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Early Childhood Longitudinal Study, Kindergarten Class of 2010–11 (ECLS-K:2011)

User's Manual for the ECLS-K:2011 Kindergarten–Third Grade Data File and Electronic Codebook, Public Version

NCES 2018-034

U.S. DEPARTMENT OF EDUCATION

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User's Manual for the ECLS-K:2011 Kindergarten–Third Grade Data File and Electronic Codebook, Public Version

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1. INTRODUCTION

This manual provides guidance and documentation for users of the longitudinal kindergarten–fourth grade (K-4) public-use data file of the Early Childhood Longitudinal Study, Kindergarten Class of 2010–11 (ECLS-K:2011), which includes the first release of the public version of the third-grade data. This manual mainly provides information specific to the third-grade round of data collection. Users should refer to the *Early Childhood Longitudinal Study, Kindergarten Class of 2010–11 (ECLS-K:2011), User's Manual for the ECLS-K:2011 Kindergarten Data File and Electronic Codebook, Public Version* (NCES 2015-074) (Tourangeau et al. 2015), hereinafter referred to as the base-year User's Manual, for information about the general study methodology and the kindergarten rounds of data collection, to the *Early Childhood Longitudinal Study, Kindergarten Class of 2010–11 (ECLS-K:2011), User's Manual for the ECLS-K:2011 Kindergarten–First Grade Data File and Electronic Codebook, Public Version* (NCES 2015-078) (Tourangeau et al. 2015) for information about the first-grade rounds of data collection, to the *Early Childhood Longitudinal Study, Kindergarten Class of 2010–11 (ECLS-K:2011), User's Manual for the ECLS-K:2011 Kindergarten–Second Grade Data File and Electronic Codebook, Public Version* (NCES 2017-285) (Tourangeau et al. 2017) for information about the second-grade rounds of data collection, and to the *Early Childhood Longitudinal Study, Kindergarten Class of 2010–11 (ECLS-K:2011), User's Manual for the ECLS-K:2011 Kindergarten–Fourth Grade Data File and Electronic Codebook, Public Version* (NCES 2018-032) (Tourangeau et al. 2018) for information about the fourth-grade rounds of data collection.

This chapter provides an overview of the ECLS-K:2011. Subsequent chapters provide details on the third-grade data collection instruments and methods, including a description of how the third-grade data collections differ from the earlier rounds; the direct and indirect child assessments; the sample design; weighting procedures; response rates; and data file content, including composite variables.

Data for the ECLS-K:2011 are released in both a restricted-use and a public-use version. This manual, which has been developed for public dissemination and use with the public version of the data, is almost identical to the manual released with the kindergarten-third-grade restricted-use file.[1] **Edits have been made to round or remove unweighted sample sizes that cannot be generated with the public-use file (PUF)**. Estimates such as means that are presented in the tables throughout the manual were calculated

[1] *Early Childhood Longitudinal Study, Kindergarten Class of 2010–11(ECLS-K:2011) User's Manual for the ECLS-K:2011 Kindergarten-Third Grade Data File and Electronic Codebook, Restricted Version* (NCES 2016-092) (Tourangeau et al. 2016).

with the restricted-use file**.** Some estimates may not be able to be reproduced exactly with variables in the PUF because the variables have been masked to make them suitable for public release. **Appendix B provides information about the ways in which data were masked on the PUF and includes tables that list all variables that have been masked or suppressed.** Also, throughout this manual references are made to materials that are on the restricted-use DVD. Public-release versions of these materials are available under "Data Products" on the ECLS-K:2011 website, https://nces.ed.gov/ecls/kindergarten2011.asp.

The ECLS-K:2011 is following a nationally representative sample of children from kindergarten through their elementary school years. It is a multisource, multimethod study that focuses on children's early school experiences. It includes interviews with parents, self-administered questionnaires completed by teachers and school administrators, one-on-one assessments of children, and beginning in third grade, a computer-assisted self-administered questionnaire for children. During the kindergarten year, the ECLS-K:2011 also included self-administered questionnaires for nonparental before- and after-school care providers. The ECLS-K:2011 is sponsored by the National Center for Education Statistics (NCES) within the Institute of Education Sciences (IES) of the U.S. Department of Education.

1.1 Background

The ECLS-K:2011 is the third and latest study in the Early Childhood Longitudinal Study (ECLS) program, which comprises three longitudinal studies of young children: the Early Childhood Longitudinal Study, Kindergarten Class of 1998–99 (ECLS-K); the Early Childhood Longitudinal Study, Birth Cohort (ECLS-B); and the ECLS-K:2011. The ECLS program is broad in its scope and coverage of child development, early learning, and school progress. It draws together information from multiple sources, including children, parents, teachers, school administrators, and early care and education providers, to provide data for researchers and policymakers to use to answer questions regarding children's early educational experiences and address important policy questions. The ECLS-K:2011 provides current information about today's elementary school children. Also, coming more than a decade after the inception of the ECLS-K, the ECLS-K:2011 allows for cross-cohort comparisons of two nationally representative kindergarten classes experiencing different policy, educational, and demographic environments.

The three studies in the ECLS program provide national data on children's developmental status at birth and at various points thereafter; children's transitions to nonparental care, early education programs, and school; and children's home and school experiences, growth, and learning. The ECLS

program also provides data that enable researchers to analyze how a wide range of child, family, school, classroom, nonparental care and education provider, and community characteristics relate to children's development and to their experiences and success in school. Together, these three studies provide the range and breadth of data needed to more fully describe and understand children's education experiences, early learning, development, and health in the late 1990s, 2000s, and 2010s.

More information about all three of these studies can be found on the ECLS website (https://nces.ed.gov/ecls).

1.2 Periods of Data Collection

The ECLS-K:2011 is following a cohort of children from their kindergarten year (the 2010–11 school year, referred to as the base year) through the 2015–16 school year, when most of the children are expected to be in fifth grade (exhibit 1-1). The sample includes both children who were in kindergarten for the first time and those who were repeating kindergarten during 2010–11. Although the study refers to later rounds of data collection by the grade the majority of children are expected to be in (that is, the modal grade for children who were in kindergarten in the 2010–11 school year), children are being included in subsequent data collections regardless of their grade level.[2] During the 2010–11 school year, when both a fall and a spring data collection were conducted, approximately 18,170 kindergartners from about 1,310 schools[3] and their parents, teachers, school administrators, and before- and after-school care providers participated in the study. Fall and spring data collections were also conducted during the first-grade year. While the fall kindergarten collection included the full ECLS-K:2011 sample, the fall first-grade collection was conducted with children in one-third of the sample of primary sampling units (PSUs) selected for the study. These children are referred to as the fall subsample. The data collection schedule for second grade was similar to the schedule for first grade, with a fall second-grade collection that included the same subsample of children from the fall of first grade and a spring collection that included the entire sample of children who participated in at least one of the two base-year data collection rounds. In third grade, a spring data collection was conducted with the entire sample of children who participated in the

[2] Children may not be in the modal grade due to retention in a grade or promotion to a higher grade ahead of schedule.

[3] This number includes both schools that were part of the original sample of schools selected for the study (approximately 970) and schools to which children transferred during the base year (approximately 340).

base year. For fourth and fifth grade, spring data collections with the entire sample of children who participated in the base year are also planned.[4]

Exhibit 1-1. Data collection schedule: School years 2010–11 through 2015–16

School year	Grade[1]	Data collections[2]
2010–11	Kindergarten	Fall 2010
		Spring 2011
2011–12	First grade	Fall 2011
		Spring 2012
2012–13	Second grade	Fall 2012
		Spring 2013
2013–14	Third grade	Spring 2014
2014–15	Fourth grade	Spring 2015
2015–16	Fifth grade	Spring 2016

[1] Grade indicates the modal grade for children who were in kindergarten in the 2010–11 school year. After the kindergarten rounds of data collection, children are included in data collection regardless of their grade level.

[2] All but two rounds of data collection include the entire sample of children. The fall first-grade data collection included approximately one-third of the total ECLS-K:2011 sample of children. The fall second-grade data collection included the same subsample selected for the fall of first grade.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Early Childhood Longitudinal Study, Kindergarten Class of 2010–11 (ECLS-K:2011).

1.3 Overview of the Third-Grade Round of Data Collection

As described in chapter 1 of the base-year User's Manual, the ECLS-K:2011 collects information from children, parents, classroom teachers, special education teachers, and school administrators. In the base year, information was also collected from children's before- and after-school care providers. Data collection instruments for all of these different respondent types were included in the third-grade round of data collection, with the exception of the care provider questionnaires. The care provider component was included in the base year to obtain more information about young children's activities outside of school, which is particularly important for understanding differences in the educational environments of children attending full-day kindergarten and of those attending part-day kindergarten.

The assessments and instruments used in third grade were largely the same as those used in earlier rounds to allow for longitudinal analysis. However, the earlier assessments and instruments were revised, as necessary, to make them appropriate for the third-grade data collections. For example, questions in the school administrator questionnaire asking about the school's second-graders were revised to ask

[4] Beginning with the fall first-grade data collection, children who moved away from their original base-year schools were subsampled for follow-up. More information about the sample for third grade, including the subsampling of movers, is provided in chapter 4.

about the school's third-graders. One new instrument was introduced for third grade: the child questionnaire. Children completed an audio computer-assisted self-administered questionnaire about themselves. More detailed information about the third-grade study instruments, including how they differ from the instruments used in the kindergarten, first-, and second-grade rounds, is provided in chapter 2. In addition, during the third-grade round, hearing evaluations were again conducted with the same subsample of children who participated in the fall 2012 round of hearing evaluations. The procedures and data for the third grade hearing evaluations are described in a separate manual, *Early Childhood Longitudinal Study, Kindergarten Class of 2010–11 (ECLS-K:2011) User's Manual for the Third-Grade Hearing Evaluations Component Data File* (NCES 2018-090) (Tourangeau et al. 2017).

1.4 ECLS-K:2011 Kindergarten–Fourth Grade (K-4) Public-Use Data File

The ECLS-K:2011 kindergarten–fourth grade (K-4) public-use data file includes the base-year, first-grade, second-grade, third-grade, and fourth-grade data encompassing both the fall and spring rounds of data collection in kindergarten, first grade, and second grade and the spring rounds of data collection in third and fourth grade. The data file includes information for all students who participated during the kindergarten year even if they did not participate during later rounds. Third-grade data for students who did not participate in the third-grade round are set to "system missing." The K-4 public-use file (PUF) is intended to replace the previously released PUFs; the K-4 PUF includes all of the cases included in prior PUFs and has some important corrections and updates to previously released data, including the child assessment scores.

In preparing data files for release, NCES takes steps to minimize the likelihood that individual schools, teachers, parents, or students participating in the study can be identified. Every effort is made to protect the identity of individual respondents. The process of preparing the files for release includes a formal disclosure risk analysis. Small percentages of values are swapped across cases with similar characteristics to make it very difficult to identify a respondent with certainty. The modifications used to reduce the likelihood that any respondent could be identified in the data do not affect the overall data quality.

Analysts should be aware that the ECLS-K:2011 data file is provided as a *child-level* data file containing one record for each child who participated in the base year. The record for each child contains information from each of the study respondents: the child, as well as his or her parent, teacher(s), school administrator and, if applicable, before- or after-school care provider.

The ECLS-K:2011 K-4 data are provided in an electronic codebook (ECB) that permits analysts to view the variable frequencies, tag selected variables, and prepare data extract files for analysis with SAS, SPSS, or Stata. The public-use version of the data will be available online.

1.5 Contents of Manual

The remainder of this manual contains more detailed information on the third-grade data collection instruments (chapter 2) and the direct and indirect child assessments (chapter 3). It also describes the ECLS-K:2011 sample design and weighting procedures (chapter 4), response rates and bias analysis (chapter 5), and data preparation procedures (chapter 6). In addition, this manual describes the structure of the data file and the composite variables that have been developed for the file (chapter 7). The last chapter of this manual contains a short introduction to the Electronic Codebook (ECB) and how to use it (chapter 8).

Additional information about the ECLS-K:2011 study design, methods, and measures can be found in the earlier round user's manuals noted above, as well as in the *Early Childhood Longitudinal Study, Kindergarten Class of 2010–11 (ECLS-K:2011), Kindergarten Psychometric Report* (Najarian et al. forthcoming), the *Early Childhood Longitudinal Study, Kindergarten Class of 2010–11 (ECLS-K:2011), First-Grade and Second- Grade Psychometric Report* (Najarian et al. forthcoming), and the *Early Childhood Longitudinal Study, Kindergarten Class of 2010-11 (ECLS-K:2011), Third- through Fifth - Grade Psychometric Report* (Najarian et al. forthcoming). Also, as noted earlier, additional information about the ECLS program can be found online at https://nces.ed.gov/ecls.

2. DATA COLLECTION INSTRUMENTS AND METHODS

This chapter describes the data collection instruments used in the Early Childhood Longitudinal Study, Kindergarten Class of 2010–11 (ECLS-K:2011) third-grade round of data collection, including the child assessments, child questionnaire, parent interview, school administrator questionnaires, and teacher questionnaires.[1] Differences between earlier rounds of data collection and the third-grade round in the study instruments and data collection procedures are discussed. For more information on the earlier rounds of data collection instruments and methods, consult the user's manuals for those rounds.

2.1 Data Collection Instruments

The design of the ECLS-K:2011 and its survey instruments is guided by a conceptual framework of children's development and learning that emphasizes the interaction among the various environments in which children live and learn and the resources within those environments to which children have access. A comprehensive picture of children's environments and experiences is created by combining information from children themselves, their parents, their school administrators, their teachers, and their kindergarten before- and after-school care providers.

Exhibit 2-1 presents a listing of the ECLS-K:2011 data collection instruments and the rounds of data collection in which they were used. The instruments for the kindergarten, first-grade, second-grade, and third-grade collections are included on the ECLS-K:2011 kindergarten–third grade (K–3) restricted-use DVD and are available online at https://nces.ed.gov/ecls, with the exception of copyrighted materials or items adapted from copyrighted materials that cannot be publicly distributed without copyright holder and NCES permission. Study instruments and items for which copyright permissions are needed are discussed further in section 2.1.7.

The information collected in the ECLS-K:2011 instruments can be used to answer a wide variety of research questions about how home, school, and neighborhood factors relate to children's cognitive, social, emotional, and physical development. Sections 2.1.1 through 2.1.6 describe the major topics covered in each instrument.

[1] For ease of presentation, this chapter refers to all students as "third-grade students"; however, the reader should keep in mind that some children had been retained in a grade and a very small number of students had been advanced to a higher grade. These children are included in the group being referred to as third-graders.

Exhibit 2-1. Instruments used in the ECLS-K:2011 kindergarten, first-, second-, and third-grade rounds of data collection: School years 2010–11, 2011–12, 2012–13, and spring 2014

Instrument	Fall kinder-garten	Spring kinder-garten	Fall first grade	Spring first grade	Fall second grade	Spring second grade	Spring third grade
Child assessment							
Language screener	X	X	X	X			
Reading	X	X	X	X	X	X	X
Mathematics	X	X	X	X	X	X	X
Executive function	X	X	X	X	X	X	X
Science		X	X	X	X	X	X
Height and weight	X	X	X	X	X	X	X
Hearing evaluation					X		X
Child questionnaire							X
Parent interview	X	X	X	X	X	X	X
Classroom teacher questionnaires							
Teacher level	X	X		X		X	X
Teacher level-subject area							X
Teacher level (new teacher supplement)		X					
Child level	X	X	X	X	X	X	X
Special education teacher questionnaires							
Teacher level		X		X		X	X
Child level		X		X		X	X
School administrator questionnaires		X		X		X	X
Before- and after-school care questionnaires							
Center director		X					
Center-based care provider		X					
Home-based care provider		X					
Child-level		X					

SOURCE: U.S. Department of Education, National Center for Education Statistics, Early Childhood Longitudinal Study, Kindergarten Class of 2010–11 (ECLS-K:2011), fall 2010, spring 2011, fall 2011, spring 2012, fall 2012, spring 2013, and spring 2014.

2.1.1 Direct Child Assessment

In the third-grade data collection, children were assessed in reading, mathematics, science, and executive function skills, and their height and weight were measured in the spring. A subsample of the children also had their hearing evaluated. The majority of the items included in the third-grade assessments in reading, mathematics, and science had been included in the first- and second-grade assessments. However, to ensure that these assessments adequately measured the knowledge and skills of the children as they progressed through school, new, more difficult items were added to the assessments in third grade, and easier items reflecting lower level first- and second-grade skills were omitted. All children received the assessments designed for the third-grade collection, regardless of their actual grade level. The reading, mathematics, and science assessments were administered directly to the sampled children on an individual basis by trained and certified child assessors. This battery of assessments was designed to be administered within about 60 minutes per child.[2] Child responses were entered by the assessor into a computer-assisted interviewing (CAI) program. Executive function skills were assessed through a computer-administered task completed by children and an oral task in which child responses were input into the computer using the CAI program. A subsample of the children also had their hearing evaluated by specially trained health technicians. The health technicians typically conducted the 15-minute hearing evaluations immediately after each selected child's assessment and height and weight measurement.

Two-stage assessment. The third-grade direct cognitive assessment included two-stage assessments for reading, mathematics, and science. For each assessment domain, the first stage of the assessment was a routing section that included items covering a broad range of difficulty. A child's performance on the routing section of a domain determined which one of three second-stage tests (low, middle, or high difficulty) the child was next administered for that domain. The second-stage tests varied by level of difficulty so that a child would be administered questions appropriate for his or her demonstrated level of ability for each of the cognitive domains. The purpose of this adaptive assessment design was to maximize accuracy of measurement while minimizing administration time.

Language screener for children whose home language was not English. Unlike in kindergarten and first grade, a language screener was not used in subsequent grades for children whose home language was not English. By the spring of first grade, nearly all children (99.9 percent) were routed

[2] Together the reading, mathematics, and science assessments took longer than expected, at an average of 63 minutes. The executive function assessments averaged 10 minutes, and measurement of height and weight took about 5 minutes.

through the assessment in English; therefore the language screener was not administered beyond the spring of first grade.

Cognitive domains. The third-grade cognitive assessment focused on four domains: reading (language use and literacy), mathematics, science, and executive function (working memory and cognitive flexibility). For the reading, mathematics, and science assessments, assessors asked the children questions related to images or text that were presented on a small easel, such as pictures, words, or short sentences for reading; numbers and number problems for mathematics; and predictions based on observations and cause-and-effect relationships for science. For the reading assessment, children were also asked questions about short reading selections they were asked to read in a passages booklet developed for the assessment. These questions were also presented on the easel. Children were not required to explain their reasoning. The executive function component included a computer-administered card sort task, for which children entered responses in the assessor's laptop computer, and a backward digit span task, for which children provided verbal responses to the assessor. A brief description of each of the cognitive assessment components follows.

Reading (language and literacy). The reading assessment included questions measuring basic skills (e.g., word recognition), vocabulary knowledge, and reading comprehension. Reading comprehension questions asked the child to identify information specifically stated in text (e.g., definitions, facts, supporting details); to make complex inferences within texts; and to consider the text objectively and judge its appropriateness and quality. The reading assessment began with a set of 20 routing items, with the children's score on these items determining which second-stage form (low, middle, or high difficulty) the child received.

Mathematics. The mathematics assessment was designed to measure skills in conceptual knowledge, procedural knowledge, and problem solving. The assessment consisted of questions on number sense, properties, and operations; measurement; geometry and spatial sense; data analysis, statistics, and probability; and patterns, algebra, and functions. A set of 17 routing items was administered to all children, and the score on these items determined which second-stage test (low, middle, or high difficulty) a child received. Most of the text that the children could see on the easel pages, for example, question text for word problems or graph labels, was read to them by the assessor to reduce the likelihood that the children's reading ability would affect their mathematics assessment performance.[3] Paper and pencil were offered to

[3] Numbers were read to the child only when the question text referenced the number.

the children for use during the mathematics assessment, and children were periodically reminded of the availability of paper and pencil as part of the assessment protocol.

Science. The science assessment domain included questions about physical sciences, life sciences, Earth and space sciences, and scientific inquiry. The science assessment included 14 routing items that all children received, followed by one of three second-stage forms (low, middle, or high difficulty). As with reading and mathematics, the second-stage form children received depended on their responses to the routing items. The questions, response options, and any text the children could see on the easel pages (for example, graph labels) were read to the children to reduce the likelihood that their reading ability would affect their science assessment score.

Executive function. The executive function component of the cognitive assessment obtained information on cognitive processes associated with learning: cognitive flexibility and working memory. To measure cognitive flexibility, children were administered the *Dimensional Change Card Sort (DCCS)* (Zelazo 2006). Different versions of the *DCCS* were used in different rounds of data collection because there was no single task that was age appropriate across all rounds of data collection when the study began. During the kindergarten and first-grade rounds, the hard-copy or physical version of the *DCCS*, as described in Zelazo 2006, was administered using cards that children were asked to sort into piles. Because the physical version of the *DCCS* would have been too easy for the majority of the study children during the second-grade rounds, beginning in the fall second-grade round children were administered a new, age-appropriate, computerized version of the *DCCS* in which the "cards" are presented on a computer screen and children sort them into "piles" on the computer screen using keys on the keyboard to indicate where to place each card. The computerized task was developed as part of the National Institutes of Health (NIH) Toolbox for the Assessment of Neurological and Behavioral Function and is appropriate for ages 3–85 (Zelazo et al. 2013). The NIH Toolbox *DCCS* has two different administrations based on the age of the child: one for children 7 years and younger and one for children 8 years and older. The task had been under development during the kindergarten and first-grade rounds of data collection but became available in time to be incorporated into the second-grade data collections. The ECLS-K:2011 used the version for children 8 years and older beginning in the fall second-grade round. Although the physical and the computer versions assess the same construct, the scoring and the way in which the construct is assessed differ across the two tasks (for information on scoring, see section 3.2.1).

Like the physical version of the *DCCS* administered in the kindergarten and first-grade data collections, the computerized version asks children to sort cards either by shape or color. However, rather

than administer the cards in sections with a consistent sorting rule (with cards first sorted only by color, then only by shape, and finally by color or shape depending on whether a card had a black border), in the computerized *DCCS* the sorting rules are intermixed across the 30 trials of the task. In the computerized *DCCS*, one rule is more common than the other to build a response tendency (i.e., a response that is "preferred" because it happens more frequently, resulting in a predisposition to respond in that manner). Also, whereas performance on the physical version is measured by sorting accuracy, performance on the computerized version is measured as a function of both accuracy and reaction time. Reaction time is calculated based on reaction time only for trials using the sorting rule that is presented less often and only when there is a correct response. The reaction time of the less frequent trials or nondominant trials is of most interest because when a child is predisposed to respond in a particular way, it is harder and takes more time to inhibit that response tendency and switch the response to maintain accuracy. As children get older, it is important to incorporate reaction time into the *DCCS* score because older children and adults tend to slow down in order to respond accurately. Younger children do not tend to show a speed/accuracy tradeoff, and therefore accuracy is a better metric of performance for young children (Davidson et al. 2006). Performance on the computerized version of the *DCCS* is derived from a formula that takes into consideration both accuracy and reaction time (Zelazo et al. 2013; Slotkin, Nowinski et al. 2012).

After the card sort, children were administered the Numbers Reversed task, which is a measure of working memory. In this task, children were asked to repeat strings of orally presented numbers in reverse order. The sequence of numbers became increasingly longer, up to a maximum of eight numbers. The task was ended when children responded incorrectly to three consecutive number sequences, so that they would not be asked to continue at a level that was too difficult, or when all number sequences had been completed.

Height and weight measurement. In addition to the cognitive domains described above, children's height and weight were measured during each data collection. A Shorr board (a tall wooden stand with a ruled edge used for measuring height) and a digital scale were used to obtain the measurements.[4] Assessors recorded the children's height (in inches to the nearest one-quarter inch) and weight (in pounds to one decimal place) on a height and weight recording form and then entered the measurements into a laptop computer. Each measurement was taken and recorded twice to ensure reliable measurement.

[4] The Shorr board that was used is manufactured by Weigh and Measure, LLC, and is model ICA. The digital scale used was Seca Bella model 840.

Hearing evaluations. In the spring third-grade data collection, a subsample of the children also had their hearing evaluated by specially trained health technicians. Study protocol called for the health technicians to conduct the 15-minute hearing evaluations immediately after each selected child's assessment and height and weight measurement.[5] For the hearing evaluation, the health technician first asked the child a few questions about his or her hearing and recent experiences that could affect the results of the evaluation, including whether the child had an earache or recent cold or had recently heard any loud noises. Next, the child's ears were visually examined to see if there was any blockage that could affect the evaluation. The child's responses to the questions and the results of the visual examination were entered into a laptop computer. Then the health technician used a tympanometer to measure inner-ear functioning. Finally, the child listened to short tones of various pitches and decibel levels that were presented through headphones connected to an audiometer in order to determine hearing thresholds (the softest sounds the child could hear) for each ear. The data collected from the tympanometer and audiometer were automatically transferred from the hearing equipment and saved to the health technician's laptop.

2.1.2 Child Questionnaire

Beginning in the spring of third grade, a child questionnaire (CQ) was administered to children prior to the cognitive assessment components. The questionnaire had 37 questions and took approximately 11 minutes to complete.

Unlike the hard-copy child questionnaires that were administered during the Early Childhood Longitudinal Study, Kindergarten Class of 1998–99 (ECLS-K) by assessors who read the questions/items to the children, the ECLS-K:2011 child questionnaire was administered on a computer using audio computer-assisted self-interview (audio-CASI) technology and headphones. Children listened as the software system read the instructions and questionnaire items. One questionnaire item at a time was displayed on the laptop's screen, and a recorded human voice read each question and response options to the child. The child responded by selecting the desired response on the laptop's touch screen. The audio-CASI questionnaire standardized administration and accommodated the variation in children's reading ability levels. It also allowed the child to hear and respond to the questions/items in private and limited distractions for the child because the headphones worn during the administration minimized extraneous noise.

[5] In some instances it was not possible to follow this standard protocol because after the assessment/measurement, the child had to return to the classroom for a scheduled activity, for example, a recess or lunch break. For those children, the evaluation was completed as soon as possible after the activity or break.

Exhibit 2-2 shows the content areas included in the third-grade child questionnaire. The content overlaps somewhat with the third-grade child questionnaire administered in the ECLS-K. During the third-grade and fifth-grade data collections of the ECLS-K, children were asked about their interest and competence in reading, mathematics, and all subjects and about their perceptions about their peer relationships. The child questionnaire for third-grade in the ECLS-K:2011 asked many of the same questions about reading, mathematics, and peers and adapted questions about "all subjects" to ask about interest and competence specifically in science. New to the ECLS-K:2011 child questionnaire were additional items relating to peers. Children were asked questions about prosocial behavior toward peers and about social anxiety, specifically fear of negative evaluation by peers. Using questions parallel to teacher- and parent-reported items, children were asked about peer victimization. Children were also asked new items on how happy they were with different aspects of their lives.

Exhibit 2-2. Child questionnaire topics in the spring 2014 third-grade round of data collection in the ECLS-K:2011

Child questionnaire content	Spring third grade
Perceived Interest/Competence in Reading[1]	X
Perceived Interest/Competence in Math[1]	X
Perceived Interest/Competence in Science[1]	X
Perceived Interest/Competence in Peer Relationships[1]	X
Peer Victimization[2]	X
Social Anxiety/Fear of Negative Evaluation[3]	X
Prosocial Behavior[4]	X
Life Satisfaction[5]	X

[1] Adapted from the Self Description Questionnaire I (SDQI) © Herbert Marsh. SELF Research Centre (Bankstown Campus) University of Western Sydney, Australia. Used with permission.
[2] Peer victimization items were adapted from a 21-item scale by Espelage, D. L. and Holt, M. (2001). Bullying and victimization during early adolescence: Peer influences and psychosocial correlates. *Journal of Emotional Abuse, 2:* 123–142.
[3] Adapted from the Social Anxiety Scale for Children—Revised ©1993 Annette M. La Greca, University of Miami. Used with permission. La Greca, A. M. and Stone, W. L. (1993). Social anxiety scale for children—revised: Factor structure and concurrent validity. *Journal of Clinical Child Psychology, 22*(1): 17–27.
[4] Adapted from the Children's Social Behavior Scale—Self Report (CSBS-S). Crick, N.R. and Grotpeter, J.K. (1995). Relational aggression, gender, and social psychological adjustment. *Child Development, 66*: 710–722.
[5] Adapted from the NIH Toolbox for Assessment of Neurological and Behavioral Function (version 1.0): Domain-Specific Life Satisfaction Survey from the NIH Toolbox Emotion Battery (www.NIHToolbox.org) © 2012 Northwestern University and the National Institutes of Health. Used with permission.
SOURCE: U.S. Department of Education, National Center for Education Statistics, Early Childhood Longitudinal Study, Kindergarten Class of 2010–11 (ECLS-K:2011), spring 2014.

2.1.3 Parent Interview

A parent interview was conducted during the spring of third grade. Unlike the kindergarten, first-grade, and second-grade data collections that had both fall and spring interviews, an interview was not conducted in the fall of third grade. The average length of the spring third-grade parent interview was approximately 36 minutes. The spring third-grade parent interview was longer than the spring second-grade parent interview and shorter than both the spring kindergarten and spring first-grade parent interviews, but captured much of the same information.

The spring third-grade parent interview included many of the same questions that were included in the kindergarten, first-grade, and second-grade rounds of the study, for example, questions about parent involvement in the child's school; homework; time children spent playing video games; children's participation in out-of-school activities; whether there had been a change in the relationship of one of the parent figures to the child (e.g., adoption); and child health and well-being. In addition, information about children's country of origin was collected if it had not been collected in kindergarten, first grade, or second grade. The spring third-grade parent interview also included some questions that were added in the spring of second grade, including nonresident parents' country of origin and peer victimization. New to the third-grade data collection were questions about whether the parent monitored that the child's homework had been completed, the child's specific ethnic origin (that is, to what specific Hispanic/Latino, Asian, or Pacific Islander group the child belongs, how many hours of sleep the child got on a school night, and whether parents had been (since the child was born) or currently were on active duty in the military; questions to assess the child's working memory; and questions about whether the child had been on field trips focused on science activities.

Exhibit 2-3 shows the content areas included in the parent interview in the fall and spring of kindergarten, first grade, and second grade, and in the spring of third grade, by data collection round. While many of the same topics were addressed in multiple rounds, there were some differences in the specific questions asked for each topic. For example, there was only one question about employment in the spring of third grade, but multiple questions about employment in earlier grades. Also, questions about whether parents were on active duty in the military were asked in the employment section of the spring third-grade parent interview, but were not asked in earlier grades.

Exhibit 2-3. Parent interview topics, by round of data collection in the ECLS-K:2011: School years 2010–11, 2011–12, 2012–13, and spring 2014

Parent interview content	Fall kinder-garten	Spring kinder-garten	Fall first grade	Spring first grade	Fall second grade	Spring second grade	Spring third grade
Child care arrangements[1]	X	X	X	X	X	X	X
Child demographic characteristics[2]	X	X	X	X	X	X	X
Child disabilities and services[3]		X	X	X	X	X	X
Child health and well-being	X	X		X	X	X	X
Child mobility	X		X	X	X	X	X
Child social skills, problem behaviors, and approaches to learning[4]	X	X		X			X
Country of origin of parent and child[5]		X		X		X	X
Family structure	X	X		X		X	X
Food sufficiency and food consumption		X		X			X
Household roster	X	X		X		X	X
Home environment, activities, resources, and cognitive stimulation[6]	X	X	X	X	X	X	X
Home language[5]	X	X		X		X	X
Involvement of nonresident parent	X	X		X		X	X
Neighborhood safety		X		X			
Parent characteristics	X	X		X		X	X
Parenting stress		X		X			
Parent education[5]	X	X		X			X
Parent employment[7]	X			X		X	X
Parent income and assets		X		X		X	X
Parent involvement with the child's education	X	X		X		X	X
Parent marital history[5]	X	X					
Parent marital status	X	X		X		X	X

See notes at end of exhibit.

Exhibit 2-3. Parent interview topics, by round of data collection in the ECLS-K:2011: School years 2010–11, 2011–12, 2012–13, and spring 2014—Continued

Parent interview content	Fall kinder-garten	Spring kinder-garten	Fall first grade	Spring first grade	Fall second grade	Spring second grade	Spring third grade
Parent respondent's psychological well-being and health		X				X	X
Parent social support				X			
Parental beliefs and expectations related to education	X						X
Parental discipline, warmth, and emotional supportiveness		X		X		X	X
Peer victimization						X	X
Time father/other adult male spends with child		X					
Welfare and other public transfers	X	X		X		X	

[1] In the fall of kindergarten, questions were asked about current child care and child care in the year before kindergarten. In the spring of kindergarten, questions about child care in the year before kindergarten were asked if information had not been collected in the fall. In the fall of first and second grades, questions were about child care during the previous summer. In the spring of first, second, and third grades, questions asked about current child care.
[2] Questions about child demographic characteristics were asked in the fall and spring of kindergarten and then asked in later rounds of the study if the information was missing from a previous round. Questions about the child's specific ethnic origin were asked in the spring third-grade parent interview.
[3] Questions in the fall first- and second-grade interviews were about services for special needs or participation in a special education program over the previous summer. Questions about disabilities and services in other rounds of the study were not limited to the past summer.
[4] In the spring of third grade, the questions in this section were about working memory. In previous rounds of the study, the questions were about social skills, behavior, and approaches to learning.
[5] Asked if information had not been collected in a previous round.
[6] Questions in the fall first- and second-grade interviews were about home activities, outings with family members, camps, and summer school during the previous summer. Questions in other rounds of the study were not limited to the summer.
[7] In the spring of third grade, employment was asked about in a single question about whether a parent figure worked part-time, full-time, was a stay-at-home parent or guardian, or was not working. In previous rounds of the study, multiple questions about employment and occupation were asked.
SOURCE: U.S. Department of Education, National Center for Education Statistics, Early Childhood Longitudinal Study, Kindergarten Class of 2010–11 (ECLS-K:2011), fall 2010, spring 2011, fall 2011, spring 2012, fall 2012, spring 2013, and spring 2014.

The parent interview was conducted by telephone for most cases. The respondent to the parent interview was usually a parent or guardian in the household who identified himself or herself as the person who knew the most about the child's care, education, and health. During the spring third-grade data collection round, interviewers attempted to complete the parent interview with the same respondent who

completed the parent interview in the previous rounds. Another parent or guardian in the household who knew about the child's care, education, and health was selected if the previous respondent was not available.

The parent interview was fully translated into Spanish before data collection began and was administered by bilingual interviewers if parent respondents preferred to speak in Spanish. The parent interview was not translated into other languages because it was cost prohibitive to do so. However, interviews were completed with parents who spoke other languages by using an interpreter who translated the English version during the interview.

2.1.4 General Classroom Teacher Questionnaires

Unlike the kindergarten, first-grade, and second-grade years, there were no fall teacher questionnaires administered during the third-grade year.

Similar to the spring kindergarten, first-grade, and second-grade collections, both teacher-level and child-level questionnaires were included in the third-grade year. The general classroom teachers of children in the study completed two self-administered hard-copy questionnaires about themselves and their classrooms as well as a child-level questionnaire for each child in their classrooms who was participating in the ECLS-K:2011. The purpose of the teacher-level questionnaires was to collect information about the classroom environment and experiences that may relate to children's academic and social development. They included questions about the classroom and student characteristics, class materials, instructional practices and curricula, evaluation practices, parent involvement, teacher's background, teaching experience, staff development and support activities, and attitudes about teaching and the school climate. In prior years these topics were contained in a single teacher-level questionnaire, but for third grade the instructional practices and curricula items were moved into a separate teacher-level subject-area questionnaire. These items were grouped together by subject area in separate sections pertaining to reading and language arts, mathematics, science, and social studies and captured information about the specific skills and concepts taught by the subject-area teacher(s). This separate subject-area questionnaire was shared by the general classroom teacher with other teachers if the study child was taught by another teacher for one or more of these specific subject areas. The items in this separate teacher-level subject-area questionnaire were parallel to the subject-specific skills and concepts items in the second-grade

teacher-level questionnaire but were revised to reflect third-grade standards in the Common Core State Standards.[6]

Taken together, the two teacher-level questionnaires used in the spring of the third-grade year were very similar in content to those that were used in the spring kindergarten, spring first-grade, and spring second-grade collections. There were no new constructs added for third grade and some items were omitted in order to shorten the questionnaire. These omitted items included items on the following topics:

- distribution of students in the classroom by age, race/ethnicity, and gender;
- some items about teachers and students who speak languages other than English (non-English languages used by teachers in the classroom, by purpose; use of written materials in languages other than English; and non-English languages spoken by children other than those who are English language learners; the type of instruction English language learners received);
- time spent working independently, in small groups, or large groups;
- availability of certain resources and materials other than technology-related equipment;
- use of achievement groups (although this topic was captured for the study children in the child-level questionnaire);
- some teacher background items (highest level of education completed by teacher's parents; number of years teacher has taught in current school unless it is his or her first year in the school; status on National Board for Professional Teaching Standards certification; name and location of university attended for highest degree obtained; whether teacher has taken college courses in early childhood education, special education, child development, and English as a Second Language; area of certification; and status regarding Highly Qualified Teacher requirements);
- some items related to methods of assessment (types of tests and other activities used for student evaluation and how student progress is communicated to parents); and
- some items related to specific professional development activities (types of training activities and peer observation).

The purpose of the child-level questionnaires was to collect information specifically about each study child's experiences and performance in the classroom. Information was collected in the child-level questionnaires about the child's academic and cognitive abilities, behavior, social skills, executive

[6] See www.corestandards.org for further information. An effort led by state governors and state commissioners of education to develop the Common Core State Standards for kindergarten through grade 12 was begun in 2009, through the National Governors Association Center for Best Practices and the Council of Chief State School Officers.

function, specific programs and services received, and achievement group placement in mathematics and reading, if applicable.

The spring third-grade child-level questionnaire was very similar to the one used in the second-grade data collection. A few items were omitted for third grade, including the falling behind with work and why, additional instruction outside of school, assessment accommodations for disability (although this is included in the special education teacher child-level questionnaire), teacher's prediction of the child's educational attainment, and some items on parent involvement (specific activities in which parents were involved and communication with parents). New items were added to the child-level questionnaire in third grade to capture aspects of the students' peer relationships and of working memory.

Exhibits 2-4 and 2-5 show the topics addressed in the kindergarten, first-grade, second-grade, and third-grade teacher-level questionnaires and child-level questionnaires, respectively, by data collection round. Although the same topics are included across rounds, the actual items can vary by data collection round.

Exhibit 2-4. General classroom teacher teacher-level questionnaire topics, by round of data collection in the ECLS-K:2011: School year 2010–11, spring 2012, spring 2013, and spring 2014

Teacher-level questionnaire content	Fall kinder-garten	Spring kinder-garten	Spring first grade (first-grade version)	Spring first grade (kindergarten version)	Spring second grade	Spring third grade
Classroom and student characteristics	X	X	X	X	X	X
Class type (half day or full day)	X	X				
Class organization and resources,	X	X	X	X	X	X
Availability of computers, Internet			X	X	X	X
Use of technology			X	X	X	X
Instructional activities		X	X	X	X	X
Instruction for English language learners	X	X	X	X	X	
Content coverage for language arts, mathematics, and science		X	X	X	X	X[1]
Activities and resources related to Response to Intervention programs			X	X	X	X
Teacher evaluation and grading practices		X	X	X	X	X
Parent involvement		X	X	X	X	X
Meeting with other teachers		X				
Respect from and cooperation with other teachers		X	X	X	X	X
Opportunities for professional development	X	X	X	X	X	X
Teacher's views on teaching, school climate, and environment	X	X	X	X	X	X
Teacher's experience, education, and background	X	X[2]	X	X	X	X

[1] In spring third grade, these items were contained in a separate questionnaire to facilitate obtaining responses from multiple teachers, if applicable.
[2] In the spring of kindergarten, teachers new to the study were asked to complete a supplemental teacher-level questionnaire in order to collect information on their experience, education, and background that had been collected from other teachers in the fall. Teachers who provided information in the fall were not asked the same questions again in the spring.
SOURCE: U.S. Department of Education, National Center for Education Statistics, Early Childhood Longitudinal Study, Kindergarten Class of 2010–11 (ECLS-K:2011), fall 2010, spring 2011, spring 2012, spring 2013, and spring 2014.

Exhibit 2-5. General classroom teacher child-level questionnaire topics, by round of data collection in the ECLS-K:2011: School years 2010–11, 2011–12, 2012–13, and spring 2014

Child-level questionnaire content	Fall kinder-garten	Spring kinder-garten	Fall first grade	Spring first grade	Spring first grade (kinder-garten version)	Fall second grade	Spring second grade	Spring third grade
Student and enrollment information	X	X	X	X	X	X	X	X
Summer assignments			X			X		
Specialized services and programs for the child		X		X	X		X	X
Language and literacy skills and knowledge	X	X	X	X	X	X		
Mathematical thinking skills and knowledge	X	X		X	X			
Science skills and knowledge		X		X				
Overall academic rating		X		X				
Overall academic rating, by subject							X	X
Social skills	X	X	X	X	X	X	X	
Approaches to learning	X	X	X	X	X	X	X	
Attention focusing and inhibitory control	X	X		X	X		X	
Student-teacher relationship		X		X	X		X	
Peer relationships								X
Bullying, victimization							X	X
Working memory								X
Programs and services for the child		X		X	X		X	X
Prediction of child's educational attainment				X	X		X	
Parent involvement		X		X	X		X	X
Child's primary teacher in reading, mathematics, science, and social studies				X	X		X	X

SOURCE: U.S. Department of Education, National Center for Education Statistics, Early Childhood Longitudinal Study, Kindergarten Class of 2010–11 (ECLS-K:2011), fall 2010, spring 2011, fall 2011, spring 2012, fall 2012, spring 2013, and spring 2014.

2.1.5 Special Education Teacher Questionnaires

As was done in each year from kindergarten through second grade, a set of special education teacher questionnaires was completed in the spring of the third-grade year for each participating child with an Individualized Education Program (IEP) or equivalent program on record with the school. The respondent to the questionnaire could have been a staff member identified as the child's special education teacher, a related service provider if the child was not taught by a special education teacher, or the child's general classroom teacher if that teacher provided all of the child's education and services required by an IEP. Two self-administered hard-copy instruments were used, a teacher-level questionnaire and a child-level questionnaire.

The special education teacher-level questionnaire used in third grade contained the same topics and most of the same items as the questionnaire used in the second-grade round of data collection. It collected information on the special education teacher's background, education, teaching experience, teaching position, and caseload. The special education teacher child-level questionnaire addressed the following topics: current services received through an IEP, child's disabilities (primary and all those for which the child received services), IEP goals and meeting those goals, classroom placement, expectations regarding general education goals, the special education teacher's communication with other teachers and the child's parents, grade placement, and participation in assessments.

Exhibit 2-6 shows the topics addressed in the kindergarten, first-grade, second-grade, and third-grade special education teacher-level and child-level questionnaires by data collection round.

Exhibit 2-6. Special education teacher questionnaire topics, by round of data collection in the ECLS-K:2011: Spring 2011, spring 2012, spring 2013, and spring 2014

Special education teacher questionnaire content	Spring kindergarten	Spring first grade	Spring second grade	Spring third grade
Teacher-level topics				
Teacher characteristics	X	X	X	X
Teacher education and experience	X	X	X	X
Teacher position, assignment, and caseload	X	X	X	X
Child-level topics				
Prekindergarten services received through an Individualized Education Program (IEP)	X			
Current services received through an IEP	X	X	X	X
Child's disabilities (primary disability and those for which services have been received)	X	X	X	X
Goals of the child's IEP and extent to which goals have been met	X	X	X	X
Classroom placement	X	X	X	X
Special education teacher's communication with other teachers and the child's parents	X	X	X	X
Expectations regarding general education goals	X	X	X	X
Grade placement		X	X	X
Participation in assessments	X	X	X	X

SOURCE: U.S. Department of Education, National Center for Education Statistics, Early Childhood Longitudinal Study, Kindergarten Class of 2010–11 (ECLS-K:2011), spring 2011, spring 2012, spring 2013, and spring 2014.

2.1.6 School Administrator Questionnaires

As in first and second grades, there were two versions of the school administrator questionnaire (SAQ) used in third grade: (1) a version for schools that were new to the study or for which a completed school administrator questionnaire was not received in a prior data collection, and (2) a shorter version for schools for which a school administrator questionnaire had been completed in a prior year. To

reduce respondent burden, the shorter version did not include questions for which the responses were not expected to change significantly from year to year, for example, grades offered by the school, type of school (public, private, magnet, charter), adequacy of facilities, and neighborhood problems.

The school administrator questionnaires were hard-copy paper questionnaires completed by the school principal/administrator and/or his or her designee during the spring data collection round of the third-grade year. The school administrator questionnaires addressed the following topics: school characteristics; facilities and resources; school-family-community connections; school policies and practices; implementation of Response to Intervention programs and practices; school programs for particular populations (language minority children and children with special needs); federal programs; staffing and teacher characteristics; and school administrator characteristics and background.

The school administrator questionnaires for the third grade—both that for new schools and that for returning schools—were very similar to those used in the second-grade year. Compared with the second-grade questionnaires, in third grade the following topics were omitted from both versions of the SAQ: school capacity, hearing and vision screenings, and school policies regarding uniforms and grade retention. A few additional topics were omitted from the version for returning schools, including student race/ethnicity distribution, students attending the school under school choice or for special needs, school-based programs for families, and recent changes in school enrollment. Items that referred specifically to second grade were reworded to refer to third grade.

Exhibit 2-7 shows the topics addressed in the kindergarten, first-grade, second-grade, and third-grade school administrator questionnaires by data collection round.

Exhibit 2-7. School administrator questionnaire topics, by round of data collection in the ECLS-K:2011: Spring 2011, spring 2012, spring 2013, and spring 2014

School administrator questionnaire content	Spring kinder-garten	Spring first grade (new schools)	Spring first grade (returning schools)	Spring second grade (new schools)	Spring second grade (returning schools)	Spring third grade (new schools)	Spring third grade (returning schools)
School characteristics	X	X	X	X	X	X	X
Facilities and resources	X	X		X	X	X	
School-family-community connections	X	X	X	X	X	X	X
School policies and practices	X	X	X	X	X	X	X
Response to Intervention programs		X	X	X	X	X	X
School programs for particular populations (language minority children and children with special needs)	X	X	X	X	X	X	X
Federal programs	X	X	X	X	X	X	X
Staffing and teacher characteristics	X	X	X	X	X	X	X
School administrator characteristics and background	X	X	X	X	X	X	X

SOURCE: U.S. Department of Education, National Center for Education Statistics, Early Childhood Longitudinal Study, Kindergarten Class of 2010–11 (ECLS-K:2011), spring 2011, spring 2012, spring 2013, and spring 2014.

2.1.7 Copyrighted Materials

A number of the measures used in the ECLS-K:2011 assessment and questionnaires are taken directly or adapted from copyrighted instruments. Exhibit 2-8 lists these copyrighted instruments and identifies the copyright holder for each.

Exhibit 2-8. Copyright-protected instruments in ECLS-K:2011

Instrument	Publisher/copyright holder
Direct child assessment	
Peabody Individual Achievement Test – Revised (PIAT-R)	Pearson Education, Inc.
Peabody Picture Vocabulary Test – 3rd Edition (PPVT-III)	Pearson Education, Inc.
Test of Early Mathematics Ability – 3rd edition (TEMA-3)	PRO-ED, Inc.
Test of Early Reading Ability – 3rd edition (TERA-3)	PRO-ED, Inc.
Test of Preschool Early Literacy (TOPEL)	PRO-ED, Inc.
Woodcock-Johnson Psychoeducational Battery, Third Edition (WJ-III) – Applied Problems Test	The Riverside Publishing Company
Woodcock Johnson Psychoeducational Battery, Third Edition (WJ-III) – Calculations Test	The Riverside Publishing Company
Woodcock Johnson Psychoeducational Battery, Third Edition (WJ-III) Tests of Cognitive Abilities – Numbers Reversed Task	The Riverside Publishing Company
Child questionnaire	
Self Description Questionnaire I (SDQI)	Herbert Marsh
Social Anxiety Scale for Children—Revised	Annette M. La Greca
Domain-Specific Life Satisfaction Survey from the NIH Toolbox Emotion Battery	Northwestern University and the National Institutes of Health
Parent instruments	
Social Skills Rating System (SSRS)	Pearson Education, Inc.
Behavior Rating Inventory of Executive Function (BRIEF)	Psychological Assessment Resources, Inc.
Teacher instruments	
Children's Behavior Questionnaire (CBQ)	Samuel Putnam and Mary Rothbart
Temperament in Middle Childhood Questionnaire (TMCQ)	Jennifer Simonds and Mary Rothbart
Student-Teacher Relationship Scale (STRS)	Robert C. Pianta
Social Skills Rating System (SSRS)	Pearson Education, Inc.
Behavior Rating Inventory of Executive Function (BRIEF)	Psychological Assessment Resources, Inc.
Child Behavior Scale	Gary W. Ladd
Classroom Environment Student Difficulties Scale	T. Abry, J. Swanson, and R. A. Fabes

NOTE: There are no copyrighted items included in the questionnaires for special education teachers and school administrators.
SOURCE: U.S. Department of Education, National Center for Education Statistics, Early Childhood Longitudinal Study, Kindergarten Class of 2010–11 (ECLS-K: 2011).

2.2 Data Collection Methods

The data collection methods used for the spring third-grade round of the ECLS-K:2011 were the same as those used in previous rounds, with just a few exceptions described below. Please refer to the *Early Childhood Longitudinal Study, Kindergarten Class of 2010–11 (ECLS-K:2011), User's Manual for the ECLS-K:2011 Kindergarten Data File and Electronic Codebook, Public Version* (NCES 2015-074) (Tourangeau et al. 2015) for an overview of the general study procedures for school recruitment, field staff training, school contact in the fall, data collection, tracing activities, and data collection quality control.

2.2.1 Comparison of Data Collection Methods Used in Third Grade to Those Used in Earlier Data Collection Rounds

School recruitment. Third-grade school recruitment followed the same procedures as in second–grade school recruitment. Data collection staff team leaders[7] recruited only new transfer schools, meaning those schools to which study children moved between second grade and the spring of third grade. Recruitment was not repeated for schools that had participated in the kindergarten, first-, or second-grade years.

Field staff training. Training for the third-grade data collection was similar to the training for the spring second-grade collection. Both team leaders and assessors completed a home study prior to attending in-person training. Both team leaders and assessors were trained on the parent interview, the child assessment, and the child questionnaire during a 6-day in-person training. Child assessment and child questionnaire training included interactive sessions, individual practice, and role plays with partners. In the spring of third grade, all team leaders were trained via the Learning Management System (LMS), an online learning platform that delivers and tracks assigned trainings in a browser environment. New team leaders participated in an additional 1-day, in-person training. Training for school recruiters for the third-grade data collection was conducted via WebEx[8] as was done in second grade. Similar to the fall of second grade, team leaders were trained on logistical procedures for integrating the hearing evaluation component into the assessment day.

[7] The team leader is a specially trained ECLS-K:2011 staff member responsible for communicating with schools and making arrangements for assessment activities and for leading a team of assessors in each school.
[8] WebEx is an Internet-based web conferencing tool for sharing presentations in any format with an audience in multiple remote locations. The CAPI application was shown to interviewers using this tool.

Health technicians, who accompanied the teams in the schools to conduct the hearing evaluations, were trained in a 5-day, in-person training. For more information on the hearing evaluations component, see the *Early Childhood Longitudinal Study, Kindergarten Class of 2010–11 (ECLS-K:2011) User's Manual for the Third-Grade Hearing Evaluations Component Data File* (NCES 2018-090) (Tourangeau et al. 2017).

Advance school contact in the fall. Advance school contact for third grade remained the same as in the fall of second grade.

Data collection. Data collection procedures used in third grade were the same as those used during the second-grade year. As described above, however, revisions were made to the instruments that had been used in the second-grade rounds. A child questionnaire was added in third grade and was administered via audio computer-assisted self-interviewing (audio-CASI). Also, the hearing evaluation component was conducted in the subset of schools in which the evaluation was first conducted in the fall of second grade.

Tracing activities. Tracing activities for the third-grade round remained the same as those used in the second-grade rounds.

Quality control. Quality control and validation procedures for the third-grade round remained the same as those used in in the second-grade rounds.

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3. ECLS-K:2011 DIRECT AND INDIRECT ASSESSMENT DATA

This chapter provides information primarily about the direct and indirect assessment data from the third-grade collection of the ECLS-K:2011. The chapter begins with a description of the direct cognitive assessments, providing information about the scores available in the data file. The chapter then presents information on the executive function assessments. Beginning in third grade, study children completed a child questionnaire, which is described in a section on children's reports about themselves, their interests, and their feelings. Finally, the chapter closes with information on teacher- and parent-reported assessments of children's cognitive and socioemotional knowledge and skills.

This chapter includes information about assessment data from the kindergarten through second-grade rounds of data collection in three instances: when those data have been changed since their release on previous files, when new data from those rounds have been added to the kindergarten through fourth-grade (K-4) data file, and when necessary to illustrate how third-grade data related to a particular measure or construct differ from data related to the same measure or construct released for the earlier rounds. Information about assessments that were used in prior rounds but not in third grade, for example the Spanish Early Reading Skills (SERS) assessment, and about scores that were produced only for earlier rounds, such as raw number-right scores, can be found in the *Early Childhood Longitudinal Study, Kindergarten Class of 2010–11 (ECLS-K:2011), User's Manual for the ECLS-K:2011 Kindergarten Data File and Electronic Codebook, Public Version* (NCES 2015-074) (Tourangeau et al. 2015), hereinafter referred to as the base-year User's Manual, the *Early Childhood Longitudinal Study, Kindergarten Class of 2010–11 (ECLS-K:2011), User's Manual for the ECLS-K:2011 Kindergarten–First Grade Data File and Electronic Codebook, Public Version* (NCES 2015-078) (Tourangeau et al. 2015), and the *Early Childhood Longitudinal Study, Kindergarten Class of 2010–11 (ECLS-K:2011), User's Manual for the ECLS-K:2011 Kindergarten–Second Grade Data File and Electronic Codebook, Public Version* (2017-285) (Tourangeau et al. 2017).

3.1 Direct Cognitive Assessment: Reading, Mathematics, and Science

The kindergarten, first-grade, second-grade, and third-grade direct cognitive assessments measured children's knowledge and skills in reading, mathematics, and science. This section presents information about the assessment scores available in the data file. More detailed information about the

development of the scores, including a more complete discussion of item response theory (IRT) procedures, can be found in the *Early Childhood Longitudinal Study, Kindergarten Class of 2010–11 (ECLS-K:2011), Kindergarten Psychometric Report* (Najarian et al. forthcoming), in the *Early Childhood Longitudinal Study, Kindergarten Class of 2010–11 (ECLS-K:2011), First-Grade and Second-Grade Psychometric Report* (Najarian et al. 2016-122), and in the *Early Childhood Longitudinal Study, Kindergarten Class of 2010–11 (ECLS-K:2011), Third- through Fifth-Grade Psychometric Report* (Najarian et al. forthcoming). A description of the administration of the direct assessments is provided in chapter 2.

It must be emphasized that the assessment scores described below are *not* directly comparable with those developed for the Early Childhood Longitudinal Study, Kindergarten Class of 1998–99 (ECLS-K). Although the IRT procedures used in the analysis of data were similar in the ECLS-K and in the ECLS-K:2011, each study incorporated different items and the resulting scales are different.

3.1.1 IRT-Based Scores Developed for the ECLS-K:2011

Broad-based scores using the full set of items administered in the kindergarten, first-grade, second-grade, and third-grade assessments in reading, mathematics, and science were calculated using IRT procedures. IRT is a method for modeling assessment data that makes it possible to calculate an overall score for each domain measured for each child that can be compared to scores of other children regardless of which specific items a child is administered. This method was used to calculate scores for the ECLS-K:2011 because, as discussed in chapter 2, the study employed a two-stage assessment (in reading and mathematics in kindergarten and in reading, mathematics, and science in first, second, and third grades) in which children were administered a set of items appropriate for their demonstrated ability level rather than all the items in the assessment. Although this procedure resulted in children being administered different sets of items, there was a subset of items that all children received (the items in the routing tests, plus a set of items common across the different second-stage forms). These common items were used to calculate scores for all children on the same scale.

IRT also was used to calculate scores for all children on the same scale for the science assessment fielded in the spring of kindergarten even though that assessment was not two-stage. In that assessment, the assortment of items a child received was not dependent upon routing to a second stage, but instead on omissions by the child or the discontinuation of the administration of the assessment. In those

cases, IRT was used to estimate the probability that a child would have provided a correct response when no response was available.

IRT uses the pattern of right and wrong responses to the items actually administered in an assessment and the difficulty, discriminating ability,[1] and "guess-ability" of each item to estimate each child's ability on the same continuous scale. IRT has several advantages over raw number-right scoring. By using the overall pattern of right and wrong responses and the characteristics of each item to estimate ability, IRT can adjust for the possibility of a low-ability child guessing several difficult items correctly. If answers on several easy items are wrong, the probability of a correct answer on a difficult item would be quite low. Omitted items are also less likely to cause distortion of scores, as long as enough items have been answered to establish a consistent pattern of right and wrong answers. Unlike raw number-right scoring, which treats omitted items as if they had been answered incorrectly, IRT procedures use the pattern of responses to estimate the probability of a child providing a correct response for each assessment question. Finally, IRT scoring makes possible longitudinal measurement of gain in achievement, even when the assessments that are administered to a child are not identical at each point, for example, when a child was administered different levels of the second-stage form in the fall and spring data collections within one year or different sets of items across grades.

3.1.1.1 Theta and the Standard Error of Measurement *(SEM)* of Theta

A theta score is provided in the ECLS-K:2011 data file for each child who participated in the direct cognitive assessment for each cognitive domain assessed and for each data collection in which the assessment was administered. The theta score[2] is an estimate of a child's ability in a particular domain (e.g., reading, mathematics, or science) based on his or her performance on the items he or she was actually administered. The theta scores are reported on a metric ranging from -8 to 8, with lower scores indicating lower ability and higher scores indicating higher ability. Theta scores tend to be normally distributed because they represent a child's latent ability and are not dependent on the difficulty of the items included within a specific test.

[1] The discriminating ability describes how well changes in ability level predict changes in the probability of answering the item correctly at a particular ability level.
[2] Theta is iteratively estimated and re-estimated and the theta score is derived from the means of the posterior distribution of the theta estimate.

The standard error of theta provides a measure of uncertainty of the theta score estimate for each child. Adding and subtracting twice the standard error from the theta score estimates provides an approximate 95 percent confidence interval or range of values that is likely to include the true theta score. Unlike classical item theory, in which the precision of the scores is consistent across all examinees, IRT allows the standard error to vary. Larger standard errors of measurement can be the result of estimations of thetas in the extremes of the distribution (very low or very high ability) or for children who responded to a limited number of items (i.e., children who responded to all items administered generally have lower standard errors of measurement than those children responding to fewer items because more information about their actual performance is available, thereby making estimates of their ability more precise).

Tables 3-1 and 3-2 list the names of the variables pertaining to the reading, mathematics, and science IRT theta scores and standard errors of measurement available in the data file, along with the variable descriptions, value ranges, weighted means, and standard deviations.[3] As can be seen in the tables, theta scores are available for all data collection rounds for reading and mathematics. For science, theta scores are available for all rounds except the fall of kindergarten; the science assessment was not included in that first round of data collection. The variable names and descriptions end with K3, indicating these are scores released on the kindergarten–third grade (K-3) longitudinal restricted-use data file.

The method used to compute the theta scores allows for the calculation of theta for a given round that will not change based on later administrations of the assessments (which is not true for the scale scores, as described in the next section). Therefore, for any given child, the kindergarten, first-grade, second-grade, and third-grade theta scores provided in subsequent data files will be the same as theta scores released in earlier data files, with one exception: the reading thetas provided in the base-year data file. After the kindergarten-year data collection, the methodology used to calibrate and compute reading scores changed; therefore, the reading thetas reported in the base-year file are not the same as the kindergarten reading thetas provided in the files with later-round data. Any analysis involving kindergarten reading theta scores and reading theta scores from later rounds, for example an analysis looking at growth in reading knowledge and skills between the spring of kindergarten and the spring of first grade, should use the kindergarten reading theta scores from a data file released after the base year. The reading theta scores released in the kindergarten-year data file *are* appropriate for analyses involving only the kindergarten-round data; analyses conducted with only data released in the base-year file are *not* incorrect, since those

[3] The name and description for each variable in the tables begin with an "X," indicating that it is a derived/calculated variable, and a data collection round number (1 for the fall kindergarten round, 2 for the spring kindergarten round, 3 for the fall first-grade round, 4 for the spring first-grade round, 5 for the fall second-grade round, 6 for the spring second-grade round, and 7 for the spring third-grade round). These variable naming conventions are used for all the variables mentioned in this chapter. More information about variable naming conventions can be found in chapter 7.

analyses do not compare kindergarten scores to scores in later rounds that were computed differently. However, now that the recomputed kindergarten theta scores are available in the kindergarten through first-grade, kindergarten through second-grade, and kindergarten through third-grade data files, it is recommended that researchers conduct any new analyses with the recomputed kindergarten reading theta scores. For more information on the methods used to calculate theta scores, see the *ECLS-K:2011 First-Grade and Second-Grade Psychometric Report* (Najarian et al. forthcoming) and the *ECLS-K:2011 Third- through Fifth-Grade Psychometric Report* (Najarian et al. forthcoming).

Table 3-1. Direct cognitive assessment: IRT theta scores, fall and spring kindergarten, fall and spring first-grade, fall and spring second-grade, and spring third-grade assessments: School years 2010–11, 2011–12, 2012–13, and spring 2014

Variable	Description	*n*	Range of possible values	Weighted mean	Standard deviation
X1RTHETK3	X1 READING THETA-K3	15,669	-8.0–+8.0	-0.56	0.844
X2RTHETK3	X2 READING THETA-K3	17,185	-8.0–+8.0	0.44	0.774
X3RTHETK3	X3 READING THETA-K3	5,194	-8.0–+8.0	0.87	0.778
X4RTHETK3	X4 READING THETA-K3	15,115	-8.0–+8.0	1.59	0.753
X5RTHETK3	X5 READING THETA-K3	4,725	-8.0–+8.0	1.83	0.654
X6RTHETK3	X6 READING THETA-K3	13,837	-8.0–+8.0	2.19	0.630
X7RTHETK3	X7 READING THETA-K3	12,866	-8.0–+8.0	2.61	0.649
X1MTHETK3	X1 MATH THETA-K3	15,595	-8.0–+8.0	-0.52	0.932
X2MTHETK3	X2 MATH THETA-K3	17,143	-8.0–+8.0	0.42	0.776
X3MTHETK3	X3 MATH THETA-K3	5,222	-8.0–+8.0	0.91	0.821
X4MTHETK3	X4 MATH THETA-K3	15,103	-8.0–+8.0	1.65	0.840
X5MTHETK3	X5 MATH THETA-K3	4,729	-8.0–+8.0	1.91	0.817
X6MTHETK3	X6 MATH THETA-K3	13,830	-8.0–+8.0	2.45	0.802
X7MTHETK3	X7 MATH THETA-K3	12,866	-8.0–+8.0	3.05	0.759
X2STHETK3	X2 SCIENCE THETA-K3	16,936	-8.0–+8.0	0.00	0.891
X3STHETK3	X3 SCIENCE THETA-K3	5,180	-8.0–+8.0	0.43	0.932
X4STHETK3	X4 SCIENCE THETA-K3	15,072	-8.0–+8.0	0.89	0.965
X5STHETK3	X5 SCIENCE THETA-K3	4,724	-8.0–+8.0	1.18	0.954
X6STHETK3	X6 SCIENCE THETA-K3	13,819	-8.0–+8.0	1.61	0.908
X7STHETK3	X7 SCIENCE THETA-K3	12,856	-8.0–+8.0	2.20	0.779

NOTE: Fall kindergarten estimates (X1) and spring kindergarten estimates (X2) estimates are weighted by W1C0. Fall first-grade estimates (X3) are weighted by W3CF3P_30, and spring first-grade estimates (X4) are weighted by W4CS4P_20. Fall second-grade estimates (X5) are weighted by W6CF6P_2A0, and spring second-grade estimates (X6) are weighted by W6CS6P_20. Spring third-grade estimates (X7) are weighted by W7C7P_20. The unweighted sample *n* indicates the number of cases with valid data regardless of the presence of a valid analytic weight.
SOURCE: U.S. Department of Education, National Center for Education Statistics, Early Childhood Longitudinal Study, Kindergarten Class of 2010–11 (ECLS-K:2011), fall 2010, spring 2011, fall 2011, spring 2012, fall 2012, spring 2013, and spring 2014.

Table 3-2. Direct cognitive assessment: IRT standard errors of measurement *(SEM),* fall and spring kindergarten, fall and spring first-grade, fall and spring second-grade, and spring third-grade assessments: School years 2010–11, 2011–12, 2012–13, and spring 2014

Variable	Description	*n*	Range of possible values	Weighted mean	Standard deviation
X1RSETHK3	X1 READING STD ERR OF THETA-K3	15,669	0.0–6.0	0.36	0.092
X2RSETHK3	X2 READING STD ERR OF THETA-K3	17,185	0.0–6.0	0.26	0.077
X3RSETHK3	X3 READING STD ERR OF THETA-K3	5,194	0.0–6.0	0.23	0.057
X4RSETHK3	X4 READING STD ERR OF THETA-K3	15,115	0.0–6.0	0.22	0.050
X5RSETHK3	X5 READING STD ERR OF THETA-K3	4,725	0.0–6.0	0.20	0.035
X6RSETHK3	X6 READING STD ERR OF THETA-K3	13,837	0.0–6.0	0.22	0.042
X7RSETHK3	X7 READING STD ERR OF THETA-K3	12,866	0.0–6.0	0.24	0.051
X1MSETHK3	X1 MATH STD ERR OF THETA-K3	15,595	0.0–6.0	0.36	0.101
X2MSETHK3	X2 MATH STD ERR OF THETA-K3	17,143	0.0–6.0	0.29	0.064
X3MSETHK3	X3 MATH STD ERR OF THETA-K3	5,222	0.0–6.0	0.28	0.048
X4MSETHK3	X4 MATH STD ERR OF THETA-K3	15,103	0.0–6.0	0.28	0.037
X5MSETHK3	X5 MATH STD ERR OF THETA-K3	4,729	0.0–6.0	0.29	0.043
X6MSETHK3	X6 MATH STD ERR OF THETA-K3	13,830	0.0–6.0	0.28	0.035
X7MSETHK3	X7 MATH STD ERR OF THETA-K3	12,866	0.0–6.0	0.23	0.015
X2SSETHK3	X2 SCIENCE STD ERR OF THETA-K3	16,936	0.0–6.0	0.71	0.081
X3SSETHK3	X3 SCIENCE STD ERR OF THETA-K3	5,180	0.0–6.0	0.59	0.039
X4SSETHK3	X4 SCIENCE STD ERR OF THETA-K3	15,072	0.0–6.0	0.59	0.032
X5SSETHK3	X5 SCIENCE STD ERR OF THETA-K3	4,724	0.0–6.0	0.46	0.066
X6SSETHK3	X6 SCIENCE STD ERR OF THETA-K3	13,819	0.0–6.0	0.46	0.050
X7SSETHK3	X7 SCIENCE STD ERR OF THETA-K3	12,856	0.0–6.0	0.39	0.045

NOTE: Fall kindergarten estimates (X1) and spring kindergarten (X2) estimates are weighted by W1C0. Fall first-grade estimates (X3) are weighted by W3CF3P_30, and spring first-grade estimates (X4) are weighted by W4CS4P_20. Fall second-grade estimates (X5) are weighted by W6CF6P_2A0, and spring second-grade estimates (X6) are weighted by W6CS6P_20. Spring third-grade estimates (X7) are weighted by W7C7P_20. The unweighted sample *n* indicates the number of cases with valid data regardless of the presence of a valid analytic weight.
SOURCE: U.S. Department of Education, National Center for Education Statistics, Early Childhood Longitudinal Study, Kindergarten Class of 2010–11 (ECLS-K:2011), fall 2010, spring 2011, fall 2011, spring 2012, fall 2012, spring 2013, and spring 2014.

3.1.1.2 Scale Scores

The IRT-based overall scale score for each content domain is an estimate of the number of items a child would have answered correctly in each data collection round if he or she had been administered all of the questions for that domain that were included in the kindergarten, first-grade, second-grade, and third-grade assessments (that is, all of the 141 unique questions in the router and the three second-stage reading forms administered in kindergarten, first grade, second grade, and third grade; all of the 135 unique questions in the router and the three second-stage mathematics forms administered in kindergarten, first grade, second grade, and third grade; and all of the 87 unique items administered in the router and three

second-stage science forms in first grade, second grade, third grade, and in the single-stage kindergarten science form).

To calculate the IRT-based overall scale score for each domain, a child's theta is used to predict a probability for each assessment item that the child would have gotten that item correct. Then, the probabilities for all the items fielded as part of the domain in every round are summed to create the overall scale score. Because the computed scale scores are sums of probabilities, the scores are not integers.

Gain scores in each domain may be obtained by subtracting the IRT scale scores at an earlier round from the IRT scale scores at a later round. For example, subtracting the fall kindergarten mathematics score from the spring kindergarten mathematics score would result in a score indicating gain across the kindergarten year. Similarly, a gain score from kindergarten entry to the end of third grade would be obtained by subtracting the fall kindergarten mathematics score from the spring third-grade mathematics score. Users should note that the scale scores are only comparable across rounds within a single data file. In other words, the scale scores for a given domain in the K-3 data file are all comparable to one other, but they are not comparable to the scale scores for that domain reported in the previously released files. Although the thetas remain the same for a given domain across rounds, the scale scores are recomputed for each file because the scale scores represent the estimated number correct for *all* items across *all* assessments administered; the total number of items in the pool expands each year as more difficult items are added to the assessments.

Scores for different subject areas are not comparable to each other because they are based on different numbers of questions and content that is not necessarily equivalent in difficulty. For example, if a child's IRT scale score in reading is higher than in mathematics, it would not be appropriate to interpret that to mean the child performs better in reading than in mathematics.

Table 3-3 provides the names of the variables pertaining to the IRT scale scores available in the data file, along with the variable descriptions, value ranges, weighted means, and standard deviations.

Table 3-3. Direct cognitive assessment: IRT scale scores, fall and spring kindergarten, fall and spring first-grade, fall and spring second-grade, and spring third-grade assessments: School years 2010–11, 2011–12, 2012–13, and spring 2014

Variable	Description	*n*	Range of possible values	Weighted mean	Standard deviation
X1RSCALK3	X1 READING IRT SCALE SCORE-K3	15,669	0.0–141.0	51.22	11.079
X2RSCALK3	X2 READING IRT SCALE SCORE-K3	17,185	0.0–141.0	65.27	13.266
X3RSCALK3	X3 READING IRT SCALE SCORE-K3	5,194	0.0–141.0	73.30	15.885
X4RSCALK3	X4 READING IRT SCALE SCORE-K3	15,115	0.0–141.0	89.12	16.405
X5RSCALK3	X5 READING IRT SCALE SCORE K3	4,725	0.0-141.0	94.33	14.661
X6RSCALK3	X6 READING IRT SCALE SCORE K3	13,837	0.0-141.0	102.19	13.465
X7RSCALK3	X7 READING IRT SCALE SCORE K3	12,866	0.0-141.0	110.21	12.319
X1MSCALK3	X1 MATH IRT SCALE SCORE—K3	15,595	0.0–135.0	33.20	11.394
X2MSCALK3	X2 MATH IRT SCALE SCORE—K3	17,143	0.0–135.0	46.98	12.532
X3MSCALK3	X3 MATH IRT SCALE SCORE-K3	5,222	0.0–135.0	55.85	15.443
X4MSCALK3	X4 MATH IRT SCALE SCORE-K3	15,103	0.0–135.0	70.29	16.583
X5MSCALK3	X5 MATH IRT SCALE SCORE-K3	4,729	0.0-135.0	75.63	15.996
X6MSCALK3	X6 MATH IRT SCALE SCORE-K3	13,830	0.0-135.0	86.35	15.536
X7MSCALK3	X7 MATH IRT SCALE SCORE K-3	12,866	0.0-135.0	97.60	14.208
X2SSCALK3	X2 SCIENCE SCALE SCORE-K3	16,936	0.0–87.0	30.93	6.940
X3SSCALK3	X3 SCIENCE SCALE SCORE-K3	5,180	0.0–87.0	34.78	8.709
X4SSCALK3	X4 SCIENCE SCALE SCORE-K3	15,072	0.0–87.0	39.44	10.035
X5SSCALK3	X5 SCIENCE SCALE SCORE-K3	4,724	0.0-87.0	42.65	9.778
X6SSCALK3	X6 SCIENCE SCALE SCORE-K3	13,819	0.0-87.0	47.61	10.202
X7SSCALK3	X7 SCIENCE SCALE SCORE-K3	12,856	0.0-87.0	54.84	9.886

NOTE: Fall kindergarten estimates (X1) and spring kindergarten estimates (X2) are weighted by W1C0. Fall first-grade estimates (X3) are weighted by W3CF3P_30, and spring first-grade (X4) estimates are weighted by W4CS4P_20. Fall second-grade (X5) are weighted by W6CF6P_2A0, and spring second-grade estimates (X6) are weighted by W6CS6P_20. Spring third-grade estimates (X7) are weighted by W7C7P_20. The unweighted sample *n* indicates the number of cases with valid data regardless of the presence of a valid analytic weight.
SOURCE: U.S. Department of Education, National Center for Education Statistics, Early Childhood Longitudinal Study, Kindergarten Class of 2010–11 (ECLS-K:2011), fall 2010, spring 2011, fall 2011, spring 2012, fall 2012, spring 2013, and spring 2014.

3.1.2 Variables Indicating Exclusion from the Direct Assessment Due to Disability

The variables X1EXDIS, X2EXDIS, X3EXDIS, X4EXDIS, X5EXDIS, X6EXDIS, and X7EXDIS can be used to identify children who were excluded from the assessment because they needed an accommodation the study did not provide or because they had an Individualized Education Program (IEP) that indicated they could not take part in standardized assessments. These variables are coded 1, *Excluded from assessment due to disability*, for children who were excluded from the assessment for these reasons. All other children are coded 0 for variables X1EXDIS, X2EXDIS, X4EXDIS, X6EXDIS, and X7EXDIS. For the variables pertaining to the fall first-grade and fall second-grade data collections (X3EXDIS and X5EXDIS), children who were part of the subsample in those rounds and not excluded

from the assessments are coded 0 and children who were not part of the subsample (and, therefore, not eligible for the assessments in these rounds) are coded as system missing.[4]

3.1.3 Choosing the Appropriate Score for Analysis

When choosing scores to use in analysis, researchers should consider the nature of their research questions, the type of statistical analysis to be conducted, the population of interest, and the audience. The sections below discuss the general suitability of the different types of scores for different analyses.

- The IRT-based theta scores are overall measures of ability. They are appropriate for both cross-sectional and longitudinal analyses. They are useful in examining differences in overall achievement among subgroups of children in a given data collection round or across rounds, as well as in analysis of correlations between achievement and child, family, and school characteristics. The fall kindergarten, spring kindergarten, fall first-grade, spring first-grade, fall second-grade, spring second-grade, and spring third-grade theta scores included in the K-3 data file are on the same metric. Therefore, an analyst looking at growth across the kindergarten year could subtract the fall kindergarten score from the spring kindergarten score to compute a gain score. Or when looking at growth from kindergarten entry to the end of third grade, an analyst could subtract the fall kindergarten score from the spring third-grade score to compute a gain score.

  The theta scores may be more desirable than the scale scores for use in a multivariate analysis because their distribution generally tends to be more normal than the distribution of the scale scores. It is recommended that analysts review the distributions for normality. In assessments where the number of items or number of observations is low, the normality of the distribution may be affected. In the ECLS-K:2011, the kindergarten science and kindergarten and first-grade SERS distributions deviated from normal, due to the limited number of items and observations, respectively. Additionally, in the extreme tails of the theta distributions in each domain, a combination of some extremely low-performing and some extremely high-performing children who took the assessment and the instrument itself may result in clustered estimates. By design, in order to limit the length of the assessment and the number of too easy or too difficult items any one child would be administered, the assessment does not have many items administered at the difficulty ranges in the tails. Including more items appropriate for children at the ability extremes would have required a reduction in the number of items at the range of ability of nearly all the sampled children (> 99 percent). Thus, some clustering of thetas may be observed in the extreme tails of the theta distributions.

[4] The "system missing" code appears as a blank when viewing codebook frequencies and in the ASCII data file. System missing codes (blanks) indicate that data for an entire instrument or assessment are missing due to unit nonresponse.

For a broader audience of readers unfamiliar with IRT modeling techniques, the metric of the theta scores (from -8 to 8) may be less readily interpretable than the metric of the scale scores. Researchers should consider their analysis and the audience for their research when selecting between the theta and the scale score.

- The IRT-based scale scores also are overall measures of achievement. They are appropriate for both cross-sectional and longitudinal analyses. They are useful in examining differences in overall achievement among subgroups of children in a given data collection round or in different rounds, as well as in analysis looking at correlations between achievement and child, family, and school characteristics. The fall kindergarten, spring kindergarten, fall first-grade, spring first-grade, fall second-grade, spring second-grade, and spring third-grade scale scores included in the K-3 data file are on the same metric. Therefore, an analyst looking at growth across the kindergarten year could subtract the fall kindergarten score from the spring kindergarten score to compute a gain score. Or when looking at growth from kindergarten entry to the end of third grade, an analyst could subtract the fall kindergarten score from the spring third-grade score to compute a gain score. Results expressed in terms of scale score points, scale score gains, or an average scale score may be more easily interpretable by a wider audience than results based on the theta scores.

3.1.4 Analytic Considerations for Measuring Gains in the ECLS-K:2011

An important issue to be considered when analyzing achievement scores and gains is assessment timing: children's age at assessment, the date of assessment, and the time interval between assessments. Most sampled children were born throughout the second half of 2004 and first half of 2005, but their birth dates were not related to testing dates. As a result, children were tested at different developmental and chronological ages. Assessment dates ranged from August to December for the fall data collections, and from March to June for the spring data collections. Children assessed later in a data collection period in a particular grade level, for example in December during a fall collection, may be expected to have an advantage over children assessed earlier in the data collection period, for example in the first days or weeks of school, because they had more exposure to educational content before being assessed. Substantial differences in the intervals between assessments may also affect analysis of gain scores. Children assessed in September for the fall data collection and June for the spring data collection have more time to learn knowledge skills than do children assessed first in November and then again in March. These differences in interval may or may not have a significant impact on analysis results. In designing an analysis plan, it is important to consider whether and how differences in age, assessment date, and interval may affect the results; to look at relationships between these factors and other variables of interest; and to adjust for differences, if necessary.

When using the IRT scale scores as longitudinal measures of overall growth, analysts should keep in mind that gains made at different points on the scale have qualitatively different interpretations. Children who made gains toward the lower end of the scale, for example, in skills such as identifying letters and associating letters with sounds, are learning different skills than children who made gains at the higher end of the scale, for example, those who have gone from reading sentences to reading passages, although their gains in number of scale score points may be the same. Comparison of gains in scale score points is most meaningful for groups that started with similar initial status. One way to account for children's initial status is to include a prior round assessment score as a control variable in an analytic model. For example, the fall kindergarten scale score could be included in a model using the spring kindergarten scale score as the outcome.

3.1.5 Reliability of the ECLS-K:2011 Scores

Reliability statistics assess consistency of measurement, or the extent to which test items in a set are related to each other and to the score scale as a whole. For tests of equal length, reliability estimates can be expected to be higher for sets of items that are closely related to the underlying construct than for tests with more diversity of content. Conversely, for tests with similar levels of diversity in content, reliabilities tend to be higher for longer tests compared to shorter tests. Reliabilities range from 0 to 1.

Table 3-4 presents the reliability statistics computed for the IRT-based scores for each subject area for the fall and spring of kindergarten, the fall and spring of first grade, the fall and spring of second grade, and the spring of third grade. The reliability of the overall ability estimate, theta, is based on the variance of repeated estimates of theta for each individual child compared with total sample variance. The reliabilities calculated for theta also apply to the scores derived from the theta estimate, namely, the IRT scale scores. The reliabilities are relatively high, ranging from .75 to .95. Science, the domain with the most diverse content and the smallest number of items, had lower reliability coefficients than reading and mathematics.[5] The reading reliability has decreased longitudinally, a result of the reduction in the number of items administered.[6]

[5] Diversity in the science assessments is by design. To develop measures of children's expected ability levels in science required assessing an assortment of items in several content strands: scientific inquiry, Earth science, physical science, and life science. Although the reading and mathematics domains also include differing content strands, the relationships between the content strands in science are not as highly correlated as those in reading and mathematics.

[6] In the earlier rounds of the reading assessment, it was possible to administer relatively more items, as the items were of relatively easy difficulty and/or took less time to administer (e.g., items on letter recognition). As time progressed, more complex items were administered, most associated with reading passages, that were more time consuming and thus the number of items administered decreased.

Table 3-4. Reliability of IRT-based scores (theta and scale scores), by round of data collection and domain, for fall and spring kindergarten, fall and spring first grade, fall and spring second grade, and spring third grade: School years 2010–11, 2011–12, 2012–13, and spring 2014

Domain	Number of items	Fall kindergarten	Spring kindergarten	Fall first grade	Spring first grade	Fall second grade	Spring second grade	Spring third grade
Reading	141	.95	.95	.95	.93	.93	.91	.87
Mathematics	135	.92	.94	.93	.93	.92	.94	.92
Science	87	†	.75	.83	.83	.83	.83	.83

† Not applicable.
SOURCE: U.S. Department of Education, National Center for Education Statistics, Early Childhood Longitudinal Study, Kindergarten Class of 2010–11 (ECLS-K:2011), fall 2010, spring 2011, fall 2011, spring 2012, fall 2012, spring 2013, and spring 2014.

3.1.6 Validity of the ECLS-K:2011 Scores

Evidence for the validity of the direct cognitive assessments was derived from several sources. A review of national and state performance standards, comparison with state and commercial assessments, and the judgments of curriculum experts all informed the development of the test specifications.

The content category specifications for the ECLS-K:2011 reading assessments in kindergarten through second grade are based on the 2009 Reading Frameworks for NAEP (National Assessment Governing Board 2008), with the addition of basic reading skills and vocabulary categories suited for the earlier grades. Although the NAEP framework was selected for its rigorous design and its use in many years of national administrations by NCES, because the NAEP assessments are administered starting in fourth grade, it was necessary to consult other sources to extend the NAEP content percentage specifications down to earlier grades. Experts in reading assessment development consulted the ECLS-K kindergarten, first-grade, and third-grade reading assessment frameworks; current curriculum standards from Texas, California, New Jersey, Florida, and Virginia; and the Common Core State Standards.[7] The ECLS-K:2011 reading specifications for third grade are built upon those developed for the earlier grades and supplemented by the fourth- and eighth-grade NAEP Reading Frameworks for 2011 (National Assessment Governing Board 2010), as well as the third-grade standards from the same five states noted.

[7] See www.corestandards.org for further information. An effort led by state governors and state commissioners of education to develop the Common Core State Standards for kindergarten through grade 12 was begun in 2009, through the National Governors Association Center for Best Practices and the Council of Chief State School Officers.

The ECLS-K:2011 mathematics test specifications for kindergarten through second grade are based on the frameworks developed for the ECLS-K assessments, which were based on the NAEP mathematics frameworks and extended down to earlier grades. The content of the mathematics framework is consistent with recommendations presented in the Mathematics Framework for the 2005 NAEP (National Assessment Governing Board 2004a), the National Council of Teachers of Mathematics *Principles and Standards for School Mathematics* (2000), and with state standards of California, New Jersey, Tennessee, Texas, and Virginia. These are also consistent with general findings from the National Mathematics Advisory Panel (2008). For third grade, the content covered in the ECLS-K:2011 mathematics assessment was determined by comparing the state or national standards from Texas, Virginia, NAEP, and the National Council of Teachers of Mathematics (NCTM). Common Core State Standards were not used in the comparison since these standards are similar to the national standards set by NCTM and NAEP. As in reading, the framework in the later grades builds on the framework developed for the earlier grades, using the same sources.

The science knowledge and skills assessed in the ECLS-K:2011 were chosen based on the areas identified as being important to assess in the 1996–2005 NAEP science framework (National Assessment Governing Board 2004b). However, because the NAEP science frameworks begin in fourth grade, the science standards of six states (Arizona, California, Florida, New Mexico, Texas, and Virginia) were analyzed to find common topics that are taught at the lower grade levels. In these states and for each grade level, three or four standards were drawn from each of four common content categories (scientific inquiry, life science, physical science, and Earth and space science) and these four areas were selected as the content categories for the ECLS-K:2011 science assessment framework.

Pools of potential assessment items were developed for each content domain based on the framework or standards pertinent to the domain. An expert panel of school educators, including curriculum specialists in the subject areas, then examined the pool of items for content and framework strand design, accuracy, nonambiguity of response options, and appropriate formatting. The items were included in a field test and better performing items were selected for the final assessment battery.

3.2 Direct Cognitive Assessment: Executive Function

Executive functions are interdependent processes that work together to regulate and orchestrate cognition, emotion, and behavior and that help a child to learn in the classroom. Two measures

of executive function were included in the kindergarten, first-grade, second-grade and third-grade direct child assessment battery: the *Dimensional Change Card Sort (DCCS*) (Zelazo 2006; Zelazo et al. 2013), assessing children's cognitive flexibility, and the Numbers Reversed subtest of the *Woodcock-Johnson III* (WJ III) *Tests of Cognitive Abilities* (Woodcock, McGrew, and Mather 2001), assessing working memory. The same versions of the *DCCS* and the Numbers Reversed tasks were administered in fall and spring of the kindergarten year and fall and spring of first grade. In second grade, the *DCCS* was changed to computerized administration to remain age-appropriate through fifth grade. The Numbers Reversed task remained the same as used in the earlier data collection rounds.

3.2.1 *Dimensional Change Card Sort*

The *Dimensional Change Card Sort (DCCS*) (Zelazo 2006; Zelazo et al. 2013) is used to collect information on children's cognitive flexibility.

In the kindergarten and first-grade data collections, the *DCCS* was administered as a physical, table-top card sort with the items administered by a trained assessor. Beginning with the second-grade data collections, a computerized version of the *DCCS* developed for the National Institutes of Health Toolbox for the Assessment of Neurological and Behavioral Function (NIH Toolbox) was administered. The shift to a computerized version of the task was made so that the *DCCS* would remain age-appropriate through the end of data collection for ECLS-K:2011. For more information on the physical, table-top card sort task administered in kindergarten and first grade and differences between the physical version and computerized version, see chapter 3 of the *User's Manual for the Kindergarten–Second Grade Data File and Electronic Codebook, Public Version* (NCES 2017-285) (Tourangeau et al. 2017). This section describes the computerized version of the *DCCS* that was administered in the spring of third grade, which is the same version administered in the second-grade rounds.

The computerized task was developed as part of the National Institutes of Health Toolbox for the Assessment of Neurological and Behavioral Function (see www.nihtoolbox.org) and is appropriate for ages 3–85 (Zelazo et al. 2013). The task had been under development during the planning phases for the earliest rounds of the ECLS-K:2011 and became available in time to be incorporated into the second-grade data collections. The NIH Toolbox Dimensional Change Card Sort Test (NIH Toolbox *DCCS*) is a task is that is used across the 3 through 85 age range, but it has two different start points based on the age of the child in order to limit administration time. The NIH Toolbox *DCCS* consists of 40 trials, including 5 pre-

switch trials (where children are asked to sort by one dimension, e.g., color), 5 post-switch trials (where children are asked to sort by a different dimension, e.g., shape), and 30 mixed-block trials (in which the sorting dimension, either color or shape, varies by trial). Testing conducted in the development of the NIH Toolbox *DCCS* indicated that 8-year-olds typically scored at ceiling on the pre-switch and post-switch trials. Consequently, children under age 8 begin with the pre-switch trials, and children age 8 and above begin with the mixed-block trials and are given credit in the scoring for completing the pre-switch and post-switch trials accurately.

For the ECLS-K:2011 administrations of the computerized *DCCS*, all ECLS-K:2011 children were administered the version of the NIH Toolbox *DCCS* for ages 8 years and older, regardless of their age at the time of assessment. In third grade, nearly all children who participated in the *DCCS* (99.95 percent) were at least 8 years old when the *DCCS* was administered. The decision to administer the same version of the *DCCS* from second grade forward, regardless of whether the child was age 8, was made so that all study children would receive the same version of the *DCCS* task in second grade and in later rounds of data collection. Use of the same measure allows for a longitudinal analysis of performance on the *DCCS* from second grade into later rounds of data collection.

As noted earlier, the construct assessed in the physical version of the *DCCS* that was administered in kindergarten and first grades and the computerized version of the *DCCS* is the same—cognitive flexibility. However, the way the construct is assessed and the scoring differ across the versions. One key difference between the two versions is that the computerized version captures data on the amount of time in milliseconds that it takes the child to complete any given item; it is not possible to accurately measure reaction time at the necessary level of precision in the physical version. Therefore, the computerized version supports the use of both accuracy of sorting and reaction time to assess overall performance while the physical card sort assesses performance by accuracy alone.

In each of the 30 mixed-block trials administered via computer to children in the ECLS-K:2011 beginning in the second-grade rounds, the children were presented with a stimulus picture of a ball or truck that was either yellow or blue. A prerecorded female voice announced the sorting rule to be used for that trial ("color" or "shape") as the appropriate word "color" or "shape" was briefly displayed in the center of screen. Next, the stimulus picture was displayed in the center of screen, where the word had just appeared. Children then selected one of two pictures at the bottom of the screen (a blue ball on the left or a yellow truck on the right) that was either the same shape or the same color as the stimulus picture, depending on whether the shape or color sorting rule was in effect for the trial. Children indicated their choice of

picture by pressing the arrow key on the laptop keyboard that was associated with the picture; the left arrow key was used to select the picture on the left side of the screen and the right arrow key was used to select the picture on the right side of the screen. Children were instructed to use just one pointer finger to press the arrow keys. They were asked to return their pointer finger to the button in between the left and right arrow keys (marked with a fuzzy sticker, and so identified as the "fuzzy button") in between trials to standardize the start location for every child's finger, with the goal of maximizing accuracy in the measurement of response time. Both reaction time to sort the card and accuracy of its placement according to the sorting rule in effect for the trial were recorded by the computer program.

The sorting rules (i.e., to either sort by shape or color) were intermixed across the trials, and one rule was more common than the other. The shape rule was used for 23 trials while the color rule was used in 7 trials. For example, the child may be asked to sort by shape for 4 trials in a row, then to sort by color on trial 5, and then to sort by shape on trials 6 and 7. One sorting rule was presented more frequently in order to build a response tendency (i.e., a response that is "preferred" because it happens more frequently, resulting in a predisposition to respond in that manner). A predisposition to sort by the dominant rule (i.e., shape) can result in either more errors or a slower reaction or response time on nondominant trials because it is necessary to inhibit the dominant response (i.e., sorting by shape) in order to shift to the less frequent sorting rule (i.e., color). The "cost" associated with the shift from a more frequent rule (the "dominant" rule) to a less frequent rule (the "nondominant" rule) tends to differ by the age of the participant (Davidson et al. 2006). The "cost" to younger children is that they tend to make more errors on the nondominant rule trials; that is, they do not demonstrate the cognitive flexibility to make the switch between rules even when prompted. Younger children do not tend to slow themselves down in favor of higher accuracy and, therefore, accuracy is a better metric of performance for young children (Zelazo et al. 2013). In contrast, older children and adults tend to demonstrate a speed/accuracy tradeoff; they slow down the pace at which they respond in order to maintain accuracy. Thus, the "cost" to older children and adults is seen in reaction time on the nondominant rule trials. The formula used to produce scores from the data collected by the computerized *DCCS* factors in reaction time on the infrequent or nondominant trials when a child demonstrates sufficiently accurate performance across all the test trials, defined as being accurate on more than 80 percent of the trials (Zelazo et al. 2013). Thus, the computerized *DCCS* provides a measure of performance through this developmental shift to learning to trade speed for accuracy. More information on scoring is provided below.

The 30 test trials were administered only to children who successfully completed the practice portion of the *DCCS*. The practice consisted of a minimum of 8 trials and a maximum of 24 trials, depending upon how quickly the child demonstrated that he or she understood the task. For the first set of practice trials, the assessor instructed the child how to sort by shape using text automatically presented on the *DCCS* screen that was read by the assessor along with additional standardized instructions presented by the assessor. Following the instructions, the computer administered four practice trials asking the child to sort by shape. If the child sorted at least three of the four items correctly by shape, he or she progressed to the color practice. If the child sorted more than one item in the set of four incorrectly, he or she was presented with a second set of four practice items. If the child failed to sort three of four items correctly by shape in the second set of practice items, he or she was presented a third set; failure of this third set ended the *DCCS* program before any actual scored trials were presented.

Once a child passed the shape practice trials, the assessor instructed on how to sort by color, and the computer presented 4 to 12 practice trials asking to sort by color. Like the shape practice trials, up to three sets of 4 items could be presented before the *DCCS* advanced to the scored trials. If the child was not able to pass the color practice, the *DCCS* program ended after the third set of color practice items, again before any actual scored trials were presented.

In contrast with the scored trials, the practice trials maintained one sorting rule for all items presented in succession until practice for the rule was complete. An additional difference between the practice and scored trials was that the stimulus pictures in the practice trials were white or brown rabbits and boats.

Item-level data for the 30 test trials are included in the data file. They are provided in three blocks of 30 items for each participant that indicate: (1) correct versus incorrect responses, (2) the type of trial, reported as dominant (most frequently presented but not included in reaction time scores; shape is the dominant sorting rule) or non-dominant (less frequently presented and used to calculate reaction time scores; color is the non-dominant sorting rule), and (3) reaction times reported in milliseconds. Variable names for the item-level data begin with "C7" for spring third grade.

As in second grade, the overall computed score reported for the third-grade *DCCS* is derived using a formula provided by the task developer and follows the scoring algorithm used for this task in the NIH Toolbox (see the *NIH Toolbox Scoring and Interpretation Guide*, [Slotkin, Nowinski et al. 2012], for additional information on scoring). Scores range from 0 to 10, with weight given to accuracy (0 to 5 units)

and reaction time (0 to 5 units) in the computation of the scores. Accuracy is considered first. If the child's accuracy rate is less than or equal to 80 percent, the child's overall computed score is based entirely on accuracy. If the child's accuracy rate is more than 80 percent, the child's overall computed score is based on a combination of accuracy and reaction time.

The accuracy score factored into the computation of the overall score can range from 0 to 5. There are a total of 40 accuracy points that are scaled down to a maximum score of 5: for each correct response, the child earns a score of .125 (5 points divided by 40 trials). Because all children used the start point of the *DCCS* for children 8 years and older, each child was administered the 30 mixed-block trials, and each child who successfully passed the practice items was automatically given 10 accuracy points for the 5 pre-switch and the 5 post-switch trials of the *DCCS* that were not administered. Therefore, the accuracy component of the overall computed *DCCS* score is calculated as follows:

DCCS accuracy score = 0.125 * number of correct responses[8]

If the child's accuracy rate is higher than 80 percent, a reaction time score is added to the child's accuracy score.[9] Like the accuracy score, the reaction time score ranges from 0 to 5 points.

The reaction time component of the overall computed score for the computerized *DCCS* is computed using the child's median reaction time to correct nondominant trials (i.e., the trials with the less frequently used sorting rule, color), following the same scoring algorithm outlined in the scoring manual for the NIH Toolbox (Slotkin, Nowinski et al. 2012). First, for those children with greater than 80 percent accuracy on the 40 trials, the median reaction time is calculated based on reaction times for correct nondominant trials with reaction times greater than or equal to 100 milliseconds (msec) and within plus or minus three standard deviations from the child's mean reaction time on the correct nondominant trials. The minimum median reaction time allowed is 500 msec; the maximum median reaction time is 3,000 msec. If the child's median reaction time falls outside this range, the child's median reaction is set to the minimum

[8] The number of correct responses = 10 + the number of correct trials out of the 30 mixed block trials. Once the child has passed the practice trials and advanced into the scored portion of the assessment, 10 accuracy points are automatically awarded due to the chosen start point for the task. For this reason, it is not possible for ECLS-K:2011 children to get an accuracy score of 0. Therefore, the minimum possible value for the DCCS accuracy score is 1.25 and the maximum possible DCCS accuracy score is 5.

[9] The criterion of *greater than* 80 percent accuracy is calculated based on all 40 trials (30 administered trials plus the 10 trials not administered). That is, 80 percent of 40 trials is 32 items. However, this can also be thought of in terms of how many items out of the 30 administered trials are required. If the criterion is 80 percent of the 40 trials, this translates to 23 of the 30 administered trials. For example, if a child responds accurately on 23 of the 30 mixed block trials, the child's accuracy rate equals 82.5 percent (10 points automatically awarded for the pre-switch and post-switch trials plus the 23 correct mixed block trials divided by 40; 33/40 = .825). In this example, the child's accuracy score would be [(10 + 23) * .125] = 4.125. Because the accuracy rate is *greater than* 80 percent, the child's reaction time score would be added to this accuracy score to obtain the overall computed score for the DCCS. Alternatively, if the child responded accurately on 22 of the 30 mixed-block trials, the child's accuracy rate would equal 80 percent and, therefore, the child's accuracy is not *greater than* 80 percent and the child's overall score would be based solely on accuracy (overall computed score = [(10 + 22) * .125] = 4).

or maximum allowable range: reaction times between 100 msec and 500 msec were set to 500 msec and reaction times between 3,000 msec and 10,000 msec (the maximum trial duration) are set to 3,000 msec. A log (base 10) transformation is applied to the median reaction times to create a more normal distribution. The log values are then algebraically rescaled to a 0 to 5 range and then reversed such that faster (better) reaction times have higher values and slower reaction times have lower values. The formula for rescaling the median reaction times is the following:

$$\text{Reaction time score} = 5 - \left(5 * \left[\frac{\log RT - \log(500)}{\log(3000) - \log(500)}\right]\right)$$

where *RT* is the median reaction time on nondominant trials within set outer limits.[10]

To summarize, the overall computed score on the computerized *DCCS* is equal to the child's accuracy score if the child's accuracy rate is less than or equal to 80 percent. If the child's accuracy rate is greater than 80 percent, the child's overall computed score is equal to the child's accuracy score plus the child's reaction time score, which is derived from the child's reaction time on correct nondominant trials as described above. Additional details on the calculation of the computed score are available in the *NIH Toolbox Scoring and Interpretation Guide* (Slotkin, Nowinski et al. 2012) and the *NIH Toolbox Technical Manual* (Slotkin, Kallen et al. 2012).

The fall and spring second-grade and spring third-grade computed scores (X5DCCSSCR, X6DCCSSCR, and X7DCCSSCR) range from 0 to 10, with weight given to accuracy (0 to 5 units) and reaction time (0 to 5 units) in the computation of the score. The overall computed score for the computerized *DCCS* can be used to examine change across rounds that use the computerized *DCCS* (i.e., performance in the fall of second grade can be directly compared to performance in the spring of second grade and the spring of third grade).

It is important for researchers using the DCCS data to be aware of the characteristics of the overall DCCS scores and determine how best to use these scores in their analyses. As noted above, the NIH-developed scoring model computes scores differently depending on sorting accuracy. The use of this scoring model with the data collected from children in the ECLS-K:2011 resulted in a non-normal distribution, with approximately 4 percent of children in the third-grade data collection who have a

[10] The median reaction time (*RT*) used to calculate the reaction time score falls within the range of 500 msec through 3,000 msec. Calculation of the median score requires a minimum of at least one correct nondominant trial reaction time that is greater than 100 msec. When the child reached the accuracy threshold for including the reaction time component in the scoring but did not have any within-range reaction times on correct nondominant trials, the child's overall computed score on the DCCS was set equal to the child's accuracy score, and reaction time was not factored into the child's score.

computed overall score failing to achieve greater than 80 percent accuracy and, therefore, having their score calculated based solely on accuracy. The remaining children have scores calculated based on both accuracy and reaction time. The non-normal distribution may be problematic for statistical analyses. For this reason, users may want to run analyses that do not use the overall score as is with the full sample. For example, users could conduct their analyses separately for the two groups of children so that each analysis only includes children with scores calculated in the same way, or they may decide to limit their analyses on only one group. Another option is for users to analyze all children using the score indicating accuracy alone, recognizing that this score is highly skewed, as most children were able to sort the cards with at least 80 percent accuracy. Users may also want to consider investigating alternative scoring models using the item-level accuracy and reaction time data available on the data file. The decision about how best to use the DCCS overall score in analysis is left to the user, given the research questions being addressed. Analysts may choose to examine other ways researchers have analyzed data with similar distributions, or other executive function or card sort data, in deciding how best to utilize the ECLS-K:2011 DCCS data.

The variable names, descriptions, value ranges, weighted means, and standard deviations for the second- and third-grade *DCCS* scores are provided in table 3-5. For information on the kindergarten and first-grade scores, see the *User's Manual for the ECLS-K:2011 Kindergarten–Second Grade Data File and Electronic Codebook, Public Version* (NCES 2017-285) (Tourangeau et al. 2017). The following scores based on the third-grade computerized administration are presented on the data file: overall score for spring third grade (range: 0-10); accuracy score for spring third grade (range: 0-5); and reaction time score for spring third grade (range: 0-5). Researchers should note that the reaction time score was only computed for cases for which the accuracy score was greater than 80 percent. If the accuracy score was not greater than 80 percent, then the reaction time score was set to -9 (not ascertained).

New *DCCS* scores to summarize the accuracy of the 30 test trials by trial type are being released for the first time on the kindergarten-third grade file and include scores for all rounds in which the computerized *DCCS* was administered (second- and third-grade rounds). The number of correct, dominant trials (X*CSDAC) can range from 0 to 23, and the number of correct, nondominant trials (X*CSNDAC) can range from 0 to 7. These scores represent accuracy by trial type and are different from the total accuracy score [X*CSACC, DCCS Accuracy Component (0-5) Score] that is derived to compute the overall *DCCS* computed score, which ranges from 0-5 and is based on the accuracy of both dominant and nondominant trials.

Table 3-5. *Dimensional Change Card Sort* variable names, descriptions, value ranges, weighted means, and standard deviations for fall and spring second grade and spring third grade: School year 2012–13 and spring 2014

Variable name	Description	*n*	Range of possible values[1]	Weighted mean	Standard deviation
X5DCCSSCR	X5 Computed (Overall) Score	4,708	0-10	6.37	1.402
X6DCCSSCR	X6 Computed (Overall) Score	13,774	0-10	6.69	1.345
X7DCCSSCR	X7 Computed (Overall) Score	12,744	0-10	7.19	1.098
X5CSACC	X5 DCCS Accuracy Component (0-5) Score	4,708	0-5	4.53	0.589
X6CSACC	X6 DCCS Accuracy Component (0-5) Score	13,774	0-5	4.59	0.504
X7CSACC	X7 DCCS Accuracy Component (0-5) Score	12,744	0-5	4.72	0.356
X5CSNDRT	X5 DCCS Nondom RT Component (0-5) Score	4,067	0-5	2.09	0.758
X6CSNDRT	X6 DCCS Nondom RT Component (0-5) Score	12,405	0-5	2.33	0.765
X7CSNDRT	X7 DCCS Nondom RT Component (0-5) Score	12,222	0-5	2.58	0.777
X5CSDAC	X5 DCCS Dominant Trial Accuracy Count	4,708	0-23	20.19	4.468
X6CSDAC	X6 DCCS Dominant Trial Accuracy Count	13,774	0-23	20.62	3.758
X7CSDAC	X7 DCCS Dominant Trial Accuracy Count	12,744	0-23	21.53	2.535
X5CSNDAC	X5 DCCS Nondominant Trial Accuracy Count	4,708	0-7	6.08	1.128
X6CSNDAC	X6 DCCS Nondominant Trial Accuracy Count	13,774	0-7	6.11	1.100
X7CSNDAC	X7 DCCS Nondominant Trial Accuracy Count	12,744	0-7	6.21	1.011

[1] Because 10 accuracy points are automatically awarded due to the chosen start point for the task, it is not possible for ECLS-K:2011 children to obtain an accuracy score of 0. Therefore, the lowest accuracy component (0-5) score in the data file is 1.25**,** and the lowest computed (overall) score in the data file is also 1.25.

NOTE: Fall second-grade estimates (X5) are weighted by W6CF6P_2A0, and spring second-grade estimates (X6) are weighted by W6CS6P_20. Spring third-grade estimates (X7) are weighted by W7C7P_20. The unweighted sample *n* indicates the number of cases with valid data regardless of the presence of a valid analytic weight.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Early Childhood Longitudinal Study, Kindergarten Class of 2010–11 (ECLS-K:2011), fall 2012, spring 2013, and spring 2014.

3.2.1.1 *Dimensional Change Card Sort* Data Flags

Seven flags indicate the presence or absence of *Dimensional Change Card Sort* data. X1DCCSFLG and X2DCCSFLG indicate the presence of data for the fall and spring of kindergarten, respectively. X3DCCSFLG and X4DCCSFLG indicate the presence of first-grade data for the fall and spring, respectively, X5DCCSFLG and X6DCCSFLG indicate that data are present for the overall computed *DCCS* score (X5DCCSSCR/X6DCCSSCR) for the fall and spring of second grade, respectively, and X7DCCSFLG indicates that data are present for the overall computed *DCCS* score (X7DCCSSCR) for the spring of third grade.

The use of computers for the administration of the *DCCS* in second and third grades allowed the completion flags (X5DCCSFLG, X6DCCSFLG, X7DCCSFLG) to be developed with additional detail that was not available for kindergarten and first grade. The values indicate whether the task was

administered, whether the overall computed *DCCS* score is present, and, if a score is not present, the reason why it is not present. Reasons why a score is not present when the *DCCS* was administered include failing the Shape practice trials, failing the Color practice trials, and having an administrative breakoff (meaning the assessor ended the task) either before or after passing the practice trials. Administrative breakoffs could have occurred for a variety of reasons such as an external event (for example, a fire drill or the child needing to return to class) that interrupted an assessment session. Note that the Shape Game preceded the Color Game during the practice trials. There are differences between the second-grade and third-grade *DCCS* flags, as explained below.

The *DCCS* flags for the fall and spring of second grade have 6 possible values. A description of the values of these completion flags is presented in exhibit 3-1.

Exhibit 3-1. Data flag description for the computerized *Dimensional Change Card Sort* for fall and spring second grade: School year 2012–13

X5DCCSFLG/X6DCCSFLG	Value
Not Administered	0
DCCS computed (overall) score present	1
Failed Shape Game practice	2
Failed Color Game practice	3
Breakoff before passing practice trials	4
Breakoff after passing practice trials	5

SOURCE: U.S. Department of Education, National Center for Education Statistics, Early Childhood Longitudinal Study, Kindergarten Class of 2010–11 (ECLS-K:2011), fall 2012 and spring 2013.

The *DCCS* flag variable for the spring of third grade, X7DCCSFLG, ranges from 0 to 7. A description of the values of the completion flag is presented in exhibit 3-2. Two additional codes not used in second grade were added to the third-grade flag to identify a small number of cases that were affected by a programming error that occurred in the third-grade administration of the *DCCS*. This error resulted in giving children credit for a correct response when the child did not provide a response to a trial. This scoring error occurred in both the practice and test trials. Scoring errors that occurred during the test trials were corrected in the data. These errors did not affect the child's experience during the test, but only affected how the trial was recorded.

Exhibit 3-2. Data flag description for the computerized *Dimensional Change Card Sort* for spring third grade: Spring 2014

X7DCCSFLG	Value
Not Administered	0
DCCS computed (overall) score present	1
Failed Shape Game practice	2
Failed Color Game practice	3
Breakoff before passing practice trials	4
Breakoff after passing practice trials	5
Programming error but still passed practice, DCCS data present	6
Programming error, insufficient practice, DCCS data set to -4	7

SOURCE: U.S. Department of Education, National Center for Education Statistics, Early Childhood Longitudinal Study, Kindergarten Class of 2010–11 (ECLS-K:2011), spring 2014.

Errors that occurred during the practice trials, however, did affect the child's experience during the test and, in some cases, resulted in insufficient opportunity for the child to demonstrate an understanding of the rules of the game. When a child did not respond to a trial in the practice, the program treated the nonresponse as a correct response and provided incorrect audio feedback to the child. The audio feedback that the child heard was "That's right," even though the child did not provide a response. If the child did not respond to a trial, the trial was supposed to be scored as incorrect, and the audio feedback was supposed to indicate that the child responded with an incorrect answer and reteach the rule. The erroneous feedback during the practice could have confused the child about the rules of the game. It is important for the child to demonstrate a clear understanding of the rules of the game in the practice trials before progressing to the test trials to ensure that performance is not a reflection of failing to understand the instructions. Under some circumstances, having nonresponse scored as correct affected what practice trials were administered.

Cases affected by the programming error were examined to determine whether they met the criteria for moving into the test trials based on the items for which they did provide a response (that is, whether they demonstrated sufficient understanding of the task despite receiving erroneous feedback). These cases, children who had at least one instance of nonresponse in the practice, are flagged as a 6 or 7 in the *DCCS* flag variable depending on whether they met the criteria. Cases that have X7DCCSFLG=6 passed the practice trials with the responses they provided during the administration of the *DCCS*. For example, a child may have had 3 correct responses and 1 nonresponse within the block of four practice trials and, thus, the criterion of responding correctly to at least 3 of 4 correct in order to proceed was still reached. As another example, the child could have had two nonresponse trials and two incorrect trials and failed the first practice set. In this case, the child would have been administered another practice block of

four trials and could have passed on that set of practice trials. Cases that have the value of 6 on the *DCCS* flag are cases that successfully met the criteria for passing both the shape and color practice and advanced to the test trial, despite receiving at least one instance of erroneous feedback. There are 189 cases that have X7DCCSFLG=6, and data for these cases are provided on the data file. Additional information on this error is provided in the appendix.

Cases that have X7DCCSFLG=7 did not demonstrate sufficient understanding of the task with the responses they provided and were not given sufficient practice per the administration protocols to have their scores included in the data file. These cases were not given the opportunity to meet the criterion for passing the practice because nonresponse was incorrectly recorded as a correct response. For example, children who had 2 correct trials, 1 incorrect trial and 1 nonresponse trial (incorrectly scored as "correct") were incorrectly given credit for passing the practice, even though they only had 2 correct trials and did not meet the criterion of at least 3 of 4 correct to pass. In this example, if the program had performed correctly, the child would have been given additional training and additional opportunities to pass the practice. Because of the programming error, this did not happen and the child progressed to the test trials without truly meeting the criterion for successfully passing the practice. Because it was not possible to determine whether the children could have passed the practice if given the correct opportunities, the data were suppressed. There are 92 cases that have X7DCCSFLG=7. These cases have *DCCS* data set to -4 (suppressed due to insufficient practice).

3.2.2 Numbers Reversed

The Numbers Reversed measure assesses the child's working memory. It is a backward digit span task that requires the child to repeat an orally presented sequence of numbers in the reverse order in which the numbers are presented. For example, if presented with the sequence "3…5," the child would be expected to say "5…3." Children are given 5 two-number sequences. If the child gets three consecutive two-number sequences incorrect, then the Numbers Reversed task ends. If the child does not get three consecutive two-number sequences incorrect, the child is then given 5 three-number sequences. The sequence becomes increasingly longer, up to a maximum of eight numbers, until the child gets three consecutive number sequences incorrect (or completes all number sequences).

Item-level data for the Numbers Reversed subtask for the fall and spring of kindergarten, first grade, second grade, and third grade are provided in the ECLS-K:2011 K-3 data file. The maximum number of items any child could have been administered in all data collection rounds was 30 items (5 two-digit number items; 5 three-digit number items; 4 four-digit number items; 4 five-digit number items; 4 six-digit number items; 4 seven-digit number items; and 4 eight-digit number items). Each item is scored "correct" (i.e., the child correctly repeated the number sequence in reversed order), "incorrect" (i.e., the child did not correctly repeat the number sequence in reversed order), or "not administered" (i.e., the child was not administered the item because he or she did not answer enough items correctly to advance to this item). The "not administered" code is different than a system missing code in that only those children who were administered the Numbers Reversed subtask could have a "not administered" code. If a child was not administered the Numbers Reversed subtask at all, his or her case would have a missing code for the Numbers Reversed scores. Variable names for the item-level data from the fall kindergarten assessments begin with "C1," and variable names for the item-level data from the spring kindergarten assessments begin with "C2." Similarly, variable names for item-level data from the fall and spring first-grade assessments begin with "C3" and "C4," while those for fall and spring second grade and spring third grade begin with "C5", "C6," and "C7", respectively. Variable descriptions for these items indicate the length of the digit sequence (e.g., C1 Numbers Reversed Two-digit sequence #1). In addition to the item-level data, five scores developed using guidelines from the publisher's scoring materials are included in the data file for Numbers Reversed: the *W*-ability[11] score, the age standard score, the grade standard score, the age percentile score, and the grade percentile score.

Before analyzing the Numbers Reversed data, it is important that researchers understand the characteristics of these scores and how these characteristics may affect the analysis and interpretation of the Numbers Reversed data in the context of the ECLS-K:2011. Depending on the research question and analysis being conducted, one of the scores may be more preferable than another. For example, the *W* score may be best for a longitudinal analysis, whereas the age or grade percentile rank and/or age or grade standardized score may be better suited for an analysis focusing on one point in time. The descriptions below provide more information about which score may be better suited for a given analysis.[12]

The *W* score, a type of standardized score, is a special transformation of the Rasch ability scale and provides a common scale of equal intervals that represents both a child's ability and the task difficulty. The *W* scale is particularly useful for the measurement of growth and can be considered a growth scale.

[11] The *W*-ability score is a *W* score that represents the individual's level of ability on the task presented.
[12] More information on these publisher scores can be found in the *Woodcock-Johnson III Tests of Achievement Examiner's Manual: Standard and Extended Batteries* (Mather and Woodcock 2001).

Typically, the *W* scale has a mean of 500 and standard deviation of 100. Furthermore, the publisher of the WJ III has set the mean to the average of performance for a child of 10 years, 0 months. This means that it would be expected that most children younger than 10 years, 0 months would obtain *W* scores lower than the mean of 500, and most older children would be expected to have scores above the mean of 500. Also, as a child develops with age, it would be expected that the child's *W* score would increase to reflect growth. For example, when a child's *W*-ability score increases from 420 to 440, this indicates growth, and this would be the same amount of growth in the measured ability as any other student who gained 20 *W* points elsewhere on the measurement scale.

As mentioned above, the *W* score is an equal-interval scale, suited for analyses such as correlations and regressions. Higher *W* scores indicate that a child provided more correct responses and generally indicate that a child was able to correctly respond to at least some longer number sequences. The *W* score accounts for only the total number of administered sequences answered correctly and does not reflect the pattern of responses, meaning the *W* score does not indicate how many of each length number sequence the child answered correctly. As noted above, the data file includes item-level data that can be used to examine patterns of response.

The *W* score for each child in the ECLS-K:2011 was determined using norming data provided by the publisher. More specifically, a sample child was assigned the *W* score from the publisher norming data that was associated with the child's raw number-right score, the child's age (in months), and the language of administration.

In kindergarten and first grade, the Numbers Reversed subtask was administered in both English and Spanish. It was administered in Spanish to children routed through the assessment battery in Spanish because they did not pass an English language screener.[13] Norming data were provided separately for English and Spanish administrations of the task. Publisher materials indicate that the *W* scores earned on English administrations of the Numbers Reversed task are comparable to *W* scores earned on Spanish administrations of the task; nevertheless, differences related to precision of measurement in the norming samples result in different *W* scores for the same raw-number right score depending on the language of administration. For example, the lowest earnable *W* score on the English administration of the Numbers Reversed task is 403 (equivalent to a raw score of 0), and the lowest earnable *W* score on the Spanish administration is 393 (equivalent to raw score of 0). While this difference in the *W* scores between English

[13] More information about how children's home language affected children's routing through the assessment battery in each round of data collection is provided in chapter 5 of the *ECLS-K:2011 Kindergarten Psychometric Report* (Najarian et al. forthcoming).

and Spanish administration is largest at the lower end of the *W* distribution, the difference occurs along the entirety of the *W* distribution. For example, a raw score of 11 corresponds to a *W* score of 496 in the English administration norming data and a *W* score of 494 in the Spanish administration norming data. The data file includes one *W* score variable per round of data collection that contains data for all children administered the Numbers Reversed task, regardless of the language of administration. Researchers who want to account for language of administration in their analyses can use the data flag provided on the data file for each round (X*FLSCRN) to identify which children were administered Numbers Reversed in English and which children were administered Numbers Reversed in Spanish. All children were administered the assessments in English in the second- and third-grade data collections. Therefore, the second- and third-grade Numbers Reversed scores for all children are based on an English administration of the assessment, and data flags to indicate language administration are not provided on the data file.

Although the *W* score is reflective of the average performance of 10-year-olds, and the ECLS-K:2011 children are younger, it is included in the data file to enable the measurement of changes in children's working memory longitudinally across all rounds of the study. Also, it facilitates comparisons of the ECLS-K:2011 data with data from other studies that include the Numbers Reversed task. Users should keep in mind that most ECLS-K:2011 sample children were 5 or 6 years old during the kindergarten data collections, 6 or 7 years old during the first-grade data collections, 7 or 8 years old during the second-grade data collections, and 8 or 9 years old during the third-grade data collections while the *W* scores compare their performance to that of 10-year-olds. As a result, *W* scores from the ECLS-K:2011 sample appear to show that the ECLS-K:2011 children demonstrated below average performance on this task. As expected, the discrepancy is declining as the participating children grow older and closer to age 10.

A score of 403 (393 for the Spanish administration) is potentially a meaningful baseline value for the ability level of children who are unable to answer any items correctly. Over time, as children develop more ability that is measurable by the WJ III Numbers Reversed task, the study will be able to compare their baseline Numbers Reversed *W* score (fall kindergarten and/or spring kindergarten Numbers Reversed *W* score) with their scores across future administrations of the task. However, researchers should understand that a raw score of 0 (which translates to a *W* score of 403 for the English administration and 393 for the Spanish administration) is an imprecise measure of children's ability in the area of working memory, because it is unknown how close a child was to getting at least one answer correct.

In the fall of kindergarten, approximately 40 percent of students did not demonstrate sufficient skills as measured by this assessment to score above the lowest scalable score (403 for English assessment and 393 for Spanish assessment). In the spring of kindergarten, approximately 20 percent of students did not score above the lowest scalable score (403 for English, 393 for Spanish). In the fall of first grade, less than 13 percent scored at the lowest scalable score, and only 6 percent scored at the lowest scalable score in the spring of first grade. In the fall of second grade, less than 4 percent scored the lowest scalable score, and slightly more than 2 percent received the lowest score in the spring. In the spring of third grade, approximately 1 percent scored at the lowest scalable score. These percentages show a general improvement over time.

A factor that may contribute to the large number of children scoring 403 (and 393 for Spanish) in kindergarten is that some ECLS-K:2011 assessors did not properly administer the practice items, which may have resulted in some children never fully understanding what they were being asked to do during the Numbers Reversed task. During field observations of the assessors, it was noted that when children did not correctly answer the first practice item, there were inconsistencies in the administration of additional practice items. It is not possible to determine the extent to which improper administration of the practice items affected the results. However, readers should keep in mind that this may have affected performance for some (but not all) children. In conducting analyses, researchers need to decide how to handle the 403 (393 for Spanish) scores; the decision for how to do so is left up to the analyst based on his or her analytic goals. For the first-grade and later data collections, assessor training for the Numbers Reversed task was changed to improve the consistency and clarity of administration of the practice items. The instructions trainers provided to the assessors emphasized the need to present practice items consistently and to present multiple practice items when necessary. More information about the Numbers Reversed scoring and data can be found in the *ECLS-K:2011 Kindergarten Psychometric Report* (Najarian et al. forthcoming).

The four additional Numbers Reversed scores are the *age standard score,* the *grade standard score,* the *age percentile score,* and the *grade percentile score.* These scores indicate children's status relative to their peers through age-normed and grade-normed transformations of the data. That is, these scores are relative to *same-aged* or *same-grade* subjects in the WJ III norming sample. The standard scores are created by the publisher and have a mean of 100 and a standard deviation of 15. The score is a linear transformation of a Z score (mean of 0 and a standard deviation of 1), which is derived from a person's achieved *W* score. The percentile rank scores describe performance on a scale from 0 to 100 relative to the

performance of subjects in the WJ III norming sample that is at the same age or grade as the ECLS-K:2011 subjects.

As with the kindergarten and first-grade *W* scores, the kindergarten and first-grade standard scores and percentile scores in the data file contain data from both the English and Spanish administrations of the Numbers Reversed task. Standard scores and percentile scores are a function of the child's age or grade at assessment. The publisher's scoring protocols result in standard and percentile scores that extend to slightly lower ages for children who were administered the task in Spanish compared to children who were administered the task in English, again due to differences in the precision of measurement within the norming samples. Children 62 months and younger who were administered the Numbers Reversed task in English and who earned a raw score of 0 or 1 have a *W* score but do not have a standard score or percentile score (*W* scores are a function of the number correct and not a function of age). However, all children who were administered this task in Spanish, including those aged 62 months and younger have a *W* score, standard scores, and percentile scores, regardless of their raw score. Again, researchers who want to account for language of administration in their analyses during kindergarten or first grade can use the variables X1FLSCRN, X2FLSCRN, X3FLSCRN, and X4FLSCRN to identify language.

For both the age-normed scores and the grade-normed scores, standard scores and percentile ranks lend themselves to different interpretations. Standard scores and percentile ranks are *not* essentially the same. Standard scores are deviation-based scores, based upon a mean and standard deviation that remains constant across the entire range. They are interval data, where values are separated by a constant interval that maintains the same meaning across the full range. Percentile ranks are neither interval data nor constant and cannot be used interchangeably with standardized scores. As such, standard scores are most appropriately used for comparisons across children and between groups; *W* scores (also a deviation-based score metric) are most appropriately used to look at growth over time, where age-normed standard scores may remain relatively constant with an age-expected rate of growth. Percentiles are less ideal for longitudinal analyses; although they can be used to examine relative rank order consistency across time periods, the *W* scores would be better to assess change and/or stability across time.

The weighted means for the ECLS-K:2011 population are lower than the established means from the WJ III norming sample:[14] the average *W* scores for the ECLS-K:2011 population are less than 500, the average age and grade standard scores are less than 100, and the average age and grade percentile scores are less than 50. The lower mean for the *W* scores in the ECLS-K:2011 may be attributed to the derivation of the score being a comparison to the average 10-year-old (generally 10-year-olds are in fourth grade) or to differences between the ECLS-K:2011 population and the WJ III norming sample. The lower means for the standard percentile scores in the ECLS-K:2011 may also be attributable to differences between the ECLS-K:2011 population and the WJ III norming sample.

The variable names, descriptions, value ranges, weighted means, and standard deviations for the Numbers Reversed scores from the fall of kindergarten to the spring of third grade are shown in table 3-6.

[14] Normative data for the WJ III were gathered from 8,818 subjects in more than 100 geographically diverse U.S. communities (McGrew and Woodcock, 2001). The kindergarten through 12th grade sample was composed of 4,783 subjects. The norming sample was selected to be representative of the U.S. population from age 24 months to age 90 years and older. Subjects were randomly selected within a stratified sampling design that controlled for the following 10 specific community and subject variables: census region (Northeast, Midwest, South, West); community size (city and urban, larger community, smaller community, rural area); sex; race (White, Black, American Indian, Asian and Pacific Islander); Hispanic or non-Hispanic; type of school (elementary, secondary, public, private, home); type of college/university (2-year, 4-year, public, private); education of adults; occupational status of adults; occupation of adults in the labor force.

Table 3-6. Numbers Reversed variable names, descriptions, value ranges, weighted means, and standard deviations for fall and spring kindergarten, fall and spring first grade, fall and spring second grade, and spring third grade: School years 2010–11, 2011–12, 2012–13, and spring 2014

Variable name	Description	n	Range of Possible values	Weighted mean	Standard deviation
X1NRWABL	X1 Numbers Reversed W-Ability Score	15,598	393-603	432.56	30.028
X1NRSSCR	X1 Numbers Reversed Age Standard Score	14,445	45-200	93.10	16.510
X1NRSSGR	X1 Numbers Reversed Grade Standard Score	15,598	74-190	96.40	14.569
X1NRPERC	X1 Numbers Reversed Age Percentile	14,445	0-100	37.89	31.786
X1NRPEGR	X1 Numbers Reversed Grade Percentile	15,598	0-100	41.98	30.886
X2NRWABL	X2 Numbers Reversed W-Ability Score	17,147	393-603	449.49	30.412
X2NRSSCR	X2 Numbers Reversed Age Standard Score	17,124	39-200	94.92	17.017
X2NRSSGR	X2 Numbers Reversed Grade Standard Score	17,147	54-200	94.76	16.049
X2NRPERC	X2 Numbers Reversed Age Percentile	17,124	0-100	42.44	30.970
X2NRPEGR	X2 Numbers Reversed Grade Percentile	17,147	0-100	41.89	29.980
X3NRWABL	X3 Numbers Reversed W-Ability Score	5,222	393-603	458.42	27.990
X3NRSSCR	X3 Numbers Reversed Age Standard Score	5,221	36-200	94.21	16.969
X3NRSSGR	X3 Numbers Reversed Grade Standard Score	5,222	29-200	95.19	17.815
X3NRPERC	X3 Numbers Reversed Age Percentile	5,221	0-100	41.23	28.832
X3NRPEGR	X3 Numbers Reversed Grade Percentile	5,222	0-100	43.61	29.857
X4NRWABL	X4 Numbers Reversed W-Ability Score	15,107	393-603	469.56	25.395
X4NRSSCR	X4 Numbers Reversed Age Standard Score	15,102	32-200	95.90	16.872
X4NRSSGR	X4 Numbers Reversed Grade Standard Score	15,107	19-200	95.42	18.159
X4NRPERC	X4 Numbers Reversed Age Percentile	15,102	0-100	44.35	28.470
X4NRPEGR	X4 Numbers Reversed Grade Percentile	15,107	0-100	44.07	29.276
X5NRWABL	X5 Numbers Reversed W-Ability Score	4,727	403-603	473.93	23.736
X5NRSSCR	X5 Numbers Reversed Age Standard Score	4,727	29-200	94.93	16.574
X5NRSSGR	X5 Numbers Reversed Grade Standard Score	4,727	23-200	95.85	17.561
X5NRPERC	X5 Numbers Reversed Age Percentile	4,727	0-100	42.13	27.609
X5NRPEGR	X5 Numbers Reversed Grade Percentile	4,727	0-100	44.17	28.742
X6NRWABL	X6 Numbers Reversed W-Ability Score	13,832	403-603	480.70	22.841
X6NRSSCR	X6 Numbers Reversed Age Standard Score	13,828	25-200	95.80	16.749
X6NRSSGR	X6 Numbers Reversed Grade Standard Score	13,832	19-200	95.52	17.715
X6NRPERC	X6 Numbers Reversed Age Percentile	13,828	0-100	43.67	27.765
X6NRPEGR	X6 Numbers Reversed Grade Percentile	13,832	0-100	43.59	28.680
X7NRWABL	X7 Numbers Reversed W-Ability Score	12,877	403-603	489.78	21.624
X7NRSSCR	X7 Numbers Reversed Age Standard Score	12,874	20-200	96.34	16.185
X7NRSSGR	X7 Numbers Reversed Grade Standard Score	12,877	19-200	102.74	17.037
X7NRPERC	X7 Numbers Reversed Age Percentile	12,874	0-100	44.10	27.742
X7NRPEGR	X7 Numbers Reversed Grade Percentile	12,877	0-100	55.90	28.907

NOTE: Fall kindergarten estimates (X1) and spring kindergarten estimates (X2) are weighted by W1C0. Fall first-grade estimates (X3) are weighted by W3CF3P_30, and spring first-grade estimates (X4) are weighted by W4CS4P_20. Fall second-grade estimates (X5) are weighted by W6CF6P_2A0, and spring second-grade estimates (X6) are weighted by W6CS6P_20. Spring third-grade estimates (X7) are weighted by W7C7P_20. The unweighted sample *n* indicates the number of cases with valid data regardless of the presence of a valid analytic weight.
SOURCE: U.S. Department of Education, National Center for Education Statistics, Early Childhood Longitudinal Study, Kindergarten Class of 2010–11 (ECLS-K:2011), fall 2010, spring 2011, fall 2011, spring 2012, fall 2012, spring 2013, and spring 2014.

3.2.2.1 Numbers Reversed Data Flags

Seven flags indicate the presence or absence of Numbers Reversed data. X1NRFLG and X2NRFLG indicate the presence of data for the fall and spring of kindergarten, respectively. X3NRFLG and X4NRFLG indicate the presence of first-grade data for the fall and spring, respectively, and X5NRFLG, X6NRFLG, and X7NRFLG indicate the presence of fall and spring second-grade data and spring third-grade data, respectively.

There is one other flag, X*NRGEST, related to Numbers Reversed that is provided for each round of data collection. The Numbers Reversed grade-normed scores (X*NRSSGR, X*NRPEGR) are normed according to how far into the school year the assessment was conducted. Decimals are used to indicate the number of months into the school year the child had been in the grade at the time of the assessment (e.g., 0.1 = 1 month; 0.2 = 2 months, etc.; 0.9 = 9 months, including time in the summer prior to the start of the next grade level). When school year start and end dates were not available, it was necessary to estimate the decimal representing the proportion of the school year completed when the assessment occurred. X*NRGEST indicates whether the number of months completed in the grade was estimated for that round of data collection.

3.3 Child Questionnaire

In the spring of third grade, a child questionnaire was administered to children prior to the cognitive assessment components. As discussed in section 2.1.1, the ECLS-K:2011 child questionnaire (CQ) was administered on a computer using audio computer-assisted self-interview (audio-CASI) technology and headphones. Children were asked questions about their interest and competence in reading, mathematics, and science, as well as items relating to peers, such as their perceptions about their peer relationships, prosocial behavior toward peers, and social anxiety, specifically fear of negative evaluation by peers. Using questions parallel to teacher- and parent-reported items, children were asked about peer victimization. Children were also asked items on how happy they were with different aspects of their lives.

Exhibit 3-3 shows the content areas included in the third-grade child questionnaire and the corresponding item-level variables along with their sources. Variable names for the item-level data begin with "C7" for spring third grade. Items in the child questionnaire were adapted from existing scales and were used with the permission of the author. Data for the individual items are included in the K-3 data file,

but composite variables for each construct are not provided; it is left to analysts to decide how best to use these data in their analyses.

Exhibit 3-3. Child questionnaire content and item-level variables for spring third grade: Spring 2014

Child questionnaire content area	*Number of items*	*Item-level variable names*
Perceived Interest/Competence in Reading[1]	5	C7LKREAD, C7INTREAD, C7CTWREAD, C7GDREAD, C7ENJREAD
Perceived Interest/Competence in Math[1]	5	C7LIKMTH, C7INTMTH, C7CTWMTH, C7GDMTH, C7ENJMTH
Perceived Interest/Competence in Science[1]	5	C7LKSCI, C7INTSCI, C7CTWSCI, C7GDSCI, C7ENJSCI
Perceived Interest/Competence in Peer Relationships[1]	6	C7HASFRNDS, C7MKFRNDS, C7GETALNG, C7EASYLIK, C7WTMEFRND, C7MORFRND
Peer Victimization[2]	4	C7TEASED, C7LIESABT, C7PUSHCH, C7EXCLDCH
Social Anxiety/Fear of Negative Evaluation[3]	3	C7WRYTHK, C7WRYDTLK, C7AFRDNTLK
Prosocial Behavior[4]	3	C7CHEERUP, C7HLPOTH C7NICEOTH
Life Satisfaction[5]	6	C7HAPHOB, C7HAPTHGS C7HAPATTN, C7HAPFRND C7HAPSKIL C7HAPNBHD

[1] Adapted from the Self Description Questionnaire I (SDQI) © Herbert Marsh. SELF Research Centre (Bankstown Campus) University of Western Sydney, Australia. Used with permission.
[2] Peer victimization items were adapted from a 21-item scale by Espelage, D. L. and Holt, M. (2001). Bullying and victimization during early adolescence: Peer influences and psychosocial correlates. *Journal of Emotional Abuse, 2:* 123–142.
[3] Adapted from the Social Anxiety Scale for Children—Revised ©1993 Annette M. La Greca, University of Miami. Used with permission. La Greca, A. M. and Stone, W. L. (1993). Social anxiety scale for children—revised: Factor structure and concurrent validity. *Journal of Clinical Child Psychology, 22*(1): 17–27.
[4] Adapted from the Children's Social Behavior Scale—Self Report (CSBS-S). Crick, N.R. and Grotpeter, J.K. (1995). Relational aggression, gender, and social psychological adjustment. *Child Development, 66*: 710–722.
[5] Adapted from the NIH Toolbox for Assessment of Neurological and Behavioral Function (version 1.0): Domain-Specific Life Satisfaction Survey from the NIH Toolbox Emotion Battery (www.NIHToolbox.org) © 2012 Northwestern University and the National Institutes of Health. Used with permission.
SOURCE: U.S. Department of Education, National Center for Education Statistics, Early Childhood Longitudinal Study, Kindergarten Class of 2010–11 (ECLS-K:2011), spring 2014.

3.4 Teacher- and Parent-Reported Measures of Child Behavior

Teachers reported their perceptions of the child's behavior and their relationship with the child, and parents reported their perceptions of the child's behavior. This section provides information on teacher-reported social skills, approaches to learning behaviors, attentional focusing, inhibitory control, student-teacher relationship, working memory, and peer relationships, and parent-reports of their child's

working memory. Parents were not asked about their child's social skills and approaches to learning in the third-grade data collection.

3.4.1 Teacher-Reported Social Skills

In the fall and spring data collections in kindergarten, first grade, second grade, and the spring data collection of third grade, teachers reported how often their ECLS-K:2011 students exhibited certain social skills and behaviors using a four-option frequency scale ranging from "never" to "very often." Teachers also had the option of indicating that they had not had an opportunity to observe the described behavior for the child being asked about. The items measuring children's social skills and behaviors are based on items from the *Social Skills Rating System* (NCS Pearson 1990)[15] and were included in the self-administered child-level teacher questionnaire. The social skills battery includes some items taken verbatim from the *Social Skills Rating System*, some items that are modifications of original *Social Skills Rating Systems* items, and some items that measure the same kinds of skills and behaviors captured in the *Social Skills Rating System* but use wording developed specifically for the ECLS studies. Sections 2.1.3 and 2.1.4. in chapter 2 have additional information on the teacher questionnaires.

Four social skill scales were developed based on teachers' responses to these questionnaire items. The score on each scale is the mean rating on the items included in the scale. The four teacher scales are as follows: Self-Control (4 items), Interpersonal Skills (5 items), Externalizing Problem Behaviors (6 items),[16] and Internalizing Problem Behaviors (4 items). A score was computed when the respondent provided a rating on at least a minimum number of the items that composed the scale. The minimum numbers of items that were required to compute a score were as follows: Self-Control (3 out of 4 items), Interpersonal Skills (4 out of 5 items), Externalizing Problem Behaviors (4 out of 6 items), and Internalizing Problem Behaviors (3 out of 4 items). Higher scores indicate that the child exhibited the behavior represented by the scale more often (e.g., higher Self-Control scores indicate that the child exhibited behaviors indicative of self-control more often; higher Interpersonal Skills scores indicate that the child

[15] The *Social Skills Rating System* is a copyrighted instrument (1990 NCS Pearson) and has been adapted with permission. These are items developed by Gresham and Elliott (1990).

[16] For children who were in first grade during the first-grade data collections (rounds 3 and 4) and for all children in subsequent rounds of data collection (rounds 5, 6, and 7), the externalizing problem behaviors composite is based on 6 items. This is different from how the composite was created for the kindergarten rounds (rounds 1 and 2). One additional item was included at the end of the "Social Skills" section of the questionnaire in first, second, and third grades. The item asked about the child's tendency to talk at times when the child was not supposed to be talking. The item was added because it had been included in the first-grade round of the ECLS-K and was factored into the calculation of that study's first-grade composite score.

interacted with others in a positive way more often). Variable names for the teacher scale scores, descriptions, value ranges, weighted means, and standard deviations for these scales are shown in table 3-7.[17] Data for the individual items contributing to each scale are not included in the K-3 data file due to copyright restrictions.

Table 3-7. Teacher-reported social skills scales variable names, descriptions, value ranges, weighted means, and standard deviations for fall and spring kindergarten, fall and spring first grade, fall and spring second grade, and spring third grade: School years 2010–11, 2011–12, 2012–13, and spring 2014

Variable name	Description	*n*	Range of possible values	Weighted mean	Standard deviation
X1TCHCON	X1 Teacher Report Self-Control	13,550	1–4	3.07	0.629
X1TCHPER	X1 Teacher Report Interpersonal Skills	13,708	1–4	2.98	0.639
X1TCHEXT	X1 Teacher Report Externalizing Problem Behaviors	14,385	1–4	1.61	0.631
X1TCHINT	X1 Teacher Report Internalizing Problem Behaviors	14,239	1–4	1.47	0.494
X2TCHCON	X2 Teacher Report Self-Control	15,796	1–4	3.17	0.637
X2TCHPER	X2 Teacher Report Interpersonal Skills	15,799	1–4	3.13	0.650
X2TCHEXT	X2 Teacher Report Externalizing Problem Behaviors	15,903	1–4	1.64	0.639
X2TCHINT	X2 Teacher Report Internalizing Problem Behaviors	15,865	1–4	1.51	0.498
X3TCHCON	X3 Teacher Report Self-Control	4,658	1–4	3.21	0.591
X3TCHPER	X3 Teacher Report Interpersonal Skills	4,724	1–4	3.14	0.613
X3TCHEXT	X3 Teacher Report Externalizing Problem Behaviors	4,964	1–4	1.67	0.590
X3TCHINT	X3 Teacher Report Internalizing Problem Behaviors	4,848	1–4	1.48	0.483
X4TCHCON	X4 Teacher Report Self-Control	13,202	1–4	3.21	0.621
X4TCHPER	X4 Teacher Report Interpersonal Skills	13,288	1–4	3.14	0.657
X4TCHEXT	X4 Teacher Report Externalizing Problem Behaviors	13,398	1–4	1.73	0.619
X4TCHINT	X4 Teacher Report Internalizing Problem Behaviors	13,306	1–4	1.55	0.508
X4KTCHCON	X4K Teacher Report Self-Control	418	1–4	3.09	0.616
X4KTCHPER	X4K Teacher Report Interpersonal Skills	418	1–4	3.04	0.671
X4KTCHEXT	X4K Teacher Report Externalizing Problem Behaviors	419	1–4	1.78	0.614
X4KTCHINT	X4K Teacher Report Internalizing Problem Behaviors	418	1–4	1.62	0.498
X5TCHCON	X5 Teacher Report Self-Control	4,174	1–4	3.23	0.614
X5TCHPER	X5 Teacher Report Interpersonal Skills	4,178	1–4	3.13	0.621
X5TCHEXT	X5 Teacher Report Externalizing Problem Behaviors	4,426	1–4	1.65	0.610
X5TCHINT	X5 Teacher Report Internalizing Problem Behaviors	4,342	1–4	1.50	0.522

See notes at end of exhibit.

[17] Two versions of the teacher-level and child-level teacher questionnaires were used in the spring of first grade: one version for students who were in first grade or higher during the data collection period and one for students who had been retained in kindergarten for the 2011–12 school year. Details of the differences in these questionnaires are presented in chapter 2 of the *User's Manual for the ECLS-K:2011 Kindergarten–First Grade Data File and Electronic Codebook, Public Version* (NCES 2015-078) (Tourangeau et al. 2015).

Table 3-7. Teacher-reported social skills scales variable names, descriptions, value ranges, weighted means, and standard deviations for fall and spring kindergarten, fall and spring first grade, fall and spring second grade, and spring third grade: School years 2010–11, 2011–12, 2012–13, and spring 2014—Continued

Variable name	Description	*n*	Range of possible values	Weighted mean	Standard deviation
X6TCHCON	X6 Teacher Report Self-Control	12,472	1–4	3.22	0.629
X6TCHPER	X6 Teacher Report Interpersonal Skills	12,518	1–4	3.12	0.664
X6TCHEXT	X6 Teacher Report Externalizing Problem Behaviors	12,657	1–4	1.72	0.625
X6TCHINT	X6 Teacher Report Internalizing Problem Behaviors	12,577	1–4	1.59	0.528
X7TCHCON	X7 Teacher Report Self-Control	11,736	1–4	3.27	0.619
X7TCHPER	X7 Teacher Report Interpersonal Skills	11,768	1–4	3.14	0.657
X7TCHEXT	X7 Teacher Report Externalizing Problem Behaviors	11,898	1–4	1.69	0.615
X7TCHINT	X7 Teacher Report Internalizing Problem Behaviors	11,830	1–4	1.61	0.535

NOTE Fall kindergarten estimates (X1) and spring kindergarten estimates (X2) are weighted by W1C0. Fall first-grade estimates (X3) are weighted by W3CF3P3T0, and spring first-grade estimates (X4) are weighted by W4CS4P_2T0. Fall second-grade estimates (X5) are weighted by W6CF6P_2A0, and spring second-grade estimates (X6) are weighted by W6CS6P_2T0. Spring third-grade estimates (X7) are weighted by W7C27P_7T70. Items contributing to the teacher-reported social skill scales were adapted with permission from the Social Skills Rating System (©1990 NCS Pearson). Variables that begin with "X4K" are for data collected in the spring first grade data collection for children who were retained in kindergarten. The unweighted sample *n* indicates the number of cases with valid data regardless of the presence of a valid analytic weight.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Early Childhood Longitudinal Study, Kindergarten Class of 2010–11 (ECLS-K:2011), fall 2010, spring 2011, fall 2011, spring 2012, fall 2012, spring 2013, and spring 2014.

Table 3-8 presents the internal consistency reliability (Cronbach's alpha) estimates of the Self-Control, Interpersonal Skills, Externalizing Problem Behaviors, and Internalizing Problem Behaviors scales derived from information reported by the teacher.

Table 3-8. Teacher-reported social skill scales reliability estimates for fall and spring kindergarten, fall and spring first grade, and fall and spring second grade, and spring third grade: School years 2010–11, 2011–12, 2012–13, and spring 2014

Variable name	Description	Number of items	Reliability coefficient
X1TCHCON	X1 Teacher Report Self-Control	4	.81
X1TCHPER	X1 Teacher Report Interpersonal Skills	5	.86
X1TCHEXT	X1 Teacher Report Externalizing Problem Behaviors	5	.88
X1TCHINT	X1 Teacher Report Internalizing Problem Behaviors	4	.79
X2TCHCON	X2 Teacher Report Self-Control	4	.82
X2TCHPER	X2 Teacher Report Interpersonal Skills	5	.87
X2TCHEXT	X2 Teacher Report Externalizing Problem Behaviors	5	.89
X2TCHINT	X2 Teacher Report Internalizing Problem Behaviors	4	.78
X3TCHCON	X3 Teacher Report Self-Control	4	.79
X3TCHPER	X3 Teacher Report Interpersonal Skills	5	.85
X3TCHEXT	X3 Teacher Report Externalizing Problem Behaviors	5	.88
X3TCHINT	X3 Teacher Report Internalizing Problem Behaviors	4	.77
X4TCHCON	X4 Teacher Report Self-Control	4	.81
X4TCHPER	X4 Teacher Report Interpersonal Skills	5	.86
X4TCHEXT	X4 Teacher Report Externalizing Problem Behaviors	5	.86
X4TCHINT	X4 Teacher Report Internalizing Problem Behaviors	4	.76
X4KTCHCON	X4K Teacher Report Self-Control	4	.79
X4KTCHPER	X4K Teacher Report Interpersonal Skills	5	.88
X4KTCHEXT	X4K Teacher Report Externalizing Problem Behaviors	5	.87
X4KTCHINT	X4K Teacher Report Internalizing Problem Behaviors	4	.73
X5TCHCON	X5 Teacher Report Self-Control	4	.80
X5TCHPER	X5 Teacher Report Interpersonal Skills	5	.85
X5TCHEXT	X5 Teacher Report Externalizing Problem Behaviors	6	.88
X5TCHINT	X5 Teacher Report Internalizing Problem Behaviors	4	.78
X6TCHCON	X6 Teacher Report Self-Control	4	.81
X6TCHPER	X6 Teacher Report Interpersonal Skills	5	.86
X6TCHEXT	X6 Teacher Report Externalizing Problem Behaviors	6	.87
X6TCHINT	X6 Teacher Report Internalizing Problem Behaviors	4	.78
X7TCHCON	X7 Teacher Report Self-Control	4	.80
X7TCHPER	X7 Teacher Report Interpersonal Skills	5	.86
X7TCHEXT	X7 Teacher Report Externalizing Problem Behaviors	6	.87
X7TCHINT	X7 Teacher Report Internalizing Problem Behaviors	4	.78

NOTE: Items contributing to the teacher-reported social skill scales were adapted with permission from the *Social Skills Rating System* (SSRS) (©1990 NCS Pearson).
SOURCE: U.S. Department of Education, National Center for Education Statistics, Early Childhood Longitudinal Study, Kindergarten Class of 2010–11 (ECLS-K:2011), fall 2010, spring 2011, fall 2011, spring 2012, fall 2012, spring 2013, and spring 2014.

3.4.2 Teacher-Reported Approaches to Learning Items and Scale

The child-level teacher questionnaire fielded in every round of data collection from the fall of kindergarten to the spring of third grade included seven items, referred to as "Approaches to Learning" items, that asked the teachers to report how often their ECLS-K:2011 students exhibited a selected set of learning behaviors (keeps belongings organized; shows eagerness to learn new things; works independently; easily adapts to changes in routine; persists in completing tasks; pays attention well; and follows classroom rules).[18] These items were presented in the same item set as the social skills items adapted from the *Social Skills Rating System* (described above in section 3.4.1), and teachers used the same frequency scale to report how often each child demonstrated the behaviors described. The Approaches to Learning scale score is the mean rating on the seven items included in the scale. A score was computed when the respondent provided a rating on at least 4 of the 7 items that composed the scale. Higher scale scores indicate that the child exhibited positive learning behaviors more often. The item-level data for the teacher-reported Approaches to Learning items are included in the data file along with the other child-level teacher questionnaire data. Variable names for the item-level data from the fall first-grade child-level teacher questionnaire begin with "T3." Those for the item-level data from the spring first-grade child-level teacher questionnaire for children in first grade begin with "T4," while those for children held back in kindergarten begin with "T4K." Variable names for the fall of second grade begin with "T5," and those for the spring of second grade begin with "T6." Variable names for the spring of third grade begin with "T7." The variable names, descriptions, value ranges, weighted means, and standard deviations for the teacher-reported Approaches to Learning scale scores are shown in table 3-9. The Approaches to Learning scale has a reliability estimate of .91 for each round of data collection, as measured by Cronbach's alpha. Additionally, the item-level data for the teacher-reported Approaches to Learning items are included in the data file along with the other child-level teacher questionnaire data.

[18]The Approaches to Learning teacher items were developed specifically for the ECLS-K; they are not taken from an existing source. These are the same items that were fielded as part of what was called the Teacher Social Rating Scale in the ECLS-K. The first six items (i.e., keeps belongings organized; shows eagerness to learn new things; works independently; easily adapts to changes in routine; persists in completing tasks; pays attention well) were included in the Teacher Social Rating Scale used in the kindergarten rounds of the ECLS-K. The seventh item (i.e., follows classroom rules) was added in the first-grade round of the ECLS-K.

Table 3-9. Teacher-reported Approaches to Learning scale variable names, descriptions, value ranges, weighted means, and standard deviations for fall and spring kindergarten, fall and spring first grade, fall and spring second grade, and spring third grade: School years 2010–11, 2011–12, 2012-13, and spring 2014

Variable name	Description	*n*	Range of possible values	Weighted mean	Standard deviation
X1TCHAPP	X1 Teacher Report Approaches to Learning	14,770	1–4	2.93	0.680
X2TCHAPP	X2 Teacher Report Approaches to Learning	15,978	1–4	3.09	0.690
X3TCHAPP	X3 Teacher Report Approaches to Learning	5,022	1–4	3.04	0.677
X4TCHAPP	X4 Teacher Report Approaches to Learning	13,449	1–4	3.07	0.700
X4KTCHAPP	X4K Teacher Report Approaches to Learning	417	1–4	2.94	0.704
X5TCHAPP	X5 Teacher Report Approaches to Learning	4,507	1–4	3.05	0.688
X6TCHAPP	X6 Teacher Report Approaches to Learning	12,689	1–4	3.07	0.707
X7TCHAPP	X7 Teacher Report Approaches to Learning	11,913	1–4	3.08	0.711

NOTE: Fall kindergarten estimates (X1) and spring kindergarten estimates (X2) are weighted by W1C0. Fall first-grade estimates (X3) are weighted by W3CF3P3T0, and spring first-grade estimates (X4) are weighted by W4CS4P_2T0. Fall second-grade estimates (X5) are weighted by W6CF6P_2A0, and spring second-grade estimates (X6) are weighted by W6CS6P_2T0. Spring third-grade estimates (X7) are weighted by W7C27P_7T70. Variables that begin with "X4K" are for data collected in the spring first grade data collection for children who were retained in kindergarten. The unweighted sample *n* indicates the number of cases with valid data regardless of the presence of a valid analytic weight.
SOURCE: U.S. Department of Education, National Center for Education Statistics, Early Childhood Longitudinal Study, Kindergarten Class of 2010–11 (ECLS-K:2011), fall 2010, spring 2011, fall 2011, spring 2012, fall 2012, spring 2013, and spring 2014.

3.4.3 Teacher-Reported Attentional Focusing and Inhibitory Control: *Children's Behavior Questionnaire (CBQ)* and *Temperament in Middle Childhood Questionnaire (TMCQ)*

The fall kindergarten, spring kindergarten, and spring first-grade child-level teacher questionnaires (both the version for students in first grade and the version for students in kindergarten) included 12 items from the Short Form of the *Children's Behavior Questionnaire* (Putnam and Rothbart 2006)[19] asking teachers to indicate how often their ECLS-K:2011 children exhibited certain social skills and behaviors related to inhibitory control and attentional focusing, two indicators related to executive functioning. Rothbart describes inhibitory control as the "capacity to plan and to suppress inappropriate approach responses under instructions or in novel or uncertain situations" (Rothbart et al. 2001, p. 1406). Teachers were presented with statements about how the children might have reacted to a number of situations in the past 6 months and were asked to indicate how "true" or "untrue" those statements were about that child on a 7-point scale ranging from "extremely untrue" to "extremely true," with a middle option of "neither true nor untrue." If a statement or situation did not apply to that child, the teacher could indicate "not applicable."

[19] The *Children's Behavior Questionnaire* is a copyrighted instrument: Putnam, S. P., and Rothbart, M. K. (2006). Development of Short and Very Short Forms of the Children's Behavior Questionnaire. *Journal of Personality Assessment, 87*(1): 103-113. Used with permission.

The *CBQ* is appropriate for assessment of children ages 3 through 7 years, so it could not be used past the first-grade rounds of data collection. To remain age appropriate, the *CBQ* was replaced with the *Temperament in Middle Childhood Questionnaire* (*TMCQ)* (Simonds and Rothbart 2004)[20] in the spring of second grade. The *TMCQ* was designed as an upward age-extension of the *CBQ* and is appropriate for children ages 7 through 10 years. While many of the items from the *TMCQ* are different from the items on the *CBQ*, the items are believed to assess the same or similar constructs in an age-appropriate way. Teachers received the same instructions for the *CBQ* and *TMCQ* items, although the *TMCQ* items were rated on a 5-point scale instead of the 7-point scale used for the *CBQ* items. For the *TMCQ* items, teachers used a 5-point scale ranging from "almost always untrue" to "almost always true," with a middle option of "sometimes true, sometimes untrue." Like the *CBQ*, there was a "not applicable" option that the teacher could select if the statement or situation did not apply to the child.

Item-level data for the items that make up the Attentional Focusing and Inhibitory Control scales are provided on the kindergarten-third grade data file. Variable names for the item-level data from the fall and spring kindergarten child-level teacher questionnaire begin with "T1" and "T2," respectively. Variable names for the item-level data from the spring first-grade child-level teacher questionnaire for children in first grade begin with "T4," while variable names for children held back in kindergarten begin with "T4K." Variable names for the spring second grade begin with "T6," and those for spring third grade begin with "T7."

The data file includes two scale scores for each round of data collection in which each measure was included: (1) Attentional Focus and (2) Inhibitory Control. In kindergarten and first grade these scores are derived from the *CBQ*, and in second and third grade these scores are derived primarily from the *TMCQ*, as explained further below. The scale scores were developed using guidelines from the developers of both the *CBQ* and *TMCQ*.

In kindergarten and first grade, the ECLS-K:2011 fielded all 6 items from the Attentional Focusing subscale and all 6 items from the Inhibitory Control subscale of the *CBQ Short Form*. As such, the kindergarten and first-grade Attentional Focus and Inhibitory Control scores are each based on all 6 items in the relevant *Short Form* subscale. Because the *CBQ* was initially designed as a parent-report measure, the item wording for 3 of the items from the *CBQ* Inhibitory Control subscale was modified slightly for use in the ECLS-K:2011 to make them more appropriate for a school setting.

[20] The *Temperament in Middle Childhood Questionnaire* is a copyrighted instrument: Adapted from the *Temperament in Middle Childhood Questionnaire.* © 2004 Jennifer Simonds and Mary K. Rothbart, University of Oregon. Used with permission.

In second and third grade, the ECLS-K:2011 fielded 6 of the 7 items from the original *TMCQ* Attentional Focusing subscale. For the inhibitory control dimension, the ECLS-K:2011 fielded 6 of the 8 items from the *TMCQ* Inhibitory Control subscale and one item from the *CBQ* Inhibitory Control subscale. Therefore, the second- and third-grade Attentional Focusing scale scores reflect the 6 items fielded by the ECLS-K:2011, not the full set of items in the original *TMCQ* scale. The second- and third-grade Inhibitory Control scale scores reflect the 7 items fielded by the ECLS-K:2011 (6 from the *TMCQ* and one from the *CBQ*), again not the full set of items in the original *TMCQ* scale. Because the *TMCQ* was designed as a parent-report measure, the item wording on one item from the *TMCQ* Attentional Focusing subscale was modified slightly to make it more appropriate for a school setting and, similarly, one item on the *TMCQ* Inhibitory Control subscale was modified.

For the kindergarten, first-grade, second-grade, and third-grade Attentional Focusing and Inhibitory Control scales, the score on each scale is the mean rating on the items included in the scale. A score was computed when the respondent provided a rating on at least 4 of the 6 or 7 items that made up the scale. Higher scale scores on the Attentional Focus scale indicate that the child exhibited more behaviors that demonstrate the ability to focus attention on cues in the environment that are relevant to the task. Higher scale scores on the Inhibitory Control scale indicate that the child exhibited more behaviors that demonstrate the ability to hold back or suppress a behavior as necessary for a particular situation. The variable names, descriptions, value ranges, weighted means, and standard deviations for these scales are shown in tables 3-10 and 3-11.

Table 3-12 presents the internal consistency reliability coefficients (Cronbach's alpha) for the teacher-reported Attentional Focus and Inhibitory Control scales for kindergarten through third grade. The Attentional Focus scale for the fall and spring kindergarten data collections (X1ATTNFS, X2ATTNFS) has an internal consistency reliability coefficient of .87, and the Inhibitory Control scale for the fall and spring kindergarten data collections (X1INBCNT, X2INBCNT) has a reliability estimate of .87. For the spring of first grade, the Attentional Focus scale (X4ATTNFS) has an internal consistency reliability coefficient of .83 for children in first grade and .86 for children retained in kindergarten, and the Inhibitory Control scale (X4INBCNT) has an internal consistency reliability coefficient of .86 for both children in first grade and those retained in kindergarten. For the spring of second grade, the Attentional Focus scale (X6ATTMCQ[21])

[21] The variable name for the Attentional Focus composite was changed from X*ATTNFS to X*ATTMCQ starting in second grade. Although the construct is believed to be the same, the items used to derive the composite were from the *CBQ* for kindergarten and first grade but were from the TMCQ starting at second grade. Thus, the name of the composite variable was changed.

has an internal consistency reliability coefficient of .96, and the Inhibitory Control scale (X6INTMCQ[22]) has an internal consistency reliability coefficient of .87. For the spring of third grade, the Attentional Focus scale (X7ATTMCQ) has an internal consistency reliability coefficient of .96, and the Inhibitory Control scale (X7INTMCQ) has an internal consistency reliability coefficient of .85.

The study received copyright permission to include item-level data from both the *CBQ* and the *TMCQ* in the ECLS-K:2011 data files. Therefore, these data have been included in the kindergarten through third-grade data file with the other child-level teacher questionnaire data. Variable names for the item-level data from the fall of kindergarten, the spring of kindergarten, the spring of first grade, the spring of second grade, and the spring of third grade begin with "T1," "T2," "T4," "T6," and "T7," respectively. Variable names that begin with "T4K" are for item-level data from the spring of first grade for students retained in kindergarten.

Table 3-10. *Children's Behavior Questionnaire* variable names, descriptions, value ranges, weighted means, and standard deviations for fall and spring kindergarten and spring first grade: School year 2010–11 and spring 2012

Variable name	Description	*n*	Range of possible values	Weighted mean	Standard deviation
X1ATTNFS	X1 Teacher Report Attentional Focus	14,562	1–7	4.68	1.323
X1INBCNT	X1 Teacher Report Inhibitory Control	14,556	1–7	4.88	1.291
X2ATTNFS	X2 Teacher Report Attentional Focus	15,937	1–7	4.90	1.329
X2INBCNT	X2 Teacher Report Inhibitory Control	15,925	1–7	5.06	1.292
X4ATTNFS	X4 Teacher Report Attentional Focus	13,390	1–7	4.84	1.292
X4INBCNT	X4 Teacher Report Inhibitory Control	13,399	1–7	5.04	1.287
X4KATTNFS	X4K Teacher Report Attentional Focus	417	1–7	4.61	1.323
X4KINBCNT	X4K Teacher Report Inhibitory Control	417	1–7	4.88	1.267

NOTE: Fall kindergarten estimates (X1) and spring kindergarten estimates (X2) are weighted by W1C0. Spring first-grade estimates (X4) are weighted by W4CS4P_2T0. Items contributing to these scales come from the *Children's Behavior Questionnaire* (Putnam and Rothbart 2006). Variables that begin with "X4K" are for data collected in the spring first grade data collection for children who were retained in kindergarten. The unweighted sample *n* indicates the number of cases with valid data regardless of the presence of a valid analytic weight.
SOURCE: U.S. Department of Education, National Center for Education Statistics, Early Childhood Longitudinal Study, Kindergarten Class of 2010–11 (ECLS-K:2011), fall 2010, spring 2011, and spring 2012.

[22] The variable name for the Inhibitory Control composite was changed from X*INBCNT to X*INTMCQ starting in second grade. Although the construct is believed to be the same, the items used to derive the composite were from the *CBQ* for kindergarten and first grade but were from the TMCQ starting at second grade. Thus, the name of the composite variable was changed.

Table 3-11. *Temperament in Middle Childhood Questionnaire* variable names, descriptions, value ranges, weighted means, and standard deviations for spring second grade and spring third grade: Spring 2013 and spring 2014

Variable name	Description	*n*	Range of possible values	Weighted mean	Standard deviation
X6ATTMCQ	X6 TMCQ TEACHER REPORT ATTENTIONAL FOCUS	12,661	1–5	3.47	1.122
X6INTMCQ	X6 TMCQ TEACHER REPORT INHIBITORY CONTROL	12,659	1–5	3.67	0.845
X7ATTMCQ	X7 TMCQ TEACHER REPORT ATTENTIONAL FOCUS	11,879	1–5	3.48	1.119
X7INTMCQ	X7 TMCQ TEACHER REPORT INHIBITORY CONTROL	11,882	1–5	3.69	0.825

NOTE: Spring second-grade estimates (X6) are weighted by W6CS6P_2T0. Spring third-grade estimates (X7) are weighted by W7C27P_7T70. Items contributing to these scales come from the *Children's Behavior Questionnaire* (Putnam and Rothbart 2006) and the *Temperament in Middle Childhood Questionnaire* (Simonds and Rothbart 2004).The unweighted sample *n* indicates the number of cases with valid data regardless of the presence of a valid analytic weight.
SOURCE: U.S. Department of Education, National Center for Education Statistics, Early Childhood Longitudinal Study, Kindergarten Class of 2010–11 (ECLS-K:2011), spring 2013 and spring 2014.

Table 3-12. Reliability estimates for the teacher-reported Attentional Focus and Inhibitory Control scales for fall and spring kindergarten, spring first grade, spring second grade, and spring third grade: School year 2010–11, spring 2012, spring 2013, and spring 2014

Variable name	Description	Number of items	Reliability coefficient
X1ATTNFS	X1 Teacher Report Attentional Focus	6	.87
X1INBCNT	X1 Teacher Report Inhibitory Control	6	.87
X2ATTNFS	X2 Teacher Report Attentional Focus	6	.87
X2INBCNT	X2 Teacher Report Inhibitory Control	6	.87
X4ATTNFS	X4 Teacher Report Attentional Focus	6	.83
X4INBCNT	X4 Teacher Report Inhibitory Control	6	.86
X4KATTNFS	X4 Teacher Report Attentional Focus	6	.86
X4KINBCNT	X4 Teacher Report Inhibitory Control	6	.86
X6ATTMCQ	X6 TMCQ Teacher Report Attentional Focus	6	.96
X6INTMCQ	X6 TMCQ Teacher Report Inhibitory Control	7	.87
X7ATTMCQ	X7 TMCQ Teacher Report Attentional Focus	6	.96
X7INTMCQ	X7 TMCQ Teacher Report Inhibitory Control	7	.85

NOTE: Items contributing to these scales come from the *Children's Behavior Questionnaire* (Putnam and Rothbart 2006) and the *Temperament in Middle Childhood Questionnaire* (Simonds and Rothbart 2004).
SOURCE: U.S. Department of Education, National Center for Education Statistics, Early Childhood Longitudinal Study, Kindergarten Class of 2010–11 (ECLS-K:2011), fall 2010, spring 2011, spring 2012, spring 2013, and spring 2014.

3.4.4 Teacher-Reported Student-Teacher Relationship Scale

The *Student-Teacher Relationship Scale (STRS)* (Pianta 2001) is a 15-item, teacher-reported measure of closeness and conflict between the teacher and child. As part of the spring kindergarten, spring first-grade, spring second-grade, and spring third-grade child-level teacher questionnaire, the teacher was presented with 15 descriptive statements about his or her relationship with the ECLS-K:2011 child and asked to indicate the degree to which each statement applied to their relationship using a 5-point scale ranging from "definitely does not apply" to "definitely applies."

Two scales were developed based on guidelines from the developer of the scale: Closeness and Conflict. The Closeness scale score is the average rating on 7 items included in the *STRS*, while the Conflict scale score is the average rating on the other 8 items included in the *STRS*. A score was computed when the respondent provided a rating on at least 5 of the 7 or 8 items that composed the scales. The Closeness scale is a measure of the affection, warmth, and open communication that the teacher experiences with the student. The Conflict scale is a measure of the teacher's perception of the negative and conflictual aspects of the teacher's relationship with the student. Higher scores on the Closeness scale indicate that the teacher perceived he or she had a closer relationship with the child. Higher scores on the Conflict scale indicate that the teacher perceived his or her relationship with the child to be characterized by more conflict. The variable names, descriptions, value ranges, weighted means, and standard deviations for the *STRS* scales are shown in table 3-13.

Table 3-14 presents the internal consistency reliability coefficients (Cronbach's alpha) for the teacher-reported *STRS* Closeness and Conflict scores for kindergarten, first grade, second grade, and third grade. In the springs of kindergarten, first grade, second grade, and third grade, the Closeness scale (X2CLSNSS, X4CLSNSS, X4KCLSNSS, X6CLSNSS, and X7CLSNSS) has a reliability estimate that ranges from .86 to .89, and the Conflict scale (X2CNFLCT, X4CNFLCT, X4KCNFLCT, X6CNFLCT, and X7CNFLCT) has a reliability estimate that ranges from .88 to .90.

The study received copyright permission to include item-level data from the *STRS* on the ECLS-K:2011 restricted-use data files. Therefore, these data have been included in the kindergarten through third-grade data file with the other child-level teacher questionnaire data.[23] Variable names for the item-level data from the spring of kindergarten, the spring of first grade, the spring of second grade, and the

[23] Item wording is redacted in the questionnaires made available to the public. It is provided in the codebook view of the Electronic Codebook (ECB).

spring of third grade begin with "T2," "T4," "T6," and "T7," respectively. Variable names that begin with "T4K" are for item-level data from the spring of first grade for students retained in kindergarten.

Table 3-13. *Student-Teacher Relationship Scale* variable names, descriptions, value ranges, weighted means, and standard deviations for spring kindergarten, spring first grade, spring second grade, and spring third grade: Spring 2011, spring 2012, spring 2013, and spring 2014

Variable name	Description	n	Range of possible values	Weighted mean	Standard deviation
X2CLSNSS	X2 Teacher Report Closeness	15,962	1–5	4.36	0.636
X2CNFLCT	X2 Teacher Report Conflict	15,960	1–5	1.63	0.802
X4CLSNSS	X4 Teacher Report Closeness	13,418	1–5	4.30	0.662
X4CNFLCT	X4 Teacher Report Conflict	13,422	1–5	1.64	0.792
X4KCLSNSS	X4K Teacher Report Closeness	418	1–5	4.27	0.693
X4KCNFLCT	X4K Teacher Report Conflict	418	1–5	1.82	0.875
X6CLSNSS	X6 Teacher Report Closeness	12,681	1–5	4.24	0.687
X6CNFLCT	X6 Teacher Report Conflict	12,683	1–5	1.63	0.794
X7CLSNSS	X7 Teacher Report Closeness	11,894	1–5	4.17	0.712
X7CNFLCT	X7 Teacher Report Conflict	11,901	1–5	1.62	0.782

NOTE: Spring kindergarten estimates (X2) are weighted by W1C0. Spring first-grade estimates (X4) are weighted by W4CS4P_2T0. Spring second-grade estimates (X6) are weighted by W6CS6P_2T0. Spring third-grade estimates (X7) are weighted by W7C27P_7T70. Items contributing to these scales come from the *Student-Teacher Relationship Scale* (Pianta 2001). Variables that begin with "X4K" are for data collected in the spring first grade data collection for children who were retained in kindergarten. The unweighted sample *n* indicates the number of cases with valid data regardless of the presence of a valid analytic weight.
SOURCE: U.S. Department of Education, National Center for Education Statistics, Early Childhood Longitudinal Study, Kindergarten Class of 2010–11 (ECLS-K:2011), spring 2011, spring 2012, spring 2013, and spring 2014.

Table 3-14. Reliability estimates for the *Student-Teacher Relationship Scale* teacher-reported Closeness and Conflict scores for spring kindergarten, spring first grade, spring second grade, and spring third grade: Spring 2011, spring 2012, spring 2013, and spring 2014

Variable name	Description	Number of items	Reliability coefficient
X2CLSNSS	X2 Teacher Report Closeness	7	.89
X2CNFLCT	X2 Teacher Report Conflict	8	.89
X4CLSNSS	X4 Teacher Report Closeness	7	.86
X4CNFLCT	X4 Teacher Report Conflict	8	.89
X4KCLSNSS	X4 Teacher Report Closeness	7	.87
X4KCNFLCT	X4 Teacher Report Conflict	8	.88
X6CLSNSS	X6 Teacher Report Closeness	7	.87
X6CNFLCT	X6 Teacher Report Conflict	8	.90
X7CLSNSS	X7 Teacher Report Closeness	7	.87
X7CNFLCT	X7 Teacher Report Conflict	8	.90

NOTE: Items contributing to these scales come from the *Student-Teacher Relationship Scale* (Pianta 2001).
SOURCE: U.S. Department of Education, National Center for Education Statistics, Early Childhood Longitudinal Study, Kindergarten Class of 2010–11 (ECLS-K:2011), spring 2011, spring 2012,spring 2013, and spring 2014.

3.4.5 Parent- and Teacher-Report Working Memory

In the spring of third grade, parents and teachers reported on child behaviors related to working memory. Parents were asked 4 items as part of the parent interview, and teachers were asked the same 4 items as part of the child-level teacher questionnaire.[24] The items are 4 of the 10 items that make up the Parent and Teacher Forms of the Working Memory Scale of the Behavior Rating Inventory of Executive Function (BRIEF).[25] Items from the BRIEF Working Memory Scale measure "the capacity to hold information in mind for the purpose of completing a task" (Gioia et al. 2000, p. 19). Parents and teachers were presented with statements that describe child behaviors related to working memory, and they were asked to rate how often (never, sometimes, or often) the child has had problems with these behaviors over the past 6 months.

Item-level data are provided on the kindergarten–third grade data file. Variables for the item-level data from the spring third grade parent interview begin with "P7," and variables from the spring third grade child-level teacher questionnaire begin with "T7."

The data file also contains a scale score for parent-reported working memory (X7PWKMEM) and a scale score for teacher-reported working memory (X7TWKMEM). For both the parent scale score and the teacher scale score, a score was computed when the respondent provided a rating on at least 3 of the 4 items that made up the scale. Scores on rated items were summed and divided by the number of items rated to derive the scale score. Higher scale scores indicate that the child exhibited more behaviors indicating problems with working memory. That is, higher scores indicate *worse* working memory. Lower scale scores indicate fewer difficulties related to working memory, and, therefore, indicate *better* working memory. The variable names, descriptions, value ranges, weighted means, and standard deviations for these scales are shown in table 3-15.

[24] The items used for teachers and parents were the same and matched the items from the Behavior Rating Inventory of Executive Function (BRIEF). The instructions were adapted from the instructions on the cover of the BRIEF questionnaire to be appropriate for the mode of data collection used in this study. The instructions were adapted to be as similar as possible to the intent of the BRIEF instructions. The instructions varied slightly for parents and teachers because the parent items were administered within the parent interview and teachers completed items in a hard-copy questionnaire.

[25] ECLS-K:2011 used 4 of 10 items from the Teacher Form of the BRIEF and 4 of 10 items from the Parent Form of the BRIEF. The items used were adapted and reproduced by special permission of the Publisher, Psychological Assessment Resources, Inc., 16204 North Florida Avenue, Lutz, Florida 33549, from the Behavior Rating Inventory of Executive Function by Gerard A. Gioia, Peter K. Isquith, Steven C. Guy, and Lauren Kenworthy, Copyright 1996, 1998, 2000 by PAR, Inc. Further reproduction is prohibited without permission from PAR, Inc.

Table 3-15. Parent- and Teacher-Reported Working Memory variable names, descriptions, value ranges, weighted means, and standard deviations for spring third grade: Spring 2014

Variable name	Description	*n*	Range of possible values	Weighted mean	Standard deviation
X7PWKMEM	X7 Parent Report Working Memory	10,689	1-3	1.70	0.535
X7TWKMEM	X7 Teacher Report Working Memory	11,870	1-3	1.58	0.607

NOTE: Spring third-grade estimates (X7) for teacher-reported data are weighted by W7C27P_7T70. Spring third-grade estimates (X7) for parent-reported data are weighted by W7C27P_7A0. Items contributing to these scales come from the Working Memory Scale of the Behavior Rating Inventory of Executive Function (BRIEF) Teacher Form and Parent Form. The items used were adapted and reproduced by special permission of the Publisher, Psychological Assessment Resources, Inc., 16204 North Florida Avenue, Lutz, Florida 33549, from the Behavior Rating Inventory of Executive Function by Gerard A. Gioia, Peter K. Isquith, Steven C. Guy, and Lauren Kenworthy, Copyright 1996, 1998, 2000 by PAR, Inc. Further reproduction is prohibited without permission from PAR, Inc. The unweighted sample *n* indicates the number of cases with valid data regardless of the presence of a valid analytic weight.
SOURCE: U.S. Department of Education, National Center for Education Statistics, Early Childhood Longitudinal Study, Kindergarten Class of 2010–11 (ECLS-K:2011), spring 2014.

Table 3-16 presents internal consistency reliability coefficients (Cronbach's alpha) for the parent Working Memory scale and the teacher Working Memory scale. The parent Working Memory scale for spring third grade has an internal consistency reliability coefficient of .81. The teacher Working Memory scale for spring third grade has an internal consistency reliability coefficient of .91.

Table 3-16. Reliability estimates for the parent-reported and teacher-reported Working Memory scores for spring third grade: Spring 2014

Variable name	Description	Number of items	Reliability coefficient
X7PWKMEM	X7 Parent Report Working Memory	4	.81
X7TWKMEM	X7 Teacher Report Working Memory	4	.91

NOTE: Items contributing to these scales come from the Working Memory Scale of the Behavior Rating Inventory of Executive Function (BRIEF) Teacher Form and Parent Form. The items used were adapted and reproduced by special permission of the Publisher, Psychological Assessment Resources, Inc., 16204 North Florida Avenue, Lutz, Florida 33549, from the Behavior Rating Inventory of Executive Function by Gerard A. Gioia, Peter K. Isquith, Steven C. Guy, and Lauren Kenworthy, Copyright 1996, 1998, 2000 by PAR, Inc. Further reproduction is prohibited without permission from PAR, Inc.
SOURCE: U.S. Department of Education, National Center for Education Statistics, Early Childhood Longitudinal Study, Kindergarten Class of 2010–11 (ECLS-K:2011), spring 2014.

3.4.6 Teacher- and Parent-Reports of Children's Peer Relationships

Teachers reported their perceptions of the child's peer relationships in the child-level teacher questionnaire, and parents reported their perceptions of the child's peer relationships in the parent interview.

Exhibit 3-4 shows the constructs on peer relationships included in the second- and third-grade child-level teacher questionnaires and the corresponding item-level variables along with their sources. In second and third grade, teachers provided information on peer victimization, both with the child as the victim and with the child as the aggressor. In the spring of third grade, teachers were asked additional questions on children's peer relationships. Teachers were asked about whether the child was excluded or ignored by peers and about whether the child exhibited prosocial behaviors with peers. These items were adapted from existing scales and were used with the permission of the authors. Data for the individual items are included in the K-3 data file. Composite variables for each construct are not provided; it is left to analysts to decide how best to use these data in their analyses.

Exhibit 3-4. Teacher-reported item-level variables on peer relationships in spring second grade and spring third grade: Spring 2013 and spring 2014

Construct/scale	Number of items	Item-level variable names
Peer Victimization (child as victim)[1]	4	T*OSTEAS, T*OSLIES, T*OSPUSH, T*OSLFTO
Peer Victimization (child as aggressor)[1]	4	T*TSTEAS, T*TSLIES, T*TSPUSH, T*TSLFTO
Excluded by Peers[2]	4	T7PLYMTE, T7PAVOID, T7EXLUED, T7IGNRED
Prosocial with Peers[2]	5	T7OTDIST, T7ISKIND, T7COPRTV, T7CNMORL, T7HLPUPS

[1] Peer victimization items were adapted from a 21-item scale by Espelage, D. L. and Holt, M. (2001). Bullying and victimization during early adolescence: Peer influences and psychosocial correlates. *Journal of Emotional Abuse, 2:* 123–142.
[2] Adapted from the Child Behavior Scale © Gary W. Ladd. Used with permission. A subset of items from the Excluded by Peers and Prosocial with Peers scales from the Child Behavior Scale were adapted and used in the spring of third grade
SOURCE: U.S. Department of Education, National Center for Education Statistics, Early Childhood Longitudinal Study, Kindergarten Class of 2010–11 (ECLS-K:2011), spring 2013 and spring 2014.

In addition to teacher provided information on peer victimization in second- and third-grade, parents provided information on peer victimization in second- and third-grade. Exhibit 3-5 shows the constructs on peer relationships included in the second- and third-grade parent interviews and the corresponding item-level variables along with their sources. The teacher- and parent-provided information complements information collected from children on peer victimization, which is described above in section 3.3. Children were asked only about their experiences as a victim, not as the aggressor.

Exhibit 3-5. Parent-reported item-level variables on peer victimization in spring second grade and spring third grade: Spring 2013 and spring 2014

Construct/scale	Number of items	Response categories	Item-level variable
Peer Victimization (child as victim) [1]	3 (second grade) 4 (third grade)	Yes, No	P*OTHTEA P7OTHLIE[2] P*OTHHIT P*OTHEXC
Peer Victimization (child as victim) [1]	3 (second grade) 4 (third grade)	Never, Sometimes, Often	P*OFTTEA P7OFTLIE[2] P*OFTHIT P*OFTEXC

[1] Peer victimization items were adapted from a 21-item scale by Espelage, D. L. and Holt, M. (2001). Bullying and victimization during early adolescence: Peer influences and psychosocial correlates. *Journal of Emotional Abuse, 2:* 123–142.
[2] In second grade, parents were not asked about whether other children told lies or untrue stories about their child. An item was added in third grade so that parents, teachers, and children were asked about the same forms of peer victimization.
SOURCE: U.S. Department of Education, National Center for Education Statistics, Early Childhood Longitudinal Study, Kindergarten Class of 2010–11 (ECLS-K:2011), spring 2013 and spring 2014.

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4. SAMPLE DESIGN AND SAMPLING WEIGHTS

The Early Childhood Longitudinal Study, Kindergarten Class of 2010–11 (ECLS-K:2011) is providing national data on children's characteristics as they progress from kindergarten through the 2015–16 school year, when most of the children will be in fifth grade. In the 2010–11 school year, the ECLS-K:2011 collected data from a nationally representative sample of 18,174 children enrolled in 968 schools.[1] This chapter summarizes the process used to select the sample for the study in the base year (i.e., kindergarten), describes how the sample design changed for the first- through third-grade years, and provides information necessary to properly analyze the data that were collected.

4.1 Sample Design

The optimal sample design for collecting data to produce national child-level estimates is to sample children with probabilities that are approximately the same for each child. In most studies, this is achieved using a multi-stage sampling design that involves sampling primary sampling units (PSUs) and schools with probabilities proportional to the targeted number of children attending the school and selecting a fixed number of children per school. Such a sampling procedure was used for the ECLS-K:2011. Additionally, a clustered design was used to minimize data collection costs, which are strongly related to the dispersion of the children in the sample. Restricting data collection to a limited number of geographic areas and to as few schools as possible helps to minimize costs while still achieving an acceptable level of precision in the estimates produced with the data.

The sample for the ECLS-K:2011 was selected using a three-stage process. In the first stage of sampling, the country was divided into primary sampling units (PSUs), or geographic areas that are counties or groups of contiguous counties, and 90 PSUs were sampled for inclusion in the study. In the second stage, samples of public and private schools with kindergarten programs or that educated children of kindergarten age (i.e., 5-year-old children) in ungraded settings were selected within the sampled PSUs. Both PSUs and schools were selected with probability proportional to measures of size (defined as the population of 5-year-old children) that took into account a desired oversampling of Asians, Native Hawaiians, and Other Pacific Islanders (APIs).[2] In the third stage of sampling, children enrolled in kindergarten and 5-year-old children in ungraded schools or classrooms were selected within each sampled

[1] This is the number of schools with at least one child or parent respondent at the end of the spring data collection; this number includes originally sampled schools and substitute schools. Children who transferred from the school in which they were originally sampled during the kindergarten year were retained in the study and followed into their new school; this number does not include schools to which study children transferred during the kindergarten year.

[2] Asian, Native Hawaiian, and Other Pacific Islander children were oversampled as one group, not as three groups that were distinct from one another.

school. For a detailed description of the three stages of sampling, see chapter 4 of the *Early Childhood Longitudinal Study, Kindergarten Class of 2010–11 (ECLS-K:2011), User's Manual for the ECLS-K:2011 Kindergarten Data File and Electronic Codebook, Public Version* (NCES 2015-074) (Tourangeau et al. 2015), hereinafter referred to as the base-year User's Manual.

4.1.1 ECLS-K:2011 School Sample

A total of 1,221 clusters of schools[3] were originally selected for the ECLS-K:2011, of which 1,003 were clusters of public schools and 218 were clusters of private schools. This resulted in 1,036 sampled public schools and 283 sampled private schools, for a total of 1,319 sampled schools.

The sample frames used to select schools were the 2006–07 Common Core of Data (CCD) and the 2007–08 Private School Survey (PSS), which were the most recent CCD and PSS data available at the time of sampling. Because the 2006–07 CCD and the 2007–08 PSS school frames were several years old, additional schools were sampled from supplemental frames that included newly opened schools and existing schools that added a kindergarten program after the 2006–07 CCD and the 2007–08 PSS data were collected. These additional schools were added to the original school sample. In total, 33 new schools were added, of which 16 were public, 4 were Catholic, and 13 were non-Catholic private schools. The total number of sampled schools after updating was 1,352 (1,052 public schools and 300 private schools). For a detailed discussion of the supplemental school sample, see section 4.1.2.7 of the base-year User's Manual.

Early in the process of recruiting schools that had been sampled for the study, it was determined that the rate at which public schools were agreeing to participate was lower than expected and it would be difficult to meet the target number of participating schools by the end of the recruitment period. The decision was made to select public schools not selected into the original ECLS-K:2011 sample that would replace those sampled public schools that had already refused to participate. For a detailed discussion of school substitution, see section 4.1.2.8 of the base-year User's Manual. The characteristics of the school sample are presented in table 4-1. This table includes characteristics for sampled schools after substitution, which makes it different from table 4-2 in the base-year User's Manual, which shows characteristics for the originally sampled schools before substitution.

[3] Public schools with fewer than 23 children and private schools with fewer than 12 children were clustered together for sampling. Thus, clusters of schools were sampled, each cluster comprising one or more schools. For a discussion of school clustering, see section 4.1.2.3 of the base-year User's Manual.

Table 4-1. The ECLS-K:2011 school sample after school substitution

Characteristic	Total	Public	Private
Total	1,352	1,052	300
Census region[1,2]			
Northeast	240	170	70
Midwest	280	220	60
South	480	390	90
West	350	270	80
Locale			
City	421	314	107
Suburb	522	400	122
Town	113	91	22
Rural	296	247	49
Kindergarten enrollment			
fewer than 25	252	75	177
25–49	197	119	78
50–99	490	451	39
100–149	267	264	3
150–199	91	89	2
200–249	24	23	1
250–299	7	7	0
300 or more	24	24	0
Religious affiliation			
Catholic	74	†	74
Other religious	136	†	136
Nonreligious, private	90	†	90

See notes at end of table.

Table 4-1. The ECLS-K:2011 school sample after school substitution—Continued

Characteristic	Total	Public	Private
Percent of students eligible for the free lunch program			
0–25 percent	472	472	†
26–50 percent	267	267	†
51–75 percent	188	188	†
greater than 75 percent	125	125	†
Other school types			
Bureau of Indian Affairs school	3	3	†
Ungraded school	177	168	9

† Not applicable.
[1] States in each region:
Northeast: Connecticut, Maine, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, and Vermont.
Midwest: Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, South Dakota, and Wisconsin.
South: Alabama, Arkansas, Delaware, Florida, Georgia, Kentucky, Louisiana, Maryland, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, Virginia, West Virginia, and the District of Columbia.
West: Alaska, Arizona, California, Colorado, Hawaii, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, and Wyoming.
[2] Sample sizes rounded to the nearest 10 and, therefore, may not sum to total.
NOTE: Data for these school characteristics are taken from the original school sampling frame. Therefore, the table estimates for these characteristics cannot be replicated with variables on the released data file.
SOURCE: U.S. Department of Education, National Center for Education Statistics, Early Childhood Longitudinal Study, Kindergarten Class of 2010–11 (ECLS-K:2011), fall 2010 and spring 2011.

4.1.2 The Sample of Children

The goal of the sample design was to obtain an approximately self-weighting sample of children, with the exception of Asians, Native Hawaiians, and Other Pacific Islanders (API) who needed to be oversampled to meet sample size goals. Table 4-2 shows the distribution of the eligible children sampled for the ECLS-K:2011, by selected characteristics. Table 4-3 shows the distribution of the children who were respondents in the base year, by selected characteristics. To be considered a base-year respondent, a student had to have child assessment data (defined as having at least one set of scoreable mathematics/reading/science data OR a height or weight measurement, or having been excluded from the assessment due to lack of accommodation for a disability) or parent interview data from the fall or spring data collection, or both, in the base year. Later rounds of data collection were conducted only with base-year respondents. Sampled students who did not participate in the base year were not recontacted for later rounds of data collection, and no new students were added to the study sample after the base year.

As mentioned in the base-year User's Manual, operational problems prevented the study from conducting data collection activities in some areas of the country where Asian, Native Hawaiian/Other Pacific Islander, and American Indian/Alaska Native students sampled for the study resided. For this reason, base-year response rates for these groups of students were lower than response rates for students of other racial/ethnic backgrounds. As a result, a relatively small number of ECLS-K:2011 sample children in the

Native Hawaiian/Other Pacific Islander group reside in Hawaii. Additionally, nonresponse on the child assessment, parent interview, or both, leads to some of these sampled cases not being included in weighted analyses depending on the weight used. Also, none of the ECLS-K:2011 sample children in the American Indian/Alaska Native group resided in Alaska at the time of sampling. Users are encouraged to consider these sample characteristics when making statements about children in these two racial groups. As a reminder, however, the study was not designed to be representative at the state level or for subgroups within any specific racial or ethnic group.

Table 4-2. Number (unweighted) of eligible children sampled for the ECLS-K:2011, by selected characteristics: School year 2010–11

Characteristic	Total	Public school	Private school
Total	20,234	17,733	2,501
Census region[1,2,3]			
Northeast	3,500	2,930	570
Midwest	4,240	3,520	710
South	7,230	6,620	610
West	5,270	4,660	610
Locale[1,4]			
City	6,675	5,822	853
Suburb	7,657	6,461	1,196
Town	1,557	1,383	174
Rural	4,345	4,067	278
Religious affiliation[1]			
Catholic	974	†	974
Other religious	1,002	†	1,002
Nonreligious, private	525	†	525
Child's race/ethnicity[5]			
White, non-Hispanic	9,673	8,167	1,506
Black, non-Hispanic	2,619	2,357	262
Hispanic	4,832	4,491	341
Asian, non-Hispanic	1,830	1,597	233
Native Hawaiian/Other Pacific Islander, non-Hispanic	152	130	22
American Indian or Alaska Native, non-Hispanic	218	207	11
Other[6]	910	784	126

† Not applicable.
[1] Data for this school characteristic are taken from the original school sampling frame. Therefore, the table estimates for this characteristic cannot be replicated with variables on the released data file.
[2] States in each region:
Northeast: Connecticut, Maine, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, and Vermont.
Midwest: Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, South Dakota, and Wisconsin.
South: Alabama, Arkansas, Delaware, Florida, Georgia, Kentucky, Louisiana, Maryland, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, Virginia, West Virginia, and the District of Columbia.
West: Alaska, Arizona, California, Colorado, Hawaii, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, and Wyoming.
[3] Sample sizes rounded to the nearest 10 and, therefore, may not sum to total.
[4] Locale information was taken from the school sampling frame for most schools. For approximately 30 schools sampled via the new school procedure (see section 4.1.2.7 of the base-year User's Manual), locale information was not available in the school frame and was imputed for the estimates in this table. Imputed values for locale are not included in the data file.
[5] Race/ethnicity information was obtained from schools at the time of sampling.
[6] This category includes children who are more than one race (non-Hispanic) and children whose race/ethnicity is unknown.
SOURCE: U.S. Department of Education, National Center for Education Statistics, Early Childhood Longitudinal Study, Kindergarten Class of 2010–11 (ECLS-K:2011), fall 2010 and spring 2011.

Table 4-3. Number (unweighted) of sampled children who are base-year respondents, by selected characteristics: School year 2010–11

Characteristic	Total	Public school	Private school
Total	18,174	15,953	2,221
Census region[1,2,3]			
Northeast	3,010	2,540	470
Midwest	3,870	3,220	650
South	6,640	6,070	570
West	4,660	4,130	530
Locale[1,4]			
City	6,014	5,252	762
Suburb	6,793	5,746	1,047
Town	1,405	1,254	151
Rural	3,962	3,701	261
Religious affiliation[1]			
Catholic	863	†	863
Other religious	903	†	903
Nonreligious, private	455	†	455
Child's race/ethnicity[5]			
White, non-Hispanic	8,489	7,175	1,314
Black, non-Hispanic	2,396	2,159	237
Hispanic	4,590	4,267	323
Asian, non-Hispanic	1,543	1,357	186
Native Hawaiian/Other Pacific Islander, non-Hispanic	117	100	17
American Indian or Alaska Native, non-Hispanic	168	159	9
Two or more races	826	708	118
Unknown	45	28	17

† Not applicable.
[1] Data for this school characteristic are taken from the original school sampling frame. Therefore, the table estimates for this characteristic cannot be replicated with variables on the released data file.
[2] States in each region:
Northeast: Connecticut, Maine, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, and Vermont.
Midwest: Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, South Dakota, and Wisconsin.
South: Alabama, Arkansas, Delaware, Florida, Georgia, Kentucky, Louisiana, Maryland, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, Virginia, West Virginia, and the District of Columbia.
West: Alaska, Arizona, California, Colorado, Hawaii, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, and Wyoming.
[3] Sample sizes rounded to the nearest 10 and, therefore, may not sum to total.
[4] Locale information was taken from the school sampling frame for most schools. For approximately 30 schools sampled via the new school procedure (see section 4.1.2.7 of the base-year User's Manual), locale information was not available in the school frame and was imputed for the estimates in this table. Imputed values for locale are not included in the data file.
[5] Race/ethnicity information is from the third-grade race/ethnicity composite X_RACETH_R. The counts of children by race/ethnicity are slightly different from the counts in similar tables in the user's manuals from previous years. X_RACETH_R is revised after every data collection.
SOURCE: U.S. Department of Education, National Center for Education Statistics, Early Childhood Longitudinal Study, Kindergarten Class of 2010–11 (ECLS-K:2011), fall 2010 and spring 2011.

4.2 Sample Design for the First-Through Third-Grade Years

4.2.1 Fall First Grade and Fall Second Grade

This section describes the sample design for the fall data collections that occurred in first and second grades. Beginning with third grade, data collections only occur in the spring of the school year. A subsample of students was selected for the fall first-grade and second-grade data collections from the full study sample described above via a three-step procedure. This subsample was designed to be representative of the full sample. In the first step, 30 PSUs were sampled from the 90 PSUs selected for the base year. Within the 30 subsampled PSUs, the 10 self-representing PSUs are large in population size and were included in the fall first-grade sample with certainty. The remaining 20 PSUs were selected from the 80 non-self-representing PSUs in 40 strata. To select the 20 non-self-representing PSUs, 20 strata were sampled with equal probability, and then one PSU was sampled within each stratum also with equal probabilities. This is equivalent to selection with probability proportional to size since the original PSU sample was selected with probability proportional to size.

In the second step, all schools within the 30 subsampled PSUs that were eligible for the base-year collection were included in the fall subsample for both first and second grades. However, data collection was not conducted in the subsampled schools in which no children participated in the base year because the study did not try and recruit base-year nonrespondents for later round of data collections. Table 4-4 shows the characteristics of all fall subsampled schools in the 30 PSUs selected in the first stage of sampling.[4] Table 4-5 shows the characteristics for the subsampled schools with base-year respondents; these are the schools in which data collection was conducted. Transfer schools (those schools that children moved into after the fall of kindergarten) are not included in this table. Of the 346 original sampled schools at the start of the fall data collections, 306 schools still cooperated in fall second grade. [5]

In the third step of sampling, students attending the subsampled schools who were respondents in the base year and who had not moved outside of the United States or died before the day assessments began in their school for the fall first-grade data collection were included as part of the fall sample for the first-grade data collection. This sample formed the base sample for the fall second-grade data collection as well, though subsampled children who had died or moved outside of the United States before the day

[4] The fall second-grade data collection also included schools to which the children sampled for the fall collections in the third step of sampling had moved after sampling. These schools were not part of the original subsample selected in the second step of sampling and, therefore, are not included in table 4-4.

[5] After the base year, some original sampled schools no longer have students originally sampled in them, but the schools remain in the study because students originally sampled in other schools have moved into them. Other original sampled schools include both students originally sampled in them and transfer students.

assessments began in their school for the fall second-grade data collection were excluded. Table 4-6 shows the characteristics of base-year respondents in the fall subsample who were selected in the third sampling step.

Table 4-4. Number (unweighted) of original sampled schools in the 30 PSUs selected for the fall data collections, by selected characteristics: Fall 2011 and fall 2012

Characteristic	Total	Public	Private
Total	568	462	106
Census region[1,2]			
Northeast	90	60	30
Midwest	100	90	10
South	170	150	30
West	210	170	40
Locale[3]			
City	241	202	39
Suburb	224	175	49
Town	19	15	4
Rural	84	70	14
Religious affiliation			
Catholic	29	†	29
Other religious	43	†	43
Nonreligious, private	34	†	34

† Not applicable.
[1] States in each region:
Northeast: Connecticut, Maine, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, and Vermont.
Midwest: Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, South Dakota, and Wisconsin.
South: Alabama, Arkansas, Delaware, Florida, Georgia, Kentucky, Louisiana, Maryland, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, Virginia, West Virginia, and the District of Columbia.
West: Alaska, Arizona, California, Colorado, Hawaii, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, and Wyoming.
[2] Sample sizes rounded to the nearest 10 and, therefore, may not sum to total.
[3] Locale information was taken from the school sampling frame for most schools. For a very small number of schools sampled via the new school procedure (see section 4.1.2.7 of the base-year User's Manual), locale information was not available in the school frame and was imputed for the estimates in this table. Imputed values for locale are not included in the data file.
NOTE: Data for these school characteristics are taken from the original school sampling frame. Therefore, the table estimates for these characteristics cannot be replicated with variables on the released data file.
SOURCE: U.S. Department of Education, National Center for Education Statistics, Early Childhood Longitudinal Study, Kindergarten Class of 2010–11 (ECLS-K:2011), fall 2011 and fall 2012.

Table 4-5. Number (unweighted) of original sampled schools with base-year respondents at the start of the fall data collections, by selected characteristics: Fall 2011 and fall 2012

Characteristic	Total	Public	Private
Total	346	305	41
Census region[1,2]			
Northeast	50	40	10
Midwest	60	50	10
South	120	110	10
West	120	100	20
Locale[3]			
City	144	132	12
Suburb	134	112	22
Town	15	12	3
Rural	53	49	4
Religious affiliation			
Catholic	16	†	16
Other religious	12	†	12
Nonreligious, private	13	†	13

† Not applicable.
[1] States in each region:
Northeast: Connecticut, Maine, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, and Vermont.
Midwest: Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, South Dakota, and Wisconsin.
South: Alabama, Arkansas, Delaware, Florida, Georgia, Kentucky, Louisiana, Maryland, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, Virginia, West Virginia, and the District of Columbia.
West: Alaska, Arizona, California, Colorado, Hawaii, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, and Wyoming.
[2] Sample sizes rounded to the nearest 10 and, therefore, may not sum to total.
[3] Locale information was taken from the school sampling frame for most schools. For a very small number of schools sampled via the new school procedure (see section 4.1.2.7 of the base-year User's Manual), locale information was not available in the school frame and was imputed for the estimates in this table. Imputed values for locale are not included in the data file.
NOTE: Data for these school characteristics are taken from the original school sampling frame. Therefore, the table estimates for these characteristics cannot be replicated with variables on the released data file.
SOURCE: U.S. Department of Education, National Center for Education Statistics, Early Childhood Longitudinal Study, Kindergarten Class of 2010–11 (ECLS-K:2011), fall 2011 and fall 2012.

Table 4-6. Number (unweighted) of base-year respondents in the fall first- and second-grade sample, by selected characteristics: Fall 2011 and fall 2012

Characteristic	Total	Public	Private
Total	6,109	5,458	651
Census region[1,2,3]			
Northeast	820	730	90
Midwest	1,120	1,010	110
South	2,000	1,840	170
West	2,170	1,880	280
Locale[1,4]			
City	2,549	2,295	254
Suburb	2,461	2,101	360
Town	250	227	23
Rural	849	835	14
Religious affiliation[1]			
Catholic	242	†	242
Other religious	233	†	233
Nonreligious, private	176	†	176
Race/ethnicity[5]			
White, non-Hispanic	2,261	1,917	344
Black, non-Hispanic	675	611	64
Hispanic	2,289	2,156	133
Asian, non-Hispanic	476	422	54
Native Hawaiian/Other Pacific Islander, non-Hispanic	33	27	6
American Indian or Alaska Native, non-Hispanic	117	110	7
Two or more races	244	207	37
Unknown	14	8	6

† Not applicable.

[1] Data for this school characteristic are taken from the original school sampling frame. Therefore, the table estimates for this characteristic cannot be replicated with variables on the released data file.

[2] States in each region:
Northeast: Connecticut, Maine, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, and Vermont.
Midwest: Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, South Dakota, and Wisconsin.
South: Alabama, Arkansas, Delaware, Florida, Georgia, Kentucky, Louisiana, Maryland, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, Virginia, West Virginia, and the District of Columbia.
West: Alaska, Arizona, California, Colorado, Hawaii, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, and Wyoming.

[3] Sample sizes rounded to the nearest 10 and, therefore, may not sum to total.

[4] Locale information was taken from the school sampling frame for most schools. For a very small number of schools sampled via the new school procedure (see section 4.1.2.7 of the base-year User's Manual), locale information was not available in the school frame and was imputed for the estimates in this table. Imputed values for locale are not included in the data file.

[5] Race/ethnicity is from the third-grade race/ethnicity composite X_RACETH_R. The counts of children by race/ethnicity are slightly different from the counts in similar tables in the user's manuals from previous years. X_RACETH_R is revised after every data collection.

NOTE: A base-year respondent has child data (scoreable assessment data or height or weight measurements, or was excluded from assessment due to lack of accommodation for a disability) or parent interview data from at least one round of data collection in the base year.
SOURCE: U.S. Department of Education, National Center for Education Statistics, Early Childhood Longitudinal Study, Kindergarten Class of 2010–11 (ECLS-K:2011), fall 2011 and fall 2012.

Tables 4-7 and 4-8 show the characteristics of base-year respondents in the fall samples, by whether the students were still in the original sampled schools or had transferred to other schools by the end of first grade and second grade, respectively.

Table 4-7 shows that 81 percent of students were still attending their original sampled schools in the fall of first grade. Table 4-8 shows that 70 percent of students were still attending their original sampled schools in the fall of second grade. In the fall of first grade, the lowest percentages of students who were still attending their original sample schools are for students in non-Catholic private schools, students in the West, students in the suburbs, and Black students. The same is true for the fall of second grade with the percentage of students in non-Catholic private schools even lower than in first grade.[6]

[6] Significance tests were not conducted for the comparisons in this chapter because the differences discussed were based on the same sample of base-year respondents.

Table 4-7. Number (unweighted) of base-year respondents in fall first grade, by type of sampled school and selected characteristics: Fall 2011

Characteristic	Total	Original sampled school	Transfer school	Percent in original sampled school
Total	6,109	4,945	1,164	80.9
School type[1]				
Public	4,900	4,414	486	90.1
Private	552	468	84	84.8
Catholic	232	208	24	89.7
Other private	320	260	60	81.3
Unknown/home school	657	63	594	9.6
Census region[1,2,3]				
Northeast	760	660	90	87.8
Midwest	980	900	80	91.6
South	1,780	1,620	160	90.8
West	1,960	1,720	240	87.9
Unknown	640	50	590	7.2
Locale[1,4]				
City	2,354	2,127	227	90.4
Suburb	2,057	1,831	226	89.0
Town	217	198	19	91.2
Rural	781	718	63	91.9
Unknown	700	71	629	10.1
Race/ethnicity[5]				
White, non-Hispanic	2,261	1,906	355	84.3
Black, non-Hispanic	675	487	188	72.1
Hispanic	2,289	1,825	464	79.7
Asian, non-Hispanic	476	400	76	84.0
Native Hawaiian/Other Pacific Islander, non-Hispanic	33	26	7	78.8
American Indian or Alaska Native, non-Hispanic	117	97	20	82.9
Two or more races	244	196	48	80.3
Unknown	14	8	6	57.1

[1] Because this table includes transfer schools that were not in the original school frame, school frame data could not be used for school characteristics. Data for school census region and school locale are taken from the first-grade composite variables X3REGION and X3LOCALE. There was no school administrator questionnaire in the fall of first grade, therefore, the composite for school type, X3SCTYP, was constructed specially for the User's Manual and not included in the data file.

[2] States in each region:

Northeast: Connecticut, Maine, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, and Vermont.
Midwest: Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, South Dakota, and Wisconsin.
South: Alabama, Arkansas, Delaware, Florida, Georgia, Kentucky, Louisiana, Maryland, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, Virginia, West Virginia, and the District of Columbia.
West: Alaska, Arizona, California, Colorado, Hawaii, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, and Wyoming.

[3] Sample sizes rounded to the nearest 10 and, therefore, may not sum to total.

[4] Locale information was taken from the school sampling frame for most schools. For a very small number of schools sampled via the new school procedure (see section 4.1.2.7 of the base-year User's Manual), locale information was not available in the school frame and was imputed for the estimates in this table. Imputed values for locale are not included in the data file.

[5] Race/ethnicity is from the third-grade race/ethnicity composite X_RACETH_R. The counts of children by race/ethnicity are slightly different from the counts in similar tables in the user's manuals from previous years. X_RACETH_R is revised after every data collection.

NOTE: A base-year respondent has child data (scoreable assessment data or height or weight measurements, or was excluded from assessment due to lack of accommodation for a disability) or parent interview data from at least one round of data collection in the base year.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Early Childhood Longitudinal Study, Kindergarten Class of 2010–11 (ECLS-K:2011), fall 2011.

Table 4-8. Number (unweighted) of base-year respondents in the fall second grade, by type of sampled school and selected characteristics: Fall 2012

Characteristic	Total	Original sampled school	Transfer school	Percent in original sampled school
Total	6,109	4,274	1,835	70.0
School type[1]				
Public	5,036	3,951	1,085	78.5
Private	424	323	101	76.2
Catholic	220	161	59	73.2
Other private	204	162	42	79.4
Unknown/home school	649	0	649	0.0
Census region[1,2,3]				
Northeast	760	630	130	83.4
Midwest	950	760	190	80.0
South	1,700	1,410	300	82.6
West	1,930	1,480	460	76.3
Unknown	770	#	770	0.3
Locale[1,4]				
City	2,201	1,786	415	81.1
Suburb	2,032	1,617	415	79.6
Town	182	159	23	87.4
Rural	801	687	114	85.8
Unknown	893	25	868	2.8
Race/ethnicity[5]				
White, non-Hispanic	2,261	1,701	560	75.2
Black, non-Hispanic	675	387	288	57.3
Hispanic	2,289	1,573	716	68.7
Asian, non-Hispanic	476	347	129	72.9
Native Hawaiian/Other Pacific Islander, non-Hispanic	33	22	11	66.7
American Indian or Alaska Native, non-Hispanic	117	75	42	64.1
Two or more races	244	161	83	66.0
Unknown	14	8	6	57.1

Rounds to zero.

[1] Because this table includes transfer schools that were not in the original school frame, school frame data could not be used for school characteristics. Data for school census region and school locale are taken from the second-grade composite variables X5REGION and X5LOCALE. There was no school administrator questionnaire in the fall of second grade; therefore, the composite for school type, X5SCTYP, was constructed specially for the User's Manual and not included in the data file.

[2] States in each region:

Northeast: Connecticut, Maine, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, and Vermont.
Midwest: Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, South Dakota, and Wisconsin.
South: Alabama, Arkansas, Delaware, Florida, Georgia, Kentucky, Louisiana, Maryland, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, Virginia, West Virginia, and the District of Columbia.
West: Alaska, Arizona, California, Colorado, Hawaii, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, and Wyoming.

[3] Sample sizes rounded to the nearest 10 and, therefore, may not sum to total.

[4] Locale information was taken from the school sampling frame for most schools. For a very small number of schools sampled via the new school procedure (see section 4.1.2.7 of the base-year User's Manual), locale information was not available in the school frame and was imputed for the estimates in this table. Imputed values for locale are not included in the data file.

[5] Race/ethnicity is from the third-grade race/ethnicity composite X_RACETH_R. The counts of children by race/ethnicity are slightly different from the counts in similar tables in the user's manuals from previous years. X_RACETH_R is revised after every data collection.

NOTE: A base-year respondent has child data (scoreable assessment data or height or weight measurements, or was excluded from assessment due to lack of accommodation for a disability) or parent interview data from at least one round of data collection in the base year.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Early Childhood Longitudinal Study, Kindergarten Class of 2010–11 (ECLS-K:2011), fall 2012.

4.2.2 Spring First Grade, Spring Second Grade, and Spring Third Grade

All base-year respondents were statistically eligible for the spring first-grade, spring second-grade, and spring third-grade data collections, with the exception of those who moved outside the United States or died before the assessments began in their school. Table 4-9 shows the characteristics of the original sample schools with base-year respondents in all 90 study PSUs. Transfer schools (those schools that children moved into after the fall of kindergarten) are not included in this table. Of the 989 original sampled schools at the start of the spring data collections, 910 cooperated in spring first grade, 896 cooperated in spring second grade, and 891 cooperated in spring third grade.

Table 4-9. Number (unweighted) of original sampled schools in the 90 PSUs selected for the spring data collections with base-year respondents, by selected characteristics: Spring 2012, spring 2013, and spring 2014

Characteristic	Tota1	Public	Private
Total	989	858	131
Census region[1,2]			
Northeast	170	150	30
Midwest	200	150	40
South	360	330	40
West	260	230	30
Locale[3]			
City	321	278	43
Suburb	357	302	55
Town	86	73	13
Rural	225	205	20
Religious affiliation			
Catholic	52	†	52
Other religious	55	†	55
Nonreligious, private	24	†	24

† Not applicable.
[1] States in each region:
Northeast: Connecticut, Maine, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, and Vermont.
Midwest: Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, South Dakota, and Wisconsin.
South: Alabama, Arkansas, Delaware, Florida, Georgia, Kentucky, Louisiana, Maryland, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, Virginia, West Virginia, and the District of Columbia.
West: Alaska, Arizona, California, Colorado, Hawaii, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, and Wyoming.
[2] Sample sizes rounded to the nearest 10 and, therefore, may not sum to total.
[3] Locale information was taken from the school sampling frame for most schools. For approximately 30 schools sampled via the new school procedure (see section 4.1.2.7 of the base-year User's Manual), locale information was not available in the school frame and was imputed for the estimates in this table. Imputed values for locale are not included in the data file.
NOTE: Data for these school characteristics are taken from the original school sampling frame. Therefore, the table estimates for these characteristics cannot be replicated with variables on the released data file.
SOURCE: U.S. Department of Education, National Center for Education Statistics, Early Childhood Longitudinal Study, Kindergarten Class of 2010–11 (ECLS-K:2011), spring 2012, spring 2013, and spring 2014.

The characteristics of base-year respondents who were eligible for the spring first-, second-, and third-grade data collections are those presented above in table 4-3; since there was no subsampling for the spring rounds of data collection, all base-year respondents were initially eligible for data collection if they had not moved outside the United States or died prior to data collection. By the end of the third-grade data collections, about 160 base-year respondents had moved out the country and 5 had died.

Tables 4-10 to 4-12 show the characteristics of base-year respondents in the spring samples, by whether the students were still in their original sampled schools or had transferred to other schools. In the spring of first grade, 78 percent of base-year respondents were still attending their original sampled schools. This percent is 68 for the spring of second grade, and 59 for the spring of third grade. As is seen with the fall subsample, the lowest percentages of students who were still attending their original sample schools in the spring of first grade are for students in non-Catholic private schools, students in the West, students in the suburbs, and Black students. For the spring of second grade and for third grade, the pattern is the same except that students in different types of private schools moved at about the same rate, while students in public schools moved at a higher rate than students in Catholic schools and in non-Catholic private schools, and students in the Northeast moved at a higher rate than students in other census regions.

Table 4-10. Number (unweighted) of base-year respondents in spring first grade, by type of sampled school and selected characteristics: Spring 2012

Characteristic	Total	Original sampled school	Transfer school	Percent in original sampled school
Total	18,174	14,104	4,070	77.6
School type[1]				
Public	13,772	12,361	1,411	89.8
Private	1,946	1,736	210	89.2
Catholic	774	726	48	93.8
Other private	1,172	1,010	162	86.2
Unknown/home school	2,456	7	2,449	0.3
Census region[1,2,3]				
Northeast	2,600	2,350	250	90.5
Midwest	3,280	2,960	320	90.2
South	5,690	5,190	490	91.3
West	4,160	3,600	560	86.5
Unknown	2,460	10	2,500	0.3
Locale[1,4]				
City	5,231	4,643	588	88.8
Suburb	5,613	4,961	652	88.4
Town	1,221	1,140	81	93.4
Rural	3,344	3,162	182	94.6
Unknown	2,765	198	2,567	7.2
Race/ethnicity[5]				
White, non-Hispanic	8,489	6,822	1,667	80.4
Black, non-Hispanic	2,396	1,623	773	67.7
Hispanic	4,590	3,540	1,050	77.1
Asian, non-Hispanic	1,543	1,254	289	81.3
Native Hawaiian/Other Pacific Islander, non-Hispanic	117	87	30	74.4
American Indian or Alaska Native, non-Hispanic	168	122	46	72.6
Two or more races	826	634	192	76.8
Unknown	45	22	23	48.9

[1] Because this table includes transfer schools that were not in the original school frame, school frame data could not be used for school characteristics. Data for school census region and school locale are taken from the first grade composite variables X3REGION and X3LOCALE. There was no school administrator questionnaire in the fall of first grade; therefore, the composite for school type, X3SCTYP, was constructed specially for the User's Manual and not included in the data file.

[2] States in each region:

Northeast: Connecticut, Maine, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, and Vermont.
Midwest: Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, South Dakota, and Wisconsin.
South: Alabama, Arkansas, Delaware, Florida, Georgia, Kentucky, Louisiana, Maryland, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, Virginia, West Virginia, and the District of Columbia.
West: Alaska, Arizona, California, Colorado, Hawaii, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, and Wyoming.

[3] Sample sizes rounded to the nearest 10 and, therefore, may not sum to total.

[4] Locale information was taken from the school sampling frame for most schools. For approximately 30 schools sampled via the new school procedure (see section 4.1.2.7 of the base-year User's Manual), locale information was not available in the school frame and was imputed for the estimates in this table. Imputed values for locale are not included in the data file.

[5] Race/ethnicity is from third-grade race/ethnicity composite X_RACETH_R. The counts of children by race/ethnicity are slightly different from the counts in similar tables in the user's manuals from previous years. X_RACETH_R is revised after every data collection.

NOTE: A base-year respondent has child data (scoreable assessment data or height or weight measurements, or was excluded from assessment due to lack of accommodation for a disability) or parent interview data from at least one round of data collection in the base year.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Early Childhood Longitudinal Study, Kindergarten Class of 2010–11 (ECLS-K:2011), spring 2012.

Table 4-11. Number (unweighted) of base-year respondents in spring second grade, by type of sampled school and selected characteristics: Spring 2013

Characteristic	Total	Original sampled school	Transfer school	Percent in original sampled school
Total	18,174	12,274	5,900	67.5
School type[1]				
Public	13,116	11,029	2,087	84.1
Private	1,388	1,245	143	89.7
Catholic	655	587	68	89.6
Other private	733	658	75	89.8
Unknown/home school	3,670	0	3,670	0.0
Census region[1,2,3]				
Northeast	2,400	2,060	350	85.6
Midwest	3,020	2,570	450	85.0
South	5,180	4,500	690	86.8
West	3,860	3,150	720	81.5
Unknown	3,700	#	3,700	0.1
Locale[1,4]				
City	4,762	3,968	794	83.3
Suburb	5,139	4,248	891	82.7
Town	1,070	976	94	91.2
Rural	3,149	2,906	243	92.3
Unknown	4,054	176	3,878	4.3
Race/ethnicity[5]				
White, non-Hispanic	8,489	6,079	2,410	71.6
Black, non-Hispanic	2,396	1,298	1,098	54.2
Hispanic	4,590	3,093	1,497	67.4
Asian, non-Hispanic	1,543	1,101	442	71.4
Native Hawaiian/Other Pacific Islander, non-Hispanic	117	73	44	62.4
American Indian or Alaska Native, non-Hispanic	168	98	70	58.3
Two or more races	826	515	311	62.3
Unknown	45	17	28	37.8

Rounds to zero.

[1] Because this table includes transfer schools that were not in the original school frame, school frame data could not be used for school characteristics. Data for school type, school census region, and school locale are taken from the second-grade composite variables X6SCTYP, X6REGION, and X6LOCALE.

[2] States in each region:
Northeast: Connecticut, Maine, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, and Vermont.
Midwest: Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, South Dakota, and Wisconsin.
South: Alabama, Arkansas, Delaware, Florida, Georgia, Kentucky, Louisiana, Maryland, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, Virginia, West Virginia, and the District of Columbia.
West: Alaska, Arizona, California, Colorado, Hawaii, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, and Wyoming.

[3] Sample sizes rounded to the nearest 10 and, therefore, may not sum to total.

[4] Locale information was taken from the school sampling frame for most schools. For approximately 30 schools sampled via the new school procedure (see section 4.1.2.7 of the base-year User's Manual), locale information was not available in the school frame and was imputed for the estimates in this table. Imputed values for locale are not included in the data file.

[5] Race/ethnicity is from third-grade race/ethnicity composite X_RACETH_R. The counts of children by race/ethnicity are slightly different from the counts in similar tables in the user's manuals from previous years. X_RACETH_R is revised after every data collection.

NOTE: A base-year respondent has child data (scoreable assessment data or height or weight measurements, or was excluded from assessment due to lack of accommodation for a disability) or parent interview data from at least one round of data collection in the base year.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Early Childhood Longitudinal Study, Kindergarten Class of 2010–11 (ECLS-K:2011), spring 2013.

Table 4-12. Number (unweighted) of base-year respondents in spring third grade, by type of sampled school and selected characteristics: Spring 2014

Characteristic	Total	Original sampled school	Transfer school	Percent in original sampled school
Total	18,174	10,641	7,533	58.6
School type[1]				
Public	12,369	9,532	2,837	77.1
Private	1,286	1,109	177	86.2
Catholic	631	545	86	86.4
Other private	655	564	91	86.1
Unknown/home school	4,519	0	4519	0.0
Census region[1,2,3]				
Northeast	2,280	1,740	550	76.1
Midwest	2,850	2,210	640	77.6
South	4,840	3,860	970	79.9
West	3,700	2,840	860	76.7
Unknown	4,520	0	4520	0.0
Locale[1,4]				
City	4,467	3,503	964	78.4
Suburb	4,841	3,594	1247	74.2
Town	990	814	176	82.2
Rural	2,993	2574	419	86.0
Unknown	4,883	156	4727	3.2
Race/ethnicity[5]				
White, non-Hispanic	8,489	5,317	3172	62.6
Black, non-Hispanic	2,396	1,058	1338	44.2
Hispanic	4,590	2,684	1906	58.5
Asian, non-Hispanic	1,543	978	565	63.4
Native Hawaiian/Other Pacific Islander, non-Hispanic	117	63	54	53.8
American Indian or Alaska Native, non-Hispanic	168	85	83	50.6
Two or more races	826	440	386	53.3
Unknown	45	16	29	35.6

[1] Because this table includes transfer schools that were not in the original school frame, school frame data could not be used for school characteristics. Data for school type, school census region, and school locale are taken from the third-grade composite variables X7SCTYP, X7REGION, and X7LOCALE.
[2] States in each region:
Northeast: Connecticut, Maine, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, and Vermont.
Midwest: Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, South Dakota, and Wisconsin.
South: Alabama, Arkansas, Delaware, Florida, Georgia, Kentucky, Louisiana, Maryland, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, Virginia, West Virginia, and the District of Columbia.
West: Alaska, Arizona, California, Colorado, Hawaii, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, and Wyoming.
[3] Sample sizes rounded to the nearest 10 and, therefore, may not sum to total.
[4] Locale information was taken from the school sampling frame for most schools. For approximately 30 schools sampled via the new school procedure (see section 4.1.2.7 of the base-year User's Manual), locale information was not available in the school frame and was imputed for the estimates in this table. Imputed values for locale are not included in the data file.
[5] Race/ethnicity is from the third-grade race/ethnicity composite X_RACETH_R.
NOTE: A base-year respondent has child data (scoreable assessment data or height or weight measurements, or was excluded from assessment due to lack of accommodation for a disability) or parent interview data from at least one round of data collection in the base year.
SOURCE: U.S. Department of Education, National Center for Education Statistics, Early Childhood Longitudinal Study, Kindergarten Class of 2010–11 (ECLS-K:2011), spring 2014.

4.2.3 Following Movers

Sections 4.2.1 and 4.2.2 discuss the samples of eligible students included in the fall and spring data collections in first and second grades and in the spring data collection in third grade. As noted, students who moved outside the United States or died prior to data collection in their schools became ineligible for the study. Their exclusion represents a limitation on the population to which the study generalizes in later rounds of data collection. For example, the data collected in the 2011–12 school year are representative of the experiences of children in the kindergarten class of 2010–11 who were living in the United States in 2011–12.

In order to control data collection costs, there are some students who are part of the statistical samples for the first-, second-, and third-grade data collections but who were excluded from actual data collection. These students, while statistically eligible for the study, were operationally ineligible. Specifically, not all students who moved away from their original base-year schools after the spring base-year data collection (known as "movers") were followed into their new schools. While some movers were followed with certainty, some subsampling of other movers occurred, as described below. Although information was not collected from all students in every round, the study sampling procedures, combined with the use of sampling weights that include mover subsampling adjustments (described below in section 4.3.2.2) in data analysis, result in the collected data being representative of the students in the kindergarten class of 2010–11 who remain living in the United States.

Homeschooled children (i.e., those who were enrolled in a school at the time of sampling in the base year but left school to become homeschooled) were followed with certainty; they were assessed in their home if there was parental consent to do so.

Destination schools. When four or more students moved from an original sampled school into the same transfer school, all those movers were followed into the new school, which is referred to as a *destination school*. This type of movement occurred for children who attended sampled schools that ended at a particular grade, which are referred to as terminal schools. For example, study students who attended an original sample school that ended with second grade would move as a group to a new school for third grade. In some cases, an original sampled school did not terminate in a particular grade, but for some reason four or more students from that school moved together into the same transfer school for the subsequent data collections. For example, this would happen if an original sample school closed after the spring first-grade data collection. More than one destination school may be identified for an original school if separate clusters of four or more students move into different transfer schools.

Language minority (LM) students, students with an Individualized Education Program (IEP), and students who had an Individualized Family Service Plan (IFSP). Students who were identified as language minority (LM) based on parent report of home language in the base year, as well as students identified as currently having an Individualized Education Program (IEP), or who had an Individualized Family Service Plan (IFSP) were followed at a rate of 100 percent in third grade. The IEP status of the child was obtained during the pre-assessment call when the team leader asked the school coordinator whether the child had an IEP or equivalent program on record with the school. The school records also may have indicated that a child had an IFSP when he or she was younger, even if the child did not have an IEP at the time of data collection, which the team leader could have noted during the call. Additionally, information about whether a child had had an IFSP prior to kindergarten was collected in the base-year parent interview. Due to an identification error before third grade, a number of these children who moved from their originally sampled school were not flagged to be followed with certainty in first grade and second grade. Despite this lack of sample protection, approximately 92 percent of the students who had had an IFSP were followed into second grade, either because they did not change schools, they had an IEP and became part of the protected group as a result of the IEP, or because they were part of the mover subsample that was followed at a rate of 50 percent.[7] In third grade, the identification error was corrected, and an additional 350 students who had had an IFSP were identified and followed with certainty.

General procedures for all other movers. Fifty percent of students who did not meet one of the criteria described above (i.e., did not move to a destination school, were not LM, and did not have an IEP) were sampled with equal probability to be flagged as "follow" if they moved from their original sample school. If a student was flagged as "do not follow," no data were collected for him or her.

[7] There are some differences between the group of IFSP children who were followed and those who were not. However, some of these differences appear to be related to the likelihood that a child had an IEP (and, therefore, whether the child became part of the protected group as a result of the IEP). For example, compared to those IFSP children who were not followed, a higher percentage of IFSP children who were followed attended public schools, which are required to provide disability services through an IEP.

The subsampling process itself should not have introduced bias into the sample of IFSP children who were followed, because cases were randomly flagged to be followed. Additionally, the sampling weights developed for use with second-grade data account for this random subsampling. A comparison of key weighted estimates (such as school type, region of residence, school locale, percent of students in the school who were races other than White, and student race/ethnicity, gender, and year of birth) between kindergarten and first grade generally suggests the loss of those children who were not followed has little impact on the overall estimates for children who had IFSPs before age 3. Where slight differences between the kindergarten and first-grade estimates were noticed (for example, on the percent of students of race other than White in a school), the pattern with the sample of IFSP children is reflective of differences seen in the full ECLS-K:2011 sample. Also, it should be kept in mind that identifying a child to be followed with certainty does not necessarily mean that the child would have participated in the round(s) in which he or she was followed. Due to general sample attrition, the IFSP students who were not flagged to be followed with certainty constitute only about half of all IFSP children who did not participate in first grade and second grade. It is unlikely that differences in weighted estimates for the entire group of IFSP children (about 680) are due solely to the absence of the approximately 60 IFSP cases that were not followed neither in first grade nor in second grade.

Nonparticipation of IFSP children in later rounds of the study for any reason does reduce the IFSP sample available for analysis. As is the case for analysis of any small subgroup, users should consider the size of their analytic sample and whether there is enough power in the data to make generalizations about the groups being examined.

Students flagged as "do not follow" were not sought for participation in any further data collection unless they were part of the fall subsample, as explained further below. If a student was flagged as "follow," and

1. the student moved into a school in a study PSU: the student was included in all aspects of data collection (child assessment, child questionnaire, parent interview, school administrator questionnaire, and teacher questionnaires);

2. the student moved into a school outside a study PSU: only a parent interview was attempted; and

3. the student moved into a school outside the country: the student was out of scope and considered ineligible for continuation in the study.

Procedures for students in the fall subsample. Fifty percent of all students in the subsample had their follow flag set to "follow" after the base-year data collection. Children were sampled with equal probability to be flagged as "follow," meaning that if they transferred to a new school they would be followed into that new school for the fall first- and second- grade data collections. As explained in detail below, all students who were subsampled in the fall, regardless of their mover status, were followed in the spring data collections. As a result of these procedures, some subsample students were not followed in the fall collections, because their follow flag applicable to the fall collections was set to "not follow," but they were followed in the spring collections.

Procedures for students in the spring main sample. Fifty percent of the schools in the main sample were subsampled with equal probability to have follow flags (i.e., all students in the 50 percent subsample of schools have flags set to "follow") applicable for the spring data collections. All fall schools in the 30 sampled PSUs were included in the "mover follow" sample for the spring of first, second and third grade. An additional sample of schools that were not part of the fall subsample was selected to arrive at 50 percent of the entire sample of schools being included in the "mover follow" subsample in the spring first-, second-, and third-grade data collections. In this way, students who were originally sampled for fall data collections were included in the spring data collections with certainty. These fall subsample cases were followed for the spring data collections even if they were movers in the fall and had their fall mover flag set to "not follow" or they were nonrespondents in the fall. Also, this method allows fall subsample movers to continue to be followed in each subsequent round of data collection, as well as more clustering of the movers to be followed, thus cutting down on field costs.

4.3 Calculation and Use of Sample Weights

The ECLS-K:2011 data should be weighted to account for differential probabilities of selection at each sampling stage and to adjust for the effect nonresponse can have on the estimates. For the base year, weights were provided at the child and school levels. Estimates produced using the base-year child-level weights are representative of children who attended kindergarten or who attended an ungraded school or classroom and were of kindergarten age in the United States in the 2010–11 school year. Estimates produced using the base-year school-level weight are representative of schools with kindergarten programs or schools that educate children of kindergarten age in an ungraded setting.

For the first-, second-, and third-grade data collections, weights are provided only at the child level, to produce estimates for the kindergarten cohort during the 2011–12 school year, the 2012–13 school year, and the 2013–14 school year, respectively. There are no school-level weights because the school sample is no longer nationally representative; it is not representative of schools with first-grade students, second-grade students, third-grade students, or ungraded schools serving children of first-grade, second-grade, or third-grade age. The school sample is simply a set of schools attended by the children in the ECLS-K:2011 cohort during the 2011–12, the 2012–13, and the 2013–14 school years.

The use of weights is essential to produce estimates that are representative of the cohort of children who were in kindergarten in 2010–11. Main sampling weights should be used to produce survey estimates. When testing hypotheses (e.g., conducting *t* tests, regression analyses, etc.) using weighted data from a study such as the ECLS-K:2011 that has a complex design, analysts also should use methods to adjust the standard errors. Two such methods are jackknife replication variance estimation and the Taylor series linearization method. Replicate weights are provided in the data file for use with the paired jackknife replication procedure, and PSU and stratum identifiers are provided for use with the Taylor series method.

4.3.1 Types of Sample Weights

Main sampling weights designed for use with data from a complex sample survey serve two primary purposes. When used in analyses, the main sampling weight weights the sample size up to the population total of interest. In the ECLS-K:2011, weighting produces national-level estimates. Also, the main sampling weight adjusts for differential nonresponse patterns that can lead to bias in the estimates. If people with certain characteristics are systematically less likely than others to respond to a survey, the collected data may not accurately reflect the characteristics and experiences of the nonrespondents, which can lead to bias. To adjust for this, respondents are assigned weights that, when applied, result in

respondents representing their own characteristics and experiences as well as those of nonrespondents with similar attributes.

A sample weight could be produced for use with data from every component of the study (e.g., data from the third-grade parent interview, the third-grade child assessment and child questionnaire, the third-grade teacher questionnaire, or the third-grade school administrator questionnaire) and for every combination of components for the study (e.g., data from the third-grade child assessment with data from the third-grade school administrator questionnaire, or data from the spring kindergarten child assessment with data from the third-grade child assessment or child questionnaire and the third-grade parent interview). However, creating all possible weights for a study with as many components as the ECLS-K:2011 would be impractical, especially as the study progresses and the number of possible weights increases. In order to determine which weights would be most useful for researchers analyzing data from third grade, completion rates for each third-grade component (e.g., response to the child assessment and child questionnaire, the parent interview, various parts of the teacher questionnaire) were reviewed in combination with completion rates from the kindergarten, first-grade, second-grade, and third-grade years, and consideration was given to how analysts are likely to use the data.

The best approach to choosing a sample weight for a given analysis is to select one that maximizes the number of sources of data included in the analyses for which nonresponse adjustments are made, which in turn minimizes bias in estimates, while maintaining as large an unweighted sample size as possible. Exhibit 4-1 shows the 16 weights computed for the analyses of third-grade data. It also identifies the survey component(s), or sources of data, for which nonresponse adjustments are made for each weight.

Since every child who was assessed also had questionnaire data, the response rates have the same pattern. Therefore, nonresponse adjustments for the child questionnaire did not need to be made separately from nonresponse adjustments for the child assessment. Analyses that include either child assessment data or child questionnaire data should be done with a weight that includes the C7 component.

Exhibit 4-1. ECLS-K:2011 third-grade main sampling weights

Weight	Description
W7C7P_2	Child base weight adjusted for nonresponse associated with child assessment/child questionnaire data from spring third grade, and parent data from either fall kindergarten or spring kindergarten (C7)(P1_P2)
W7C17P_2	Child base weight adjusted for nonresponse associated with child assessment/child questionnaire data from both kindergarten rounds and spring third grade, as well as parent data from fall kindergarten or spring kindergarten (C1C2C7)(P1_P2)
W7C17P_7T7	Child base weight adjusted for nonresponse associated with child assessment/child questionnaire data from both kindergarten rounds and spring third grade, parent data from either fall kindergarten or spring kindergarten, parent data from spring third grade, as well as either teacher-/classroom- or child-level teacher data from spring third grade (C1C2C7)(P1_P2)(P7)(T7)
W7C17P_7	Child base weight adjusted for nonresponse associated with child assessment/child questionnaire data from both kindergarten rounds and spring third grade, as well as parent data from fall kindergarten or spring kindergarten, spring first grade, spring second grade, and spring third grade (C1C2C7)(P1_P2)(P4P6P7)
W7C17P_2T27	Child base weight adjusted for nonresponse associated with child assessment/child questionnaire data from both kindergarten rounds and spring third grade, as well as parent data from fall kindergarten or spring kindergarten, and either teacher-/classroom- or child-level teacher data from spring kindergarten (from a core or supplemental teacher questionnaire), spring first grade (from a first-grade or a kindergarten teacher questionnaire), spring second grade, and spring third grade (C1C2C7)(P1_P2)(T2T4T6T7)
W7C17P_7T27A	Child base weight adjusted for nonresponse associated with child assessment/child questionnaire data from both kindergarten rounds and spring third grade, as well as parent data from fall kindergarten or spring kindergarten, parent data from spring third grade, and either teacher-/classroom- or child-level teacher data from spring kindergarten (from a core or supplemental teacher questionnaire), spring first grade (from a first-grade or a kindergarten teacher questionnaire), spring second grade, and spring third grade (C1C2C7)(P1_P2))(P7)(T2T4T6T7)

See notes at end of exhibit.

Exhibit 4-1. ECLS-K:2011 third-grade main sampling weights—Continued

Weight	Description
W7C17P_7T27B	Child base weight adjusted for nonresponse associated with child assessment/child questionnaire data from both kindergarten rounds and spring third grade, as well as parent data from fall kindergarten or spring kindergarten, parent data from spring first grade, parent data from spring second grade, parent data from spring third grade, and either teacher-/classroom- or child-level teacher data from spring kindergarten (from a core or supplemental teacher questionnaire), spring first grade (from a first-grade or a kindergarten teacher questionnaire), spring second grade, and spring third grade (C1C2C7)(P1_P2)(P4P6P7)(T2T4T6T7)
W7C17P_7T17	Child base weight adjusted for nonresponse associated with child assessment/child questionnaire data from both kindergarten rounds, spring first grade, spring second grade, and spring third grade, as well as parent data from fall kindergarten or spring kindergarten, parent data from spring first grade, parent data from spring second grade, parent data from spring third grade, and either teacher-/classroom- or child-level teacher data from fall kindergarten, spring kindergarten (from a core or supplemental teacher questionnaire), spring first grade (from a first-grade or a kindergarten teacher questionnaire), spring second grade, and spring third grade (C1C2C4C6C7)(P1_P2)(P4P6P7)(T1T2T4T6T7)
W7C27P_7T7	Child base weight adjusted for nonresponse associated with child assessment/child questionnaire data from spring kindergarten and spring third grade, as well as parent data from fall kindergarten or spring kindergarten, parent data from spring third grade, and either teacher-/classroom- or child-level teacher data from spring third grade (C2C7)(P1_P2)(P7)(T7)
W7C27P_7A	Child base weight adjusted for nonresponse associated with child assessment/child questionnaire data from spring kindergarten, spring first grade, spring second grade, and spring third grade, as well as parent data from fall kindergarten or spring kindergarten, and parent data from spring third grade (C2C4C6C7)(P1_P2)(P7)
W7C27P_7B	Child base weight adjusted for nonresponse associated with child assessment/child questionnaire data from spring kindergarten, spring first grade, spring second grade, and spring third grade, as well as parent data from fall kindergarten or spring kindergarten, parent data from spring first grade, parent data from spring second grade, and parent data from spring third grade (C2C4C6C7)(P1_P2)(P4P6P7)

See notes at end of exhibit.

Exhibit 4-1. ECLS-K:2011 third-grade main sampling weights—Continued

Weight	Description
W7C27P_2T7	Child base weight adjusted for nonresponse associated with child assessment/child questionnaire data from spring kindergarten, spring first grade, spring second grade, and spring third grade, as well as parent data from fall kindergarten or spring kindergarten, and either teacher-/classroom- or child-level teacher data from spring third grade (C2C4C6)(C7)(P1_P2)(T7)
W7C27P_2T27	Child base weight adjusted for nonresponse associated with child assessment/child questionnaire data from spring kindergarten, spring first grade, spring second grade, and spring third grade, as well as parent data from fall kindergarten or spring kindergarten, and either teacher-/classroom- or child-level teacher data from spring kindergarten (from a core or supplemental teacher questionnaire), spring first grade (from a first-grade or a kindergarten teacher questionnaire), spring second grade, and spring third grade (C2C4C6C7)(P1_P2)(T2T4T6T7)
W7C27P_7T27	Child base weight adjusted for nonresponse associated with child assessment/child questionnaire data from spring kindergarten, spring first grade, spring second grade, and spring third grade, as well as parent data from fall kindergarten or spring kindergarten, parent data from spring first grade, parent data from spring second grade, parent data from spring third grade, and either teacher-/classroom- or child-level teacher data from spring kindergarten (from a core or supplemental teacher questionnaire), spring first grade (from a first-grade or a kindergarten teacher questionnaire), spring second grade, and spring third grade (C2C4C6C7)(P1_P2)(P4P6P7)(T2T4T6T7)
W7CF7P_7	Child base weight adjusted for nonresponse associated with child assessment/child questionnaire data from all seven rounds from kindergarten through third grade, as well as parent data from all seven rounds from kindergarten through third grade (C1C2C3C4C5C6C7)(P1_P2)(P3P4P5P6P7)
W7CF7P_2T17	Child base weight adjusted for nonresponse associated with child assessment/child questionnaire data from all seven rounds from kindergarten through third grade, as well as parent data from fall kindergarten or spring kindergarten, and either teacher-/classroom- or child-level teacher data from all seven rounds from kindergarten through third grade (C1C2C3C4C5C6C7)(P1_P2)(T1T2T3T4T5T6T7)

NOTE: Having child assessment/child questionnaire data includes (1) having reading and/or mathematics and/or science scores, (2) having at least one executive function score, (3) having a height or weight measurement, or (4) being excluded from assessment due to lack of accommodation for a disability. In spring third grade, every child who was assessed also had questionnaire data. The weight designations (C1, C2, etc.) use the same prefixes that are used for other variables in the kindergarten–third grade data file. The prefixes are listed in exhibit 7-1.
SOURCE: U.S. Department of Education, National Center for Education Statistics, Early Childhood Longitudinal Study, Kindergarten Class of 2010–11 (ECLS-K:2011), kindergarten–third grade (K-3) data file.

Exhibit 4-2, which presents the same information as exhibit 4-1 in matrix format, was developed to further assist researchers in deciding which weight to use for analyses. In exhibit 4-2, the components for which nonresponse adjustments are made for each weight are noted with a "Yes." Researchers should choose a weight that has a "Yes" in the column(s) for the source(s) of data they are using in their analyses. The best weight would have a "Yes" for each and every source used and only those sources. For example, if a researcher is conducting an analysis that includes third-grade child assessment/child questionnaire data, and fall kindergarten or spring kindergarten parent interview data, the weight W7C7P_20 should be used since it adjusts for nonresponse on all of those components (i.e., exhibit 4-2 shows a "Yes" in the fall kindergarten and spring kindergarten parent columns and the spring third-grade child assessment/child questionnaire column; the italicized *Yes* indicates an "or" condition).

However, for many analyses, there will be no weight that adjusts for nonresponse to all the sources of data that are included and for only those sources. When no weight corresponds exactly to the combination of components included in the desired analysis, researchers might prefer to use a weight that includes nonresponse adjustments for more components than they are using in their analysis (i.e., a weight with "Yes" in columns corresponding to components that are not included in their analyses) if that weight also includes nonresponse adjustments for the components they are using. Although such a weight may result in a smaller analytic sample than would be available when using a weight that corresponds exactly to the components from which the analyst is using data, it will adjust for the potential differential nonresponse associated with the components. If researchers instead choose a weight with nonresponse adjustments for fewer components than they are using in their analysis, missing data should be examined for potential bias.

Exhibit 4-2. Weights developed for use with the ECLS-K:2011 third-grade data, by components for which nonresponse adjustments were made

	Fall kindergarten			Spring kindergarten			Fall first grade			Spring first grade			Fall second grade			Spring second grade			Spring third grade		
Weight	C1	P1	T1[1]	C2	P2	T2[2]	C3	P3	T3[3]	C4	P4	T4[4]	C5	P5	T5[5]	C6	P6	T6[6]	C7	P7	T7[7]
W7C7P_2	†	*Yes*	†	†	*Yes*	†	†	†	†	†	†	†	†	†	†	†	†	†	Yes	†	†
W7C17P_2	Yes	*Yes*	†	Yes	*Yes*	†	†	†	†	†	†	†	†	†	†	†	†	†	Yes	†	†
W7C17P_7T7	Yes	*Yes*	†	Yes	*Yes*	†	†	†	†	†	†	†	†	†	†	†	†	†	Yes	Yes	Yes
W7C17P_7	Yes	*Yes*	†	Yes	*Yes*	†	†	†	†	†	Yes	†	†	†	†	†	Yes	†	Yes	Yes	†
W7C17P_2T27	Yes	*Yes*	†	Yes	*Yes*	Yes	†	†	†	†	†	Yes	†	†	†	†	†	Yes	Yes	†	Yes
W7C17P_7T27A	Yes	*Yes*	†	Yes	*Yes*	Yes	†	†	†	†	†	Yes	†	†	†	†	†	Yes	Yes	Yes	Yes
W7C17P_7T27B	Yes	*Yes*	†	Yes	*Yes*	Yes	†	†	†	†	Yes	Yes	†	†	†	†	Yes	Yes	Yes	Yes	Yes
W7C17P_7T17	Yes	*Yes*	Yes	Yes	*Yes*	Yes	†	†	†	Yes	Yes	Yes	†	†	†	Yes	Yes	Yes	Yes	Yes	Yes
W7C27P_7T7	†	*Yes*	†	Yes	*Yes*	†	†	†	†	†	†	†	†	†	†	†	†	†	Yes	Yes	Yes
W7C27P_7A	†	*Yes*	†	Yes	*Yes*	†	†	†	†	Yes	†	†	†	†	†	Yes	†	†	Yes	Yes	†
W7C27P_2T7	†	*Yes*	†	Yes	*Yes*	†	†	†	†	Yes	†	†	†	†	†	Yes	†	†	Yes	†	Yes
W7C27P_7B	†	*Yes*	†	Yes	*Yes*	†	†	†	†	Yes	Yes	†	†	†	†	Yes	Yes	†	Yes	Yes	†
W7C27P_2T27	†	*Yes*	†	Yes	*Yes*	Yes	†	†	†	Yes	†	Yes	†	†	†	Yes	†	Yes	Yes	†	Yes
W7C27P_7T27	†	*Yes*	†	Yes	*Yes*	Yes	†	†	†	Yes	Yes	Yes	†	†	†	Yes	Yes	Yes	Yes	Yes	Yes
W7CF7P_7	Yes	*Yes*	†	Yes	*Yes*	†	Yes	Yes	†	Yes	Yes	†	Yes	Yes	†	Yes	Yes	†	Yes	Yes	†
W7CF7P_2T17	Yes	*Yes*	Yes	Yes	*Yes*	Yes	Yes	†	Yes	Yes	†	Yes	Yes	†	Yes	Yes	†	Yes	Yes	†	Yes

† Not applicable.

[1] A case had to have either teacher/classroom- or child-level teacher data from the fall kindergarten data collection to have a valid weight.

[2] A case had to have either teacher/classroom- or child-level teacher data from a teacher questionnaire or supplemental teacher questionnaire from the spring kindergarten data collection to have a valid weight.

[3] A case had to have child-level teacher data from the fall first-grade data collection to have a valid weight.

[4] A case had to have either teacher/classroom- or child-level teacher data from a first-grade or a kindergarten teacher questionnaire in the spring first-grade data collection to have a valid weight.

[5] A case had to have child-level teacher data from the fall second-grade data collection to have a valid weight.

[6] A case had to have either teacher/classroom- or child-level teacher data from the spring second-grade data collection to have a valid weight.

[7] A case had to have either teacher/classroom- or child-level teacher data from the third-grade data collection to have a valid weight.

NOTE: C indicates child assessment/child questionnaire data. P indicates parent interview data. T indicates teacher data. The weight designations (C1, C2, etc.) use the same prefixes that are used for other variables in the kindergarten–third grade data file. The prefixes are listed in exhibit 7-1. "Yes" indicates that the weight includes nonresponse adjustments for that component. An italicized *Yes* indicates an "or" condition.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Early Childhood Longitudinal Study, Kindergarten Class of 2010–11 (ECLS-K:2011), kindergarten–third grade (K-3) data file.

4.3.2 Computation of Sample Weights

To compute sample weights, first a base weight is computed to reflect the sample design, and then the base weight is adjusted for nonresponse and unknown eligibility. When there is an intermediate adjustment (e.g., a mover subsampling adjustment), it is the intermediate weight that is adjusted for nonresponse and not the base weight.

The nonresponse adjustment was computed as the sum of the base weights for all eligible units in a nonresponse class divided by the sum of the base weights of the respondent units in that nonresponse class. Nonresponse classes were formed separately for students in each type of school (public/Catholic/non-Catholic private). Within school type, analysis of school response propensity was done using school characteristics such as census region, locale, school enrollment size, and percent minority in school.[8] Nonresponse classes were created based on this analysis of response propensity. Similarly, student characteristics such as sex and race/ethnicity were used to analyze response propensity and create nonresponse classes. Rules for collapsing nonresponse adjustment cells were adopted; for example, cells had to have a maximum adjustment factor of 2 and a minimum cell size of 30.

Main sampling weights (indicated by the suffix 0) and replicate weights (indicated by the suffixes 1 to 40 or 1 to 80) were computed and included in the data file. In the sections that follow, only the main sampling weight is discussed, but any adjustment done to the main sampling weight was done to the replicate weights as well.

4.3.2.1 Student Base Weights

Only base-year respondents were eligible to participate in the third-grade data collection. The third-grade student base weight is the base-year student base weight adjusted for base-year nonresponse. The adjustment factor for base-year nonresponse is the sum of the base weights of the eligible students in the base year divided by the sum of the base weights of the base-year respondents within nonresponse adjustment classes.[9] For a description of the computation of the base-year student base weights, see section 4.2.2.3.1 of the base-year User's Manual.

[8] This was art of the school nonresponse adjustment that was done in the base year.
[9] A base-year respondent has child data (scoreable assessment data or height or weight measurements, or was excluded from assessment due to lack of accommodation for a disability) or parent interview data from at least one round of data collection in the base year.

4.3.2.2 Student Weights Adjusted for Mover Subsampling

The student base weight described in section 4.3.2.1 was adjusted to reflect the subsampling of movers described in section 4.2.3. For every student who is a base-year respondent, a "follow" flag was assigned a value of 0 (do not follow if student moves) or 1 (follow if student moves). A mover-subsampling adjustment factor was set to 1 if the student has never moved out of an original sampled school, 2 if the student moved out of the original sampled school at any time after the base year and was followed into his or her new school, and 0 if the student moved out of the original sampled school at any time after the base year and was not followed. The mover-subsampling adjusted weight is the product of the base weight described in section 4.3.2.1 and this mover-subsampling adjustment factor. Note that child assessments were not conducted and school staff questionnaires were not fielded for students who moved into nonsampled PSUs even if their flag was set to "follow"; such students are counted as nonrespondents in the adjustment for nonresponse on weights involving child assessment or teacher data.[10] However, an attempt was made to complete a parent interview for students who moved into nonsampled PSUs if their flag was set to "follow"; therefore, their parents would be counted as respondents in the adjustment for parent nonresponse if a parent interview was completed and as nonrespondents if a parent interview was not completed.

4.3.2.3 Student Nonresponse-Adjusted Weights

The mover-subsampling adjusted weight described in section 4.3.2.2 was adjusted for nonresponse to produce each of the student-level weights described in exhibit 4-1. For each weight, a response status was defined based on the presence of data for the particular component(s) and round(s) covered by the weight.

For example, for the weight W7C7P_20, an *eligible respondent* is a base-year respondent who satisfies both of these criteria: (1) the student has child assessment/child questionnaire data[11] from third grade, and (2) the student has parent interview data from either the fall or spring of kindergarten. An *ineligible* student is one who moved out of the country or is deceased or moved to another school and was not assigned to be followed. A student of *unknown eligibility* is one who could not be located. The remaining students are *eligible nonrespondents*.

[10] Only homeschooled children were considered "not eligible" for the collection of teacher data; they are the only students who were not included in the adjustment for nonresponse for teacher data.

[11] Having child assessment data includes (1) having reading and/or mathematics and/or science scores, (2) having at least one executive function score, (3) having a height or weight measurement, or (4) being excluded from assessment due to lack of accommodation for a disability.

Nonresponse adjustment was done in two steps: (1) adjustment for children whose eligibility was not determined (i.e., those who could not be located, or those who moved to another sampled PSU and who did not have parent interview data because the parent could not be contacted), and (2) adjustment for eligible nonrespondents. In the first step, a portion of cases with unknown eligibility was assumed to be ineligible. This proportion varied between 1.1 and 2.1 percent for the weights that do not include data from the fall collections, and between 1.6 and 3 percent for the weights that include data from the fall collections; it is highest for those weights that adjusted for teacher nonresponse. The latter is because children who were homeschooled were considered not eligible to have teacher data. Nonresponse classes were created using school and child characteristics and used in adjustments for both unknown eligibility and nonresponse.

4.3.2.4 Raking to Sample Control Totals

To reduce the variability due to the subsampling of movers and to ensure that the final weights continue to sum to the base-year population total, the student nonresponse-adjusted weights were raked to sample-based control totals using the third-grade student base weights. Raking is a calibration estimator that is closely related to poststratification. The poststratification adjustment procedure involves applying a ratio adjustment to the weights. Respondents are partitioned into groups, known as poststrata cells, and a single ratio adjustment factor is applied to the weights of all units in a given poststratification cell. The numerator of the ratio is a "control total" usually obtained from a secondary source; the denominator is a weighted total for the survey data. Therefore at the poststratum level, estimates obtained using the poststratified survey weights will correspond to the control totals used. If either the cell-level population counts are not available for all cells or the majority of the cell sample sizes are too small, raking is used to adjust the survey estimates to the known marginal totals of several categorical variables. Raking is essentially a multivariate poststratification. In the ECLS-K:2011, multiple background characteristics from schools, students, and parents were combined to create raking cells.

The student records included in the file used for computing the control totals are records of base-year eligible children. The sum of the base weights from this file is the estimated number of children who were in kindergarten in 2010–11. Raking was done within raking cells (also known as raking dimensions). The raking dimensions were based on single characteristics (e.g., locale) or a combination of characteristics (e.g., age and race/ethnicity). Chi-Square Automatic Interaction Detector (CHAID) analysis was used to determine the best set of raking cells.

The final weight is the product of the raking factor and the student nonresponse-adjusted weight. The raking factor was computed as the ratio of the base-year sample control total for a raking cell over the sum of the nonresponse-adjusted third-grade weights in that raking cell.

4.3.3 Characteristics of Sample Weights

The statistical characteristics of the sample weights are presented in table 4-13. For each weight, the number of cases with a nonzero weight is presented along with the mean weight, the standard deviation, the coefficient of variation (i.e., the standard deviation as a percentage of the mean weight), the minimum weight, the maximum weight, the design effect of the final weight, the skewness, the kurtosis, and the sum of weights. The procedure for raking to control totals included respondents and ineligible cases. Afterwards, weights of ineligible cases were set to zero. Because a portion of children of unknown eligibility was assumed to be ineligible (as discussed in section 4.3.2.3) and this adjustment for unknown eligibility was done within adjustment cells, there are small differences in the sums of weights.

Table 4-13. Characteristics of the third-grade weights

Weight	Number of cases	Mean	Standard deviation	CV[1] (× 100)	Minimum	Maximum	Design effect of the final weight	Skewness	Kurtosis	Sum
W7C7P_20	11,747	340.94	225.31	66.09	32.22	2,051.59	1.44	2.68	11.28	4,005,023.42
W7C17P_20	10,376	385.97	251.56	65.18	38.64	2,112.82	1.42	2.51	9.77	4,004,857.72
W7C17P_7T70	8,210	484.37	320.00	66.06	50.75	2,771.60	1.44	2.48	9.75	3,976,676.01
W7C17P_70	7,873	508.04	346.09	68.12	46.43	2,871.23	1.46	2.44	9.08	3,999,795.69
W7C17P_2T270	8,781	452.93	293.53	64.81	42.35	2,693.78	1.42	2.47	9.93	3,977,190.09
W7C17P_7T27A	7,469	532.40	351.65	66.05	45.10	3,027.37	1.47	2.31	8.52	3,976,514.55
W7C17P_7T27B0	6,755	588.10	401.15	68.21	52.08	3,157.84	1.44	2.23	7.59	3,972,645.00
W7C17P_7T170	6,740	589.41	401.94	68.19	51.83	3,273.87	1.47	2.23	7.63	3,972,626.35
W7C27P_7T70	9,101	437.18	291.81	66.75	37.32	2,728.42	1.45	2.59	10.76	3,978,798.16
W7C27P_7A0	9,646	415.17	276.15	66.52	39.02	2,512.94	1.44	2.56	10.37	4,004,692.22
W7C27P_2T70	10,619	374.62	245.14	65.44	35.79	2,273.99	1.43	2.65	11.28	3,978,131.30
W7C27P_7B0	8,674	461.49	323.66	70.13	45.82	2,758.06	1.49	2.59	10.26	4,002,942.94
W7C27P_2T270	9,590	414.78	268.16	64.65	37.19	2,504.57	1.42	2.49	10.13	3,977,764.38
W7C27P_7T270	7,381	538.43	372.76	69.23	53.45	3,077.50	1.48	2.33	8.41	3,974,134.50
W7CF7P_70	2,538	1,573.67	1,279.29	81.29	111.29	7,962.19	1.66	1.76	3.87	3,993,969.25
W7CF7P_2T170	2,901	1,352.55	1,039.27	76.84	32.39	7,760.95	1.59	2.08	7.24	3,923,758.16

[1] Coefficient of variation.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Early Childhood Longitudinal Study, Kindergarten Class of 2010–11 (ECLS-K:2011), kindergarten–third grade (K-3) data file.

A simple random sample (SRS) is completely self-weighting (i.e., no weights are necessary to produce estimates from this sample). In the ECLS-K:2011, the sample design is multistaged, with nonresponse encountered at both school and student levels. Weighting adjustments were necessary, but they tend to increase the variance of the estimates. As described in section 4.3, the design effect (*DEFF*)—defined as the ratio of the variance estimate under the actual sample design to the variance estimate obtained with an SRS of the same sample size—shows an estimate of the variance increase. One way of approximating this increase due to weighting is by way of the coefficient of variation (*CV*):

$$DEFF\ due\ to\ weighting = 1 + CV^2$$

In table 4-13, design effect due to weighting is included for each weight. For example, for weight W7C7P_20, the design effect due to weighting is $1+(0.6609)^2 = 1.44$, (i.e., the variance is increased by 44 percent due to weight adjustments). The design effect due to weighting varies between 1.42 to 1.66, with the highest design effects due to weighting for the fall subsample (weights W7CF7P_70 and W7CF7P_2T170). The fall subsample includes an additional sampling stage and is about 30 percent of the main sample (see section 4.2.1 for a discussion of the fall subsample).

4.3.4 Variance Estimation

The precision of the sample estimates derived from a survey can be evaluated by estimating the variances of these estimates. For a complex sample design such as the one employed in the ECLS-K:2011, replication and Taylor Series methods have been developed to correctly estimate variance. These methods take into account the clustered, multistage sampling design and the use of differential sampling rates to oversample targeted subpopulations. For the ECLS-K:2011, in which the first-stage self-representing sampling units (i.e., PSUs) were selected with certainty and the first-stage non-self-representing sampling units were selected with two units per stratum, the paired jackknife replication method (JK2) is recommended. This section describes the JK2 and the Taylor series methods, which can be used to compute correct standard errors for any analysis.

4.3.4.1 Jackknife Method

The final main sampling and replicate weights can be used to compute estimates of variance for survey estimates using the jackknife method with two PSUs per stratum (JK2) using several software packages, including WesVar, AM, SUDAAN, SAS, Stata, and R. In the jackknife method, each survey

estimate of interest is calculated for the full sample as well as for each of the *g* replicates, where *g* is 80 for the spring weights, and 40 for the fall weights. The variation of the replicate estimates around the full-sample estimate is used to estimate the variance for the full sample. The variance estimator is computed as the sum of squared deviations of the replicate estimates from the full sample estimate:

$$v(\hat{\theta}) = \sum_{g=1}^{G} (\hat{\theta}_{(g)} - \hat{\theta})^2$$

where θ is the survey estimate of interest,
$\hat{\theta}$ is the estimate of θ based on the full sample,
G is the number of replicates, and
$\hat{\theta}_{(g)}$ is the g^{th} replicate estimate of θ based on the observations included in the g^{th} replicate.

Each main sampling weight that does not include adjustments for nonresponse to components from the fall data collections has 80 corresponding replicate weights for use with the JK2 method. The replicate weights begin with the same characters as the main sampling weight and end with the numbers 1 to 80. For example, the replicate weights corresponding to weight W7C7P_20 are W7C7P_21 through W7C7P_280. For weights that include nonresponse adjustments for components from the fall data collections, there are 40 replicate weights. For example, weight W7CF7P_70 has W7CF7P_71 through W7CF7P_740 as replicate weights.

4.3.4.2 Taylor Series Method

Variance stratum and variance unit (first-stage sample unit [i.e., PSU]) identifiers were also created to be used in statistical software that computes variance estimates based on the Taylor series method (for example, AM, SUDAAN, SAS, SPSS, and Stata). In this method, a linear approximation of a statistic is formed and then substituted into the formula for calculating the variance of a linear estimate appropriate for the sample design.

If $Y = \left(Y_1, ..., Y_p\right)'$ denotes a p-dimensional vector of population parameters, $\hat{Y} = \left(\hat{Y}_1, ..., \hat{Y}_p\right)'$ is the corresponding vector of estimators based on a sample *s* of size $n(s)$, $\theta = g(Y)$ is the population parameter of interest, and $\theta = g(\hat{Y})$ is an estimator of θ, then

$$\hat{\theta} - \theta = \sum_{j=1}^{p} \frac{\partial g(Y)}{\partial y_j} (\hat{Y}_j - Y_j)$$

and

$$v(\hat{\theta}) = v\left(\sum_{j=1}^{p} \frac{\partial g(Y)}{\partial y_i}(\hat{Y}_j - Y_i)\right) = \sum_{j=1}^{p}\sum_{i=1}^{p} \frac{\partial g(Y)}{\partial y_j}\frac{\partial g(Y)}{\partial y_i} Cov\{\hat{Y}_j, \hat{Y}_i\}.$$

where
- $\hat{\theta}$ is the estimate of θ based on the full sample,
- θ is the survey estimate of interest,
- Y is a p-dimensional vector of population parameters,
- $\hat{Y}$ is a p-dimensional vector of estimators,
- y is an element of the vector Y, and
- $g(Y)$ is an estimator of θ.

The Taylor series method relies on a simplified procedure for estimating the variance for a linear statistic even with a complex sample design and is valid when analyzing data from large samples in which the first-stage units are sampled with replacement.[12] The stratum and first-stage unit identifiers needed to use the Taylor series method were assigned as follows: all independent sampling strata were numbered sequentially from 1 to h; within each sampling stratum, first-stage sampling units were numbered from 1 to n_h. Care was taken to ensure that there were at least two responding units in each stratum. For instances in which a stratum did not have at least two responding units, the stratum was combined with an adjacent stratum. Stratum and first-stage unit identifiers are provided in the data file. Each main sampling weight has corresponding stratum and PSU identifiers for use with the Taylor series method. The stratum and PSU identifiers begin with the same characters as the main sampling weight and end with either STR or PSU. For example, the stratum and PSU identifiers corresponding to weight W7C7P_20 are W7C7P_2STR and W7C7P_2PSU, respectively.

4.3.4.3 Specifications for Computing Standard Errors

For the jackknife replication method, the main sampling weight, the replicate weights, and the method of replication must be specified. All analyses of the ECLS-K:2011 data using the replication method should be done using JK2. As an example, an analyst using the main sample weight W7C7P_20 to compute child-level estimates of mean reading scores for third grade would need to specify W7C7P_20 as the main sampling weight, W7C7P_21 to W7C7P_280 as the replicate weights, and JK2 as the method of replication. Note that there are 40 replicate weights for each weight that involves the any of the fall data collections, and 80 replicate weights for each weight not involving any of the fall data collections.

[12] For the ECLS-K:2011, the sample of PSUs was selected using the Durbin method. In this method, two PSUs were selected per stratum without replacement with probability proportional to size and known joint probability of inclusion in such a way to allow variances to be estimated as if the units had been selected with replacement.

For the Taylor series method, the main sampling weight, the sample design, the nesting stratum, and PSU variables must be specified. As an example, an analyst using the main sample weight W7C7P_20 to compute child-level estimates of mean reading scores for third grade must specify the main sampling weight (W7C7P_20), the stratum variable (W7C7P_2STR), and the PSU variable (W7C7P_2PSU). The "with replacement" sample design option, WR, must also be specified if using SUDAAN.

4.3.5 Use of Design Effects

An important analytic device is to compare the statistical efficiency of survey estimates from a complex sample survey such as the ECLS-K:2011 with what would have been obtained in a hypothetical and usually impractical simple random sample (SRS) of the same size. In a stratified clustered design, stratification generally leads to a gain in efficiency over simple random sampling, but clustering has the opposite effect because of the positive intracluster correlation of the units in the cluster. The basic measure of the relative efficiency of the sample is the design effect (*DEFF*), defined as the ratio, for a given statistic, of the variance estimate under the actual sample design to the variance estimate that would be obtained with an SRS of the same sample size:

$$DEFF = \frac{VAR_{DESIGN}}{VAR_{SRS}}.$$

The root design effect *(DEFT)* is the square root of the design effect:

$$DEFT = \sqrt{DEFF} = \frac{SE_{DESIGN}}{SE_{SRS}}$$

where *SE* is the standard error of the estimate.

As discussed above, jackknife replication and Taylor Series can be used to compute more precise standard errors for data from complex surveys. If statistical analyses are conducted using software packages that assume the data were collected using simple random sampling (i.e., adjustments are not made using jackknife replication or the Taylor series method), the standard errors will be calculated under this assumption and will be incorrect. They can be adjusted using the average *DEFT*, although this method is

less precise than JK or Taylor series.[13] The standard error of an estimate under the actual sample design can be approximated as the product of the *DEFT* and the standard error assuming simple random sampling.

In the ECLS-K:2011, a large number of data items were collected from children, parents, teachers, school administrators, and before- and after-school care providers. Each item has its own design effect that can be estimated from the survey data. Standard errors and design effects are presented in the tables below for selected items from the study to allow analysts to see the range of standard errors and design effects for the study variables. They were computed using the paired jackknife replication method in the statistical software package WesVar.

However, as discussed in section 4.3.4, not all statistical analysis software packages have procedures to compute the variance estimate or standard error using the replication method, and some analysts may not have access to software packages that do have such procedures. In such situations the correct variance estimate or standard error can be approximated using the design effect or the root design effect.

As the first step in the approximation of a standard error, the analyst should normalize the overall sample weights for packages that use the weighted population size (*N*) in the calculation of standard errors (SPSS but not SAS). The normalized weight will sum to the sample size (*n*) and is calculated as

$$normalized\ weight = weight \times \frac{n}{N}$$

where *n* is the sample size (i.e., the number of cases with a valid main sampling weight) and *N* is the sum of weights. See table 4-13 for the sample size *n* and the sum of weights *N*.

[13] Common procedures in SAS, SPSS, and Stata assume simple random sampling. Data analysts should use the SURVEY procedure (SAS), the Complex Samples module (SPSS), or the SVY command (Stata) to account for complex samples.

As the second step in the approximation, the standard errors produced by the statistical software, the test statistics, or the sample weight used in analysis can be adjusted to reflect the actual complex design of the study. To adjust the standard error of an estimate, the analyst should multiply the standard error produced by the statistical software by the square root of the *DEFF* or the *DEFT* as follows:

$$SE_{DESIGN} = \sqrt{DEFF \times VAR_{SRS}} = DEFT \times SE_{SRS}$$

A standard statistical analysis package can be used to obtain VAR_{SRS} and SE_{SRS}. The *DEFF* and *DEFT* used to make adjustments can be calculated for specific estimates, can be the median *DEFF* and *DEFT* across a number of variables, or can be the median *DEFF* and *DEFT* for a specific subgroup in the population.

Adjusted standard errors can then be used in hypothesis testing, for example, when calculating *t* and *F* statistics. A second option is to adjust the *t* and *F* statistics produced by statistical software packages using unadjusted (i.e., SRS) standard errors. To do this, first conduct the desired analysis weighted by the normalized weight and then divide a *t* statistic by the *DEFT* or divide an *F* statistic by the *DEFF*. A third alternative is to create a new analytic weight variable in the data file by dividing the normalized analytic weight by the DEFF and using the adjusted weight in the analyses.

Table 4-14 shows estimates, standard errors, and design effects for 50 means and proportions selected from the third-grade data collection. Table 4-15 shows the median design effects for the same items but for subgroups. For each survey item, table 4-14 presents the number of cases for which data are nonmissing, the estimate, the standard error taking into account the actual sample design (*Design SE*), the standard error assuming SRS (*SRS SE*), the root design effect (*DEFT*), and the design effect (*DEFF*). Standard errors (*Design SE*) were produced in WesVar using JK2 based on the actual ECLS-K:2011 complex design. For each survey item, the variable name as it appears in the data file is also provided in the table.

In general, design effects for the third grade are comparable to design effects for the spring of second grade for similar items. As was the case in earlier years, design effects for the teacher-level data and the school-level data are quite large compared to the design effects of items coming from the child assessment or parent interview because the intraclass correlation is 100 percent for children in the same class with the same teacher and for children in the same school.

Table 4-14. Standard errors and design effects for selected survey items, third grade: Spring 2014

Survey item	Variable	*n*	Estimate	*SE*	SE_{SRS}	*DEFT*	*DEFF*
Scores (mean)[1, 2]							
Mathematics scale score	X7MSCALK3	11,653	97.60	0.305	0.132	2.315	5.361
Reading scale score	X7RSCALK3	11,652	110.21	0.235	0.114	2.055	4.224
Science scale score	X7SSCALK3	11,641	54.84	0.233	0.092	2.540	6.453
Mathematics theta score	X7MTHETK3	11,653	3.05	0.016	0.007	2.316	5.362
Reading theta score	X7RTHETK3	11,652	2.61	0.012	0.006	2.063	4.255
Science theta score	X7STHETK3	11,641	2.20	0.018	0.007	2.515	6.327
Difference in mathematics scale score between spring second grade and spring third grade	X7MSCALK3 – X6MSCALK3	11,653	16.30	0.162	0.065	2.498	6.240
Difference in reading scale score between spring second grade and spring third grade	X7RSCALK3 – X6RSCALK3	11,652	13.67	0.094	0.063	1.502	2.256
Difference in science scale score between spring second grade and spring third grade	X7SSCALK3 – X6SSCALK3	11,641	11.32	0.101	0.052	1.948	3.793
Difference in mathematics theta score between spring second grade and spring third grade	X7MTHETK3 – X6MTHETK3	11,653	0.59	0.009	0.004	2.536	6.433
Difference in reading theta score between spring second grade and spring third grade	X7RTHETK3 – X6RTHETK3	11,652	0.40	0.005	0.003	1.531	2.343
Difference in science theta score between spring second grade and spring third grade	X7STHETK3 – X6STHETK3	11,641	0.57	0.009	0.004	2.037	4.149
Approaches to Learning-Teacher	X7TCHAPP	9,028	3.08	0.011	0.008	1.433	2.054
Externalizing Problem Behaviors-Teacher	X7TCHEXT	9,016	1.69	0.009	0.006	1.415	2.003
Internalizing Problem Behaviors-Teacher	X7TCHINT	8,967	1.61	0.009	0.006	1.526	2.330
Interpersonal Skills-Teacher	X7TCHPER	8,928	3.14	0.010	0.007	1.387	1.924
Self-control-Teacher	X7TCHCON	8,898	3.27	0.009	0.007	1.299	1.687
Student characteristics from parent interview (percent)[3]							
Parent is currently married/in civil union/in domestic partnership	P7CURMAR	9,627	71.30	0.881	0.461	1.912	3.655
Non-English language used at home	P7ANYLNG	9,596	25.68	1.100	0.446	2.466	6.080
At least one parent has high school education	X7PAR1ED_I, X7PAR2ED_I	9,646	91.81	0.470	0.279	1.683	2.833
Has child care from relative	P7RELNOW	9,334	25.86	0.669	0.453	1.475	2.177
Child participated in organized athletic activities	P7ATHLET	9,418	59.69	0.950	0.505	1.880	3.535
Child participated in performing arts programs	P7PERFRM	9,403	20.84	0.569	0.418	1.360	1.849
Child has art classes or lessons	P7ARTLSN	9,405	11.91	0.465	0.334	1.391	1.936
Parent volunteered at school	P7VOLSCH	9,616	50.46	1.073	0.510	2.104	4.428
Often or sometimes true that parent could not afford balanced meals in last 12 months	P7BLMEAL	9,120	10.63	0.623	0.322	1.932	3.732

See notes at end of table.

Table 4-14. Standard errors and design effects for selected survey items, spring third grade: Spring 2014—Continued

Survey item	Variable	*n*	Estimate	*SE*	SE_{SRS}	*DEFT*	*DEFF*
Student characteristics from teacher questionnaire (percent**)**[2]							
Teacher used non-English languages in class	A7TSPNH etc.[4]	4,123	45.30	1.620	0.775	2.090	4.369
Teacher has regular or standard state certificate or advanced professional certificate	*A7STATCT*	8,970	90.83	0.597	0.305	1.959	3.837
Teacher has bachelor's degree or higher	A7HGHSTD	9,020	99.93	0.038	0.027	1.404	1.970
Teacher agreed/strongly agreed that school administrator encouraged staff	A7ENCOUR	9,005	78.34	1.275	0.434	2.936	8.623
Teacher agreed/strongly agreed that child misbehavior interfered with teaching	A7MISBHV	8,995	28.50	1.210	0.476	2.543	6.465
At least 50 percent of parents volunteered regularly	A7REGHLP	9,009	7.08	0.732	0.270	2.708	7.331
Student received individual tutoring in math	T7TTRMT	8,951	19.18	0.795	0.416	1.910	3.649
Student reading skills are below grade level	T7RTREAD	8,997	25.54	0.770	0.460	1.675	2.805
Parent was very involved at the school	T7PARIN	8,990	29.71	0.726	0.482	1.507	2.270
Student was in program to learn English skills	T7PRGES	1,694	54.86	2.691	1.209	2.226	4.955
School characteristics from school administrator questionnaire (percent)[2]							
Classroom needs always adequate	S7CLSSOK	733	83.60	3.280	1.367	2.399	5.753
Computer lab needs always adequate	S7COMPOK	733	61.30	4.709	1.799	2.618	6.853
Offered child care for meetings/events	S7MTGCAR	730	47.77	4.946	1.849	2.675	7.158
Parents are active in school programs, agree/ strongly agree	S7INVOLV	8,626	82.81	1.330	0.406	3.273	10.714
Received Title I funding	S7TT1	7,640	72.88	2.337	0.509	4.595	21.117
Bullying happened on occasion	S7BULLY	8,601	74.72	1.579	0.469	3.369	11.349
Had problem with crime in area, somewhat of a problem or a big problem	S7CRIME	728	37.22	4.853	1.792	2.709	7.338
Other student characteristics (mean)[1,3]							
Student's age (in months)	X7AGE	11,679	109.03	0.097	0.042	2.332	5.437
Student's height	X7HEIGHT	11,539	53.28	0.038	0.026	1.448	2.097
Student's weight	X7WEIGHT	11,480	75.81	0.277	0.194	1.430	2.046
Student's body mass index (BMI)	X7BMI	11,470	18.61	0.056	0.037	1.495	2.236
Total number of persons in household	X7HTOTAL	9,646	4.67	0.023	0.015	1.583	2.506
Total number of siblings in household	X7NUMSIB	9,646	1.61	0.022	0.011	1.916	3.671
Total number of persons in household less than 18 years of age	X7LESS18	9,622	2.57	0.020	0.011	1.756	3.082

[1] Estimates of assessment scores, age, height, weight and BMI computed using weight W7C7P_20.
[2] Estimates of variables from the teacher and school administrator questionnaires computed using weight W7C27P_7T70.
[3] Estimates of variables from the parent interview computed using weight W7C27P_7A0.
[4] This characteristic was created using the series of variables A7TSPNH, A7TSPNH, A7TVTNM, A7TCHNS, A7TJPNS, A7TKRN, A7TFLPN, A7ARBIC, A7TINDN, A7OTHLG (teacher questionnaire items A7 A13B to A7 A13K).
NOTE: *SE* is the standard error based on the sample design. SE_{srs} is the standard error assuming simple random sampling. *DEFT* is the root design effect. *DEFF* is the design effect. Estimates produced with the restricted-use file. Due to top- and bottom-coding, the same estimates may not be obtained from the public-use file.
SOURCE: U.S. Department of Education, National Center for Education Statistics, Early Childhood Longitudinal Study, Kindergarten Class of 2010–11 (ECLS-K:2011), spring 2014.

Table 4-15. Median design effects for the spring third-grade survey items, by school characteristic: Spring 2014

Characteristic[1]	Spring third grade	
	DEFT	*DEFF*
All schools	1.953	3.815
School affiliation		
Public	1.931	3.730
Private	1.459	2.128
Catholic private	1.306	1.705
Other private	1.552	2.409
Census region[2]		
Northeast	1.854	3.439
Midwest	1.909	3.645
South	2.039	4.159
West	1.952	3.811
Locale		
City	1.729	2.989
Suburb	1.844	3.401
Town	1.698	2.884
Rural	1.684	2.836
School enrollment		
1 to 149 students	1.640	2.690
149 to 299 students	1.597	2.552
300 to 499 students	1.506	2.267
500 to 749 students	1.809	3.274
750 or more students	1.686	2.841
Percent minority enrolled		
0 to 50	1.877	3.525
16 to 45	1.738	3.022
46 to 85	1.644	2.702
86 to 100	1.805	3.259

[1] School characteristics are from the composites X7SCTYP (school affiliation), X7REGION (census region), X7LOCALE (locale), X7ENRLS (school enrollment), and X7RCETH (percent minority enrolled).
[2] States in each region:
Northeast: Connecticut, Maine, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, and Vermont.
Midwest: Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, South Dakota, and Wisconsin.
South: Alabama, Arkansas, Delaware, Florida, Georgia, Kentucky, Louisiana, Maryland, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, Virginia, West Virginia, and the District of Columbia.
West: Alaska, Arizona, California, Colorado, Hawaii, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, and Wyoming.
NOTE: *DEFT* is the root design effect. *DEFF* is the design effect.
SOURCE: U.S. Department of Education, National Center for Education Statistics, Early Childhood Longitudinal Study, Kindergarten Class of 2010–11 (ECLS-K:2011), spring 2014.

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5. RESPONSE RATES

This chapter presents unit response rates and overall response rates for the different instruments included in the third-grade round of data collection (spring 2014) for the ECLS-K:2011. A unit response rate is the ratio of the number of units with a completed interview, questionnaire, or assessment (for example, the units are students with a completed assessment) to the number of units sampled and eligible for the interview, questionnaire, or assessment. Unit response rates are used to describe the outcomes of data collection activities and to measure the quality of the study. The overall response rate indicates the percentage of eligible units with a completed interview, questionnaire, or assessment, taking all survey stages into account.

5.1 Study Instruments

For the ECLS-K:2011 third-grade data collection, there were several survey instruments, as shown in exhibit 5-1. Exhibit 5-1 also indicates how much information had to be collected for each instrument for it to be considered "complete" and, therefore, for a case to be considered a respondent to that instrument for the purpose of calculating response rates. Response rates are presented in section 5.2 for all of these instruments.

Exhibit 5-1. ECLS-K:2011 survey instruments and definition of completed instrument: Spring 2014

Survey instrument	Spring 2014	Definition of completed instrument
Child assessment	Yes	Student has at least one set of scoreable data for mathematics, reading, or science OR at least one executive function score OR a height or weight measurement OR one completed item in the child questionnaire (CQ).
Parent interview	Yes	Parent answered all applicable items in the family structure section of the questionnaire (FSQ) through item FSQ200 on current marital status.
Teacher-level teacher questionnaire A	Yes	Teacher completed at least one item in this questionnaire
Teacher-level teacher questionnaire S	Yes	Teacher completed at least one item in this questionnaire
Student-level teacher questionnaire	Yes	Teacher completed at least one item in this questionnaire
Teacher-level special education teacher questionnaire	Yes	Student has special education teacher, and teacher completed at least one item in this questionnaire
Student-level special education teacher questionnaire	Yes	Student has special education teacher, and teacher completed at least one item in this questionnaire
School administrator questionnaire[1]	Yes	School administrator completed at least one item in this questionnaire

[1] In the third-grade data collection, there were two versions of the school administrator questionnaire. SAQ-A was given to administrators in schools that were new to the study or administrators in schools for which there was no previously completed SAQ. SAQ-B was given to administrators in schools that had a previously completed SAQ..
SOURCE: U.S. Department of Education, National Center for Education Statistics, Early Childhood Longitudinal Study, Kindergarten Class of 2010–11 (ECLS-K:2011), spring 2014.

5.2 Unit Response Rates and Overall Response Rates

The tables in this section present both weighted and unweighted response rates for the different components of data collection shown above in exhibit 5-1 (the child assessment, parent interview, general classroom teacher questionnaires, school administrator questionnaire (SAQ), and special education teacher questionnaires) computed at the student level. Response rates for all students and response rates by selected school and student background characteristics are provided.

Only weighted rates are discussed in this section. The unweighted rate provides a useful description of the success of the operational aspects of the survey. The weighted rate gives a better description of the success of the survey with respect to the population sampled since the weights allow for inference of the sample data (including response status) to the population level. Both rates are usually similar unless the probabilities of selection and the unit response rates in the categories with different selection probabilities vary considerably. All of the unit response rates discussed in this chapter are weighted unless noted specifically in the text, since the main purpose of this chapter is to describe the success of the survey with respect to the survey population. The weights used in the computation of the student-level unit response rates are the third-grade student base weights. For a description of these weights, see chapter 4.

In order to compute response rates by different characteristics, the selected characteristics must be known for both respondents and nonrespondents. Multiple sources were used to obtain information on school characteristics in order to have data that were as complete as possible for the calculation of response rates. For respondents, data for school census region, school locale, school type, and school enrollment come from the composite variables derived for the data file. For nonrespondents, school characteristic variables were computed for use in the response rate calculations using the same process that was used to compute the data file composite variables. Information on the derivation of variables indicating school region (X7REGION) and school locale (X7LOCALE) is provided in section 7.5.4.8. Information on the derivation of the variable indicating school type (X7SCTYP) is provided in section 7.5.4.1. Information on the derivation of the variable indicating school enrollment (X7ENRLS) is provided in section 7.5.4.3. Information on the derivation of the variable indicating percent minority enrollment (X7RCETH) is provided in section 7.5.4.4.

Information on the child characteristics presented in the tables comes from the third-grade data collection. Information on student sex comes from the composite variable X_CHSEX_R (described in section 7.5.1.3). Information on student race/ethnicity comes from the composite variable X_RACETH_R (described in section 7.5.1.4). Information on student year of birth comes from the composite variable X_DOBYY_R (described in section 7.5.1.1). These composites were derived for all base-year respondents; therefore, they exist for third-grade respondents as well as nonrespondents.

When necessary, comparisons in this chapter were examined to ensure that the differences discussed were statistically significant at the 95 percent level of confidence. For example, this was done for tables in sections 5.3 when comparing characteristics of the data using different weights, or when comparing data from different years. Significance tests were not conducted for statements related to response rates in

section 5.2 because the base weights were used to produce all rates, which are calculated over the same sample of eligible cases.

The overall response rate indicates the percentage of possible interviews, questionnaires, or assessments completed, taking all survey stages into account. In the base-year data collection, children were identified for assessment in a two-stage process. The first stage involved the recruitment of sampled schools to participate in the study. Assessments were then conducted for the sampled children whose parents consented to the children's participation. In third grade, children were contacted for follow-up unless they (1) became ineligible for the study because they had moved out of the country or had died, or (2) were movers who were not sampled for follow-up and, therefore, were excluded from data collection. The response rate for the child assessment is the percentage of sampled and eligible children not subsampled out as an unfollowed mover who completed the assessment. The overall weighted response rate is the product of the base-year before-substitution school response rate for all schools (62.7 percent) and the third-grade weighted child assessment response rate. The overall unweighted response rate is the product of the unweighted base-year before-substitution response rate for all schools (61.3 percent) and the third-grade unweighted child assessment response rate. In the overall response rate tables, the response rates by characteristic are also a product of the third-grade response rate by the corresponding (weighted or unweighted) overall base-year rate.

Because children were sampled in the base year and school participation after the base year was not required for the children to stay in the study, the school response rates used to calculate the student-level response rates in these tables are those from the base year (the base-year response rates are presented in table 5-2 of the *Early Childhood Longitudinal Study, Kindergarten Class of 2010–11 (ECLS-K:2011), User's Manual for the ECLS-K:2011 Kindergarten Data File and Electronic Codebook, Public Version* (NCES 2015-074) (Tourangeau et al. 2015), hereinafter referred to as the base-year User's Manual).

In the third-grade data collection, all 18,174 base-year respondents were part of the sample. Of these, about 160 became ineligible for the data collection because they had moved out of the country sometime between the base year and the start of the third-grade data collection and 5 had died. An additional 2,620 students were not included in the data collection because they were movers who were subsampled out of the study (see section 4.2.3 for information on mover subsampling). After these exclusions for ineligibility and subsampling, the number of children followed for data collection in third-grade was about 15,390. This number is the denominator used to calculate the unweighted parent interview response rate. This is also the basis of the denominator used to calculate the unweighted child assessment response rate. However, children who were excluded from the assessment because the study did not provide needed accommodations for a disability, such as an assessment in Braille, are not included in the calculation of response rates for the child assessment. Therefore, the denominator used to calculate the unweighted child

assessment response rate is about 15,310. The denominator used to calculate the teacher and the school administrator response rates is 12,990. This denominator is lower than the ones used to calculate response rates for the child assessment and parent interview because it excludes students who were not eligible for the teacher and administrator questionnaire components: homeschooled children and children who did not have either a complete child assessment score or parent interview (per the definition of complete provided in Exhibit 5-1) for the third-grade collection. The parent and teacher rates are computed at the student level, meaning they indicate the percentages of students for whom a parent interview was completed or for whom a teacher questionnaire was received. The school administrator rate is also computed at the student level and indicates the percentage of students whose school administrator completed a questionnaire. There were two versions of the administrator questionnaire but response rates are not calculated separately for each version since a student would only have data for one version.

Table 5-1 presents weighted and unweighted response rates for the child assessment and the parent interview in the third-grade data collection by selected school characteristics. Response rates for the child questionnaire are the same as for the child assessment because all children with assessment data have child questionnaire data and vice-versa. Researchers should note that the "unknown/homeschool group" has a low response rate, in large part because this group includes unlocatable cases who are, by default, nonrespondents. This unknown/homeschool group (1,736 cases) is about 11 percent of the overall sample of eligible cases. Because their school characteristics are unknown, cases in this group cannot be included in a specific school characteristics category. This may have an impact on the calculation of the response rates by school characteristics that should be considered. Specifically, including these unlocatable cases in a separate category likely results in response rates by different school characteristics being higher than they would be if the unlocatable cases were included as nonrespondents when calculating response rates for the different school characteristic categories. Not including the "unknown" subgroups, the lowest response rate by school characteristics for the child assessment/child questionnaire was for students in non-Catholic private schools (83.5 percent). For other subgroups, response rates ranged from 88.9 to 96.4 percent. For the parent interview, the lowest response rate by school characteristics was for students in schools in the highest percent minority group (69.8 percent). Parent interview response rates ranged from 72.9 to 83.0 percent for all other subgroups.

Table 5-1. Response rates for child assessment and parent interview, by selected school characteristics, third grade: Spring 2014

School characteristic[3]	Child assessment[1]			Parent interview[2]		
	Number of respondents	Response rates		Number of respondents	Response rates	
		Weighted	Unweighted		Weighted	Unweighted
All students	12,896	79.9	84.2	11,083	70.1	72.0
School type						
Public	11,690	95.2	95.1	9,489	76.7	76.7
Private	1,161	88.5	90.3	1,005	77.8	78.1
Catholic	594	94.2	94.1	519	83.0	82.3
Other private	567	83.5	86.6	486	73.3	74.2
Homeschool/ Unknown school type	45	2.7	2.6	589	34.6	33.9
Census region[4,5]						
Northeast	2,150	93.5	94.5	1,780	77.4	78.0
Midwest	2,690	95.7	95.2	2,190	77.4	76.9
South	4,570	95.3	95.3	3,830	78.8	79.1
West	3,440	93.4	93.5	2,700	73.2	73.2
Unknown	50	2.7	2.6	590	34.6	33.9
Locale						
City	4,192	93.8	94.2	3,303	74.3	73.9
Suburb	4,531	94.1	94.1	3,739	77.1	77.2
Town	938	96.4	95.7	772	77.7	78.0
Rural	2,842	95.6	95.7	2,401	79.7	80.2
Unknown	393	18.0	18.7	868	41.5	41.3

See notes at end of table.

Table 5-1. Response rates for child assessment and parent interview, by selected school characteristics, third grade: Spring 2014—Continued

School characteristic[3]	Child assessment[1]			Parent interview[2]		
	Number of respondents[4]	Response rates		Number of respondents	Response rates	
		Weighted	Unweighted		Weighted	Unweighted
School enrollment						
1 to 149 students	420	88.9	92.5	355	72.9	77.7
150 to 299 students	1,535	93.6	94.2	1,252	76.9	76.6
300 to 499 students	3,819	94.6	94.9	3,130	76.5	77.2
500 to 749 students	4,825	95.5	95.1	3,978	78.5	77.9
750 or more students	2,220	95.1	94.8	1,749	74.7	74.4
Unknown	77	4.3	4.3	619	35.4	34.6
Percent minority enrolled						
0 to 15	3,093	95.2	95.2	2,659	81.4	81.4
16 to 45	3,660	95.1	95.2	3,135	80.5	81.0
46 to 85	2,973	94.0	93.9	2,358	73.8	74.0
86 to 100	3,077	94.7	94.7	2,300	69.8	70.5
Unknown	93	5.2	5.2	631	35.7	35.0

[1] Student had scoreable reading or mathematics or science data, or at least one executive function score, or a height or weight measurement, or a completed item from the Child Questionnaire.
[2] Parent answered all applicable items in the family structure section of the questionnaire (FSQ) through item FSQ200 on current marital status.
[3] School characteristics were taken from the third-grade school administrator questionnaire (SAQ) when available. When third-grade SAQ data were not available, information was taken from prior-round SAQ responses, the Common Core of Data (CCD), or the Private School Survey (PSS). The versions of the school characteristics variables used to produce this table were specially derived for the User's Manual and are not included in the data file.
[4] States in each region:
Northeast: Connecticut, Maine, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, and Vermont.
Midwest: Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, South Dakota, and Wisconsin.
South: Alabama, Arkansas, Delaware, Florida, Georgia, Kentucky, Louisiana, Maryland, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, Virginia, West Virginia, and the District of Columbia.
West: Alaska, Arizona, California, Colorado, Hawaii, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, and Wyoming.
[5] Sample sizes rounded to the nearest 10 and, therefore, may not sum to total.
NOTE: The weighted response rates were calculated using the third-grade student base weight.
SOURCE: U.S. Department of Education, National Center for Education Statistics, Early Childhood Longitudinal Study, Kindergarten Class of 2010–11 (ECLS-K:2011), spring 2014.

Table 5-2 presents weighted and unweighted response rates for the child assessment and the parent interview in the third-grade data collection by selected student characteristics. For the child assessment, Hispanic students had the highest response rate at 84.4 percent. Among subgroups with a large number of sample members, Black students had a lower response rate (72.7 percent), while some subgroups with small sample sizes also had lower response rates: American Indians/Alaskan Natives (72.4 percent) and students born in 2006 (71.3 percent). For the parent interview, the highest response rate was for White students (74.5 percent), while the lowest parent response rates were for the following subgroups: Native Hawaiians/Other Pacific Islanders (57.8 percent) and Black students (58.6 percent).

Table 5-2. Response rates for child assessment and parent interview, by selected student characteristics, third grade: Spring 2014

Student characteristic	Child assessment[1]			Parent interview[2]		
	Number of respondents	Response rates		Number of respondents	Response rates	
		Weighted	Unweighted		Weighted	Unweighted
All students	12,896	79.9	84.2	11,083	70.1	72.0
Sex						
Male	6,593	79.7	83.9	5,680	70.1	71.8
Female	6,286	80.4	84.7	5,403	70.5	72.5
Unknown	17	44.7	53.1	0	0.0	0.0
Race/ethnicity						
White, non-Hispanic	6,106	80.1	85.4	5,545	74.5	77.2
Black, non-Hispanic	1,415	72.7	77.6	1,126	58.6	61.3
Hispanic	3,536	84.4	86.3	2,874	68.6	69.8
Asian, non-Hispanic	1,114	82.8	85.2	895	67.3	68.1
Native Hawaiian/ Other Pacific Islander, non-Hispanic	73	75.6	78.5	55	57.8	59.1
American Indian or Alaska Native, non-Hispanic	106	72.4	70.7	91	62.2	60.3
Two or more races, non-Hispanic	534	75.4	80.9	497	70.1	74.6
Unknown	12	37.4	44.4	0	0.0	0.0
Year of birth[3]						
2003	60	76.9	81.2	50	60.9	63.0
2004	3,930	79.8	84.6	3,450	71.2	73.8
2005	8,890	80.1	84.2	7,570	69.8	71.4
2006	10	71.3	65.0	10	61.1	60.0
Unknown	#	18.9	33.3	0	0.0	0.0

Rounds to zero.

[1] Student had scoreable reading or mathematics or science data, or at least one executive function score, or a height or weight measurement, or a completed item from the Child Questionnaire.

[2] Parent answered all applicable items in the Family Structure Questions (FSQ) section of the questionnaire through item FSQ200 on current marital status.

[3] Sample sizes rounded to the nearest 10 and, therefore, may not sum to total.

NOTE: The weighted response rates were calculated using the third-grade student base weight.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Early Childhood Longitudinal Study, Kindergarten Class of 2010–11 (ECLS-K:2011), spring 2014.

Table 5-3 and table 5-5 present weighted and unweighted response rates for the three general classroom teacher questionnaires by selected school characteristics. The response rates are 92.3 percent, 91.9 percent, and 92.1 percent for the teacher-level teacher questionnaire, the teacher-level subject-area

questionnaire, and the student-level teacher questionnaire, respectively. The pattern of response rates is almost the same for all three teacher questionnaires. By school characteristics, the highest rates were between 96.6 and 97.9 percent for students in schools with fewer than 149 students, for students in schools with 15 percent or fewer students who were racial/ethnic minorities, for students in rural schools, and for students in Catholic schools. The lowest rates (between 86.1 and 88.0 percent) were for students in cities or students in schools with at least 86 percent of students who were racial/ethnic minorities.

Table 5-3. Response rates for teacher-level teacher questionnaires, by selected school characteristics, third grade: Spring 2014

	Teacher questionnaire (teacher level)			Teacher questionnaire (subject area)		
	Number of	Response rates		Number of	Response rates	
School characteristic[1]	respondents	Weighted	Unweighted	respondents	Weighted	Unweighted
All students	11,983	92.3	92.2	11,933	91.9	91.9
School type						
Public	10,864	92.2	91.9	10,816	91.7	91.5
Private	1,119	94.3	95.9	1,117	94.0	95.7
Catholic	584	96.9	98.2	584	96.9	98.2
Other private	535	91.7	93.5	533	91.2	93.2
Census region[2,3]						
Northeast	1,960	90.4	90.4	1,950	89.9	90.0
Midwest	2,580	95.1	94.9	2,570	94.5	94.5
South	4,320	92.9	93.2	4,310	92.8	93.0
West	3,130	90.4	90.0	3,100	89.7	89.4
Locale						
City	3,709	87.9	87.5	3,703	87.8	87.4
Suburb	4,246	92.1	92.7	4,207	91.0	91.9
Town	903	95.7	95.1	900	95.6	94.7
Rural	2,792	96.6	97.2	2,791	96.6	97.2
Unknown	333	95.2	94.9	332	95.0	94.6

See notes at end of table.

Table 5-3. Response rates for teacher-level teacher questionnaires, by selected school characteristics, third grade: Spring 2014—Continued

School characteristic[1]	Teacher questionnaire (teacher level)			Teacher questionnaire (subject area)		
	Number of respondents	Response rates		Number of respondents	Response rates	
		Weighted	Unweighted		Weighted	Unweighted
School enrollment						
1 to 149 students	417	96.9	98.1	417	96.9	98.1
150 to 299 students	1,435	92.9	92.5	1,432	92.2	92.3
300 to 499 students	3,632	94.2	94.1	3,613	93.8	93.6
500 to 749 students	4,504	91.9	92.3	4,483	91.5	91.9
750 or more	1,978	90.0	88.4	1,972	89.8	88.1
Unknown	17	51.2	48.6	16	48.9	45.7
Percent minority enrolled						
0 to 15	3,055	97.9	98.1	3,050	97.5	97.9
16 to 45	3,513	94.8	95.0	3,490	94.2	94.4
46 to 85	2,696	89.1	89.4	2,687	88.8	89.1
86 to 100	2,686	86.4	86.3	2,673	86.1	85.9
Unknown	33	67.4	64.7	33	67.4	64.7

[1] School characteristics were taken from the third-grade school administrator questionnaire (SAQ) when available. When third-grade SAQ data were not available, information was taken from prior-round SAQ responses, the Common Core of Data (CCD), or the Private School Survey (PSS). The versions of the school characteristics variables used to produce this table were specially derived for the User's Manual and are not included in the data file.

[2] States in each region:
Northeast: Connecticut, Maine, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, and Vermont.
Midwest: Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, South Dakota, and Wisconsin.
South: Alabama, Arkansas, Delaware, Florida, Georgia, Kentucky, Louisiana, Maryland, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, Virginia, West Virginia, and the District of Columbia.
West: Alaska, Arizona, California, Colorado, Hawaii, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, and Wyoming.

[3] Sample sizes rounded to the nearest 10 and, therefore, may not sum to total.

NOTE: A respondent is defined as a child for whom a teacher questionnaire was returned with at least one response, and who had either child assessment or parent interview data. The weighted response rates were calculated using the third-grade student base weight.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Early Childhood Longitudinal Study, Kindergarten Class of 2010–11 (ECLS-K:2011), spring 2014.

Table 5-4 and table 5-6 present weighted and unweighted response rates for the three general classroom teacher questionnaires, by selected student characteristics. The highest subgroup rates were observed for children born in 2003 (99.1 percent for both the teacher-level teacher questionnaire and the teacher-level subject-area questionnaire, and 95.3 percent for the student-level teacher questionnaire), and White students (95.0 percent, 94.4 percent, and 94.7 percent for the teacher-level teacher questionnaire, the teacher-level subject-area questionnaire, and student-level teacher questionnaire, respectively. The subgroups with the lowest rates were students born in 2006 (75.0 percent for all three questionnaires) and Asian students (between 80.3 and 80.9 percent for the three questionnaires). These patterns of response by subgroup are similar to the patterns seen in the spring of second grade.

Table 5-4. Response rates for teacher-level teacher questionnaires, by selected student characteristics, third grade: Spring 2014

Student characteristic	Teacher questionnaire (teacher level)			Teacher questionnaire (subject area)		
	Number of respondents	Response rates		Number of respondents	Response rates	
		Weighted	Unweighted		Weighted	Unweighted
All students	11,983	92.3	92.2	11,933	91.9	91.9
Sex						
Male	6,127	92.3	92.2	6,102	91.9	91.9
Female	5,841	92.3	92.3	5,816	91.9	91.9
Unknown	15	85.5	88.2	15	85.5	88.2
Race/ethnicity						
White, non-Hispanic	5,856	95.0	95.6	5,824	94.4	95.1
Black, non-Hispanic	1,299	89.7	90.4	1,303	90.0	90.7
Hispanic	3,233	90.4	90.5	3,209	89.8	89.9
Asian, non-Hispanic	919	80.7	81.6	922	80.9	81.9
Native Hawaiian/ Other Pacific Islander, non-Hispanic	67	91.1	91.8	67	91.1	91.8
American Indian or Alaska Native, non-Hispanic	100	93.6	92.6	100	93.6	92.6
Two or more races, non-Hispanic	496	91.1	92.2	495	90.8	92.0
Unknown	13	100.0	100.0	13	100.0	100.0
Year of birth[1]						
2003	60	99.1	98.3	60	99.1	98.3
2004	3,740	94.4	94.5	3,730	94.1	94.2
2005	8,170	91.4	91.3	8,130	90.9	90.8
2006	10	75.0	71.4	10	75.0	71.4
Unknown	#	100.0	100.0	#	100.0	100.0

Rounds to zero.

[1] Sample sizes rounded to the nearest 10 and, therefore, may not sum to total.

NOTE: A respondent is defined as a child for whom a teacher questionnaire was returned with at least one response, and who had either child assessment or parent interview data. The weighted response rates were calculated using the third-grade student base weight.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Early Childhood Longitudinal Study, Kindergarten Class of 2010–11 (ECLS-K:2011), spring 2014.

Table 5-5. Response rates for student-level teacher questionnaires, by selected school characteristics, third grade: Spring 2014

School characteristic[1]	Teacher questionnaire, student level		
	Number of respondents	Response rates	
		Weighted	Unweighted
All students	11,942	92.1	91.9
School type			
Public	10,826	92.0	91.6
Private	1,116	94.2	95.6
Catholic	583	96.8	98.0
Other private	533	91.6	93.2
Census region[2,3]			
Northeast	1,960	90.3	90.5
Midwest	2,540	94.1	93.3
South	4,320	93.0	93.3
West	3,120	90.3	89.9
Locale			
City	3,710	88.0	87.5
Suburb	4,244	92.0	92.7
Town	902	95.6	94.9
Rural	2,756	96.0	96.0
Unknown	330	94.6	94.0

See notes at end of table.

Table 5-5. Response rates for student-level teacher questionnaires, by selected school characteristics, third grade: Spring 2014—Continued

School characteristic[1]	Teacher questionnaire, student level		
	Number of respondents	Response rates	
		Weighted	Unweighted
School enrollment			
1 to 149 students	397	93.7	93.4
150 to 299 students	1,423	92.7	91.7
300 to 499 students	3,630	94.1	94.0
500 to 749 students	4,500	91.8	92.2
750 or more	1,976	89.9	88.3
Unknown	16	47.5	45.7
Percent minority enrolled			
0 to 15	3,021	97.4	97.0
16 to 45	3,508	94.6	94.9
46 to 85	2,691	88.9	89.3
86 to 100	2,690	86.6	86.4
Unknown	32	64.8	62.7

[1] School characteristics were taken from the third-grade school administrator questionnaire (SAQ) when available. When third-grade SAQ data were not available, information was taken from prior-round SAQ responses, the Common Core of Data (CCD), or the Private School Survey (PSS). The versions of the school characteristics variables used to produce this table were specially derived for the User's Manual and are not included in the data file.

[2] States in each region:

Northeast: Connecticut, Maine, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, and Vermont.
Midwest: Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, South Dakota, and Wisconsin.
South: Alabama, Arkansas, Delaware, Florida, Georgia, Kentucky, Louisiana, Maryland, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, Virginia, West Virginia, and the District of Columbia.
West: Alaska, Arizona, California, Colorado, Hawaii, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, and Wyoming.

[3] Sample sizes rounded to the nearest 10 and, therefore, may not sum to total.

NOTE: A respondent is defined as a child for whom a teacher questionnaire was returned with at least one response, and who had either child assessment or parent interview data. The weighted response rates were calculated using the third-grade student base weight.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Early Childhood Longitudinal Study, Kindergarten Class of 2010–11 (ECLS-K:2011), spring 2014.

Table 5-6. Response rates for student-level teacher questionnaires, by selected student characteristics, third grade: Spring 2014

	Teacher questionnaire, student level		
		Response rates	
Student characteristic	Number of respondents	Weighted	Unweighted
All students	11,942	92.1	91.9
Sex			
Male	6,114	92.2	92.0
Female	5,813	92.1	91.8
Unknown	15	85.5	88.2
Race/ethnicity			
White, non-Hispanic	5,819	94.7	95.0
Black, non-Hispanic	1,307	90.0	91.0
Hispanic	3,225	90.2	90.3
Asian, non-Hispanic	918	80.3	81.5
Native Hawaiian/ Other Pacific Islander, non-Hispanic	67	91.1	91.8
American Indian or Alaska Native, non-Hispanic	100	93.6	92.6
Two or more races, non-Hispanic	493	90.4	91.6
Unknown	13	100.0	100.0
Year of birth[1]			
2003	60	95.3	95.0
2004	3,730	94.2	94.0
2005	8,150	91.2	91.0
2006	10	75.0	71.4
Unknown	#	100.0	100.0

Rounds to zero.
[1] Sample sizes rounded to the nearest 10 and, therefore, may not sum to total.
NOTE: A respondent is defined as a child for whom a teacher questionnaire was returned with at least one response, and who had either child assessment or parent interview data. The weighted response rates were calculated using the third-grade student base weight.
SOURCE: U.S. Department of Education, National Center for Education Statistics, Early Childhood Longitudinal Study, Kindergarten Class of 2010–11 (ECLS-K:2011), spring 2014.

Table 5-7 presents weighted and unweighted overall response rates for the child assessment and the parent interview in the third-grade data collection by selected school characteristics. The overall response rate is the percentage of possible assessments, interviews, or questionnaires completed, taking into account all survey stages. Of the 2,684 original and transfer schools that were initially eligible for the third-grade data collection, 2,562 schools participated in the study, 33 schools refused, and 89 became ineligible because all ECLS-K:2011 students in the school had moved to other schools. The school response rates used in the overall rates are from the base year because children were sampled in the base year and are

eligible to stay in the study regardless of school participation after the base year. The overall weighted response rate is the product of the base-year before-substitution school response rate for all schools (62.7 percent) and the third-grade weighted response rate. The overall unweighted response rate is the product of the unweighted base-year before-substitution response rate for all schools (61.3 percent) and the third-grade unweighted response rate. In the overall response rate tables, the response rates by characteristic are also a product of the third-grade response rate by the corresponding (weighted or unweighted) overall base-year rate.

The overall weighted response rate for the child assessment was 50.1 percent. For the parent interview, the overall weighted response rate was 44.0 percent. Because the driving factor of the overall response rate is the base-year school response rate for all schools, the pattern of overall response rates by subgroups is the same as the pattern of third-grade response rates.

Table 5-7. Overall response rates for child assessment and parent interview, by selected school characteristics, third grade: Spring 2014

	Child assessment[1]			Parent interview[2]		
		Overall response rates			Overall response rates	
School characteristic[3]	Number of respondents	Weighted	Unweighted	Number of respondents	Weighted	Unweighted
All students	12,896	50.1	51.6	11,083	44.0	44.1
School type						
Public	11,690	59.7	58.3	9,489	48.1	47.0
Private	1,161	55.5	55.4	1,005	48.8	47.9
Catholic	594	59.1	57.7	519	52.0	50.4
Other private	567	52.4	53.1	486	46.0	45.5
Census region[4,5]						
Northeast	2,150	58.6	57.9	1,780	48.5	47.8
Midwest	2,690	60.0	58.4	2,190	48.5	47.1
South	4,570	59.8	58.4	3,830	49.4	48.5
West	3,440	58.6	57.3	2,700	45.9	44.9
Locale						
City	4,192	58.8	57.7	3,303	46.6	45.3
Suburb	4,531	59.0	57.7	3,739	48.3	47.3
Town	938	60.4	58.7	772	48.7	47.8
Rural	2,842	59.9	58.7	2,401	50.0	49.2

See notes at end of table.

Table 5-7. Overall response rates for child assessment and parent interview, by selected school characteristics, third grade: Spring 2014—Continued

School characteristic[3]	Child assessment[1]			Parent interview[2]		
	Number of respondents	Overall response rates		Number of respondents	Overall response rates	
		Weighted	Unweighted		Weighted	Unweighted
School enrollment						
1 to 149 students	420	55.7	56.7	355	45.7	47.6
150 to 299 students	1,535	58.7	57.7	1,252	48.2	47.0
300 to 499 students	3,819	59.3	58.2	3,130	48.0	47.3
500 to 749 students	4,825	59.9	58.3	3,978	49.2	47.8
750 or more students	2,220	59.6	58.1	1,749	46.8	45.6
Percent minority enrolled						
0 to 15	3,093	59.7	58.4	2,659	51.0	49.9
16 to 45	3,660	59.6	58.4	3,135	50.5	49.7
46 to 85	2,973	58.9	57.6	2,358	46.3	45.4
86 to 100	3,077	59.4	58.1	2,300	43.8	43.2

[1] Student had scoreable reading or mathematics or science data, or at least one executive function score, or a height or weight measurement, or a completed item from the Child Questionnaire.
[2] Parent answered all applicable items in the family structure section of the questionnaire (FSQ) through item FSQ200 on current marital status.
[3] School characteristics were taken from the third-grade school administrator questionnaire (SAQ) when available. When third-grade SAQ data were not available, information was taken from prior-round SAQ responses, the Common Core of Data (CCD), or the Private School Survey (PSS). The versions of the school characteristics variables used to produce this table were specially derived for the User's Manual and are not included in the data file.
[4] States in each region:
Northeast: Connecticut, Maine, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, and Vermont.
Midwest: Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, South Dakota, and Wisconsin.
South: Alabama, Arkansas, Delaware, Florida, Georgia, Kentucky, Louisiana, Maryland, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, Virginia, West Virginia, and the District of Columbia.
West: Alaska, Arizona, California, Colorado, Hawaii, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, and Wyoming.
[5] Sample sizes rounded to the nearest 10 and, therefore, may not sum to total.
NOTE: The weighted overall response rates were calculated using the school base weight for the school response rate component and the student base weight for the student response rate component. The counts of students by subgroups do not sum to the total because homeschooled students and students with unknown school characteristics are not included in this table.
SOURCE: U.S. Department of Education, National Center for Education Statistics, Early Childhood Longitudinal Study, Kindergarten Class of 2010–11 (ECLS-K:2011), spring 2014.

Table 5-8 and table 5-9 present weighted and unweighted overall response rates for three teacher questionnaires in the third-grade data collection, by selected school characteristics. The overall response rate for the teacher-level teacher questionnaire was 57.9 percent. The overall response rate for the teacher-level subject- area questionnaire was 57.6 percent. The overall response rate for the student-level teacher questionnaire was 57.7. The response rates by subgroup follow the same pattern as was seen for the third-grade teacher response rates.

Table 5-8. Overall response rates for teacher-level teacher questionnaires, by selected school characteristics, third grade: Spring 2014

School characteristic[1]	Teacher questionnaire (teacher level)			Teacher questionnaire (subject area)		
	Number of respondents	Overall response rates		Number of respondents	Overall response rates	
		Weighted	Unweighted		Weighted	Unweighted
All students	11,983	57.9	56.5	11,933	57.6	56.3
School type						
Public	10,864	57.8	56.3	10,816	57.5	56.1
Private	1,119	59.1	58.8	1,117	58.9	58.7
Catholic	584	60.8	60.2	584	60.8	60.2
Other private	535	57.5	57.3	533	57.2	57.1
Census region[2,3]						
Northeast	1,960	56.7	55.4	1,950	56.4	55.2
Midwest	2,580	59.6	58.2	2,570	59.3	57.9
South	4,320	58.2	57.1	4,310	58.2	57.0
West	3,130	56.7	55.2	3,100	56.2	54.8
Locale						
City	3,709	55.1	53.6	3,703	55.1	53.6
Suburb	4,246	57.7	56.8	4,207	57.1	56.3
Town	903	60.0	58.3	900	59.9	58.1
Rural	2,792	60.6	59.6	2,791	60.6	59.6
School enrollment						
1 to 149 students	417	60.8	60.1	417	60.8	60.1
150 to 299 students	1,435	58.2	56.7	1,432	57.8	56.6
300 to 499 students	3,632	59.1	57.7	3,613	58.8	57.4
500 to 749 students	4,504	57.6	56.6	4,483	57.4	56.3
750 or more students	1,978	56.4	54.2	1,972	56.3	54.0
Percent minority enrolled						
0 to 15	3,055	61.4	60.1	3,050	61.1	60.0
16 to 45	3,513	59.4	58.2	3,490	59.1	57.9
46 to 85	2,696	55.9	54.8	2,687	55.7	54.6
86 to 100	2,686	54.2	52.9	2,673	54.0	52.7

[1] School characteristics were taken from the third-grade school administrator questionnaire (SAQ) when available. When third-grade SAQ data were not available, information was taken from prior-round SAQ responses, the Common Core of Data (CCD), or the Private School Survey (PSS). The versions of the school characteristics variables used to produce this table were specially derived for the User's Manual and are not included in the data file.

[2] States in each region:

Northeast: Connecticut, Maine, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, and Vermont.

Midwest: Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, South Dakota, and Wisconsin.

South: Alabama, Arkansas, Delaware, Florida, Georgia, Kentucky, Louisiana, Maryland, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, Virginia, West Virginia, and the District of Columbia.

West: Alaska, Arizona, California, Colorado, Hawaii, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, and Wyoming.

[3] Sample sizes rounded to the nearest 10 and, therefore, may not sum to total.

NOTE: A respondent is defined as a child for whom a teacher questionnaire was returned with at least one response, and who had either child assessment or parent interview data. The weighted overall response rates were calculated using the school base weight for the school response rate component and the third-grade student base weight for the student response rate component. The counts of students by subgroups do not sum to the total because homeschooled students and students with unknown school characteristics are not included in this table.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Early Childhood Longitudinal Study, Kindergarten Class of 2010–11 (ECLS-K:2011), spring 2014.

Table 5-9. Overall response rates for student-level teacher questionnaires, by selected school characteristics, third grade: Spring 2014

School characteristic[1]	Teacher questionnaire (student level)		
	Number of respondents	Overall response rates	
		Weighted	Unweighted
All students	11,942	57.7	56.3
School type			
Public	10,826	57.7	56.2
Private	1,116	59.1	58.6
Catholic	583	60.7	60.1
Other private	533	57.4	57.1
Census region[2,3]			
Northeast	1,960	56.6	55.5
Midwest	2,540	59.0	57.2
South	4,320	58.3	57.2
West	3,120	56.6	55.1
Locale			
City	3,710	55.2	53.6
Suburb	4,244	57.7	56.8
Town	902	59.9	58.2
Rural	2,756	60.2	58.8
School enrollment			
1 to 149 students	397	58.7	57.3
150 to 299 students	1,423	58.1	56.2
300 to 499 students	3,630	59.0	57.6
500 to 749 students	4,500	57.6	56.5
750 or more students	1,976	56.4	54.1
Percent minority enrolled			
0 to 15	3,021	61.1	59.5
16 to 45	3,508	59.3	58.2
46 to 85	2,691	55.7	54.7
86 to 100	2,690	54.3	53.0

[1] School characteristics were taken from the third-grade school administrator questionnaire (SAQ) when available. When third-grade SAQ data were not available, information was taken from prior-round SAQ responses, the Common Core of Data (CCD), or the Private School Survey (PSS). The versions of the school characteristics variables used to produce this table were specially derived for the User's Manual and are not included in the data file.

[2] States in each region:

Northeast: Connecticut, Maine, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, and Vermont.

Midwest: Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, South Dakota, and Wisconsin.

South: Alabama, Arkansas, Delaware, Florida, Georgia, Kentucky, Louisiana, Maryland, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, Virginia, West Virginia, and the District of Columbia.

West: Alaska, Arizona, California, Colorado, Hawaii, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, and Wyoming.

[3] Sample sizes rounded to the nearest 10 and, therefore, may not sum to total.

NOTE: A respondent is defined as a child for whom a teacher questionnaire was returned with at least one response, and who had either child assessment or parent interview data. The weighted overall response rates were calculated using the school base weight for the school response rate component and the third-grade student base weight for the student response rate component. The counts of students by subgroups do not sum to the total because homeschooled students and students with unknown school characteristics are not included in this table.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Early Childhood Longitudinal Study, Kindergarten Class of 2010–11 (ECLS-K:2011), spring 2014.

Table 5-10 presents the response rates for the two special education teacher questionnaires. Response rates are not presented by subgroup for the special education teacher questionnaires because of the relatively small number of students eligible for this component. The denominator for the special education teacher rates is 1,268. This denominator excludes children who did not have either a complete child assessment score or parent interview for the third-grade collection, even if they had special education teacher data. The two special education teacher questionnaires had the same response rates.

Table 5-10. Response rates for special education teacher questionnaires, third grade: Spring 2014

Questionnaire	Number of respondents	Response rates		Overall response rates	
		Weighted	Unweighted	Weighted	Unweighted
Special education teacher					
Teacher-level questionnaire	1,155	91.8	91.1	57.6	55.8
Child-level questionnaire	1,155	91.8	91.1	57.6	55.8

NOTE: A child was eligible for the special education questionnaire if he or she had an Individualized Education Plan (IEP) on file with the school. A respondent is defined as a child for whom a special education teacher questionnaire was returned with at least one response, and who had either child assessment or parent interview data. The weighted response rates were calculated using the third-grade student base weight.
SOURCE: U.S. Department of Education, National Center for Education Statistics, Early Childhood Longitudinal Study, Kindergarten Class of 2010–11 (ECLS-K:2011), spring 2014.

Tables 5-11 and 5-12 present response rates for the school administrator questionnaire (SAQ) included in the third-grade data collection. In the base year, the school sample was representative of schools educating kindergartners and kindergarten-aged children, so the base-year User's Manual presented response rates at the school level. After the base year, the school sample is the set of schools attended by children in the ECLS-K:2011 and is no longer a nationally representative sample of schools. For this reason, response rates for the SAQ are presented only at the student level.

Table 5-11 presents the weighted and unweighted response rates for the school administrator questionnaire by selected school characteristics. They are rates for students who were not homeschooled and are respondents in the third-grade data collection.[1] The weighted response rate for the school administrator questionnaire was 91.6 percent. The highest response rates by school characteristics for this questionnaire were between 97.2 and 97.7 percent for students in schools with fewer than 150 students, students in schools with zero to 15 percent of students who were racial/ethnic minorities, and students in rural areas. Aside from the "Unknown" categories, which had very low response rates due to their composition, the lowest response rates were for students in schools with at least 86 percent of students who were racial/ethnic minorities (85.4 percent) and in cities (88.5 percent). In this table, the "unknown"

[1] A third-grade respondent has child data (scoreable reading or mathematics or science data, or at least one executive function score, or a height or weight measurement, or child questionnaire data, or was excluded from assessment due to lack of accommodation for a disability) or parent interview data from the third-grade round of data collection.

categories include a small number of students with SAQ data, but for whom locale, school size, and/or minority enrollment data are missing.

Table 5-11. Response rates for school administrator questionnaire, by selected school characteristics, third grade: Spring 2014

	Student-level school administrator questionnaire		
		Response rates	
School characteristic[1]	Number of respondents	Weighted	Unweighted
All students	11,885	91.6	91.5
School type			
Public	10,792	91.5	91.3
Private	1,093	92.7	93.7
Catholic	572	95.3	96.1
Other private	521	90.1	91.1
Census region[2,3]			
Northeast	1,960	90.6	90.3
Midwest	2,530	93.1	92.8
South	4,260	92.2	92.1
West	3,140	89.9	90.4
Locale			
City	3,742	88.5	88.3
Suburb	4,116	89.6	89.9
Town	898	94.8	94.5
Rural	2,809	97.2	97.8
Unknown	320	91.3	91.2

See notes at end of table.

Table 5-11. Response rates for school administrator questionnaire, by selected school characteristics, third grade: Spring 2014—Continued

School characteristic[1]	Student-level school administrator questionnaire		
	Number of respondents	Response rates	
		Weighted	Unweighted
School enrollment			
1 to 149 students	419	97.7	98.6
150 to 299 students	1,457	93.7	93.9
300 to 499 students	3,616	93.4	93.7
500 to 749 students	4,431	90.9	90.8
750 or more students	1,955	89.4	87.4
Unknown	7	17.2	20.0
Percent minority enrolled			
0 to 15	3,046	97.5	97.8
16 to 45	3,446	93.3	93.2
46 to 85	2,717	89.6	90.1
86 to 100	2,653	85.4	85.2
Unknown	23	44.5	45.1

[1] School characteristics were taken from the third-grade school administrator questionnaire (SAQ) when available. When third-grade SAQ data were not available, information was taken from prior-round SAQ responses, the Common Core of Data (CCD), or the Private School Survey (PSS). The versions of the school characteristics variables used to produce this table were specially derived for the User's Manual and are not included in the data file.
[2] States in each region:
Northeast: Connecticut, Maine, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, and Vermont.
Midwest: Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, South Dakota, and Wisconsin.
South: Alabama, Arkansas, Delaware, Florida, Georgia, Kentucky, Louisiana, Maryland, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, Virginia, West Virginia, and the District of Columbia.
West: Alaska, Arizona, California, Colorado, Hawaii, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, and Wyoming.
[3] Sample sizes rounded to the nearest 10 and, therefore, may not sum to total.
NOTE: A respondent is defined as an eligible student for whom the school was eligible for the school administrator questionnaire, the questionnaire was returned with at least one response, and the student had either child assessment or parent interview data. The weighted response rates were calculated using the third-grade student base weight.
SOURCE: U.S. Department of Education, National Center for Education Statistics, Early Childhood Longitudinal Study, Kindergarten Class of 2010–11 (ECLS-K:2011), spring 2014.

Table 5-12 presents the weighted and unweighted response rates for the school administrator questionnaire by selected student characteristics. Excluding subgroups with small numbers of sampled students, the highest response rate was for White students (94.1 percent) and the lowest response rate was for Asian students (84.8 percent).

Table 5-12. Response rates for school administrator questionnaire, by selected student characteristics, third grade: Spring 2014

Student characteristic	Student-level school administrator questionnaire		
	Number of respondents	Response rates	
		Weighted	Unweighted
All students	11,885	91.6	91.5
Sex			
Male	6,115	92.1	92.1
Female	5,754	91.0	90.9
Unknown	16	94.9	94.1
Race/ethnicity			
White, non-Hispanic	5,804	94.1	94.8
Black, non-Hispanic	1,272	88.7	88.5
Hispanic	3,173	89.0	88.9
Asian, non-Hispanic	963	84.8	85.5
Native Hawaiian/Other Pacific Islander, non-Hispanic	66	90.5	90.4
American Indian or Alaska Native, non-Hispanic	100	94.1	92.6
Two or more races, non-Hispanic	494	90.1	91.8
Unknown	13	100.0	100.0
Year of birth[1]			
2003	60	100.0	100.0
2004	3,700	93.4	93.4
2005	8,110	90.7	90.6
2006	10	68.0	64.3
Unknown	#	100.0	100.0

Rounds to zero.
[1] Sample sizes rounded to the nearest 10 and, therefore, may not sum to total.
NOTE: A respondent is defined as an eligible student for whom the school was eligible for the school administrator questionnaire, the questionnaire was returned with at least one response, and the student had either child assessment or parent interview data. The weighted response rates were calculated using the third-grade student base weight.
SOURCE: U.S. Department of Education, National Center for Education Statistics, Early Childhood Longitudinal Study, Kindergarten Class of 2010–11 (ECLS-K:2011), spring 2014.

Table 5-13 shows the overall response rates for the school administrator questionnaire. The overall weighted response rate was 57.4 percent. As with other overall response rates, the overall rates by subgroups have the same patterns as the third-grade response rates because the base-year school response rate is for all schools and, thus, the same for all subgroups.

Table 5-13. Overall response rates for school administrator questionnaire, by selected school characteristics, third grade: Spring 2014

School characteristic[1]	Student-level school administrator questionnaire		
	Number of respondents	Overall response rates	
		Weighted	Unweighted
All students	11,885	57.4	56.1
School type			
Public	10,792	57.4	56.0
Private	1,093	58.1	57.4
Catholic	572	59.8	58.9
Other private	521	56.5	55.8
Census region[2,3]			
Northeast	1,960	56.8	55.4
Midwest	2,530	58.4	56.9
South	4,260	57.8	56.5
West	3,140	56.4	55.4
Locale			
City	3,742	55.5	54.1
Suburb	4,116	56.2	55.1
Town	898	59.4	57.9
Rural	2,809	60.9	60.0
School enrollment			
1 to 149 students	419	61.3	60.4
150 to 299 students	1,457	58.7	57.6
300 to 499 students	3,616	58.6	57.4
500 to 749 students	4,431	57.0	55.7
750 or more students	1,955	56.1	53.6
Percent minority enrolled			
0 to 15	3,046	61.1	60.0
16 to 45	3,446	58.5	57.1
46 to 85	2,717	56.2	55.2
86 to 100	2,653	53.5	52.2

[1] School characteristics were taken from the third-grade school administrator questionnaire (SAQ) when available. When third-grade SAQ data were not available, information was taken from prior-round SAQ responses, the Common Core of Data (CCD), or the Private School Survey (PSS). The versions of the school characteristics variables used to produce this table were specially derived for the User's Manual and are not included in the data file..

[2] States in each region:

Northeast: Connecticut, Maine, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, and Vermont.
Midwest: Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, South Dakota, and Wisconsin.
South: Alabama, Arkansas, Delaware, Florida, Georgia, Kentucky, Louisiana, Maryland, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, Virginia, West Virginia, and the District of Columbia.
West: Alaska, Arizona, California, Colorado, Hawaii, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, and Wyoming.

[3] Sample sizes rounded to the nearest 10 and, therefore, may not sum to total.

NOTE: A respondent is defined as an eligible student for whom the school was eligible for the school administrator questionnaire, the questionnaire was returned with at least one response, and the student had either child assessment or parent interview data. The weighted overall response rates were calculated using the school base weight for the school response rate component and the third-grade student base weight for the student response rate component. The counts of students by subgroups do not sum to the total because students with unknown school characteristics are not included in this table.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Early Childhood Longitudinal Study, Kindergarten Class of 2010–11 (ECLS-K:2011), spring 2014.

5.3 Nonresponse Bias Analysis

NCES statistical standards require that any survey instrument with a weighted unit response rate less than 85 percent be evaluated for potential nonresponse bias. For the third-grade data collection, two study components had weighted response rates lower than 85 percent: the child assessment (79.9 percent, weighted, and 84.2 percent, unweighted), and the parent interview (70.1 percent, weighted, and 72.0 percent, unweighted). The effect of nonresponse is examined in two ways. Sections 5.3.1 and 5.3.2 discuss the effect of nonresponse on estimates produced from the child assessment data and the parent interview data, respectively. Section 5.3.3 compares estimates of selected base-year characteristics between base-year respondents and third-grade respondents.[2] A comparison of the study estimates to frame estimates, which pertain to schools with third grade and to third-graders in the United States, cannot be done because the sample of study schools is not a representative sample and the sample of study students is not representative of all third graders. After the base year, students in the ECLS-K:2011 can only be referred to as the cohort of children who attended kindergarten or of kindergarten age in the 2010–11 school year. For a comparison to frame estimates that was conducted in the base year of the study, see chapter 5 of the base-year User's Manual.

5.3.1 Effect of Nonresponse on Child Assessment Data

Estimates weighted by the nonresponse-adjusted weights are compared with estimates weighted by the base weights (which are referred to as unadjusted estimates). Large differences between the estimates weighted by the nonresponse-adjusted weights and the unadjusted weights may indicate the potential for bias in the unadjusted estimates. If the differences are small, then either there is very small bias in the estimates or the characteristics used in the adjustment process are not related to the survey estimates and, therefore, the adjustments do not introduce changes in the estimates.

The unadjusted base weight only takes into account the selection probabilities of the sampling units and the subsampling of movers to be followed. The nonresponse-adjusted weights are the weights used to analyze ECLS-K:2011 data. The nonresponse adjusted weight used in this analysis of the effect of nonresponse on child assessment data is W7C7P_20, which is adjusted for nonresponse to the child assessment. For a discussion of how the weights were constructed, see chapter 4.

[2] A base-year respondent has child data (scoreable assessment data, or height or weight measurements, or was excluded from assessment due to lack of accommodation for a disability) or parent interview data from at least one round of data collection in the base year. A third-grade respondent has child data (scoreable assessment data, or executive function data, or child questionnaire data, or height or weight measurements or was excluded from assessment due to lack of accommodation for a disability) or parent interview data from the third-grade round of data collection.

In the ECLS-K:2011, chi-square analyses were used to identify characteristics that are most related to nonresponse, and these characteristics were used in the adjustment. Therefore, the likelihood that the weighted estimates are biased as a result of nonresponse would be lower than if nonresponse adjustment was not implemented. This method of examining nonresponse bias provides an indication of the degree to which nonresponse adjustments are needed and how effective the adjustments are.

Table 5-14 shows estimates of selected items from the child assessment. Table 5-15 shows the differences between unweighted and weighted estimates, and between estimates produced using base weights (unadjusted estimates) and estimates produced using nonresponse adjusted weights. The differences are shown in absolute value and as a percent (relative difference), together with their *p* value ($\alpha = 0.05$). For example, for the differences between unweighted and unadjusted estimates, the difference is the absolute value of the unweighted estimate minus the unadjusted estimate, and the percent is the difference divided by the unweighted estimate. A *p* value of less than 0.05 means that there is a statistically significant difference between the two estimates.

The differences between the unadjusted and adjusted estimates are indications of potential nonresponse bias. However, as can be seen in table 5-15, many of the differences in the estimates are not statistically significant as shown by the *p* value. For the child assessment, only 7 percent of the items included in the analysis show statistical differences between unadjusted and adjusted estimates, meaning that the nonresponse adjustment was essential to reduce the potential bias. Where there is no statistical difference, it means that the effect of the nonresponse adjustment is neutral, i.e., it does not result in changes between unadjusted and adjusted estimates. The range of absolute differences is 0 to 1.05, with an average of 0.23.

In terms of interpreting percent difference (relative difference), the percent difference is sensitive not only to sample size but also to the prevalence of a particular characteristic. Large relative differences can be a function of small sample sizes. For example, as seen in table 5-15 for students who attended school in a town, there is an absolute difference between the nonresponse-adjusted and unadjusted estimates of 0.60 and a relative difference of 5.99. For students who attended school in the West, there is an absolute difference between the nonresponse-adjusted and unadjusted estimates of 1.02 and a relative difference of 4.08. Proportionately there are fewer students who attended school in a town than students who attended school in the West; therefore, the relative difference is higher for students who went to school in a town even though the absolute difference is smaller for students in this group compared to students who attended school in the West. The differences found in the analyses show that there is some potential for nonresponse bias in the unweighted assessment data, but the weights used to produce estimates were adjusted for nonresponse and, thus, reduce that potential for bias.

Table 5-14. Estimates using unadjusted and nonresponse-adjusted weights, child assessment, spring third grade: Spring 2014

Characteristic	Sample size	Unweighted estimate	Unadjusted[1]		Adjusted[2]	
			Estimate	*SE*	Estimate	*SE*
Proportion of students by school type						
Public	12,990	91.02	92.40	0.377	91.94	0.350
Private	12,990	8.98	7.60	0.377	8.06	0.350
Proportion of students by census region[3,4]						
Northeast	12,990	16.67	16.11	0.555	15.97	0.165
Midwest	12,990	20.95	22.00	0.610	22.11	0.219
South	12,990	35.64	36.90	0.652	37.95	0.285
West	12,990	26.74	24.99	0.467	23.97	0.230
Proportion of students by locale						
City	12,639	33.54	31.39	0.951	31.69	0.998
Suburb	12,639	36.22	35.07	0.949	34.51	0.938
Town	12,639	7.52	10.01	0.822	10.61	0.841
Rural	12,639	22.72	23.53	0.982	23.19	1.060
Proportion of students by race/ethnicity						
White, non-Hispanic	18,129	46.83	52.04	1.640	51.76	1.683
Black, non-Hispanic	18,129	13.22	12.85	1.160	13.32	1.215
Hispanic	18,129	25.32	24.87	1.244	24.75	1.238
Asian, non-Hispanic	18,129	8.51	4.60	0.654	4.49	0.659
Native Hawaiian/Pacific Islander, non-Hispanic	18,129	0.65	0.41	0.087	0.41	0.074
American Indian/Alaska Native, non-Hispanic	18,129	0.93	1.18	0.525	1.18	0.521
Two or more races	18,129	4.56	4.05	0.219	4.09	0.220
Mean estimate of the following student						
Mathematics scale score	12,866	97.56	97.58	0.297	97.60	0.305
Reading scale score	12,866	110.09	110.15	0.239	110.21	0.235
Science scale score	12,856	54.66	54.76	0.232	54.84	0.233
Mathematics theta score	12,866	3.05	3.05	0.016	3.05	0.016
Reading theta score	12,866	2.60	2.60	0.013	2.61	0.012
Science theta score	12,856	2.18	2.19	0.018	2.20	0.018
Number reversed age percentile	12,874	44.33	44.15	0.345	44.10	0.353
Age (in months)	12,893	108.98	109.07	0.095	109.03	0.097
Height (in inches)	12,722	53.23	53.27	0.036	53.28	0.038
Weight (in pounds)	12,656	75.59	75.64	0.254	75.81	0.277
Body mass index (BMI)	12,643	18.59	18.58	0.055	18.61	0.056

[1] Unadjusted estimates are produced using the third-grade student base weight. The sample size is the count of cases with nonzero third-grade student base weight.
[2] Adjusted estimates are produced using weight W7C7P_20.
[3] States in each region:
Northeast: Connecticut, Maine, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, and Vermont.
Midwest: Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, South Dakota, and Wisconsin.
South: Alabama, Arkansas, Delaware, Florida, Georgia, Kentucky, Louisiana, Maryland, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, Virginia, West Virginia, and the District of Columbia.
West: Alaska, Arizona, California, Colorado, Hawaii, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, and Wyoming.
[4] Sample sizes rounded to the nearest 10 and, therefore, may not sum to total.
NOTE: *SE* = standard error. The sample sizes are the number of cases with a nonzero third-grade base weight and a nonmissing value for the characteristic or group of characteristics.
SOURCE: U.S. Department of Education, National Center for Education Statistics, Early Childhood Longitudinal Study, Kindergarten Class of 2010–11 (ECLS-K:2011), spring 2014.

Table 5-15. Differences between unweighted and weighted estimates, and between unadjusted and adjusted estimates, child assessment, spring third grade: Spring 2014

Survey item	Sample	Between unweighted and unadjusted[1]			Between unweighted and adjusted[2]			Between unadjusted[1] and adjusted[2]		
		Absolute difference	Relative difference	*p* value	Absolute difference	Relative difference	*p* value	Absolute difference	Relative difference	*p* value
Proportion of students by school type										
Public	12,990	1.38	1.52	0.000	0.92	1.01	0.010	0.46	0.50	0.051
Private	12,990	1.38	15.37	0.000	0.92	10.24	0.010	0.46	6.05	0.051
Proportion of students by census region[3,4]										
Northeast	12,990	0.56	3.36	0.323	0.70	4.20	0.000	0.14	0.87	0.788
Midwest	12,990	1.05	5.01	0.091	1.16	5.54	0.000	0.11	0.50	0.842
South	12,990	1.26	3.54	0.058	2.31	6.48	0.000	1.05	2.85	0.118
West	12,990	1.75	6.54	0.000	2.77	10.36	0.000	1.02	4.08	0.038
Proportion of students by locale										
City	12,639	2.15	6.41	0.027	1.85	5.52	0.067	0.30	0.96	0.477
Suburb	12,639	1.15	3.18	0.229	1.71	4.72	0.071	0.56	1.60	0.240
Town	12,639	2.49	33.11	0.003	3.09	41.09	0.000	0.60	5.99	0.000
Rural	12,639	0.81	3.57	0.413	0.47	2.07	0.658	0.34	1.44	0.323
Proportion of students by race/ethnicity										
White, non-Hispanic	18,129	5.21	11.13	0.002	4.93	10.53	0.004	0.28	0.54	0.387
Black, non-Hispanic	18,129	0.37	2.80	0.754	0.10	0.76	0.931	0.47	3.66	0.179
Hispanic	18,129	0.45	1.78	0.721	0.57	2.25	0.647	0.12	0.48	0.189
Asian, non-Hispanic	18,129	3.91	45.95	0.000	4.02	47.24	0.000	0.11	2.39	0.169
Native Hawaiian/Pacific Islander, non-Hispanic	18,129	0.24	36.92	0.009	0.24	36.92	0.002	0.00	0.00	0.983
American Indian/Alaska Native, non-Hispanic	18,129	0.25	26.88	0.627	0.25	26.88	0.631	0.00	0.00	0.730
Two or more races	18,129	0.51	11.18	0.023	0.47	10.31	0.038	0.04	0.99	0.335

See notes at end of table.

Table 5-15. Differences between unweighted and weighted estimates, and between unadjusted and adjusted estimates, child assessment, spring third grade: Spring 2014—Continued

Survey item	Sample	Between unweighted and unadjusted[1]			Between unweighted and adjusted[2]			Between unadjusted[1] and adjusted[2]		
		Absolute difference	Relative difference	*p* value	Absolute difference	Relative difference	*p* value	Absolute difference	Relative difference	*p* value
Mean estimate of the following student scores and characteristics										
Mathematics scale score	12,866	0.02	0.02	0.952	0.04	0.04	0.900	0.02	0.02	0.823
Reading scale score	12,866	0.06	0.05	0.796	0.12	0.11	0.617	0.06	0.05	0.471
Science scale score	12,856	0.10	0.18	0.681	0.18	0.33	0.459	0.08	0.15	0.224
Mathematics theta score	12,866	0.00	0.00	0.982	0.00	0.00	0.959	0.00	0.00	0.921
Reading theta score	12,866	0.00	0.00	0.822	0.01	0.38	0.750	0.01	0.38	0.784
Science theta score	12,856	0.01	0.46	0.654	0.02	0.92	0.414	0.01	0.46	0.173
Number reversed age percentile	12,874	0.18	0.41	0.600	0.23	0.52	0.515	0.05	0.11	0.696
Age (in months)	12,893	0.09	0.08	0.352	0.05	0.05	0.655	0.04	0.04	0.148
Height (in inches)	12,722	0.04	0.08	0.336	0.05	0.09	0.236	0.01	0.02	0.438
Weight (in pounds)	12,656	0.05	0.07	0.851	0.22	0.29	0.438	0.17	0.22	0.140
Body mass index (BMI)	12,643	0.01	0.05	0.865	0.02	0.11	0.691	0.03	0.16	0.172

[1] Unadjusted estimates are produced using the third-grade student base weight. The sample size is the count of cases with nonzero third-grade student base weight.
[2] Adjusted estimates are produced using weight W7C7P_20.
[3] States in each region:
Northeast: Connecticut, Maine, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, and Vermont.
Midwest: Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, South Dakota, and Wisconsin.
South: Alabama, Arkansas, Delaware, Florida, Georgia, Kentucky, Louisiana, Maryland, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, Virginia, West Virginia, and the District of Columbia.
West: Alaska, Arizona, California, Colorado, Hawaii, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, and Wyoming.
[4] Sample sizes rounded to the nearest 10 and, therefore, may not sum to total.
NOTE: The sample sizes are the number of cases with a nonzero third-grade base weight and a nonmissing value for the characteristic or group of characteristics.
SOURCE: U.S. Department of Education, National Center for Education Statistics, Early Childhood Longitudinal Study, Kindergarten Class of 2010–11 (ECLS-K:2011), spring 2014.

5.3.2 Effect of Nonresponse on Parent Interview Data

The adjusted weight used in the analysis of the effect of nonresponse on parent interview data is W7C27P_7A0. For a discussion of how the weights were constructed, see chapter 4. Table 5-16 shows estimates of selected items from the parent interview. Table 5-17 shows the differences between unweighted and weighted estimates, and between estimates produced using base weights (unadjusted estimates) and estimates produced using nonresponse adjusted weights. The range of absolute differences is 0 to 3.4, and the average is 0.64.

The discussion of how to interpret the relative difference provide above in the section on the child assessment applies to the parent interview data as well. As noted above, the percent difference is sensitive not only to sample size but also to the prevalence of a particular characteristic. For example, as shown in table 5-16, the percent of students who have took art classes or lessons outside of school is 11.91; the absolute difference between the nonresponse-adjusted estimate and unadjusted estimate is 0.75, and the relative difference between these two estimates is 5.92, as shown in table 5-17. The percent of students whose parents volunteered at school is 50.46, with an absolute difference of 1.80 and a relative difference of 3.44 between the nonresponse-adjusted estimate and the unadjusted estimate. The relative difference is smaller for the groups of students with higher prevalence in the characteristic examined.

As with the child assessment data, the differences found in the analyses show that there is some potential for nonresponse bias in the unweighted parent interview data, but the weights used to produce estimates were adjusted for nonresponse and, thus, reduce that potential for bias.

Table 5-16. Estimates using unadjusted and nonresponse-adjusted weights, parent interview, spring third grade: Spring 2014

Characteristic	Sample size	Unweighted estimate	Unadjusted[1]		Adjusted[2]	
			Estimate	*SE*	Estimate	*SE*
Proportion of students by school type						
Public	12,990	91.02	92.40	0.377	91.98	0.381
Private	12,990	8.98	7.60	0.377	8.02	0.381
Proportion of students by census region[3,4]						
Northeast	12,990	16.67	16.11	0.555	15.98	0.165
Midwest	12,990	20.95	22.00	0.610	22.09	0.222
South	12,990	35.64	36.90	0.652	37.98	0.289
West	12,990	26.74	24.99	0.467	23.94	0.233
Proportion of students by locale						
City	12,639	33.54	31.39	0.951	31.74	1.027
Suburb	12,639	36.22	35.07	0.949	34.17	0.952
Town	12,639	7.52	10.01	0.822	10.51	0.837
Rural	12,639	22.72	23.53	0.982	23.58	1.037
Proportion of students by race/ethnicity						
White, non-Hispanic	18,129	46.83	52.04	1.640	51.77	1.683
Black, non-Hispanic	18,129	13.22	12.85	1.160	13.31	1.215
Hispanic	18,129	25.32	24.87	1.244	24.75	1.242
Asian, non-Hispanic	18,129	8.51	4.60	0.654	4.47	0.660
Native Hawaiian/Pacific Islander, non-Hispanic	18,129	0.65	0.41	0.087	0.44	0.106
American Indian/Alaska Native, non-Hispanic	18,129	0.93	1.18	0.525	1.15	0.535
Two or more races	18,129	4.56	4.05	0.219	4.10	0.222

See notes at end of table.

Table 5-16. Estimates using unadjusted and nonresponse-adjusted weights, parent interview, spring third grade: Spring 2014—Continued

Characteristic	Sample size	Unweighted estimate	Unadjusted[1]		Adjusted[2]	
			Estimate	*SE*	Estimate	*SE*
Proportion of students with the following characteristics from the parent interview						
Parent is currently married/in civil union/in domestic partnership	11,061	73.38	72.35	0.840	71.30	0.881
Non-English language used at home	11,019	29.91	24.85	1.241	25.68	1.100
At least one parent has high school education	11,083	90.92	91.78	0.555	91.81	0.470
Has child care from relative	10,684	25.40	25.08	0.666	25.86	0.669
Child participated in organized athletic activities	10,788	59.84	61.31	1.017	59.69	0.950
Child participated in performing arts programs	10,768	21.53	21.32	0.533	20.84	0.569
Child has art classes or lessons	10,771	12.88	12.66	0.396	11.91	0.465
Parent volunteered at school	11,040	51.83	52.26	1.133	50.46	1.073
Often or sometimes true that parent could not afford balanced meals in last 12 months	10,419	10.04	10.32	0.593	10.63	0.623
Household poverty index						
Below poverty threshold	11,083	23.13	22.90	0.996	24.24	0.911
At or above poverty threshold but below 200 percent poverty threshold	11,083	22.62	21.94	0.633	24.05	0.666
At or above 200 percent poverty threshold	11,083	54.25	55.15	1.283	51.71	1.159
Mean estimate of the following student characteristics						
Total number of persons in household	11,083	4.69	4.67	0.023	4.67	0.023
Total number of siblings in household	11,083	1.60	1.61	0.021	1.61	0.022
Total number of persons in household less than 18 years of age	11,051	2.57	2.59	0.020	2.57	0.020

[1] Unadjusted estimates are produced using the third-grade student base weight. The sample size is the count of cases with nonzero third-grade student base weight.
[2] Adjusted estimates are produced using weight W7C27P_7A0.
[3] States in each region:
Northeast: Connecticut, Maine, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, and Vermont.
Midwest: Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, South Dakota, and Wisconsin.
South: Alabama, Arkansas, Delaware, Florida, Georgia, Kentucky, Louisiana, Maryland, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, Virginia, West Virginia, and the District of Columbia.
West: Alaska, Arizona, California, Colorado, Hawaii, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, and Wyoming.
[4] Sample sizes rounded to the nearest 10 and, therefore, may not sum to total.
NOTE: *SE* = standard error. The sample sizes are the number of cases with a nonzero third-grade base weight and a nonmissing value for the characteristic or group of characteristics.
SOURCE: U.S. Department of Education, National Center for Education Statistics, Early Childhood Longitudinal Study, Kindergarten Class of 2010–11 (ECLS-K:2011), spring 2014.

Table 5-17. Differences between unweighted and weighted estimates, and between unadjusted and adjusted estimates, parent interview, spring third grade: Spring 2014

Survey item	Sample size	Between unweighted and unadjusted[1] Absolute difference	Between unweighted and unadjusted[1] Relative difference	Between unweighted and unadjusted[1] *p* value	Between unweighted and adjusted[2] Absolute difference	Between unweighted and adjusted[2] Relative difference	Between unweighted and adjusted[2] *p* value	Between unadjusted[1] and adjusted[2] Absolute difference	Between unadjusted[1] and adjusted[2] Relative difference	Between unadjusted[1] and adjusted[2] *p* value
Proportion of students by school type										
Public	12,990	1.38	1.52	0.000	0.96	1.05	0.013	0.42	0.45	0.123
Private	12,990	1.38	15.37	0.000	0.96	10.69	0.013	0.42	5.53	0.123
Proportion of students by census region[3,4]										
Northeast	12,990	0.56	3.36	0.323	0.69	4.14	0.000	0.13	0.81	0.810
Midwest	12,990	1.05	5.01	0.091	1.14	5.44	0.000	0.09	0.41	0.871
South	12,990	1.26	3.54	0.058	2.34	6.57	0.000	1.08	2.93	0.109
West	12,990	1.75	6.54	0.000	2.80	10.47	0.000	1.05	4.20	0.034
Proportion of students by locale										
City	12,639	2.15	6.41	0.027	1.80	5.37	0.083	0.35	1.12	0.434
Suburb	12,639	1.15	3.18	0.229	2.05	5.66	0.034	0.90	2.57	0.099
Town	12,639	2.49	33.11	0.003	2.99	39.76	0.001	0.50	5.00	0.006
Rural	12,639	0.81	3.57	0.413	0.86	3.79	0.410	0.05	0.21	0.892
Proportion of students by race/ethnicity										
White, non-Hispanic	18,129	5.21	11.13	0.002	4.94	10.55	0.004	0.27	0.52	0.407
Black, non-Hispanic	18,129	0.37	2.80	0.754	0.09	0.68	0.937	0.46	3.58	0.188
Hispanic	18,129	0.45	1.78	0.721	0.57	2.25	0.649	0.12	0.48	0.193
Asian, non-Hispanic	18,129	3.91	45.95	0.000	4.04	47.47	0.000	0.13	2.83	0.129
Native Hawaiian/Pacific Islander, non-Hispanic	18,129	0.24	36.92	0.009	0.21	32.31	0.056	0.03	7.32	0.670
American Indian/Alaska Native, non-Hispanic	18,129	0.25	26.88	0.627	0.22	23.66	0.679	0.03	2.54	0.612
Two or more races	18,129	0.51	11.18	0.023	0.46	10.09	0.043	0.05	1.23	0.273

See notes at end of table.

Table 5-17. Differences between unweighted and weighted estimates, and between unadjusted and adjusted estimates, parent interview, spring third grade: Spring 2014—Continued

Survey item	Sample size	Between unweighted and unadjusted[1]			Between unweighted and adjusted[2]			Between unadjusted[1] and adjusted[2]		
		Absolute difference	Relative difference	*p* value	Absolute difference	Relative difference	*p* value	Absolute difference	Relative difference	*p* value
Proportion of students with the following characteristics from the parent interview										
Parent is currently married/in civil union/in domestic partnership	11,061	1.03	1.40	0.221	2.08	2.83	0.021	1.05	1.45	0.001
Non-English language used at home	11,019	5.06	16.92	0.000	4.23	14.14	0.000	0.83	3.34	0.048
At least one parent has high school education	11,083	0.86	0.95	0.125	0.89	0.98	0.064	0.03	0.03	0.924
Has child care from relative	10,684	0.32	1.26	0.625	0.46	1.81	0.493	0.78	3.11	0.013
Child participated in organized athletic activities	10,788	1.47	2.46	0.154	0.15	0.25	0.867	1.62	2.64	0.000
Child participated in performing arts programs	10,768	0.21	0.98	0.700	0.69	3.20	0.228	0.48	2.25	0.069
Child has art classes or lessons	10,771	0.22	1.71	0.581	0.97	7.53	0.041	0.75	5.92	0.004
Parent volunteered at school	11,040	0.43	0.83	0.702	1.37	2.64	0.206	1.80	3.44	0.000
Often or sometimes true that parent could not afford balanced meals in last 12 months	10,419	0.28	2.79	0.642	0.59	5.88	0.348	0.31	3.00	0.226
Household poverty index										
Below poverty threshold	11,083	0.23	0.99	0.823	1.11	4.80	0.224	1.34	5.85	0.000
At or above poverty threshold but below 200 percent poverty threshold	11,083	0.68	3.01	0.289	1.43	6.32	0.035	2.11	9.62	0.000
At or above 200 percent poverty threshold	11,083	0.90	1.66	0.485	2.54	4.68	0.031	3.44	6.24	0.000

See notes at end of table.

Table 5-17. Differences between unweighted and weighted estimates, and between unadjusted and adjusted estimates, parent interview, spring third grade: Spring 2014—Continued

Survey item	Sample	Between unweighted and unadjusted[1]			Between unweighted and adjusted[2]			Between unadjusted[1] and adjusted[2]		
		Absolute difference	Relative difference	*p* value	Absolute difference	Relative difference	*p* value	Absolute difference	Relative difference	*p* value
Mean estimate of the following student characteristics										
Total number of persons in household	11,083	0.02	0.43	0.298	0.02	0.43	0.356	0.00	0.00	0.794
Total number of siblings in household	11,083	0.01	0.63	0.612	0.01	0.63	0.816	0.00	0.00	0.581
Total number of persons in household less than 18 years of age	11,051	0.02	0.78	0.504	0.00	0.00	0.908	0.02	0.77	0.252

[1] Unadjusted estimates are produced using the third-grade student base weight. The sample size is the count of cases with nonzero third-grade student base weight.
[2] Adjusted estimates are produced using weight W7C27P_7A0.
[3] States in each region:
Northeast: Connecticut, Maine, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, and Vermont.
Midwest: Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, South Dakota, and Wisconsin.
South: Alabama, Arkansas, Delaware, Florida, Georgia, Kentucky, Louisiana, Maryland, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, Virginia, West Virginia, and the District of Columbia.
West: Alaska, Arizona, California, Colorado, Hawaii, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, and Wyoming.
[4] Sample sizes rounded to the nearest 10 and, therefore, may not sum to total.
NOTE: The sample sizes are the number of cases with a nonzero third-grade base weight and a nonmissing value for the characteristic or group of characteristics.
SOURCE: U.S. Department of Education, National Center for Education Statistics, Early Childhood Longitudinal Study, Kindergarten Class of 2010–11 (ECLS-K:2011), spring 2014.

5.3.3 Effect of Nonresponse on Characteristics from the Base Year

In this section, the effect of nonresponse is explored by comparing estimates of selected base-year characteristics between kindergarten respondents and third-grade respondents.[3] The estimates are unadjusted estimates (i.e., they are weighted by the base weights). Base-year characteristics of the kindergarten respondents are weighted by the base-year base weight that takes into account only the selection probabilities of the sampling units. Base-year characteristics of the third-grade respondents are weighted by the third-grade base weight that takes into account the selection probabilities and the subsampling of movers to be followed.

Table 5-18 shows the differences in the unadjusted base-year estimates between the kindergarten respondents and the third-grade respondents. As noted above, the characteristics presented in this table are from the base year, since the purpose of this analysis is to detect large changes in the same estimates due to sample attrition between the two data collections. Because of missing values, the kindergarten sample size is smaller than 18,174, the number of base-year respondents. Similarly, the third-grade sample size is smaller than 13,579, the number of third-grade respondents. Each difference is shown as an absolute value and as a relative difference (i.e., the difference divided by the kindergarten estimate). The relative differences range from 0 percent to 14.71 percent, for an average of 3.28 percent. The largest relative difference is for the percentage of Black students. As in previous years, response rates for Black students are the lowest among the different race/ethnicity groups (not counting the Hawaiian Native/Pacific Islander and the American Indian/Alaska Native groups with very small sample sizes). The other relative differences that are larger than 5 percent are for students in towns (6.79 percent), students of two or more races (5.37 percent), and students in households with income below the poverty threshold (6.47 percent). Since locale and race/ethnicity are characteristics used to construct nonresponse cells for nonresponse adjustments, any potential bias would be reduced in estimates produced using weights adjusted for nonresponse.

[3] A base-year respondent has child data (scoreable assessment data or height or weight measurements or was excluded from assessment due to lack of accommodation for a disability) or parent interview data from at least one round of data collection in the base year. A third-grade respondent has child data (scoreable assessment data, or executive function data, or child questionnaire data, or height or weight measurements or was excluded from assessment due to lack of accommodation for a disability) or parent interview data from the third-grade round of data collection.

Table 5-18. Differences between unadjusted base-year estimates from kindergarten respondents and unadjusted base-year estimates from third-grade respondents: Spring 2011 and spring 2014

Survey item from the base year	Sample size		Unadjusted estimates and difference between kindergarten and third grade[1]			
	Kindergarten	Third grade	Kindergarten	Third grade	Absolute difference	Relative difference
Proportion of students by school type						
Public	17,791	13,482	89.07	89.21	0.14	0.16
Private	17,791	13,482	10.93	10.79	0.14	1.28
Proportion of students by census region[2,3]						
Northeast	17,790	13,482	15.74	15.97	0.23	1.46
Midwest	17,790	13,482	21.98	21.99	0.01	0.05
South	17,790	13,482	38.23	37.26	0.97	2.54
West	17,790	13,482	24.04	24.78	0.74	3.08
Proportion of students by locale						
City	17,525	13,295	32.79	31.73	1.06	3.23
Suburb	17,525	13,295	33.35	34.38	1.03	3.09
Town	17,525	13,295	11.20	10.44	0.76	6.79
Rural	17,525	13,295	22.65	23.46	0.81	3.58
Proportion of students by race/ethnicity						
White, non-Hispanic	18,129	13,566	50.67	52.86	2.19	4.32
Black, non-Hispanic	18,129	13,566	13.73	11.71	2.02	14.71
Hispanic	18,129	13,566	25.64	25.50	0.14	0.55
Asian, non-Hispanic	18,129	13,566	4.43	4.58	0.15	3.39
Native Hawaiian/Pacific Islander, non-Hispanic	18,129	13,566	0.37	0.37	0.00	0.00
American Indian/Alaska Native, non-Hispanic	18,129	13,566	1.05	1.09	0.04	3.81
Two or more races	18,129	13,566	4.10	3.88	0.22	5.37

See notes at end of table.

Table 5-18. Differences between unadjusted base-year estimates from kindergarten respondents and unadjusted base-year estimates from third-grade respondents: Spring 2011 and spring 2014—Continued

Survey item from the base year	Sample size		Unadjusted estimates and difference between kindergarten and third grade[1]			
	Kindergarten	Third grade	Kindergarten	Third grade	Absolute difference	Relative difference
Proportion of students with the following characteristics from the spring kindergarten parent interview						
Parent is currently married, in civil union, or domestic partnership	13,481	10,687	72.89	74.64	1.75	2.40
Non-English language used at home	13,611	10,770	7.90	7.62	0.28	3.54
At least one parent has high school education	16,005	12,278	90.56	91.12	0.56	0.62
Household poverty index						
Below poverty threshold	13,527	10,720	25.96	24.28	1.68	6.47
At or above poverty threshold but below 200 percent poverty threshold	13,527	10,720	22.41	22.15	0.26	1.16
At or above 200 percent poverty threshold	13,527	10,720	51.63	53.57	1.94	3.76

[1] Unadjusted estimates are produced using the kindergarten base weight for kindergarten and the third-grade base weight for third grade.
[2] States in each region:
Northeast: Connecticut, Maine, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, and Vermont.
Midwest: Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, South Dakota, and Wisconsin.
South: Alabama, Arkansas, Delaware, Florida, Georgia, Kentucky, Louisiana, Maryland, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, Virginia, West Virginia, and the District of Columbia.
West: Alaska, Arizona, California, Colorado, Hawaii, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, and Wyoming.
[3] Sample sizes rounded to the nearest 10 and, therefore, may not sum to total.
NOTE: The sample sizes for kindergarten are the number of base-year respondents with a nonmissing value for the kindergarten characteristic or group of characteristics. The sample sizes for third grade are the number of third-grade respondents with a nonmissing value for the kindergarten characteristic or group of characteristics.
SOURCE: U.S. Department of Education, National Center for Education Statistics, Early Childhood Longitudinal Study, Kindergarten Class of 2010–11 (ECLS-K:2011), spring 2011 and spring 2014.

The reduction in potential bias is seen in table 5-19 where the relative differences between the adjusted estimates decrease to a range of 0 to 9.95 percent, with an average of 2.52 percent. For each group in table 5-19, the sample size is the number of records with nonzero final weights. Generally, a relative difference of more than 5 percent indicates that there may be potential bias in the estimate. There are no relative differences larger than 5 percent among the demographic groups. Relative differences larger than 5 percent are seen for children who regularly spoke a non-English language at home (9.95 percent) and student in households with income at or above the poverty threshold but below 200 percent of the poverty threshold (6.94 percent). As mentioned before, the relative difference is a function not only of the sample size but also of the prevalence of a particular characteristic. For example, only 8.24 percent of kindergartners and 7.42 percent of students in third grade regularly used a non-English language at home (representing a high relative difference), compared with 90.37 percent of kindergartners and 91.98 percent of students in third grade with at least one parent with a high school degree or higher (representing a low relative difference).

Table 5-19. Differences between adjusted base-year estimates from kindergarten respondents and adjusted base-year estimates from third-grade respondents: Spring 2011 and spring 2014

Survey item from the base year	Sample size		Adjusted estimates and difference between kindergarten and third grade[1]			
	Kindergarten	Third grade	Kindergarten	Third grade	Absolute difference	Relative difference
Proportion of students by school type, kindergarten year						
Public	15,798	9,642	89.00	89.18	0.18	0.20
Private	15,798	9,642	11.00	10.82	0.18	1.64
Proportion of students by census region, kindergarten year[2,3]						
Northeast	15,800	9,642	16.24	15.92	0.32	1.97
Midwest	15,800	9,642	21.77	22.08	0.31	1.42
South	15,800	9,642	37.47	37.88	0.41	1.09
West	15,800	9,642	24.52	24.11	0.41	1.67
Proportion of students by locale, kindergarten year						
City	15,559	9,504	32.82	32.09	0.73	2.22
Suburb	15,559	9,504	33.81	33.91	0.1	0.30
Town	15,559	9,504	10.85	11.12	0.27	2.49
Rural	15,559	9,504	22.52	22.88	0.36	1.60
Proportion of students by race/ethnicity, kindergarten year						
White, non-Hispanic	16,083	9,646	51.34	51.77	0.43	0.84
Black, non-Hispanic	16,083	9,646	13.50	13.31	0.19	1.41
Hispanic	16,083	9,646	24.75	24.75	0	0.00
Asian, non-Hispanic	16,083	9,646	4.60	4.47	0.13	2.83
Native Hawaiian/Pacific Islander, non-Hispanic	16,083	9,646	0.42	0.44	0.02	4.76
American Indian/Alaska Native, non-Hispanic	16,083	9,646	1.21	1.15	0.06	4.96
Two or more races	16,083	9,646	4.18	4.10	0.08	1.91

See notes at end of table.

Table 5-19. Differences between adjusted estimates from kindergarten and adjusted estimates from spring third grade: Spring 2011 and spring 2014—Continued

Survey item	Sample size		Adjusted estimates and difference between kindergarten and third grade[1]			
	Kindergarten	Third grade	Kindergarten	Third grade	Absolute difference	Relative difference
Proportion of students with the following characteristics from the spring kindergarten parent interview						
Parent is currently married, in civil union, or domestic partnership	13,481	8,684	72.65	74.45	1.8	2.48
Non-English language used at home	13,611	8,729	8.24	7.42	0.82	9.95
At least one parent has high school education	12,313	9,620	90.37	91.98	1.61	1.78
Household poverty index						
Below poverty threshold	13,527	8,702	26.33	24.96	1.37	5.20
At or above poverty threshold but below 200 percent poverty threshold	13,527	8,702	22.47	24.03	1.56	6.94
At or above 200 percent poverty threshold	13,527	8,702	51.20	51.01	0.19	0.37

[1] Adjusted estimates are produced using weight W1_2P0 for kindergarten and weight W7C27P_7A0 for third grade.
[2] States in each region:
Northeast: Connecticut, Maine, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, and Vermont.
Midwest: Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, South Dakota, and Wisconsin.
South: Alabama, Arkansas, Delaware, Florida, Georgia, Kentucky, Louisiana, Maryland, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, Virginia, West Virginia, and the District of Columbia.
West: Alaska, Arizona, California, Colorado, Hawaii, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, and Wyoming.
[3] Sample sizes rounded to the nearest 10 and, therefore, may not sum to total.
NOTE: The sample sizes for kindergarten are the number of cases with a nonzero kindergarten final weight (weight W1_2P0) and a nonmissing value for the kindergarten characteristic or group of characteristics. The sample sizes for third grade are the number of cases with a nonzero third-grade final weight (weight W7C27P_7A0) and a nonmissing value for the kindergarten characteristic or group of characteristics.
SOURCE: U.S. Department of Education, National Center for Education Statistics, Early Childhood Longitudinal Study, Kindergarten Class of 2010–11 (ECLS-K:2011), spring 2011 and spring 2014.

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6. DATA PREPARATION

In the third-grade round (spring 2014), two types of data collection instruments were again used for the Early Childhood Longitudinal Study, Kindergarten Class of 2010–11 (ECLS-K:2011): computer-assisted interviews and assessments (CAI) and self-administered paper forms (hard-copy questionnaires). As in kindergarten (i.e., the base year), first grade, and second grade, once data were collected, they were reviewed and prepared for release to analysts. The approaches used to prepare the data differed with the mode of data collection. The direct child assessments and parent interviews were conducted using CAI. Editing specifications were built into the CAI programs used by assessors or interviewers collecting these data. The teacher and school administrator hard-copy questionnaires were self-administered. When these hard-copy questionnaires were returned to the data collector's home office, staff recorded the receipt of these forms into a project-specific forms tracking system. Data from the hard-copy questionnaires were then captured by scanning the completed forms. Before scanning, coders reviewed the questionnaires to ensure that responses were legible and had been written in appropriate response fields for transfer into an electronic format. After the data were scanned and reviewed for range and logical consistency, coding of open-ended[1] "other, specify" text responses into existing or new categories was implemented.

The following sections briefly describe the data preparation activities for both modes of data collection, focusing on the third-grade activities. More detailed information on these data preparation activities can be found in the base-year (kindergarten), kindergarten–first grade, and kindergarten–second grade User's Manuals of the Early Childhood Longitudinal Study, Kindergarten Class of 2010–11 (ECLS-K:2011).[2]

[1] Open-ended items are those that do not provide a predetermined set of response options from which to choose. Closed-ended items are those with predetermined response categories.

[2] Users should refer to the *Early Childhood Longitudinal Study, Kindergarten Class of 2010–11 (ECLS-K:2011), User's Manual for the ECLS-K:2011 Kindergarten Data File and Electronic Codebook* (NCES 2013-061) (Tourangeau et al. 2013), hereinafter referred to as the base-year User's Manual, for information about the general study methodology and the kindergarten rounds of data collection, to the *Early Childhood Longitudinal Study, Kindergarten Class of 2010–11 (ECLS-K:2011), User's Manual for the ECLS-K:2011 Kindergarten–First Grade Data File and Electronic Codebook* (NCES 2015-069) (Tourangeau et al. 2014) for information about the first-grade rounds of data collection, and to the *Early Childhood Longitudinal Study, Kindergarten Class of 2010–11 (ECLS-K:2011), User's Manual for the ECLS-K:2011 Kindergarten–Second Grade Data File and Electronic Codebook, Restricted Version* (NCES 2015-049) (Tourangeau et al. 2015) for information about the second-grade rounds of data collection.

6.1 Coding Text Responses

Additional coding was required for some of the items asked in the CAI parent interview once the data had been collected. These items included "other, specify" text responses and responses to questions asking about parent or guardian occupation, which interviewers had entered into the CAI system verbatim.

Review of "other, specify" items. As in previous rounds, for third grade, trained data preparation staff reviewed respondents' verbatim "other, specify" text responses and coded responses into existing response categories as appropriate. These staff also reviewed the "other, specify" text to identify any responses that occurred with sufficient frequency to warrant the addition of a new response category. Beginning with the third-grade parent interview, one item required an additional category in order to categorize "other, specify" text responses that occurred with sufficient frequency. HEQ290 asked about subjects that the child was tutored in; the category "Language Arts" was added and used to categorize responses such as English, Spelling, Writing, Communication Arts, Grammar, Language Skills, and Vocabulary. Note that while this question was also asked in the spring first-grade and spring second-grade rounds, such responses were not upcoded to "Language Arts" until this third-grade round. New categories added as a result of a review of "other, specify" responses are noted as such in appendix A. Text responses that did not fit into any preexisting category and were not common enough to be coded into a new category were left coded as "other" in the data. There were no "other, specify" items in the child assessments.

Parent occupation coding. In the third-grade data collection round, specifics related to a parent's occupation such as job title and employer were not asked in the parent interview. Details about parent occupation coding in earlier rounds can be found in the respective User's Manual for the round.

6.1.1 Household Roster Review

The third-grade parent interview included a household roster in which information on household composition was collected. Following protocols established during the previous rounds, three general types of checks were run on the household roster information to identify missing or inaccurate information that would require editing.

- First, the relationship of an individual living in the household to the study child was compared to the individual's listed age and sex. Inconsistencies, such as a male mother, and unusual combinations of characteristics, such as a biological mother over age 65,

were examined further. Information was corrected when the interview contained sufficient information to support a change.

- Second, while it is possible to have more than one mother or more than one father in a household, households with more than one mother or more than one father were reviewed to ensure they were not cases of data entry error. Corrections were made whenever clear errors were identified and a clear resolution existed.

- Third, the relationships of an individual in the household to both the study child and the respondent were examined, as there were cases in which the relationship of an individual to the study child conflicted with his or her status as the spouse/partner of the respondent. For example, in a household containing a child's grandparents but not the child's parents, the grandmother may be designated the "mother" figure, and the grandfather thus becomes the "father" figure for the purposes of some questions in the interview by virtue of his marriage to the grandmother. In this example, these cases would have been examined but left unchanged. Both the original—and correct (grandfather)—relationship data and the new "parent-figure" designation (father) that had been constructed were retained. In other situations, discrepancies in the reported relationships indicated an error, and the data were edited. For example, in a household containing two mothers, if a review of the audio recording from the interview indicated the relationship of the second mother was documented incorrectly by the interviewer—that the second female identified as a mother was *not* actually a mother to the focal child—the relationship of the second female would have been edited (corrected) to something other than mother.

A flag on the data file (X7EDIT) identifies cases that were reviewed or edited for any of the reasons described above; the flag is set to 1 if the case was identified for review for any of these household roster checks. Note that a code of 1 does not necessarily indicate that the data were changed; if the data were reviewed and found to be as reported by the respondent or there was no clear error to be fixed, the reviewed data were left as is. There were 4,203 cases (37.9 percent) identified for review of the household roster from the spring of third grade. The number of cases identified for review was substantially higher in third grade than in previous rounds because age incrementation errors from prior rounds for persons in the household roster were fixed during editing of third-grade interviews. Of the 4,203 cases edited, the age incrementation edits impacted 2,663 cases.[3]

[3] The errors with age incrementation have been corrected. Users will not have to revise ages in this or earlier rounds. Any incrementation anomalies present in the data (for example, if a parent's age increased by three years between data collections conducted one year apart) have been reviewed and determined to be age updates requested by interviewers.

6.1.2 Partially Complete Parent Interviews

Parents did not have to complete an entire interview for the data collected from them to be included on the data file. However, parent interviews did have to be completed through a specified section of the interview for those data to be included. For the third-grade round, the respondent had to answer all applicable questions through the majority of the section on family structure (FSQ). There were 638 partially completed spring parent interviews for which the respondent answered applicable questions in the FSQ section but did not complete the entire interview.[4] All data derived from questions asked after the interview termination point for these partially completed interviews are set to -9 for "not ascertained."

6.2 Receipt, Coding, and Editing of Hard-Copy Questionnaires

6.2.1 Receipt Control

Receipt control was managed in the same manner for third grade as it had been in the earlier rounds of the ECLS-K:2011. Please refer to the base-year User's Manual for details.

6.2.2 Scanning of Hard-Copy Questionnaires

Scanning of hard-copy questionnaires was managed in the same manner for third grade as it had been in the earlier rounds of the ECLS-K:2011. Please refer to the base-year User's Manual for details.

6.2.3 Coding for Hard-Copy Questionnaires

Similar to the process described for the parent interview and identical to procedures used in earlier rounds, "other, specify" text responses were reviewed by the data preparation staff and coded at the instrument level. In the third-grade round, there were a small number of items for which additional categories were added to categorize "other, specify" text responses that occurred with sufficient frequency. For example, in response to the question about measures taken by the school to ensure the safety of children

[4] Note that due to skip patterns applicable to individual cases, parents did not have to answer *every* question up to the end of the specified section for the parent interview data to be included in the file. The last question in the FSQ section (spring round) that applied to all cases was FSQ200 (marital status).

in the school administrator questionnaires, a sufficient number of respondents indicated that cameras or video were used. A new response category was added to classify these responses. New categories added as a result of this review of "other, specify" responses are noted as such in appendix A. In addition, categories that were added during the coding process in earlier rounds that did not appear on the third-grade hard-copy questionnaires were again available to coders during the coding process for third grade. For example, in earlier rounds, a number of teachers provided "other, specify" responses to the question about what languages other than English are spoken by teachers or aides to the ELL children in the class. Although not listed on the questionnaire, several categories to classify these responses (e.g. African languages, Creole, French, German, Polish, Portuguese, Russian, and Hmong) were available to the coders for third grade as well. Text responses that did not fit into any preexisting category and were not common enough to be coded into new categories were left coded as "other" in the data.

6.2.4 Data Editing

The data editing process for hard-copy questionnaires was managed in the same manner for third grade as it had been in the earlier rounds of the ECLS-K:2011. The base-year User's Manual has more detail related to editing.

As part of the editing process in third grade as well as in earlier rounds of the ECLS-K:2011, skip patterns were enforced. In cases in which respondents did not follow the skip instructions and proceeded to answer the questions that were supposed to be skipped, responses for the inapplicable dependent questions generally were deleted and the data were set to -1, the inapplicable code. There are two check boxes (shown below), one on the school administrator questionnaire given to administrators in schools that were new to the study or for which a completed school administrator questionnaire was not received in a prior data collection (i.e., SAQ-A) and one on the teacher-level teacher questionnaire, that were part of skip patterns that, in certain circumstances, were not enforced:

- ■ School administrator questionnaire (SAQ-A): **S*SCHPMC**
- ☐ *If your school is a private, magnet, or charter school, please check here and SKIP TO Q A11.*

- Teacher questionnaire (TQA): **A*NODEG**

☐ *IF YOU DO **NOT** HAVE A DEGREE FROM A COLLEGE OR UNIVERSITY, CHECK HERE. (SKIP TO Q G11)*

When respondents marked these check boxes, they were directed to skip ahead in the questionnaire because a subset of subsequent, dependent questions were not applicable to them. In some cases, it was clear to the data editors that the check box was marked in error by the respondent and the responses to the dependent questions were valid, usable data. In such cases, the check box was edited (corrected) in order to retain responses to dependent questions in the data. Consequently, data for the two check boxes listed may not reflect the actual responses provided by the person completing the questionnaire.

7. DATA FILE CONTENT AND COMPOSITE VARIABLES

This chapter describes the contents of the Early Childhood Longitudinal Study, Kindergarten Class of 2010–11 (ECLS-K:2011) kindergarten through third-grade (K-3) restricted-use data file. The data are accessible through software called the Electronic Codebook (ECB). The ECB allows data users to view variable frequencies, tag variables for extraction, and create the SAS, SPSS for Windows, or Stata code needed to create an extract file for analysis. The child data file on the ECB is referred to as a "child catalog." Instructions for installing the ECB are provided in chapter 8.

The K-3 file provides data at the child level and contains one record for each of the 18,174 children who participated, or whose parent participated, in at least one of the two kindergarten data collections. References to "parents" in this chapter include both parents and guardians. Each child record contains data from the various respondents associated with the child (i.e., the child herself or himself, a parent, one or more teachers, a school administrator and, if applicable, a nonparental care provider), weights and imputation flags, and administrative variables from the Field Management System (FMS),[1] for example, "F7SCHZIP" for the ZIP code of the school the child attended. The file includes cases with either child assessment data or parent interview data from at least one round of kindergarten data collection (fall 2010 or spring 2011). Among the 18,174 participants from kindergarten, the file includes fall 2011 data for those with a child assessment or parent interview in fall 2011, spring 2012 data for those with a child assessment or parent interview in spring 2012, fall 2012 data for those with a child assessment or parent interview in fall 2012, spring 2013 data for those with a child assessment or parent interview in spring 2013, and spring 2014 data for those with a child assessment or parent interview in spring 2014. The hearing evaluation data that were collected in the spring of third grade are not included in the kindergarten–third grade restricted-use file. Those data are provided in a separate restricted-use data file (NCES 2018-091) that has a separate user's manual focusing on the hearing evaluation component (NCES 2018-090).

The raw data are provided in an ASCII data file named childK3.dat. To develop data files for statistical analyses, analysts should use the ECB software or the file record layout located in appendix B of the DVD. The ECB writes syntax files that must be run within a statistical software package to generate customized data files. Users should not access the ASCII data file directly, as any changes made to that file will alter the raw data obtained during data collection.

[1] The Field Management System includes information collected about the study schools, school staff, and children from available administrative records or existing data sources (such as the Common Core of Data) or from conversations between data collection staff and school staff.

This chapter focuses primarily on the composite variables that were created from information obtained during the third-grade data collections. Most of the variables have been computed in the same way as those that were created using information collected in the base year (i.e., kindergarten), first grade, and second grade. However, a small number of the variables differ slightly either because the same exact information available in the earlier years of the study was not available in third grade or because it was determined that there was a better way to compute the composite after release of a previous data file. These differences are noted in the descriptions of the variables. To the extent feasible, the composite variables have also been computed in the same way as those created for the Early Childhood Longitudinal Study, Kindergarten Class of 1998-99 (ECLS-K). This results in consistency between the two studies and facilitates comparisons between the two cohorts. However, some composites were created differently in the ECLS-K:2011 than in the ECLS-K. Documentation for both studies should be consulted before conducting cross-cohort analyses using composites. The user's manuals for kindergarten, first grade, and second grade should be consulted for detailed descriptions of the composite variables computed for rounds 1 through 6. For information on the ECLS-K, the *Combined User's Manual for the ECLS-K Eighth-Grade and K-8 Full Sample Data Files and Electronic Codebooks* (NCES 2009-004) is available on the National Center for Education Statistics website (https://nces.ed.gov/pubsearch/pubsinfo.asp?pubid=2009004), as are the round-specific manuals for each round of ECLS-K data collection (https://nces.ed.gov/pubsearch/getpubcats.asp?sid=024).

As discussed in Appendix B, the public-use file is derived from the restricted-use file and is identical in format. However, masking techniques such as re-categorization and top- and bottom-coding have been applied to some data to make them suitable for public release. As a result of masking, some variables in the public-use file may not contain the exact same categories and values described in this chapter. Please see Appendix B for information on which variables are modified in the public-use file and see the public-use codebook for the exact categories and values provided in the public data.

This chapter is divided into several sections. Sections 7.1 through 7.4 describe variable naming conventions, identification variables, missing values, and data flags. Section 7.5 provides details about the creation of composite variables, and section 7.6 focuses on the methodological variables.

7.1 Variable Naming Conventions

Variables are named according to the data source (e.g., parent interview, teacher questionnaires about the teacher and child) and the data collection round to which they pertain. With the exception of the identification variables described in section 7.2, the first two or three characters of each variable (referred to as the variable prefix) include (1) a letter designating the source and (2) a number indicating the data collection round. For example, the number 7 is used for the data collection that took place in the spring of 2014. These variable naming conventions are used consistently in the data file. The prefixes used for third-grade variables in the kindergarten–third grade data file are listed in exhibit 7-1.

Exhibit 7-1. Prefixes for third-grade variables

Variable prefix	Source of data
A7	Data collected from the spring 2014 teacher-level questionnaire
O7	Data collected from the spring 2014 subject-specific teacher-level questionnaire
C7	Data/scores from the spring 2014 direct child assessment
D7	Data collected from the spring 2014 special education teacher-level questionnaire
E7	Data collected from the spring 2014 special education child-level questionnaire
F7	Data from the spring 2014 Field Management System (FMS)
IF	Imputation flags
T7	Data collected from the spring 2014 teacher child-level questionnaire
P7	Data collected from the spring 2014 parent interview
S7	Data collected from the spring 2014 school administrator questionnaire
X_	Composite/derived variables not specific to a particular round
X7	Spring 2014 composite/derived variables
W	Analytic weights and stratum/cluster identifiers

SOURCE: U.S. Department of Education, National Center for Education Statistics, Early Childhood Longitudinal Study, Kindergarten Class of 2010–11 (ECLS-K:2011), kindergarten–third grade (K-3) data file.

Some variable names end with a suffix denoting a particular feature of the variable of which users should be aware. The suffix "_R" indicates that the variable has been updated or revised since its release in a prior data file. The suffix "2" is used for composites that are based on new questions or have new categories added relative to a prior round. The suffix "_I" indicates that missing data for the variable have been imputed or, in the case of a composite variable, that it is computed from imputed source variables. Imputation is discussed in sections 7.5.2.5 and 7.5.4.6.

7.2 Identification Variables

The kindergarten through third-grade data file contains a child identification (ID) variable (CHILDID) that uniquely identifies each record. For children who have a twin who also participated in the study, TWIN_ID is the child identification number of the focal child's twin. The file also contains an ID for the parent (PARENTID). The parent ID number (PARENTID) is the same number as the child ID.

Unlike in the ECLS-K, CHILDID is randomly generated, so it cannot be used to group children into classrooms or schools (that is, there is no commonality among IDs for children within the same school or classroom). The K-3 restricted-use data file does contain IDs for the child's general classroom teacher in each round, special education teacher (if applicable) in each round, school in each round, and before- and after-school care provider in the kindergarten year (if the child was in before- or after-school care with one provider at least 5 hours per week). Users who wish to conduct hierarchical-level analyses with the school or classroom as additional levels can use these ID variables to group children within schools and classrooms. However, it should be noted that children change schools and classrooms over time, and this should be taken into account in any analysis of school or classroom effects. Additionally, as children change schools and classrooms over time, cluster sizes may become too small to support hierarchical analyses. The IDs available on the restricted-use file are listed in exhibit 7-2.

Children's general classroom teachers in the 2013–14 school year are identified in the restricted-use file with the ID variable T7_ID, the spring 2014 teacher identification number. Study children who share the same general classroom teacher with other study children have the same value for the general classroom teacher ID. For children who had an Individualized Education Program (IEP) on record with the school that was identified as part of the process for determining accommodations for the child assessment, D7T_ID provides the identification number for their special education teacher or related service provider. For some students, the general classroom teacher was also the student's special education teacher. However, D7T_ID does not match T7_ID for these students. The ID variable S7_ID indicates the school the child attended at the time of the spring 2014 data collection.

Exhibit 7-2. Identification variables included in the ECLS-K:2011 kindergarten–third grade restricted-use data file

Order on file	Variable	Label
1	CHILDID	CHILD IDENTIFICATION NUMBER
2	PARENTID	PARENT IDENTIFICATION NUMBER
3	S1_ID	FALL 2010 SCHOOL IDENTIFICATION NUMBER
4	S2_ID	SPRING 2011 SCHOOL IDENTIFICATION NUMBER
5	S3_ID	FALL 2011 SCHOOL IDENTIFICATION NUMBER
6	S4_ID	SPRING 2012 SCHOOL IDENTIFICATION NUMBER
7	S5_ID	FALL 2012 SCHOOL IDENTIFICATION NUMBER
8	S6_ID	SPRING 2013 SCHOOL IDENTIFICATION NUMBER
9	S7_ID	SPRING 2014 SCHOOL IDENTIFICATION NUMBER
10	T1_ID	FALL 2010 TEACHER IDENTIFICATION NUMBER
11	T2_ID	SPRING 2011 TEACHER IDENTIFICATION NUMBR
12	T3_ID	FALL 2011 TEACHER IDENTIFICATION NUMBER
13	T4_ID	SPRING 2012 TEACHER IDENTIFICATION NUMBR
14	T5_ID	FALL 2012 TEACHER IDENTIFICATION NUMBER
15	T6_ID	SPRING 2013 TEACHER IDENTIFICATION NUMBER
16	T7_ID	SPRING 2014 TEACHER IDENTIFICATION NUMBER
17	D2T_ID	SPRING 2011 SPECIAL ED TEACHER ID NUMBER
18	D4T_ID	SPRING 2012 SPECIAL ED TEACHER ID NUMBER
19	D6T_ID	SPRING 2013 SPECIAL ED TEACHER ID NUMBER
20	D7T_ID	SPRING 2014 SPECIAL ED TEACHER ID NUMBER
21	CC_ID[1]	CHILD CARE PROVIDER IDENTIFICATION NUM
22	TWIN_ID	CHILDID FOR FOCAL CHILD'S TWIN

[1] Kindergarten only.
SOURCE: U.S. Department of Education, National Center for Education Statistics, Early Childhood Longitudinal Study, Kindergarten Class of 2010-11 (ECLS-K:2011), kindergarten–third grade (K-3) data file.

Each child has a school identification number for the two kindergarten data collections, the spring first-grade data collection, the spring second-grade data collection, and the spring third-grade data collection. Children selected for the fall subsamples also have school identification numbers for the fall 2011 and fall 2012 data collections. Not all identification numbers represent specific schools. Instead, certain identification numbers have been designated to identify children who were homeschoolers (9100), moved to a nonsampled county (9997), were unlocatable (9995), moved outside the United States (9993), were movers who were not subsampled to be followed into their new schools (9998), were deceased (9994), or whose parents asked for them to be removed from the study (9999).

If a child did not have an IEP on record with the school that was identified as part of the process for determining accommodations for the child assessment, there is no special education teacher or related services provider associated with that child, and D7T_ID is missing. The D7T_ID would also be missing if the school records indicated that a child had an Individualized Family Service Plan (IFSP) when

he or she was younger, but did not have an IEP at the time of data collection. If a child had an IEP identified as part of the process for determining accommodations for the child assessment and, therefore, a special education teacher associated with him or her, there is an ID provided in D7T_ID whether or not the special education teacher responded to the spring 2014 special education teacher questionnaires.

For both general classroom and special education teachers, there could be missing data for the child's teacher-level or child-level questionnaire (for example, if the general or special education teacher replied to only one of the two teacher questionnaires for the general or special education teacher, respectively, or did not fully complete the questionnaires) even though there is an assigned teacher ID. It is left to users to determine how they would like to set "not applicable" versus "not ascertained" codes when data for T7_ID or D7T_ID are missing. Note that if a teacher did not complete a teacher-level questionnaire, completed a child-level questionnaire for one child, and did not complete another child-level questionnaire for a child to whom the teacher was also linked, both children would have the same teacher identification number (e.g., T7_ID for the general classroom teacher or D7T_ID for the special education teacher). However, only the child for whom the teacher completed the child-level questionnaire would have data for those variables.

7.3 Missing Values

Variables on the ECLS-K:2011 data file use a standard scheme for identifying missing data. Missing value codes are used to indicate item nonresponse (when a question is not answered within an otherwise completed interview or questionnaire), legitimate skips (when a question was not asked or skipped because it did not pertain to the respondent), and unit nonresponse (when a respondent did not complete any portion of an interview or questionnaire) (see exhibit 7-3).

Exhibit 7-3. Missing value codes used in the ECLS-K:2011 data file

Value	Description
-1	Not applicable, including legitimate skips
-2	Data suppressed (public-use data file only)
-4	Data suppressed due to administration error
-5	Item not asked in School Administrator Questionnaire form B
-7	Refused (a type of item nonresponse)
-8	Don't know (a type of item nonresponse)
-9	Not ascertained (a type of item nonresponse)
(blank)	System missing (unit nonresponse)

SOURCE: U.S. Department of Education, National Center for Education Statistics, Early Childhood Longitudinal Study, Kindergarten Class of 2010–11 (ECLS-K: 2011), kindergarten–third grade (K-3) data file.

The -1 (not applicable) code is used to indicate that a respondent did not answer a question due to skip instructions within the instrument. In the parent interview, "not applicable" is coded for questions that were not asked of the respondent because a previous answer made the question inapplicable to the particular respondent. For example, a question about a child's sibling's age is not asked when the respondent has indicated that the child has no siblings. For the teacher and school administrator self-administered instruments, "not applicable" is coded for questions that the respondent left blank because the written directions instructed him or her to skip the question due to a certain response on a previous question that made the question inapplicable to the particular respondent. One example of the use of "not applicable" is found in the spring 2014 school administrator questionnaire version A (SAQ-A) questions F2 and F3a-h. Question F1 asks whether the school received Title I funds for this school year. If the answer to question F1 is "yes," the respondent is directed to continue to question F2 asking if the school was operating a Title I targeted assistance or schoolwide program, and then to F3a-h, which asks how the Title I funds are used. If the answer to question F1 is "no," the respondent is supposed to skip to question F4 and questions F2 and F3a-h would be coded as -1 (not applicable). If questions F1, F2, and F3a-h are left blank by the respondent, and the respondent did not indicate that it is a private school (S7PRVSCH = 0), data for these questions are coded -9 (not ascertained), meaning the questions should have been answered but were not. If the respondent indicated that the school is private (S7PRVSCH = 1) and questions F1, F2, and F3a-h are left blank, data for these questions are coded -1 (not applicable) because they were supposed to be left blank given the school's designation as private.

There are some exceptions to the standard use of -1 to indicate data are inapplicable for specific cases. For questions about the hours and minutes that the child spends watching television and playing video games, the questions about the number of minutes (P7TVMIN, P7VIDMIN) can be entered by interviewers as "0" or skipped if there are no minutes. If the questions about the number of minutes are skipped, they are coded -1 (not applicable). Another exception to the standard use of -1 is that for several round 7 variables (X7RTHETK3, X7MTHETK3, X7STHETK3), -1 is a valid value and should not be identified as missing data. Another use of -1 is in the teacher-level questionnaire about teacher background and the classroom. In this questionnaire, question B9 was "How frequently do you or your students use computers or the following electronic devices for instructional purposes? Please include any desktop, laptop, or other computer-type devices." In addition to several discrete response categories for devices (a. Computer, b. LCD or DLP projector, c. Interactive whiteboard, etc.), a space was also provided for the respondent to enter text for "h. Other electronic devices" (A7OTHUSE). In many cases, a respondent did not indicate using any other type of electronic device (i.e., did not enter a text response for category h to specify another electronic device). In such cases, A7OTHUSE was set to -1 (not applicable) because

providing a response for category h was essentially optional, and nonresponse (missing values) for category h could be expected.

In order to protect the confidentiality of study participants, some data are suppressed in the public-use data file. The code -2 indicates the suppression of data for confidentiality. The suppression code -4 is used in rare instances in which there was a problem in the administration of an item that led to a high proportion of cases having missing or flawed data on the affected item, such that the data that were collected were not useful. For most variables that have a -4 assigned, the administration error did not typically affect all cases, but the -4 missing data code is assigned to all cases, including those not specifically affected by the error. An exception occurs with children's scores on the *Dimensional Change Card Sort (DCCS*) (Zelazo et al. 2013) for third grade. For these variables (C7DCCS1-30, C7GAME1-30, C7TARGRT1-30, X7DCCSSCR, X7CSDAC, X7CSNDAC, X7CSACC, X7CSNDRT), a code of -4 is only assigned to cases that were affected by a programming error that did not allow for sufficient practice with the *DCC*S task. These cases are flagged with X7DCCSFLG=7 and have all spring third-grade *DCCS*-related data set to -4.

Information about a number of school characteristics that was collected in the SAQ-A (the school administrator questionnaire given to schools that were new to the study or had not previously completed an SAQ) was not collected in the SAQ-B (the school administrator questionnaire given to schools that had previously completed an SAQ). This data collection approach reduced respondent burden by eliminating questions about school characteristics that were unlikely to change from year-to-year, such as public/private control and the grade levels taught at the school. The code -5 is a special "not applicable" code indicating that a child does not have a value for the given school characteristic variable because it was not included in the abbreviated SAQ-B.

The -7 (refused) code indicates that the respondent specifically told the interviewer that he or she would not answer the question. This, along with the -8 (don't know) code and the -9 (not ascertained) code, indicate item nonresponse. The -7 (refused) code is not used in the school or teacher data.

The -8 (don't know) code indicates that the respondent specifically told the interviewer that he or she did not know the answer to the question. The -8 (don't know) code is not used in the school or teacher data. For questions where "don't know" is one of the options explicitly provided, a -8 is not coded for those who choose this option; instead the "don't know" response is coded as indicated in the value label information for the variable associated with that question.

The -9 (not ascertained) code indicates that the respondent left a question blank that he or she should have answered (or for which it is uncertain whether the item should have been answered or legitimately skipped because the respondent also left a preceding item blank). However, if a gate question[2] was left blank, but valid responses are provided to follow-up questions, the valid responses are included in the data file. For example, in the spring 2014 school administrator questionnaire version A (SAQ-A), question E1 asks, "Do any of the children in this school come from a home where a language other than English is spoken?" If the school administrator left E1 blank (i.e., unanswered), but then provided a valid response for question E2 which asks, "What percentage of children in this school and in third grade are English language learners (ELL)?," E1 is coded -9 and the information from E2 is included in the data file as reported. If a gate question and its follow-up questions were left blank, all of the questions (gate and follow-up) are coded as -9 (not ascertained).

For data that are not collected using the self-administered questionnaires (e.g., direct assessment scores), a -9 means that a value was not ascertained or could not be calculated due to nonresponse. The -9 (not ascertained) code is also used in the parent interview data when the interview ended before all applicable questions were asked. In these cases, the code of -9 is used for all variables associated with interview questions that came after the point at which the parent ended the interview. One exception to this coding scheme is the pointer variables.[3] Pointer variables are not set to -9 when the interview ended before all applicable questions were asked; instead they are set to the value corresponding to the household's parent figure(s). The -9 code is also used in the parent interview for questions that were edited[4] or inadvertently skipped in computer-assisted interviewing (CAI) programming. After editing, for complete interviews, the data for all questions that should have been asked but were not are coded as -9 (not ascertained), while the data for other skipped questions are coded as -1 (not applicable); codes -7 and -8 are used only when respondents stated a response of "refused" or "don't know," and not as a result of editing or inadvertently skipping a question as a result of CAI programming.

Missing values (-1, -7, -8, or -9) in questions that allow for more than one response are coded the same for all coding categories used for the question. For example, in the spring 2014 parent interview, if the question about subjects in which the child was tutored (HEQ290) has the answer of -8 (don't know),

[2] A gate question is the first question in a series with skips to one or more follow-up questions.
[3] Pointer variables indicate the household roster number of a person in the household who was the subject of questions about a parent figure.
[4] Edits to household composition data that result in the addition or deletion of a parent or parent figure in the child's household sometimes result in -9 (not ascertained) codes being used for variables in multiple sections of the parent interview that have questions that are asked depending on the presence of specific parents or parent figures. The affected sections in the spring 2014 parent interview include FSQ (Family Structure), PLQ (Primary Language(s) Spoken), DWQ (Discipline, Warmth, and Emotional Supportiveness), NRQ (Nonresident Parents), COQ (Country of Origin for Nonresident Biological Parents), PPQ (Parent's Psychological Well-Being and Health), PEQ (Parent Education and Human Capital), and EMQ (Parent Employment). The -9 (not ascertained) code is used for both questions that are asked about specific parent/parent figures as well as those that are based on skips from those questions.

then all the subject variables associated with that question (e.g., reading, mathematics, science, and any categories that were added based on "other, specify" upcoding) are also coded as -8 (don't know).

The "system missing" code appears as a blank when viewing codebook frequencies and in the ASCII data file. System missing codes (blanks) indicate that data for an entire instrument or assessment are missing due to unit nonresponse. For example, when a child's parent does not participate in the parent interview, all of the data associated with questions from the parent interview are coded "system missing" (blank) for that child. These blanks may be converted to another value when the data are extracted into specific processing packages. For instance, SAS converts these blanks into periods (".") for numeric variables.

Codes used to identify missing values (-1, -7, -8, -9, or system missing) are not all identified as missing values by default in the data analysis software. Users will need to define these as missing values in the software they are using to analyze the data. Depending on the research question being addressed, in some instances users may want to assign a valid value to cases with missing values. For example, a teacher who reported that he or she did not have any English language learners in his or her classroom in the spring 2014 teacher-level questionnaire (Q A11) skipped the next question (Q A12) asking how many English language learners were in his or her classroom. An analyst interested in knowing the average number of English language learners in the classrooms of children in the ECLS-K:2011 may want to recode a value of -1 (not applicable) on the variable associated with Q A12 to a value of 0 (thereby indicating no English language learners in the classroom) in those instances where a teacher indicated in Q A11 that there were no English language learners in the classroom. It is advised that users crosstabulate all gate questions and follow-up questions before proceeding with any recodes or use of the data. Additionally, data users are encouraged to closely examine the distribution of their data and value labels to determine if values that appear to be missing value codes are valid data prior to any recoding.

Composite variables may be derived using data from one or more instrument(s) in one round of data collection, from instrument data across multiple rounds, or from both instrument data and data from administrative records in one or more rounds. If a particular composite is inapplicable for a certain case, for example, as school composite variables are for children who are homeschooled, the variable is given a value of -1 (not applicable) for that case. In instances where a variable is applicable but complete information required to construct the composite is not available, the composite is given a value of -9 (not ascertained). The -7 (refused) code is not used for any of the composites except for the height and weight composites. The -8 (don't know) code is not used for any of the composites.

There is variation in the use of system missing for composite variables. Some child demographic variables (date of birth, sex, and race/ethnicity) are considered applicable to all 18,174 children who participated in the base year and are not assigned a value of system missing for any case. For composite variables using data from both a survey instrument and other administrative or school data sources, only nonparticipants in a given round of data collection are assigned values of system missing. For composite variables using data from only one instrument, (e.g., X7PAR1AGE, parent 1's age, is derived from the spring 2014 parent interview), a value of system missing is assigned if the instrument on which they are based was not completed; if the instrument was completed and an item used in the composite derivation was missing, the composite is assigned a value of -9 as described above.

7.4 Data Flags

7.4.1 Child Assessment Flags (X7RDGFLG, X7MTHFLG, X7SCIFLG, X7NRFLG, X7NRGEST, X7DCCSFLG, X7HGTFLG, X7WGTFLG, X7ASMTST, X7EXDIS)

There are many flags on the data file that indicate the presence or absence of child assessment data. X7RDGFLG denotes whether a child had scoreable reading assessment data in spring 2014, X7MTHFLG denotes whether a child had scoreable mathematics assessment data in spring 2014, X7SCIFLG denotes whether a child had scoreable science assessment data in spring 2014.[5] If a child answered fewer than 10 questions in any direct cognitive assessment domain (reading, mathematics, or science), the assessment was not considered scoreable. Only items actually attempted by the child counted toward the scoreability threshold.[6] A flag value of 1 indicates that the child responded to 10 or more questions in the assessment for that domain, and thus has the associated scores. A flag value of 0 indicates the child had fewer than 10 responses and does not have a score.

X7NRFLG indicates the presence of Numbers Reversed scores and X7DCCSFLG indicates the presence of Dimensional Change Card Sort (DCCS) scores. X7HGTFLG and X7WGTFLG indicate the presence of data for height and weight in spring 2014, respectively.

[5] For earlier rounds of data collection, these reading and mathematics flags took into account both the English and Spanish administrations of the assessments. (The science assessment was administered only in English.) In the fall 2012 and spring 2013 data collections, and the spring 2014 data collection, all children received the reading and mathematics assessments in English, so no language of administration is specified here. For more information on the language of administration, see section 2.1.1.

[6] See chapter 3 for a complete discussion of assessment scoreability.

For the Numbers Reversed and DCCS assessments, as long as the child started the assessment task and answered at least one test question beyond the practice items, a W-ability score (for Numbers Reversed) or a computed overall score (for DCCS) was computed. Flags for each of the scores are coded 1 if the child has a W-ability score (for Numbers Reversed) or a computed overall score (for DCCS), coded 0 if the child participated in the child assessment but does not have a score, and set to system missing if the child did not participate in the child assessment. The DCCS flag has an additional code of -4, which is used for cases affected by a programming error. This error is described in more detail in section 3.2.1.1. The Numbers Reversed grade-normed scores are calculated using information about how far into the school year the assessment occurred. For some children the school year start and end dates are unavailable, so an estimate based on the mean of available data is used instead (information about the calculation of these grade-normed scores can be found in section 3.2.2). The data file includes a flag that indicates whether the assessment point was estimated for the Numbers Reversed grade-normed scores (X7NRGEST). This flag is set to 0 when actual school start and end dates are known, and set to 1 when the assessment point was estimated.

The child's assessment status for the spring of 2014 is indicated by the composite X7ASMTST. The valid values include 1 for children who have any assessment data in the data file,[7] 2 for those children who were excluded due to disability (and, therefore, do not have assessment data in the data file), and 3 for children who do not have assessment data in the data file and were not excluded due to disability. Note that those excluded due to disability (code 2) are considered to be participants in the data collection round even if they do not have any parent interview data either.

In addition, there is a composite variable that uses FMS data to indicate whether the child was excluded from the assessment due to a disability: X7EXDIS. Study team leaders obtained information from school staff in the fall of 2013 and spring of 2014 about whether a child had an IEP on file and if any information in a child's IEP indicated that he or she would need Braille, large print, or sign language. It was also determined whether the IEP specifically prohibited the child from participating in standardized assessments such as those conducted in the ECLS-K:2011. If so, the child was not assessed, and X*n*EXDIS was coded 1 (child was excluded from the assessment due to a disability). Otherwise, X*n*EXDIS was coded 0 (child was not excluded from the assessment due to a disability). Students could have been excluded from taking the assessment for other reasons (e.g., lack of parental consent); these children are also coded 0 on X*n*EXDIS. The number of cases with system missing values varies across the seven X*n*EXDIS variables,

[7] Having child assessment data includes (1) having reading and/or mathematics and/or science scores, (2) having at least one executive function score, or (3) having a height or weight measurement.

due to the sample for each round. The cases that are system missing on X1EXDIS are cases that were added to the sample in the spring of the base year and thus were not members of the sample in round 1. The cases that are system missing on X3EXDIS and X5EXDIS are those that were not selected for the fall subsample. There are no cases coded system missing on these variables in rounds 2, 4, 6, and 7.

7.4.2 Parent Data Flags (X7PARDAT, X7EDIT, X7BRKFNL)

There is one flag that indicates the presence of parent interview data. X7PARDAT is coded as 1 if there was a fully completed or partially completed interview in spring 2014. A partially completed interview in spring 2014 was one that ended before all applicable questions were answered, but that had answers to questions through FSQ200 (variable P7CURMAR) in section FSQ (family structure).

The flag X7EDIT indicates whether, for a given case, household matrix data were reviewed or edited. It is coded as 1 if a parent interview household matrix was edited (e.g., if the age of a household member was reported incorrectly and had to be updated, or a person who was added to the household in error needed to be deleted from the household) or reviewed for editing even if no data were changed (e.g., if there were data that suggested a possible problem, but after examining the case the data were left as they were reported). This flag is included to make users aware that data cleaning or review of household matrix data was necessary for a particular case. If something about the household composition or characteristics of the household members seems unusual (e.g., the child is identified as having a 34-year-old brother in the household) and this flag is set to 1, this is an indication that the unusual data were reviewed and either edited to appear as they do in the data file or left as is because it was confirmed the data were accurate or there was no additional information indicating how the data could be edited accurately. When the flag is set to 1 and data (e.g., for the ages or relationships of household members) are corrected, the data are only changed in the variables for the round of the study to which the data flag pertains; no corrections are made to the data for the prior rounds to reflect the later corrections. Researchers who are using data about household composition from the parent interview household roster in their analyses should examine all rounds of household roster data closely, recognizing that for a limited number of cases corrected information from later rounds may need to be applied to earlier rounds. Before applying changes to earlier-round data, researchers should ensure that they are making changes for the correct household member(s). It should also be ensured that any changes noted in the relationship variables are related to the correction of errors and not to real changes in the relationship of household members to the study child.

The composite variable X7BRKFNL indicates a final breakoff from the round 7 parent interview. A final breakoff occurs when a respondent stops in the middle of the interview before answering all applicable questions. These composites identify the variable associated with the last question answered by the parent. The breakoff point is provided only for those parent interviews with a status of partially complete. Cases for which a parent completed the interview have a value of -1, indicating that the case was not a breakoff.

7.4.3 Teacher Flags (X7TQCDAT, X7TQSUBDAT, X7TQTDAT, X7SETQA, X7SETQC)

Data were collected from teachers using three different questionnaires, two teacher-classroom-level questionnaires and a one child-level questionnaire. Teacher and classroom data were collected in two spring 2014 teacher-level questionnaires. A teacher-level questionnaire about teacher background and the classroom was completed by the child's primary teacher and includes information about the teacher (e.g., year of birth, ethnicity, race, education) and topics such as classroom characteristics, parent involvement, homework assignments, and criteria used to evaluate children's progress. A subject-specific teacher-level questionnaire was completed by the child's primary teacher, or by teachers for a specific subject if the subject was not taught by the primary teacher, and has questions about the instructional curriculum and time spent teaching reading and language arts, mathematics, science, and social studies. These questions were included in a separate subject-specific teacher-level questionnaire so that it would be easy for the primary teacher to share with other teachers if the primary teacher did not teach one or more of those subjects. Several variables that were derived from questions included in the teacher-level questionnaire about teacher background and the classroom administered in spring 2013 (e.g., A6CENMSG, A6MLT2NM, A6SENSOBS, A6STTMTR, A6HISTORY) have also been derived from the same questions included in the subject-specific teacher-level questionnaire administered in spring 2014. For spring 2014, these variables have the same name as in spring 2013, but have the prefix O7 (e.g., O7CENMSG) for data collected from the spring 2014 subject-specific teacher-level questionnaire. The teacher-level questionnaires were completed by a teacher linked to at least one ECLS-K:2011 child, and the data from the teacher-level questionnaires have been linked to every ECLS-K:2011 child in the teacher's class. Data which pertain to an individual study child, were collected from the teacher in the child-level questionnaire. Teachers were asked to complete a child-level questionnaire for each sampled child in their class in the spring of 2014.

The data file contains flag variables that can be used to determine whether data were obtained from a teacher.[8] There are separate flag variables corresponding to each of the teacher questionnaires (teacher-level and child-level) given to the specific teacher in the spring data collections (X7TQTDAT for the first teacher-level questionnaire described above, X7TQSUBDAT for the second teacher-level questionnaire described above, and X7TQCDAT for the child-level questionnaire).

Two flags indicate the presence of data from each of the two special education teacher questionnaires for spring 2014 (X7SETQA for the teacher-level questionnaire and X7SETQC for the child-level questionnaire). Cases linked to a special education teacher who did not complete a questionnaire and cases that were not linked to a special education teacher have a value of 0 on these flags.

Users interested in information about whether special education teacher questionnaires were requested, regardless of whether special education questionnaires were completed in the spring of 2014, can use the composite variable X7SPECS, which is based on information from the FMS rather than the special education questionnaires. X7SPECS can be used with the flags for the presence of data for special education teacher questionnaires, X7SETQA and X7SETQC, to indicate whether special education questionnaires were requested and received. For example, if X7SETQA=0 and X7SPECS=1, this indicates that the case was linked to a special education teacher who did not complete a teacher-level special education questionnaire, but special education questionnaires were requested. If X7SETQA=0 and X7SPECS=2, this indicates that the case was not linked to a special education teacher and special education questionnaires were not requested. X7SPECS is described further below in section 7.5.1.10.

7.4.4 School Administrator Data Flag (X7INSAQ)

There is a flag for the school administrator questionnaire (X7INSAQ) that is coded 1 if there are data from either version of the spring 2014 school administrator questionnaire (SAQ) and 0 if there are no data from the SAQ.

[8] An identification number is provided in the teacher ID variable T6_ID as long as a child was linked to a general classroom teacher, even if the teacher did not complete any questionnaires.

7.4.5 Destination School Flag (X7DEST)

The variable X7DEST is nonmissing for respondents in the spring round and is coded 1 if the child attended a school that became a destination school in the spring of 2014, and 0 otherwise. Destination schools are schools for which it was determined that at least four ECLS-K:2011 children moved into them during the same round of the study and from the same original school at which they were sampled for the study. This typically happened when children attended a school that ended with a particular grade (e.g., a school that only provided education through first grade) or a school that closed. Destination schools may be new to the ECLS-K:2011 or may have participated in a past round. A school already participating in the study could be designated a destination school if four children from the same original school move into that school. The composite X7DEST identifies schools that became destination schools in round 7. Users can identify schools that were ever designated as destination schools by looking at whether any of the X*DEST composites = 1.

7.5 Composite Variables

To facilitate analysis of the survey data, composite variables were derived and included in the data file. This section identifies the source variables and provides other details for the composite variables. Most composite variables were created using two or more variables that are also available in the data file, each of which is named in the text that explains the composite variable. Other composites, for example, X_CHSEX_R, were created using data from the Field Management System (FMS) and the sampling frame, which are not available in the data file. Note that some of these variables have been updated or revised since their release on the base-year data file. Such variables have an "_R" suffix in their name.

7.5.1 Child Composite Variables

There are many child-level composite variables in the child catalog. The nonassessment variables are described in further detail here. The child-level composites for the direct and indirect child assessment are described in chapter 3.

7.5.1.1 Child's Date of Birth (X_DOBYY_R and X_DOBMM_R)

The composite variables for the child's date of birth are based on data from previous rounds of the study and are the same as the date of birth variables released in the K–2 longitudinal data file (X_DOBMM_R, X_DOBDD_R,[9] and X_DOBYY_R). The child's date of birth was not collected in the spring 2014 interview. Information about child's date of birth was collected from schools at the time of sampling and stored in the FMS, collected from parents in the fall kindergarten parent interview, and then collected or confirmed by parents in the spring kindergarten parent interview (parents confirmed the parent report from the fall or FMS data if the fall parent report was not obtained). Questions to collect date of birth information were only asked in the fall 2011, spring 2012, fall 2012, or spring 2013 interviews if data from the parent interview about the child's date of birth were missing due to unit or item nonresponse. In these rounds of the study, the parent was only asked child's date of birth if the parent had not confirmed FMS-reported data (or had not reported date of birth if there were no FMS data) in a prior interview. In creating the composite, data from the most recent parent interview were given priority over data from other rounds because they were collected in the most recent interview and any data that were missing from the parent interview due to unit or item nonresponse had the potential to be updated in a subsequent data collection.

7.5.1.2 Child's Age at Assessment and Date of Assessment (X7AGE, X7ASMTDD, X7ASMTMM, X7ASMTYY)

The child's age at assessment in months (X7AGE) was calculated by comparing the exact date the child completed the ECLS-K:2011 direct child assessment according to administrative data that are not included in the data file and the child's date of birth (X_DOBDD_R [day of birth],[10] X_DOBMM_R [month of birth], X_DOBYY_R [year of birth]). The calculation of age in months uses the number of days in each month and is adjusted for leap years. The child assessment date was examined to ensure it was within the field period. If the assessment date fell outside the field period, the modal assessment date for the child's school was used to set the composite and was retained for the data file.[11]

[9] X_DOBDD_R indicates the child's exact day of birth. This is an administrative variable that is not included in the K-3 longitudinal data file for issues related to confidentiality.
[10] X_DOBDD_R indicates the child's exact day of birth. This is an administrative variable that is not included in the K-3 longitudinal data file for reasons related to confidentiality.
[11] Some assessments that were partially but not entirely completed during the field period were assigned a final status after the end of the data collection round. Thus, assessment dates after the end of the field period reflect the timing of the assignment of the final disposition, not the actual date of assessment. These cases were adjusted so that the assessment date reflects the modal date for the school.

Variables indicating the date of assessment (day, month, and year) in round 7 are also included in the kindergarten through third grade data file. The variable for the day of assessment (X7ASMTDD) provides a range of days in a month that the child was assessed and is coded 1 (days 1 through 7); 2 (days 8 through 15); 3 (days 16 through 22); 4 (day 23 or later); or -9 (not ascertained). The exact day of the month is not provided for reasons related to confidentiality. The variable for the month of assessment (X7ASMTMM) indicates the month that the child was assessed, and the variable for the year of assessment (X7ASMTYY) indicates the year that the child was assessed.

7.5.1.3 Child's Sex (X_CHSEX_R)

The composite variable for the child's sex is based on data from previous rounds of the study and is the same as the variables for the child's sex that were released in the K–2 longitudinal data file (X_CHSEX_R). The child's sex was not collected in the spring 2014 interview. Information about child's sex was collected from schools at the time of sampling and stored in the FMS, collected from parents in the fall kindergarten parent interview, and then collected or confirmed by parents in the spring kindergarten parent interview (parents confirmed the parent report from the fall or FMS data if the fall parent report was not obtained). Questions to collect information on the child's sex were only asked in the fall 2011, spring 2012, fall 2012, or spring 2013 interviews if data from the parent interview about the child's sex were missing due to unit or item nonresponse. In these rounds of the study, the parent was only asked the child's sex if the parent had not confirmed FMS reported data (or had not reported the child's sex if there were no FMS data) in a prior interview. In creating the composite, data from the most recent parent interview were given priority over data from other rounds because they were collected in the most recent interview and any data that were missing from the parent interview due to unit or item nonresponse had the potential to be updated in a subsequent data collection.

7.5.1.4 Race/Ethnicity (X_AMINAN_R, X_ASIAN_R, X_HAWPI_R, X_BLACK_R, X_WHITE_R, X_HISP_R, X_MULTR_R, X_RACETHP_R, X_RACETH_R)

There are three types of composite variables indicating child's race/ethnicity in the ECLS-K:2011 file: (1) dichotomous variables for each race/ethnicity category (X_AMINAN_R, X_ASIAN_R, X_HAWPI_R, X_BLACK_R, X_WHITE_R, X_HISP_R, X_MULTR_R) derived from data collected in the parent interview; (2) a single race/ethnicity composite derived from data collected in the parent

interview (X_RACETHP_R); and (3) a race/ethnicity composite that draws from either the parent-reported data about the child's race or the FMS (X_RACETH_R), with FMS data used only if parent responses about the child's race were missing. Parent interview responses about the races of the child's biological parents were not used in the creation of child race composite variables. Race/ethnicity information was updated in these composite variables for about 30 to about 100 cases based on information collected from parents in the spring 2014 parent interviews.

Parents were asked about the child's ethnicity in the spring of 2014 if ethnicity in the parent interview items for the child were missing due to unit or item nonresponse. Specifically, parents were asked whether or not their child was Hispanic or Latino. Parents were also asked about the child's race in spring 2014 only if parent interview race data for the child were missing. Parents were asked to indicate to which of five race categories (White, Black or African American, Asian, Native Hawaiian or other Pacific Islander, American Indian or Alaska Native) their child belonged, and they were allowed to indicate more than one. From these responses, a series of five dichotomous race variables were created that indicate separately whether the child belonged to each of the five specified race groups. In addition, one additional dichotomous variable was created to identify those who had indicated that their child belonged to more than one race category.[12]

The seven dichotomous ethnicity and race variables (X_HISP_R, X_AMINAN_R, X_ASIAN_R, X_HAWPI_R, X_BLACK_R, X_WHITE_R, X_MULTR_R) were created using parent data from spring 2014, or if those data were not asked in spring 2014 because they were asked in a previous round of the study, the dichotomous composites were set to the values of the second-grade dichotomous race composites that used parent data from the second grade, first grade, and base year (X_HISP_R, X_AMINAN_R, X_ASIAN_R, X_HAWPI_R, X_BLACK_R, X_WHITE_R, X_MULTR_R). Otherwise, the dichotomous ethnicity and race composites were set to -9 (not ascertained).

Using the six dichotomous race variables and the Hispanic ethnicity variable, the race/ethnicity composite variables for the child (X_RACETHP_R, X_RACETH_R) were created. The categories for these variables are: White, non-Hispanic; Black or African American, non-Hispanic; Hispanic, race specified; Hispanic, no race specified; Asian, non-Hispanic; Native Hawaiian or other Pacific Islander, non-Hispanic; American Indian or Alaska Native, non-Hispanic; and more than one race specified, non-Hispanic. A child is classified as Hispanic if a parent indicated the child's ethnicity was Hispanic or Latino regardless of whether a race was identified and what that race was. If a child is not

[12] Unlike the ECLS-K, in the ECLS-K:2011 "other" was not a permitted response for the race question.

reported to be Hispanic or Latino, the race/ethnicity categories (White, non-Hispanic; Black or African-American, non-Hispanic; Asian, non-Hispanic; Native Hawaiian or Other Pacific Islander, non-Hispanic; and American Indian or Alaska Native, non-Hispanic; More than one Race, non-Hispanic) are coded according to the child's reported race. If the report about whether the child was Hispanic or Latino was -7 (refused) or -8 (don't know), or if the child is not Hispanic/Latino and parent reported race is missing, X_RACETHP_R is coded -9 (not ascertained); if the report about whether the child was Hispanic or Latino is also missing from the FMS, or if the child is not Hispanic/Latino and race is also missing from the FMS, X_RACETH_R is coded -9 (not ascertained). The difference between X_RACETHP_R and X_RACETH_R is that if race or ethnicity data are missing from the spring 2014 parent interview, X_RACETH_R is set to the value used for the second-grade composite, also called X_RACETH_R, which uses both parent data and FMS data, while only parent-report data were used for the variable X_RACETHP_R. Thus, there are more missing data for X_RACETHP_R than for X_RACETH_R.

About 100 cases have a value for X_RACETHP_R that is different in the K-3 longitudinal file than in the K-2 longitudinal file due to the collection of child race/ethnicity data in the spring 2014 parent interview. About 30 of these cases changed value from -9 (not ascertained) to a valid value and about 70 cases changed from code 4, Hispanic-no race reported, to code 3, Hispanic-race reported. About 85 cases have a changed value for X_RACETH_R due to the collection of child race/ethnicity data in the spring 2014 parent interview. Most of these cases, about 80, changed from code 4, Hispanic-no race reported, to code 3, Hispanic-race reported.

The categories for X_RACETHP_R and X_RACETH_R are mutually exclusive, meaning that a child is coded as just one race/ethnicity. Users interested in the specific races of children who are identified as multiracial, or who are interested in identifying the race(s) of children who are identified as Hispanic, should use the dichotomous race variables discussed above.

7.5.1.5 Child's Height (X7HEIGHT)

To obtain accurate measurements, each child's height was measured twice in each data collection round. The height measurements were entered into the computer program used for the assessment, with a lower limit set at 35 inches and an upper limit set at 78 inches.

For the height composites, if the two height measurements (C7HGT1 and C7HGT2 for spring 2014) were less than 2 inches apart, the average of the two height values was computed and used as the composite value. If the two spring measurements were 2 inches or more apart, for X7HEIGHT (the child's height in spring 2014), the measurement that was closest to 52.83 inches for boys and 52.41 inches for girls was used as the composite value. This is the 50th percentile height for children who were 9 years old (109.25 months for boys and 108.66 months for girls: the average age at assessment in spring 2014 using the composite X7AGE). The height averages come from the 2000 Centers for Disease Control and Prevention (CDC) Growth Charts (www.cdc.gov/growthcharts/html_charts/statage.htm).[13] The two height measurements were 2 or more inches apart for 6 cases for X7HEIGHT.

If one value for height was missing, the other value was used for the composite. If both the first and second measurements of height were coded as -8 (don't know), then the height composite was coded as -9 (not ascertained). Children who did not have their height measured due to a physical disability were coded as -8 (don't know) for both height measurements and, therefore, have a code of -9 on the composite. If both the first and second measurements of height were coded as -7 (refused), then the height composite was coded as -7 (refused). If both the first and second measurements of height were coded as -9 (not ascertained) because height data were missing as the result of a breakoff in the child assessment or the measurements had different missing values (e.g., one was -8 and the other was -9), then the height composite was coded as -9 (not ascertained).

For 154 cases, the child's height in the spring of 2014 (X7HEIGHT) was shorter than in the spring of 2013 (X6HEIGHT). A difference of 1 inch or less (37 children) could be a function of things such as slouching versus standing upright or differences in shoes, hairstyle, thickness of socks, or a combination of these factors. However, 117 children were recorded as being more than 1 inch shorter in the spring of 2014 than in the spring of 2013, and 85 of those were recorded as being more than 2 inches shorter. These discrepancies may result from measurement error or recording error. Analysts should use their own judgment in how to use these cases in their analysis.

[13] For calculating the median height, the composite X7AGE was used to determine children's average age at assessment. The average age at assessment in spring 2014 was 109.25 months for boys and 108.66 months for girls using the composite X7AGE. The closest value on the CDC Growth Chart was 109.5 for boys and 108.5 for girls.

7.5.1.6 Child's Weight (X7WEIGHT)

To obtain accurate measurements, each child's weight was measured twice in each data collection round. The weight measurements were entered into the computer program used for the assessment, with a lower limit set at 20 pounds and an upper limit set at 250 pounds. Values outside the range that were documented in assessor comments as being valid measurements were included in the data file.

For the weight composites, if the two weight measurements obtained within a round (i.e., C7WGT1 and C7WGT2 for spring 2014) were less than 5 pounds apart, the average of the two weight values was computed and used as the composite value. If the two measurements were 5 or more pounds apart, for X7WEIGHT the measurement that was closest to 63.81 pounds for boys or 64.25 pounds for girls was used as the composite value. These are the median weights for children who were 9 years old (109.25 months for boys and 108.66 months for girls: the average age at assessment in spring 2014 using the composite X7AGE). The weight averages come from the 2000 CDC Growth Charts (see www.cdc.gov/growthcharts/html_charts/wtage.htm).[14] The two weight measurements were 5 or more pounds apart in 4 cases for X7WEIGHT.

If one value for weight was missing, the other value was used for the composite. If both the first and second measurements of weight were coded as -8 (don't know), the weight composite was coded as -9 (not ascertained). Children who did not have their weight measured due to a physical disability were coded as -8 (don't know) for both weight measurements and, therefore, have a code of -9 on the composite. If both the first and second measurement of weight in the child assessment were coded as -7 (refused), then the weight composite was coded as -7 (refused). If both the first and second measurements of weight in the child assessment were coded as -9 because weight data were missing as the result of a breakoff in the child assessment or the measurements had different missing values (e.g., one was -8 and the other was -9), then the weight composite was coded as -9 (not ascertained).

There are approximately 40 children whose round 7 weights are more than 10 pounds lower than their round 6 weights; of these, about 10 change between 26 pounds and 76.6 pounds. It is possible that some of these changes result from measurement error. Analysts may wish to review such cases and determine how to account for these weight changes in their analysis.

[14] For calculating the median weight, the composite X7AGE was used to determine children's average age at assessment. The average age at assessment in spring 2014 was 109.25 months for boys and 108.66 months for girls using the composite X7AGE. The closest value on the CDC Growth Chart was 109.5 for boys and 108.5 for girls.

7.5.1.7 Child's Body Mass Index (X7BMI)

Composite body mass index (BMI) was calculated by multiplying the composite weight in pounds by 703.0696261393 and dividing by the square of the child's composite height in inches (Keys et al. 1972; Mei et al. 2002). Unrounded values of height and weight were used in the calculation of BMI. If either the height or weight composite was coded as -9 (not ascertained) or -7 (refused), the BMI composite was coded as not ascertained (-9). Values of "don't know" for height and weight were coded -9 (not ascertained) in the height and weight composites and also coded -9 (not ascertained) in the BMI composite.

7.5.1.8 Child's Disability Status (X7DISABL2, X7DISABL)

Two composite variables based on information obtained in the parent interview were created to indicate whether a child had a disability diagnosed by a professional. Note that these variables indicate either diagnosed disabilities that were identified for the first time in the round 7 parent interview or diagnoses reported in a previous interview for which the child also had a diagnosis reported in round 7. The variables must be used in conjunction with the disability composites from earlier rounds to identify the entire group of children who have ever had a disability diagnosed by a professional. Also, these two variables differ in how missing data were treated during their creation, as described below.

Questions in the spring 2014 parent interview asked about the child's ability to be independent and take care of himself or herself, ability to pay attention and learn, coordination in moving arms and legs, overall activity level, overall behavior and ability to relate to adults and children, emotional or psychological difficulties, ability to communicate, difficulty in hearing and understanding speech, and eyesight. If parents indicated that their child had any issues or difficulties in response to these questions, follow-up questions asked whether the child had been evaluated by a professional for that particular issue and whether a diagnosis of a problem was obtained by a professional (CHQ120, CHQ125, CHQ215, CHQ245, CHQ246, CHQ300, CHQ301). A question was also asked about current receipt of therapy services or participation in a program for children with disabilities (CHQ340).

The composite variable X7DISABL is coded 1 (yes) if the parent answered "yes" to at least one of the questions about diagnosis (indicating a diagnosis of a problem was obtained) or therapy services (indicating the child received services) (CHQ120, CHQ215, CHQ245, CHQ300, CHQ340) and the questions about the specific diagnoses (CHQ125, CHQ246, CHQ301) were not coded -7 (refused), -8 (don't

know), or -9 (not ascertained); or in the case of the vision diagnosis (CHQ301), the question was not coded as only nearsightedness (myopia), farsightedness (hyperopia), color blindness or deficiency, or astigmatism; or in the case of a hearing diagnosis (CHQ246), the question was not coded as only external ear canal ear wax.

Using these criteria to calculate X7DISABL, a child could be coded as having a disability even if data for some of the questions about diagnoses or therapy services (CHQ120, CHQ215, CHQ245, CHQ300, CHQ340) were missing. This is because a child is coded as not having a disability if there are data for at least one of the questions about diagnoses or therapy services (CHQ120, CHQ215, CHQ245, CHQ300, CHQ340), and the response was either 2 (no) or the item was -1 (inapplicable) (because the child did not have issues that indicated a question should be asked), even if data for some of these questions were missing. In addition to having "no" answers or "inapplicable" codes for the diagnoses or therapy services questions, if the child had a diagnosis, but the specific diagnosis was not reported (was refused, don't know, or not ascertained), X7DISABL was also coded 2 (no) because there was no reported disability. The composite was coded as missing only if all of the data for the questions about diagnoses or therapy services (CHQ120, CHQ215, CHQ245, CHQ300, CHQ340) were -7 (refused), -8 (don't know), or -9 (not ascertained), or if the items that skipped to these items were -7 (refused), -8 (don't know), or -9 (not ascertained).

A more conservative approach when coding cases that had incomplete data for the diagnoses and services variables was used to derive the variable X7DISABL2. Whereas X7DISABL codes cases with missing data as "no" as long as all the information that was collected indicates the child does not have a diagnosed disability or receive services for a diagnosed disability, X7DISABL2 is coded -9 (not ascertained) when any of the questions about diagnoses or therapy services (CHQ120, CHQ215, CHQ245, CHQ300, CHQ340) are -7 (refused), -8 (don't know), or -9 (not ascertained), or the items that skipped to these items are -7 (refused), -8 (don't know), or -9 (not ascertained). For X7DISABL2, if there are no "yes" answers for a disability, but any of the evaluation (CHQ115, CHQ210, CHQ235, CHQ290), diagnoses (CHQ120, CHQ215, CHQ245, CHQ300), or therapy questions (CHQ340) are -7 (refused), -8 (don't know), or -9 (not ascertained),[15] or if any of the evaluation, diagnosis, or therapy questions were not asked (were -1 for inapplicable) because of missing data for questions that skipped to those questions (and thus it is not known if they should have been asked), X7DISABL2 is coded -9 (not ascertained). In addition, if the parents indicated that a diagnosis had been obtained, but the specific diagnosis was coded as refused, don't know,

[15] If CHQ340 was -9 (not ascertained) because the interview broke off after CHQ330, but all answers in CHQ330 and questions prior to CHQ330 indicated that CHQ340 would not have been applicable, X7DISABL2 and X2DISABL2 were coded 2 (no disability) because that question would not have been asked for those children.

or not ascertained, X7DISABL2 is coded as -9 (not ascertained). This approach is more conservative because it does not assume that the response for unanswered questions was "no." Due to these differences in coding, the number of cases identified as not having a diagnosed disability is higher for X7DISABL than it is for X7DISABL2.

7.5.1.9 Student Grade Level (X7GRDLVL)

The X7GRDLVL composite indicates the child's grade level in the spring of 2014 as reported by the teacher or recorded in the FMS. This composite has valid values for the 13,579 cases that are respondents for round 7, that is the cases that have either child assessment or parent interview data. It is constructed using F7CLASS2 (child's grade in spring 2014 from the FMS). The values include 1 for first grade, 2 for second grade, 3 for third grade, and 4 for fourth grade. In all other cases the value is set to -9 for not ascertained.

Note that grade level (F7CLASS2) is also included for homeschooled children. For all children, their grade was known at their initial sampling in school. For homeschooled children and other assess-in-home children, the grade was incremented by 1 year each year. In spring 2011, fall 2011, spring 2012, and fall 2012, the child's grade was confirmed with the parent for these cases. In the spring of 2013 and 2014, parents were not asked to confirm this information. The grade level from the spring of 2013 was increased by one grade for the spring of 2014. If a parent volunteered new information about grade level, field team leaders updated the information in the Field Management System (FMS) and that information is reflected in the composite variable.

7.5.1.10 Child Linked to a Special Education Teacher (X7SPECS)

The composite variable X7SPECS indicates whether or not children were linked to a special education teacher and special education questionnaires were requested from teachers in the spring of 2014, based on the presence or absence of a link to a special education teacher or related service provider in the FMS. The value is 1 if special education questionnaires were requested and 2 if special education questionnaires were not requested. Study team leaders asked school staff if any accommodations were required for the study children to be assessed. During that discussion about assessment accommodations, team leaders were also supposed to record whether the child had an Individualized Education Program

(IEP) on file with the school but did not require any accommodations for the study assessments. The link to a special education teacher was established automatically when information indicating a child needed an accommodation or had an IEP but did not require an accommodation was entered in the FMS by study team leaders.

There are a few cases of a mismatch between X7SPECS and special education teacher reports about an IEP. In about 80 cases, there were FMS data indicating the child had an IEP on record at the school (and thus a special education teacher questionnaire was requested from the teacher and X7SPECS = 1), but the special education teacher indicated in the child-level questionnaire that the child did not have an IEP (E7RECSPE=2).

7.5.2 Family and Household Composite Variables

Many composite variables are created to provide information about the sampled children's family and household characteristics. It must be noted that household composition composite variables consider only those people who were household members at the time of the parent interview. If information on household composition was collected in the spring 2013, spring 2012, spring 2011, or fall 2010 parent interview, the parent respondent was asked to indicate whether the people living in the household in the most recent interview in which information about household composition was collected were still in the household at the time of the spring 2014 parent interview, as well as whether there were any new members of the household. Household members were accounted for in the derivation of the spring 2014 composite variables if they were still living in the household or had joined the household since the time of the last interview, as indicated in the variables P7CUR_1–P7CUR_25.

During the spring 2014 parent interview, information on age, sex, and relationship to the study child was collected for all new household members. For certain existing household members, information was collected about whether their relationship to the study child had changed since the previous interview in which relationship data was collected. Change in relationship was asked for household members who were identified in a prior round interview as being a step- or foster mother or father, other male or female parent or guardian, boyfriend or girlfriend of the child's parent, relative, or nonrelative. Information about race and ethnicity were collected for specific household members who were new to the household and for specific previous household members with missing race or ethnicity data. Other key background

information such as country of origin was also collected about parents in the spring of 2014 if it had not been collected in a prior round.

The composite variables for parents (e.g., parent age, parent education) are for the parents who were members of the household at the time of the spring 2014 interview. The identities of household parent figures can change over time, meaning that data in a composite may not pertain to the parent figure in the household in an earlier round. For example, parent education information collected in the spring 2014 parent interview would pertain to a father figure who was in the home during that round but not necessarily to a father figure who was in the household during the kindergarten, first, or second grade years. Users should look at the X7IDP1 and X7IDP2 variables described in section 7.5.2.3 to determine if the household roster numbers associated with parent 1 and parent 2 in the spring of 2014 match the household roster numbers for parent 1 and parent 2 from an earlier round (e.g., X6IDP1 or X6IDP2) in order to determine if the parent figures changed.

It should be noted that in spring 2014 there are not composite variables for parent occupation or employment. In spring 2014, questions about parent occupation were not asked and questions about parent employment were asked in a single question. Data for the single question for parent 1 and parent 2 (P7EMPSIT1_I, P7EMPSIT2_I) were imputed if they were missing using either longitudinal imputation, if appropriate, or hot deck imputation.[16]

7.5.2.1 Household Counts (X7HTOTAL, X7NUMSIB, X7LESS18, X7OVER18)

The composite variable X7HTOTAL provides a count of the total number of household members in the spring of 2014. For households for which household roster information had been collected in a prior round, this count is the number of household members who were previously rostered and reported to still be in the household plus any new persons added after the last interview in which roster information was collected. For a small number of households that did not participate in any of the prior parent interviews in which household composition information was collected (fall 2010, spring 2011, spring 2012, or spring 2013), X7HTOTAL is a count of the total number of persons identified by the respondent as household members in the spring 2014 parent interview.

[16] Longitudinal imputation was conducted using the most recent composite variables for employment (X6PAR*EMP_I, X4PAR*EMP_I, or X1PAR1EMP). For example, if there were data available for spring 2013, if X6PAR*EMP_I = 2 (less than 35 hours per week), then P7EMPSIT*_I=1 (working part-time). If X6PAR*EMP_I = 1 (35 hours or more per week), then P7EMPSIT*_I=2 (working full-time). Otherwise, for parents who were not employed, the most recently collected value for P6DOW_*, P4DOW_*, or P1DOW_* was used as boundary variable in hot deck imputation to set the value of P7EMPSIT*_I=3 (a stay-at-home parent or guardian), and P7EMPSIT*_I=4 (not working).

Two composite variables take the ages of the household members into account to indicate the total numbers of (1) adults and (2) children in the household in the spring of 2014. Information about household members' ages was collected in the household matrix, or roster, section of the parent interview. X7LESS18 indicates the total number of people in the household under age 18, including the study child, siblings, and other children, and X7OVER18 indicates the total number of people in the household age 18 or older. All household members who were 18 years old or older, as well as anyone identified as a parent or grandparent of the focal child whose age is missing, are counted in the total for X7OVER18. Households with members with missing age information who are not identified as a parent or grandparent are coded as -9 (not ascertained) on X7OVER18 and X7LESS18. X7LESS18 is created by subtracting X7OVER18 from X7HTOTAL.

The composite X7NUMSIB indicates the total number of siblings (biological, step-, adoptive, or foster) living in the household with the study child. Siblings were identified by questions in the FSQ section of the parent interview that asked about the relationship of each household member to the study child. X7NUMSIB does not count children of the parent's boyfriend or girlfriend (identified by the code 5 in the variables associated with question FSQ180) as siblings.

7.5.2.2 Household Rosters

The ECLS-K:2011 data file includes rosters of the household members as collected in the parent interviews. The roster information appears as part of the block of Family Structure Questions (FSQ) for each round in which the FSQ section was included in the parent interview. Variable names begin with P1 for round 1 (fall kindergarten), P2 for round 2 (spring kindergarten), P4 for round 4 (spring 2012, when most children were in first grade), P6 for round 6 (spring 2013, when most children were in second grade), and P7 for round 7 (spring 2014, when most children were in third grade). No FSQ section was included in the brief round 3 or round 5 parent interviews.

For each household member in each round, roster variables include the following, where * is the round number (1, 2, 4, 6 or 7) and # is the household roster number (1 through 25):

- P*PER_#, person type, whether the person is the focal child, respondent, or spouse/partner of the respondent;
- P*AGE_#, the person's age;

- P*SEX_#, the person's sex;
- P*REL_#, how the person is related to the focal child;
- P*MOM_#, if the person is the child's mother, the type of mother;
- P*DAD_#, if the person is the child's father, the type of father;
- P*SIS_#, if the person is the child's sister, the type of sister;
- P*BRO_#, if the person is the child's brother, the type of brother;
- P*UNR_#, if the person is not a relative, the type of relationship to the study child;
- P*HSP_#, whether the child or parent/guardian is of Hispanic or Latino origin;
- P*AIA_#, whether the child or parent/guardian is American Indian or Alaska Native;
- P*ASN_#, whether the child or parent/guardian is Asian;
- P*BLK_#, whether the child or parent/guardian is Black or African American;
- P*HPI_#, whether the child or parent/guardian is Native Hawaiian or other Pacific Islander; and
- P*WHT_#, whether the child or parent/guardian is White.

For rounds 2, 4, 6, and 7, there are two additional variables:

- P*CUR_#, whether the person was currently a household member at the time of the interview; and
- P*REASL#, if the person left the household, the reason for doing so.

For round 2, there are two additional variables.[17]

- P2JOI_#, the round in which the person was first enumerated as a household member; and
- P2RDP_#, the round in which the person left the household.

Once a person is assigned a household roster number, he or she retains that number permanently. Thus, if there are four persons in the household and person 3 leaves the household, person 4

[17] In round 2, variables identifying in which round a person was first enumerated as a household member and in which round a person was identified as having left the household were set in the CAPI parent interview and included in the base-year data file. For later rounds, analysts can compare the P*CUR_# variables (person is currently a household member) from different rounds, where * is the round number and # is the person number, to determine in which round a person was first enumerated as a household member and in which round a person was identified as having left the household.

remains in position 4 in the roster for all rounds. Similarly, if the last person on the roster leaves the household and a new person subsequently joins the household, that new household member is assigned to the position below that of the person who left (for example, if person 6 is the last person on the roster and leaves the household, a new person joining the household would be assigned to position 7).

If there is no parent interview completed in a given round, then the items for that round are assigned a value of system missing. Beginning in round 4, if a person has left the household (e.g., P4CUR_# = 2, not a current household member), the roster variables for that position are assigned a value of -1 for that round and subsequent rounds in which a parent interview is completed.

In rare cases, only in rounds 4 and 6, there are roster positions for which all values are system missing or -1 across all rounds but P4CUR_# = 2 or P6CUR_# = 2 (not a current household member). This may occur because a new household member was the respondent for round 3 or 5, when there was no roster completion or confirmation in the parent interview, and that person had left the household before the next parent interview in which complete household composition information was collected.[18]

Determining household membership in a given round. In round 1, respondents were not asked if persons were currently household members, because that was the first household enumeration for the study and all enumerated persons were household members at that time. For rounds 2, 4, 6, and 7, analysts can determine the current household membership at the time of the parent interview for the round by examining the variables P2CUR_#, P4CUR_#, P6CUR_#, and P7CUR_#, respectively. Analysts should not look for the first "empty" position in the roster series to determine the last person with roster data in the household, since, as noted above, all persons retain their household positions permanently; if person 3 leaves the household, then person 4 still remains in position 4.

[18] Because there was not a household roster in the fall 2011 or fall 2012 parent interviews, there are potentially other household members who were present in the fall of 2011 or the fall of 2012 and had left the household by the time of the subsequent parent interviews. There would be no record of these household members in the study.

7.5.2.3 Parent Identifiers and Type in the Household (X7IDP1, X7IDP2, X7HPAR1, X7HPAR2, X7HPARNT)

X7IDP1 and X7IDP2 indicate the positions in the household roster of the sampled child's residential parent/parent figure(s) in the spring of 2014.[19] The construction of parent identifiers and the household composition variables from the parent interview data was a multistep process. First, it was determined from household roster variables whether there was a mother (biological, adoptive, step-, or foster) and/or a father (biological, adoptive, step-, or foster) in the household. Using this information, the method described below was used to create X7IDP1 and X7IDP2 for the spring.

1. If there was only one mother (of any type, including unknown type) and only one father (of any type, including unknown type) in the household, the mother was identified as parent 1 (X7IDP1) and the father was identified as parent 2 (X7IDP2).

2. If there was only one mother (of any type, including unknown type) in the household and no other parent figure (of any type), the mother was identified as parent 1 and parent 2 is coded -1 (not applicable). If there was a mother and she had a male spouse/partner in the household who was not identified as a father (of any type, including unknown type), the spouse/partner was identified as parent 2.

3. If there was only one father (of any type, including unknown type) in the household and no other parent figure (of any type), the father was identified as parent 1 and parent 2 is coded -1 (not applicable). If there was a father and he had a female spouse/partner in the household who was not identified as a mother (of any type), the spouse/partner was identified as parent 1 and the father was identified as parent 2.

4. If there were two mothers (or a mother and female spouse/partner) in the household, an order of preference was used to identify one mother to be parent 1, with the order specified as biological, adoptive, step-, foster mother or female guardian, then other female parent or guardian.[20] The other mother was identified as parent 2. If there were two mothers of the same type (e.g., two adoptive mothers) or there were two mothers and the type for both was -7 (refused) or -8 (don't know), the mother with the lowest household roster number was identified as parent 1 and the other mother was identified as parent 2.

5. If there were two fathers in the household (or a father and male spouse/partner), an order of preference was used to identify one father to be parent 1, with the order specified as biological, adoptive, step-, foster father or male guardian, then other male parent or guardian. The other father was identified as parent 2. If there were two fathers of the same type (e.g., two adoptive fathers) or there were two fathers and the type for both was -7

[19] In the ECLS-K, the parent identifiers were P*MOMID and P*DADID and specifically identified the mother/female guardian and father/male guardians, respectively, in the household. The format of the parent identifiers was changed in the ECLS-K:2011 to allow for more accurate identification of households with two mothers/female guardians or two fathers/male guardians.

[20] There were new categories in the ECLS-K:2011 parent interview for "Other female parent or guardian" in FSQ140 and "Other male parent or guardian" in FSQ150 that were not included in the ECLS-K.

(refused) or -8 (don't know), the father with the lowest household roster number was identified as parent 1 and the other father was identified as parent 2.

6. If there was no one in the household identified as a mother or father, then a female respondent or the female spouse or partner of a male respondent was identified as parent 1. If the female parent figure had a male spouse or partner, the spouse/partner was identified as parent 2. If the respondent was male and had a female spouse or partner, she was designated as parent 1 and he was designated as parent 2. For example, if a child lived with his grandmother (the respondent) and grandfather, and neither his mother nor father lived in the household, then the grandmother was identified as parent 1 and the grandfather was identified as parent 2. If the grandfather lived in the household, but no grandmother or parents lived there, the grandfather respondent would be parent 1 and parent 2 would be coded -1. Demographic information such as age, race, and education was collected for these "parent figures."

Once parents/parent figures were identified, X7HPAR1 and X7HPAR2 were created to identify the specific relationship of parent 1 and parent 2 to the study child.[21] It should be noted, however, that for households in which the child lived with parent figures other than his or her mother and/or father, the parent figures identified in X7IDP1 and X7IDP2 were not defined as parents (meaning biological, step-, adoptive, or foster) for the construction of X7HPAR1 and X7HPAR2. For example, if there are a grandmother and grandfather and there are no parents listed in the household, X7HPAR1 and X7HPAR2 would be coded as category 15 (no resident parent).

X7HPARNT indicates the type(s) of parents living in the household with the study child. The values for the X7HPARNT composite are as follows:

- 1 = two biological/adoptive parents;
- 2 = one biological/adoptive parent and one other parent/partner;
- 3 = one biological/adoptive parent only; and
- 4 = one or more related or unrelated guardian(s).

When study children are living with parent figures (e.g., grandmother and grandfather), rather than biological, adoptive, step-, or foster parents, X7HPARNT is coded 4.

The composite parent identifier variables X7IDP1 and X7IDP2 are used to determine which composite variables correspond to parent 1 and parent 2, respectively. These "pointer" variables indicate the household roster number of the person who was the subject of the questions being asked. All parent

[21] These variables are a combination of P*HMOM and P*HDAD from the ECLS-K.

composite variables that include "PAR" and the number 1 in the variable name are associated with the person designated in X7IDP1, who is parent 1. All parent composite variables that include "PAR" and the number 2 in the variable name are associated with the person designated in X7IDP2, who is parent 2. In the third-grade parent interview, there are four sets of questions that were first asked about parent 1 and then asked about parent 2 if the household contained two parents.

- The first set of questions asks where parent 1 and parent 2 were born (P7PARCT1 and P7PARCT2) and when, if applicable, they moved to the United States (P7PAREM1 and P7PAREM2).

- The second set of questions asks about how often a parent 1 and parent 2 use a language other than English when speaking to the child (P7RES_1, P7RES_2) and how often the child uses a language other than English in speaking to a parent (P7CHL_1, P7CHL_2). There is also a set of "pointer" variables that hold the household roster number of the person who was the subject of the language questions (P7PLQHH1 and P7PLQHH2). However, since the language questions were asked only of parent(s) or parent figure(s) in the household, the value of language pointer variables is the same as the value for the composite parent identifier variables, other than when a pointer is not applicable. If a pointer is applicable, the household roster number indicated in the pointer variable for the language data for parent 1, P7PLQHH1, is always equal to the household roster number indicated in the composite parent identifier variable of parent 1, X7IDP1.

  Similarly, the household roster number indicated in the pointer variable for the language data for parent 2, P7PLQHH2, is always equal to the household roster number indicated in the composite parent identifier variable of parent 2, X7IDP2 (where applicable). The PLQ parent pointers are set based on P7ANYLNG and the parent identifiers X7IDP1 and X7IDP2. If P7ANYLNG = 2, -7, or -8 (no, refused, don't know), section PLQ is not applicable and the pointers are set to -1 (not applicable). Thus, if P7ANYLNG = 2, -7, or -8 (no, refused, don't know), P7PLQHH1 could be -1, even though there is a person for X7IDP1. If P7ANYLNG = -9 (not ascertained), the PLQ parent pointers are set to -9 (not ascertained). If P7ANYLNG = 1, then P7PLQHH1 will have a value that matches X7IDP1. If P7ANYLNG = 1, P7PLQHH2 will have a value that matches X7IDP2. If there is no parent 2, P7PLQHH2 = -1 (not applicable).

- The third set of questions about parent 1 and parent 2 were about parent education. For parent education, there is also a second set of "pointer" variables that hold the household roster number of the person who was the subject of the education questions (P7PEQHH1 and P7PEQHH2). For the education questions, the pointer variables are applicable to up to two parents in the household. If there are two parents in the household, P7PEQHH1 and P7PEQHH2 are the roster numbers of the first and second parent, respectively. If there is only one parent in the household, P7PEQHH1 is the roster number of the first parent and P7PEQHH2 = -1 (not applicable). Since the parent education questions were asked only of parent(s) or parent figure(s) in the household, the value of parent education pointer variables is the same as the value for the composite parent identifier variables.

- The fourth set of questions about parent 1 and parent 2 asks about parent employment. There is also a set of "pointer" variables that hold the household roster number of the person who was the subject of the employment questions (P7EMPP1 and P7EMPP2). For the employment questions, the pointer variables are applicable to up to two parents in the household. If there are two parents in the household, P7EMPP1 and P7EMPP2 are the roster numbers of the first and second parent, respectively. If there is one parent in the household, P7EMPP1 is the roster number of the first parent and P7EMPP2 = -1 (not applicable). The value of employment pointer variables is the same as the value for the composite parent identifier variables.

To illustrate how the pointer variables work, suppose there is a household with both a mother and a father who were listed as the third and fourth individuals in the household roster. According to the rules outlined above, household member #3, the mother, becomes parent 1 and X7IDP1 equals 3. All applicable pointer variables for parent 1 will subsequently take on the value 3. Similarly, household member #4, the father, becomes parent 2 and X7IDP2 equals 4. All applicable pointer variables for parent 2 will subsequently take on the value 4.

Table 7-1 identifies the PLQ, PEQ, and EMQ section pointer variables included in the data file along with the interview items and variables associated with those pointer variables. The pointer variables are necessary to determine which parent should be assigned the answers to items about employment. Returning to the example above, the answers to the employment questions for the mother are stored in variables that end with the suffix "1" since the mother was identified as parent 1, and her household roster number is the value in X7IDP1. For example, P7EMPSIT1_I and P7EVRACTV1 indicate the mother's current employment situation and whether the mother has been on active duty in the military since the child was born, respectively. The answers to the employment questions for the father are stored in variables that end with the suffix "2" since the father was identified as parent 2, and his household roster number is the value in X7IDP2. For example, P7EMPSIT2_I and P7EVRACTV2 indicate the father's current employment situation and whether the father has been on active duty in the military since the child was born, respectively.

Table 7-1. Pointers to parent figure questions: School year 2013–14

Person pointer		Interview item	
P7PLQHH1	P7 PLQ083-090 HH PERSON	P7RES_1	P7 PLQ083 PERSON 1 LANGUAGE TO
		P7CHL_1	P7 PLQ090 CHILD'S LANGUAGE TO
P7PLQHH2	P7 PLQ083-090 HH PERSON	P7RES_2	P7 PLQ083 PERSON 2 LANGUAGE TO
		P7CHL_2	P7 PLQ090 CHILD'S LANGUAGE TO
P7PEQHH1	P7 PEQ020–021 PERSON 1 ROSTER NUMBER	P7HIG_1	P7 PEQ020 PERS 1 HIGHEST EDUCATION
		IFP7HIG_1	P7 IMPUTATION FLAG FOR P7HIG_1_I
		P7HIS_1	P7 PEQ021 IF PERS 1 HIGH SCHOOL
		IFP7HIS_1	P7 IMPUTATION FLAG FOR P7HIS_1_I
P7PEQHH2	P7 PEQ020–021 PERSON 2 ROSTER NUMBER	P7HIG_2	P7 PEQ020 PERS 2 HIGHEST EDUCATION
		IFP7HIG_2	P7 IMPUTATION FLAG FOR P7HIG_2_I
		P7HIS_2	P7 PEQ021 IF PERS 2 HIGH SCHOOL
		IFP7HIS_2	P7 IMPUTATION FLAG FOR P7HIS_2_I
P7EMPP1	P7 EMQ200-215 PERSON 1 ROSTER	P7EMPSIT1	P7 EMQ200 PERS 1 CURR EMPLMT
		P7EVRACTV1	P7 EMQ210 PERS 1 SERVED ACTIVE
		P7CURACTV1	P7 EMQ215 PERS 1 CURR ON ACTIVE
P7EMPP2	P7 EMQ200-215 PERSON 2 ROSTER	P7EMPSIT2	P7 EMQ200 PERS 2 CURR EMPLMT
		P7EVRACTV2	P7 EMQ210 PERS 2 SERVED ACTIVE
		P7CURACTV2	P7 EMQ215 PERS 2 CURR ON ACTIVE

SOURCE: U.S. Department of Education, National Center for Education Statistics, Early Childhood Longitudinal Study, Kindergarten Class of 2010–11 (ECLS-K:2011), kindergarten–third grade data file.

7.5.2.4 Parent Demographic Variables (X7PAR1AGE, X7PAR2AGE, X7PAR1RAC, X7PAR2RAC)

X7PAR1AGE is a composite variable for the age of parent 1 from the household roster (the person whose roster number is indicated in X7IDP1) and X7PAR2AGE is the composite variable for the age of parent 2 from the household roster (the person whose roster number is indicated in X7IDP2).[22] The ages of all household members (other than the child) who had their ages collected in the fall of 2010 or spring of 2011 were automatically incremented by three years for the spring 2014 parent interview. Age was incremented by two years for household members who were living in the household in the spring of 2012 and had age information collected in that interview but who were not in the household in the fall of 2010 or the spring of 2011. Age was incremented by one year for household members who were living in the household in the spring of 2013 and had age information collected in that interview but who were not in the household in the fall of 2010, the spring of 2011, or the spring of 2012. For information about how the first and second parents were selected for these and other parent variables, see section 7.5.2.3 above.

[22] These variables are a combination of P*HDAGE and P*HMAGE in the ECLS-K.

The composite variables for race/ethnicity for the parent/guardians were derived in the same way as those for the child, except that there are no variables that supplement parent-reported race/ethnicity with FMS data as was done for children. All data on parent race/ethnicity come from the parent interview. Race/ethnicity information collected for parents in the spring 2014 parent interview is provided in the data file in categorical race/ethnicity composites (X7PAR1RAC for parent 1, the person whose roster number is indicated in X7IDP1, and X7PAR2RAC for parent 2, the person whose roster number is indicated in X7IDP2). Race and ethnicity information was collected only once for each parent/guardian. If race and ethnicity information was collected in the fall of 2010, spring of 2011, spring of 2012, or spring of 2013, it was not collected again in the spring of 2014. The questions about race and ethnicity were only asked in the spring 2014 parent interview to collect this information for parents/guardians who were new to the household in that round or when this information was missing for parents/guardians who lived in the household at the time of the spring 2014 interview.

Respondents were allowed to indicate that they, and the other parent figure when applicable, were Hispanic or Latino, and whether they belonged to one or more of the five race categories (White, Black or African American, American Indian or Alaska Native, Asian, Native Hawaiian or other Pacific Islander).[23] From these responses, a person's race/ethnicity was classified into eight mutually exclusive categories. A person's race/ethnicity was classified as "more than one race, non-Hispanic" if more than one race was specified and the answer to the question about being Hispanic or Latino was 2 (no). A person's race/ethnicity was classified as "Hispanic, race specified" if the answer to the question about being Hispanic or Latino was 1 (yes) and at least one race was indicated in the question about race. If a person was Hispanic or Latino, but a race was not indicated, that person's race/ethnicity was classified as "Hispanic, no race specified." The remaining race/ethnicity categories (White, non-Hispanic; Black or African-American, non-Hispanic; Asian, non-Hispanic; Native Hawaiian or Other Pacific Islander, non-Hispanic; and American Indian or Alaska Native, non-Hispanic) were coded according to the person's reported race when the person was not Hispanic or Latino. If the answer to the question about being Hispanic or Latino was -7, -8, or -9 (refused, don't know, or not ascertained respectively), or if the person was not Hispanic/Latino and the answer to the question about race was -7, -8, -9 (refused, don't know, or not ascertained, respectively), race/ethnicity was coded -9 (not ascertained).

Parent race/ethnicity was obtained for all parents/guardians and spouses of respondent parents/guardians but may or may not have been collected for a parent's boyfriend or girlfriend. For

[23] Unlike the ECLS-K, in the ECLS-K:2011 "other" was not a permitted response for the race question.

example, in a household with a birth mother and stepfather, the race/ethnicity of both parents was obtained. However, in a household with a birth mother and her boyfriend, the race/ethnicity of the mother was obtained but the race/ethnicity of the boyfriend was not unless he was the respondent.[24]

7.5.2.5 Household Income and Poverty (X7INCCAT_I, X7POVTY_I)

Household income data were collected in the spring 2014 parent interview. Parents were asked to report income by broad range ($25,000 or less or more than $25,000) and by detailed range as shown in table 7-2.[25] The composite X7INCCAT_I was created using the detailed income range information. X7INCCAT_I was set to the value of P7INCLOW_I (detailed income range for those who reported the broad income range in P7HILOW_I as $25,000 or less) or P7INCHIG (detailed income range for those who reported the broad income range in P6HILOW_I as more than $25,000). When data for the broad range variable (P7HILOW_I) or one of the detailed range variables (P7INCLOW_I, P7INCHIG_I) were missing (i.e., coded -7 (refused), -8 (don't know), or -9 (not ascertained)), income information was imputed.

Table 7-3 shows the amount of missing data for household income. If the parent figures in the household were the same at the time of the spring 2014 parent interview as at the time of the spring 2013 parent interview, income reported in the spring of 2013 was used for longitudinal imputation. If spring 2013 income was not available, but spring 2012 income was available and the parent figures were the same in 2014 as in 2012, then income reported in the spring of 2012 was carried forward to 2014. If spring 2012 income was not available, but spring 2011 income was available and the parent figures were the same in 2014 as in 2011, then income reported in the spring of 2011 was carried forward to 2014.[26]

[24] In the spring of 2014, race/ethnicity information was collected for some persons who did not meet the criteria for having race and ethnicity questions asked in the spring of 2014 but did meet the criteria for having race and ethnicity collected in an earlier round of the study. Persons who have race and ethnicity on the file for spring 2014 include the study child, those with a relationship of mother/female guardian or father/male guardian in any round (P*REL_* = 1 or 2 or P*UNR = 3 or 4), those who were a respondent in any round (P*PER_* = 1), and persons who were spouse/partners of respondent parents in any round.

[25] Starting at category 9 of the detailed income range, the categories for the income variable in the ECLS-K:2011 are different from those used in the ECLS-K. More narrow ranges of income were used at higher income levels in the ECLS-K:2011 in order to determine whether household income was near 200 percent of the federal poverty threshold given household size. If so, follow-up questions about exact income were asked.

[26] No adjustment was made for inflation when household income was longitudinally imputed from a prior round.

Table 7-2. Detailed income range categories used in the parent interview: Spring 2014

Detailed income range	Total household income
1	$5,000 or less
2	$5,001 to $10,000
3	$10,001 to $15,000
4	$15,001 to $20,000
5	$20,001 to $25,000
6	$25,001 to $30,000
7	$30,001 to $35,000
8	$35,001 to $40,000
9	$40,001 to $45,000
10	$45,001 to $50,000
11	$50,001 to $55,000
12	$55,001 to $60,000
13	$60,001 to $65,000
14	$65,001 to $70,000
15	$70,001 to $75,000
16	$75,001 to $100,000
17	$100,001 to $200,000
18	$200,001 or more

SOURCE: U.S. Department of Education, National Center for Education Statistics, Early Childhood Longitudinal Study, Kindergarten Class of 2010–11 (ECLS-K:2011), spring 2014.

Where longitudinal imputation was not possible, missing values were imputed using the hot deck method in which similar respondents and nonrespondents are grouped or assigned to "imputation cells," and a respondent's value is randomly "donated" to a nonrespondent within the same cell. Cells are defined by characteristics such as geographic region, school locale, school type, household type, age, race, education, and income. When information used to define the imputation cells was missing for any of these variables in third grade, information was used from second grade, first grade, or the base year, where available. Imputation flag values for IFP7HILOW, IFP7INCLOW, and IFP7INCHIG identify cases for which longitudinal or hot deck imputation was conducted. There are no separate imputation flags for X7INCCAT_I and X7POVTY_I; imputation was done only in the source variables P7HILOW, P7INCLOW, and P7INCHIG, and is reflected in the imputation flags for those variables.

Table 7-3. Missing data for household income: School year 2013–14

Variable	Number missing	Percent
Detailed income range	1,568	14.1

SOURCE: U.S. Department of Education, National Center for Education Statistics, Early Childhood Longitudinal Study, Kindergarten Class of 2010–11 (ECLS-K:2011), spring 2014.

Reported income was used to determine household poverty status in the spring of 2014, which is provided in variable X7POVTY_I. For some households, more detailed information about household income than the ranges described above was collected. Specifically, when parent respondents reported a detailed household income range suggesting the household income was close to or lower than 200 percent of the U.S. Census Bureau poverty threshold for a household of its size, the respondents were asked to report household income to the nearest $1,000 (referred to as exact income) in order to determine household poverty status more accurately. Table 7-4 shows the reported detailed income categories for households of a given size for which respondents were asked the exact income question. For example, a respondent in a household with two people would have been asked to provide an exact income if the respondent had indicated that the household income was less than or equal to $30,000. Table 7-4 also shows how the income categories compare to the value that is 200 percent of the weighted average 2013 poverty threshold.[27]

Table 7-4. Criteria for reporting income to the nearest $1,000 in the spring parent interview and 2013 thresholds for 200 percent of poverty: Spring 2014

Household size	ECLS-K:2011 parent interview income categories	200 percent of weighted average thresholds for 2013[1, 2]
Two	Less than or equal to $30,000	$30,284 or less
Three	Less than or equal to $40,000	$37,104 or less
Four	Less than or equal to $50,000	$47,688 or less
Five	Less than or equal to $55,000	$56,530 or less
Six	Less than or equal to $65,000	$63,850 or less
Seven	Less than or equal to $75,000	$72,768 or less
Eight	Less than or equal to $100,000	$80,968 or less
Nine or more	Less than or equal to $100,000	$96,130 or less

[1] U.S. Census Bureau, Current Population Survey. Poverty Thresholds for 2012 by Size of Family and Number of Related Children Under 18 Years Old, retrieved December 8, 2014 from http://www.census.gov/hhes/www/poverty/data/threshld/index.html.
[2] The 2013 weighted poverty thresholds were used for the poverty composite because respondents in the spring of 2014 were asked about household income in the past year. At the time that the spring 2014 parent interview was finalized, the most updated poverty thresholds available were the weighted 2012 poverty thresholds. Poverty thresholds for 2013 were similar to the poverty thresholds for 2012. However, because of differences in one category, exact income should have been asked for one narrow range of incomes according to the 2013 thresholds, but it was not asked because the 2012 thresholds were used. Using the 2013 poverty thresholds rather than the 2012 poverty thresholds, cases with two household members and an income between $30,001 and $30,284 were not asked exact income when they should have been.
SOURCE: U.S. Department of Education, National Center for Education Statistics, Early Childhood Longitudinal Study, Kindergarten Class of 2010–11 (ECLS-K:2011), spring 2014.

[27] The CAPI program used to conduct the parent interview was programmed to only ask for exact income when parent respondents reported a detailed household income range suggesting the household income was close to or lower than 200 percent of the U.S. Census Bureau poverty threshold for a household of its size. Although the parent interview in which this information was collected was conducted in the spring of 2014, the 2012 poverty thresholds were used for instrument programming because they were the most recent thresholds available when programming was done. The question about exact income was asked for the following conditions: (NUMBER IN HH = 1 AND PAQ.110 < 6) OR (NUMBER IN HH = 2 AND PAQ.110 < 7) OR (NUMBER IN HH = 3 AND PAQ.110 < 9) OR (NUMBER IN HH = 4 AND PAQ.110 < 11) OR (NUMBER IN HH = 5 AND PAQ.110 < 13) OR (NUMBER IN HH = 6 AND PAQ.110 < 14) OR (NUMBER IN HH = 7 AND PAQ.110 < 16) OR (NUMBER IN HH = 8 AND PAQ.110 < 17) OR (NUMBER IN HH IS GREATER THAN OR EQUAL TO 9 AND PAQ.110 < 17)).

When information about exact household income was available (P7TINCTH_I), it was used in conjunction with household size (X7HTOTAL) to calculate the poverty composite. When exact income was not available because the exact income question was not asked, the midpoint of the detailed income category (X7INCCAT_I) was used in conjunction with household size (X7HTOTAL).[28]

Household poverty status in the spring of 2014 was determined by comparing total household income reported in the parent interview to the weighted 2013 poverty thresholds from the U.S. Census Bureau (shown in table 7-5), which vary by household size. Although the parent interview was conducted in the spring of 2014, the 2013 weighted poverty thresholds were used in the derivation of the poverty composite because respondents were asked about household income in the past year. Exact income (P7TINCTH_I) was asked in the parent interview or imputed for all persons in categories 1 and 2 of the poverty composite. Imputation of exact income was conducted according to thresholds in the parent interview. Households with an exact income that fell below the appropriate threshold were classified as category 1, "below the poverty threshold," in the composite variable. Households with an exact income that was at or above the poverty threshold but below 200 percent of the poverty threshold were classified as category 2, "at or above the poverty threshold, but below 200 percent of the poverty threshold," in the composite variable. Households with a total income (either exact or the income representing the midpoint of the detailed range reported by the composite) that was at or above 200 percent of the poverty threshold were classified as category 3, "at or above 200 percent of the poverty threshold," in the composite variable.[29] For example, if a household contained two members and the household income was lower than $15,142, the household was considered to be below the poverty threshold and would have a value of 1 for the composite. If a household with two members had an income of $15,142 or more, but less than $30,284 (200 percent of the poverty threshold for a household of two), the composite would have a value of 2. If a household with two members had an income of $30,284 or more, the composite would have a value of 3.

[28] Because exact income information was not collected from all parents, the ECLS-K:2011 provides an approximate but not exact measure of poverty.

[29] In the ECLS-K:2011, there are three categories in the poverty composite rather than two categories for "below poverty threshold" and "at or above poverty threshold" as there were in the ECLS-K. The ECLS-K:2011 categories 2 and 3 can be combined to create a poverty composite variable comparable to the ECLS-K poverty composite variable.

Table 7-5. ECLS-K:2011 poverty composite and 2013 census poverty thresholds: Spring 2014

Household size poverty threshold	Census weighted average poverty thresholds for 2013 (X7POVTY_I = 1)[1]	100 percent to less than 200 percent of census weighted average poverty thresholds for 2013 (X7POVTY_I = 2)[1]	Census weighted average thresholds for poverty 2013[1]
Two	Less than $15,142	$15,142 to less than $30,284	$15,142
Three	Less than $18,552	$18,552 to less than $37,104	$18,552
Four	Less than $23,834	$23,834 to less than $47,688	$23,834
Five	Less than $28,265	$28,265 to less than $56,530	$28,265
Six	Less than $31,925	$31,925 to less than $63,850	$31,925
Seven	Less than $36,384	$36,384 to less than $72,768	$36,384
Eight	Less than $40,484	$40,484 to less than $80,968	$40,484
Nine or more	Less than $48,065	$48,065 to less than $96,130	$48,065

[1] U.S. Census Bureau, Current Population Survey. Poverty Thresholds for 2013 by Size of Family and Number of Related Children Under 18 Years Old, retrieved 11/6/2014 from http://www.census.gov/hhes/www/poverty/data/threshld/index.html.
SOURCE: U.S. Department of Education, National Center for Education Statistics, Early Childhood Longitudinal Study, Kindergarten Class of 2010–11 (ECLS-K:2011), spring 2014.

7.5.2.6 Creation of a Socioeconomic Status Variable

In the base-year of the study and the spring of 2012, a composite variable for socioeconomic status (SES) was created that combined occupation prestige scores, income, and education. The composite for socioeconomic status was not created in the spring of 2013 or 2014 because not all data for the composite were collected (in spring 2013, parents were not asked for education information; in spring 2014, parents were not asked for occupation information). Users who wish to create their own SES composite may take the spring 2014 education data for a case (X7PAR1ED_I and X7PAR2ED_I) and combine those data with spring 2014 household income (X7INCCAT_I) and spring 2013 variables for parent occupational prestige scores (X6PAR1SCR_I and X6PAR2SCR_I). The values of each SES component can then be normalized as *z* scores so that the component has a mean of 0 and a standard deviation of 1. In this normalization step, -1 (not applicable) values would be treated as missing. For the *h*-th SES component, a *z* score z_{hi} for the *i*-th household may be computed as

$$z_{hi} = \frac{x_{hi} - \bar{x}_w}{sd(\bar{x}_w)},$$

where x_{hi} is the value of the *h*-th SES component for the *i*-th household; $\bar{x}_w$ is the weighted mean of x_{hi}; and $sd(\bar{x}_w)$ is the standard deviation of $\bar{x}_w$. Note that where *h* is household income, x_{hi} is the natural log of

the midpoint of the detailed income range. The weight used to compute the *z* score would be the spring 2014 child base weight. The spring 2014 base weight, W7CI0, should be merged by CHILDID into the data file from file K3BASEWTS in appendix D of the ECB. The SES variable for the *i*-th household would then be computed as

$$SES_i = \frac{\sum_{h=1}^{m} z_{hi}}{m},$$

where *m* is the number of components. Note that for households with only one parent present and for parents who were retired or not currently in the labor force, not all the components would be defined. In these cases, the SES would be the average of the *z* scores of the available components.

7.5.2.7 Respondent ID and Relationship to Focal Child (X7RESID, X7RESREL2)

The respondent to the parent interview was a person identified as the household member who knew the most about the child's care, education, and health. X7RESID indicates the household roster number of the spring 2014 parent interview respondent. The relationship variables (P7REL_1-P7REL_25, P7MOM_1-P7MOM_25, P7DAD_1-P7DAD_25, and P7UNR_1-P7UNR_25) associated with the respondent's household roster number were used to code X7RESREL2. If the respondent was a biological mother or father, X7RESREL2 is coded as 1 (biological mother) or 4 (biological father), respectively. If the respondent was an adoptive, step-, or foster mother or father, or other female or male guardian, X7RESREL2 is coded as 2 (other mother type) or 5 (other father type), respectively. If the respondent was a mother or father but the type of mother (P7MOM_#) or father (P7DAD_#) was coded as -7 (refused), -8 (don't know), or -9 (not ascertained), X7RESREL2 is coded as 3 (mother of unknown type) or 6 (father of unknown type).[30] If the respondent was a grandparent, aunt, uncle, cousin, sibling, or other relative, X7RESREL2 is coded as 7 (nonparent relative). If the respondent was a girlfriend or boyfriend of the child's parent or guardian; a daughter or son of the child's parent's partner; other relative of the child's parent's partner; or another nonrelative, X7RESREL2 is coded as 8 (nonrelative). Otherwise, X7RESREL2 is coded as -9 (not ascertained). Because the interviewer initially asked to speak with the previous round respondent

[30] Categories for mothers and fathers of unknown type were new for the spring 2012 composite. Mothers and fathers of unknown type were included in the categories "other mother type" and "other father type" for the fall 2010 and spring 2011 composites, X1RESREL and X2RESREL.

at the beginning of the spring 2014 parent interview, the respondent for previous interviews (X*RESID) was the same person for many cases.

7.5.2.8 Food Security Status

The food security status of the children's household was determined by responses to the 10 food security questions (P7WORRFD through P7NOTEA2) asked in section FDQ of the spring 2014 parent interview. The questions measured the households' experiences related to food insecurity and reduced food intake in the last 12 months. In spring 2011 and spring 2012, questions were asked about adults' experiences separately from the experiences of the children in the household. In spring 2014, to reduce respondent burden, a shorter 10-item version of this measure suggested by the United States Department of Agriculture (USDA) was used to measure adult food security. The adult food security measure can be used to predict child food security. The adult data were combined into scales using statistical methods based on the Rasch measurement model. The food security questions were developed by academic researchers using ethnographic and case-study methods with low-income women and families to identify natural language used to describe their situations and behaviors when they had difficulty obtaining enough food. The scales derived from the food security questions were validated using statistical methods based on item response theory and by comparing measured food security with other indicators of food adequacy. Composites were created that indicate the food security status of the adults (based on 10 household- and adult-referenced items).

When interpreting food security statistics, users should keep in mind that food security status is a household-level characteristic. In most households classified as having very low food security, the children in the household were not food insecure at that level of severity. Young children in U.S. households are generally protected from disrupted diets and reduced food intake to a greater extent than are older children or adults in the same households (Nord and Hopwood 2007). Calculations of the scales indicating household adult food security were carried out in accordance with the standard methods described in *Guide to Measuring Household Food Security, Revised 2000* (U.S. Department of Agriculture 2000). Analysis of the ECLS-K:2011 data using statistical methods based on the Rasch measurement model found that item severity parameters in the ECLS-K:2011 data were near enough to the standards benchmarked by the Current Population Survey Food Security Supplement that it was appropriate to use the standard benchmark household scores, which are based on the latter data source.

7.5.2.8.1 Food Security Status: Raw Scores (X7FSADRA2)

X7FSADRA2 is the adult food security raw score, which is a simple count of the number of household- and adult referenced food security items affirmed by the parent, and ranges from 0 to 10. It is an ordinal-level measure of food insecurity. It can be used in analyses as an ordinal measure of food insecurity or to identify more severe or less severe categories of food insecurity than those identified in the categorical food security variables described in section 7.5.2.8.3. The raw score is ordinal, not interval, so it should not be used when a linear measure is required, such as for calculation of a mean. Responses to items skipped because of screening are assumed to be negative for the purpose of creating the score. For cases that have some missing data but at least some valid responses, missing responses were considered to be negatives. Cases with no valid responses to any of the 10 food security items are coded as missing -9 (not ascertained). Definitions for negative and affirmed values of food security items are shown in exhibit 7-4.

Exhibit 7-4. Definitions of negative and affirmed values for the food security items in the ECLS-K:2011 kindergarten–third grade restricted-use data file

Question number	Negative responses (coded 0)	Affirmative responses (coded 1)
FDQ130A	3 (never true)	1 (often true); or 2 (sometimes true)
FDQ130B	3 (never true)	1 (often true); or 2 (sometimes true)
FDQ130C	3 (never true)	1 (often true); or 2 (sometimes true)
FDQ140	2 (no); or screened out in previous questions	1 (yes)
FDQ150	3 (only 1 or 2 months; FDQ140=2; or screened out in previous questions	1 (almost every month); or 2 (some months, but not every month)
FDQ160	2 (no); or screened out in previous questions	1 (yes)
FDQ170	2 (no); or screened out in previous questions	1 (yes)
FDQ180	2 (no); or screened out in previous questions	1 (yes)
FDQ190	2 (no); or screened out in previous questions	1 (yes)
FDQ191	3 (only 1 or 2 months); FDQ190=2; or screened out in previous questions	1 (almost every month); or 2 (some months, but not every month)

SOURCE: U.S. Department of Education, National Center for Education Statistics, Early Childhood Longitudinal Study, Kindergarten Class of 2010-11 (ECLS-K:2011), kindergarten–third grade (K-3) data file.

7.5.2.8.2 Food Security Status: Continuous Measures (X7FSADSC2)

X7FSADSC2 is the adult food security scale score. This is a measure of the severity of food insecurity experienced by adults in the household in the previous 12 months. It is a continuous, interval level measure based on the Rasch measurement model and is appropriate for linear models, such as correlation, regression, or analysis of variance. It is on the standard (logistic-unit) metric described in *Guide to Measuring Household Food Security, Revised 2000* (U.S. Department of Agriculture 2000) (for households without children). Valid values range from 1.7 to 11.1, with higher values indicating more severe food deprivation. The scale score is undefined for households that affirmed no adult-referenced items and is coded -6. Under Rasch-model assumptions, the scale score for households that affirm no items (raw score = 0) is undefined. It is less than the lowest measured value, but its precise value is unknown and may vary substantially among households. For such cases, X7FSADSC2 is assigned a value of -6. These households are food secure, but the appropriate size of the interval between their score and the score of households that affirmed one item is not known and varies from household to household. If these cases (a substantial majority of all cases) are included in linear models, appropriate methods must be used. For example, if the food security scale score is a dependent variable, a selection model such as Tobit may be appropriate. If the food security scale score is a predictor variable, a value of 0 may be assigned to cases with a raw score of 0 and a dummy variable added to identify households with a raw score of 0.

7.5.2.8.3 Food Security Status: Categorical Measures (X7FSADST2)

X7FSADST2 is a categorical measure of adults' food security status based on the household's adult food security raw score, X7FSADRA2. X7FSADST2 identifies households as food secure (raw scores 0-2), having low food security among adults (raw scores 3-5), or having very low food security among adults (raw scores of 6 or more). Users may combine the latter two categories as indicating food insecurity among adults. This variable is appropriate for comparing percentages of households with food insecurity among adults and very low food security among adults across subpopulations.

7.5.3 Teacher Composite Variables

In addition to the teacher data flags discussed in section 7.4.3 above, there are several composite variables on the file that use data from teachers. For example, there are composite variables

about the child's closeness and conflict with the teacher (X7CLSNSS, X7CNFLCT). These two variables are described in chapter 3, along with other variables derived from teacher reports of children's social skills and working memory. Other variables that use teacher data are about the child's grade level (e.g., X7GRDLVL) and are discussed above in section 7.5.1 about the child composites.

7.5.4 School Composite Variables

Variables describing children's school characteristics were constructed using data from the teacher, the school administrator, and the sample frame. Details on how these variables were created are provided below.

A change in approach to computing school composite variables was implemented for the spring 2014 data collection. ECLS-K:2011 data were prioritized over school master file[31] data in assigning values to school composites. As a result, data from the school administrator questionnaire were used for the current round or the most recent available prior round before using current school master file data to assign composite values.

Because many children move from one school to another over the course of the study, the construction of school composites (e.g., school type) can be challenging when current-round data are missing or when items are not asked in the current round if the school submitted an SAQ in a prior round. Using the school value for a child from a prior round can be erroneous due to children moving. As a result, many school composites are constructed by combining data across years at the school level, calculating the composite value, and then assigning that value to participating children currently enrolled in the school.

7.5.4.1 School Type (X7SCTYP)

In the spring of 2014, the questionnaire given to administrators in schools that did not have previous round school data (SAQ-A) contained a question on school type that was used in the creation of the spring school type composite (X7SCTYP). The questionnaire given to administrators in schools that had provided school data in previous rounds (SAQ-B) did not contain the question used to create the school

[31] The school master file was created for the ECLS-K:2011 from the Common Core of Data (CCD) for public schools, the Private School Universe Survey (PSS) for private schools, and other data sources. It is updated regularly as new files from those surveys become available.

type composite; therefore, for these schools data from the school administrator questionnaire in spring 2013, spring 2012, or spring 2011 were used. School master file data were used if school responses were not available from any ECLS-K:2011 round.

X7SCTYP was created as follows when SAQ-A was given to school administrators: If question A5 in the SAQ-A ("Which of the following characterizes your school?") was answered as "a regular public school (not including magnet school or school of choice)" (S7REGPSK); "a public magnet school" (S7MAGSKL); or "a charter school" (S7CHRSKL); the school was coded as "public." If the question was answered as "a Catholic school" of any type (S7CATHOL, S7DIOCSK, S7PARSKL, or S7PRVORS), the school was coded as "Catholic." If the question was answered as "other private school, religious affiliation" (S7OTHREL), the school was coded as "other religious." Otherwise, if the question was answered as "private school, no religious affiliation" (S7OTNAIS, S7OTHRNO), then the school was coded as "other private."

When questionnaire SAQ-B was given to school administrators, X7SCTYP was set based on school administrator questionnaire answers about school type provided in spring 2013, spring 2012, or spring 2011. If data about school type were missing from the SAQ-A for the current round or prior rounds, information about school type from the school master file (which included FMS and frame data) was used to create X7SCTYP.[32]

Homeschooled children have a code of -1 (not applicable) on X7SCTYP.[33] Children who changed schools and were not followed and children who were not located in the spring of 2014 have a code of -9 (not ascertained) for X7SCTYP. The variable X7SCTYP is set to system missing for children who were not participants in the spring 2014 round. In addition, nonparticipants have a value of 990000000 on the variable F7CCDLEA.

[32] X7SCTYP is constructed differently than previous versions of the same composite. For example, for the round 6 version of the composite, X6SCTYP, if spring 2013 school administrator data were missing, previous round composite values for school type (X4PUBPRI, X2PUBPRI) were used. If those data were missing, data from the school master file were used.
[33] These children were enrolled in a school at the time of sampling in the base year, but were homeschooled during the spring of 2014.

7.5.4.2 Public or Private School (X7PUBPRI)

X7PUBPRI is a broad indicator of school type with only two categories—public and private. X7PUBPRI, which is derived from the more detailed school type variable X7SCTYP described above, has valid values for the 13,579 cases that have either child assessment or parent interview data in round 7.

This composite was created as follows: X7PUBPRI is coded 1 (public) if school type indicated in X7SCTYP is 4 (public). X7PUBPRI is coded 2 (private) if school type indicated in X7SCTYP is 1, 2, or 3 (Catholic, other religious, or other private). If the school identification number for spring 2014 indicated that the child was homeschooled, then X7PUBPRI is coded -1 (not applicable). X7PUBPRI is coded -9 (not ascertained) if data on school type are not available in the spring 2014 school master file. X7PUBPRI is set to system missing for children who did not participate in round 7.

7.5.4.3 School Enrollment (X7ENRLS)

There is a composite variable in the data file (X7ENRLS) that indicates total school enrollment on October 1, 2013 (or the date nearest to that date for which the school administrator had data available). This total school enrollment composite was created using the school enrollment variable from the school administrator questionnaire (S7ANUMCH). If school administrator data on total school enrollment were missing for spring 2014, enrollment data were obtained from the most recent round of the study with nonmissing school administrator data about school enrollment. If those data were missing, information from the Private School Universe Survey (PSS) for private schools and from the Common Core of Data (CCD) public school universe data for public schools were used.[34] In all other cases the variable is coded -9 (not ascertained).

7.5.4.4 Percent Non-White Students in the School (X7RCETH)

The composite variable X7RCETH indicates the percentage of the student population that was not White in the spring of 2014.[35] The composite is derived from a question in the school administrator

[34] X7ENRLS is constructed differently than previous versions of the same composite. For example, for the round 6 version of the composite, X6ENRLS, if spring 2013 school administrator data were missing, X6ENRLS was set using school master file data. If those data were missing, data from previous round composites (X4KENRLS, X2KENRLS) were used.

[35] This variable was S*MINOR in the ECLS-K. In the ECLS-K:2011, there is a different variable factored into the composite that indicates the percentage of students classified as "two or more races, non-Hispanic or Latino" (S*MULTPT).

questionnaire (question A8 in SAQ-A) that asked the number or percentage of students in the school who were the following race/ethnicities: Hispanic/Latino of any race; American Indian or Alaska Native, not Hispanic or Latino; Asian, not Hispanic or Latino; Black or African American, not Hispanic or Latino; Native Hawaiian or other Pacific Islander, not Hispanic or Latino; White, not Hispanic or Latino; or two or more races, not Hispanic or Latino. The composite was calculated by summing the percentages for all categories except White, not Hispanic or Latino.

School administrators were allowed to report their answers to the student racial/ethnic composition questions as either numbers or percentages. All answers provided as numbers were converted to percentages using the total enrollment variable S7TOTENR as the denominator before computing the composite variable.[36] The sum of the calculated percentages for each race/ethnicity category was allowed to be within +/- 5 percent of 100 percent to allow for minor reporting errors of numbers that did not add to the reported total or percentages that did not add to 100 percent. In a few cases, this procedure resulted in a total sum of percentages that was slightly over 100 percent. Totals greater than 100 percent are top-coded to 100 percent.

A flag for each individual race/ethnicity variable indicating whether the school administrator reported the information as a number or a percent is included in the data file.[37] Because the composite is calculated as a percent, these flags will not be needed by users unless they are interested in examining how

[36] There were five recoding rules used for data with apparent errors:
1. If answers were reported as numbers and the total number of students in the school (S7TOTENR) was missing, the total from another question about total enrollment (Q3a S7ANUMCH) was used if the difference between the summed total of students in different race/ethnicity groups and the reported Q3a total was within +/-5 percent of 100 percent (95–105 percent). For example, if the number of students in each race/ethnicity group in the school added to 501 students, but the total number of students by race (S7TOTENR) was missing, and total enrollment from S7ANUMCH was 500 students, the sum of the number of students in the race/ethnicity categories (501) would be 100.2 percent of the value of 500 reported in S7ANUMCH. The value of 100.2 percent is within the 95-105 percent range of allowed errors, so S7ANUMCH is used as the denominator for calculating the percentage of students in each race/ethnicity category.
2. If the method of reporting was mixed (some as numbers, others as percentages), the race/ethnicity percentages were coded as -9 (not ascertained).
3. If percentages were recorded, with none of the above errors, and the summed total across categories was within +/-5 percent of 100 percent (95–105 percent) of the value in S7TOTENR, any race/ethnicity categories that the school administrator left blank were recoded to 0.
4. If the summed total of students in race/ethnicity categories was not +/-5 percent of 100 percent (95–105) percent of the sum reported in S7TOTENR or not 95–105 percent of total enrollment from another question (Q3a S7ANUMCH), the individually reported percentages and numbers were made -9 (not ascertained).
5. If numbers were reported, with none of the above errors, and the summed total across categories was within +/- 5 percent of the reported total, any race/ethnicity categories that the school administrator left blank were recoded to 0.

[37] There were also other questions in the school administrator questionnaire that allowed for answers to be recorded as either a number or percent. The flags for these variables are S7ADAFLG (average daily attendance reported as number or percent); S7ASIAFL (question about Asian or Pacific Islander teachers, not Hispanic or Latino, reported as number or percent); S7HISPFL (question about Hispanic teachers reported as number or percent); S7BLACFL (question about Black teachers, not Hispanic or Latino, reported as number or percent); S7WHITFL (question about White teachers, not Hispanic or Latino, reported as number or percent); S7AIANFL (question about American Indian or Alaska Native teachers, not Hispanic or Latino, reported as number or percent); S7HAWPFL (question about Native Hawaiian or Pacific Islander teachers, not Hispanic or Latino, reported as number or percent); and S7MULTFL (question about teachers of two or more races, not Hispanic or Latino, reported as number or percent). In all cases, the variables related to these flags provide information as numbers or percentages, with the flags indicating how the answers were originally reported by school administrators.

answers were reported. If the flag (S7ASIAFL, S7HISPFL, S7BLACFL, S7WHITFL, S7AIANFL, S7HAWPFL, and S7MULTFL) for each of the race/ethnicity variables (S7ASIAPT, S7HISPPT, S7BLACPT, S7WHITPT, S7AIANPT, S7HAWPPT, and S7MULTPT) is equal to 1, that indicates the information was reported by the school administrator as a percentage. If the flag (S7ASIAFL, S7HISPFL, S7BLACFL, S7WHITFL, S7AIANFL, S7HAWPFL, and S7MULTFL) for each of the race/ethnicity variables (S7ASIAPT, S7HISPPT, S7BLACPT, S7WHITPT, S7AIANPT, S7HAWPPT, and S7MULTPT) is equal to 2, that indicates the information was reported by the school administrator as a number.

In some cases, the composite could not be derived from the school administrator questionnaire responses because some data used to compute it were missing or the data collected from administrators appeared to be in error (e.g., if school administrators reported both numbers and percents that were not consistent with one another and it was unclear which data were correct). If the composite could not be derived from the spring 2014 data, the percentage of non-White students in the school was obtained from school administrator questionnaire responses from spring 2013, spring 2012, or spring 2011.[38] If those data were also missing, the percentage of non-White students in the school was obtained from the CCD (for public schools) or the PSS (for private schools). If those data were also missing, X7RCETH is coded -9 (not ascertained). If the study child was homeschooled in the spring of 2014, X7RCETH is coded -1 (not applicable).

7.5.4.5 Highest and Lowest Grade at the School (X7LOWGRD, X7HIGGRD)

Composite variables indicate the lowest grade taught at the school (X7LOWGRD) and the highest grade taught at the school (X7HIGGRD). They are derived from information collected from the school administrator during the spring 2014 data collection (for administrators in schools for which no previous SAQ had been submitted, who received questionnaire SAQ-A) or from the spring of 2013, spring of 2012, or the spring of 2011 (for administrators in schools for which an SAQ had previously been submitted and who received questionnaire SAQ-B). For administrators who submitted questionnaire SAQ-A, X7LOWGRD and X7HIGGRD were created by first coding answers of "ungraded" in question A4 ("Mark all grade levels included in your school") as category 15 (ungraded) and then coding the lowest grade in the school and the highest grade in the school, respectively. The grade level for children in transitional kindergarten, kindergarten, or pre-first grade is coded as category 2 (kindergarten). For schools

[38] X7RCETH is constructed differently than previous versions of the same composite. For example, for the round 6 version of the composite, X6RCETH, if spring 2013 school administrator data were missing, X6RCETH was set using school master file data. If those data were missing, data from previous round composites (X4RCETH, X2KRCETH) were used.

whose administrators received questionnaire SAQ-B, or those who received questionnaire SAQ-A and had missing data for school grade levels, the composites X7HIGGRD and X7LOWGRD were set to the values reported in previous school administrator data in spring 2013, spring 2012, or spring 2011. Data from the school master file were used if information about the highest and lowest grade at the school was not collected in school administrator variables for any round.[39]

7.5.4.6 Students Eligible for Free or Reduced-Price School Meals (X7FRMEAL_I)

The composite variable X7FRMEAL_I indicates the percent of students in the school who were approved for free or reduced-price school meals. This composite has valid values for the 13,579 cases that have either child assessment or parent interview data in round 7. This composite differs from the school meal composites created in for the spring of 2011 and the spring of 2012 (X2FLCH2_I, X2RLCH2_I, X4FMEAL_I, and X4RMEAL_I) because the spring 2014 school administrator questionnaire did not include questions on USDA program participation or the numbers of students eligible for free and reduced priced meals (breakfast or lunch) that were used as the sources of the composite variables for spring 2011 and spring 2012. However, in the spring of 2014 and in previous rounds of the study, school administrators were asked for the percentage of children eligible for free or reduced-price lunch. This question and several other sources of information were used to create X7FRMEAL_I. Specifically, X7FRMEAL_I is derived from the percentage of children eligible for free or reduced-price lunch reported by the school administrator during the spring 2014 data collection, or imputed if the item was missing from the SAQ, using information collected from school administrators in the spring of 2013, the spring of 2012, or the spring of 2011, frame variables or hot deck imputation.[40] For schools where no SAQ was received for spring 2014 (and therefore SAQ missing values were not imputed), the composite was completed by assigning, in the following order, a value from prior rounds of the study, the school master file, or hot deck imputation.[41] X7FRMEAL_I, based on school administrator data about children eligible for free or reduced-price lunch, was imputed

[39] X7LOWGRD and X7HIGGRD are constructed differently than previous versions of the same composite. For example, for the round 6 versions of the composites, X6LOWGRD and X6HIGGRD, if spring 2013 school administrator data were missing, previous round composite (X4HIGGRD and X4LOWGRD, X2HIGGRD, and X2LOWGRD) values were used to set the composites. If those data were missing, data from the school master file were used.

[40] Both public schools and nonprofit private schools are eligible for the National School Lunch Program.

[41] X7FRMEAL_I is constructed differently than previous versions of the same composite. For example, for the round 6 version of the composite, X6FRMEAL_I, data from the imputed spring 2013 school administrator questionnaire were used first to set the composite value, followed by variables in the following order of priority: unimputed school administrator data from the most recent previous round of the study available, data from the school master file, the sum of the spring 2012 composite for free school meals added to the spring 2012 composite for reduced-price school meals, and then the sum of the spring 2011 composite for free school meals added to the spring 2011 composite for reduced-price school meals. Finally, if X6FRMEAL_I did not have an assigned value following each of the above steps, the remaining missing values were imputed using hot deck imputation at the composite level.

with information from previous rounds about students eligible for free or reduced-price meals because children are approved for free or reduced-price meals generally, not just for lunch. Children who were homeschooled have X7FRMEAL_I set to -1.

The percent of children reported by school administrators in spring 2014 to be eligible for free or reduced-price lunch (S7PCTFLN_I) was used as the first source of data for X7FRMEAL_I.[42] There are seven schools that appear to have reported a number of students rather than a percentage in S7PCTFLN_I; their values were retained for the composite and a flag (X7FRMEALFLG) was created to identify them. S7PCTFLN_I was imputed for all cases that had child assessment or parent interview data in the spring 2014 round **and** a completed SAQ, but for which the administrator did not provide free and reduced-price lunch information. Table 7-6 shows the level of missing data for the school administrator variable for the percent of children who were eligible for free or reduced-price lunch (S7PCTFLN) among the schools that had at least one child or parent respondent in the spring 2014 data collection.

Table 7-6. Number and percent of public and private schools and study students with missing data for the percent of children in the school eligible for free or reduced-price lunch (S7PCTFLN): Spring 2014

School meal composite	Number missing	Percent missing	Number of students in these schools	Percent of students with missing values
Percent eligible for free or reduced-price meal	72	3.4	237	2.0

SOURCE: U.S. Department of Education, National Center for Education Statistics, Early Childhood Longitudinal Study, Kindergarten Class of 2010–11 (ECLS-K:2011), spring 2014.

The imputation flag IFS7PCTFLN indicates whether the school administrator questionnaire variable S7PCTFLN_I was longitudinally imputed using spring 2013, spring 2012, or spring 2011 data, was filled with data from the CCD, was imputed using the hot deck method, or was not imputed. For cases with missing data on S7PCTFLN, longitudinal imputation was used first, if possible, taking a value from school administrator data in a previous round for the same school in spring 2013 (S6PCTFLN), spring 2012 (S4PCTFLN), or spring 2011 (S2LUNCH). If historical survey data were not available, then data from the CCD were used to impute for these missing S7PCTFLN_I values for public schools. The PSS does not have data on school meals that can be used to compute an imputed value for S7PCTFLN_I. If CCD data were not available, then the values of the meal composites from previous rounds were used to compute an imputed value for S7PCTFLN_I, where available, with the imputed value computed as X6FRMEAL_I, if

[42] X7FRMEAL_I was top-coded to 100 percent, if necessary. This was done for 8 schools with 43 participating students.

this was available, the sum of X4FMEAL_I and X4RMEAL_I if these were available, and otherwise the sum of X2FLCH2_I and X2RLCH2_I, if available.

If S7PCTFLN_I was still missing after data from previous rounds and the CCD were used, it was imputed using the hot deck method described above in section 7.5.2.5. Hot-deck imputation was done at the school level and the imputed value was then assigned to each child in the school. In hot-deck imputation, a school with a nonmissing value for a component has this value assigned or "donated" to a similar school with a missing value for the component. Schools are similar if they belong in the same imputation cell. Imputation cells were created using district poverty category (created from the district poverty variable X7DISTPOV described in section 7.5.7), census region, school type, the percentage of students in minority ethnic groups, and whether the school received Title I funding.

Cases that did not have any data from the school administrator questionnaire in the spring of 2014 did not have a value for S7PCTFLN_I to set the value of the composite X7FRMEAL_I, so other sources were used to assign a value for the composite. X7FRMEAL_I was set to the percentage of students in the child's current school eligible for free or reduced-price lunch reported by the school administrator in the spring of 2013 (S6PCTFLN), if those data were available, or the spring of 2012 (S4PCTFLN), if those data were available. If spring 2012 data were not available but data from the spring of 2011 (S2LUNCH) were, the 2011 data were used. Otherwise, if the school master file had data for the school's total enrollment, the number of children approved for free meals, and the number of children approved for reduced-price meals, X7FRMEAL_I was set to the percentage of children approved for free meals plus the percentage of children approved for reduced-price meals.

Finally, if X7FRMEAL_I did not have an assigned value following each of the above steps, the remaining missing values were imputed using hot deck imputation at the composite level. The imputation flag IFX7FRMEAL indicates whether X7FRMEAL_I was imputed longitudinally, was imputed using the hot deck method or was not imputed.

In some cases, the children's schools are unknown because the child was unlocatable or the child moved to a nonsampled county and was not followed into his/her new school, but a parent interview was completed. In such cases, data were not imputed for X7FRMEAL_I because no information about the school was available (e.g., public or private control, school size, or even if the child was enrolled in a school). X7FRMEAL_I is coded as -9 for these cases.

7.5.4.7 Geographic Region and Locality of the Child's School (X7REGION, X7LOCALE)

Composite variables indicating the geographic region (X7REGION) and locality type (X7LOCALE) of the child's school come from the PSS for private schools and the CCD for public schools. For the spring 2014 geographic region composite, X7REGION, if the geographic region was missing in the PSS and CCD files, then the state in which the school was located was used to assign region. If those data were missing and the geographic region for the school was identified in an earlier round, the composite was set to the value from the most recent round (as reported in X6REGION, X4REGION, X2REGION, or X1REGION).[43] Values for X7REGION are the following:

1 = Northeast: CT, ME, MA, NH, RI, VT, NJ, NY, PA;

2 = Midwest: IL, IN, MI, OH, WI, IA, KS, MN, MO, NE, ND, SD;

3 = South: DE, DC, FL, GA, MD, NC, SC, VA, WV, AL, KY, MS, TN, AR, LA, OK, TX; and

4 = West: AZ, CO, ID, MT, NV, NM, UT, WY, AK, CA, HI, OR, WA.

X7REGION is coded -9 (not ascertained) for children who were unlocatable or moved out of a sampled county and were not followed to new schools in the spring of 2014, but for whom there are parent interview data. Children who were homeschooled in the spring of 2014 have a code of -1 on X7REGION. X7REGION is set to system missing for those who did not participate in round 7.

For the spring 2014 school locality variable, X7LOCALE, the categories correspond to the 2006 NCES system for coding locale (https://nces.ed.gov/ccd/rural_locales.asp). If data were not available for the child's school from the PSS or CCD, and locale data were available from an earlier round, the composites were set to the value from the most recent round (X6LOCALE, X4LOCALE, X2LOCALE, or X1LOCALE). Otherwise, the composites are coded -9 (not ascertained). Some -9 (not ascertained) values for X7LOCALE are associated with cases in which children who moved were unlocatable or moved out of a sampled county and were not followed to new schools in spring 2014, but for whom there are parent interview data. Children who were homeschooled in spring 2014 are coded as -1 on X7LOCALE.

[43] X7REGION is constructed differently from all previous versions of the same composite. Although X7REGION uses the same data sources that were used to construct the composite in previous rounds, the order of the data sources used is different in round 7 than in previous rounds. For example, for the round 6 version of the composite, X6REGION, the state in which the school was located was used as a final step in assigning the composite value, if data from the CCD or PSS files and geographic location from a previous round (X4REGION, X2REGION, or X1REGION) were not available.

X7LOCALE is set to system missing for those who did not participate in round 7. Values for X7LOCALE are the following:

11 - City, Large: Territory inside an urbanized area and inside a principal city with population of 250,000 or more;

12 - City, Midsize: Territory inside an urbanized area and inside a principal city with population less than 250,000 and greater than or equal to 100,000;

13 - City, Small: Territory inside an urbanized area and inside a principal city with population less than 100,000;

21 - Suburb, Large: Territory outside a principal city and inside an urbanized area with population of 250,000 or more;

22 - Suburb, Midsize: Territory outside a principal city and inside an urbanized area with population less than 250,000 and greater than or equal to 100,000;

23 - Suburb, Small: Territory outside a principal city and inside an urbanized area with population less than 100,000;

31 - Town, Fringe: Territory inside an urban cluster that is less than or equal to 10 miles from an urbanized area;

32 - Town, Distant: Territory inside an urban cluster that is more than 10 miles and less than or equal to 35 miles from an urbanized area;

33 - Town, Remote: Territory inside an urban cluster that is more than 35 miles from an urbanized area;

41 - Rural, Fringe: Census-defined rural territory that is less than or equal to 5 miles from an urbanized area, as well as rural territory that is less than or equal to 2.5 miles from an urban cluster;

42 - Rural, Distant: Census-defined rural territory that is more than 5 miles but less than or equal to 25 miles from an urbanized area, as well as rural territory that is more than 2.5 miles but less than or equal to 10 miles from an urban cluster; and

43 - Rural, Remote: Census-defined rural territory that is more than 25 miles from an urbanized area and is also more than 10 miles from an urban cluster.

Some schools have different values for X*LOCALE between the base year and subsequent rounds. The differences in values reflect changes in the PSS or CCD source data.

The classification of locale has undergone some changes since the ECLS-K study conducted with children in the kindergarten class of 1998-99. Information on these changes is available on the NCES website at https://nces.ed.gov/ccd/rural_locales.asp.

7.5.5 Field Management System (FMS) Composite Variables

Several composite variables were created from data stored in the FMS, which were obtained from school master file data as well as by field staff during visits to the schools and discussions with school staff.

7.5.5.1 School Year Start and End Dates (X7SCHBDD, X7SCHBMM, X7SCHBYY, X7SCHEDD, X7SCHEMM, X7SCHEYY)

The composite variables indicating school year start and end dates, which are listed below, were derived from information contained in the FMS.

- X7SCHBDD – X7 School Year Starting Date, Day;
- X7SCHBMM – X7 School Year Starting Date, Month;
- X7SCHBYY – X7 School Year Starting Date, Year;
- X7SCHEDD – X7 School Year Ending Date, Day;
- X7SCHEMM – X7 School Year Ending Date, Month; and
- X7SCHEYY – X7 School Year Ending Date, Year.

The composite variables for beginning and ending school dates are derived differently in spring 2014 than in previous rounds. In previous rounds of the study, the school administrator questionnaire data were used as the first source of data for creating the composites, followed by the use of FMS data if the questionnaire data were missing. In spring 2014, the school administrator questionnaire did not include a question about beginning and ending school dates, so the FMS data were used to derive the composites. For the spring 2014 composites, some 2013 school start dates were obtained after the data collection period.

7.5.5.2 Year-Round Schools (X7YRRND)

The year-round school composite variable is based on information obtained from the school staff member who helps coordinate the data collection activities in the school (referred to as the school coordinator) about whether a school is a year-round school. This composite has valid values for the 13,579 cases that have child assessment or parent interview data in round 7. The values for this composite variable are 1 (year-round school) and 0 (not year-round school). If the child was homeschooled in the spring of 2014, the composite is coded as -1 (not applicable). If these data were not obtained in the spring of 2014 but information about being a year-round school was collected in an earlier round, the composite was set to the value from the most recent round (X6YRRND, X4YRRND, or X12YRRND).

7.5.6 School District Poverty (X7DISTPOV)

X7DISTPOV is a district-level indicator of the percentage of children age 5–17 in a school district who are in poverty. It is derived from the 2013 Small Area Income & Poverty Estimates (SAIPE) and is computed as the estimated number of children 5–17 years old in poverty divided by the estimated population of children 5–17 years old in the district multiplied by 100 and rounded to 0 decimals. The school district boundaries were based on the 2013 school district mapping survey that included school districts as of January 1, 2014 and reflect district boundaries for the 2013–14 school year (U.S. Census Bureau n.d.). There are 97 ECLS-K:2011 public schools with a missing value for X7DISTPOV because the values were missing in the SAIPE source data.

7.6 Methodological Variables

To facilitate methodological research, variables pertaining to aspects of the data collection work were extracted from the FMS and included in the data file. These include identifiers for parent interview work area (F7PWKARE), parent interviewer identification number (F7PINTVR), the month the parent interview was conducted (F7INTVMM), the year the parent interview was conducted (F7INTVYY), child assessment work area (F7CWKARE), and child assessor identification number (F7CASSOR). A "work area" is the group of schools that each team leader was assigned. Team leaders managed a group of 2 to 4 other individuals who worked as child assessors and parent interviewers for the sampled cases in the work area. If a case was not assigned to an interviewer (e.g., a child who moved and was not followed),

then F7PINTVR is system missing. Similarly, if a case was not assigned to an assessor, then F7CASSOR is system missing.

8. ELECTRONIC CODEBOOK (ECB)

8.1 Introduction

This chapter provides specific instructions for using the Early Childhood Longitudinal Study, Kindergarten Class of 2010–11 (ECLS-K:2011) Electronic Codebook (ECB). The functionality of the ECB, which is the same throughout the ECLS studies, is fully described in the Help File for the ECLS-K:2011 longitudinal kindergarten–fourth grade (K-4) ECB. The information in the ECB's Help File provides a comprehensive tour through the ECB and addresses all of the functions and capabilities of the program. These functions allow users to access the accompanying data catalog and view the data in various ways by performing customized searches and extractions. Using the ECB, the data user can create SAS, SPSS for Windows, and Stata syntax programs that can be run to generate an extract data file from the text (ASCII) data file.

8.1.1 Hardware and Software Requirements

The ECB program is designed to run under Windows 95®, Windows 98®, Windows 2000®, Windows XP®, or Windows NT® 4.0 on a Pentium-class or higher personal computer (PC). The ECB has been successfully tested using current versions of Windows Vista and Windows 7. It has not been tested on Windows 10. The ECB is not designed for use on Apple Macintosh systems, but Mac users can create a data file using the file record layout.

The PC should have a minimum of 20 megabytes of available disk space. The program will fit best visually on screens set to a desktop area of 1024 x 768 pixels. It will still work on other screen settings, but it may not make the best use of the available screen space. If you have a Windows NT® or earlier operating system, you can check or set your desktop area as follows:

1. Click the Windows Start button.
2. Select the Settings menu and then the Control Panel folder icon.
3. In the Control Panel window, click the Display icon.
4. Select the Settings tab.

5. Set the Desktop Area to 1024 x 768 pixels with the Desktop Area slidebar.

If you have a Windows Vista or Windows 7® operating system, you can check or set your desktop area as follows:

1. Click the Windows Start Button.
2. Select the Control Panel tab.
3. In the Control Panel window, click the Display icon.
4. Select the Change display settings tab.
5. Set the Desktop Area to 1024 x 768 pixels with the Desktop Area slidebar.

As noted above, the ECB requires approximately 20 megabytes of available disk space on your hard drive. If 20 megabytes of space is not available, you may wish to delete unnecessary files from the drive to make space for the ECB.

8.2 Installing, Starting, and Exiting the ECB

The ECB is intended to be installed and run from within the Windows 95®, Windows 98®, Windows 2000®, Windows XP®, Windows NT® 4.0, Windows Vista, or Windows 7® environment. The sections in this chapter provide you with step-by-step instructions for installing the program on your PC, starting the program, and exiting the program once you have completed your tasks.

8.2.1 Installing the ECB Program on Your Personal Computer

Program installation is initiated by running the "InstallECLSECB.exe" executable file.

How to Install the Program

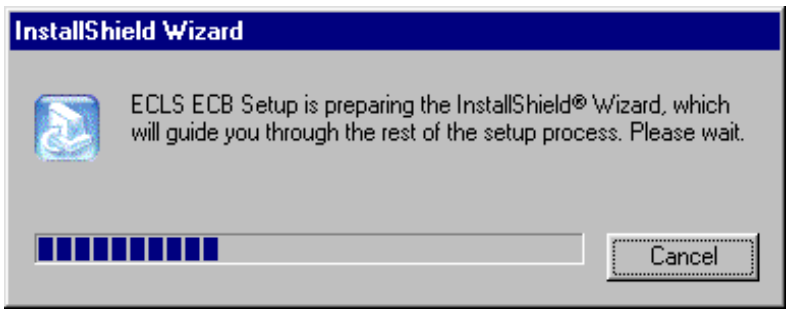
1. Close all applications on your computer.
2. Run program "InstallECLSECB.exe".

Depending on your PC's configuration, you may encounter warning messages during installation. To respond, always keep the newer version of a file being copied and ignore any access violations that occur during file copying.

If you are installing multiple ECBs (not different versions of the same ECB) on your PC, you may receive a message warning that Setup is about to replace pre-existing files. To respond, always opt to continue the installation although the default is to cancel the setup. When you get a follow-up message to confirm whether the installation should be continued, press Yes to continue, although the default is No.

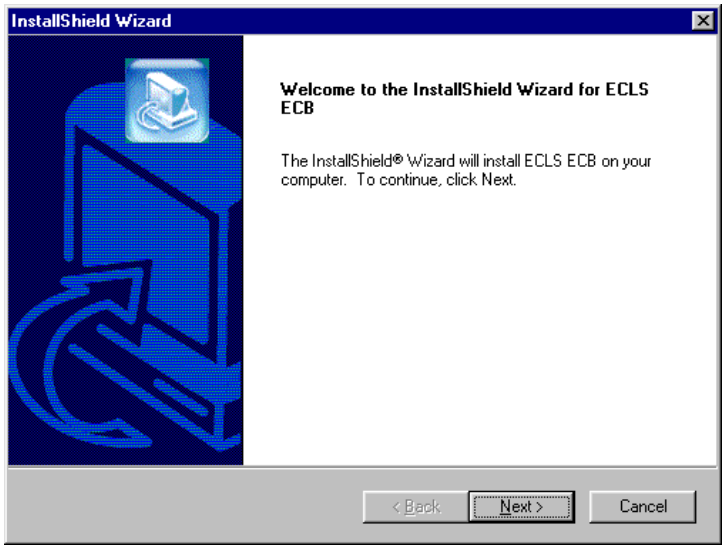
3. The screen shown in exhibit 8-1 indicates that the setup is being prepared.

Exhibit 8-1. InstallShield Wizard



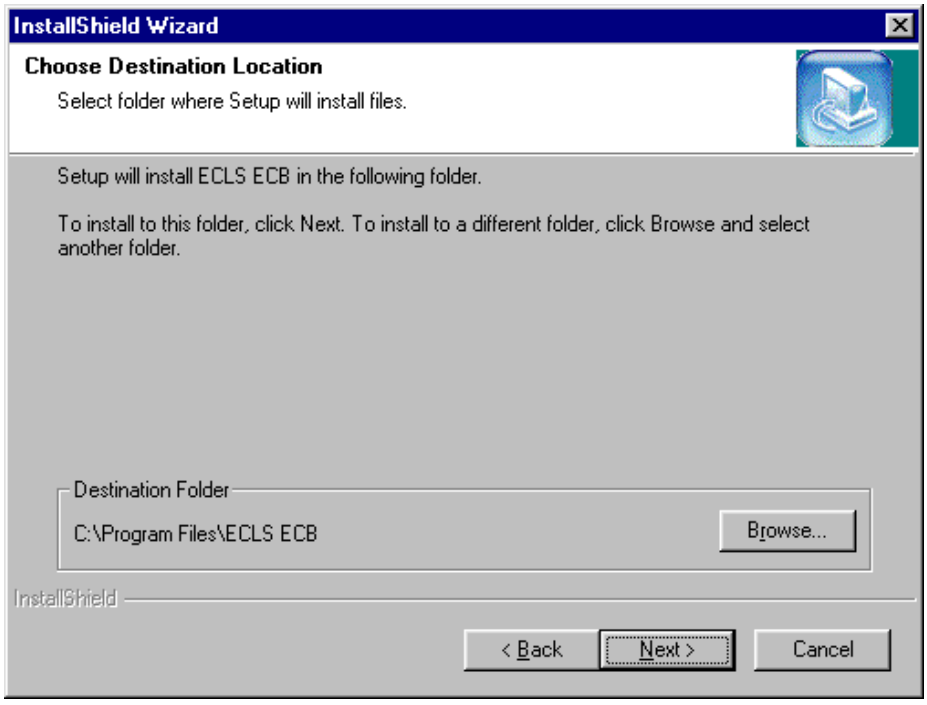
4. You will be prompted to continue with the installation in the Welcome window shown in exhibit 8-2. Click the Next button to continue.

Exhibit 8-2. Welcome window



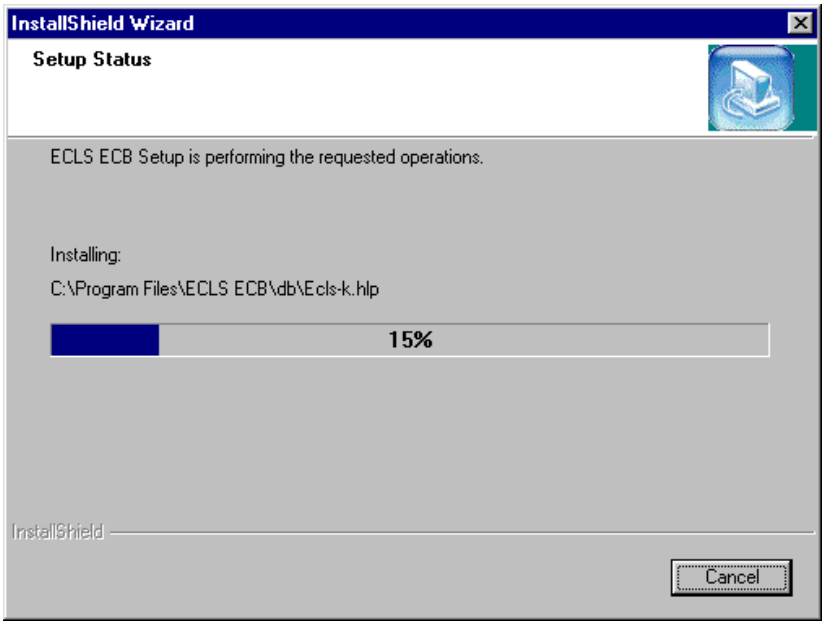
5. When you continue, you will be prompted to choose a destination location for the installation in the window shown in exhibit 8-3. If you wish to change the destination location, click the Browse button to change the directory. Click the Next button when the desired destination folder is shown.

Exhibit 8-3. Choose Destination Location



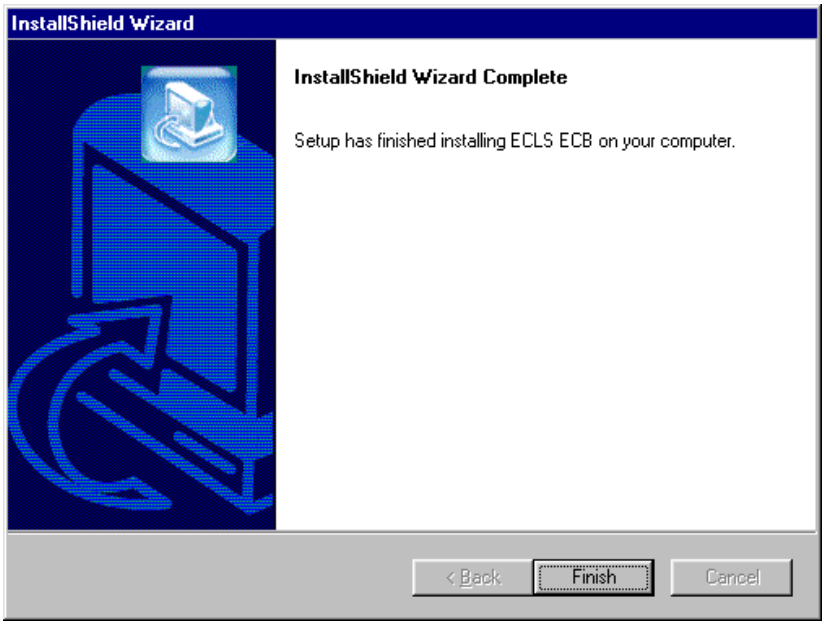
6. Setup will then start installing files. Exhibit 8-4 shows the setup status.

Exhibit 8-4. Setup Status



7. Once the installation is completed, the InstallShield Wizard Complete window shown in exhibit 8-5 will appear. Click the Finish button to finish the process and return to your PC's desktop.

Exhibit 8-5. InstallShield Wizard Complete



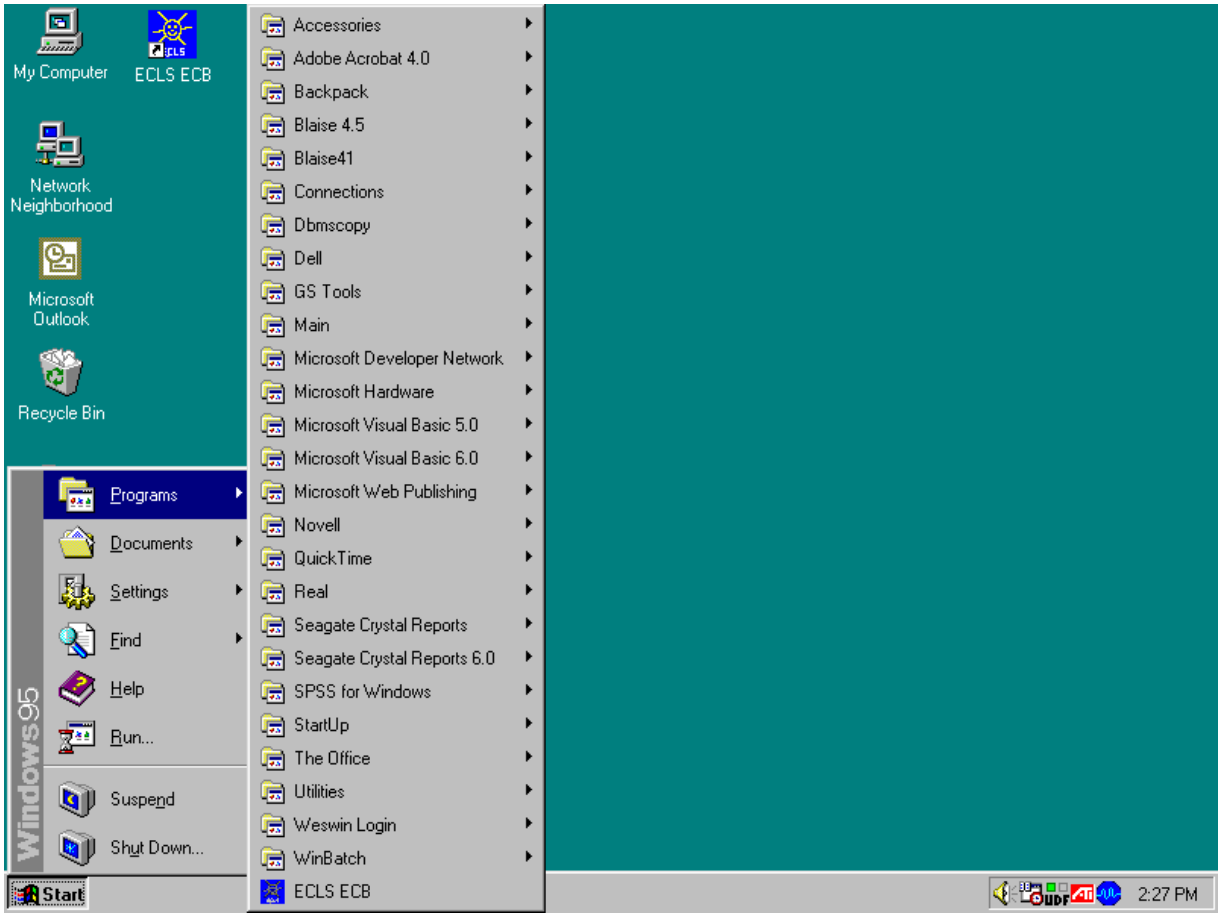
8. The installation process should take about a minute, depending on the speed of the computer on which the ECB is being installed.

8.2.2 How to Start the ECB

On the desktop screen, click the ECB desktop icon (exhibit 8-6a) shown below to initiate the program. Alternatively, on the desktop screen, click the Start button and then point to Programs (exhibit 8-6b). Click the ECB title to start the program. In Windows 7, click the Start button, click on All Programs, and click the ECB title to start the program.

Exhibit 8-6a. Desktop icon

Exhibit 8-6b. Desktop screen—click start

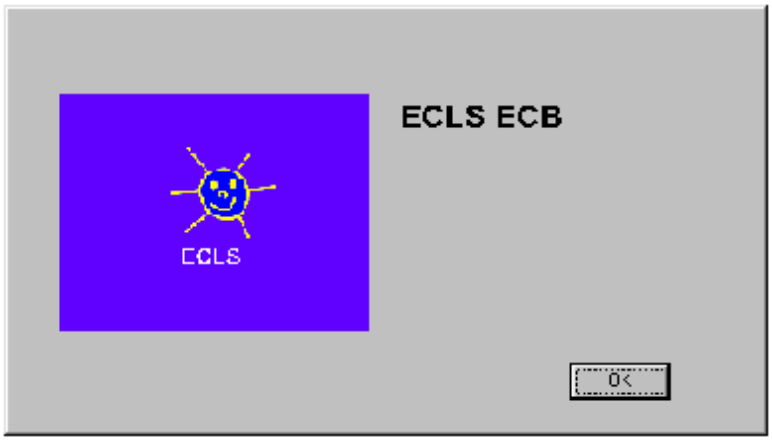


If you are a first-time user of the ECB, exhibit 8-7 will appear and ask if you are a new user.

Exhibit 8-7. First-time user dialog box

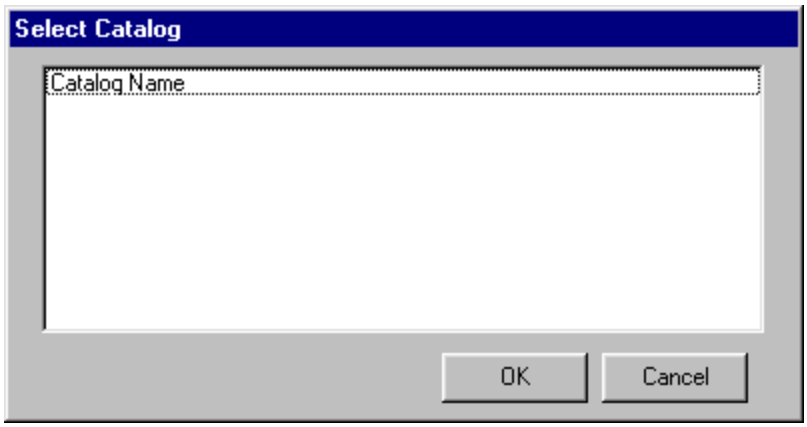
Click Yes if you are a first-time user. The ECB splash screen shown in exhibit 8-8 will appear.

Exhibit 8-8. ECB splash screen



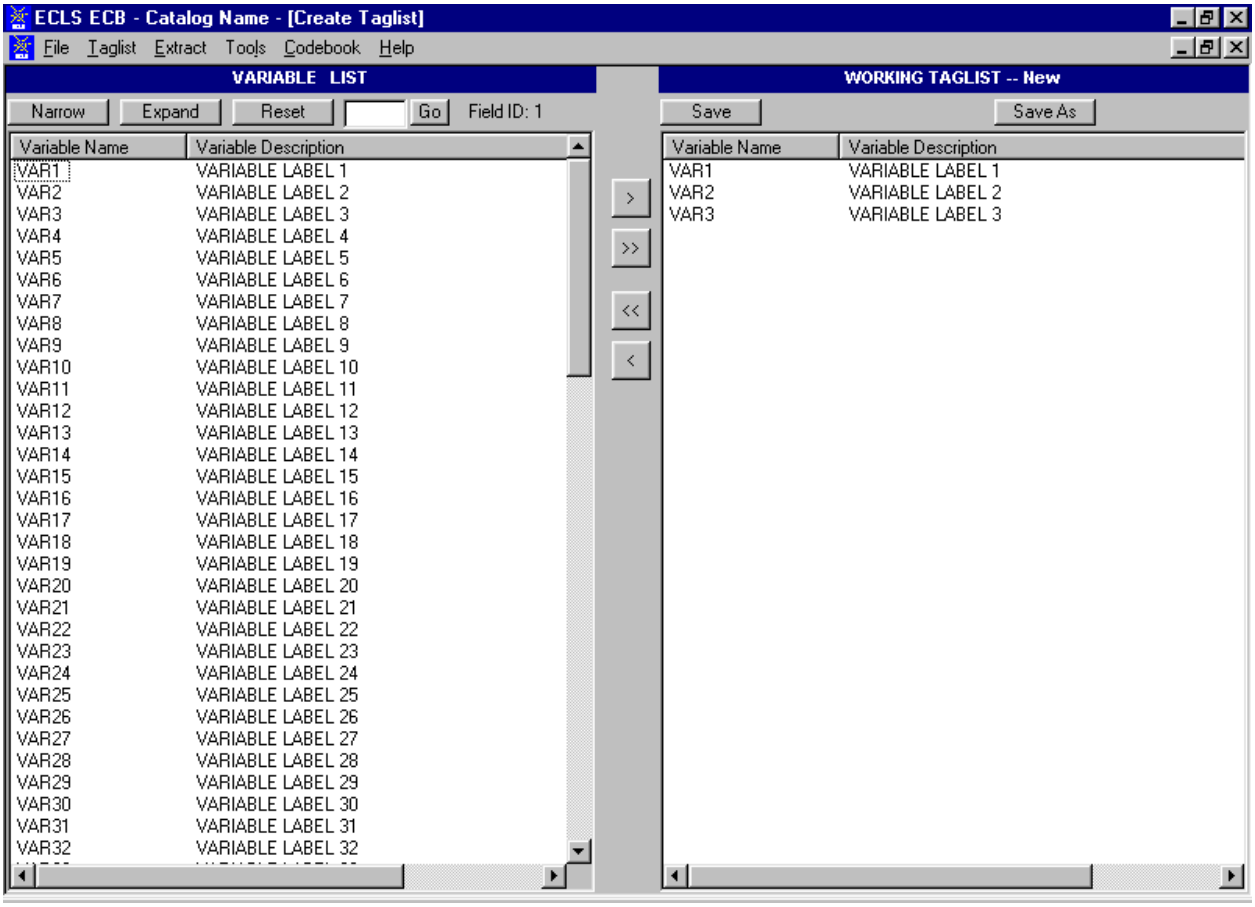
On the Select Catalog screen (exhibit 8-9), highlight the name of the catalog. (The ECLS-K:2011 has only one catalog.)

Exhibit 8-9. Select Catalog screen



Click OK to open the main ECB screen, shown in exhibit 8-10.

Exhibit 8-10. Main ECB screen



You are now ready to use the functions of the ECB as described in the ECB Help File.

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APPENDIX A

DATA ANOMALIES, ERRATA, AND DATA CONSIDERATIONS

This appendix provides information on data anomalies, errata, and data considerations. Anomalies and errata listed here were identified during the editing and review of these data and are those known at the time this manual was prepared. Other anomalies and errata may exist in the data. This section also discusses additional categories that were added for coding some open-ended questions.

The information presented here will be more easily understood, and is most useful, *after* the survey items or variables to be used in analyses have been identified. Each anomaly, error, or data consideration is associated with a specific survey question or variable in the data file (or both). Rather than read through this entire appendix, users may find it easier to identify any issues associated with their data of interest by searching for the survey question number, variable name, or keyword in this appendix. For example, an analyst who is interested in information about children's diagnoses of attention deficit hyperactivity disorder (ADHD) could search (1) CHQ125, which is the number of the question in which this information was asked in the parent interview; (2) P7ADHA, which is the name of the variable in which data from CHQ125 about ADHD are stored; and (3) "Attention Deficit Hyperactivity Disorder" or "ADHD."

These anomalies, errors, and considerations are noted so that users are aware these issues with the data exist. However, leaving the anomalous or erroneous data as they are will not significantly affect most analyses, because the number of cases affected is generally very small. An exception to this is the programming errors that affect entire groups of cases that should have been asked certain questions. Additionally, analyses focused on a small subpopulation or examining rare characteristics could be significantly affected by data issues with even a small number of cases. Therefore, analysts doing such analyses should consider the impact these data issues may have on their results.

This appendix is organized into the following sections:

Parent Interview: Spring 2014 Anomalies

- Some cases have household data about family members that were edited (e.g., if the age of a household member was reported incorrectly and had to be updated, or a person who was added to the household roster in error needed to be deleted from the household roster). These data were changed in the current round of the study, but not in previous rounds of the study. Researchers who are using data about household composition from the parent interview household roster in their analyses should examine all rounds of household roster data closely, recognizing that for a limited number of cases corrected information from later rounds may need to be applied to earlier rounds. Age changes were made to the following cases: for person 1 in the household, age changes were made to CHILDID=10000279, 10012797, 10003756, 10004230, 10005643, 10008515, 10008783, 10015171, 10015360, 10017528, 10017731; for person 3 in the household, age changes were made to CHILDID=10004230, 10001605, 10006227, 10007830; for person 4 in the household, age changes were made to CHILDID=10004230, 10014762; for person 5 in the household, age changes were made to CHILDID=10017561, 10008501; and for person 6 in the household, age changes were made to CHILDID=10012545. Changes to a household member's sex and relationship to the child were made to the following cases: for person 1 in the household, CHILDID=10003947, 10004420, 10012797, 10014103; for person 3 in the household CHILDID=10003947; and for person 5 in the household CHILDID=10002026.

- As in previous rounds of the study, there are races and ethnicities for persons on the data file who did not qualify to have race and ethnicity asked in the current round, but did qualify to have race and ethnicity collected in an earlier round of the study. Persons who qualify to have race and ethnicity on the file include the focal child, those with a relationship of mother/female guardian or father/male guardian in any round (P*REL_*=1 or 2 or P*UNR=3 or 4), those who were a respondent in any round (P*PER_*=1), and persons who were spouse/partners of respondent parents in any round. Some cases have additional race and ethnicity data that were collected in

previous rounds when a household member was incorrectly coded as having a relationship that would make collecting his or her race/ethnicity applicable (e.g., a respondent or a parent figure), but was later reported in interviewer comments to be a boyfriend to the parent, or a sibling, other relative, or other nonrelative to the child. The race/ethnicity data for these persons who did not qualify to have race and ethnicity collected were retained on the data file for person 3 in the household for cases with CHILDID=10000654, 10003762, 10006539, 10011925; for person 4 in the household for cases with CHILDID=10006096, 10006539, 10011925, 10012510, 10012832, 10016707, 10017583; for person 5 in the household for cases with CHILDID=10003905, 10005500, 10011049, 10012527, 10013433, 10014926, 10015826, 10017300, 10018006; for person 6 in the household for cases with CHILDID=10006539, 10011611; and for person 10 in the household for cases with CHILDID=10010479.

- In one case (CHILDID=10018155) there was a household member who was identified as a father or male guardian, but has a -7 (refused) answer for the type of father (e.g., biological, adoptive, etc.). Because the type of father was unknown, the CAPI program did not ask questions about the second parent in the household and variables associated with the second-parent questions are coded -9 (not ascertained).

- There are cases that have a disability diagnosis for the focal child and have follow-up questions about that diagnosis recorded in variables other than those used for the child's specific diagnosis. In the parent interview, respondents were asked to provide the diagnosis of the child's disability, if applicable, in question CHQ125 (P7LRNDIS-P7OTHDIA). If a diagnosis did not fit one of the categories in the parent interview specifications, the diagnosis was entered as "other." Follow-up questions about age at diagnosis and medication taken for a particular diagnosis (CHQ130-CHQ173) were asked about the diagnosis entered as "other." During data editing and review of "other" responses conducted after the parent interview was completed, it was determined that some answers in the "other" category fit within existing codes that were available in the interview and were assigned codes for those existing categories. For example, in a situation in which the parent report was initially coded as an "other" diagnosis in CHQ125 but was later determined to be depression, the diagnosis was recategorized from "other" to depression (P7DEPRESS=1), but the information collected in follow-up questions about age at diagnosis and medication taken for a particular diagnosis (CHQ130-CHQ173) remain in the variables pertaining to the "other" category. If the category for depression was already chosen in CHQ125, the follow-up questions about age at diagnosis and medication taken for a particular diagnosis (CHQ130-CHQ173) would be both in the variables pertaining to depression and in the variables pertaining to the "other" category. Five cases (CHILDID=10000833, 10000896, 10004043, 10009107, 10009905) are coded -9 (not ascertained) for DWQ010-DWQ077c and PPQ100-PPQ120, even though these cases did not experience a breakoff during the parent interview (i.e., X7BRKFNL=-1). These questions were not asked during the interview because of skip patterns in the interview specifications based on the relationship type of the respondent recorded at the time of the interview. After data collection, editing was conducted and changes were made to the household relationships such that these questions would have been asked had the newly edited relationships been recorded during data collection. As a result, these questions were coded -9 (not ascertained).

Parent Interview: Spring 2014 Errors in the CAI Programming

- There were errors in the preloaded data used to determine which questions about education should be asked, given information collected in prior-round interviews. As a result, there are cases for which the data collected are inconsistent with the skip patterns documented in the interview specifications. In some instances, these errors caused education questions to be asked again for cases that already had education questions asked in an earlier round of the study and for which new education data should not have been collected. For parent 1, there were 86 cases that were asked about education in round 7 but had education data from round 4, and four cases that were asked about education again in round 7 but had education data from round 1. For parent 2, there were 66 cases that were asked about education in round 7 but had education data from round 4, and 13 cases that were asked about education again in round 7 but had education data from round 1. The round 7 education data have been kept on the file for these cases, along with the education data from previous rounds.

  There were 22 cases for parent 1 and 15 cases for parent 2 that were not asked education questions in section PEQ but should have been because education data were not collected for these parents in a prior round. Hot deck imputation was used to impute education data for these cases.

Parent Interview: Data Considerations

- The nonresident parent section of the parent interview (NRQ) is designed to ask about biological and adoptive parents who are not in the household. If there is one adoptive parent in the household, questions are asked about contact the child may have with another adoptive parent who is not in the household. Questions in this section are asked about a nonresident adoptive parent who is the opposite sex of the adoptive parent in the household. Questions are not asked about a nonresident adoptive parent who is the same sex as the other adoptive parent in the household.

Hard-Copy Questionnaires

For the hard-copy instruments (school administrator questionnaires, teacher-level teacher questionnaire, and teacher child-level questionnaire), both range and consistency checks were performed.

- Range checks include logical soft checks for continuous variables.
- Consistency checks include logical soft comparisons between related variables within a form to check for inconsistencies.

When data were identified during quality control (QC) processes as possibly in error, the original questionnaire returned by the respondent was reviewed to determine whether the response was incorrectly captured during the questionnaire scanning process. For those cases listed in this section as having anomalous data, data reviewers confirmed that the data matched the response provided on the

questionnaire and a reasonable correction(s) could not be determined. Therefore, the data were left as reported.

Teacher Questionnaires: Spring 2014 Anomalies

- The responses to T7TCMTH (Are you this student's primary [math] teacher?) for cases 10016226 and 10017615 are different and contradict the response to A7TCHMTH (Do you teach [math] to any or all students in your class?) despite the fact that both are linked to T7_ID 2016249. The data for these cases match the forms and are inconsistent responses provided by the respondent.

Composite Variable Anomalies, Errata, and Considerations

Chapter 7 of this manual provides detailed information about the composite variables that were created and included in the data file. In this section, several data considerations related to the composite variables are described. Analysts are encouraged to carefully review the descriptions of the composite measures of interest to them in chapter 7.

- Some households have an uncommon combination of parent/guardians. Cases (CHILDID=10018131, 10013049, 10014697, 10007530, 10002069, 10003018) were reviewed, and it was either confirmed that the parent/guardians listed are as reported during the parent interview or no information was provided to indicate the parent/guardians listed were incorrect.

- In two cases (CHILDID=10001835, 10015435), the child's height and weight measurements (C7HGT1, C7HGT2, X7HEIGHT, C7WGT1, C7WGT2, X7WEIGHT) are inconsistent with prior rounds. It appears the values may have been switched when they were entered into the assessment computer application, but this cannot be confirmed. Analysts should use their judgment in using the values from these cases. Analysts who choose not to use the reported values will also want to set X7BMI (body mass index) to missing for these cases, as BMI is based on the height and weight measures.

- In two cases (CHILDID=10005679, 10015019), the parents' ages in X7PAR2AGE were updated to correct errors for the parents' ages in round 4.

- For a small number of cases, values for X2KRCETH, X4RCETH, X2FLCH2_I, X2RLCH2_I, X4FMEAL_I, X4RMEAL_I, S4NMFRM_I, and S4NMRDM_I were corrected due to errors in imputation present in these variables on previously released data files.

- In chapter 7, it is noted in the description of X7FRMEAL_I (Students Eligible for Free or Reduced-Price School Meals) that there are some schools for which is appears data were reported by administrators as number of students eligible, rather than as a percent. All such cases are coded in the highest category of X7FRMEAL_I on the public-use file. Data users are encouraged to use X7FRMEALFLG to identify these cases, evaluate

whether their inclusion has an impact on analyses, and make statistical adjustments, if needed, that best serve the analysis goals.

The *Dimensional Change Card Sort (DCCS)* Error in the CAI Programming

There was a programming error in the round 7 *DCCS* that resulted in giving children credit for a correct response when the child did not provide a response to a trial. This error occurred in both the practice and test trials. Approximately 4 percent of cases were affected overall. As shown in Table A-1, in the practice trials, 281 out of 12,849 cases were affected. In the test trials, 250 out of 12,849 cases were affected.

Table A-1. Frequency of trials affected by the programming error in practice trials, test trials, and both: Spring 2014

Type of error	Frequency	Percent	Cumulative frequency	Cumulative percent
Error both in practice and test	28	5.57	28	5.57
Error in practice only	253	50.30	281	55.86
Error in test only	222	44.14	503	100.00

SOURCE: U.S. Department of Education, National Center for Education Statistics, Early Childhood Longitudinal Study, Kindergarten Class of 2010–11 (ECLS-K:2011), spring 2014.

Because of the programming error, audio feedback given to a child for nonresponse during the practice trials was incorrect. The audio feedback that the child heard was "That's right," even though the child did not provide a response. If the child did not respond to a trial, the trial was supposed to be scored as incorrect, and the audio feedback was supposed to indicate that the child responded with an incorrect answer and reteach the rule. The erroneous audio feedback during the practice trials could have confused the child about the rules of the game. It was important for the child to demonstrate a clear understanding of the rules of the game in the practice trials before progressing to the test trials to ensure that performance was not a reflection of failing to understand the instructions. Under some circumstances, having nonresponse scored as correct affected the number of practice trials administered.

Errors that occurred during the test trials were corrected in the data. These errors did not affect the child's experience during the test, but only affected how the trial was recorded.

Errors that occurred during the practice trials, however, did affect the child's experience during the test and, in some cases, resulted in insufficient opportunity for the child to demonstrate an understanding of the rules of the game. Cases affected by the programming error during practice were examined to determine whether they met the criteria for moving into the test trials based on the items for which they did provide a response (that is, whether they demonstrated sufficient understanding of the task despite receiving erroneous feedback). These cases, children who had at least one instance of nonresponse in the practice, are flagged as a 6 or 7 in the *DCCS* flag variable X7DCCSFLG depending on whether they met the criteria (exhibit A-1). Cases that have X7DCCSFLG=6 passed the practice trials with the responses they provided during the administration of the *DCCS,* despite erroneous feedback. These children successfully met the criterion on both the shape and color trials to advance to the test trials. Although the erroneous feedback may have confused the child in a way that would have affected his or her performance on the test, there are some notable trends in the performance on the practice trials that suggest that data for these children are valid and that the erroneous feedback had minimal impact on a child's understanding of the task. First, the nonresponse occurred most often on an item in the first set of shape trials during practice, which was the first set of practice trials the child received, as opposed to the color trials, which was the second set of practice trials the child received. Second, the practice trials appear to be easy for children this age. Approximately 83 percent of children with a score on the task (X7DCCSFLG=1) passed the shape and color practice with no errors and using the minimum number of practice trials required to advance, and 99.5 percent of children with a score passed the shape practice using the minimum number of practice trials required. In addition, a large percentage of children who had nonresponse in the practice (189 of 281 children) passed the practice by getting 3 or 4 trials correct, when excluding nonresponse trials. This means they were generally accurate when a response was provided. In addition, because the sorting rule was stated prior to every practice and test trial, the child had clear instructions for what to do on each trial, even if erroneous feedback had occurred on a previous practice trial. Because the practice trials seem to be easy for children this age because so many children were able to pass the practice despite the erroneous feedback, and because the child was constantly reminded of what sorting rule should be used for the trial, it is reasonable to conclude that receiving incorrect audio feedback produced minimal interference to children's understanding of the task.

Cases that have X7DCCSFLG=7 did not demonstrate sufficient understanding of the task with the responses they provided and were not given sufficient practice per the administration protocols to have their scores included in the data file. They would not have advanced to the test trials if their nonresponse had not been recorded as correct. These cases have *DCCS* data set to -4 (suppressed due to programming error). Information is also provided on this error in section 3.2.1.1.

Exhibit A-1. Values for the *DCCS* flag variable (X7DCCSFLG)

X7DCCSFLG	Value
Not administered	0
DCCS computed (overall) score present	1
Failed Shape Game practice	2
Failed Color Game practice	3
Breakoff before passing practice trials	4
Breakoff after passing practice trials	5
Programming error but still passed practice, DCCS data present	6
Programming error, insufficient practice, DCCS data set to -4	7

SOURCE: U.S. Department of Education, National Center for Education Statistics, Early Childhood Longitudinal Study, Kindergarten Class of 2010–11 (ECLS-K:2011), kindergarten–third grade (K-3) data file.

"Other, Specify" Variables

As discussed in chapter 6, there were times when a sufficient number of cases provided the same "other, specify" response to warrant the addition of a new category to the response options for third grade. The categories added after data collection ended, during review of the data, are listed in exhibit A-2. Users should keep in mind that had these new categories been offered as response options to all respondents during data collection, it is possible that more respondents would have chosen them.

Exhibit A-2. Response categories added for ECLS-K:2011 instruments: Third-grade round (spring 2014)

Item No.	Instrument	Question text	Added new response categories
C6/B4	School administrator questionnaires SAQ-A/SAQ-B	Does your school take any of the following measures to ensure the safety of children?	▪ Use cameras or video ▪ Require background checks ▪ Aides, volunteers, and parent groups
B9	Teacher-level teacher questionnaire	How frequently do you or your students use computers or the following electronic devices for instructional purposes? Please include any desktop, laptop, or other computer-type devices.	▪ Cell phone/smartphone (iPhone) ▪ Document camera or projector (ELMO, HoverCam) ▪ Student response system (clickers, responders, ActiVote, ActivExpression) ▪ Microphone or classroom audio sound system (TopCat, Redcat)
HEQ290	Parent interview	Is {CHILD} tutored on a regular basis, by someone other than you or a family member, in a specific subject, such as reading, math, science, or a foreign language? What is {CHILD} tutored in?	▪ Language Arts

SOURCE: U.S. Department of Education, National Center for Education Statistics, Early Childhood Longitudinal Study, Kindergarten Class of 2010–11 (ECLS-K:2011), spring 2014.

Electronic Codebook (ECB) Value Labels

There is a small set of minor issues with the value labels for some variables in the electronic codebook.

- G7TMEENG: The label for category 7 shoud say “3 hours or more (8).”
- T7TMEOTH: The label for category 2 should say “2. LESS THAN 1/2 HOUR TO 3 HOURS OR MORE.”
- S7RPTCRD: The labels should be as follows: “1: 3 OR FEWER TIMES A YEAR,” “2: 4 TO 6 TIMES A YEAR,” and “3: 7 OR MORE TIMES A YEAR.”
- P7BMCNTC and P7BDCNTC: The label for category 4 should indicate this includes cases where the nonresident parent is deceased.
- P7HIG_1_I and P7HIG_2_I: The label for the top category should say “"20: GRADUATE OR PROFESSIONAL SCHOOL OR HIGHER."
- X7RCETH and X7FRMEAL_I: The labels should be as follows: “1: 0 TO LESS THAN 25,” “2: 25 TO LESS THAN 50,” “3: 50 TO LESS THAN 75,” and “4: 75 OR HIGHER.”
- X7HIGGRD: The label for category 6 should say "6: 9TH TO 12TH GRADE, UNGRADED (11, 12, 13, 14, 15)."

APPENDIX B
SUPPLEMENTAL GUIDE FOR THE KINDERGARTEN–FOURTH GRADE PUBLIC-USE DATA FILE

1 Introduction

This guide provides information specific to the Early Childhood Longitudinal Study, Kindergarten Class of 2010-11 (ECLS-K:2011) kindergarten–fourth grade public-use data file, referred to hereinafter as the K-4 PUF, which includes data from the base-year (kindergarten) through fourth-grade data collections. This guide is a supplemental document that describes the edits made to the restricted-use file in order to produce the public-use file. This guide focuses on the variables associated with the third-grade data collection. Users should refer to the supplemental appendices in the *Early Childhood Longitudinal Study, Kindergarten Class of 2010–11 (ECLS-K:2011), User's Manual for the ECLS-K:2011 Kindergarten Data File and Electronic Codebook, Public Version* (NCES 2015-074) (Tourangeau et al. 2015) for information about variables associated with the kindergarten rounds of data collection, to the *Early Childhood Longitudinal Study, Kindergarten Class of 2010–11 (ECLS-K:2011), User's Manual for the ECLS-K:2011 Kindergarten–First Grade Data File and Electronic Codebook, Public Version* (NCES 2015-078) (Tourangeau et al. 2015) for information about the variables associated with the first-grade rounds of data collection, to the *Early Childhood Longitudinal Study, Kindergarten Class of 2010–11 (ECLS-K:2011), User's Manual for the ECLS-K:2011 Kindergarten–Second Grade Data File and Electronic Codebook, Public Version* (NCES 2017-285) (Tourangeau et al. 2017) for information about the variables associated with the second-grade rounds of data collection, and to the *Early Childhood Longitudinal Study, Kindergarten Class of 2010–11 (ECLS-K:2011), User's Manual for the ECLS-K:2011 Kindergarten–Fourth Grade Data File and Electronic Codebook, Public Version* (NCES 2018-032) (Tourangeau et al. 2018) for information about the variables associated with the fourth-grade rounds of data collection.

The K-4 PUF is derived from the K-4 restricted-use file, or RUF, and is identical in format. All the variables from the K-4 restricted-use file are included in the same order on the K-4 public-use file. Like the RUF, the PUF is a child-level file that contains assessment data and parent, teacher, and school information collected for all 18,174 study children who are considered base-year respondents. Data masking techniques were applied to variables in the K-4 RUF to make it suitable for release to researchers without a restricted-use license. These masking techniques, which are described further in the next section, include suppression

of sensitive data or variables that apply to only a small subset of study participants, collapsing variable categories, top- or bottom-coding values that are unusually low or unusually high, converting continuous variables to categorical variables and adding noise to school information from the study that is also present in the school sampling frame. These techniques are applied to the data to minimize the risk that any study participant can be identified using the information provided in the data file about them.

2 Masked Variables

As noted above, the masking techniques used to produce the ECLS-K:2011 public-use data file include variable recoding and suppression. The purpose of masking is to provide data in a format that minimizes the potential for a respondent to be identified because of that respondent's characteristics or a unique combination of characteristics. For example, there is potential for the principal of a school to be identified if the ZIP code of that school, the number of students in the school, and the age and race/ethnicity of that principal are all provided in the data file. To guard against this potential disclosure, ZIP code and principal race/ethnicity are suppressed (i.e., not provided) in the PUF, and the number of students in the school and principal age are provided in categories rather than as exact values. There are several types of modifications to variables in the K-4 PUF, as described below.

- Outliers (that is, unusually high or unusually low values) are top- or bottom-coded to prevent identification of unique schools, teachers, parents, and children without affecting overall data quality. The category value labels for variables that are top- and bottom-coded in the PUF are edited versions of the RUF category labels and reflect the new highest and lowest categories.

- Some continuous variables are converted into categorical variables, and some categorical variables have their categories collapsed in the K-4 PUF. Category value labels are provided for continuous variables that are converted into categorical variables.

- Variables with too few cases and/or a sparse distribution are suppressed in the K-4 PUF. The values for these variables are set to -2 and labeled "suppressed" in the Electronic Codebook (ECB). The value -2 means that the data for this variable are suppressed to protect the respondent's confidentiality.

- Variables that provide a particularly identifying characteristic, such as a specific disability, or information that could be matched against external data sources to obtain a specific identifying characteristic, such as exact date of marriage or divorce, are also suppressed. The values for these variables are set to -2.

- The variables from kindergarten through second grade are masked identically in the K-4 PUF as they were in the K-2 PUF. To the greatest extent possible, third- and fourth-grade variables have been masked to be consistent with the masking for similar kindergarten through second-grade variables.

- Variables with information that could be found in the school sampling frame have noise added to them unless they were already masked using any of the methods above. This is only for a small number of records that might be identified using these and other frame variables.

There is a comment field in the variable frequency distribution view screen of the ECB that displays a comment for each masked variable indicating whether the variable from the restricted-use file has been recoded or suppressed in the K-4 PUF.

Exhibits B-1 to B-7 present the lists of masked variables for third grade. The exhibits display the variable name, variable label, and a comment indicating whether the variable was recoded or suppressed, and the reason for suppression. See section 7.1 of this manual for the variable naming conventions.

All variables from the special education teacher questionnaire part A (i.e., all variables with the prefix D7) and from the special education teacher questionnaire part B (i.e., all variables with the prefix E7) are suppressed on the K-4 PUF. For brevity, these variables are not included in the exhibits.

Exhibit B-1. ECLS-K:2011 masked variables, spring 2014 child assessment

Variable name	Variable description	Comments
C7HGT1	C7 ACQ005 HEIGHT MEASUREMENT 1	Data recoded for respondent confidentiality
C7WGT1	C7 ACQ010 WEIGHT MEASUREMENT 1	Data recoded for respondent confidentiality
C7HGT2	C7 ACQ015 HEIGHT MEASUREMENT 2	Data recoded for respondent confidentiality
C7WGT2	C7 ACQ020 WEIGHT MEASUREMENT 2	Data recoded for respondent confidentiality
C7FRDRILL	C7 ACQ030 INTERRUPTION - FIRE DRILL	Data suppressed for respondent confidentiality
C7BMBTHR	C7 ACQ030 INTERRUPTION - BOMB THREAT	Data suppressed for respondent confidentiality
C7LIMIT	C7 ACQ041 PHYS LIMITATION AFFECTED DCCS	Data suppressed for respondent confidentiality
C7SPECAC	C7 ACQ045 SPECIAL ACCOMMODATION LISTED	Data suppressed for respondent confidentiality
C7ACCOM	C7 ONE OF LISTED ACCOMMODATIONS PROVIDED	Data suppressed for respondent confidentiality
C7SETTNG	C7 ACQ055 ACCMMDTNS PROVIDED - SETTING	Data suppressed for respondent confidentiality
C7SCHEDL	C7 ACQ055 ACCMMDTNS PROVIDED - SCHEDULE	Data suppressed for respondent confidentiality
C7AIDE	C7 ACQ055 ACCMMDTNS PROVIDED - AIDE	Data suppressed for respondent confidentiality
C7DEVICE	C7 ACQ055 ACCMMDTNS PROVIDED - DEVICE	Data suppressed for respondent confidentiality
C7IEPPRO	C7 ACQ055 ACCMMDTNS PROVIDED - IEP	Data suppressed for respondent confidentiality
C7BREAKS	C7 ACQ055 ACCMMDTNS PROVIDED - BREAKS	Data suppressed for respondent confidentiality
C7EXTTIM	C7 ACQ055 ACCMMDTNS PROVIDED - EXT TIME	Data suppressed for respondent confidentiality
C7STAFF	C7 ACQ055 ACCMMDTNS PROVIDED - STAFF	Data suppressed for respondent confidentiality
C7BRKRES	C7 REASON FOR THE BREAKOFF	Data suppressed for respondent confidentiality

SOURCE: U.S. Department of Education, National Center for Education Statistics, Early Childhood Longitudinal Study, Kindergarten Class of 2010–11 (ECLS-K:2011) kindergarten–fourth grade (K-4) public-use data file.

Exhibit B-2. ECLS-K:2011 masked variables, spring 2014 parent interview

Variable name	Variable description	Comments
P7CENTRC	P7 HOME CENSUS TRACT CODE	Data suppressed for respondent confidentiality
P7HOMZIP	P7 HOME ZIP CODE	Data suppressed for respondent confidentiality
P7BTHPLC	P7 INQ300 CHILD BORN IN THIS COUNTRY	Data suppressed for respondent confidentiality
P7CNTRYB	P7 INQ310 CHILD COUNTRY OF BIRTH	Data suppressed for respondent confidentiality
P7YRCOME	P7 INQ320 YEAR CHILD CAME TO UNITED STATES	Data suppressed for respondent confidentiality
P7CITIZN	P7 INQ330 CHILD A U.S. CITIZEN	Data suppressed for respondent confidentiality
P7SCHOOL	P7 PIQ060 SCHOOL ASSIGNED OR SELECTED	Data recoded for respondent confidentiality
P7ATTSCH	P7 PIQ065 DOES CHILD ATTEND SCHOOL	Data suppressed for respondent confidentiality
P7HRSSCH	P7 PIQ066 HOURS IN SCHOOL PER WEEK	Data suppressed for respondent confidentiality
P7REASL1	P7 FSQ015 REASON LEFT PERS 1	Data suppressed for respondent confidentiality
P7REASL2	P7 FSQ015 REASON LEFT - PERS 2	Data suppressed for respondent confidentiality
P7REASL3	P7 FSQ015 REASON LEFT - PERS 3	Data suppressed for respondent confidentiality
P7REASL4	P7 FSQ015 REASON LEFT - PERS 4	Data suppressed for respondent confidentiality
P7REASL5	P7 FSQ015 REASON LEFT - PERS 5	Data suppressed for respondent confidentiality
P7REASL6	P7 FSQ015 REASON LEFT - PERS 6	Data suppressed for respondent confidentiality
P7REASL7	P7 FSQ015 REASON LEFT - PERS 7	Data suppressed for respondent confidentiality
P7REASL8	P7 FSQ015 REASON LEFT - PERS 8	Data suppressed for respondent confidentiality
P7REASL9	P7 FSQ015 REASON LEFT - PERS 9	Data suppressed for respondent confidentiality
P7REASL10	P7 FSQ015 REASON LEFT - PERS 10	Data suppressed for respondent confidentiality
P7REASL11	P7 FSQ015 REASON LEFT - PERS 11	Data suppressed for respondent confidentiality
P7REASL12	P7 FSQ015 REASON LEFT - PERS 12	Data suppressed for respondent confidentiality
P7REASL13	P7 FSQ015 REASON LEFT - PERS 13	Data suppressed for respondent confidentiality
P7REASL14	P7 FSQ015 REASON LEFT - PERS 14	Data suppressed for respondent confidentiality
P7REASL15	P7 FSQ015 REASON LEFT - PERS 15	Data suppressed for respondent confidentiality
P7REASL16	P7 FSQ015 REASON LEFT - PERS 16	Data suppressed for respondent confidentiality
P7REASL17	P7 FSQ015 REASON LEFT - PERS 17	Data suppressed for respondent confidentiality
P7REASL18	P7 FSQ015 REASON LEFT - PERS 18	Data suppressed for respondent confidentiality
P7REASL19	P7 FSQ015 REASON LEFT - PERS 19	Data suppressed for respondent confidentiality
P7REASL20	P7 FSQ015 REASON LEFT - PERS 20	Data suppressed for respondent confidentiality
P7REASL21	P7 FSQ015 REASON LEFT - PERS 21	Data suppressed for respondent confidentiality
P7REASL22	P7 FSQ015 REASON LEFT - PERS 22	Data suppressed for respondent confidentiality
P7REASL23	P7 FSQ015 REASON LEFT - PERS 23	Data suppressed for respondent confidentiality
P7REASL24	P7 FSQ015 REASON LEFT - PERS 24	Data suppressed for respondent confidentiality
P7REASL25	P7 FSQ015 REASON LEFT - PERS 25	Data suppressed for respondent confidentiality
P7CURMAR	P7 FSQ200 CURRENT MARITAL STATUS	Data recoded for respondent confidentiality
P7PARCT1	P7 FSQ212 PARENT 1'S HOME COUNTRY	Data recoded for respondent confidentiality
P7PAREM1	P7 FSQ213 AGE PARENT 1 MOVED TO US	Data suppressed for respondent confidentiality
P7PARCT2	P7 FSQ212 PARENT 2'S HOME COUNTRY	Data recoded for respondent confidentiality
P7PAREM2	P7 FSQ213 AGE PARENT 2 MOVED TO US	Data suppressed for respondent confidentiality

See note at end of exhibit.

Exhibit B-2. ECLS-K:2011 masked variables, spring 2014 parent interview—Continued

Variable name	Variable description	Comments
P7RELNUM	P7 CCQ060 # REL CARE ARRANGMNTS NOW	Data recoded for respondent confidentiality
P7RELMST	P7 CCQ065 WHICH RELATIVE GIVES MOST CARE	Data recoded for respondent confidentiality
P7RDAYS	P7 CCQ085 # OF DAYS/WK OF REL CARE	Data recoded for respondent confidentiality
P7NRNUM	P7 CCQ165 # NONREL CARE ARRANGMNTS NOW	Data recoded for respondent confidentiality
P7NDAYS	P7 CCQ185 # OF DAYS/WK OF NONREL CARE	Data recoded for respondent confidentiality
P7NHROTH	P7 CCQ205 # HRS/WK OTHER NONREL CARE	Data suppressed for respondent confidentiality
P7CTRNUM	P7 CCQ325 # CNTR CARE ARRANGMNTS NOW	Data suppressed for respondent confidentiality
P7CWKEND	P7 CCQ335C WHEN PROGRAM - WEEKENDS	Data suppressed for respondent confidentiality
P7CDAYS	P7 CCQ350 # OF DAYS/WK OF CENTER CARE	Data recoded for respondent confidentiality
P7CHROTH	P7 CCQ375 #HRS/WK AT OTHER PROGRAMS	Data suppressed for respondent confidentiality
P7SELFCA	P7 CCQ376 CHILD CARES FOR SELF	Data suppressed for respondent confidentiality
P7SCHRWK	P7 CCQ377 HR/WK CHILD CARES FOR SELF	Data suppressed for respondent confidentiality
P7BMCNTC	P7 NRQ040 TIME FROM LAST CONTACT-BIOMOM	Data recoded for respondent confidentiality
P7AMCNTC	P7 NRQ040 TIME FROM LAST CONTACT-ADPMOM	Data suppressed for respondent confidentiality
P7AMPHEM	P7 NRQ123 #TIMES PHONE/CALL/EMAIL/TEXT	Data suppressed for respondent confidentiality
P7BDCNTC	P7 NRQ040 TIME FROM LAST CONTACT-BIODAD	Data recoded for respondent confidentiality
P7ADCNTC	P7 NRQ040 TIME FROM LAST CONTACT-ADPDAD	Data suppressed for respondent confidentiality
P7ADPHEM	P7 NRQ123 #TIMES PHONE/CALL/EMAIL/TEXT	Data suppressed for respondent confidentiality
P7BMCOB	P7 COQ005 COUNTRY OF BIRTH-BIOMOM	Data recoded for respondent confidentiality
P7BMAGEM	P7 COQ010 AGE WHEN MOVED TO USA-BIOMOM	Data suppressed for respondent confidentiality
P7BDCOB	P7 COQ020 COUNTRY OF BIRTH-BIODAD	Data recoded for respondent confidentiality
P7BDAGEM	P7 COQ025 AGE WHEN MOVED TO USA-BIODAD	Data suppressed for respondent confidentiality
P7DIAEAR	P7 CHQ023 DIAGNSE EAR INFCT SINCE SPRING	Data recoded for respondent confidentiality
P7KDECN	P7 CHQ024B EAR TREATMENT - DECONGEST	Data suppressed for respondent confidentiality
P7KTUBE	P7 CHQ024D EAR TREATMENT - EAR TUBES	Data suppressed for respondent confidentiality
P7KFLSH	P7 CHQ024G EAR TREATMENT - FLUSH/IRRIG	Data suppressed for respondent confidentiality
P7KTONS	P7 CHQ024H EAR TREATMENT - TONSILS/ADNOID	Data suppressed for respondent confidentiality
P7KCHIR	P7 CHQ024I EAR TREATMENT - CHIROPRACTIC	Data suppressed for respondent confidentiality
P7KNODR	P7 CHQ024J EAR TREATMENT - NO DR VISIT	Data suppressed for respondent confidentiality
P7KOTHR	P7 CHQ024K EAR TREATMENT - OTHER	Data suppressed for respondent confidentiality
P7KETLO	P7 CHQ025 EAR TUBES IN WHICH EAR	Data suppressed for respondent confidentiality
P7LRNDIS	P7 CHQ125 DIAGNOSIS - LEARN DISABILITY	Data suppressed for respondent confidentiality
P7ADD	P7 CHQ125 DIAGNOSIS - ADD	Data suppressed for respondent confidentiality
P7ADHA	P7 CHQ125 DIAGNOSIS - ADHD	Data suppressed for respondent confidentiality
P7DEVDLY	P7 CHQ125 DIAGNOSIS - DEVELOP DELAY	Data suppressed for respondent confidentiality
P7AUTSM	P7 CHQ125 DIAGNOSIS - AUTISM SPEC DISORD	Data suppressed for respondent confidentiality
P7DYSLXA	P7 CHQ125 DIAGNOSIS - DYSLEXIA	Data suppressed for respondent confidentiality
P7DYSCLC	P7 CHQ125 DIAGNOSIS - DYSCALCULIA	Data suppressed for respondent confidentiality

See note at end of exhibit.

Exhibit B-2. ECLS-K:2011 masked variables, spring 2014 parent interview—Continued

Variable name	Variable description	Comments
P7COGNTV	P7 CHQ125 DIAGNOSIS - SEVERE COGNITIVE	Data suppressed for respondent confidentiality
P7ORTHOP	P7 CHQ125 DIAGNOSIS - ORTHOPEDIC IMPAIR	Data suppressed for respondent confidentiality
P7EMODIS	P7 CHQ125 DIAGNOSIS - SER EMOTION DISTRB	Data suppressed for respondent confidentiality
P7TRMBRI	P7 CHQ125 DIAGNOSIS - TRAUMATC BRAIN INJ	Data suppressed for respondent confidentiality
P7PNCDIS	P7 CHQ125 DIAGNOSIS - PANIC DISORDER	Data suppressed for respondent confidentiality
P7SEPANX	P7 CHQ125 DIAGNOSIS - SEPARATION ANXIETY	Data suppressed for respondent confidentiality
P7OCD	P7 CHQ125 DIAGNOSIS - OCD	Data suppressed for respondent confidentiality
P7GENANX	P7 CHQ125 DIAGNOSIS - GEN ANXIETY DIS	Data suppressed for respondent confidentiality
P7OTHANX	P7 CHQ125 DIAGNOSIS - OTHER ANXIETY DIS	Data suppressed for respondent confidentiality
P7BIPOLR	P7 CHQ125 DIAGNOSIS - BIPOLAR DISORDER	Data suppressed for respondent confidentiality
P7DEPRESS	P7 CHQ125 DIAGNOSIS - DEPRESSION	Data suppressed for respondent confidentiality
P7SPEECH	P7 CHQ125 DIAGNOSIS - SPEECH PROBLEMS	Data suppressed for respondent confidentiality
P7SENSDF	P7 CHQ125 DIAGNOSIS - SENSORY DEFICIT	Data suppressed for respondent confidentiality
P7OPPDEF	P7 CHQ125 DIAGNOSIS - OPPOS DEFIANCE DIS	Data suppressed for respondent confidentiality
P7OTHDIA	P7 CHQ125 DIAGNOSIS - OTHER	Data suppressed for respondent confidentiality
P7AUTSPC	P7 CHQ126 TYPE OF AUTISM SPECRM DISORDER	Data suppressed for respondent confidentiality
P7AGELD	P7 CHQ130 AGE AT 1ST DIAGNS-LRN DISABLTY	Data suppressed for respondent confidentiality
P7AGELDU	P7 CHQ131 AGE 1ST DIAGNS-LRN DISBL UNIT	Data suppressed for respondent confidentiality
P7AGELDM	P7 CHQ135A AGE 1ST DIAGNS-LRN DIS MONTH	Data suppressed for respondent confidentiality
P7AGELDY	P7 CHQ135B AGE 1ST DIAGNS-LRN DIS YEAR	Data suppressed for respondent confidentiality
P7MEDLD	P7 CHQ140 TAKE PRESCRIPTION FOR LRN DIS	Data suppressed for respondent confidentiality
P7MEDLDL	P7 CHQ173 HOW LONG TAKING MED - LRN DIS	Data suppressed for respondent confidentiality
P7AGEADD	P7 CHQ130 AGE AT 1ST DIAGNS-ADD	Data suppressed for respondent confidentiality
P7AGEADU	P7 CHQ131 AGE 1ST DIAGNS-ADD UNIT	Data suppressed for respondent confidentiality
P7AGEADM	P7 CHQ135A AGE 1ST DIAGNS-ADD MONTH	Data suppressed for respondent confidentiality
P7AGEADY	P7 CHQ135B AGE 1ST DIAGNS-ADD YEAR	Data suppressed for respondent confidentiality
P7MEDAD	P7 CHQ140 TAKING PRESCRIPTION FOR ADD	Data suppressed for respondent confidentiality
P7LOCMED1	P7 CHQ155 LOCATION TAKING RX -ADD	Data suppressed for respondent confidentiality
P7MEDLAD	P7 CHQ173 HOW LONG TAKING MED - ADD	Data suppressed for respondent confidentiality
P7AGEAHD	P7 CHQ130 AGE AT 1ST DIAGNS-ADHD	Data suppressed for respondent confidentiality
P7AGEHDU	P7 CHQ131 AGE 1ST DIAGNS-ADHD UNIT	Data suppressed for respondent confidentiality
P7AGEHDM	P7 CHQ135A AGE 1ST DIAGNS-ADHD MONTH	Data suppressed for respondent confidentiality
P7AGEHDY	P7 CHQ135B AGE 1ST DIAGNS-ADHD YEAR	Data suppressed for respondent confidentiality
P7MEDHD	P7 CHQ140 TAKE PRESCRIPTION FOR ADHD	Data suppressed for respondent confidentiality
P7LOCMED2	P7 CHQ155 LOCATION TAKING RX-ADHD	Data suppressed for respondent confidentiality
P7MEDLHD	P7 CHQ173 HOW LONG TAKING MED - ADHD	Data suppressed for respondent confidentiality
P7AGEDV	P7 CHQ130 AGE AT 1ST DIAGNS-DEV DELAY	Data suppressed for respondent confidentiality
P7AGEDVU	P7 CHQ131 AGE 1ST DIAGNS-DEV DEL UNIT	Data suppressed for respondent confidentiality

See note at end of exhibit.

Exhibit B-2. ECLS-K:2011 masked variables, spring 2014 parent interview—Continued

Variable name	Variable description	Comments
P7AGEDVM	P7 CHQ135A AGE 1ST DIAGNS-DEV DEL MONTH	Data suppressed for respondent confidentiality
P7AGEDVY	P7 CHQ135B AGE 1ST DIAGNS-DEV DEL YEAR	Data suppressed for respondent confidentiality
P7MEDDV	P7 CHQ140 TAKE PRESCRIPTION FOR DEV DEL	Data suppressed for respondent confidentiality
P7MEDDVL	P7 CHQ173 HOW LONG TAKING MED - DEV DEL	Data suppressed for respondent confidentiality
P7AGEAU	P7 CHQ130 AGE AT 1ST DIAGNS-AUTISM SD	Data suppressed for respondent confidentiality
P7AGEAUU	P7 CHQ131 AGE 1ST DIAGNS-AUTISM SD UNIT	Data suppressed for respondent confidentiality
P7AGEAUM	P7 CHQ135A AGE 1ST DIAGNS-AUTISM SD MNTH	Data suppressed for respondent confidentiality
P7AGEAUY	P7 CHQ135B AGE 1ST DIAGNS-AUTISM SD YEAR	Data suppressed for respondent confidentiality
P7MEDAU	P7 CHQ140 TAKE PRESCRIPTION AUTISM SD	Data suppressed for respondent confidentiality
P7MEDAUL	P7 CHQ173 HOW LONG TAKING MED -AUTISM SD	Data suppressed for respondent confidentiality
P7AGEDL	P7 CHQ130 AGE AT 1ST DIAGNS-DYSLXIA	Data suppressed for respondent confidentiality
P7AGEDLU	P7 CHQ131 AGE 1ST DIAGNS-DYSLXIA UNIT	Data suppressed for respondent confidentiality
P7AGEDLM	P7 CHQ135A AGE 1ST DIAGNS-DYSLXIA MONTH	Data suppressed for respondent confidentiality
P7AGEDLY	P7 CHQ135B AGE 1ST DIAGNS-DYSLXIA YEAR	Data suppressed for respondent confidentiality
P7MEDDL	P7 CHQ140 TAKE PRESCRIPTION FOR DYSLXIA	Data suppressed for respondent confidentiality
P7MEDDLL	P7 CHQ173 HOW LONG TAKING MED - DYSLXIA	Data suppressed for respondent confidentiality
P7AGEDC	P7 CHQ130 AGE AT 1ST DIAGNS-DYSCALCULIA	Data suppressed for respondent confidentiality
P7AGEDCU	P7 CHQ131 AGE 1ST DIAGNS-DYSCLC UNIT	Data suppressed for respondent confidentiality
P7AGEDCM	P7 CHQ135A AGE 1ST DIAGNS-DYSCLC MONTH	Data suppressed for respondent confidentiality
P7AGEDCY	P7 CHQ135B AGE 1ST DIAGNS-DYSCLC YEAR	Data suppressed for respondent confidentiality
P7MEDDC	P7 CHQ140 TAKE PRESCRIPTION FOR DYSCLC	Data suppressed for respondent confidentiality
P7MEDDCL	P7 CHQ173 HOW LONG TAKING MED - DYSCLC	Data suppressed for respondent confidentiality
P7AGECD	P7 CHQ130 AGE AT 1ST DIAGNS-COGN DIS/MR	Data suppressed for respondent confidentiality
P7AGECDU	P7 CHQ131 AGE 1ST DIAGNS-COG/MR UNIT	Data suppressed for respondent confidentiality
P7AGECDM	P7 CHQ135A AGE 1ST DIAGNS-COG/MR MONTH	Data suppressed for respondent confidentiality
P7AGECDY	P7 CHQ135B AGE 1ST DIAGNS-COG/MR YEAR	Data suppressed for respondent confidentiality
P7MEDCD	P7 CHQ140 TAKE PRESCRIPTION FOR COG/MR	Data suppressed for respondent confidentiality
P7MEDCDL	P7 CHQ173 HOW LONG TAKING MED - COG/MR	Data suppressed for respondent confidentiality
P7AGEOR	P7 CHQ130 AGE AT 1ST DIAGNS-ORTHO IMPAIR	Data suppressed for respondent confidentiality
P7AGEORU	P7 CHQ131 AGE 1ST DIAGNS-ORTHO UNIT	Data suppressed for respondent confidentiality
P7AGEORM	P7 CHQ135A AGE 1ST DIAGNS-ORTHO MONTH	Data suppressed for respondent confidentiality
P7AGEORY	P7 CHQ135B AGE 1ST DIAGNS-ORTHO YEAR	Data suppressed for respondent confidentiality
P7MEDOR	P7 CHQ140 TAKE PRESCRIPTION FOR ORTHO	Data suppressed for respondent confidentiality
P7MEDORL	P7 CHQ173 HOW LONG TAKING MED - ORTHO	Data suppressed for respondent confidentiality
P7AGEEM	P7 CHQ130 AGE AT 1ST DIAGNS-EMOT DISTRB	Data suppressed for respondent confidentiality
P7AGEEMU	P7 CHQ131 AGE 1ST DIAGNS-EMOT UNIT	Data suppressed for respondent confidentiality
P7AGEEMM	P7 CHQ135A AGE 1ST DIAGNS-EMOT MONTH	Data suppressed for respondent confidentiality
P7AGEEMY	P7 CHQ135B AGE 1ST DIAGNS-EMOT YEAR	Data suppressed for respondent confidentiality

See note at end of exhibit.

Exhibit B-2. ECLS-K:2011 masked variables, spring 2014 parent interview—Continued

Variable name	Variable description	Comments
P7MEDEM	P7 CHQ140 TAKE PRESCRIPTION FOR EMOT	Data suppressed for respondent confidentiality
P7MEDEML	P7 CHQ173 HOW LONG TAKING MED - EMOT	Data suppressed for respondent confidentiality
P7AGEBR	P7 CHQ130 AGE AT 1ST DIAGNS-BRAIN INJRY	Data suppressed for respondent confidentiality
P7AGEBRU	P7 CHQ131 AGE 1ST DIAGNS-BRAIN UNIT	Data suppressed for respondent confidentiality
P7AGEBRM	P7 CHQ135A AGE 1ST DIAGNS-BRAIN MONTH	Data suppressed for respondent confidentiality
P7AGEBRY	P7 CHQ135B AGE 1ST DIAGNS-BRAIN YEAR	Data suppressed for respondent confidentiality
P7MEDBR	P7 CHQ140 TAKE PRESCRIPTION FOR BRAIN	Data suppressed for respondent confidentiality
P7MEDBRL	P7 CHQ173 HOW LONG TAKING MED - BRAIN	Data suppressed for respondent confidentiality
P7AGEPC	P7 CHQ130 AGE AT 1ST DIAGNS-PANIC DIS	Data suppressed for respondent confidentiality
P7AGEPCU	P7 CHQ131 AGE 1ST DIAGNS-PANIC UNIT	Data suppressed for respondent confidentiality
P7AGEPCM	P7 CHQ135A AGE 1ST DIAGNS-PANIC MONTH	Data suppressed for respondent confidentiality
P7AGEPCY	P7 CHQ135B AGE 1ST DIAGNS-PANIC YEAR	Data suppressed for respondent confidentiality
P7MEDPC	P7 CHQ140 TAKE PRESCRIPTION FOR PANIC	Data suppressed for respondent confidentiality
P7MEDPCL	P7 CHQ173 HOW LONG TAKING MED - PANIC	Data suppressed for respondent confidentiality
P7AGESA	P7 CHQ130 AGE AT 1ST DIAGNS-SEP ANXTY	Data suppressed for respondent confidentiality
P7AGESAU	P7 CHQ131 AGE 1ST DIAGNS-SEP ANX UNIT	Data suppressed for respondent confidentiality
P7AGESAM	P7 CHQ135A AGE 1ST DIAGNS-SEP ANX MONTH	Data suppressed for respondent confidentiality
P7AGESAY	P7 CHQ135B AGE 1ST DIAGNS-SEP ANX YEAR	Data suppressed for respondent confidentiality
P7MEDSA	P7 CHQ140 TAKE PRESCRIPTION FOR SEP ANX	Data suppressed for respondent confidentiality
P7MEDSAL	P7 CHQ173 HOW LONG TAKING MED - SEP ANX	Data suppressed for respondent confidentiality
P7AGEOC	P7 CHQ130 AGE AT 1ST DIAGNS-OCD	Data suppressed for respondent confidentiality
P7AGEOCU	P7 CHQ131 AGE 1ST DIAGNS-OCD UNIT	Data suppressed for respondent confidentiality
P7AGEOCM	P7 CHQ135A AGE 1ST DIAGNS-OCD MONTH	Data suppressed for respondent confidentiality
P7AGEOCY	P7 CHQ135B AGE 1ST DIAGNS-OCD YEAR	Data suppressed for respondent confidentiality
P7MEDOC	P7 CHQ140 TAKE PRESCRIPTION FOR OCD	Data suppressed for respondent confidentiality
P7MEDOCL	P7 CHQ173 HOW LONG TAKING MED - OCD	Data suppressed for respondent confidentiality
P7AGEGA	P7 CHQ130 AGE AT 1ST DIAGNS-GAD	Data suppressed for respondent confidentiality
P7AGEGAU	P7 CHQ131 AGE 1ST DIAGNS-GAD UNIT	Data suppressed for respondent confidentiality
P7AGEGAM	P7 CHQ135A AGE 1ST DIAGNS-GAD MONTH	Data suppressed for respondent confidentiality
P7AGEGAY	P7 CHQ135B AGE 1ST DIAGNS-GAD YEAR	Data suppressed for respondent confidentiality
P7MEDGA	P7 CHQ140 TAKE PRESCRIPTION FOR GAD	Data suppressed for respondent confidentiality
P7MEDGAL	P7 CHQ173 HOW LONG TAKING MED - GAD	Data suppressed for respondent confidentiality
P7AGEAN	P7 CHQ130 AGE AT 1ST DIAGNS-OTH ANXTY DS	Data suppressed for respondent confidentiality
P7AGEANU	P7 CHQ131 AGE 1ST DIAGNS-ANXTY UNIT	Data suppressed for respondent confidentiality
P7AGEANM	P7 CHQ135A AGE 1ST DIAGNS-ANXTY MONTH	Data suppressed for respondent confidentiality
P7AGEANY	P7 CHQ135B AGE 1ST DIAGNS-ANXTY YEAR	Data suppressed for respondent confidentiality
P7MEDAN	P7 CHQ140 TAKE PRESCRIPTION FOR ANXTY	Data suppressed for respondent confidentiality
P7MEDANL	P7 CHQ173 HOW LONG TAKING MED - ANXTY	Data suppressed for respondent confidentiality

See note at end of exhibit.

Exhibit B-2. ECLS-K:2011 masked variables, spring 2014 parent interview—Continued

Variable name	Variable description	Comments
P7AGEBI	P7 CHQ130 AGE AT 1ST DIAGNS-BIPOLAR	Data suppressed for respondent confidentiality
P7AGEBIU	P7 CHQ131 AGE 1ST DIAGNS-BIPLR UNIT	Data suppressed for respondent confidentiality
P7AGEBIM	P7 CHQ135A AGE 1ST DIAGNS-BIPLR MONTH	Data suppressed for respondent confidentiality
P7AGEBIY	P7 CHQ135B AGE 1ST DIAGNS-BIPLR YEAR	Data suppressed for respondent confidentiality
P7MEDBI	P7 CHQ140 TAKE PRESCRIPTION FOR BIPLR	Data suppressed for respondent confidentiality
P7MEDBIL	P7 CHQ173 HOW LONG TAKING MED - BIPLR	Data suppressed for respondent confidentiality
P7AGEDE	P7 CHQ130 AGE AT 1ST DIAGNS-DEPRSSION	Data suppressed for respondent confidentiality
P7AGEDEU	P7 CHQ131 AGE 1ST DIAGNS-DEPRSS UNIT	Data suppressed for respondent confidentiality
P7AGEDEM	P7 CHQ135A AGE 1ST DIAGNS-DEPRSS MONTH	Data suppressed for respondent confidentiality
P7AGEDEY	P7 CHQ135B AGE 1ST DIAGNS-DEPRSS YEAR	Data suppressed for respondent confidentiality
P7MEDDE	P7 CHQ140 TAKE PRESCRIPTION FOR DEPRSS	Data suppressed for respondent confidentiality
P7MEDDEL	P7 CHQ173 HOW LONG TAKING MED - DEPRSS	Data suppressed for respondent confidentiality
P7AGESPC	P7 CHQ130 AGE AT 1ST DIAGNS-SPEECH	Data suppressed for respondent confidentiality
P7AGESPU	P7 CHQ131 AGE 1ST DIAGNS-SPEECH UNIT	Data suppressed for respondent confidentiality
P7AGESPM	P7 CHQ135A AGE 1ST DIAGNS-SPEECH MONTH	Data suppressed for respondent confidentiality
P7AGESPY	P7 CHQ135B AGE 1ST DIAGNS-SPEECH YEAR	Data suppressed for respondent confidentiality
P7MEDSPC	P7 CHQ140 TAKE PRESCRIPTION FOR SPEECH	Data suppressed for respondent confidentiality
P7MEDSPL	P7 CHQ173 HOW LONG TAKING MED - SPEECH	Data suppressed for respondent confidentiality
P7AGESDF	P7 CHQ130 AGE AT 1ST DIAGNS-SENS DEF	Data suppressed for respondent confidentiality
P7AGESDU	P7 CHQ131 AGE 1ST DIAGNS-SENS DEF UNIT	Data suppressed for respondent confidentiality
P7AGESDM	P7 CHQ135A AGE 1ST DIAGNS-SENS DEF MONTH	Data suppressed for respondent confidentiality
P7AGESDY	P7 CHQ135B AGE 1ST DIAGNS-SENS DEF YEAR	Data suppressed for respondent confidentiality
P7MEDSDF	P7 CHQ140 TAKE PRESCRIPTION FOR SENS DEF	Data suppressed for respondent confidentiality
P7MEDSDL	P7 CHQ173 HOW LONG TAKING MED-OPP DEF	Data suppressed for respondent confidentiality
P7AGEODF	P7 CHQ130 AGE AT 1ST DIAGNS-OPP DEF	Data suppressed for respondent confidentiality
P7AGEODU	P7 CHQ131 AGE 1ST DIAGNS-OPP DEF UNIT	Data suppressed for respondent confidentiality
P7AGEODM	P7 CHQ135A AGE 1ST DIAGNS-OPP DEF MONTH	Data suppressed for respondent confidentiality
P7AGEODY	P7 CHQ135B AGE 1ST DIAGNS-OPP DEF YEAR	Data suppressed for respondent confidentiality
P7MEDODF	P7 CHQ140 TAKE PRESCRIPTION FOR OPP DEF	Data suppressed for respondent confidentiality
P7MEDODL	P7 CHQ173 HOW LONG TAKING MED - OPP DEF	Data suppressed for respondent confidentiality
P7AGEOT	P7 CHQ130 AGE AT 1ST DIAGNS-OTHER	Data suppressed for respondent confidentiality
P7AGEOTU	P7 CHQ131 AGE 1ST DIAGNS-OTH UNIT	Data suppressed for respondent confidentiality
P7AGEOTM	P7 CHQ135A AGE 1ST DIAGNS-OTH MONTH	Data suppressed for respondent confidentiality
P7AGEOTY	P7 CHQ135B AGE 1ST DIAGNS-OTH YEAR	Data suppressed for respondent confidentiality
P7MEDOT	P7 CHQ140 TAKE PRESCRIPTION FOR OTH	Data suppressed for respondent confidentiality
P7MEDOTL	P7 CHQ173 HOW LONG TAKING MED - OTH	Data suppressed for respondent confidentiality
P7DEHEAR	P7 CHQ216 DESCRIBE HEARING	Data recoded for respondent confidentiality
P7HEARWH	P7 CHQ217 HEAR WHISPER IN QUIET ROOM	Data suppressed for respondent confidentiality

See note at end of exhibit.

Exhibit B-2. ECLS-K:2011 masked variables, spring 2014 parent interview—Continued

Variable name	Variable description	Comments
P7HEARNO	P7 CHQ218 HEAR NORMAL IN QUIET ROOM	Data suppressed for respondent confidentiality
P7HEARQT	P7 CHQ219 HEAR SHOUT IN QUIET ROOM	Data suppressed for respondent confidentiality
P7HEARYL	P7 CHQ220 HEAR IF SPEAKS LOUDLY IN EAR	Data suppressed for respondent confidentiality
P7DESCHR	P7 CHQ222 DESCRIBES HEARING IN WORSE EAR	Data suppressed for respondent confidentiality
P7EARWX	P7 CHQ246 HEARING DIAGNOSIS-EAR WAX	Data suppressed for respondent confidentiality
P7CLDFRM	P7 CHQ246 HEARING DIAGNOSIS-CANAL DEFORM	Data suppressed for respondent confidentiality
P7EARSCK	P7 CHQ246 HEARING DIAGNOSIS-EAR INFECTN	Data suppressed for respondent confidentiality
P7FLDNER	P7 CHQ246 HEARING DIAGNOSIS-FLUID IN EAR	Data suppressed for respondent confidentiality
P7EARDRM	P7 CHQ246 HEARING DIAGNOSIS-EAR DRUM PRB	Data suppressed for respondent confidentiality
P7ILLNES	P7 CHQ246 HEARING DIAGNOSIS-ILLNESS	Data suppressed for respondent confidentiality
P7CMV	P7 CHQ246 HEARING DIAGNOSIS-CMV	Data suppressed for respondent confidentiality
P7OTOTXC	P7 CHQ246 HEARING DIAGNOSIS-OTOTOXIC	Data suppressed for respondent confidentiality
P7NOISE	P7 CHQ246 HEARING DIAGNOSIS-NOISE EXP	Data suppressed for respondent confidentiality
P7GENES	P7 CHQ246 HEARING DIAGNOSIS-GENETIC	Data suppressed for respondent confidentiality
P7HDINJY	P7 CHQ246 HEARING DIAGNOSIS-HEAD INJURY	Data suppressed for respondent confidentiality
P7SURGRY	P7 CHQ246 HEARING DIAGNOSIS-SURGERY	Data suppressed for respondent confidentiality
P7NRVDF	P7 CHQ246 HEARING DIAGNOSIS-NERVE DEAF	Data suppressed for respondent confidentiality
P7CAPDIS	P7 CHQ246 HEARING DIAGNOSIS-CAP DISORDER	Data suppressed for respondent confidentiality
P7DEAF	P7 CHQ246 HEARING DIAGNOSIS-DEAF	Data suppressed for respondent confidentiality
P7HRLSDK	P7 CHQ246 HEARING DIAGNOSIS-CAUSE UNKNWN	Data suppressed for respondent confidentiality
P7AWAIT	P7 CHQ246 HEARING DIAGNOSIS-AWAITING EVAL	Data suppressed for respondent confidentiality
P7HROTHR	P7 CHQ246 HEARING DIAGNOSIS-OTHER	Data suppressed for respondent confidentiality
P7AGHCU1	P7 CHQ250A AGE 1ST DIAGNS-HEARNG/COM UNT	Data suppressed for respondent confidentiality
P7AGHCM1	P7 CHQ250B AGE 1ST DIAGNS-HEARNG/COM MO	Data suppressed for respondent confidentiality
P7AGHCY1	P7 CHQ250C AGE 1ST DIAGNS-HEARNG/COM YR	Data suppressed for respondent confidentiality
P7DTHCM1	P7 CHQ255A L1 COMMUN DIAG DATE - MONTH	Data suppressed for respondent confidentiality
P7DTHCY1	P7 CHQ255B L1 COMMUN DIAG DATE - YEAR	Data suppressed for respondent confidentiality
P7AGHCU2	P7 CHQ250A AGE 1ST DIAGNS-HEARNG/COM UNT	Data suppressed for respondent confidentiality
P7AGHCM2	P7 CHQ250B AGE 1ST DIAGNS-HEARNG/COM MO	Data suppressed for respondent confidentiality
P7AGHCY2	P7 CHQ250C AGE 1ST DIAGNS-HEARNG/COM YR	Data suppressed for respondent confidentiality
P7DTHCM2	P7 CHQ255A L2 HEARING DIAG DATE - MONTH	Data suppressed for respondent confidentiality
P7DTHCY2	P7 CHQ255B L2 HEARING DIAG DATE - YEAR	Data suppressed for respondent confidentiality
P7SLIHRA	P7 CHQ256A SINCE LAST INTVW-HEARING AID	Data suppressed for respondent confidentiality
P7EVRHRA	P7 CHQ256B CHILD EVER WORE HEARING AID	Data suppressed for respondent confidentiality
P71REHAU	P7 CHQ257A 1ST RECOMMEND HEARING AID-UNT	Data suppressed for respondent confidentiality
P71REHAM	P7 CHQ257B 1ST RECOMMEND HEARING AID-MTH	Data suppressed for respondent confidentiality
P71REHAY	P7 CHQ257C 1ST RECOMMEND HEARING AID -YR	Data suppressed for respondent confidentiality
P7AIDSCH	P7 CHQ258 HOW OFTEN HEAR AID IN SCHOOL	Data suppressed for respondent confidentiality

See note at end of exhibit.

Exhibit B-2. ECLS-K:2011 masked variables, spring 2014 parent interview—Continued

Variable name	Variable description	Comments
P7AIDWHS	P7 CHQ259 HEAR WHISPER IN QUIET RM W/AID	Data suppressed for respondent confidentiality
P7AIDREG	P7 CHQ260 HEAR NORMAL IN QUIET RM W/AID	Data suppressed for respondent confidentiality
P7AIDSHT	P7 CHQ261 HEAR SHOUT IN QUIET RM W/AID	Data suppressed for respondent confidentiality
P7AIDEAR	P7 CHQ262 HEAR SPEAKS LOUDLY EAR W/AID	Data suppressed for respondent confidentiality
P7DRREHA	P7 CHQ263 DOCTOR RECOMMEND HEAR AID	Data suppressed for respondent confidentiality
P7DR1REU	P7 CHQ264A DOCTOR 1ST RECOM AID - UNIT	Data suppressed for respondent confidentiality
P7DR1REM	P7 CHQ264A DOCTOR 1ST RECOM AID - MONTH	Data suppressed for respondent confidentiality
P7DR1REY	P7 CHQ264C DOCTOR 1ST RECOM AID - YEAR	Data suppressed for respondent confidentiality
P7COCHLE	P7 CHQ270 CHILD HAS COCHLEAR IMPLANT	Data suppressed for respondent confidentiality
P7IMPLNT	P7 CHQ271 YEAR OF IMPLANT	Data suppressed for respondent confidentiality
P7COAGEU	P7 CHQ272A AGE AT IMPLANT - UNIT	Data suppressed for respondent confidentiality
P7COAGEM	P7 CHQ272B AGE AT IMPLANT - MONTH	Data suppressed for respondent confidentiality
P7COAGEY	P7 CHQ272C AGE AT IMPLANT - YEAR	Data suppressed for respondent confidentiality
P7LIMPYR	P7 CHQ273 LEFT EAR IMPLANT YEAR	Data suppressed for respondent confidentiality
P7RIMPYR	P7 CHQ274 RIGHT EAR IMPLANT YEAR	Data suppressed for respondent confidentiality
P7ALIMPU	P7 CHQ275A AGE L IMPLANT - UNIT	Data suppressed for respondent confidentiality
P7ALIMPM	P7 CHQ275B AGE L IMPLANT - MONTH	Data suppressed for respondent confidentiality
P7ALIMPY	P7 CHQ275C AGE L IMPLANT - YEAR	Data suppressed for respondent confidentiality
P7ARIMPU	P7 CHQ276A AGE R IMPLANT - UNIT	Data suppressed for respondent confidentiality
P7ARIMPM	P7 CHQ276B AGE R IMPLANT - MONTH	Data suppressed for respondent confidentiality
P7ARIMPY	P7 CHQ276C AGE R IMPLANT - YEAR	Data suppressed for respondent confidentiality
P7COCHWH	P7 CHQ277 HR WHISPER IN QUIET RM W/COCH	Data suppressed for respondent confidentiality
P7COCHRG	P7 CHQ278 HEAR NORMAL IN QUIET RM W/COCH	Data suppressed for respondent confidentiality
P7COCHSH	P7 CHQ279 HEAR SHOUT IN QUIET RM W/COCH	Data suppressed for respondent confidentiality
P7COCHER	P7 CHQ280 HEAR SPEAKS LOUDLY EAR W/COCH	Data suppressed for respondent confidentiality
P7VISCLR	P7 CHQ301 VISION DIAGNOSIS - COLOR BLIND	Data suppressed for respondent confidentiality
P7VISCRS	P7 CHQ301 VISION DIAGNOSIS - CROSS EYED	Data suppressed for respondent confidentiality
P7VISRET	P7 CHQ301 VISION DIAGNOSIS - RETINOPATHY	Data suppressed for respondent confidentiality
P7VISBLN	P7 CHQ301 VISION DIAGNOSIS - BLINDNESS	Data suppressed for respondent confidentiality
P7AWAITG	P7 CHQ301 VISION DIAGNOSIS - AWAITING EVAL	Data suppressed for respondent confidentiality
P7AGVIU1	P7 CHQ305A AGE 1ST DIAGNS-VISION UNIT	Data suppressed for respondent confidentiality
P7AGVIM1	P7 CHQ305B AGE 1ST DIAGNS-VISION MONTH	Data suppressed for respondent confidentiality
P7AGVIY1	P7 CHQ305C AGE 1ST DIAGNS-VISION YEAR	Data suppressed for respondent confidentiality
P7VISMO	P7 CHQ310A MONTH 1ST DIAGNS-VISION	Data suppressed for respondent confidentiality
P7VISYR	P7 CHQ310B YEAR 1ST DIAGNS-VISION	Data suppressed for respondent confidentiality
P7OFTLEN	P7 CHQ312 HOW OFTEN CHD WEAR GLASS/LENS	Data recoded for respondent confidentiality
P7HVELEN	P7 CHQ313 DOES CHILD HAVE GLASSES/LENS	Data suppressed for respondent confidentiality
P7HSCALE	P7 CHQ330 1-5 SCALE OF CHILD'S HEALTH	Data recoded for respondent confidentiality

See note at end of exhibit.

Exhibit B-2. ECLS-K:2011 masked variables, spring 2014 parent interview—Continued

Variable name	Variable description	Comments
P7HIG_1_I	P7 PEQ020 PERS 1 HIGHEST EDUCATION LEVEL	Data recoded for respondent confidentiality
P7HIG_2_I	P7 PEQ020 PERS 2 HIGHEST EDUCATION LEVEL	Data recoded for respondent confidentiality
P7EVRACTV1	P7 EMQ210 PERS 1 SERVED ACTIVE DUTY	Data suppressed for respondent confidentiality
P7CURACTV1	P7 EMQ215 PERS 1 CURR ON ACTIVE DUTY	Data suppressed for respondent confidentiality
P7CURACTV2	P7 EMQ215 PERS 2 CURR ON ACTIVE DUTY	Data suppressed for respondent confidentiality
P7TINCTH_I	P7 PAQ120 TOTAL HOUSEHOLD INCOME ($-LOW)	Data suppressed for respondent confidentiality
P7HOUSIT	P7 PAQ140 CURRENT HOUSING SITUATION	Data recoded for respondent confidentiality
P7BTRSCH	P7 CMQ020 WHY MOVED-BETTER SCHOOL	Data suppressed for respondent confidentiality
P7SAFER	P7 CMQ020 WHY MOVED-SAFER AREA	Data suppressed for respondent confidentiality
P7FORCLS	P7 CMQ020 WHY MOVED-BANK FORECLOSED	Data suppressed for respondent confidentiality
P7EVICT	P7 CMQ020 WHY MOVED-EVICTED	Data suppressed for respondent confidentiality
P7DAMAGE	P7 CMQ020 WHY MOVED-DAMAGED HOUSE	Data suppressed for respondent confidentiality
P7HSSOLD	P7 CMQ020 WHY MOVED-HOUSE SOLD/NO NEW	Data suppressed for respondent confidentiality
P7NOLEAS	P7 CMQ020 WHY MOVED-LEASE UP/OWNER WANTED BACK	Data suppressed for respondent confidentiality
P7LEFTRL	P7 CMQ020 WHY MOVED-LEFT RELATV'S HOME	Data suppressed for respondent confidentiality
P7CLSFAM	P7 CMQ020 WHY MOVED-BE CLOSER TO FAM	Data suppressed for respondent confidentiality
P7LANGUA	P7 CMQ690 LANGUAGE INTERVIEW CONDUCTED	Data recoded for respondent confidentiality

SOURCE: U.S. Department of Education, National Center for Education Statistics, Early Childhood Longitudinal Study, Kindergarten Class of 2010–11 (ECLS-K:2011) kindergarten–fourth grade (K-4) public-use data file.

Exhibit B-3. ECLS-K:2011 masked variables, spring 2014 teacher-level teacher questionnaire

Variable name	Variable description	Comments
A7ENROL	A7 A1A # CURRENTLY IN CLASS	Data recoded for respondent confidentiality
A7JOINE	A7 A1B # JOINED CLASS	Data recoded for respondent confidentiality
A7LEFTL	A7 A1C # LEFT CLASS	Data recoded for respondent confidentiality
A7BOYS	A7 A1D NUMBER OF BOYS IN CLASS	Data suppressed for respondent confidentiality
A7GIRLS	A7 A1E NUMBER OF GIRLS IN CLASS	Data recoded for respondent confidentiality
A7T1ST	A7 A2A CLASS HAS 1ST GR	Data suppressed for respondent confidentiality
A7T2ND	A7 A2B CLASS HAS 2ND GR	Data suppressed for respondent confidentiality
A7T3RD	A7 A2C CLASS HAS 3RD GR	Data suppressed for respondent confidentiality
A7T4TH	A7 A2D CLASS HAS 4TH GR	Data suppressed for respondent confidentiality
A7T5THOH	A7 A2E CLASS HAS 5TH GR OR HIGHER	Data suppressed for respondent confidentiality
A7REPK	A7 A4 NUM CHILDREN REPEATING THIS GRADE	Data recoded for respondent confidentiality
A7GIFT	A7 A5A # CLASSIFIED AS GFTED/TALENTED	Data recoded for respondent confidentiality
A7PRTGF	A7 A5B # TAKE PART IN GIFTED/TALENTED	Data recoded for respondent confidentiality
A7TARDY	A7 A6A # TARDY ON AVERAGE DAY	Data recoded for respondent confidentiality
A7ABSEN	A7 A6B # ABSENT ON AVERAGE DAY	Data recoded for respondent confidentiality
A7RDBLW	A7 A7A1 # READ SKLS BELOW GRADE LEVEL	Data recoded for respondent confidentiality
A7RDONL	A7 A7A2 # READ SKLS ON GRADE LEVEL	Data suppressed for respondent confidentiality
A7RDABV	A7 A7A3 # READ SKLS ABOVE GRADE LEVEL	Data recoded for respondent confidentiality
A7MTHBL	A7 A7B1 # MATH SKLS BELOW GRADE LEVEL	Data recoded for respondent confidentiality
A7MTHONL	A7 A7B2 # MATH SKLS ON GRADE LEVEL	Data suppressed for respondent confidentiality
A7MTHABV	A7 A7B3 # MATH SKLS ABOVE GRADE LEVEL	Data recoded for respondent confidentiality
A7DISAB	A7 A10 # WITH DIAGNOSED DISABILITY	Data recoded for respondent confidentiality
A7NMELL	A7 A12 NUMBER ELL STUDENTS IN CLASS	Data recoded for respondent confidentiality
A7TVTNM	A7 A13C TCHR SPEAKS VIETNAMESE	Data suppressed for respondent confidentiality
A7TCHNS	A7 A13D TCHR SPEAKS CHINESE LNG	Data suppressed for respondent confidentiality
A7TJPNS	A7 A13E TCHR SPEAKS JAPANESE	Data suppressed for respondent confidentiality
A7TKRN	A7 A13F TCHR SPEAKS KOREAN	Data suppressed for respondent confidentiality
A7TFLPN	A7 A13G TCHR SPEAKS A FILIPINO LNG	Data suppressed for respondent confidentiality
A7ARBIC	A7 A13H TCHR SPEAKS ARABIC	Data suppressed for respondent confidentiality
A7TINDN	A7 A13I TCHR SPEAKS ASIAN IND SUBCON LNG	Data suppressed for respondent confidentiality
A7TSIGN	A7 A13J TCHR USES SIGN LANGUAGE	Data suppressed for respondent confidentiality
A7OTHLG	A7 A13K TCHR SPEAKS OTHER LANGUAGE	Data suppressed for respondent confidentiality
A7TAFRCN	A7 A13KA TCHR SPEAKS AN AFRICAN LNG	Data suppressed for respondent confidentiality
A7TCREOL	A7 A13KB TCHR SPEAKS CREOLE LNG	Data suppressed for respondent confidentiality
A7TFRNCH	A7 A13KC TCHR SPEAKS FRENCH	Data suppressed for respondent confidentiality
A7TGRMN	A7 A13KD TCHR SPEAKS GERMAN	Data suppressed for respondent confidentiality
A7TPOLSH	A7 A13KE TCHR SPEAKS POLISH	Data suppressed for respondent confidentiality
A7TPORTG	A7 A13KF TCHR SPEAKS PORTUGUESE	Data suppressed for respondent confidentiality
A7TRUSSN	A7 A13KG TCHR SPEAKS RUSSIAN	Data suppressed for respondent confidentiality

See note at end of exhibit.

Exhibit B-3. ECLS-K:2011 masked variables, spring 2014 teacher-level teacher questionnaire—Continued

Variable name	Variable description	Comments
A7THMONG	A7 A13KH TCHR SPEAKS HMONG	Data suppressed for respondent confidentiality
A7TXMUS	A7 B3E TIME FOR MUSIC	Data recoded for respondent confidentiality
A7TXART	A7 B3F TIME FOR ART	Data recoded for respondent confidentiality
A7TXDAN	A7 B3H TIME FOR DANCE	Data recoded for respondent confidentiality
A7TXTHTR	A7 B3I TIME FOR THEATER	Data recoded for respondent confidentiality
A7DYRECS	A7 B5 DAYS PER WEEK HAVE RECESS	Data recoded for respondent confidentiality
A7LUNCH	A7 B7A TIME FOR LUNCH	Data recoded for respondent confidentiality
A7YRBORN	A7 G2 TEACHER'S YEAR OF BIRTH	Data recoded for respondent confidentiality
A7HISP	A7 G3 HISPANIC OR LATINO (ANY RACE)	Data suppressed for respondent confidentiality
A7AMINAN	A7 G4 AMER IND/ALASKA NAT	Data suppressed for respondent confidentiality
A7ASIAN	A7 G4 ASIAN	Data suppressed for respondent confidentiality
A7BLACK	A7 G4 BLACK/AFRICAN AMERICAN	Data suppressed for respondent confidentiality
A7HAWPI	A7 G4 NATIVE HAWAIIAN/PAC ISL	Data suppressed for respondent confidentiality
A7WHITE	A7 G4 WHITE	Data suppressed for respondent confidentiality
A7HGHSTD	A7 G5 HIGHEST ED LEVEL TEACHER ACHIEVED	Data recoded for respondent confidentiality
A7YRSPRK	A7 G6A YRS TAUGHT PRESCHL/KINDRGTN	Data suppressed for respondent confidentiality
A7YRSFST	A7 G6B YRS TEACHER TAUGHT FIRST GRADE	Data suppressed for respondent confidentiality
A7YRS2ND	A7 G6C YRS TEACHER TAUGHT SECOND GRADE	Data suppressed for respondent confidentiality
A7YRS3RD	A7 G6D YRS TEACHER TAUGHT THIRD GRADE	Data suppressed for respondent confidentiality
A7YRS4TH	A7 G6E YRS TEACHER TAUGHT FOURTH GRADE	Data suppressed for respondent confidentiality
A7YRS5TH	A7 G6F YRS TEACHER TAUGHT FIFTH GRADE	Data suppressed for respondent confidentiality
A7YRS6PL	A7 G6G YRS TEACHER TAUGHT 6 GRADE OR UP	Data suppressed for respondent confidentiality
A7YRSEBD	A7 G6H YRS TAUGHT ESL/BILING/DUAL LANG	Data suppressed for respondent confidentiality
A7YRSSPE	A7 G6I YRS TEACHER TAUGHT SPECIAL ED	Data suppressed for respondent confidentiality
A7YRSGFT	A7 G6J YRS TEACHER TAUGHT GIFTED ED	Data suppressed for respondent confidentiality
A7YRSTCH	A7 G7 NUMBER YEARS BEEN SCHOOL TEACHER	Data recoded for respondent confidentiality
A7NODEG	A7 G8 NO DEGREE OBTAINED	Data suppressed for respondent confidentiality
A7DEGERL	A7 G9A UNDER GRAD/EARLY CHILDHOOD ED	Data suppressed for respondent confidentiality
A7DEGELM	A7 G9B UNDER GRAD/ELEMENTARY ED	Data suppressed for respondent confidentiality
A7DEGSPE	A7 G9C UNDER GRAD/SPECIAL ED	Data suppressed for respondent confidentiality
A7DEGOTH	A7 G9D UNDER GRAD/OTHER ED MAJOR	Data suppressed for respondent confidentiality
A7DEGNON	A7 G9E UNDER GRAD/NON ED MAJOR	Data suppressed for respondent confidentiality
A7GRDERL	A7 G10A GRAD DEG/EARLY CHILDHOOD ED	Data suppressed for respondent confidentiality
A7GRDELM	A7 G10B GRAD DEG/ELEMENTARY ED	Data suppressed for respondent confidentiality
A7GRDSPE	A7 G10C GRAD DEG/SPECIAL ED	Data suppressed for respondent confidentiality
A7GRDOTH	A7 G10D GRAD DEG/OTHER ED MAJOR	Data suppressed for respondent confidentiality
A7GRDNON	A7 G10E GRAD DEG/NON ED MAJOR	Data suppressed for respondent confidentiality

SOURCE: U.S. Department of Education, National Center for Education Statistics, Early Childhood Longitudinal Study, Kindergarten Class of 2010–11 (ECLS-K:2011) kindergarten–fourth grade (K-4) public-use data file.

Exhibit B-4. ECLS-K:2011 masked variables, spring 2014 child-level teacher questionnaires

Variable name	Variable description	Comments
T7RWRELC	T7 C1: PIANTA STRS-SHORT FORM, ITEM 1	Data suppressed due to copyright
T7RSTRUG	T7 C2: PIANTA STRS-SHORT FORM, ITEM 2	Data suppressed due to copyright
T7RSKCOM	T7 C3: PIANTA STRS-SHORT FORM, ITEM 3	Data suppressed due to copyright
T7RCONUN	T7 C4: PIANTA STRS-SHORT FORM, ITEM 4	Data suppressed due to copyright
T7RVLURE	T7 C5: PIANTA STRS-SHORT FORM, ITEM 5	Data suppressed due to copyright
T7RPRDPR	T7 C6: PIANTA STRS-SHORT FORM, ITEM 6	Data suppressed due to copyright
T7RSHINF	T7 C7: PIANTA STRS-SHORT FORM, ITEM 7	Data suppressed due to copyright
T7REZGRY	T7 C8: PIANTA STRS-SHORT FORM, ITEM 8	Data suppressed due to copyright
T7RNTNCF	T7 C9: PIANTA STRS-SHORT FORM, ITEM 9	Data suppressed due to copyright
T7RNGRDI	T7 C10: PIANTA STRS-SHORT FORM, ITEM 10	Data suppressed due to copyright
T7RDRENE	T7 C11: PIANTA STRS-SHORT FORM, ITEM 11	Data suppressed due to copyright
T7RMDDAY	T7 C12: PIANTA STRS-SHORT FORM, ITEM 12	Data suppressed due to copyright
T7RNPRDT	T7 C13: PIANTA STRS-SHORT FORM, ITEM 13	Data suppressed due to copyright
T7RSNEKY	T7 C14: PIANTA STRS-SHORT FORM, ITEM 14	Data suppressed due to copyright
T7RSHFEL	T7 C15: PIANTA STRS-SHORT FORM, ITEM 15	Data suppressed due to copyright
T7LNGTMX	T7 E1 LENGTH OF TIME IN CLASSROOM	Data recoded for respondent confidentiality
T7OFT2LN	T7 E7A DAYS REC LNG INS - 2 LANG	Data recoded for respondent confidentiality
T7OFTENG	T7 E7B DAYS REC LNG INS - ENG ONLY	Data recoded for respondent confidentiality
T7OFTOTH	T7 E7C DAYS REC LNG INS - OTHER	Data recoded for respondent confidentiality
T7TME2LN	T7 E8A TIME PER DAY LNG INS - 2 LANG	Data recoded for respondent confidentiality
T7TMEENG	T7 E8B TIME PER DAY LNG INS - ENG ONLY	Data recoded for respondent confidentiality
T7TMEOTH	T7 E8C TIME PER DAY LNG INS - OTHER	Data recoded for respondent confidentiality
T7CHRDGP	T7 E18 CHILDS PLACEMENT IN READING GRP	Data recoded for respondent confidentiality
T7CHMTGP	T7 E20 CHDS PLACEMENT IN MATHEMATICS GRP	Data recoded for respondent confidentiality

SOURCE: U.S. Department of Education, National Center for Education Statistics, Early Childhood Longitudinal Study, Kindergarten Class of 2010–11 (ECLS-K:2011)) kindergarten–fourth grade (K-4) public-use data file.

Exhibit B-5. ECLS-K:2011 masked variables, spring 2014 school administrator questionnaire

Variable name	Variable description	Comments
S7NUMDAY	S7 A1 NUMBER OF DAYS MUST ATTEND	Data recoded for respondent confidentiality
S7NUM3RD	S7 A2A # ENROLLED IN 3RD GRADE	Data recoded for respondent confidentiality
S7ANUMCH	S7 A2B # ENROLLED AROUND OCTOBER 1 2013	Data recoded for respondent confidentiality
S7BNUMCH	S7 A2C # ENROLLED SINCE OCTOBER 1 2013	Data recoded for respondent confidentiality
S7CNUMCH	S7 A2D # LEFT SINCE OCT 1 2013	Data recoded for respondent confidentiality
S7ADA	S7 A3A % AVERAGE DAILY ATTENDANCE FOR YR	Data recoded for respondent confidentiality
S7ADANUM	S7 A3B AVERAGE NUMBER ATTENDING DAILY	Data suppressed for respondent confidentiality
S7UNGRAD	S7N A4 GRADE LEVEL-UNGRADED	Data suppressed for respondent confidentiality
S7PRKNDR	S7N A4 GRADE LEVEL-PREKINDERGARTEN	Data suppressed for respondent confidentiality
S7TRANSK	S7N A4 GRADE LEVEL-TRANSITIONAL K	Data suppressed for respondent confidentiality
S7KINDER	S7N A4 GRADE LEVEL-KINDERGARTEN	Data suppressed for respondent confidentiality
S7PRE1	S7N A4 GRADE LEVEL-PREFIRST/TRANS 1ST	Data suppressed for respondent confidentiality
S7GRADE1	S7N A4 GRADE LEVEL-FIRST GRADE	Data suppressed for respondent confidentiality
S7SECOND	S7N A4 GRADE LEVEL-SECOND GRADE	Data suppressed for respondent confidentiality
S7THIRD	S7N A4 GRADE LEVEL-THIRD GRADE	Data suppressed for respondent confidentiality
S7FOURTH	S7N A4 GRADE LEVEL-FOURTH GRADE	Data suppressed for respondent confidentiality
S7FIFTH	S7N A4 GRADE LEVEL-FIFTH GRADE	Data suppressed for respondent confidentiality
S7SIXTH	S7N A4 GRADE LEVEL-SIXTH GRADE	Data suppressed for respondent confidentiality
S77TH	S7N A4 GRADE LEVEL-SEVENTH GRADE	Data suppressed for respondent confidentiality
S78TH	S7N A4 GRADE LEVEL-EIGHTH GRADE	Data suppressed for respondent confidentiality
S7NINTH	S7N A4 GRADE LEVEL-NINTH GRADE	Data suppressed for respondent confidentiality
S7TENTH	S7N A4 GRADE LEVEL-TENTH GRADE	Data suppressed for respondent confidentiality
S711TH	S7N A4 GRADE LEVEL-ELEVENTH GRADE	Data suppressed for respondent confidentiality
S712TH	S7N A4 GRADE LEVEL-TWELFTH GRADE	Data suppressed for respondent confidentiality
S7MAGSKL	S7N A5 PUBLIC MAGNET SCHOOL	Data suppressed for respondent confidentiality
S7CHRSKL	S7N A5 CHARTER SCHOOL	Data suppressed for respondent confidentiality
S7CATHOL	S7N A5 CATHOLIC SCHOOL	Data suppressed for respondent confidentiality
S7DIOCSK	S7N A5 CATHOLIC SCHOOL - DIOCESAN	Data suppressed for respondent confidentiality
S7PARSKL	S7N A5 CATHOLIC SCHOOL - PARISH	Data suppressed for respondent confidentiality
S7PRVORS	S7N A5 CATHOLIC SCHOOL - PRIVATE ORDER	Data suppressed for respondent confidentiality
S7OTHREL	S7N A5 PRIVATE SCHOOL RELIG - NOT CATH	Data suppressed for respondent confidentiality
S7OTNAIS	S7N A5 PRIVATE SCHOOL NAIS - NOT RELG	Data suppressed for respondent confidentiality
S7OTHRNO	S7N A5 OTHER PRVT, NO RELG OR NAIS	Data suppressed for respondent confidentiality
S7EARCHC	S7N A5 EARLY CHILDHOOD CENTER	Data suppressed for respondent confidentiality
S7SPDSCH	S7N A5 SPECIAL ED SCHOOL	Data suppressed for respondent confidentiality
S7YROUND	S7N A5 YEAR-ROUND SCHOOL	Data suppressed for respondent confidentiality
S7YCHART	S7N A6 YR BECAME CHARTER SCHOOL	Data suppressed for respondent confidentiality
S7CHARPN	S7N A7 IS CHARTER PROFIT OR NONPROF	Data suppressed for respondent confidentiality

See note at end of exhibit.

Exhibit B-5. ECLS-K:2011 masked variables, spring 2014 school administrator questionnaire—Continued

Variable name	Variable description	Comments
S7HISPNM	S7N A8A # HISPANIC/LATINO	Data suppressed for respondent confidentiality
S7AIANNM	S7N A8B # AMER IND/ALASKA NAT	Data suppressed for respondent confidentiality
S7AIANPT	S7N A8B % AMER IND/ALASKA NAT	Data recoded for respondent confidentiality
S7ASIANM	S7N A8C # ASIAN	Data suppressed for respondent confidentiality
S7ASIAPT	S7N A8C % ASIAN	Data recoded for respondent confidentiality
S7BLACNM	S7N A8D # BLACK/AFRICAN AMERICAN	Data suppressed for respondent confidentiality
S7BLACPT	S7N A8D % BLACK/AFRICAN AMERICAN	Data recoded for respondent confidentiality
S7HAWPNM	S7N A8E # HAWAIIAN/PAC ISL	Data suppressed for respondent confidentiality
S7HAWPPT	S7N A8E % HAWAIIAN/PAC ISL	Data recoded for respondent confidentiality
S7WHITNM	S7N A8F # WHITE	Data suppressed for respondent confidentiality
S7MULTNM	S7N A8G # TWO OR MORE RACE	Data suppressed for respondent confidentiality
S7MULTPT	S7N A8G % TWO OR MORE RACE	Data recoded for respondent confidentiality
S7TOTENR	S7N A8H RPTD TOTAL SCHOOL ENROLLMENT	Data recoded for respondent confidentiality
S7OTNEED	S7N A10A PERCENT SENT W/SPECIAL NEED	Data recoded for respondent confidentiality
S7PTRAYP	S7N A10B PCT PREV SCH NOT MEET AYP	Data recoded for respondent confidentiality
S7PUBCHO	S7N A10C PCT ATTEND UNDER PUB SCH CHOICE	Data recoded for respondent confidentiality
S7PCTFLN_I	S7 A11 PERCENT ELG FOR FREE/RED LUNCH	Data recoded for respondent confidentiality
S7RPTCRD	S7 C2B FREQ OF REPORT CARDS	Data recoded for respondent confidentiality
S7PTCONF	S7 C2D FREQ OF PARENT-TCHR CONFERENCE	Data recoded for respondent confidentiality
S7INVITE	S7 C2E FREQ OF PERFORMANCES FOR PARENTS	Data recoded for respondent confidentiality
S7DETECT	S7 C6C SCHOOL METAL DETECTORS	Data suppressed for respondent confidentiality
S7NMRET2	S7 D1 NUMBER RETAINED GRADE2	Data recoded for respondent confidentiality
S7NMRET3	S7 D2 NUMBER RETAINED GRADE3	Data recoded for respondent confidentiality
S7TOTELL	S7 E2A PCT OF STUDENTS WHO ARE ELL	Data recoded for respondent confidentiality
S7TOTHRD	S7 E2B PCT OF 3RD GRADERS WHO ARE ELL	Data recoded for respondent confidentiality
S7NEIEPY	S7 E5 NEW EVAL FOR IEP THIS YEAR	Data recoded for respondent confidentiality
S7NEEIEP	S7 E6 NEW EVAL ELIGIBLE FOR IEP	Data recoded for respondent confidentiality
S7SPDPCT	S7 E8A1 % STUDENTS IN SPECIAL ED 3RD GR	Data recoded for respondent confidentiality
S7504STU	S7 E8B1 % STUDENTS W/ 504 PLAN 3RD GRADE	Data recoded for respondent confidentiality
S7RDIPCT	S7 E8C1 % STUDNT GETTING INSTRUCTION RDG	Data recoded for respondent confidentiality
S7MTIPCT	S7 E8D1 % STUDNT GETTING INSTRUCTION MTH	Data recoded for respondent confidentiality
S7GIFPCT	S7 E8E1 % STUDENTS IN G/T PROGRAM 3RD GR	Data recoded for respondent confidentiality
S7TRANS2	S7N F8B2 OFFER TRANSFER IN RESP	Data suppressed for respondent confidentiality
S7REORN2	S7N F8H2 REORGANIZE INTERN IN RESP	Data suppressed for respondent confidentiality
S7OFFPDV	S7N F8I1 OFFERED PRO DEVELOPMENT	Data suppressed for respondent confidentiality
S7OFFPD2	S7N F8I2 OFFERED PRO DEV IN RESP	Data suppressed for respondent confidentiality
S7RGTCHF	S7 G1A1 # REG CLASSROOM TCHR-FULL	Data recoded for respondent confidentiality
S7RGTCHP	S7 G1A2 # REG CLASSROOM TCHR-PART	Data recoded for respondent confidentiality

See note at end of exhibit.

Exhibit B-5. ECLS-K:2011 masked variables, spring 2014 school administrator questionnaire—Continued

Variable name	Variable description	Comments
S7ESLF	S7 G1B1 # ESL/BILINGUAL TCHR-FULL	Data recoded for respondent confidentiality
S7ESLP	S7 G1B2 # ESL/BILINGUAL TCHR-PART	Data recoded for respondent confidentiality
S7ARTSTF	S7 G1C1 # DRAMA MUSIC ART TCHR-FULL	Data recoded for respondent confidentiality
S7ARTSTP	S7 G1C2 # DRAMA MUSIC ART TCHR-PART	Data recoded for respondent confidentiality
S7GYMTF	S7 G1D1 # GYM/HEALTH TEACHER-FULL	Data recoded for respondent confidentiality
S7GYMTP	S7 G1D2 # GYM/HEALTH TEACHER-PART	Data recoded for respondent confidentiality
S7SPEDF	S7 G1E1 # SPECIAL ED TCHR-FULL	Data recoded for respondent confidentiality
S7SPEDP	S7 G1E2 # SPECIAL ED TCHR-PART	Data recoded for respondent confidentiality
S7PARAF	S7 G1F1 # PARAPROFESSIONALS-FULL	Data recoded for respondent confidentiality
S7PARAP	S7 G1F2 # PARAPROFESSIONALS-PART	Data recoded for respondent confidentiality
S7TEBEGN	S7 G4A # NEW TEACHER SINCE OCT 1 2013	Data recoded for respondent confidentiality
S7TELEFT	S7 G4B # TEACHERS LEFT SINCE OCT 1 2013	Data recoded for respondent confidentiality
S7RYYEMP	S7 G7A # OF YRS RESPONDENT AT SCHOOL	Data suppressed for respondent confidentiality
S7RMMEMP	S7 G7B # OF MNTHS RESP AT SCHOOL	Data suppressed for respondent confidentiality
S7GENDER	S7 H1 GENDER OF SCHOOL ADMINISTRATOR	Data suppressed for respondent confidentiality
S7BRTHYR	S7 H2 YEAR SCHL ADMIN WAS BORN	Data recoded for respondent confidentiality
S7HISP	S7 H3 SCHL ADMIN IS HISP/LAT (ANY RACE)	Data suppressed for respondent confidentiality
S7AMINAN	S7 H4 SCHL ADMIN IS AMER IND/ALASKA NAT	Data suppressed for respondent confidentiality
S7ASIAN	S7 H4 SCHL ADMIN IS ASIAN	Data suppressed for respondent confidentiality
S7BLACK	S7 H4 SCHL ADMIN IS BLACK/AFRICAN AMER	Data suppressed for respondent confidentiality
S7HAWPI	S7 H4 SCL ADMIN IS NAT HAWAIIAN/PAC ISL	Data suppressed for respondent confidentiality
S7WHITE	S7 H4 SCHL ADMIN IS WHITE	Data suppressed for respondent confidentiality
S7YSTCH	S7 H5A NUMBER OF YRS TEACHING	Data recoded for respondent confidentiality
S7TOTPRI	S7 H5B NUMBER OF YRS AS SCHL ADMIN	Data recoded for respondent confidentiality
S7PRINHR	S7 H5C NUMBER YRS A SCHL ADMIN HERE	Data suppressed for respondent confidentiality
S7UNIVER	S7 H6A TRAIN AT TRADITNL UNIV/CERT PROG	Data suppressed for respondent confidentiality
S7DISTPR	S7 H6B DISTRICT-BASED TRAINING PROG	Data suppressed for respondent confidentiality
S7CITYPR	S7 H6C CITY-BASED TRAINING PROG	Data suppressed for respondent confidentiality
S7STPROG	S7 H6D STATE-BASED TRAINING PROG	Data suppressed for respondent confidentiality
S7NATNON	S7 H6E NATIONAL NON-PROFIT TRAINING	Data suppressed for respondent confidentiality
S7OTHSCH	S7 H6F ANOTHER SCHOOL ADMIN PROG	Data suppressed for respondent confidentiality
S7EDLVL	S7 H7 HIGHEST LEVEL OF EDUCATION	Data recoded for respondent confidentiality
S7BSERED	S7 H8A FIELD OF STUDY-EARLY CHILD ED	Data suppressed for respondent confidentiality
S7BSELEM	S7 H8B FIELD OF STUDY-ELEMENTARY ED	Data suppressed for respondent confidentiality
S7BSEDAD	S7 H8C FIELD OF STUDY-ED ADMIN/MANAGE	Data suppressed for respondent confidentiality
S7BSSPED	S7 H8D FIELD OF STUDY-SPECIAL ED	Data suppressed for respondent confidentiality
S7BSOTHR	S7 H8E FIELD OF STUDY-OTHER ED MAJOR	Data suppressed for respondent confidentiality
S7BSNOED	S7 H8F FIELD OF STUDY-NON-ED MAJOR	Data suppressed for respondent confidentiality

See note at end of exhibit.

Exhibit B-5. ECLS-K:2011 masked variables, spring 2014 school administrator questionnaire—Continued

Variable name	Variable description	Comments
S7SOVTNM	S7 H13 OTHER LANGUAGE -VIETNAMESE	Data suppressed for respondent confidentiality
S7SOJAPN	S7 H13 OTHER LANGUAGE -JAPANESE	Data suppressed for respondent confidentiality
S7SOKORN	S7 H13 OTHER LANGUAGE -KOREAN	Data suppressed for respondent confidentiality
S7SOFILP	S7 H13 OTHER LANGUAGE -FILIPINO	Data suppressed for respondent confidentiality
S7SOARAB	S7 H13 OTHER LANGUAGE -ARABIC	Data suppressed for respondent confidentiality

SOURCE: U.S. Department of Education, National Center for Education Statistics, Early Childhood Longitudinal Study, Kindergarten Class of 2010–11 (ECLS-K:2011) kindergarten–fourth grade (K-4) public-use data file.

Exhibit B-6. ECLS-K:2011 masked variables, spring 2014 composite variables

Variable name	Variable description	Comments
X_DOBYY_R	CHILD COMPOSITE DOB YEAR - REVISED	Data recoded for respondent confidentiality
X7EXDIS	X7 CHILD NOT ASSESSED - DISAB EXCLUSION	Data suppressed for respondent confidentiality
X7HEIGHT	X7 CHILD COMPOSITE HGT (INCHES)	Data recoded for respondent confidentiality
X7WEIGHT	X7 CHILD COMPOSITE WGT (POUNDS)	Data recoded for respondent confidentiality
X7GRDLVL	X7 CHILD GRADE LEVEL	Data recoded for respondent confidentiality
X7LOCALE	X7 LOCATION TYPE OF SCHOOL	Data recoded for respondent confidentiality
X7REGION	X7 CENSUS REGION OF SCHOOL	Data suppressed for respondent confidentiality
X7PAR1ED_I	X7 PARENT 1 EDUCATION LEVEL (IMPUTED)	Data recoded for respondent confidentiality
X7PAR2ED_I	X7 PARENT 2 EDUCATION LEVEL (IMPUTED)	Data recoded for respondent confidentiality
X7YRRND	X7 YEAR ROUND SCHOOL	Data suppressed for respondent confidentiality
X7LOWGRD	X7 LOWEST GRADE AT THE SCHOOL	Data recoded for respondent confidentiality
X7HIGGRD	X7 HIGHEST GRADE AT THE SCHOOL	Data recoded for respondent confidentiality
X7SCHBDD	X7 SCHOOL YEAR BEGINNING DATE DAY	Data suppressed for respondent confidentiality
X7SCHBMM	X7 SCHOOL YEAR BEGINNING DATE MONTH	Data recoded for respondent confidentiality
X7SCHEDD	X7 SCHOOL YEAR ENDING DATE DAY	Data suppressed for respondent confidentiality
X7ASMTST	X7 ASSESSMENT STATUS SPRING 2014	Data recoded for respondent confidentiality
X7RCETH	X7 PERCENT NONWHITE STUDENTS IN SCHOOL	Data recoded for respondent confidentiality
X7FRMEAL_I	X7 PCT FREE RED MEAL ELIG STUDENTS (IMP)	Data recoded for respondent confidentiality
X7ASMTDD	X7 CHILD ASSESSMENT DAY OF THE MONTH	Data suppressed for respondent confidentiality

SOURCE: U.S. Department of Education, National Center for Education Statistics, Early Childhood Longitudinal Study, Kindergarten Class of 2010–11 (ECLS-K:2011) kindergarten–fourth grade (K-4) public-use data file.

Exhibit B-7. ECLS-K:2011 masked variables, spring 2014 field management system and identification variables

Variable name	Variable description	Comments
F7CADISP	F7 CHILD ASSESSMENT DISPOSITION CODE	Data suppressed for respondent confidentiality
F7PIDISP	F7 PARENT INTERVIEW DISPOSITION CODE	Data suppressed for respondent confidentiality
F7CLASS2	F7 CHILD CLASS TYPE FROM FMS SPRING 2014	Data recoded for respondent confidentiality
F7CCDLEA	F7 CCD LEA/SCHOOL DIST ID (PUBLIC)	Data suppressed for respondent confidentiality
F7CCDSID	F7 CCD SCHOOL ID (PUBLIC)	Data suppressed for respondent confidentiality
F7CENTRC	F7 SCHOOL CENSUS TRACT CODE	Data suppressed for respondent confidentiality
F7FIPSCT	F7 SCHOOL FIPS COUNTY CODE	Data suppressed for respondent confidentiality
F7FIPSST	F7 SCHOOL FIPS STATE CODE	Data suppressed for respondent confidentiality
F7SCHPIN	F7 SCHOOL PIN (PRIVATE/PSS)	Data suppressed for respondent confidentiality
F7SCHZIP	F7 SCHOOL ZIP CODE	Data suppressed for respondent confidentiality
T7_ID	SPRING 2014 TEACHER IDENTIFICATION NUMBER	Data suppressed for respondent confidentiality
IFS7PCTFLN	S7 IMPUTATION FLAG FOR S7PCTFLN	Data recoded for respondent confidentiality
IFX7FRMEAL	X7 IMPUTATION FLAG FOR X7FRMEAL_I	Data recoded for respondent confidentiality

SOURCE: U.S. Department of Education, National Center for Education Statistics, Early Childhood Longitudinal Study, Kindergarten Class of 2010–11 (ECLS-K:2011) kindergarten–fourth grade (K-4) public-use data file.

Exhibit B-8 shows items from the kindergarten through second grade child-level questionnaires that are included in the K-4 public-use data file for the first time but are masked due to disclosure risk.

Exhibit B-8. ECLS-K:2011 masked variables, spring 2011, spring 2012, spring 2013 child-level teacher questionnaires

Variable name	Variable description	Comments
T2RWRELC	T2 TCR1: PIANTA STRS-SHORT FORM, ITEM 1	Data suppressed due to copyright
T2RSTRUG	T2 TCR2: PIANTA STRS-SHORT FORM, ITEM 2	Data suppressed due to copyright
T2RSKCOM	T2 TCR3: PIANTA STRS-SHORT FORM, ITEM 3	Data suppressed due to copyright
T2RCONUN	T2 TCR4: PIANTA STRS-SHORT FORM, ITEM 4	Data suppressed due to copyright
T2RVLURE	T2 TCR5: PIANTA STRS-SHORT FORM, ITEM 5	Data suppressed due to copyright
T2RPRDPR	T2 TCR6: PIANTA STRS-SHORT FORM, ITEM 6	Data suppressed due to copyright
T2RSHINF	T2 TCR7: PIANTA STRS-SHORT FORM, ITEM 7	Data suppressed due to copyright
T2REZGRY	T2 TCR8: PIANTA STRS-SHORT FORM, ITEM 8	Data suppressed due to copyright
T2RNTNCF	T2 TCR9: PIANTA STRS-SHORT FORM, ITEM 9	Data suppressed due to copyright
T2RNGRDI	T2 TCR10: PIANTA STRS-SHORT FORM, ITEM 10	Data suppressed due to copyright
T2RDRENE	T2 TCR11: PIANTA STRS-SHORT FORM, ITEM 11	Data suppressed due to copyright
T2RMDDAY	T2 TCR12: PIANTA STRS-SHORT FORM, ITEM 12	Data suppressed due to copyright
T2RNPRDT	T2 TCR13: PIANTA STRS-SHORT FORM, ITEM 13	Data suppressed due to copyright
T2RSNEKY	T2 TCR14: PIANTA STRS-SHORT FORM, ITEM 14	Data suppressed due to copyright
T2RSHFEL	T2 TCR15: PIANTA STRS-SHORT FORM, ITEM 15	Data suppressed due to copyright
T4KRWRELC	T4K STR1: PIANTA STRS-SHORT FORM, ITEM 1	Data suppressed due to copyright
T4KRSTRUG	T4K STR2: PIANTA STRS-SHORT FORM, ITEM 2	Data suppressed due to copyright
T4KRSKCOM	T4K STR3: PIANTA STRS-SHORT FORM, ITEM 3	Data suppressed due to copyright
T4KRCONUN	T4K STR4: PIANTA STRS-SHORT FORM, ITEM 4	Data suppressed due to copyright
T4KRVLURE	T4K STR5: PIANTA STRS-SHORT FORM, ITEM 5	Data suppressed due to copyright
T4KRPRDPR	T4K STR6: PIANTA STRS-SHORT FORM, ITEM 6	Data suppressed due to copyright
T4KRSHINF	T4K STR7: PIANTA STRS-SHORT FORM, ITEM 7	Data suppressed due to copyright
T4KREZGRY	T4K STR8: PIANTA STRS-SHORT FORM, ITEM 8	Data suppressed due to copyright
T4KRNTNCF	T4K STR9: PIANTA STRS-SHORT FORM, ITEM 9	Data suppressed due to copyright
T4KRNGRDI	T4K STR10: PIANTA STRS-SHORT FORM, ITEM 10	Data suppressed due to copyright
T4KRDRENE	T4K STR11: PIANTA STRS-SHORT FORM, ITEM 11	Data suppressed due to copyright
T4KRMDDAY	T4K STR12: PIANTA STRS-SHORT FORM, ITEM 12	Data suppressed due to copyright
T4KRNPRDT	T4K STR13: PIANTA STRS-SHORT FORM, ITEM 13	Data suppressed due to copyright
T4KRSNEKY	T4K STR14: PIANTA STRS-SHORT FORM, ITEM 14	Data suppressed due to copyright
T4KRSHFEL	T4K STR15: PIANTA STRS-SHORT FORM, ITEM 15	Data suppressed due to copyright
T4RWRELC	T4 STR1: PIANTA STRS-SHORT FORM, ITEM 1	Data suppressed due to copyright
T4RSTRUG	T4 STR2: PIANTA STRS-SHORT FORM, ITEM 2	Data suppressed due to copyright
T4RSKCOM	T4 STR3: PIANTA STRS-SHORT FORM, ITEM 3	Data suppressed due to copyright

See note at end of exhibit.

Exhibit B-8. ECLS-K:2011 masked variables, spring 2011, spring 2012, spring 2013 child-level teacher questionnaires— Continued

Variable name	Variable description	Comments
T4RCONUN	T4 STR4: PIANTA STRS-SHORT FORM, ITEM 4	Data suppressed due to copyright
T4RVLURE	T4 STR5: PIANTA STRS-SHORT FORM, ITEM 5	Data suppressed due to copyright
T4RPRDPR	T4 STR6: PIANTA STRS-SHORT FORM, ITEM 6	Data suppressed due to copyright
T4RSHINF	T4 STR7: PIANTA STRS-SHORT FORM, ITEM 7	Data suppressed due to copyright
T4REZGRY	T4 STR8: PIANTA STRS-SHORT FORM, ITEM 8	Data suppressed due to copyright
T4RNTNCF	T4 STR9: PIANTA STRS-SHORT FORM, ITEM 9	Data suppressed due to copyright
T4RNGRDI	T4 STR10: PIANTA STRS-SHORT FORM, ITEM 10	Data suppressed due to copyright
T4RDRENE	T4 STR11: PIANTA STRS-SHORT FORM, ITEM 11	Data suppressed due to copyright
T4RMDDAY	T4 STR12: PIANTA STRS-SHORT FORM, ITEM 12	Data suppressed due to copyright
T4RNPRDT	T4 STR13: PIANTA STRS-SHORT FORM, ITEM 13	Data suppressed due to copyright
T4RSNEKY	T4 STR14: PIANTA STRS-SHORT FORM, ITEM 14	Data suppressed due to copyright
T4RSHFEL	T4 STR15: PIANTA STRS-SHORT FORM, ITEM 15	Data suppressed due to copyright
T6RWRELC	T6 C1: PIANTA STRS-SHORT FORM, ITEM 1	Data suppressed due to copyright
T6RSTRUG	T6 C2: PIANTA STRS-SHORT FORM, ITEM 2	Data suppressed due to copyright
T6RSKCOM	T6 C3: PIANTA STRS-SHORT FORM, ITEM 3	Data suppressed due to copyright
T6RCONUN	T6 C4: PIANTA STRS-SHORT FORM, ITEM 4	Data suppressed due to copyright
T6RVLURE	T6 C5: PIANTA STRS-SHORT FORM, ITEM 5	Data suppressed due to copyright
T6RPRDPR	T6 C6: PIANTA STRS-SHORT FORM, ITEM 6	Data suppressed due to copyright
T6RSHINF	T6 C7: PIANTA STRS-SHORT FORM, ITEM 7	Data suppressed due to copyright
T6REZGRY	T6 C8: PIANTA STRS-SHORT FORM, ITEM 8	Data suppressed due to copyright
T6RNTNCF	T6 C9: PIANTA STRS-SHORT FORM, ITEM 9	Data suppressed due to copyright
T6RNGRDI	T6 C10: PIANTA STRS-SHORT FORM, ITEM 10	Data suppressed due to copyright
T6RDRENE	T6 C11: PIANTA STRS-SHORT FORM, ITEM 11	Data suppressed due to copyright
T6RMDDAY	T6 C12: PIANTA STRS-SHORT FORM, ITEM 12	Data suppressed due to copyright
T6RNPRDT	T6 C13: PIANTA STRS-SHORT FORM, ITEM 13	Data suppressed due to copyright
T6RSNEKY	T6 C14: PIANTA STRS-SHORT FORM, ITEM 14	Data suppressed due to copyright
T6RSHFEL	T6 C15: PIANTA STRS-SHORT FORM, ITEM 15	Data suppressed due to copyright

SOURCE: U.S. Department of Education, National Center for Education Statistics, Early Childhood Longitudinal Study, Kindergarten Class of 2010–11 (ECLS-K:2011) kindergarten–fourth grade (K-4) public-use data file.

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