



# First-Time Kindergartners in 2010-11: First Findings From the Kindergarten Rounds of the Early Childhood Longitudinal Study, Kindergarten Class of 2010-11 (ECLS-K:2011)

# First-Time Kindergartners in 2010-11: First Findings From the Kindergarten Rounds of the Early Childhood Longitudinal Study, Kindergarten Class of 2010-11 (ECLS-K:2011)

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# Introduction

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This brief report provides a demographic profile of the students who attended kindergarten in the United States in the 2010-11 school year using data from the Early Childhood Longitudinal Study, Kindergarten Class of 2010-11 (ECLS-K:2011). The ECLS-K:2011 cohort includes students in public and private schools across the United States, students who attended part-day and full-day kindergarten programs, and students who were attending their first year of kindergarten as well as those who were repeating kindergarten. The analyses presented in this report focus on the 3.5 million students who were attending kindergarten for the first time in the 2010-11 school year. Approximately 5 percent of the students in the ECLS-K:2011 cohort were repeating kindergarten and are not represented in the findings in this report.

The ECLS-K:2011 is a longitudinal study that will follow a nationally representative sample of students from their kindergarten year to the spring of 2016, when most of them are expected to be in fifth grade. During the first year of data collection, when all children were in kindergarten, data were collected in both the fall and the spring. Approximately 18,200 children enrolled in 970 schools during the 2010-11 school year participated during the kindergarten year.

The study will provide information on students' status at entry to school, their transition into school, and their progression through the elementary grades. The longitudinal nature of the ECLS-K:2011 data will enable researchers to study how a wide range of family, school, community, and individual factors are associated with educational, socioemotional, and physical development over time. Information is being collected from the students, their parents/guardians, their teachers, their school administrators, and their before- and after-school care providers.

The ECLS-K:2011 is the third in a series of longitudinal studies of young children conducted by the National Center for Education Statistics (NCES), within the Institute of Education Sciences, in the U.S. Department of Education. The Early Childhood Longitudinal Study (ECLS) program comprises three studies: 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. Coming more than a decade after the inception of the ECLS-K, the ECLS-K:2011 will allow for cross-cohort comparisons of two nationally representative samples of kindergartners experiencing different policy, educational, and demographic environments.

This report is intended to provide a snapshot of the kindergartners in the ECLS-K:2011 who were attending kindergarten for the first time and to show readers the kinds of data that are available, in order to encourage more in-depth analysis using more sophisticated statistical methods. It presents information about the demographic and family characteristics of first-time kindergartners in the kindergarten class of 2010-11 (table 1); their overall achievement in reading and mathematics in the fall and spring of kindergarten as measured by individually administered direct assessments (table 2); and their Body Mass Index (BMI) calculated from their height and weight in each of the kindergarten data collection rounds (table 3).

Readers are cautioned not to draw causal inferences based on the results presented. It is important to note that many of the characteristics examined in this report may be related to one another, and complex interactions and relationships among the characteristics were not explored in this report. The variables examined here are just a few of the several thousand that can be examined using the ECLS-K:2011 data. These findings are examples of estimates that can be obtained from the data and are not designed to emphasize any particular issue. In addition, the estimates presented in this report are based on a

preliminary version of the ECLS-K:2011 restricted-use data. Estimates produced with the final restricted-use data file, or the public-use data file, may vary.

All comparisons referred to in the text were tested for statistical significance to ensure that the differences were larger than might be expected due to sampling variation. All differences reported are statistically significant at the  $p < .05$  level and at least one-fifth of a standard deviation in size. In addition, the comparisons focus on children's reading and math performance and BMI in the fall of kindergarten as the children entered elementary school for the first time. Adjustments were not made for multiple comparisons. Appendix A provides technical documentation for the estimates presented in this report, a glossary describing the variables, and general information about the study. Additional information about the study can be found online at <http://nces.ed.gov/ecls/kindergarten2011.asp>. Appendix B reports the standard errors for tables 1 through 3.

## Selected Findings

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### **Demographic Characteristics of First-Time Kindergartners in 2010-11 (table 1)**

- Most of the 3.5 million first-time kindergarten students in the cohort were born prior to September 2005 (7 percent of the cohort was born in September 2005 or later), meaning that most of these kindergartners were 5 years of age or older at the start of the school year.
- Fifty-three percent of these first-time kindergartners were White, 24 percent were Hispanic, 13 percent were Black, 4 percent were Asian, 4 percent were two or more races, 1 percent were American Indian or Alaska Native, and less than 0.5 percent were Native Hawaiian or other Pacific Islander.
- Students living in households with incomes below the federal poverty level made up 25 percent of these first-time kindergartners. Thirty-eight percent had parents whose highest level of education was a bachelor's degree or higher, and 76 percent started kindergarten living in a two-parent household. Eighty-four percent of first-time kindergartners lived in a home with English as the primary language.

### **Early Reading and Math Skills and Knowledge of First-Time Kindergartners at Kindergarten Entry (table 2)**

- On average, the group of first-time kindergarten students born from January 2004 through August 2004 scored higher on the math assessment than all other age groups; they also scored higher on average on the reading assessment than did all but one of the other age groups (the group born from September through December 2004). In addition, the two groups of first-time kindergartners born from September 2004 through April 2005 (those born September-December 2004, and those born January-April 2005) both scored higher in reading and math than did kindergartners in any of the three groups born in May 2005 or later (those born May-August 2005, those born September-December 2005, and those born after December 2005).
- Asian first-time kindergartners had higher reading and math scores than first-time kindergartners of other race/ethnicities. White first-time kindergartners had higher reading and math scores than Black, Hispanic, Native Hawaiian/Pacific Islander, and American Indian/Alaska Native students. Black students scored higher than Hispanic students on the reading assessment. Students of two or more races scored higher than Black, Hispanic, and American Indian/Alaska Native students on both assessments and higher than Native Hawaiian/Pacific Islander students on the reading assessment. Native Hawaiian/Pacific Islanders had higher math scores than Hispanics.
- Scores on reading and math were lowest for first-time kindergartners in households with incomes below the federal poverty level and highest for those in households with incomes at or above 200 percent of the federal poverty level.
- For both reading and math, assessment scores increased with parental education level.
- Students in households with two parents had higher reading and math scores than those in households of different structures.
- First-time kindergartners with a primary home language of English scored higher in reading and math than those coming from homes with a primary home language other than English.
- First-time kindergartners attending private school had higher reading and math scores than those attending public school.

**Body Mass Index (BMI) of First-Time Kindergartners at Kindergarten Entry (table 3)**

- Asian students in kindergarten for the first time had a lower BMI than children of other race/ethnicities except for Whites. White kindergartners had a lower BMI than kindergartners of Hispanic, Native Hawaiian/Pacific Islander, and American Indian/Alaska Native origins.
- First-time kindergartners in households with an income below the federal poverty level had a higher BMI than those in households with an income of 200 percent or above.
- Kindergartners with parents whose highest level of education is a Bachelor's degree or higher had a lower BMI than those whose parents' highest level of education is a high school diploma/equivalent or lower.

Table 1. Percentage distribution of children in kindergarten for the first time in the 2010-11 school year, by child, household, and school characteristics: School year 2010-11

Characteristics	Population	Percent
Total	3,472,902	100
Child's sex		
Male	1,779,792	51
Female	1,693,109	49
Child's birth month and year		
Born before January 2004	4,930	#
Born January-August 2004	123,174	4
Born September-December 2004	890,822	26
Born January-April 2005	1,083,961	31
Born May-August 2005	1,117,224	32
Born September-December 2005	244,383	7
Born after December 2005	8,408	#
Child's race/ethnicity <sup>1</sup>		
White, non-Hispanic	1,844,241	53
Black, non-Hispanic	458,058	13
Hispanic	820,424	24
Asian, non-Hispanic	142,096	4
Native Hawaiian or other Pacific Islander, non-Hispanic	13,466	#
American Indian or Alaska Native, non-Hispanic	42,970	1
Two or more races, non-Hispanic	149,097	4
Poverty status <sup>2</sup>		
Income below the federal poverty level	707,334	25
Income between 100 and 199 percent of the federal poverty level	635,889	22
Income at or above 200 percent of the federal poverty level	1,519,452	53
Parents' highest level of education		
Less than high school diploma or equivalent	308,586	9
High school diploma or equivalent	706,967	20
Some college or vocational degree	1,122,354	32
Bachelor's degree	693,651	20
Graduate/professional school	630,113	18
Family type in fall 2010 <sup>3</sup>		
Two parents	2,432,987	76
One parent	715,725	22
Other	69,293	2
Primary home language		
Not English	514,014	15
English	2,909,750	84
Multiple home languages, no primary language identified	39,019	1
School type in fall 2010		
Public	3,074,220	89
Private	398,682	11

# Rounds to zero.

<sup>1</sup> Black, non-Hispanic includes African American. Hispanic includes Latino.

<sup>2</sup> Poverty status is based on preliminary U.S. Census thresholds for 2010, which identify incomes determined to meet household needs, given size. For example, in 2010 a family of two was below the poverty threshold if its income was lower than \$14,220.

<sup>3</sup> Two parents includes two biological parents, two adoptive parents, and one biological/adoptive parent and one other parent/partner. One parent refers to one biological or adoptive parent only. Other refers to related and/or unrelated guardians.

NOTE: Estimates based on a preliminary version of the Early Childhood Longitudinal Study, Kindergarten Class of 2010-11 (ECLS-K:2011) restricted-use data file. Estimates produced with the final restricted-use data file, or the public-use data file, may vary. Estimates were weighted by W1\_2P0. Detail may not sum to total due to rounding and/or missing data.

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

Table 2. Mean reading and mathematics scale scores for children in kindergarten for the first time in the 2010-11 school year, by child, household, and school characteristics: School year 2010-11

Characteristics	Reading		Mathematics	
	Fall 2010	Spring 2011	Fall 2010	Spring 2011
Total	34.7	49.5	29.3	42.0
Child's sex				
Male	34.0	48.5	29.4	42.0
Female	35.4	50.5	29.2	42.0
Child's birth month and year				
Born before January 2004	29.5	39.6	22.5	30.2
Born January-August 2004	38.7	52.1	35.1	46.6
Born September-December 2004	37.1	51.8	32.4	44.9
Born January-April 2005	35.1	50.1	29.7	42.6
Born May-August 2005	32.7	47.6	26.7	39.6
Born September-December 2005	31.8	46.0	25.4	37.7
Born after December 2005	28.5	40.0	23.3	35.7
Child's race/ethnicity <sup>1</sup>				
White, non-Hispanic	36.6	51.6	31.7	44.6
Black, non-Hispanic	32.9	47.1	25.8	37.5
Hispanic	30.3	45.3	24.7	37.8
Asian, non-Hispanic	40.5	54.0	34.5	46.0
Native Hawaiian or other Pacific Islander, non-Hispanic	32.0	48.5	27.9	41.2
American Indian or Alaska Native, non-Hispanic	31.1	46.0	26.3	40.2
Two or more races, non-Hispanic	36.1	51.0	30.5	43.2
Poverty status <sup>2</sup>				
Income below the federal poverty level	29.6	44.4	24.1	36.8
Income between 100 and 199 percent of the federal poverty level	33.4	48.4	27.9	40.6
Income at or above 200 percent of the federal poverty level	38.6	53.1	33.3	45.9
Parents' highest level of education				
Less than high school diploma or equivalent	26.3	41.5	21.0	34.3
High school diploma or equivalent	29.9	45.2	24.7	37.4
Some college or vocational degree	33.7	48.7	28.4	41.1
Bachelor's degree	38.4	52.9	33.1	45.8
Graduate/professional school	41.6	55.5	35.7	48.1
Family type in fall 2010 <sup>3</sup>				
Two parents	36.0	50.7	30.6	43.4
One parent	31.6	46.3	25.9	38.3
Other	30.5	45.5	24.6	37.3
Primary home language				
Not English	29.4	44.2	24.1	37.3
English	35.6	50.5	30.2	42.9
Multiple home languages, no primary language identified	31.3	46.8	25.8	38.3
School type in fall 2010				
Public	34.3	49.1	28.8	41.5
Private	37.9	52.1	32.9	45.8

<sup>1</sup> Black, non-Hispanic includes African American. Hispanic includes Latino.

<sup>2</sup> Poverty status is based on preliminary U.S. Census thresholds for 2010, which identify incomes determined to meet household needs, given size. For example, in 2010 a family of two was below the poverty threshold if its income was lower than \$14,220.

<sup>3</sup> Two parents includes two biological parents, two adoptive parents, and one biological/adoptive parent and one other parent/partner. One parent refers to one biological or adoptive parent only. Other refers to related and/or unrelated guardians.

NOTE: The assessment scale was 0-83 for the reading assessment and 0-75 for the mathematics assessment. Estimates based on a preliminary version of the Early Childhood Longitudinal Study, Kindergarten Class of 2010-11 (ECLS-K:2011) restricted-use data file. Estimates produced with the final restricted-use data file, or the public-use data file, may vary. Estimates were weighted by W1\_2P0. Detail may not sum to total due to rounding and/or missing data.

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

Table 3. Mean Body Mass Index (BMI) of children in kindergarten for the first time in the 2010-11 school year, by child, household, and school characteristics: School year 2010-11

Characteristics	Body Mass Index	
	Fall 2010	Spring 2011
Total	16.5	16.6
Child's sex		
Male	16.6	16.7
Female	16.4	16.5
Child's birth month and year		
Born before January 2004	18.4	19.7
Born January-August 2004	16.3	16.3
Born September-December 2004	16.7	16.8
Born January-April 2005	16.5	16.5
Born May-August 2005	16.4	16.5
Born September-December 2005	16.4	16.4
Born after December 2005	16.1	16.0
Child's race/ethnicity <sup>1</sup>		
White, non-Hispanic	16.3	16.3
Black, non-Hispanic	16.7	16.8
Hispanic	16.9	17.1
Asian, non-Hispanic	16.0	16.0
Native Hawaiian or other Pacific Islander, non-Hispanic	17.4	17.4
American Indian or Alaska Native, non-Hispanic	17.0	17.2
Two or more races, non-Hispanic	16.6	16.6
Poverty status <sup>2</sup>		
Income below the federal poverty level	16.8	17.0
Income between 100 and 199 percent of the federal poverty level	16.7	16.8
Income at or above 200 percent of the federal poverty level	16.2	16.3
Parents' highest level of education		
Less than high school diploma or equivalent	17.0	17.2
High school diploma or equivalent	16.8	16.9
Some college or vocational degree	16.6	16.7
Bachelor's degree	16.2	16.3
Graduate/professional school	16.0	16.1
Family type in fall 2010 <sup>3</sup>		
Two parents	16.4	16.4
One parent	16.8	16.9
Other	16.7	16.7
Primary home language		
Not English	17.0	17.1
English	16.4	16.5
Multiple home languages, no primary language identified	16.9	17.1
School type in fall 2010		
Public	16.5	16.6
Private	16.1	16.2

<sup>1</sup> Black, non-Hispanic includes African American. Hispanic includes Latino.

<sup>2</sup> Poverty status is based on preliminary U.S. Census thresholds for 2010, which identify incomes determined to meet household needs, given size. For example, in 2010 a family of two was below the poverty threshold if its income was lower than \$14,220.

<sup>3</sup> Two parents includes two biological parents, two adoptive parents, and one biological/adoptive parent and one other parent/partner. One parent refers to one biological or adoptive parent only. Other refers to related and/or unrelated guardians. NOTE: Using the CDC 2000 growth charts, a boy age 5.0 to 5.49 years is considered to be a healthy weight if his BMI is 13.9 to less than 16.9. A girl age 5.0 to 5.49 years is considered to be a healthy weight if her BMI is 13.5 to less than 17.1. A boy age 5.5 to 5.99 years is considered to be a healthy weight if his BMI is 13.8 to less than 17.1. A girl age 5.5 to 5.99 years is considered to be a healthy weight if her BMI is 13.5 to less than 17.5. Estimates based on a preliminary version of the Early Childhood Longitudinal Study, Kindergarten Class of 2010-11 (ECLS-K:2011) restricted-use data. Estimates produced with the final restricted-use data, or the public-use data, may vary. Estimates were weighted by W1\_2P0. Detail may not sum to total due to rounding and/or missing data.

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

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## **Appendix A: Survey Methodology and Glossary**

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## Survey Overview and Methodology

The Early Childhood Longitudinal Study, Kindergarten Class of 2010-11 (ECLS-K:2011) is sponsored by the National Center for Education Statistics (NCES) in the Institute of Education Sciences of the U.S. Department of Education to provide detailed information on the school achievement and experiences of students throughout their elementary school years. Westat, Inc. assisted with the design of the study and collected the data upon which this report is based. The students participating in the ECLS-K:2011 are being followed longitudinally from kindergarten (the 2010-11 school year) through the spring of 2016, when most of them are expected to be in fifth grade. This sample of students is designed to be nationally representative of all students who were enrolled in kindergarten or who were of kindergarten age and being educated in an ungraded classroom or school in the United States in the 2010-11 school year, including those in public and private schools,<sup>1</sup> those who attended full-day and part-day programs, those who were in kindergarten for the first time, and those who were kindergarten repeaters.

The ECLS-K:2011 places emphasis on measuring students' experiences within multiple contexts and development in multiple domains. The design of the study includes the collection of information from the students, their parents/guardians, their teachers, their schools, and their before- and after-school care providers.

Estimates in this report are based on data collected from the students themselves, in the form of direct assessments, as well as from their parents and schools. The estimates pertain only to students who were in kindergarten for the first time in the 2010-11 school year.<sup>2</sup> About 5 percent of the ECLS-K:2011 cohort was repeating kindergarten in 2010-11; kindergarten repeaters are excluded from the analyses in this report.

### **Sample Design**

A nationally representative sample of approximately 18,200 children enrolled in 970 schools during the 2010-11 school year participated in the base-year of the ECLS-K:2011. The children attended both public and private schools. The sample includes children from different racial/ethnic and socioeconomic backgrounds. Asian/Pacific Islander students were oversampled to assure that the sample included enough students of this race/ethnicity to be able to make accurate estimates for these students as a group.

The ECLS-K:2011 cohort was sampled using a multistage sampling design. The first stage of sampling involved the selection of 90 primary sampling units (PSUs) from a national sample of PSUs. The PSUs were counties and county groups. Public and private schools educating kindergartners or children of kindergarten age who were educated in an ungraded setting were then selected within the PSUs, and students were sampled from the selected schools. Schools were selected from a frame that was developed for the 2010 National Assessment of Educational Progress (NAEP). Public schools in the NAEP frame came from the NCES 2006-07 Common Core of Data (CCD) Universe File. Private schools in the NAEP frame came from the 2007-08 Private School Survey (PSS), another NCES survey.<sup>3</sup> In the third stage of sampling, approximately 23 kindergartners were selected from a list of all enrolled kindergartners or students of kindergarten age being educated in an ungraded classroom in each of the sampled schools.

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<sup>1</sup> Students who attended early learning centers or institutions that offered education only through kindergarten are included in the study sample and represented in the cohort.

<sup>2</sup> For ease of presentation, this report generally refers to "kindergartners"; children of kindergarten age in ungraded settings are included in the group referred to as kindergartners.

<sup>3</sup> During the spring of 2010, procedures were used to update the school frame and select a supplemental sample of newly opened schools and kindergarten programs that were not included in the original frame.

For more information on the sample design and sampling procedures, 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 Files and Electronic Codebook* (Tourangeau et al. forthcoming).

## **Data Collection**

Two data collections were conducted in the 2010-11 school year, one in the fall and one in the spring. The fall kindergarten direct child assessments were conducted from September through December 2010. About two-thirds of the assessments were completed by the end of October, with 25 percent completed in November and 10 percent completed in December. Fall kindergarten parent interviews were conducted from September 2010 to January 2011. The spring kindergarten direct child assessments were conducted from late March through June 2011. Approximately 60 percent of the assessments were completed by the end of April, with 35 percent completed in May and 5 percent completed in June. Spring kindergarten parent interviews were conducted from March to July 2011.

Parent interviews were conducted mostly by telephone, though the interview was conducted in-person for parents who did not have telephones or who preferred an in-person interview. 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 kindergarten data collection round, interviewers attempted to complete the parent interview with the same respondent who answered the parent interview in the fall kindergarten round, though another parent or guardian in the household who knew about the child's care, education, and health was selected if the fall respondent was not available.

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

## **Response Rates**

A total of approximately 780 of the 1,320 originally sampled schools participated during the base year of the study. This translates into a weighted unit response rate (weighted by the base weight) of 63 percent for the base year. The weighted student unit response rates were 87 percent for the fall data collection and 85 percent for the spring data collection. The weighted student unit response rate for participation in the fall or spring data collections was 89 percent (i.e., a child assessment was completed at least once during kindergarten). The weighted student unit response rate for participation in both the fall and spring data collections was 76 percent (i.e., a child assessment was completed in both the fall and spring of kindergarten). The weighted parent unit response rates were 74 percent for the fall data collection and 67 percent for the spring data collection. The weighted parent unit response rate for participation in the fall or spring data collections was 80 percent (i.e., a parent interview was completed at least once during kindergarten). The weighted parent unit response rate for participation in both the fall and spring data collections was 55 percent (i.e., a parent interview was completed in both the fall and spring of kindergarten). The overall base-year response rate for students (with a complete assessment in either fall or spring) was 56 percent (63 percent of schools x 89 percent of sampled children) and the base-year overall response rate for the parent interview (i.e., a complete parent interview in either fall or spring) was 50 percent (63 percent of schools x 80 percent of parents of sampled children).

A nonresponse bias analysis was conducted to determine if substantial bias was introduced as a result of nonresponse. Three methods were used to examine the potential for nonresponse bias: (1) a comparison of

estimates from the ECLS-K:2011 to those produced using frame data (i.e., data from the Common Core of Data and the Private School Survey); (2) a comparison of estimates from the ECLS-K:2011 to other data sources (for example, the National Household Education Surveys Program); and (3) a comparison of estimates produced using weights that include adjustments for nonresponse to estimates produced using weights without nonresponse adjustments. Findings from these analyses suggest that there is not a substantial bias due to nonresponse after adjusting for that nonresponse. For information on the nonresponse bias analysis, refer to the *Early Childhood Longitudinal Study, Kindergarten Class of 2010-11 (ECLS-K:2011) Kindergarten Year Methodology Report* (Tourangeau et al. forthcoming).

The item missing rates for the variables used in this report are generally low for the analytic sample included in this report (less than 1 percent). The exceptions were poverty status, which has an item missing rate of 17 percent, and family type in fall 2010, which has an item missing rate of 8 percent. Parents' highest level of education was imputed using a hot-deck imputation method. More information on item-level missing data and hot deck imputation can be found in the *Early Childhood Longitudinal Study, Kindergarten Class of 2010-11 (ECLS-K:2011) Kindergarten Year Methodology Report* (Tourangeau et al. forthcoming).

### **Data Reliability**

Estimates produced using data from the ECLS-K:2011 are subject to two types of error: nonsampling and sampling errors. Nonsampling errors are errors made in the collection and processing of data. Sampling errors occur because the data are collected from a sample rather than a census of the population.

#### ***Nonsampling Errors***

Nonsampling error is the term used to describe variations in the estimates that may be caused by population coverage limitations, as well as data collection, processing, and reporting procedures. The sources of nonsampling errors are typically nonresponse, differences in respondents' interpretations of the meaning of the questions, response differences related to the particular time the survey was conducted, and mistakes in data preparation.

In general it is difficult to identify and estimate either the amount of nonsampling error or the bias caused by this error. In the ECLS-K:2011, efforts were made to prevent such errors from occurring and to compensate for them where possible (e.g., field testing items and assessments, using survey questions that had been tested and used in previous surveys, multiday assessor/interviewer training, assessor certification sessions, and monitoring assessor/interviewer performance and field data quality throughout the collection period).

Another potential source of nonsampling error is respondent bias that occurs when respondents systematically misreport (intentionally or unintentionally) information in a study. One potential source of respondent bias is social desirability bias, which can result when respondents provide information they believe is socially desirable or acceptable but that does not accurately reflect the respondents' characteristics or experiences. An associated error occurs when respondents give unduly positive reports about those close to them. For example, parents may give a better assessment of their children's reading ability than might be obtained from a direct assessment. If there are no systematic differences among specific groups under study in their tendency to give socially desirable or unduly positive responses, then comparisons of the different groups will provide reasonable measures of relative differences among the groups.

Information in this *First Findings* report uses items from the parent interviews and child assessments, as well as information collected from schools. Analysis of potential bias due to item nonresponse is typically

conducted for those items with less than 85 percent response. Most of the information presented in this report is derived from items in the parent interview with a missing data rate of less than 1 percent. The exceptions are information on poverty status, which was missing for 17 percent of the analytic sample, and family type in fall 2010, which was missing for 8 percent. The child assessment data are not reported out at the item level, so it is not appropriate to discuss item-level nonresponse rates for them. However, the child assessments can be evaluated by the unit response rate, which, as noted above, was 87 percent for the fall of kindergarten and 85 percent for the spring of kindergarten.

### ***Sampling Errors and Weighting***

The ECLS-K:2011 data are weighted to compensate for unequal probabilities of selection at each sampling stage and to adjust for the effects of school, teacher, before- and after-school care provider, child, and parent nonresponse. The sample weights to be used in ECLS-K:2011 analyses were developed in several stages.<sup>4</sup> The first stage of the weighting process assigned weights to the sampled primary sampling units that are equal to the inverse of the PSU probability of selection. The second stage of the weighting process assigned weights to the schools sampled within selected PSUs. The base weight for each sampled school is the PSU weight multiplied by the inverse of the probability of selecting the school from the PSU. The base weights of responding schools were adjusted to compensate for nonresponse among the set of eligible schools. These adjustments were made separately for public and private schools.

To compute the base weight for each student in the sample, the school nonresponse-adjusted weight for the school the student attended was multiplied by the within-school student weight. The within-school student weight was calculated separately for Asian/Pacific Islander (API) students and non-Asian/Pacific Islander students to account for the oversampling of API students. For API students, the within-school student weight is the total number of API kindergarten students in the school divided by number of API kindergarten students sampled in the school. For non-API students, the within-school student weight is the total number of non-API kindergarten students in the school divided by number of non-API kindergarten students sampled in the school. The student-level base weight was then adjusted for nonresponse for different components of the study. The weight used with data collected in the base-year parent interview (W1\_2P0), which is the weight used to produce the estimates found in this report, is the base-year child weight adjusted for nonresponse to the fall or spring parent interview. Only those students with parent interview data from either the fall or spring data collection have a valid weight (i.e., a weight greater than 0) for W1\_2P0. This weight sums to the population of all children who attended kindergarten or were of kindergarten age and being educated in an ungraded setting in the United States in the 2010-11 school year.

In addition to properly weighting the data in this report, special procedures for estimating the statistical significance of the estimates were employed, because the data were collected using a complex sample design. Complex sample designs, like that used in the ECLS-K:2011, result in data that violate the assumptions that are normally required to assess the statistical significance of results. The standard errors of the estimates from complex surveys may vary from those that would be expected if the sample were a simple random sample and the observations were independent and identically distributed random variables. The Taylor series method was used to compute approximately unbiased estimates of the standard errors of the estimates in the report.<sup>5</sup> Specifically, SVY commands were used in the STATA statistical software package to identify variance stratum and variance unit identifiers associated with the

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<sup>4</sup> The approach used to develop weights for the ECLS-K:2011 is described in the *Early Childhood Longitudinal Study, Kindergarten Class of 2010-11 (ECLS-K:2011), User's Manual for the ECLS-K:2011 Kindergarten Data Files and Electronic Codebook* (forthcoming).

<sup>5</sup> More detail about the Taylor series method is provided in the *Early Childhood Longitudinal Study, Kindergarten Class of 2010-11 (ECLS-K:2011), User's Manual for the ECLS-K:2011 Kindergarten Data Files and Electronic Codebook* (forthcoming).



full sample weight (W1\_2P0STR and W1\_2P0PSU, respectively) and to produce the standard errors used when testing group differences.

### **Statistical Procedures**

Comparisons made in the text were tested for statistical significance at the  $p < .05$  level to ensure that the differences were larger than might be expected due to sampling variation. When comparing estimates between categorical groups (e.g., sex, race/ethnicity),  $t$  statistics were calculated. The formula used to compute the  $t$  statistic was

$$t = \frac{x_1 - x_2}{\sqrt{(SE_1^2 + SE_2^2)}}$$

where  $x_1$  and  $x_2$  are the estimates being compared and  $SE_1$  and  $SE_2$  are their corresponding standard errors. Due to the large sample size, many differences (no matter how substantively minor) are statistically significant. All differences reported are statistically significant at the  $p < .05$  level and at least one-fifth of a standard deviation in size. No adjustments were made for multiple comparisons.

## Glossary: Constructs and Variables Used in Analysis

### **Direct Cognitive Assessments: Reading, Mathematics, and Science**

The ECLS-K:2011 kindergarten direct cognitive assessment battery was designed to assess kindergartners' knowledge and skills in reading, mathematics, and science. Because the ECLS-K:2011 is a longitudinal study, the assessments also were designed to allow for the measurement of growth in these domains across time. The longitudinal design of the ECLS-K:2011 required that the cognitive assessments be developed to support the measurement of change in knowledge and skills demonstrated by children from kindergarten entry through the spring of fifth grade. The ECLS-K:2011 reading and math specifications were based on the frameworks developed for the National Assessment of Educational Progress. Although the NAEP assessments are administered starting in fourth grade, the specifications were extrapolated down to kindergarten based on current curriculum standards from several states and, for math, the National Council of Teachers of Mathematics *Principles and Standards for School Mathematics*. The frameworks necessarily cover content strands applicable to a range of content at different grade levels, for example from number sense (i.e., basic knowledge of numbers) to algebra in mathematics. Content appropriate for most kindergartners was included in the kindergarten assessments. For example, in the kindergarten math assessment, the "algebra" content strand was assessed through children's recognition of patterns. While the assessments were designed to contain mostly items that assessed knowledge and skills at a kindergarten level, easier and more difficult items were included to measure the abilities of students performing below or above grade level.

The cognitive assessments were individually administered by trained assessors using computer-assisted technology and small easel test books containing the assessment items. The reading and mathematics assessments were administered in both the fall and spring data collections using two-stage adaptive tests. For each assessment, the first-stage was a routing section that included items covering a broad range of difficulty. A child's performance on the routing section determined which one of three second-stage tests (low, middle, or high difficulty) the child was administered. The second-stage tests varied by level of difficulty so that a child would be administered questions appropriate to his or her demonstrated level of ability for each of these cognitive domains. The purpose of this adaptive assessment design was to maximize accuracy of measurement while minimizing administration time.

Kindergarten science knowledge and skills were measured using a 20-item assessment that was administered only in the spring data collection. All students were administered the entire assessment. A two-stage design was not needed for science because the length of the test was relatively short with respect to both time (approximately 10 minutes) and the number of items.

Most sampled students participated in the cognitive assessments regardless of disability status or home language, though there were some exceptions. Students whose Individualized Education Programs (IEPs) indicated that they should not participate in standardized assessments were excluded from the assessments. Also, students who required an assessment in Braille, students who required a sign language interpreter, and students whose IEPs required them to be assessed using large print materials were excluded from the assessments because the study did not provide these accommodations. Though these exclusions do result in the assessment data not being generalizable to students with these particular needs, less than 1 percent of all students were excluded due to needs that were not accommodated. To the greatest extent possible, other necessary accommodations (for example allowing a health care aid to be present during the assessment) were allowed so that students with disabilities could be included.

The components of the ECLS-K:2011 assessment administered to children who spoke a language other than English at home depended on the children's performance on a language screener used in the fall and spring data collections. The screener consisted of two tasks from the Preschool Language Assessment

Scale (*preLAS* 2000) (Duncan and De Avila 1998).<sup>6</sup> The “Simon Says” task required children to follow simple, direct instructions given by the assessor in English. The “Art Show” task was a picture vocabulary assessment that tested children’s expressive vocabulary. All children, regardless of home language, were administered the language screener as the first component of the direct cognitive assessment. For children whose home language was English, the screener primarily served as a warm-up or practice for the rest of the assessment since the items were of low difficulty. While the screener also served as a warm-up for children whose home language was one other than English, in addition it determined whether the children understood English well enough to receive the full direct child assessment in English.

All children also received the first 18 items of the reading assessment in English, regardless of their home language or performance on the *preLAS* tasks. These items, plus two items from the *preLAS* “Art Show” task (a total of 20 items), comprise the section of the reading assessment referred to as the English basic reading skills (EBRS) section because they measure such skills. Once the EBRS items were administered, children whose home language was not English who achieved a score of 16 or higher on the language screener were administered the remaining assessments, including the rest of the reading assessment, in English. Spanish-speaking children who did not achieve at least the minimum score on the screener (i.e., 16) were administered a short reading assessment in Spanish that measured Spanish early reading skills (SERS), as well as the mathematics and executive function assessments that had been translated into Spanish.<sup>7</sup> Students whose home language was one other than English or Spanish and who did not achieve at least the minimum score on the screener were not administered any cognitive assessments except for the language screener and EBRS.

**Reading [X1RSCAL, X2RSCAL].** This report presents information on students’ overall reading knowledge and skills in the fall and spring of kindergarten. The possible range of scores was 0 to 83. The reading assessment included questions measuring basic skills (print familiarity, letter recognition, beginning and ending sounds, rhyming words, word recognition), vocabulary knowledge, and reading comprehension (including locate/recall questions, integrate/interpret questions, and critique/evaluate questions about text the children were asked to read). Reading comprehension questions were asked only of children who could read. Locate/recall questions asked children to identify information explicitly stated in the text, such as definitions, facts, and supporting details, and to make simple inferences within and across texts. Questions in the integrate/interpret category asked children to make inferences within and across texts to describe problem and solution, or cause and effect. Questions also assessed the children’s ability to go beyond the text to arrive at a logical conclusion. Items in this category also asked the child to summarize ideas, draw conclusions, or predict outcomes. The content strand “critique/evaluate” involved asking the children questions about stories they read to demonstrate their understanding of the text. The design of the reading assessment allowed for the computation of reading scores for all children, regardless of home language and English proficiency.

**Mathematics [X1MSCAL, X2MSCAL].** This report presents information on students’ overall mathematics knowledge and skills in the fall and spring of kindergarten. The possible range of scores was 0 to 75. 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 (measured with a set of simple questions assessing children’s ability to read a graph); and pre-algebra skills such as identification of patterns. For the mathematics assessment, most text that the children could see on the easel pages (for example, question text for word problems or graph labels) was read to the children to

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<sup>6</sup> Duncan, S.E. and De Avila, E. A., *preLAS* 2000 Cue Picture Book English Form C, CTB/McGraw-Hill Companies, Inc., 1998.

<sup>7</sup> Spanish-speaking children who did achieve at least the minimum score on the language screener were only assessed in English. They were not administered any of the assessments in Spanish.

reduce the likelihood that their reading ability would impact their mathematics assessment performance.<sup>8</sup> Paper and pencil were offered to the children to use during the mathematics assessment, and children were periodically reminded of their availability as part of the assessment protocol. The assessment also contained several items for which wooden blocks were available for students to use in solving the problems. However, students were not required to use blocks.

Spanish-speaking students who did not pass the language screener were administered the mathematics assessment that had been fully translated into Spanish. The mathematics assessment was not administered to students whose home language was one other than English or Spanish who did not achieve at least the minimum score on the screener.

### **Student and Family Characteristics**

A number of variables used in this report were derived by combining information from one or more questions in the ECLS-K:2011 study instruments. More information on the derivation of key variables is provided in Chapter 7 of the *Early Childhood Longitudinal Study, Kindergarten Class of 2010-11 (ECLS-K:2011), User's Manual for the ECLS-K:2011 Kindergarten Data Files and Electronic Codebook* (forthcoming).

**Student's sex [X\_CHSEX].** This composite variable is based primarily on information obtained from the school at the time of sampling. If the parent indicated during the parent interview that the student's sex was different from that recorded in the field management system (which contained information collected from the school at the time of sampling), then the parent interview information was used to create the composite.

**Student's birth month and year [X\_DOBMM, X\_DOBYY].** The child's date of birth composite variable was derived from information collected during the parent interview and from the school at the time of sampling. Children were grouped into seven categories based on their birth month and year: born before January 2004, born between January and August 2004, born between September and December 2004, born between January and April 2005, born between May and August 2005, born between September and December 2005, and born after December 2005. The categories were created to generally group children born in 2004 and 2005 into three categories per birth year, with the division between the second and third categories representing a typical cut-off for being age-eligible for kindergarten (i.e., being born in August versus being born in September). The highest and lowest categories include children attending kindergarten at an age that is atypical.

**Student's race/ethnicity [X12RACETH].** This composite variable, which takes into account both ethnicity and race, is derived from information collected from parents in the parent interview or, if parent-reported information was missing, from the school. Parent respondents were allowed to indicate that their child belonged to one or more of the following races: White, Black or African American, American Indian or Alaska Native, Asian, and Native Hawaiian or other Pacific Islander. In addition, each parent respondent was asked to identify whether his or her child was Hispanic. Hispanicity and race were used to create eight mutually exclusive categories: White, not Hispanic; Black or African American, not Hispanic; Hispanic, race specified; Hispanic, no race specified; Asian, not Hispanic; Native Hawaiian or other Pacific Islander, not Hispanic; American Indian or Alaska Native, not Hispanic; and two or more races, not Hispanic. The data file includes the categories "Hispanic, race specified" and "Hispanic, no race specified" because some parents reported a race for their Hispanic children while others did not. For this report, these two categories are collapsed into one category indicating a child is Hispanic. A student is classified as Hispanic if a parent indicated the child's ethnicity was Hispanic regardless of whether a

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<sup>8</sup> Numbers were only read to the child when the question text referenced them.

race was identified and what that race was. When race/ethnicity differences are presented in this report, White refers to White, non-Hispanic; Black refers to Black, non-Hispanic; Asian refers to Asian, non-Hispanic; Native Hawaiian or other Pacific Islander refers to Native Hawaiian or other Pacific Islander, non-Hispanic; American Indian or Alaska Native refers to American Indian or Alaska Native, non-Hispanic; and two or more races refers to two or more races, non-Hispanic.

**Poverty status [X2POVTY].** The federal poverty level status composite variable is derived from household income and the total number of household members. Parent respondents first were asked to report household income using a standard list of income categories. If a parent reported a household income indicating the household was close to or lower than 200 percent of the U.S. Census Bureau poverty threshold for a household of its size, the respondent was asked to report household income to the nearest \$1,000 (referred to as exact income). Poverty classification was determined using the reported income category, exact income when necessary, and household size. Preliminary weighted 2010 Census poverty thresholds were used to define household poverty status. Households with a total income that fell below the appropriate threshold were classified as being below the federal poverty level. Households with a total income that was at or above the poverty threshold but below 200 percent of the poverty threshold were classified in a middle category, 100 to 199 percent of the federal poverty level. Households with a total income that was at or above 200 percent of the poverty threshold were categorized as being at 200 percent of the federal poverty level or above. For example, if a household contained two members and the household income was lower than \$14,220, the household was classified as being below the federal poverty level. If a household with two members had an income of \$14,220 or more, but less than \$28,440 (200 percent of the poverty threshold for a household of two), the household was classified in the category “100 to 199 percent of the federal poverty level.” If a household with two members had an income of \$28,440 or more, the household was classified as being at 200 percent of the federal poverty level or above.

**Parents’ highest level of education [X12PAR1ED\_I, X12PAR2ED\_I].** Parents’ highest level of education is the highest level of education achieved by either of the parents or guardians in a two-parent household or by the only parent or guardian in a single-parent household. This composite is derived from parent interview information about parents’ educational attainment. Data were imputed using a hot-deck procedure if they were not obtained during the parent interview but a parent completed at least a portion of the parent interview in either the fall or spring data collection.

For this report, the parent education composite variable available on the data file was collapsed into five categories: less than high school diploma or equivalent, high school diploma or equivalent, some college or vocational degree, Bachelor’s degree, and graduate/professional school. Those with an Associate’s degree are included in the “some college or vocational degree” category.

**Family type [X1HPARNT].** This composite variable is derived from information collected during the fall 2010 parent interview about the number and type of parents in the home. For this report, the composite was collapsed into a three-category variable: two parents, single parent, and other. Two parents includes two biological parents, two adoptive parents, and one biological/adoptive parent and one other parent/partner. One parent refers to one biological or adoptive parent only. Other refers to related and/or unrelated guardians.

**Primary home language [X12LANGST].** This composite variable indicates whether English was the primary language spoken in a student’s home or whether a non-English language was the primary language spoken, according to information collected in the parent interview. If English was the only language spoken in the home, or if a language other than English was spoken in the home but the primary language of the household was English, a student is classified as coming from a home in which the primary language was English. If a language other than English was the primary language spoken in the

home, a student is classified as coming from a home in which the primary language was not English, even if English was also spoken. In some instances, children lived in a home where more than one language, including English, was spoken and the parent respondent could not choose a primary language. These children are coded in a third category indicating that a primary language was not identified. Children whose parents indicated they spoke more than one language equally are categorized in the third category.

**School type [X1PUBPRI].** This variable indicates whether a study student attended a public or private school in the fall of kindergarten. Public schools included Bureau of Indian Education schools, public schools of choice (e.g., charter schools), and public schools with magnet programs. Private schools included Catholic schools, other religious private schools, and nonreligious private schools.

**Student's Body Mass Index (BMI) [X1BMI, X2BMI].** Student's height and weight were measured as part of the child assessment activities in both the fall and spring data collections. The composite variables indicating Body Mass Index were calculated by multiplying the child's weight in pounds by 703.0696261393 and dividing by the square of the child's height in inches (Keys et al. 1972; Mei et al. 2002).<sup>9</sup>

According to the Centers for Disease Control and Prevention (CDC), determination of a child as being underweight, a healthy weight, overweight, or obese is based on the percentile into which the child's BMI falls, given the child's age and sex, rather than strictly the numerical value for BMI as is used for adults.<sup>10</sup> A child's weight status is categorized according to percentile ranges based on comparisons of the child's BMI number to other children of the same sex and age. The categories for children determined in this way are as follows: underweight if the child's BMI is lower than the 5th percentile, healthy weight if the child's BMI falls in the 5th percentile to less than the 85th percentile, overweight if the child's BMI falls in the 85th to less than the 95th percentile, and obese if the child's BMI is equal to or greater than the 95th percentile, given the child's age and sex. Using the CDC 2000 growth charts, which report BMI percentiles by half-year age groupings, a boy age 5.0 to 5.49 years is considered to be a healthy weight if his BMI is approximately 13.9 to less than 16.9, while a girl age 5.0 to 5.49 years is considered to be a healthy weight if her BMI is approximately 13.5 to less than 17.1. A boy age 5.5 to 5.99 years is considered to be a healthy weight if his BMI is approximately 13.8 to less than 17.1, while a girl age 5.5 to 5.99 years is considered to be a healthy weight if her BMI is approximately 13.5 to less than 17.5. The BMI percentile values reported here were taken from *2000 CDC Growth Charts for the United States: Methods and Development* (Kuczmarski et al. 2002). For more information on BMI for children, see [http://www.cdc.gov/healthyweight/assessing/bmi/childrens\\_bmi/about\\_childrens\\_bmi.html](http://www.cdc.gov/healthyweight/assessing/bmi/childrens_bmi/about_childrens_bmi.html).

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<sup>9</sup> Keys, A., Fidanza, F., Karvonen, M.J., Kimura, N., and Taylor, H.L. (1972). Indices of Relative Weight and Obesity. *Journal of Chronic Disease*, 25: 329-343.

Mei, Z., Grummer-Strawn, L., Pietrobelli, A., Goulding, A., Goran, M., and Dietz, W.H. (2002). Validity of Body Mass Index Compared With Other Body-Composition Screening Indexes for the Assessment of Body Fatness in Children and Adolescents. *American Journal of Clinical Nutrition*, 75 (6): 978-985.

<sup>10</sup> For children, BMI is often referred to as BMI-for-age because categorization of BMI is age- and sex-specific. However, for ease of presentation, this report refers to children's BMI-for-age as BMI.

## **Appendix B: Standard Error Tables**

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Table A-1. Standard errors of the percentage distribution of children in kindergarten for the first time in the 2010-11 school year, by child, household, and school characteristics: School year 2010-11

Characteristics	Population	Percent
Total	175,420	†
Child's sex		
Male	90,843	0.4
Female	87,108	0.4
Child's birth month and year		
Born before January 2004	1,205	#
Born January-August 2004	11,964	0.3
Born September-December 2004	53,444	0.8
Born January-April 2005	54,509	0.4
Born May-August 2005	57,996	0.5
Born September-December 2005	30,962	0.8
Born after December 2005	3,502	0.1
Child's race/ethnicity <sup>1</sup>		
White, non-Hispanic	125,809	2.0
Black, non-Hispanic	54,498	1.4
Hispanic	56,686	1.4
Asian, non-Hispanic	21,032	0.6
Native Hawaiian or other Pacific Islander, non-Hispanic	3,966	0.1
American Indian or Alaska Native, non-Hispanic	19,647	0.6
Two or more races, non-Hispanic	12,223	0.3
Poverty status <sup>2</sup>		
Income below the federal poverty level	47,524	1.2
Income between 100 and 199 percent of the federal poverty level	36,332	0.6
Income at or above 200 percent of the federal poverty level	95,652	1.5
Parents' highest level of education		
Less than high school diploma or equivalent	23,527	0.6
High school diploma or equivalent	36,006	0.6
Some college or vocational degree	62,848	0.7
Bachelor's degree	44,082	0.6
Graduate/professional school	44,702	0.8
Family type in fall 2010 <sup>3</sup>		
Two parents	137,228	0.9
One parent	43,715	0.9
Other	5,390	0.2
Primary home language		
Not English	36,960	1.0
English	159,462	1.0
Multiple home languages, no primary language identified	5,320	0.1
School type in fall 2010		
Public	172,311	1.0
Private	32,880	1.0

† Not applicable.

# Rounds to zero.

<sup>1</sup> Black, non-Hispanic includes African American. Hispanic includes Latino.

<sup>2</sup> Poverty status is based on preliminary U.S. Census thresholds for 2010, which identify incomes determined to meet household needs, given size. For example, in 2010 a family of two was below the poverty threshold if its income was lower than \$14,220.

<sup>3</sup> Two parents includes two biological parents, two adoptive parents, and one biological/adoptive parent and one other parent/partner. One parent refers to one biological or adoptive parent only. Other refers to related and/or unrelated guardians.

NOTE: Estimates based on a preliminary version of the Early Childhood Longitudinal Study, Kindergarten Class of 2010-11 (ECLS-K:2011) restricted-use data file. Estimates produced with the final restricted-use data file, or the public-use data file, may vary. Estimates were weighted by W1\_2P0. Detail may not sum to total due to rounding and/or missing data.

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

Table A-2. Standard errors of mean reading and mathematics scale scores for children in kindergarten for the first time in the 2010-11 school year, by child, household, and school characteristics: School year 2010-11

Characteristics	Reading		Mathematics	
	Fall 2010	Spring 2011	Fall 2010	Spring 2011
Total	0.25	0.29	0.27	0.33
Child's sex				
Male	0.28	0.32	0.28	0.36
Female	0.28	0.32	0.30	0.33
Child's birth month and year				
Born before January 2004	4.12	4.20	5.85	6.58
Born January-August 2004	0.59	0.60	0.59	0.74
Born September-December 2004	0.38	0.37	0.32	0.34
Born January-April 2005	0.30	0.35	0.28	0.34
Born May-August 2005	0.29	0.34	0.34	0.38
Born September-December 2005	0.66	0.72	0.58	0.60
Born after December 2005	2.90	4.09	3.02	4.24
Child's race/ethnicity <sup>1</sup>				
White, non-Hispanic	0.34	0.34	0.34	0.43
Black, non-Hispanic	0.51	0.52	0.43	0.44
Hispanic	0.40	0.37	0.36	0.36
Asian, non-Hispanic	0.58	0.57	0.43	0.39
Native Hawaiian or other Pacific Islander, non-Hispanic	1.79	1.76	1.40	1.60
American Indian or Alaska Native, non-Hispanic	1.14	1.06	1.61	1.42
Two or more races, non-Hispanic	0.61	0.52	0.58	0.55
Poverty status <sup>2</sup>				
Income below the federal poverty level	0.34	0.35	0.37	0.41
Income between 100 and 199 percent of the federal poverty level	0.31	0.39	0.33	0.43
Income at or above 200 percent of the federal poverty level	0.31	0.34	0.23	0.31
Parents' highest level of education				
Less than high school diploma or equivalent	0.37	0.45	0.39	0.48
High school diploma or equivalent	0.33	0.37	0.30	0.32
Some college or vocational degree	0.25	0.30	0.28	0.39
Bachelor's degree	0.33	0.32	0.22	0.30
Graduate/professional school	0.39	0.39	0.31	0.33
Family type in fall 2010 <sup>3</sup>				
Two parents	0.27	0.29	0.27	0.33
One parent	0.30	0.36	0.33	0.39
Other	0.70	1.00	0.70	0.78
Primary home language				
Not English	0.46	0.54	0.43	0.47
English	0.26	0.30	0.27	0.35
Multiple home languages, no primary language identified	1.11	1.19	0.87	0.91
School type in fall 2010				
Public	0.27	0.32	0.29	0.36
Private	0.63	0.65	0.52	0.58

<sup>1</sup> Black, non-Hispanic includes African American. Hispanic includes Latino.

<sup>2</sup> Poverty status is based on preliminary U.S. Census thresholds for 2010, which identify incomes determined to meet household needs, given size. For example, in 2010 a family of two was below the poverty threshold if its income was lower than \$14,220.

<sup>3</sup> Two parents includes two biological parents, two adoptive parents, and one biological/adoptive parent and one other parent/partner. One parent refers to one biological or adoptive parent only. Other refers to related and/or unrelated guardians.

NOTE: The assessment scale was 0-83 for the reading assessment and 0-75 for the mathematics assessment. Estimates based on a preliminary version of the Early Childhood Longitudinal Study, Kindergarten Class of 2010-11 (ECLS-K:2011) restricted-use data file. Estimates produced with the final restricted-use data file, or the public-use data file, may vary. Estimates were weighted by W1\_2P0. Detail may not sum to total due to rounding and/or missing data.

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

Table A-3. Standard errors of mean Body Mass Index (BMI) of children in kindergarten for the first time in the 2010-11 school year, by child, household, and school characteristics: School year 2010-11

Characteristics	Body Mass Index	
	Fall 2010	Spring 2011
Total	0.04	0.04
Child's sex		
Male	0.04	0.04
Female	0.05	0.05
Child's birth month and year		
Born before January 2004	1.33	1.31
Born January-August 2004	0.12	0.12
Born September-December 2004	0.06	0.08
Born January-April 2005	0.05	0.05
Born May-August 2005	0.04	0.04
Born September-December 2005	0.10	0.10
Born after December 2005	0.27	0.27
Child's race/ethnicity <sup>1</sup>		
White, non-Hispanic	0.05	0.05
Black, non-Hispanic	0.08	0.10
Hispanic	0.06	0.06
Asian, non-Hispanic	0.08	0.08
Native Hawaiian or other Pacific Islander, non-Hispanic	0.53	0.50
American Indian or Alaska Native, non-Hispanic	0.16	0.19
Two or more races, non-Hispanic	0.11	0.11
Poverty status <sup>2</sup>		
Income below the federal poverty level	0.06	0.07
Income between 100 and 199 percent of the federal poverty level	0.06	0.07
Income at or above 200 percent of the federal poverty level	0.04	0.04
Parents' highest level of education		
Less than high school diploma or equivalent	0.10	0.09
High school diploma or equivalent	0.06	0.06
Some college or vocational degree	0.04	0.05
Bachelor's degree	0.05	0.05
Graduate/professional school	0.05	0.05
Family type in fall 2010 <sup>3</sup>		
Two parents	0.04	0.04
One parent	0.06	0.07
Other	0.13	0.14
Primary home language		
Not English	0.06	0.06
English	0.04	0.04
Multiple home languages, no primary language identified	0.24	0.27
School type in fall 2010		
Public	0.04	0.04
Private	0.07	0.08

<sup>1</sup> Black, non-Hispanic includes African American. Hispanic includes Latino.

<sup>2</sup> Poverty status is based on preliminary U.S. Census thresholds for 2010, which identify incomes determined to meet household needs, given size. For example, in 2010 a family of two was below the poverty threshold if its income was lower than \$14,220.

<sup>3</sup> Two parents includes two biological parents, two adoptive parents, and one biological/adoptive parent and one other parent/partner. One parent refers to one biological or adoptive parent only. Other refers to related and/or unrelated guardians.

NOTE: Using the CDC 2000 growth charts, a boy age 5.0 to 5.49 years is considered to be a healthy weight if his BMI is 13.9 to less than 16.9. A girl age 5.0 to 5.49 years is considered to be a healthy weight if her BMI is 13.5 to less than 17.1. A boy age 5.5 to 5.99 years is considered to be a healthy weight if his BMI is 13.8 to less than 17.1. A girl age 5.5 to 5.99 years is considered to be a healthy weight if her BMI is 13.5 to less than 17.5. Estimates based on a preliminary version of the Early Childhood Longitudinal Study, Kindergarten Class of 2010-11 (ECLS-K:2011) restricted-use data. Estimates produced with the final restricted-use data, or the public-use data, may vary. Estimates were weighted by W1\_2P0. Detail may not sum to total due to rounding and/or missing data.

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