



Color Your Own Aurora

What can these ribbons of light tell us about the Sun-Earth connection?

Description

Use stencils to imagine and color a unique aurora image.

Age Level: 5 and up



Materials

- White paper
- Black construction paper
- Oil pastels or colored chalk (with at least two different colors)
- Scissors
- Tissue, paper towel, or recycled fabric scraps



Time

Preparation: 5 minutes
Activity: 30 minutes
Cleanup: 5 minutes

Safety

Have an adult help you cut out the stencils.

Step 1

Starting on the shorter side, cut a piece of white paper in half using a wavy path for your scissors. Choose the half you like the best. This long wavy shape is your stencil.



Tip

Keep the other half to have two stencils—or share it with a friend to make an aurora with you.

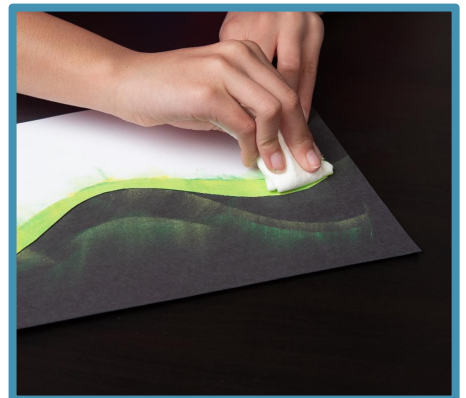
Step 2

Using one color of pastels or chalk, completely color the long wavy edge of the stencil (about a finger's width).



Step 3

Place your colored stencil on top of a piece of black construction paper. Position it where you want your aurora to start. While holding down your stencil with one hand, use a tissue, paper towel, or fabric scrap to smudge the color from your stencil onto the black paper.



Step 4

Recolor over the wavy edge of your stencil, or use a fresh stencil. Again, smudge the color onto the black paper to add another layer to your colorful aurora. Keep going—add more layers or try a different color.

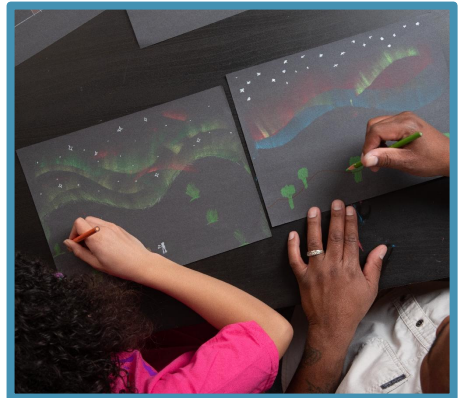
Tip

Use a clean piece of tissue, paper towel, or fabric scrap to smudge if you are using a new color.



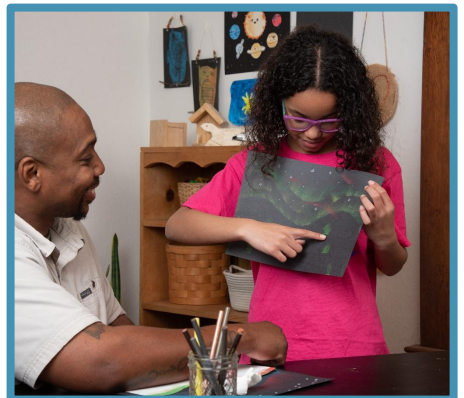
Step 5

People often travel far away from the bright lights of towns and cities to see the aurora better in darker night skies. Get creative and finish your aurora with a quiet scene in the wilderness under the night sky. Maybe some stars, trees, or a campfire?



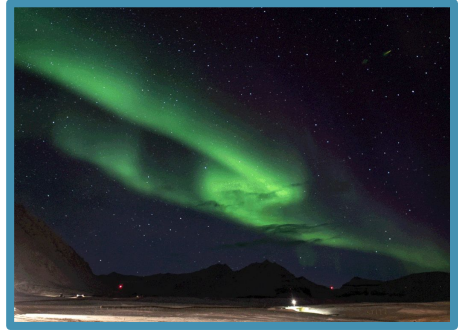
Step 6

Share your aurora creation with a friend or family member! What is their favorite part? Help them create their own aurora!



What's going on?

The colorful lights of the aurora provide spectacular views, but they also help scientists understand how the Sun interacts with the rest of the solar system. Earth and the other planets orbit through a flow of charged particles from the Sun called the solar wind. Auroras occur when charged particles of the solar wind collide with gases in Earth's upper atmosphere. Those collisions produce tiny flashes of light that fill the sky with color. As billions of flashes occur in sequence, the auroras appear to move or dance in the sky. Earth's magnetic field steers the charged particles of the solar wind toward the planet's poles, which is why auroras are often called the Northern Lights (or Southern Lights). Understanding how and why auroras occur helps us learn more about the complex space environment around our planet.

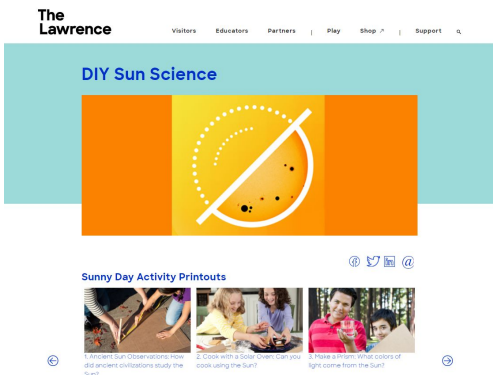


What causes the different colors of an aurora?

The color range of an aurora is due to the different gases in Earth's atmosphere. Auroras mostly glow green, but can often include red and blue colors as well. Earth's atmosphere consists mainly of nitrogen and oxygen, which emit specific colors when interacting with particles from the solar wind. Oxygen emits green or red light. Nitrogen emits more of a blue light. Sometimes all of these colors mix and form strange combinations, like yellow or pink light.



Learn More



For more info and other activities, visit:

LawrenceHalofScience.org/do-science-now/diy-sun-science

Credits



The DIY Sun Science app allows families and educators to investigate and learn about the Sun at home, at school, or anywhere you go! The app provides 15 hands-on investigations, images, and videos.

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Activity inspired by "Make a Pastel Aurora!" NASA Space Place and "Aurora Chalk Art", University of Alaska, Museum of the North. Slide 9, 10, NASA's Goddard Space Flight Center. Slide 11, NASA.



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