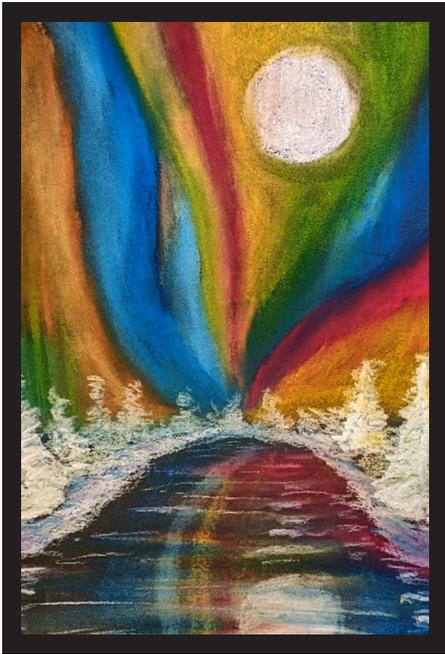


# Auroras Over a Lake



*Lesson adapted from Art Makes U Smart*

## Grade Level

Fourth Grade

## Key Vocabulary

- Aurora Borealis
- Atom
- Photon
- Atmosphere

## Materials

- Images of auroras
- Tru-Ray® Black Construction Paper, #103029, and #103061
- Creativity Street® Square Artist Pastels, #AC9748, #AC9712, #AC9750, or #AC9724

## Objective

Students will be able to describe how auroras are formed in the earth's atmosphere, where they are usually located, and create their own artwork depicting this phenomenon.

## Standards

### NGSS: 4-PS3-2, 4-PS3-3

Energy is present whenever there are moving objects, sound, light, or heat. When objects collide, energy can be transferred from one object to another. Light also transfers energy from place to place.

### VA:Cr2.1.4a

Explore and invent art-making techniques and approaches.

### VA:Cr2.2.4a

When making works of art, utilize and care for materials, tools, and equipment in a manner that prevents danger to oneself and others.

## Engagement

1. Ask students if they've ever heard of an Aurora Borealis, or the Northern Lights. Ask students who are familiar with them to share what they know. Show the class images of auroras.
2. Give some scientific background on auroras, and have students do their own research and share findings with the class. Explain that auroras are formed at the magnetic poles of the earth. The lights from an aurora form when electrically charged particles from the sun enter earth's magnetic shield. Atoms collide with these particles and create photons, little bursts of light. (Students should have some background knowledge about the transfer of energy from third grade science concepts.) Students may be familiar with some elements that are found in our atmosphere, such as oxygen. When oxygen is present, auroras appear yellow/green or red depending on their height in the atmosphere. Sometimes, when nitrogen is present, auroras will appear blue or a beautiful reddish purple.
3. Tell students they will be creating their own artwork featuring auroras using pastels and black paper.

## Step 1



## Activity

1. Supply each student with black construction paper. With the paper in portrait format, use a white pastel to draw a moon, slightly off center, in the upper third of the paper.
2. The top two-thirds of the paper will be the sky. Use red, orange, yellow, blue and green pastels to make vertical curved bands of color around the moon to completely fill the sky.
3. When the entire sky is filled with color, it is time to blend. Using one fingertip at a time, blend some of the pastel bands. Avoid mixing colors you don't want to blend, and make sure to wipe your fingertips with a wet wipe when switching between colors you're blending. Continue blending until the entire sky is blended, but be careful to not blend the colors into the moon.
4. When you've finished blending, there will be piles of excess pastel dust. DO NOT blow or wipe the dust off of the paper. Instead, tip your art so it's tilted toward a paper towel on the table, and tap the backside of the paper.

## Step 2



### Tips for working with pastels:

Hold your pastel *on its side* to make wide bands of color quickly.

Hold your pastel *like a pencil* to create lines that are sharply defined and saturated with color. You can alternate stripes of color in the same section of sky. When blending later, it will create a new color.

## Step 3



## Step 5



## Step 6



## Step 7



## Step 8



## Step 9



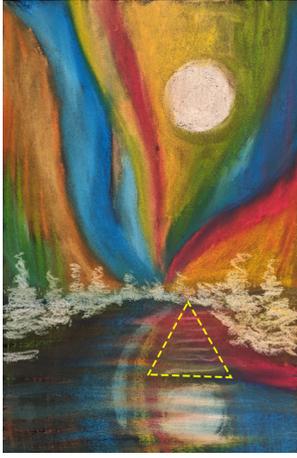
## Step 10



5. Next, work on the reflection of the aurora in the bottom third of the paper, which will be the lake. Start by drawing a mirror image of the moon where it would be reflecting on the lake.
6. Use the same colors you used in the sky to draw a mirror image of the bands of color reflecting on the lake in the bottom third of the paper. Make sure to leave some areas in this section black. This will help it to look like a lake at night.
7. Once the lake has the reflected colors shaded in, use a fingertip and blend the colors in the bottom third of the paper in a horizontal motion. The colors will blend slightly and bands will blend together. This effect will heighten the impression of a wavy lake reflection.
8. After blending is complete, tip the artwork over a paper towel again, and tap the backside of the paper to remove excess pastel dust.
9. Next, use a white pastel to draw a horizon line. Below the horizon line, draw a shallow curve with the top of the curve just below the horizon line.
10. Begin drawing in trees, starting from the top of the curve and extending just slightly above the horizon line. Continue drawing trees. Trees that are closest to the edges of the paper should be the largest, while trees closest to the center should appear smallest.

Note: Since the trees are being drawn in an area of the paper that already has pastels on it, some of the color under the trees will blend with the white. That is a good thing! It will look like color reflected from the sky.

## Step 11



11. Remind students that in this scene, the moon is the light source and it creates highlights on the water and trees. Use the white pastel to add highlights and reflections of the trees in the water. In the lake, there should be a triangular path of highlights from the reflected moon to the shore. To create realistic highlights in the water, draw the lines closer together and thinner the further they are from the viewer. Lightly blend the highlight lines with a finger tip.
12. Add some snow at the bottom of the trees to create a small snow bank. Then, use a purple and dark blue pastel to add shadows from the trees into the snow bank. Finally, use a white pastel to add more highlight to the sides of the trees that face the moon, and to the surface of the lake.

## Step 12



13. Mount this paper on the 12" x 18" black construction paper.

## Assessment

Have students write a paragraph describing where auroras can be found, why they take place, and an interesting detail about them from their research. Students should be able to explain that auroras come from charged particles in the earth's atmosphere, and that they can be found near the earth's poles.

## Step 13

