Cross-Curricular Activities Connected to Earth Science, Grade K

The following activities from ***Weather and Sky,*** integrate math, social studies, English Language Arts (ELA), art, and more into earth science topics. These cross-curricular connections help students see how science is related to their lives, and the world they live in. These activities reinforce and extend ideas about patterns in weather conditions and how weather affects our daily lives and are perfect for learning-from-home lesson plans. Permission is granted to incorporate these activities into teacher and parent lesson plans.

Classroom Mobile (Art)

Turn your classroom's ceiling into the sky. Designate half of your ceiling for the daytime sky and half for nighttime sky. Make art supplies available and give each student a paper plate to turn into an object that appears in the sky. Hang students' artwork from the ceiling using paper clips, yarn, or hooks to create a classroom mobile. Students will enjoy looking at the artwork above them and will be continually reminded of objects that appear in the daytime and the nighttime skies.

What Object Am I? (ELA)

Create flashcards of objects from the class comparison chart that appear in the daytime and nighttime skies. Have small teams take turns giving clues about the objects and guessing what they are. Students who are still developing their vocabulary may choose to act out the objects or draw objects rather than provide verbal clues.

The Night Sky from Space (Science)

Visit NASA's Earth Observatory site to share images of Earth at night from space. Show students what nighttime looks like around the world from space. Discuss with students what they notice as they view the different images. Enhance the discussion of the nighttime sky by introducing light pollution and how it affects what we can see at night.

Lesson 2

Learn More About the Weather (Social Studies)

Visit the Education page at the National Weather Service's website to explore weather through games, activities, and lessons. Then arrange a visit to a local TV station or invite a meteorologist to your class. Encourage students to come up with questions before their visit.

What's Your Favorite Weather? (Math)

Poll the class to see which weather type students prefer: hot and sunny, cold and sunny, hot and rainy, or cold and rainy. Tally the votes and graph the collected survey data as a bar graph and pictograph.

Interpreting a Weather Forecast (Science and ELA)

Print the weekly weather forecast and post it in your classroom. Explain that a forecast is a prediction of what the weather will be for the week. At the end of each day, look at the weather forecast and compare it with students' direct observations. Encourage students to act out their direct observations of the weather conditions in the form of a skit in pairs or larger groups.

Pair Example:

- Student One: "What is the temperature Today?"
- Student Two: "It is cold outside!"

Group Example:

- Student One: Today's temperature is cold. (student shivers)
- Student Two: It is partly cloudy. (points at the clouds in the sky)
- Student Three: There is some wind. (sways back and forth gently)
- Student Four: It is snowing! (wiggles fingers from up high toward the ground)

Snowy Day (ELA)

As a class, read The Snowy Day by Ezra Jack Keats about the first snowfall through the eyes of a young child. Next, provide art supplies and have students create their own pictures of their first experience with snow or what they would do if they saw snow for the first time. Create a class display of students' pictures.

Precipitation Model (Science)

Pour 2–3 inches of hot tap water into a large, wide-mouth plastic container. Place several ice cubes in an aluminum pie pan and then place it right-side up on top of the container. Ask students to carefully observe what happens and to record their observations in their science notebooks. In this model, the aluminum pie pan causes the moisture trapped in the large container to condense and form water droplets. In the atmosphere, warm, moist air rises and meets colder temperatures high in the sky. The water vapor condenses and forms precipitation that falls back down to the ground.

Owlie Skywarn™ (Science)

The Owlie Skywarn™ page has numerous games, activities, and lessons related to weather and weather safety. Share this page with students and their families to extend their learning about weather and encourage them to explore the age-appropriate learning opportunities on the site.

Ready (Social Studies)

Ready is a public safety campaign launched in the United States in 2003. Visit the site to gather information to share with your class about natural disasters, including how to prepare an emergency plan and build an emergency kit. Invite an emergency responder or public official to your class to discuss how they prepare for and notify people in the event of an emergency.

Tornado (ELA)

Move the tornado vortex models to a learning center. Encourage students to investigate how changing the way they move the bottles changes the tornado vortex. Have students write or draw their observations in their science notebooks.

Change in Temperature (Science and Art)

Place the plastic thermometer in an area of the classroom for students to further explore temperature. They might want to observe what happens to the temperature in different scenarios, such as in a sunny window or in cold water. Encourage students to draw what they observe.

Dressing for the Temperature (ELA and Art)

Have available newspapers, magazines, or catalogs as well as scissors and glue or tape. Prepare a sheet of paper with four quadrants. Label the quadrants “Hot,” “Warm,” “Cool,” and “Cold.” Make one copy of this sheet for each student. Encourage students to select, cut out, and glue or tape one or two examples of people wearing the appropriate clothing for each temperature word. As a class, discuss the clothing choices students made for each temperature.

The Seasons of Arnold’s Apple Tree (ELA)

Read The Seasons of Arnold’s Apple Tree by Gail Gibbons aloud to your class to give students a look at the four seasons through the eyes of Arnold and his apple tree. Encourage students to think about how the tree changes as it goes through each season and make connections to how plants react seasonally in your local area.

Make Your Own Sun Catchers (Art)

Encourage students to see how sunlight can change objects by making a sun catcher out of tissue paper and clear contact paper. Cut different colored tissue paper into shapes or encourage students to do this. Give each student a 4-inch square of clear contact paper. Direct them to place the contact paper sticky-side up and then lay tissue paper on the contact paper. Seal their artwork with another 4-inch square of clear contact paper. Cut the contact-paper square into a circle, punch a hole in the top, and add a piece of string or ribbon. Hang the finished product in a sunny window to see how the sun catcher changes during the day.

Measuring Sunlight by Observing Change (Math, ELA, and Art)

Students can use their observation skills to investigate whether the Sun is always in the sky during the day, regardless of cloud cover, by making a Sun detector. Set up a distribution station that includes UV beads and pipe cleaners. (UV beads are available at most large craft supply stores.) Direct each student to count out 10 beads and put them on a pipe cleaner. As students finish threading the beads onto their pipe cleaner, join the ends together and twist to form a circle. Slide one bead over the joined ends of the pipe cleaner so that all rough edges are covered, and the circle is smooth to the touch. Ask students to observe the color of the beads on their pipe cleaner.

Take students and their Sun detectors outside on a sunny day, a cloudy day, and a partly cloudy day, and allow them to record their observations of their UV beads in their science notebooks using crayons or colored pencils. Once students have observed the beads under all three cloud conditions, discuss their findings.

Keep It Low (Science)

Put the other materials (soil, rocks, water) in a learning center, and challenge students to create another structure to investigate ways to reduce the Sun's warming effect on these other materials. Have students make observations to determine which material benefits most from the structure and which material is not helped by the structure.

Cool It Off (Engineering)

Challenge students to come up with a design and a plan to cool off the air around an object. Put the plastic thermometer and materials in a learning center for them to explore and test their idea.

Plants Need Sun (Science)

Obtain two small green plants. Have students make a prediction about what will happen if one of the plants does not have access to sunlight. Place one of the plants in sunlight and the other in a dark place. Leave the plants in these locations for 3 to 4 days. Show students the plants and ask them to compare the plant that was placed in the Sun with the one that was stored in the dark. Encourage students to come up with questions about the Sun and plants that the class could test.