

Weather Walks

Standard II

Students will gain an understanding of Earth and Space Science through the study of earth materials, celestial movement, and weather.

Objective 3

Compare changes in weather over time.

Intended Learning Outcomes

Knowing in Science: Understanding the nature of science.

Content Connections: Language Arts; Math

Background Information

Weather develops in the air that surrounds Earth. The condition of the air determines the temperature and whether the day is cloudy or clear, windy or calm. The combination of these conditions determines whether we have rain or snow. Temperature is one of these conditions. Heat from the sun warms Earth's atmosphere and surface waters. Cloudy days may be cooler than sunny days because clouds block some of the sun's warmth. Wind is moving air. Some winds are gentle; others are very strong.

There are different tools to help us observe, measure and track weather. Meteorologists are people who report and forecast the weather.

Invitation to Learn

Teach students the weather song that goes to the tune of BINGO. The words are:

We have weather everyday

Today is sunny weather.

S-U-N-N-Y, S-U-N-N-Y, S-U-N-N-Y

Today it's sunny weather.

Change the words of the song to match the weather—possibilities include: snowy, windy, rainy, foggy, cloudy.

Tell students that they are going to become weather watchers and weather walkers! Be flexible and ready to include the following activities on an appropriate day.

Instructional Procedures

Materials

One per class:

- What Makes a Shadow*
- Sidewalk chalk
- Sun Song*

Sunny Walk

1. Discuss that it can be sunny weather in the summer and in the winter. When it is sunny weather we have shadows. The sun's rays cannot pass through solid objects so shadows are the places light could not get through.
2. Read *What Makes a Shadow*.
3. Divide up into partners. Go outside and trace each others' shadows on the sidewalk with chalk.
4. You may want to go outside later and see if you can "fit" into the shadow tracings made earlier in the day. Explain how the sun appears to have moved in the sky, causing a change in the shadows.
5. *Sun Song* by Jean Marzollo describes the sun's activities from sunrise to sunset.

Family Connections

- Have students observe where the sun sets and at what time, and where the sun rises and at what time.

Materials

For the class:

- Thermometer
- Roll of paper towels
- Ziploc bag
- Two glass jars that are the same size
- Two elastic bands
- Chart paper
- Markers

For each student:

- Paintbrushes
- Bucket of water
- White construction paper
- Corn syrup
- Yellow food coloring
- Scissors

Hot Walk

1. Take a thermometer outside with you and determine where the hottest area in the playground is. Experiment with the sidewalk, a shady spot, and the sandbox. Discuss your findings.
2. After studying about shapes, draw shapes on the sidewalk with paintbrushes and water. Discuss why the water disappears.
3. Take two paper towels and wet each of them. Ask the class which one will dry first: the one you leave in the shade, or the one you leave in the sun. Take a class vote and chart your predictions and your findings. This is a good time to remind students that scientists are interested in learning, not in wanting to vote like their friends. All ideas are important.
4. Take two paper towels and wet each of them. Place one towel spread out inside. Squeeze the other towel into a small ball. Ask the class which will dry first. Chart predictions and findings. Relate this experiment to towels students might use when swimming. Ask, "Which way will your towel dry fastest; hanging up or in a pile on the floor?" Explain how air dries the towel and how we can use that knowledge to help us.

5. Take two paper towels and wet each of them. Place one in a sealed Ziploc bag and the other on a counter. Follow the procedure used in #4.
6. Fill two jars that are the same size and shape with the same amount of water. Place a rubber band around the jars to show the water level. Put a lid on one jar and leave the other without a lid. Ask the students what they think will happen. Chart their predictions. Check the jars each day for a week. Read the predictions and discuss what happened. The water without the lid evaporated because it is exposed to air. The water in the other jar stayed the same because the air stayed the same.

Language Arts and Art Connection

1. Have each child draw or trace a large sun on white construction paper.
2. Draw a dark pencil drawing (representative of a shadow) of a favorite summertime activity inside the sun. Have students write and complete the sentence, "In summer I like to _____" underneath their drawing.
3. Cut the large sun out.
4. Paint over the drawings and words with a transparent paint made by mixing one cup corn syrup with about 20 drops yellow food coloring. Let this dry a day or two.

Family Connections

- Have students do one experiment at home and report his/her findings with the class.

Wind Walk

1. Read the poem, "Who Has Seen the Wind?" by Christina Rossetti (p. 7-17).
2. Ask what happened when the wind was passing through.
3. Ask students how they can tell which direction the wind is blowing.
4. Go outside and have students run into the wind, as well as with the wind. Discuss which one is easier. Skip, hop, and twirl with the wind.
5. Give students a four foot crepe paper streamer to take outside. Experiment which way the streamer moves when you move it up and down or try to spin it.
6. Wet a finger and hold it up in the air. Ask students what they feel? The wind will cool one side as it passes by.

Materials

One per class:

Poem, "Who Has Seen the Wind?"

The Wind Blew

One per student:

Crepe paper streamers

Crayons

White construction paper

Paper strips

Glue stick

Language Arts and Art Connection

1. Read *The Wind Blew* by Pat Hutchins
2. Make a class book similar to *The Wind Blew*. Ask each student to fill in the blank “The wind blew my _____.” Write the completed sentence for each student. Then cut the sentence into individual words. Have each student glue his/her “word puzzle” together in order at the bottom of the page, illustrate his/her page with crayons, and bind the pages together into a book.
3. Let each child read his/her own page to the class.

Family Connections

- Have students make a book at home entitled, *What Moves in the Wind*. Share with the class.

Rain Walk

1. Explain that the students are going to be detectives. They are going to discover the answer to some rain questions. The questions are:
 - Where is the biggest puddle on our playground and why is it so large?
 - What do raindrops do when they land on the sidewalk?
 - What do raindrops do when they land on the grass?
 - What do raindrops do when they land on our coats?
 - What do raindrops do when they land on leaves?
2. Chart the predictions on a chart using the headings “What We Think” and “What We Learned” before the class goes outside and when they come back.
3. Have students hold foil pie plates above their heads and listen to the sound the rain makes as they stand outside. Back in the classroom, demonstrate how to tap on the back of the foil pan with a pencil to imitate the sound of the raindrop. Experiment what a thunderstorm would sound like, as well as a drizzle, a light rain, and a steady downpour.
4. Read *Wet World* by Norma Simon.
5. Experiment with hands to find other ways to make rain sounds (e.g., snapping, rubbing, clapping, etc.).

Materials

One per class

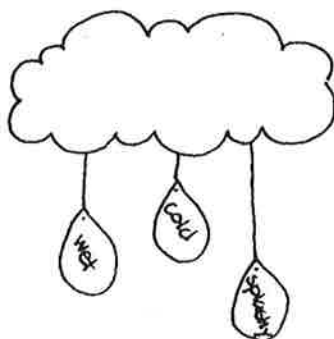
- Rain Talk*
- Wet World*

One per student

- Foil pie plates
- Blue construction paper
- String
- Paper punch
- Gray butcher paper
- Tape
- Rain gear

Language Arts and Art Connection

1. Have students cut large water drops out of blue construction paper. Write words that describe rain on both sides, such as wet, splashing, cold, etc.
2. Punch a hole at the top of each drop and tie a string of different lengths to each.
3. Cut two large clouds that are exactly the same (you may want to provide a template to trace around) out of gray butcher paper. Staple around the two clouds about half way. Stuff the cloud with scraps of paper and then finish stapling the rest.
4. Tape the ends of the strings with the water drops to the bottom of the cloud so that the water drops can dangle under the puffy cloud (see illustration).



Snowy Walk

1. Read *The Snowy Day* by Ezra Keats.
2. Have students measure how deep the snow is in different places. Discuss why it is different.
3. Take the temperature of the snow and the ground beneath. Is it different? Discuss why. How would that affect animals?
4. Collect snow in one jar and ice in another.
5. Place an elastic band around the jars to show where the snow and ice levels are. Ask the class for predictions about how much water will remain when the ice and snow melt. Will the water level be above the elastic or below the elastic? Record the answers.
6. Ask students which jar will melt faster, the ice or the snow. Record their predictions and later their answers.
7. Explain that there is more air in snow so it makes less water. The air also causes the snow to melt faster. Have students observe how clean the melted snow is. Discuss the reasons for not eating snow.

Materials

One per class

- Two glass jars
- Thermometer
- The Snowy Day*
- Yardstick
- 2 Elastic bands

K 2-3 7.5

Language Arts and Art Connection

- Have students use crayons to draw a winter tree and themselves wearing winter clothes on blue construction paper. Under supervision have students dab Q-tips into bleach to paint snowflakes on their pictures. Underneath have students finish the sentence: In winter I like to _____.

Assessment Suggestions

Student artwork and participation in each weather walk is a good assessment of whether they understand the concepts covered. Each weather walk is designed to help students become more observant and experience the weather in different ways than they might have before.

Additional Resources

What Makes a Shadow, by Clyde Robert Bulla; ISBN 0060229152

Sun Song, by Jean Marzollo; ISBN 060611937X

The Wind Blew, by Pat Hutchins; ISBN 068971744X

Wet World, by Norma Simon; ISBN 1564021904

The Snowy Day, by Ezra Jack Keats; ISBN 0670867330

Weather, by Ann Flag; ISBN 0-590-13111-7

Whatever the Weather, by Karen Wallace; ISBN 0-7894-4750-9

Shadows, by Carolyn B. Otto; ISBN 0-439-20548-4

Guess Whose Shadow, by Stephen R. Swinburne;
ISBN 0-439-26651-3

Family Connections

- Have students watch the weather on television. Have them record the temperature and the forecast for the next day.
- Have students bring weather maps from the newspaper. Let them share the information they have learned from the map.

Who Has Seen the Wind?

By Christina Rossetti

Who has seen the wind?

Neither I nor you.

But when the leaves hang trembling,

The wind is passing through.

Who has seen the wind?

Neither you nor I.

But when the trees bow down their heads,

The wind is passing by.

