

Air and Weather: Where'd My Hat Go?

by Emily Sohn and Judy Kentor Schmauss

Science Objective

Using observation and experience, children will discover that air, although unseen, is actually a material that takes up space and interacts with other objects. With a fundamental understanding of air, they will explore basic aspects of weather, including temperature, clouds, and precipitation. Children will discover how the Sun and air interact in the water cycle. By the end of this book, children will be able to “read” the weather.

iScience Puzzle: Where Did Your Hat Go?

Children are faced with three solutions to finding a hat that has blown away. The best choice, finding out which way the wind is blowing, introduces them to concepts of air. Children will learn that air is an important part of weather and that although it cannot be seen, it moves.

Objectives ► Children will:

- learn that air moves and that moving air can move other things.
- use thermometers to measure the temperature of air.
- describe the water cycle.
- learn which types of clouds produce precipitation.

Materials

- bottles of bubbles with wands
- pinwheels

Lesson Plan

Before Reading

Investigation

Tell children to take a deep breath and then blow out. Ask: *What did you breathe in? What did you blow out?*

Have children blow on their hands. Ask: *What does it feel like? Can you see the air? Can you make a piece of paper move when you blow hard on it?*

Explain that air is all around us. We cannot see it but we can feel it when it moves and we can feel when it is hot or cold. Tell children that they are going to learn about weather, and that air is an important part of weather.

Science Concepts

Breathing air in and blowing it out is one way to move air.

Air is not visible, but people can feel it when it is moving. Air can be used to move objects.

During Reading

Investigation

pp. 6–10: Bring in liquid soap, wands, and pinwheels so that children can blow bubbles and see how air can move objects. Ask: *Can you move air in different directions? Does blowing harder make a pinwheel turn faster? What's inside a bubble?*

pp. 11–12: Use a map to help children visualize a plane flying from west to east. Review the four cardinal directions as needed.

pp. 13–14: Relate the information about hot-air balloons to the soap bubbles children blew. Explain that the balloon is filled with air, just as the soap fills with air to form bubbles.

pp. 15–16: Ask: *What effect can clouds have on the temperature?*

pp. 17–18: Use the illustration to explain the water cycle. Ask children to point to each part of the illustration and restate what they have learned. Be sure they understand the Sun's role in the water cycle.

Science Concepts

Air is matter that interacts with objects. When air is moving, it has direction and speed.

The direction of wind can affect how it interacts with objects.

Air is matter and can fill containers.

Clouds can block some of the heat of the Sun from reaching the surface of Earth. Clouds look different depending on the weather. Temperature is measured with thermometers.

The Sun drives the water cycle. The water cycle follows the pattern of evaporation, condensation, precipitation, and back to evaporation.

During Reading (continued)

Investigation

p. 19: Ask: *What happened when you blew on a pinwheel or a piece of paper? What happens to clouds when the wind is blowing?* Explain that not all clouds produce precipitation.

Science Concepts

Wind is moving air. Direction and speed can be measured and described.

p. 20: Discuss the choices and the question on this page. Ask: *What else can you do besides blowing bubbles to figure out which way the wind is blowing?*

Direction and speed of moving air can be measured and described.

After Reading

Restate the key ideas in this book. Air is all around us, and we can feel its warmth or coolness. But we can feel or see it moving only when air pushes against our skin or against objects, such as leaves. Air can be hot or cold, wet or dry. The Sun heats air and evaporates water, setting in motion the water cycle. Precipitation comes from clouds, but not all types of clouds produce rain.

Investigation

Begin a class daily weather chart. Have children record the temperature and draw pictures to represent cloud conditions.

Understanding Science

Temperature, clouds, and precipitation are aspects of the weather.

Have children draw pictures of a flag on a flagpole or trees on the school playground on calm and windy days. Have them label and compare the pictures to see how wind affects the trees or the flag.

Wind direction and speed affect objects.