



# BLOWING IN THE WIND

**GRADE LEVEL:** 4-5

**SUBJECT:** Geography

**NATIONAL STANDARD(S)**

(3-5) GE: 1.1, 1.2, 1.3, 3.1, 3.2, 3.4

**THEME:** Meteorology

**FOOD AND FIBER TOPIC:** I-B, E; II-E, III-B, E

## LEARNER OBJECTIVE:

Students will interpret maps, graphs, charts, tables and political cartoons.

## VOCABULARY

**Beaufort Wind Scale**—A system of estimating wind velocities, originally based in 1806 by Admiral Sir Francis Beaufort of the British Navy, on the effects of various wind speeds on the amount of canvas which a full-rigged frigate of the early 19<sup>th</sup> century could carry. It has since been modified and widely used for international meteorology.

**lightning rods**—A metallic rod set upright on the roof of a building and grounded by a wire conductor. It serves to conduct the lightning to the earth to minimize damage to the structure.

**Meteorologist** – A person who studies the physical processes which occur in the atmosphere.

**meteorology**—The study of the physical processes which occur in the atmosphere.

**prevailing winds**—The wind which comes most frequently in an area from a particular point of the compass, either seasonally or annually.

**weathervanes**—Any of several devices used to show the direction from which the wind is blowing.

## BACKGROUND

The wind is an ever-present and ever-changing force in environments. Look at the shape of the trees around your neighborhood or school. In many areas of the country where the prevailing winds come from the south, the trees probably lean towards the north.

Farmers must know which way the wind might blow before they can make decisions about when to apply pesticides, plow fields, or before attempting other types of field work. A conscientious farmer will not work the topsoil if he or she knows high winds might carry it away.

Meteorologists use computers, satellite photography, and other technology to inform people which direction the wind will blow. One type of measurement, the Beaufort Wind Scale, measures the approximate wind speed. Using this scale, wind speeds are classified from zero to 12. Air that is calm registers a zero on the scale while the highest measure of 12 indicates hurricane-type winds.

Prior to meteorologists reporting the wind and weather, weathervanes were used to determine the direction of the prevailing winds. A Greek astronomer, Andronicus built one of the first weathervanes, or wind vanes. His design was eight-sided and is

still seen in Athens, Greece. A likeness of the Greek god Triton sits on top and turns with the wind. According to Greek mythology, Triton could control the waves by calming or stirring the waters. Early American colonists brought with them weathervanes from Europe. On top of nearly every building was a weathervane. In addition to showing wind direction, weathervanes were used as lightning rods and served as advertisements for businesses. For example, a rooster atop a barn meant the farmer sold eggs, and a fire engine meant the building was a firehouse.

The most common design for weathervanes in colonial America was a running horse. The horse was a symbol of hard work and speedy transportation. One of the most famous weathervanes still in existence is Paul Revere's wooden codfish that stood above his copper shop in Massachusetts.

### **STEP-BY-STEP INSTRUCTIONS**

1. Draw a compass rose on the chalkboard and review its meaning in relation to standard directions (north, south, east, west, northeast, northwest, southeast and southwest). Ask for volunteers to label directional points on the compass rose.
2. Share background information with students.
3. Hand out student worksheets, and review instructions. Have students complete the worksheets.

### **RELATED ACTIVITIES**

1. Have students design their own weathervanes. Student should pencil out designs on paper and fashion their finished products from aluminum foil decorated by parents. Display the finished weathervanes on dowel rods pushed into foil-covered blocks of floral foam.

### **RESOURCES**

#### ***Student Books***

- Asimov, I. (1985). How did We Find Out About the Atmosphere? Walker.
- Edom, H. and Butterfield, M. (1991). Science with Air. Usborne Publishing.
- O'Neill, M. (1991). Air Scare. Troll.
- Ruckman, I. (1986). Night of the Twisters. Harper Collins.
- Smith, Henry. (1983). Amazing Air. Lothrop.

#### ***Teacher Resources***

- Gipe, Paul (1995). Wind Energy Comes of Age. John Wiley & Sons. Available by calling (800)-225-5945 in the United States or (800)-263-1590 in Canada.
- Richard L. Hills (1996). Power from Wind : A History of Windmill Technology. Cambridge University Press.

#### ***Related Internet Websites***

- A Brief History of Weathervanes. <http://www.denninger.com/history.htm>
- Dan's Wild Wild Weather Page. Interactive weather page with activities for students: <http://www.whnt19.com/kiddwx/>
- The Weather Vane Homepage. History, News, Museums, Antique Marketplace dealing with weathervanes. This site also contains a comprehensive bibliography for weathervane books. [www.denninger.com](http://www.denninger.com)

**EVALUATION**

Did the students learn the standard directions of the wind?

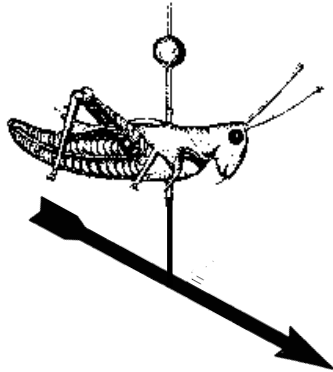
**ACKNOWLEDGMENT**

This lesson adapted from Oklahoma Ag in the Classroom, Department of Agricultural Education, Communications and 4-H Youth Development, Oklahoma State University, Stillwater, OK 74078.

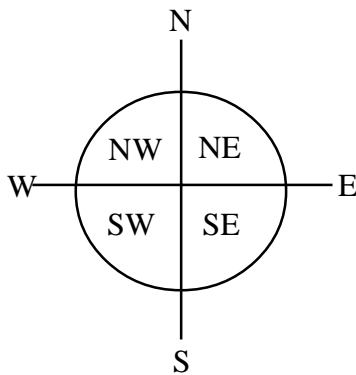
# Blowing in the Wind

Weathervanes were a common sight on the roofs of homes, churches and buildings in colonial America. Not only did they show the direction the wind was blowing, they also told passersby something about the person living or working in the building below. Today weathervanes are mostly used as folk art decorations in homes. Antique weather vanes have become quite valuable. In January, 1996, at an auction at Sotheby's auction house in New York City, an antique weathervane with the figure of a horse and rider sold for \$770,000.

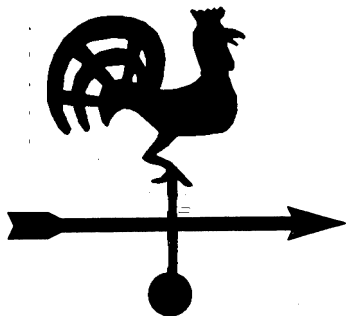
*A weathervane shows which way the wind is blowing. It may point in one of eight directions—north, south, east, west, northeast, northwest, southeast, or southwest. Look at the arrow beneath each of the weathervanes pictured below. In the blank provided, write the direction the arrow is pointing. Use the compass rose if you need help.*



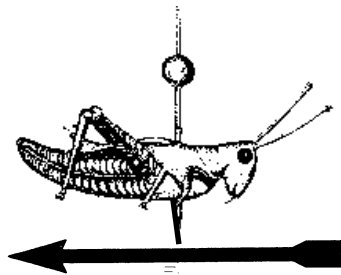
1. Answer \_\_\_\_\_



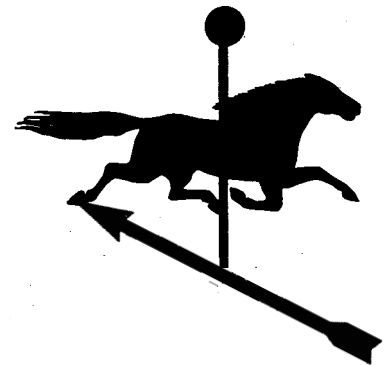
2. Answer \_\_\_\_\_



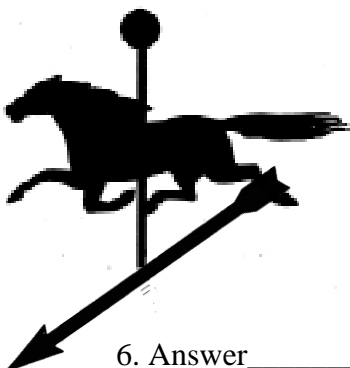
3. Answer \_\_\_\_\_



4. Answer \_\_\_\_\_



5. Answer \_\_\_\_\_



6. Answer \_\_\_\_\_

7. On the back of this paper draw a weathervane that could go on top of your house. It should illustrate something you like to do or a special interest you have.

