

What's the Weather? Check a Windsock

Objectives

Students use cultural symbols to decorate a windsock in increasingly complex ways as they mature.

Students (K-2) observe a windsock flying in a breeze to identify compass direction.

Students (3-4) use their windsocks to chart wind direction during a period of time and report findings.

Students (5-6) research wind velocity and use windsocks they create as a tool to record and analyze the direction of wind over a period of time.

Multiple Intelligences

Logical-mathematical

Spatial

What Does It Mean?

Escutcheon: shield or shield-like surface on which a coat of arms is depicted

Family crest: symbolic design that distinguishes people who are related

National Standards

Visual Arts Standard #3

Choosing and evaluating a range of subject matter, symbols, and ideas

Science Standards

Science as Inquiry

Abilities necessary to do scientific inquiry

Understanding about scientific inquiry

Physical Science

Position and motion of objects

Earth and Space Science

Changes in earth and sky

Background Information

Windsocks are specially designed to catch the wind. A familiar windsock that resembles a fish can be seen in Japan and other countries. To help celebrate Boy's Day, families create and fly these fish windsocks outside their homes. Families display one windsock for each son. Designs on the windsock usually contain a family crest.

Windsocks today are used at airports to show wind direction and speed. They help pilots choose the best runway when their planes must take off and land in the wind.

Resources

Henry and the Kite by Bruce Edward Hall

Detailed, dramatic paintings engage 4- to 8-year-olds. Story of a talented kite maker and his 8-year-old neighbor, who together solve a community problem using negotiation and compromise.

How Artists See the Weather by Colleen Carrol

Written for 9- to 12-year-olds. Shows how various artists, in diverse places and throughout different time periods, have depicted different weather conditions. Explains artists' techniques and includes biographies.

The Weather Detectives by Mark Eubank and Mark Hicks

Appropriate for grades 3 to 6. Follows the adventures of three curious children as they explore extreme weather conditions on Earth and in space. Covers how weather works and what conditions produce storms such as tornados, thunderstorms, and hurricanes.

Wind Power by Christine Peterson

Clear and simple definition of wind and how its power can be harnessed to supply energy. Captioned photographs of windmills, wind turbines, and wind farms. A wealth of information for grades 3 to 5.

Vocabulary List

Use this list to explore new vocabulary, create idea webs, or brainstorm related subjects.

| | |
|-----------------------------|----------------|
| Alternative energy | Runway |
| Anemometer | Symbol |
| Atmosphere | Thunderstorm |
| Aztec | Tornado |
| Boys Day | Weather |
| Circular calendar | Wind |
| Climate | Wind direction |
| Cultures | Wind farm |
| Egyptian | Windmill |
| Energy | Wind speed |
| Environment | Wind turbine |
| Escutcheon | |
| Family crest | |
| Hex signs | |
| Hieroglyphics | |
| Hurricanes | |
| Meteorology | |
| Observation | |
| Pennsylvania Dutch (German) | |
| Recording data | |
| Rube Goldberg | |



Artwork created by students from Tipps Elementary School, Houston, Texas.
Teacher: Marcia Elise Peterson



Artwork by students from Mount Prospect Elementary School, Basking Ridge, New Jersey. Teacher: Susan Bivona

Artwork created by students from Tipps Elementary School, Houston, Texas. Teacher: Marcia Elise Peterson

K-2

3-4

5-6

Suggested Preparation and Discussion

Collect and display weather-related objects and news articles. Discuss. Together, read and closely note the illustrations in *How Artists See Weather* or a similar book. Relate the types of weather shown in the book to scientific information displayed, especially about wind and its direction.

Display examples of several cultural symbols, including community resources. Consider this lesson in conjunction with social studies topics and as a way to build community diversity awareness. Some possibilities: Pennsylvania Dutch (German) symbols such as those used on hex signs, Aztec images from circular calendars, and Egyptian hieroglyphics. Discuss the cultures children choose for their project themes. What symbols will they use? What is the meaning of the symbols? Why were they chosen?

Create a sample windsock to inspire children's creativity.



Dream~Makers
Building fun and creativity into standards-based learning

What's the Weather? Check a Windssock

| | K-2 | 3-4 | 5-6 |
|--|--|---|--|
| Crayola® Supplies | <ul style="list-style-type: none"> • Colored Pencils • Color Explosion™ Markers and Paper • Glitter Glue • Markers • School Glue • Scissors | | |
| Other Materials | <ul style="list-style-type: none"> • Compass • Hole punch • Poster board • Ribbon • Rulers • Stapler and staples • Tag paper • Tissue paper | | |
| Set-up/Tips | <ul style="list-style-type: none"> • Choose Color Explosion™ white or black. Both are designed for dramatic, colorful effects. Remind children to work with dry hands. • These windsocks can also be made with recycled file folders or similar heavier paper stock. Decorate them with markers or crayons. | | |
| Process: Session 1 30-45 min. | <ol style="list-style-type: none"> 1. Explore how a compass works and identify the position of each direction with hands-on explorations. 2. Measure, mark, and cut a Color Explosion paper strip about 2 x 10 inches. Decorate the strip with diverse cultural symbols using a Color Explosion Marker. Use lines, patterns, and shapes. 3. Cut six strips of colored tissue paper (1 inch wide, varying in length from 6 to 10 inches). 4. Glue tissue paper to the back side of the decorated strip. Air-dry the glue. | <ol style="list-style-type: none"> 1. Research various cultures to identify signs and symbols that reflect traditions. Choose one culture and several symbols to represent it. 2. Measure, mark, cut, and staple a strip of Color Explosion Paper about 4 x 18 inches. 3. Decorate the strip with cultural symbols using the Color Explosion Markers. Cut eight strips of colored tissue paper (2 inch wide, varying in length from 12 to 18 inches). Glue tissue paper to the back of the decorated strip. 4. Apply glitter glue lines and shapes to decorate the top of the tissue paper. | |
| Process: Session 2 30-45 min. | <ol style="list-style-type: none"> 5. Cut six 2-inch squares of paper. Create additional symbols on the squares with markers. Glue the backs of the squares on the ends of the tissue strips. 6. Punch three evenly spaced holes near the top of the Color Explosion paper strip. Bend it into a circle. Staple it closed. 7. Cut three 8-inch lengths of ribbon. Tie ribbon in the holes. Knot ribbons at the top for hanging. | <ol style="list-style-type: none"> 5. Cut eight geometric shapes from tag paper. Decorate the shapes with additional cultural symbols correlated to the existing symbols on the tag strip. Glue the shapes on one end of the tissue strips. 6. Punch three evenly spaced holes near the top of the paper strip. Bend the strip into a circle. Glue it closed. 7. Cut three 12-inch lengths of ribbon. Tie ribbon in the holes. Knot ribbons at the top for hanging. | |
| Process: Session 3 30 min. | <ol style="list-style-type: none"> 8. Hang windsocks in an open, dry area to catch light breezes. As the wind blows, observe the motion of the tissue strips. Note wind direction. Use a compass to check wind motion with compass directions such as N, NE, E, SE, S, SW, W, and NW. | <ol style="list-style-type: none"> 9. Discuss findings. | <ol style="list-style-type: none"> 9. Create individual wind direction charts (see diagram) to record wind direction for at least a week. 10. Vary the time of day to check and chart wind motion. Compare findings. |
| | | <ol style="list-style-type: none"> 9. Create a wind direction chart (see diagram). 10. Every day for at least a week, students note daily the wind direction forecast and their own predictions on the chart. 11. Students vary the time of day they check and note actual wind direction. 12. Analyze findings. | |

Tibetan Prayer Flags
Artist unknown
10" x 30"
Private Collection.



| | K-2 | 3-4 | 5-6 |
|-------------------|--|---|---|
| Assessment | <ul style="list-style-type: none"> Can students identify all directions noted on a compass? Monitor their understanding of the direction wind socks fly in a breeze and how the direction is indicated on a compass. Verify that wind sock decorations accurately represent the culture chosen by the child. | <ul style="list-style-type: none"> Check wind direction charts for completeness and accuracy. Ask students to compare findings. Discuss. | <ul style="list-style-type: none"> Check for accuracy and completeness of data compiled about wind direction. How thoughtful were students' analyses of the findings? |

- Confirm that students successfully created and assembled a functioning windsock.
- Ask students to reflect on this lesson and write a DREAM statement to summarize the most important things they learned.

| | | |
|-------------------|--|---|
| Extensions | <p>Make pinwheels. See these samples on Crayola.com:</p> <ul style="list-style-type: none"> Pinwheel With Sparkle Party Pinwheels See-Through Pinwheels <p>Test them outside in the wind.</p> <p>With younger students and some who have special needs, this would make an excellent small-group activity. Consider making it a homework project for families to portray their culture.</p> <p>Conduct other weather observations (such as temperature and rainfall) and record findings. Try to identify any trends over time.</p> <p>Borrow an anemometer and observe how it works.</p> | <p>What causes the wind? Find out. Research changing weather patterns, violent storms such as hurricanes, and other wind-related effects on people and property.</p> <p>Advanced students could research to learn about the many alternative energy sources that use wind currently employed around the world. As a group, imagine additional possible uses for wind power. Sketch Rube Goldberg-like wind machines.</p> <p>Research popular traditions such as kite flying and sailing in various cultures. Why are wind-driven activities so popular? Which designs are most aerodynamic? Suitable for catching the wind?</p> |
|-------------------|--|---|

Ask an expert in the community to talk about why it is important for pilots to know wind direction and speed. How does plane size/design alter the effects of wind?

Explore the field of meteorology or atmospheric science. How do scientists measure and predict the weather? What other jobs are affected by or rely on knowledge of the wind?

Grades 3-4 Wind Direction Chart

| | | | | | |
|----------------|--------|---------|-----------|----------|--------|
| Days | Monday | Tuesday | Wednesday | Thursday | Friday |
| Time of day | | | | | |
| Wind direction | | | | | |

Grades 5-6 Wind Direction Chart

| | | | | | |
|---------------------------------|--------|---------|-----------|----------|--------|
| Days | Monday | Tuesday | Wednesday | Thursday | Friday |
| Wind direction weather forecast | | | | | |
| Wind direction-prediction | | | | | |
| Time of day | | | | | |
| Wind direction-actual | | | | | |

