

# HOW DO WE OBSERVE AND MEASURE WEATHER?

**UNIT 1: Energy**  
Lesson 4 — Grades K-1  
INSTRUCTIONS



## Overview

- During this lesson, students build working weather vanes to use for measuring wind direction.

## Objectives

On successful completion of this lesson, students will be able to:

- define wind;
- describe the impact wind has on the community; and
- observe wind direction using a weather vane.

## Alaska Standards

### Alaska Science Standards

[SA1] Students develop an understanding of the processes of science used to investigate problems, design and conduct repeatable scientific investigations, and defend scientific arguments.

[SD3] Students develop an understanding of the cyclical changes controlled by energy from the sun and by Earth's position and motion of our solar system.

### Alaska Cultural Standards

[E] Culturally-knowledgeable students demonstrate an awareness and appreciation of the relationships and processes of interaction of all elements in the world around them.

## Bering Strait School District Scope & Sequence

1st grade Sequence #9: Understanding Weather

## Materials

- Index card
- Ruler
- Scissors
- Pencil
- Thread spools (1 per student)
- Straws (1 per student)



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- Transparent tape
- Skewers (1 per student)
- STUDENT INFORMATION SHEET: Build a Weather Vane

## Additional Resources

HSP I: Ch. 7, Lessons 1–3

*Weather Words and What They Mean* by Gail Gibbons

*Feel the Wind* by Arthur Dorros

*Like a Windy Day* by Frank Asch

*The Wind Blew* by Pat Hutchins

## Activity Preparation

Students should have some prior knowledge of the directions of east, west, north and south.

## Whole Picture

A weather vane is a simple device intended to show the direction of the wind. To work most accurately the device should be located away from objects – such as buildings and trees – that can interfere with true wind direction. The pointer must move freely on its axis.

A true weather vane is designed to balance equal weight on either side of the axis, though each side is shaped differently so the area exposed to the wind is unequal. The unequal dispersion of wind force is what causes the vane to turn into the wind. The end with the smallest amount of surface area points in the direction the wind is coming from. For this reason, many designs include an arrow or other shape to indicate direction and many weather vanes included markers to identify geographic orientation.

## Vocabulary

wind

moving air

weather vane

an instrument that shows the direction of the wind



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## Activity Procedure

1. Discuss and define the word wind. Have students describe what happens when it is windy outside. List responses for all to see. Tell students that they will be making a weather vane, which is an instrument that will show the direction of the wind.
2. Divide students into pairs. Distribute an index card, a ruler, a pair of scissors, and a pencil to each pair. Ask students to identify the shape of the card (rectangle).
3. Demonstrate how to place the ruler diagonally across the index card, from the upper left corner, to the bottom right corner. Ask students to draw a line on the index card using the ruler as a guide
4. Ask students to cut the index card along the line they drew. Ask them what shapes they have created (triangle).
5. Distribute spools, straws, tape, skewers, and a copy of the Student Information Sheet to each pair of students.
6. Demonstrate how to assemble the weather vane. Have students build their weather vane and assist as needed.
7. After all weather vanes are completed, take students and their weather vanes outside to see which direction the wind is blowing.
8. Compare student answers about which direction the wind was moving. Ask students what happens to their home, school or other buildings in their community if it is too windy.
9. As an extension to this lesson, students could make a windsock to take home to measure the direction of the wind.

## Language Links

Have an elder or culture bearer visit the class and tell about a time that the wind was very strong in the local area.

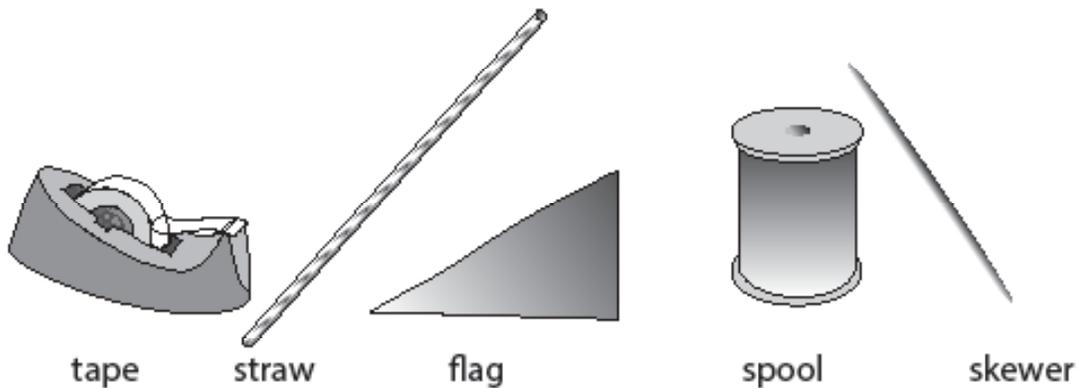


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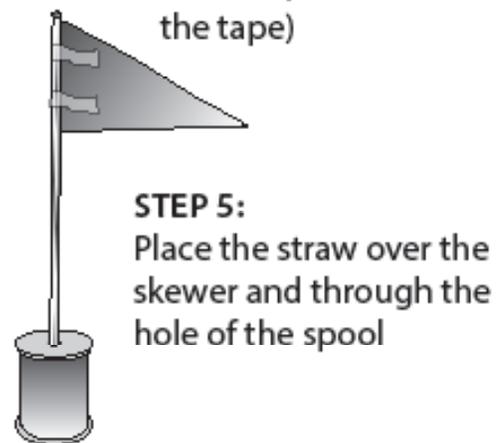
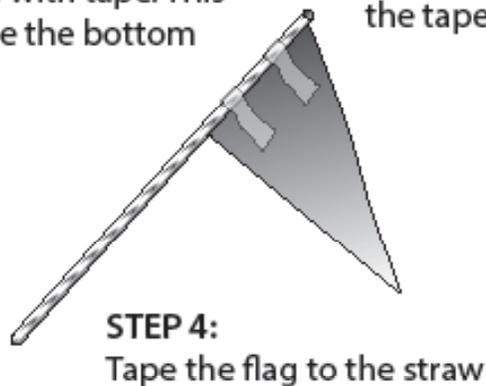
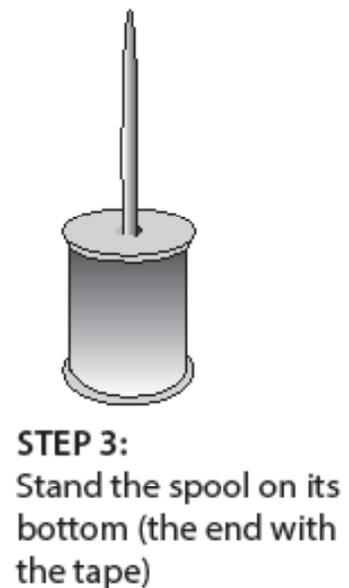


## Student Information Sheet: Make a Weather Vane

You will need:



Assemble the pieces:



A copy of the above graphic can be found on our website:

<http://k12reach.org/tab5.php>, go to the **Graphics** tab and scroll to the **Weather** option of the accordion menu.

