

# Build a Weather Vane \_\_\_\_\_

Level



## Overview:

During this project, students build working weather vanes for use to measure wind direction in another lesson.

## Objectives:

The student will:

- use a ruler as a straight edge to draw a line;
- identify basic shapes (rectangle, triangle); and
- construct a simple weather vane

## GLEs Addressed:

*Science*

- [3-4] SA1.1 The student demonstrates an understanding of the processes of science by asking questions, predicting, observing, describing, measuring, classifying, making generalizations, inferring, and communicating.

## 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.

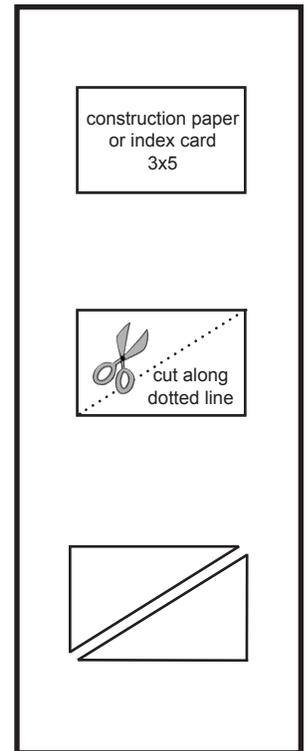
## Materials:

- Index card
- Ruler
- Scissors
- Pencil
- Thread spools (1 per student)
- Straws (1 per student)
- Transparent tape
- Skewers (1 per student)
- STUDENT INSTRUCTION SHEET: “Build a Weather Vane”

## Activity Procedure:

1. Divide students into pairs. Distribute an index card, a ruler, a pair of scissors, and a pencil to each pair.
2. 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.

3. Ask students to identify the shape of the index card as a rectangle.
4. Ask student to cut the index card along the line they drew. Notice that the rectangle has become two triangles!
5. Distribute spools, straws, tape, skewers, and the Student Instruction Sheet "Build a Weather Vane."
6. Lead students through the process of building their weather vanes.



# Build a Weather Vane

## Student Instruction Sheet



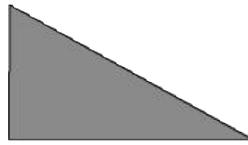
### You will need:



Straw



Tape



Flag

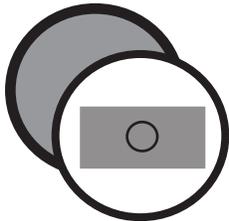


Skewer

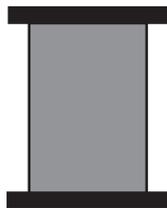


Spool

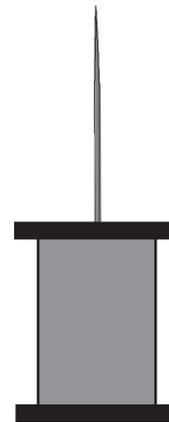
### Make a Weather Vane:



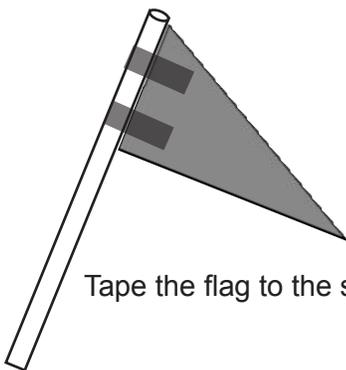
Cover 1 end of the spool with tape. This is the bottom.



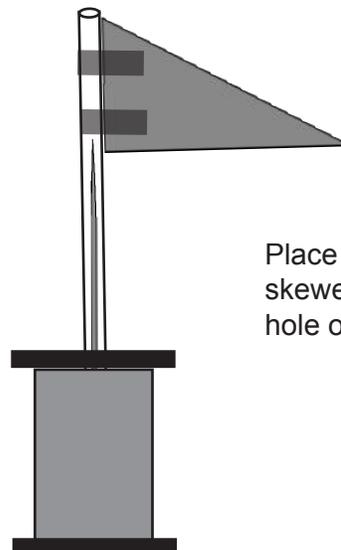
Stand the spool on its bottom (the end with the tape).



Put the skewer in the hole of the spool.



Tape the flag to the straw.



Place the straw over the skewer and through the hole of the spool.