

# Understanding Wind Direction And Making A Wind Vane

**Grade Levels:** Kindergarten, 1, 2, and 3

**Objectives:** The students will learn how to construct a wind vane and understand the parts of a wind vane. Students will learn the four directions. Students will understand that wind vanes are used to measure wind direction and be able to tell the wind direction from their own wind vane. Students will understand that wind direction and weather are correlated.

**Materials:** (for each weathervane)

- Triangle template made from poster board for students to trace
- 1 small piece of poster board
- 2 pieces of tape
- 1 straw
- 1 straight pin
- 1 new pencil with a new eraser on it
- 2 strong paper plates
- Glue
- A few small rocks or pieces of clay

**Important Points to Understand:**

- A weather vane is also called a wind vane. It is one of the oldest weather tools for measuring wind direction. It is still used today to measure the direction of the wind.
- Weather vanes can only measure wind direction a few yards (meters) off the ground. The weather vane spins on a rod and points in the direction from which the wind comes. Large, helium-filled weather balloons are used to measure winds high above the earth's surface. The balloons move with the same speed and direction as the wind.
- Weather vanes are usually found on the tops of buildings so they can catch an open breeze. They are placed on top of barns, houses, weather stations, hardware stores, and other places that use or sell weather tools.
- It is easier to see how the energy from the wind moves your weather vane if it is up high and in an open area. You might also want to experiment by putting it on the ground.

- A weather vane is one of the most useful tools for forecasting because certain winds tend to bring certain weather patterns. Once your wind vane is working, a glance at it will give you an important clue about what to expect. For example, in New Mexico, winds from the east are likely to usher in fair weather, while winds mainly from the west are likely to bring unsettled conditions. If the wind is blowing from the south, the wind is usually warm. If the wind is blowing from the north, the wind is usually cooler. Determine what types of weather the winds in your area bring!

## Procedure:

1. Give each student a paper plate. Have them turn it upside down and write the four directions on it. (See extensions for Inupiaq)
2. Give each student a cutout template from poster board and another piece of poster board on which to trace and cut out 2 triangles.
3. Students can either make a small slit in the ends of their straw to insert the two triangles or they can use glue or small pieces of tape to attach the 2 triangles to the ends of the straw.
4. Insert a straight pin into the center of the straw and into the eraser end of a new pencil. (Teachers might want to do this for their students if they are very young.)
5. Push the other end of the pencil through the center of the plate.
6. Place the other plate upside down on the plate and secure it with glue around the edges after placing a few small rocks or small pieces of clay inside for weight. (If you used clay, press the pencil into the center of the clay for added security.)
7. Students can decorate their weather vanes if they want to.
8. Allow the glue to dry and go outside to see from which direction the wind is blowing.
9. Record the wind direction and the weather condition on the activity sheet three times a day for two weeks.
10. Students can also record directions from different locations around the schoolyard i.e.: near main door, behind school or in playground.

## How To Find North Without a Compass

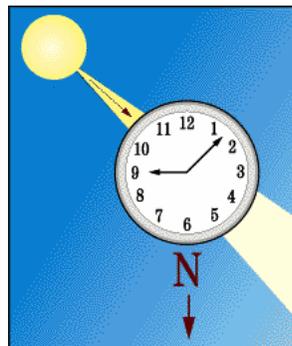
If you have an analog watch and the sun is visible, you can find north very easily.

Here's how:

Hold your watch so the face is horizontal (parallel to the ground).

Align it so that the sun is halfway between the hour hand and the number 12.

The number 6 will point toward North.



### **Extension:**

Find out how to write the four directions in Iñupiaq.

Make another wind vane and write the Iñupiaq words for the four directions on it in the appropriate places. Ask elders in the community or family members for any common weather terminology related to the directions. Make a list of these words or phrases and present it to the class.

### **Science Standards:**

Kindergarten: 2b, 2e, 3

First Grade: 2b, 2e, 5

Second Grade: 2b, 2e, 3,8

Third Grade: 2b, 2e, 3

### **Alaska Performance Standards, Ages 5-7:**

**Math- Measurement:** Tell time to the nearest half hour.

**Statistics/Probability:** Collect, record, organize, display and explain the classification of data

**Reading-** Slight recognition of high frequency vocabulary words

# Wind Directions



Name \_\_\_\_\_

**Instructions:** Three times a day, record the direction of the wind according to your wind vane. Write North, South, East, West or combinations of the directions in each box. Also write the general weather condition. Monday is given as an example. At the end of two weeks compare your chart to your classmates.

DAY	TIME					
	9:00 a.m.		12:00 p.m.		3:00 p.m.	
	Wind direction	Weather condition	Wind direction	Weather condition	Wind direction	Weather condition
<b>Monday</b>	North	Sunny	North East	Partly cloudy	West	Rain
<b>Tuesday</b>						
<b>Wednesday</b>						
<b>Thursday</b>						
<b>Friday</b>						
<b>Monday</b>						
<b>Tuesday</b>						
<b>Wednesday</b>						
<b>Thursday</b>						
<b>Friday</b>						