

# WHIMSICAL WIND VANE

A personable wind vane with its beak to the wind

## Curriculum topics:

- Wind
- Weather
- Fluids
- Atmosphere

## Subjects:

Physical Science  
Earth/Space Science

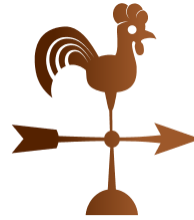
## Grade range:

1 – 8

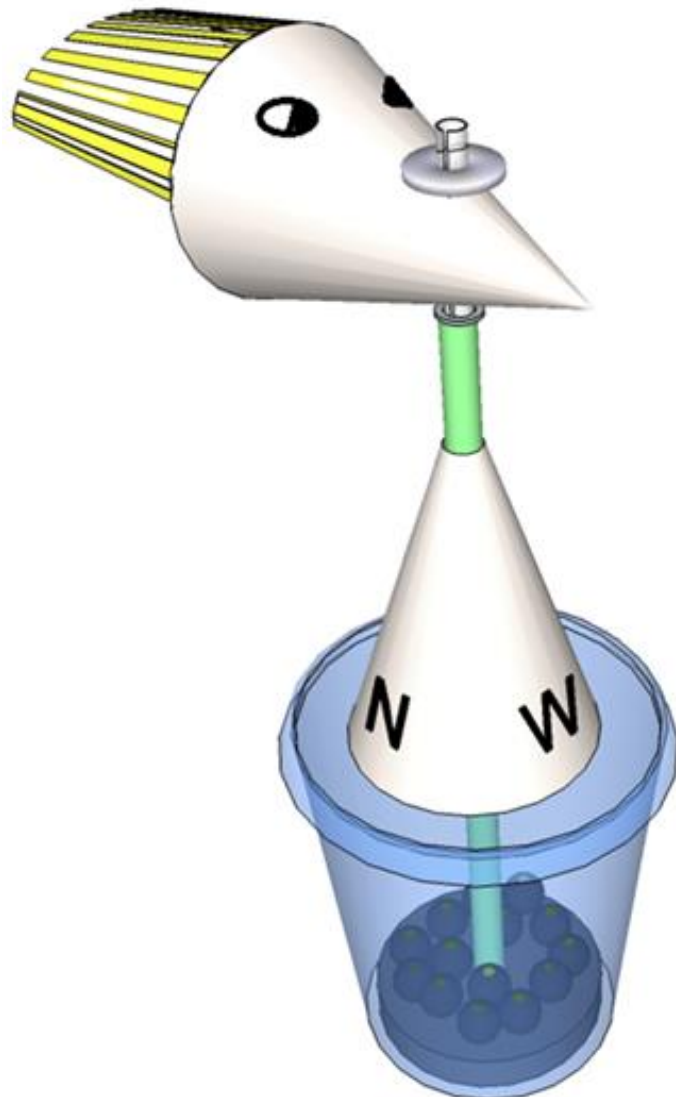
## Who we are:

Resource Area for Teaching (RAFT) helps educators transform the learning experience by inspiring joy through hands-on learning.

For more ideas visit  
<https://raft.net>



Create a playful, easy to make wind vane which will point to the source of the wind!

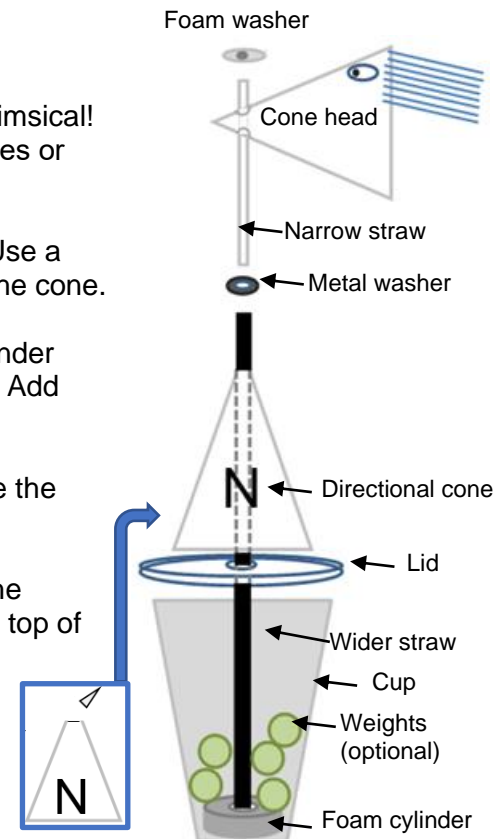


# Materials required per wind vane

- Paper cone cup, 4 oz, w/ hole near tip (x1)
- Paper cone cup, 4 oz, no hole (x1)
- Jumbo, narrow straw section, 4" long (x1)
- Wide straw, 8" long (x1)
- Metal washer, M6 (x1)
- Cup & lid with a straw slit (x1)
- Foam washer with center hole (x1)
- Foam cylinder with center hole (x1)
- Optional: Small weights, paper streamer, adhesive labels, googly eyes, marker (not included)

## Set-Up

- 1** Add a face to the paper cone with the hole to make the wind vane whimsical! Optional: Add paper streamer strips to make "hair" and add googly eyes or draw facial features (see title page).
- 2** Clip off the point of the other cone without the hole (see box below). Use a marker to write compass directions (N, E, S, W) on the quadrants of the cone.
- 3** Insert the wider straw into the foam cylinder hole. Stand the foam cylinder and wide straw in the plastic cup (assembly shown at right). Optional: Add weights to the cup.
- 4** Poke the wide straw through the lid and attach the lid to the cup. Slide the directional cone and then the metal washer onto the wide straw.
- 5** Slide the cone head and foam washer onto the narrow straw. Insert the narrow straw into the wider straw, making sure the foam washer is on top of the cone head and holds it in place.



## To do and notice

- 1** Blow toward the wind vane. Does the vane point toward the source of the "wind"?
- 2** Use the wind vane outside. Choose a location away from buildings, trees.
- 3** Orient the compass rose correctly by using a directional compass to find North.
- 4** Record the wind's direction at regular time intervals.

## Content Standards:

### NGSS

Forces & Motion:

[3-PS2-1](#)

[3-PS2-2](#)

Weather Conditions:

[3-ESS2-1](#)

Wind:

[MS-ESS2-5](#)

Design Solutions:

Testing Variables

(Engineering):

[K-2-ETS1-1](#)

[K-2-ETS1-2](#)

[K-2-ETS1-3](#)

[3-5-ETS1-1](#)

[3-5-ETS1-2](#)

[3-5-ETS1-3](#)

# The content behind the activity

On the Earth, wind is caused by the uneven warming of the water and land by sunlight. Rocks and sand warm up much more quickly than water when exposed to sunlight. The land and water, in turn, heat the air above. When a volume of gas is heated the gas expands and become less dense. A gas, when cooled, will contract and become denser. Gravity will cause denser air to sink down which in turns pushes up less dense air. The resulting air movements cause wind.

A wind vane is a device that points in the direction from which the wind is blowing (that is, towards the source of the wind). For the wind vane to point correctly, the part of the wind vane in front of the pivot point must be much smaller than the rear part. The larger section will have more wind resistance than the narrower front. Below are some artistic examples of wind vanes.



## Learn more

- Keep a weather journal over several weeks or months and graph the wind data collected using the Whimsical Wind Vane.
- Measure the wind speed with an anemometer. Compare measurements with wind speeds reported on the local news.

Visit <https://raft.net> to view the following related activities!

As the Clouds Go Bye

Catching the Wind

Everybody Talks About It

Thar She Blows

Design a Weather Instrument

Design Weatherproof Signs for Your School

Interactions Between Earth's Spheres

## Resources

- YouTube video (1:03), Reading a weather vane - <https://bit.ly/3bRxDxS>
- Weather-related student research - <https://bit.ly/35INHfV>