

STEAM WITH THE PROGRAM TEAM

Measure the Wind *Science*

MATERIALS NEEDED:

- 4 paper or plastic cups
- Cardboard 2 strips 1.5 inches by 12 inches
- Thumbtack
- Stapler or tape
- Scissors
- Unsharpened pencil with eraser
- Plastic container with lid at least 2.5-3 inches tall, we will be making a hole in the lid (playdough container or yogurt container work really well)

THE SCIENCE:

What is wind?

Air moving around the earth; high pressure to low pressure; think about when you blow up the balloon – you are pushing air into the balloon but as soon as you let go, the air wants to escape and equalize pressure.

Why is wind important?

Gives us power, helps move things around the world (seeds, birds); impacts the weather, transportation, and recreation.

How would knowing how fast the wind is help us?

Helps predict the weather, flying conditions, recover animals, designing buildings and structures, and if we can go fly a kite?

Badge Steps

Take a look at the requirements and see if the activities will help you complete the following badge steps.

Daisy: Journey: Think like a Citizen Scientist, Step 2

Brownie: Outdoor Adventurer, Step 2

Junior:

Cadette: Journey: Breathe, Step 1

Senior:

Ambassador:

PA Education Standards

The content of all Girl Scout national proficiency Badges and Journeys have been correlated by grade level to national and state learning objectives.

Visit <https://www.girlscouts.org/en/adults/educators/curriculum-standards.html> for more information about how badges support the standards.

Finished with your badge? Now buy it for your uniform. Order online at <https://www.girlscoutshop.com/HEART-OF-PENNSYLVANIA-COUNCIL>.

We would love to see you in action! Snap a photo and sent it to marcomm@gshpa.org Please include name, troop #, and what she is working on.

ACTIVITY ONE: Anemometer

An anemometer is a device used for measuring wind speed and direction. It is also a common weather station instrument. The term is derived from the Greek word *anemos*, which means wind, and is used to describe any wind speed instrument used in meteorology.

Step one: Cut your cardboard into two strips approx. 1.5 inches by 12 inches long.

Step two: Staple or tape your two pieces together so they form a cross. Try to center the pieces so you have an even length on every side.

Step three: Decorate one of your cups, or use a different colored cup for one of the four.

Step four: Staple or tape your cups to the ends of the cardboard. Make sure they are all facing the same direction (left).



Step five: Now to the spinning part. Grab your plastic container and with scissors cut a hole in the center of the lid slightly larger than your pencil.

Step six: Use your thumbtack to attach or cup/cardboard cross to the top of **the pencil's** eraser.

Step seven: Stick the pencil in the hole of the lid of your container.

Note: If your anemometer is having a hard time stay upright, you can add some weight to your container. Rice, beads, rocks, marbles can be added to help weigh it down.

ACTIVITY TWO: Go Measure the Wind!

Now you get to take it outside to measure the speed of the wind.

Step one: Make sure to find a flat surface to set your anemometer in the open, a picnic table or chair.

Step two: Set a timer for 1 minute and count how many times the different colored cup goes around.

Step three: Divide that number by 10 and you will get speed in miles per hour. Example, if you cup goes around 10 times in 1 minute, the speed is approximately 1 mile an hour. If it goes around 20 then 2 miles an hour, etc.

REVIEW:

1. How do you use the wind?
2. How did you work through a challenge?
3. What did you learn from a failure?
4. What succeeded and why?