

My Weather Watcher Project

- 1) Rain Gauge (measures rainfall)
- 2) Wind Vane (measures wind direction)
- 3) Anemometer (measures wind speed)
- 4) Barometer (measures air pressure)
- 5) *Thermometer (measures temperature). If you have one you can put this with your weather station.*

Rain gauge

How much rain is really falling when you watch a heavy shower through the window of your home? How about on other days when it's just a light shower?

Find out by making your own rain gauge, recording the results and studying your findings

Make a Rain Gauge

What you'll need:

- A plastic (soft drink) bottle
- Some stones or pebbles
- Tape
- Marker (felt pen)
- A ruler

Instructions:

1. Cut the top off the bottle.
2. Place some stones in the bottom of the bottle. Turn the top upside down and tape it to the bottle.
3. Use a ruler and marker pen to make a scale on the bottle.
4. Pour water into the bottle until it reaches the bottom strip on the scale. Congratulations, you have finished your rain gauge.
5. Put your rain gauge outside where it can collect water when it starts raining. After a rain shower has finished, check to see how far up the scale the water has risen.

What's happening?

Rain falls into the top of the gauge and collects at the bottom, where it can be easily measured. Try comparing the amount of rain to the length of time the shower lasted, was it a short and heavy rain shower or a long and light one?

If you want to get serious you can graph the rainfall over weeks or even months, this is especially interesting if the place you live experiences varying seasons where sometimes it is very dry and other times it is very wet.

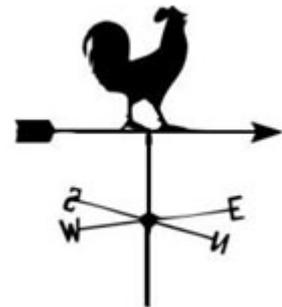
Wind Vane

Knowing which way the wind is blowing is an important yet often overlooked piece of information. Wind plays a role in many things we do and you'll know that's true if you've ever biked into a strong head wind, seen a forest fire, visited a wind farm or tried to predict weather changes. Be aware of the wind direction by making your own wind vane and add it to your set of weather monitoring and predicting tools.

Make Your Own Weather Vane

What you'll need:

- An icecream container lid (or an old food container lid)
- Scissors or a craft knife (be careful and use adult help when necessary)
- A marker (felt pen)
- A skewer
- A straw
- A pin



Instructions:

1. Trace a triangle onto the icecream container lid with the marker and cut it out. Repeat the process but this time trace and cut out a rectangle.
2. Cut a slit in both ends of the straw and slide the triangle in one end and the rectangle in the other end and glue into place.
3. Push a pin through the exact middle of the straw and then into the flat end of the skewer.
4. Place it outside where you can easily see it from the inside and you'll be able to tell which direction the wind is blowing without even having to go outside.

Wind speed

Harness the power of wind with some weather based projects that will help you understand wind speed and how it changes from place to place and day to day. Put your problem solving skills to the test with these fun challenges.

Take the Wind Speed Challenge

Anemometer- An anemometer will help show you how fast the wind is going by spinning cups around. The faster the wind is moving the faster the cups will spin.

What you'll need:

- Paper cups
- A skewer (or something similar to poke holes)
- Straws
- Scissors
- A marker (felt pen)
- Tape or glue



The Challenge- Your challenge is to design something that can measure the wind speed. Create an anemometer that features free spinning cups that spin faster as the wind increases. The wind should blow into the cups pushing them away. The faster the wind the more force it has to push the cups and the faster they spin. You can measure the wind strength by comparing how many times the anemometer spins around every 10 seconds.

Wind Speed Box

Make a wind speed box to measure how fast the wind is blowing. Similar in use to the anemometer, your wind box will be able to measure the strength of the wind in different places.

What you'll need:

- An old shoe box
- A marker (felt pen)
- String
- Tape or glue
- A piece of card

The Challenge -The challenge is to make a wind box that can compare different wind speeds. Marking a scale inside the box is a good place to start and you can use the piece of card as a guide, with it swinging further along the scale as the wind increases. The rest is up to you and your problem solving skills. A stronger wind has more force to push the piece of card along the scale, while it might struggle to move it at all on a very calm day?

Barometer

A barometer is used for measuring air pressure. It is a useful tool for helping predict weather changes. Make your own barometer and start making your own weather forecasts, compare your results to the weather forecast on the news and see who does best!

Make Your Own Barometer

What you'll need:

- A balloon
- Scissors
- A jar
- A rubber band
- Tape
- A straw
- A piece of card
- A marker (felt pen)

Instructions:

1. Cut the top off the balloon (the part which you blow into).
2. Stretch the balloon over the top of the jar and hold it in place with a rubber band.
3. Place the straw across the top of the jar so that one third of the straw is hanging over the edge. Stick the straw to the balloon with tape.
4. Draw three lines on the piece of card that are about half a centimeter apart from each other. Label the lines as high, moderate and low.
5. Tape the card against the back of the jar so that the straw points to moderate.
6. Put your barometer on a flat surface somewhere inside.

What's happening?

When there is low air pressure the balloon should expand out and the straw will point down. This is because the air inside the balloon now has relatively more air pressure compared to the air outside, it pushes the balloon out as a result.

When there is high air pressure the air on the outside will push the balloon into the jar and the straw will point upwards. The air inside the balloon now has relatively less pressure, this pushes the balloon inwards as a result.

In general, high air pressure indicates fair weather while low air pressure indicates that bad weather is more likely. Although forecasting the weather isn't an exact science and can be very difficult at times, give it a go and see how accurate you are.