



## Activity 4: Building Devices to Measure the Weather

*How can I measure the weather with instruments of my own?*

### Resources

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- **How to Make Elementary School Weather Instrument**

<https://sciencing.com/easy-homemade-weather-instruments-kids-7974126.html>

- **Environment Canada:** [https://weather.gc.ca/canada\\_e.html](https://weather.gc.ca/canada_e.html)

- **Weather Watch: Experiment with Weather**

[http://teacher.scholastic.com/activities/wwatch/gather\\_data/](http://teacher.scholastic.com/activities/wwatch/gather_data/)

### **Anemometer**

- five small bathroom paper or plastic cups
- two straws
- straight pin
- pencil with eraser on one end

### **Barometer**

- clear glass jar
- masking tape
- balloon
- rubber band
- toothpick
- straw
- index card

### **Thermometer**

- Clear plastic water bottle
- water
- food colouring
- rubbing alcohol
- clear straw or clear glass tube
- modeling clay

### **Rain Gauge**

- ruler
- wide-mouthed glass jar
- permanent magic marker

## Instructions

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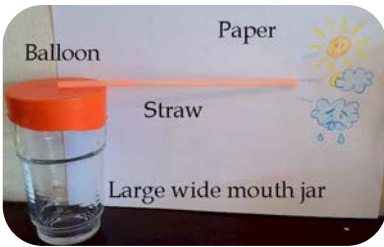
### **Safety Warning:**

Building weather devices involves using sharp pins and scissors. Never pin or cut toward yourself.

Handle glass with care. Rubbing alcohol can irritate the skin and is poisonous. If you get any on your skin, rinse it off with plenty of water.

1. Visit the How to Make Elementary School Weather Instruments website. There are instructions for making an anemometer, a thermometer, a rain gauge, and a barometer. Read all the instructions very carefully before building anything. Note that the website refers to "inches" in some instructions. You will be using "centimetres".
2. Your goal should be to build all four weather instruments. As you build weather instruments, be sure you follow the instructions carefully on the How to Make Elementary School Weather Instruments website. Remember to use "centimetres" for "inches". For example, in Step 11 for the rain gauge, mark your rain gauge in centimetres.
3. When you have completed your weather instruments, take them outside to test them. If you need to make any adjustments to make them work better, do so.
4. You will now use your weather instruments. Use the *Weather Instrument Chart* as a guide for how to use each of the instruments to measure your local weather. Use the *Weather Notes Chart* to record your weather notes for the next five days. Use the example as a guide.

## Weather Instrument Chart

Instrument	How to Use It	For Your Weather Report
<b>Anemometer</b>	Take your anemometer outside to the same place and at the same time each day for five days in a row. Hold your anemometer level and watch how fast it spins.	The faster your anemometer spins, the faster the wind is. Is the anemometer still? Is it spinning slowly? Medium speed? Is it spinning fast? Very fast? Record the speed in your weather notes
<b>Thermometer</b>	Find a place you can put your thermometer outside where it will not be damaged. At the same time each day, check the liquid level in your thermometer.	Your thermometer has markings on it for "warm" and "cool". Where is the liquid level? Is it above warm? Near warm? Between warm and cool? At cool? Below cool? Record the position of the liquid in your weather notes.
<b>Rain Gauge</b>	Find a place outside where you can put your rain gauge where it can collect rain. If it rains, check the rain gauge at the end of the day to see how much rain was collected. When you have recorded the number, empty the rain gauge.	Your rain gauge has markings in centimetres. If there was no rain, write "no rain" in your weather notes. If there was rain, write the amount of rain in your weather notes.
<b>Barometer</b> 	Your barometer does not have to be taken outside. Place your barometer in a location in your home where you can leave it untouched for 5 days. Do not move the barometer. At the same time each day, check the barometer to see if the end of the straw has moved up or down.	Your barometer has marks on the card to show where your air pressure started. Each day, make a small mark on the card for the new position of the straw (put a number next to the mark so you do not lose track of which mark is which). Has the straw moved higher? Then, record "pressure rising" in your weather notes. Has the straw moved lower? Then, record "pressure falling" in your weather notes.

## Weather Notes Chart

Day 1	Example notes: Wind speed is very fast. Temperature is below cool. There were 2.5 centimetres of rain. The air pressure is falling.
Day 2	
Day 3	
Day 4	
Day 5	