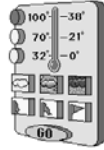


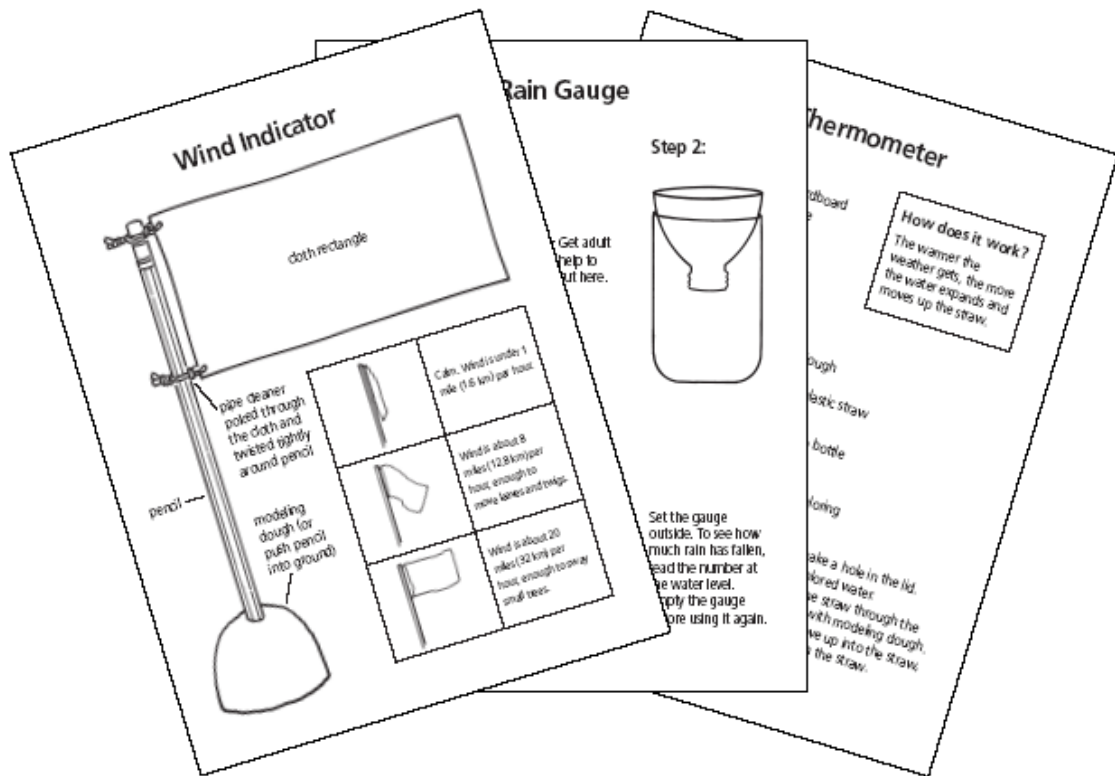
Weather Machine



Weather Station

Science

Have students work in small groups to make simple weather instruments for a classroom "weather station." Instructions for making a wind indicator, rain gauge, and thermometer are included on pages 56, 57, and 58.



When the instruments are completed, ask students to explain the instruments and how they work to the class. Have each group take readings daily. Use simple symbols to keep a record of the weather conditions on a large chart or calendar:

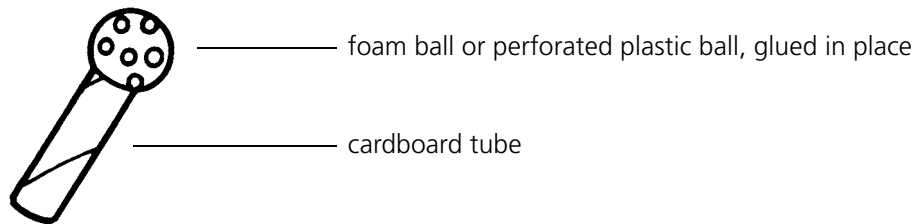
Tuesday	Wednesday	Thursday	Friday

If students want to make their own weather stations at home, provide them with copies of pages 56, 57, and 58.

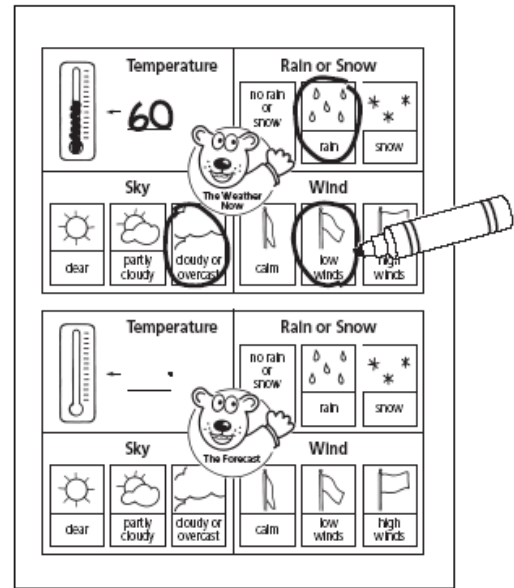
And Now for the Weather. . .

Over a period of about one month, let each student have a turn at being a weather reporter. The necessary weather information can be gathered by reading the instruments in your weather station ("Weather Station," page 52) and by using the newspaper weather column or radio and television reports. Make a transparency from page 59 and demonstrate how to use the form to record weather information. Current weather conditions are recorded at the top of the form and the forecast at the bottom of the form.

Each day, have the designated reporter fill in a copy of page 59 and use it to give the weather report from a "broadcasting studio" set up in your classroom. In the studio, you might want to include a small table or desk, a map of your state or the United States, a sign with a name for the broadcasting station, and a "microphone" made from a cardboard tube and a ball:



Creative Dramatics

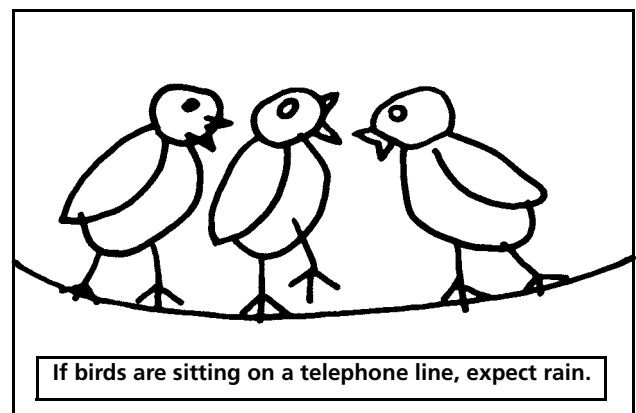


Weather Folklore

Ask a student volunteer to relate the story of Groundhog Day. (If the groundhog comes out of its burrow on Groundhog Day and sees its shadow, there will be 6 more weeks of winter. If the groundhog casts no shadow, there will be an early spring.) Explain that folklore has often been used to predict the weather, and that sometimes there may be some truth to weather folklore. In the United States, many sayings about the weather originated with the early settlers in New England and often quite accurately reflect the weather patterns in that part of the country.

Cut apart the sayings on page 60. Give each student a saying to paste to the bottom of a 12 x 18-inch sheet of drawing paper. Let students illustrate their sayings.

Language Arts



Suggest that during the next few days, students use their own observations as well as opinions gathered from their parents, other adults, and classmates to determine if their sayings contain elements of truth. Then let students share their illustrations and conclusions with the class. Students may want to include their thoughts on how the sayings might have originated as well as thoughts about whether the sayings might be true in other geographic locations.

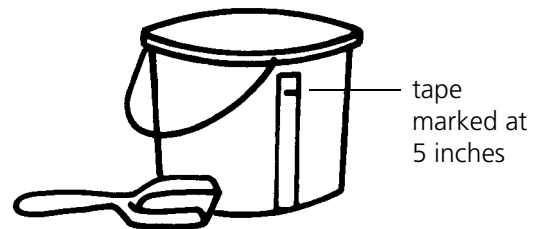
Moisture Measurements

Mathematics

Let students put their measurement skills to use in exploring one or both of the following weather questions:

Question: How many inches of water are in a 5-inch (12.5 cm) snowfall?

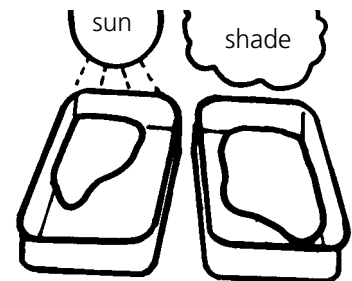
Supplies: plastic bucket (about 5-quart size)
ruler
masking tape
marker
small shovel or scoop



Procedure: On the outside of the bucket, run a strip of masking tape from top to bottom. Set the bucket on the floor and use the marker to mark a point on the tape 5 inches (12.5 cm) up from ground level. Fill the bucket with 5 inches of snow. If possible, scoop freshly fallen snow from an undisturbed spot. Take the bucket inside and let the snow melt. Mark the water level on the tape. Measure from ground level as before to determine the amount of water in 5 inches of snow.

Question: Will an 8-ounce (240 ml) puddle evaporate faster in the sun or in the shade?

Supplies: 2 plastic buckets or bins of the same size and shape
measuring cup

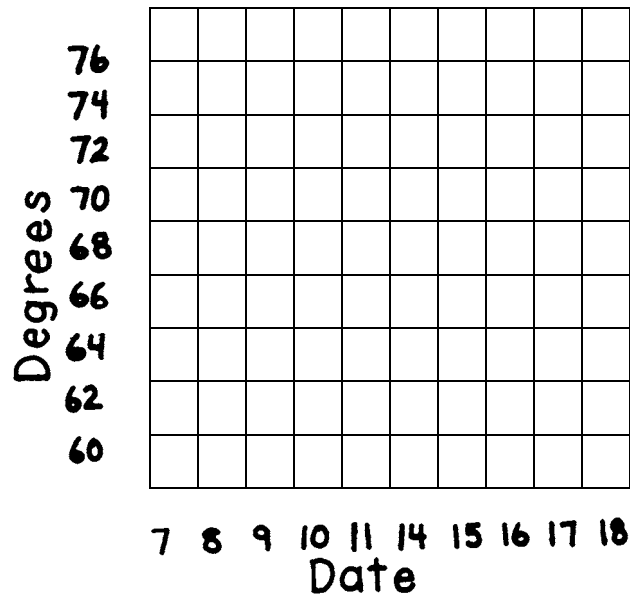


Procedure: Pour an 8-ounce (240 ml) "puddle" of water into each plastic container. Set one in a sunny location (in the classroom or outside) and the other in a location that will remain in the shade. Periodically, measure the remaining water in each container to determine which is evaporating faster. (You can try a similar experiment with real rain puddles by measuring their diameters periodically as they evaporate.)

Temperature Graph

Mathematics

For this activity, you will need a thermometer mounted outside your classroom window or a thermometer that can be placed outside for a short period of time each day. Also, prepare a large grid to use as a bar graph, writing the dates for the next 10 school days at the bottom and numbers representing the expected range of temperatures at the side.



For the next 10 school days at approximately the same time each day, have students use the thermometer to read the outside temperature. On the graph, help students record the temperature by coloring the bar above the day's date. When the graph is complete, work with students to draw some conclusions about the data. For example, identify the highest temperature recorded, the lowest temperature recorded, the temperature that appears most frequently, and any general trends toward warmer or cooler temperatures over the time period.

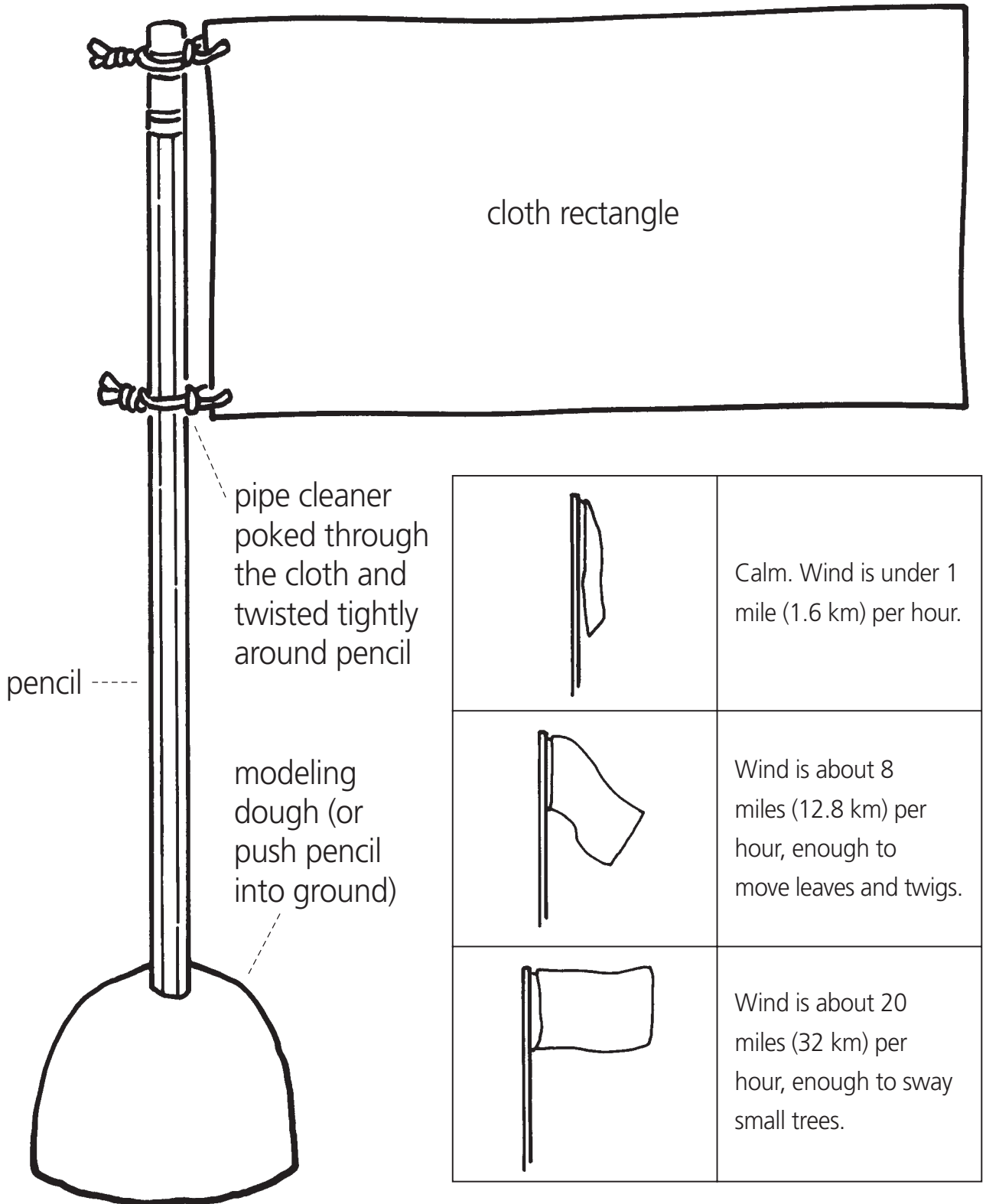
Wish for a Rainy Day

Art

You can do the first step of this project anytime, but you'll have to wait for a rainy day to complete it. Provide white drawing paper and tempera paint. Instruct students to fill their papers with large colored shapes. Their creations can be free-form or geometric, realistic or imaginary, but small detail should be avoided.

Put the paintings aside and wait for a rainy day. Ask students to listen to the weather forecasts at home and let you know when to expect rain. On the first rainy day, let students take turns at an open window or door, holding their paintings outside for just a moment. Keeping the paintings horizontal at all times so that the paint doesn't run, have students place them on a table or on the floor to dry. When the paintings are dry, display them and point out the interesting patterns created by the rain.

Wind Indicator

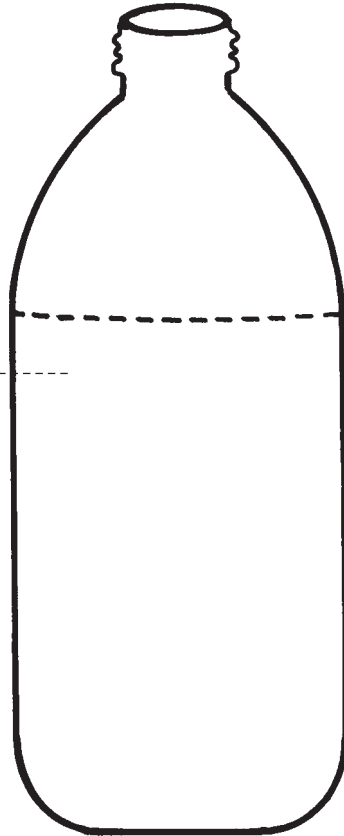


Use with "Weather Station" (page 52).

Rain Gauge

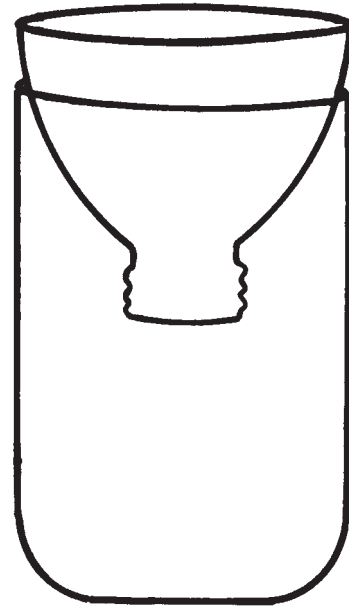
Step 1:

plastic
soda pop
bottle



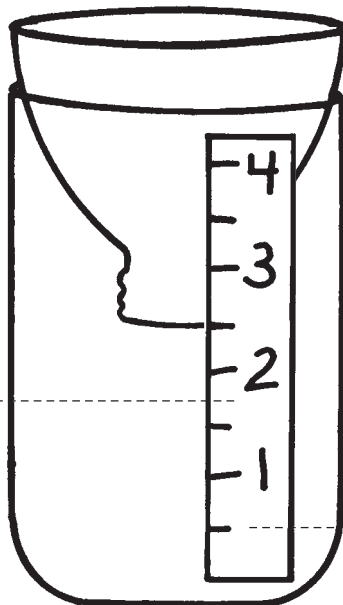
Get adult
help to
cut here.

Step 2:



Step 3:

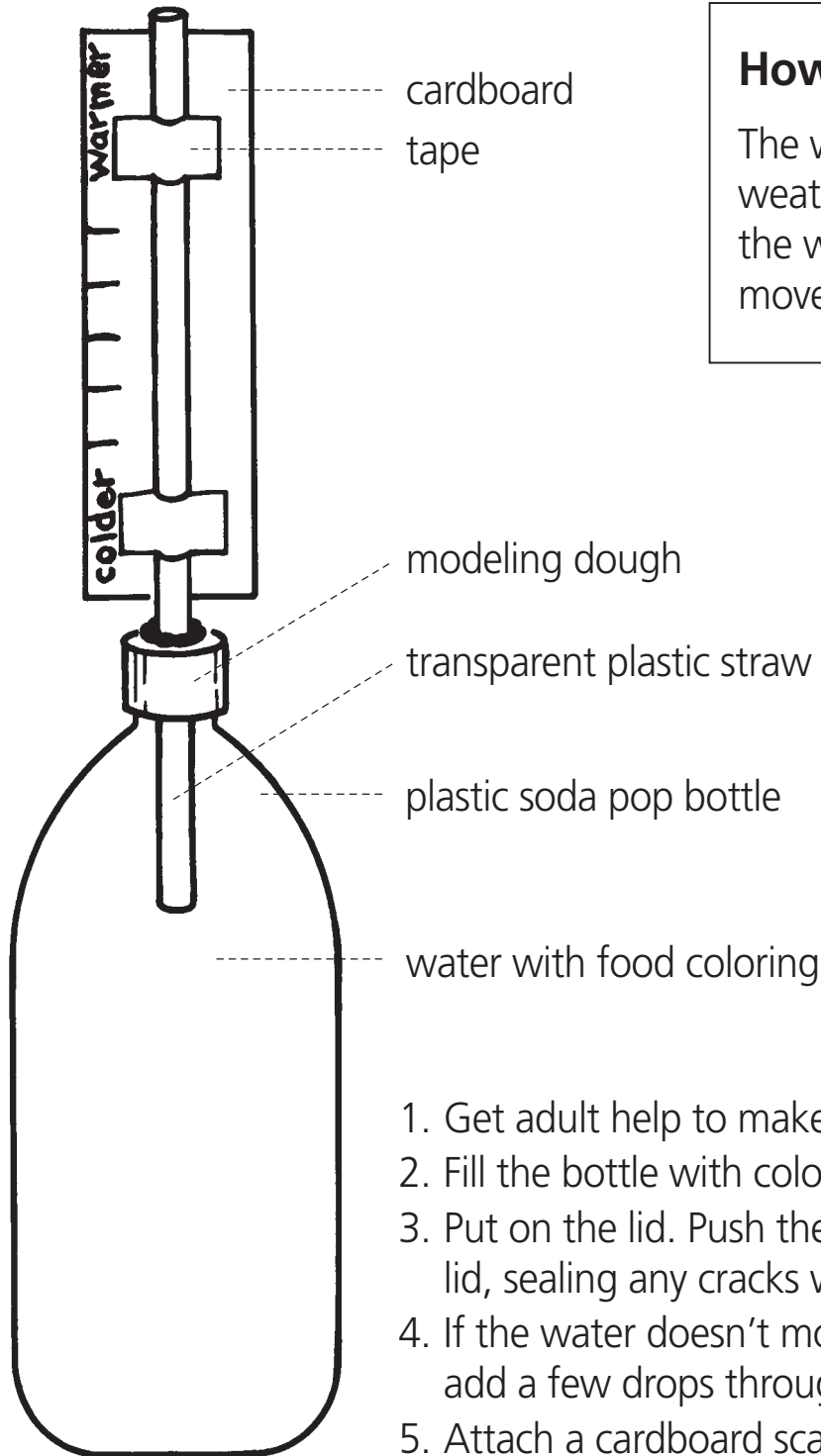
tape



Measure up
from the
bottom to
mark inches
(or cm).

Set the gauge
outside. To see how
much rain has fallen,
read the number at
the water level.
Empty the gauge
before using it again.

Thermometer

















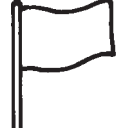


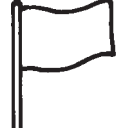





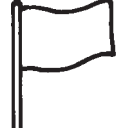




























How does it work?

The warmer the weather gets, the more the water expands and moves up the straw.

1. Get adult help to make a hole in the lid.
2. Fill the bottle with colored water.
3. Put on the lid. Push the straw through the lid, sealing any cracks with modeling dough.
4. If the water doesn't move up into the straw, add a few drops through the straw.
5. Attach a cardboard scale.

Use with "Weather Station" (page 52).

 <h3>Temperature</h3> <p>← ° _____</p>			<h3>Rain or Snow</h3> <table border="1"> <tr> <td>no rain or snow</td> <td></td> <td></td> </tr> <tr> <td></td> <td>rain</td> <td>snow</td> </tr> </table>			no rain or snow				rain	snow						
no rain or snow																	
	rain	snow															
 <p>The Weather Now</p>																	
<h3>Sky</h3> <table border="1"> <tr> <td></td> <td></td> <td></td> </tr> <tr> <td>clear</td> <td>partly cloudy</td> <td>cloudy or overcast</td> </tr> </table>						clear	partly cloudy	cloudy or overcast	<h3>Wind</h3> <table border="1"> <tr> <td></td> <td></td> <td></td> </tr> <tr> <td>calm</td> <td>low winds</td> <td>high winds</td> </tr> </table>						calm	low winds	high winds
																	
clear	partly cloudy	cloudy or overcast															
																	
calm	low winds	high winds															

 <h3>Temperature</h3> <p>← ° _____</p>			<h3>Rain or Snow</h3> <table border="1"> <tr> <td>no rain or snow</td> <td></td> <td></td> </tr> <tr> <td></td> <td>rain</td> <td>snow</td> </tr> </table>			no rain or snow				rain	snow						
no rain or snow																	
	rain	snow															
 <p>The Forecast</p>																	
<h3>Sky</h3> <table border="1"> <tr> <td></td> <td></td> <td></td> </tr> <tr> <td>clear</td> <td>partly cloudy</td> <td>cloudy or overcast</td> </tr> </table>						clear	partly cloudy	cloudy or overcast	<h3>Wind</h3> <table border="1"> <tr> <td></td> <td></td> <td></td> </tr> <tr> <td>calm</td> <td>low winds</td> <td>high winds</td> </tr> </table>						calm	low winds	high winds
																	
clear	partly cloudy	cloudy or overcast															
																	
calm	low winds	high winds															

Use with "And Now for the Weather..." (page 53).

Weather Folklore

Use with "Weather Folklore" (page 53).

Fireflies come out before a rain.

A rainbow in the evening means fair weather is on the way.

When bees stay near the hive, rain is close by.

When muskrats build large houses in deep water,
it will be a cold winter.

Expect stormy weather when ants travel in a straight line.
When they scatter all over, the weather is fine.

If a dog pulls its feet up when walking, expect a
change in weather.

The higher hornets build their nests, the higher the snow will be.

Rabbits leave the field and head for the woods before a rain.

If birds are feeding during a rain, it will rain all day.

The faster a cricket chirps, the warmer the weather.

Clover leaves show their bottom sides before a rain.

If birds are sitting on a telephone line, expect rain.

Red sky in the morning, sailors take warning.
Red sky at night, sailor's delight.

Ant mounds will be heaped up before a rain.

The higher the clouds, the fairer the weather.

Small snowflakes mean a long snow.
Large snowflakes show the snow won't last.

Frogs croak before a rain,
But in the sun are quiet again.

Fish bite before a rain.

A ring around the moon or sun
Means that rain will surely come.

The wider the brown band on Woolly Bear
Caterpillars, the milder the winter will be.

Cattle huddle together before a storm.

Rain before seven,
Clear by eleven.

Cats and dogs eat grass before a rain.

When the wind is in the west,
Fishing is the best.

Ducks quack louder before a storm.

The daisy shuts its eye before a rain.

The more nuts squirrels gather in autumn,
the colder the coming winter.

Flowers smell best before a rain.

Doors and drawers stick before a rain.

After the robin comes in spring,
he will get snow three times on his back.