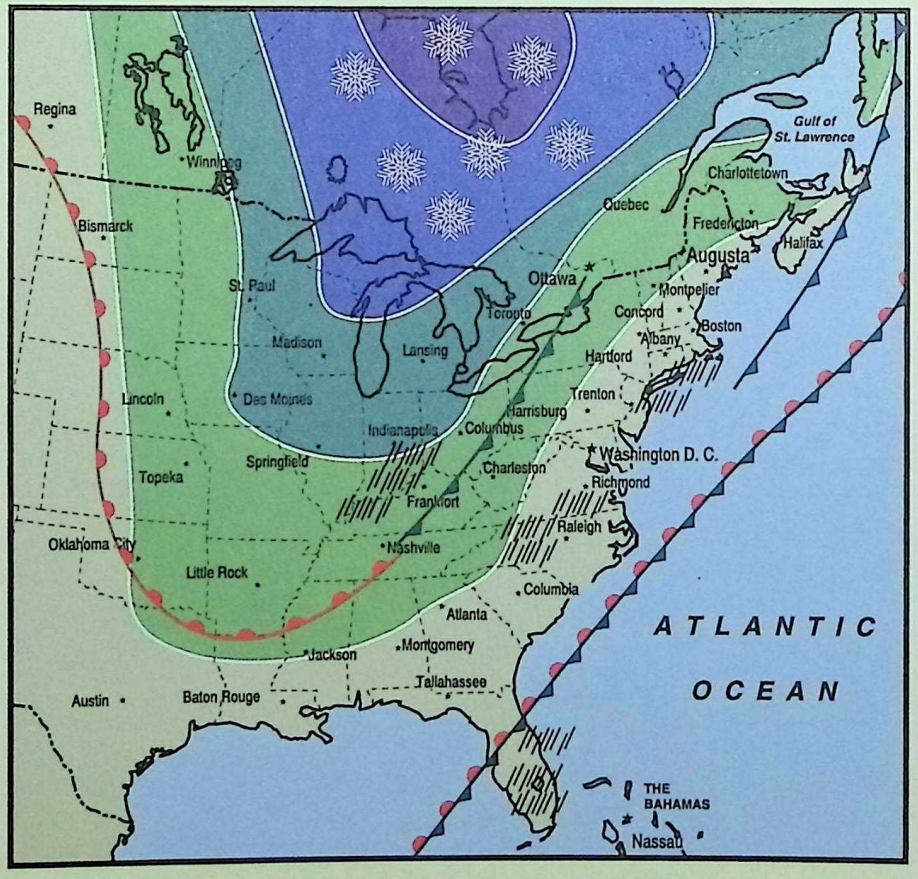
Explore and Discover

Weather Watch



Wouldn't it be great to be able to predict the weather? You'd never get caught in a rainstorm without an umbrella! Weather affects your life everyday. Learn to predict and plan ahead with this badge.



1. Weather Maps

Learn to read a weather map printed in a newspaper. Look for places where it's raining, or places where it's hot or cold. Predict the weather in your area using the maps and information given.

2. Visit a Weather Station

Visit a weather station, or interview a weather reporter or meteorologist about weather forecasting. Find out what kinds of equipment are used to watch and predict weather, why weather stations are useful, how the data about weather are interpreted, and how accurate weather predictions usually are.

Where to Find Weather Stations

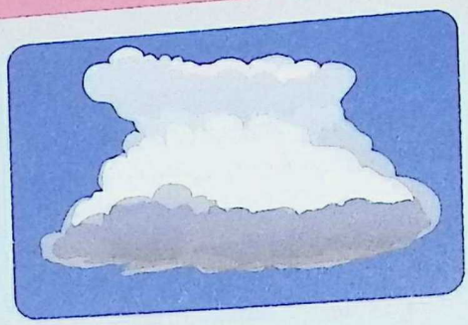
- **Airports**
- **Military installations**
- **Television stations**
- **U.S. Weather Service facilities**
- **Federal and state agencies responsible for public lands**

3. Become a Cloud Watcher

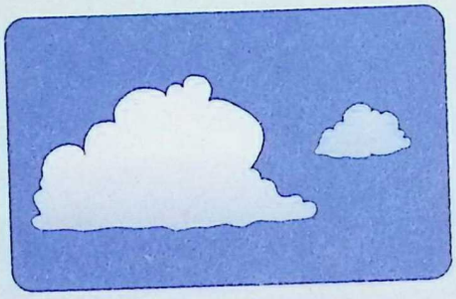
Pay special attention to clouds for a week. Find out what kinds of clouds you are watching and what kinds of weather usually go with them. Then, make a cloud chart by drawing pictures or gluing magazine photos of cloud types on a piece of paper. Label each type of cloud (such as cirrus, cumulus, nimbus, and stratus) and use your chart to help predict the weather for a week. How accurate were you?



Cirrus clouds



Nimbus clouds



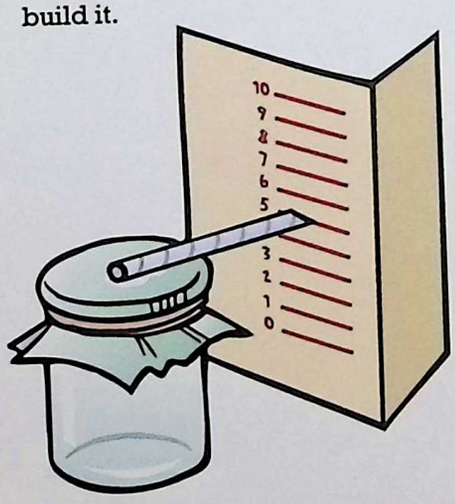
Cumulus clouds



Stratus clouds

4. Build a Weather Instrument

Find directions for building an instrument that helps you predict the weather, such as an hygrometer (measures changes in humidity), a barometer (see box), an anemometer (measures wind speed), or an alcohol thermometer (measures temperatures). Then build it.



Build Your Own Barometer

What You Need

- A balloon
- A large baby-food or similar-sized jar
- A heavy-duty rubber band
- A drinking straw
- A piece of cardboard

What You Do

1. Cut a large section from the balloon and stretch it tightly over the mouth of the jar.
2. Wrap the rubber band around the balloon so it stays put.
3. Cut the end of the drinking straw into a point.
4. Lay the straw across the top of the jar.
5. Glue the non-pointed end of the straw to the center of the balloon.
6. Fold the piece of cardboard so that it will stand up next to the jar.
7. Mark where the pointed end of the straw touches the cardboard.
8. Draw a line and label the line number 5.
9. Draw another ten lines (five above and five below the number 5 line) on the cardboard. They should each be three millimeters* apart from one another. Write the numbers 0-10 on the lines. Make sure the straw is pointing at number 5.

Watch what happens to the straw over the next week. Check your barometer at approximately the same time every day. What is the weather like when the straw points to a lower number? What is the weather like when it points to higher numbers?

* See page 235 for the metric conversion chart.

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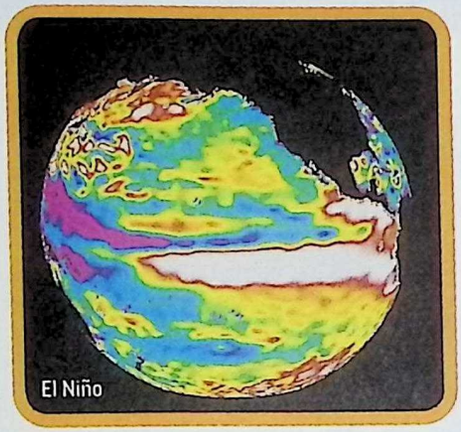
5. Weather Smarts

Find out about weather-related emergencies that your community might face, such as hurricanes, tornadoes, flash floods, or lightning storms. Create a family plan for each emergency situation that could occur in your area. Include an emergency number to call for local or state weather reports. Then do one thing that will help your family be better prepared for a weather emergency.



Hurricane from space


El Niño

6. Weather Trends

What's all the talk about global warming, La Niña, El Niño, and holes in the ozone? Find out more about one of these major weather trends. How is it affecting the climate and quality of life in your part of the country or another part of the world? What, if anything, can you or your community do to learn to live with the changes in weather cycles?

7. Weather Games

Make a game about weather. You can make a card or board game, a word game, or an active game. Share this with others.

8. Help Others Be Weather-Prepared

Help to run a weather-safety booth at a community event. You can make posters or distribute safety tips for weather emergencies common to your area. At your booth, include some hands-on learning for kids.

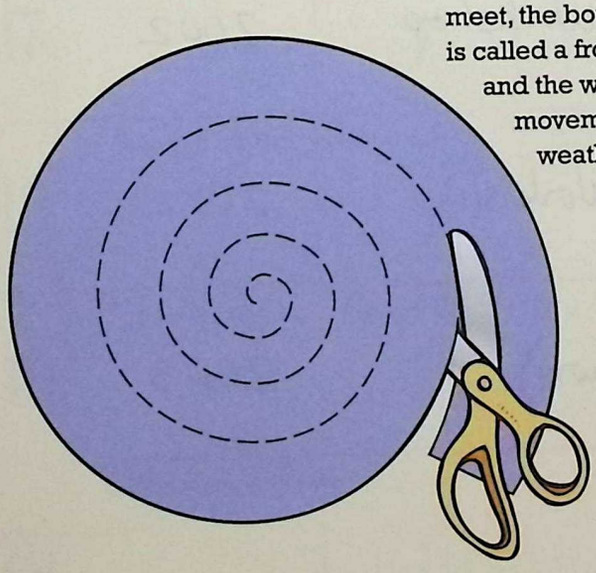
OR

Help an older neighbor prepare a kit for use in a weather emergency.

9. Paper Spirals and Frontal Systems

How do you make a paper spiral spin without blowing on it? Cut the spiral out of paper using the pattern below. Put a small hole through the center using a large needle. Tie a knot in a 6- to 8-inch-long piece of string and thread it through the hole.* Hold the spiral very still above a lamp. Be patient and wait a few minutes. What does the spiral do? Do you know why?

A front has come through. When two air masses of different temperatures meet, the boundary between them is called a front. The colder air sinks and the warmer air rises. This movement often causes rainy weather and storms.



10. Make Your Own Weather

With the help of an adult, try making your own rain cloud.

What You Need

- Very hot (but not boiling) water
- A large piece of plastic wrap
- Matches
- Ice cubes
- A clear liter plastic bottle cut down to be about 6-8 inches tall*

What You Do

1. Cut a piece of plastic wrap large enough to drape over the top of the bottle.
2. Put several pieces of ice on the plastic wrap and set it aside.
3. Fill the bottle 1/3 full with the hot water.
4. Light a match and throw it into the bottle.
5. Quickly place the plastic wrap with ice on top of the bottle.
6. Wait and watch to see a rain cloud appear.

What is the cloud that is formed? It isn't smoke. It's water droplets forming on the smoke particles. The water vapor rises from the hot water and when it gets to the cool air near the ice, the vapor cools and begins to sink, condensing into water droplets. This forms a cloud. Droplets that form on the underside of the plastic may become so heavy that they fall as rain.

* See page 235 for the metric conversion chart.