

A hurricane is a doughnut-shaped mass of whirling winds revolving around a low-pressure center, as you can see from the satellite image of Fran.

The Earth's rotation pulls the winds into a curve. The faster winds blow, the more they curve. At 74 mph or more, hurricane winds make a tight circle. The center of the circle is a quiet space, called the eye of the hurricane. When one is in the eye of the hurricane, the air may be calm and the sun may be shining. But it won't last long, perhaps a few minutes to an hour. As the eye passes, hurricane-force winds will resume, only this time they will be blowing from the opposite direction.

# CYCLONE IN A BOTTLE

**Learning Objective:** Examine the wind patterns swirling around the eye of a hurricane.

**Challenge:** Why do hurricanes have eyes?

**Materials:** globe, record player, paper, pencil, scissors, tornado tube from hobby or toy store, two empty plastic soda bottles, duct tape (optional)

**Procedure:**

1. Ask students to describe how hurricane winds move. Look at the satellite image of Andrew.



2. Cut out a piece of paper to fit onto the turntable of a record player. Ask kids how you could make a straight line become a curved line. Turn on the record player and draw a line. What happens?

3. Ask students to look at a globe. Ask them to demonstrate how the Earth turns or rotates. Explain that winds do blow straight, but like the record player's turning, the Earth rotates

4. You can make your own hurricane in the classroom by using a tornado tube that you can purchase in a toy store or from a science supply catalog. The tube with a small opening connects two plastic soda bottles.

Fill one soda bottle with colored water, attach the tube to the mouth of the bottle and screw the bottle to other end of the tube. Turn the bottles over and give the assembly a sharp twist. After a few seconds the water in the bottle should begin to spiral through the tube. As air and water pass each other through the narrow space, they create a spiral that simulates the tight circulation of hurricanes, as well as of tornadoes.

5. Try making a tornado tube without using the tube, just by taping two bottles together with duct tape. How well does it work?

**Extension Activity:** Ask the students what the TV or newspaper weather map shows for different parts of the country. Make sure they notice that the weather isn't the same all around the country.

Have them write to a key pal (email) or penpal (good, old-fashioned letter writing) to find out about the weather in another region of the world. What are the seasons like there? What was the worst storm their correspondent can recall?

