

# Tornado in a Bottle

Discover how tornados form by making your own vortex.

## Materials

- Two 2-liter plastic bottles
- One washer
- Duct tape
- Water
- Food coloring (optional)

## Instructions

1. Fill one of the 2-liter plastic bottles two-thirds full with water. If you'd like, add a few drops of food coloring to the water.
2. Place the metal washer on top of the bottle opening.
3. Take the second bottle and place it upside down on top of the first one, so that the bottle openings perfectly line up to each other.
4. Tape the bottles together at their openings using duct tape. Make sure to tape tightly so that no water will leak out when you turn the bottle over.
5. Turn the bottles upside down so that the bottle with water is on top. Swirl the bottle in a circular, counterclockwise motion.
6. Watch what happens. What shape does the water take as it moves from the upper bottle to the lower one?

## What's Happening?

This simple activity lets you see the structure of a vortex. A vortex is an area where the flow of a fluid (such as water or air) revolves around an axis. In the bottle, water flows in a circle and creates a funnel shape. In a supercell thunderstorm, a tornado is an example of a vortex that can form from air that moves in a deep and continuous circular updraft.

## Learn More

National Oceanic and Atmospheric Administration tornado resources

<https://www.noaa.gov/education/resource-collections/weather-atmosphere/tornadoes>

Tornado Alley film resources

<http://tornadoallemovie.com/index.php/education/>



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