

### Tornado in a Bottle

**Post-visit activity** connection to Energizer Weather and Nature exhibits

**Grade level: 2<sup>nd</sup> grade** NGSS 2-ESS1-1; CCSS W.2.8, SL.2.2, MP.5, **3<sup>rd</sup> grade** NGSS 3-ESS2-2; CCSS W.3.8, MP.5

**Concepts:** water vortex, tornado formation

**Materials needed:**

1. Water
2. A clear plastic bottle with a tight fitting lid such as a soda bottle
3. Glitter
4. Dish washing liquid

**Procedure:**

1. Fill a plastic bottle with water until it reaches around three quarters full.
2. Add a few drops of dish washing liquid.
3. Sprinkle in a few pinches of glitter to make your tornado easier to see.
4. Put the cap on tightly.
5. Turn the bottle upside down and hold it by the neck.
6. Quickly spin the bottle in a circular motion for a few seconds, then stop and look inside to see if you can see a mini tornado forming in the water. You might need to try it a few times before you get it working properly.

**What's Happening:**

Spinning the bottle in a circular motion creates a water vortex that looks like a miniature tornado. The water is rapidly spinning around the center of the vortex due to centripetal force. Vortexes that are found in nature includes tornadoes, hurricanes and waterspouts.

**Book List:**

1. Tornadoes by Gail Gibbons
2. Come On Rain by Karen Hesse
3. Hurricane by David Wiesner
4. Feel the Wind by Arthur Dorros

5. Flash, Crash, Rumble and Roll by Franklyn Branley

**Extension Activities:**

1. Have the students use descriptive words to tell how wind feels on their faces.
2. Experiment with making tornados using a vortex bottle connector available for purchase online or at the Amazeum's Curiosity Corner.