

**Project FOCUS
Best Lessons
FIFTH GRADE**

Title of Lesson: Tornadoes!!!

Theme: Earth/Space Science

Unit Number: X **Unit Title:** Earth's Surface Features

Performance Standard(s) Covered (enter codes):

S5CS1

S5CS7

S5CS8

S5E1

Enduring Standards (objectives of activity):

Habits of Mind

- Asks questions
- Uses numbers to quantify
- Works in a group
- Uses tools to measure and view
- Looks at how parts of things are needed
- Describes and compares using physical attributes
- Observes using senses
- Draws and describes observations

Content (key terms and topics covered):

Tornadoes, wind, cold front, wind erosion, Tornado Alley

Learning Activity (Description in Steps)

Abstract (limit 100 characters): This lesson is focused on teaching students about tornadoes and how they affect Earth's surface.

Details: You will need to explain to them what exactly a tornado is. Have them brainstorm in groups at first to collectively decide what they think a tornado consists of, then have each group answer. Afterwards, clear up any discrepancies they may have on what it is by covering general information, such as the mixing of hot air from the south and cold air from the north. This would be a good time to tell them about Tornado Alley and why tornadoes occur there most often. Next, ask if anyone has ever seen a tornado or knows what it looks like, and describe the physical aspects of it, such as the fact that a tornado is made up of wind and really without it picking anything up, such as dirt or other debris, you truly could not see a tornado because it is made of wind which we all know we cannot see. You can then discuss the way it moves, supporting your facts with a fun little spinning activity where the faster they spin, the more likely they are to move around the room. Begin by having them spin slowly, then gradually have them spin faster until they begin to move around the room uncontrollably. Just be careful that they do not injure themselves or anyone else! Next you can talk about how strong tornadoes are, using examples the kids may know, such as the movie "The Wizard of Oz." Ask them if they think tornadoes can lift certain things, beginning with a cat or some animal and progressing to a human, a cow, a car, and eventually a house. Some may not think that it can lift a house, but find a video online that shows the true power of a tornado. The kids will love watching all of the destruction a tornado does, and the trail of ruins it leaves behind.

Finally, you can show them more closely what a tornado looks like by making the classic tornado in a bottle. Pour about 3/4 one bottle full of water and put a few drops of food coloring in it to see the water better. Next, place the empty bottle on top of the filled bottle and duct tape them together at the openings, making a water tight seal. Once you have made it, hold it by the duct taped section and swirl it around so that the bottom bottle with the water is swirling around the bottle, then turn bottles upside down so the water drains to the other bottle, which should form a water tornado while it is draining from the top bottle. The kids will love watching it form, and will probably beg you to let them do it. Just make sure they hold it at the neck as well so the tornado in a bottle doesn't break open or leak. Once you finish, ask questions to see if they remembered what they learned, such as how is a tornado formed? Where do they occur most? How strong is a tornado? One last thing you can do is show them videos of water cyclones and fire tornadoes (yes, there are such things as fire tornadoes)

Materials Needed (Type and Quantity):

Two 2-Liter bottles (preferably clear), water, food coloring (blue works best), duct tape

Notes and Tips (suggested changes, alternative methods, cautions):

If you are worried the kids may not be able to soak all of this in, just try your best to help them understand. I had my kids blow hot and cold air on their hands to see the differences of temperature in the winds that collide to form a tornado. Be creative and do as much group involvement as possible so that the students who are not following as well can be helped discreetly by those who may know more or have a better grasp of the concept.

Sources/References:

- 1) <http://www.nssl.noaa.gov/edu/safety/tornadoguide.html>
- 2) <http://www.weatherwizkids.com/weather-tornado.htm>
- 3) <http://video.nationalgeographic.com/video/player/environment/environment-natural-disasters/tornadoes/tornadoes-101.html>