



Weather Rocks! Pre-Visit

Thank you for scheduling an educational experience at the Putnam Museum. In this thirty-five minute program, the Putnam Museum's Education Specialist will lead your hands-on program in which your students will take a closer look at severe weather storms. We look forward to seeing you and thank you for your interest in the Putnam Museum's education programs.

Sincerely,
Kara Fedje,
Education Specialist

Project Title: Weather Rocks!

Target Audience: grades 2-6

Focus: Severe Weather Storms

Focus Question: What are some types of severe weather?

Learning Objectives:

- Students will know the difference between a volcano, tornado, hurricane, and tsunami
- Students will create their own tornados and volcanoes
- Students will understand how a cloud is formed

Catalog Description: Get ready to rock, rumble, and...get wet? Exploring the earth's dynamic forces and wonders of weather, we'll create our own volcanoes and tornados. We'll also examine hurricanes, tsunamis, and even take a look at how clouds are formed. Come to the Putnam where it won't rain, sleet or snow but you will always want to be prepared for the weather!

Key Words:

Clouds: tiny droplets of water that are formed when water vapor molecules cool and stick together

Hurricanes: a severe tropical storm that gathers heat and energy through contact with warm ocean waters

Tornado: a rotating column of air that is in contact with both the surface of the earth and a storm cloud

Tsunami: a series of huge waves that happen after an undersea disturbance, such as an earthquake or volcano eruption

Volcanoes: a vent in the earth's crust that expels lava, steam, and ash

Standards and Curriculum:

Iowa Core: Earth and Space 3-5

Illinois Learning Standards: Late Elementary 12.E.2a

Background Information: Weather plays an important role in all of our lives. Wind alone can create patterns that change temperatures across the globe. But, changes on the earth's crust, like a volcanoes or earthquakes, will alter weather patterns as well.

For more information:

FEMA: Federal Emergency Management Agency

<http://www.fema.gov/>

NOAA: National Oceanic and Atmospheric Administration's National Weather Service

<http://www.noaa.gov/>

NOAA's National Weather Service

<http://weather.gov/>

University of Illinois Meteorology Guide

<http://ww2010.atmos.uiuc.edu/%28Gh%29/guides/mtr/home.rxml>

USGS: United States Geological Survey

<http://www.usgs.gov/>

Further Activities for your classroom:**Building a Barometer****Background**

Air exerts pressure on Earth's surface. In fact, it exerts pressure in all directions—down, up and sideways—at the same time! At sea level, air weighs 14.7 pounds per square inch. That means that a desktop area 2 inches by 2 inches has almost 59 pounds of air sitting over it. Standard copy paper (8.5 x 11 inches) has close to 1,375 pounds of air holding it down AND up at the same time.

**Materials**

- Empty coffee can
- large, heavy-duty latex balloon
- heavy rubber band
- scissors
- coffee stirrer
- 3x5 card
- duct tape
- white glue

Procedure

1. Smoothly tape the rim of the coffee can so the metal edge is completely hidden but remains open. Be sure the tape smoothly extends down the side of the can an inch or more. To effectively do this, tape around upper side of the can leaving at least 1/2 inch of tape sticking up over the rim. Use scissors to make 8 to 10 cuts in the protruding tape straight down to the can rim. Fold the tape down and smoothly stick it to the inside of the can.
2. Cut the filler hole off the balloon and discard. Stretch the balloon tightly over the taped edge and secure it with a rubber band. Make the rubber band as tight as you can.
3. Put a drop of white glue in the center of the stretched balloon. Put the coffee stirrer on the glue and position it so that it protrudes about 1/2 inch over the edge of the can.

4. Tape the 3x5 card on the side of the can so that it extends over the top and is close but not touching the coffee stirrer.
5. Mark the card at the tip of the stirrer. It isn't necessary to put numbers there.
6. Write the current barometric pressure in a journal. Determine if the pressure is high, low or "somewhere in between." This will be your baseline pressure. Be sure to note the position of the mark on the 3x5 card corresponding to the pressure.
7. Repeat step 6 through several cycles of weather. Be sure you have several highs and lows marked on your card and that you have entered all information in your journal.

When you become accustomed to the way your barometer works, you will have a tool with which to predict the weather. Determine how the barometric pressure correlates to present weather.

(Source: How to build your own weather station:

<http://school.discoveryeducation.com/lessonplans/activities/weatherstation/>)