



Weather Rocks! Pre-Visit Material

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

Program Title: Weather Rocks!

Target Audience: Grades 3-5

Focus: Severe Weather Storms

Focus Questions: What are some types of severe weather?

The program highlights:

- Different types of clouds and storms and how they are formed
- Demonstration of a cloud in a bottle
- Students will learn what makes a thunderstorm
- Students will have the opportunity to create a vortex in a tornado tube

Catalog Description: Get ready to twist, rumble and...get wet? Exploring the earth's wonders of weather. Participants create their own tornados, examine hurricanes and electrical storms. Classes will also take a look at how clouds are formed in a unique demonstration.

Key Words:

Cloud- tiny droplets of water that are formed when water vapor molecules cool and stick together

Flood- a rising and overflowing of a body of water especially onto normally dry land

Thunderstorm- a storm with lightning and thunder

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

Hurricane- a severe tropical storm that gathers heat and energy through contact with warm ocean waters

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 Activity 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/>)

(Barometer: Build your own weather tool:

<https://www.scholastic.com/teachers/articles/teaching-content/barometer/>)