ORLANDO SCIENCE CENTER

Discovery Lab Post-Visit Activities

Forces of Nature

Grades 3-5

We hope that you enjoyed your visit to the Orlando Science Center! As a means of enhancing and extending your students' Discovery Lab experience into the classroom, we are providing you with these post-visit materials to share with your class.

Discussion Topics:

- Weathering and erosion slowly changes the surface of our planet. *Compare and contrast these two processes. How does weathering and erosion affect Florida?*
- Volcanoes have vents that connect to reservoirs of molten rock. When gas pressure under the surface of the earth builds up, the volcano will erupt. Active volcanoes in the U.S. are found in Hawaii, Alaska, California, Oregon and Washington. *Why do volcanoes form in certain regions and not in others?*
- Meteorologists use tools such as ocean buoys, satellite imagery, and reconnaissance aircraft that actually fly 'into' the hurricane to measure the strength of a hurricane. This information helps the National Hurricane Center create forecasts and predictions. *How might our lives change in the future as meteorologists' tools improve and forecasts become more accurate?*

In Class Activities:

- Evidence of erosion by wind or water can be found in many locations if you look closely. As a class, take a walk outside in the playground or elsewhere on school grounds. Have the students bring a notebook or piece of paper to record what they find. Look at the grass for bald spots, slopes with run-off, and mud near sidewalk or parking lots. Look closely at the school buildings and identify which ones show the greatest amount of erosion. Why do some buildings and areas show more signs of erosion than others? Does it have to do with the location of the buildings or grass areas? Do buildings or objects made out of certain materials endure more erosion than others? Have students keep records of what they discovered and to write down their ideas for preventing or slowing down the effects of erosion at their school in the future.
- Scientists design and build weather instruments that have sensors which can measure wind speed, wind direction, temperature, air pressure, and humidity. This information can help meteorologists predict where storms are going to occur and how strong they will become. Draw a picture of your design of a weather instrument that will float in a hurricane. Make sure to include sensors that can monitor conditions within the storm. Then, write a description of an idea that you might use to help convince someone to invest money or time in helping you make the product. Build a model or prototype of your idea using materials available to you in the classroom or from home. Present your model to the class.

Math Problems:

1. Hurricane Katie is a Category 2 storm with winds of 100 mph. It is moving towards Daytona Beach with a storm surge of 7 feet. The sea wall protecting Daytona Beach is 9 feet above sea level. What is the distance between the top of the sea wall and the water level when the storm surge hits?
2. Hurricane Michael is moving towards Key West at 10 mph. If Hurricane Michael is 150 miles away, how many hours will it take to reach Key West?
3. An evacuation has been issued in 3 communities; Satellite Beach, Cocoa Beach, and Melbourne Beach as Category 5 Hurricane Monica approaches. Satellite Beach has 11,792 people living in it, Cocoa Beach has 11,862 people living in it, and Melbourne Beach has 3,130 people. How many people in total need to be evacuated?

Writing Prompt:
Read books and articles about beach erosion in Florida. Write a one-page article explaining what beach erosion is and which areas of Florida are most prone to it. Explore methods people have used to prevent erosion in the past and list them in your paper. Come up with at least two ideas for slowing down the effects of erosion at your favorite beach.

Art Project:
Create a model volcano out of playdough, paper mache, or clay. Build it on top of a piece of cardboard or plywood. Use paint to add color to your volcano. Be sure to include the following parts; crater, vent, side vents, and the magma chamber.

Additional Resources:
Hurricanes by Seymour Simon (Collins)
Eye Wonder: Volcano (DK Children)
Erosion by Joelle Riley (Lerner Classroom)