



# F7 FOCUSED FIELD TRIPS

**PLEASE NOTE:** Parts of Level 1 are currently under renovation while we prepare your next scientific adventure! For up-to-date construction information, please visit [azscience.org/construction\\_updates](http://azscience.org/construction_updates).

## Seventh Grade Student Investigation

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The Investigation contains activities on a variety of topics found throughout the Center. Exhibits are also sometimes removed temporarily for repair or refurbishment, or may be in use by other groups, so be prepared to be flexible.

## Investigation Activities

### Level 3: Forces of Nature in the Sybil B. Harrington Galleries

#### Erosion and Deposition

Erosion is the moving of rocks, soils and sand by various natural means. Deposition is the dropping of those materials into another place. Given enough time, these processes can cause huge changes in the Earth's landscape.

##### Where to go

Rivers Erode the Land, Oceans Erode the Land and Stream Table

##### What to do

Read and discuss the effects that water has on the land. Identify specific changes that have occurred on the land over a long period of time. Name a feature in Arizona that was formed by water-caused erosion.

Now, find the Stream Table and dig in! Use your hands to carve channels and make mounds.

*Describe the effect of the water on the land using the words "erodes" and "deposits".  
How does the flow's force change the rate of erosion?*

#### The Rock Cycle

Like water, rocks also have a cycle. They are all around us; they leave us clues that provide information about the Earth and how it changes. Rocks are classified as igneous, sedimentary and metamorphic, depending on how they were formed. A rock is made up of one or more minerals.

##### Where to go

The Rock Recycler and Take a Closer Look

**What to do**

At the Rock Recycler, preview the rock cycle by reading and discussing the information provided on the chart on the left.

*Can you guess how these rocks were made just by looking at them?*

Using the Rock Recycler, have each person in your group participate in changing rocks. As you are making choices, make sure to take a rock through at least 3 changes. Please pay close attention to the how the rocks are changed.

Name three of the forces that can change rocks from one type to another:

\_\_\_\_\_

Now find the exhibit, Earth Rocks - Take a Closer Look. Use the magnifying eye to look at examples of each type of rock.

Write down some words you would use to describe the rocks:

\_\_\_\_\_

\_\_\_\_\_

Are all the rocks the same? Why or why not?

\_\_\_\_\_

\_\_\_\_\_

*Based on what you learned from the Rock Recycler, can you identify the three types of rocks in these samples?*

**Earth in Motion**

“Plate tectonics” is a theory in geology that our lithosphere (made up of the upper mantle and the Earth’s crust) is divided into large sections called plates. These plates, and the continents on top of them, are thought to be slowly moving as a result of pushing and pulling by convection currents in the molten rock of the earth’s mantle.

**Where to go**

Plate Tectonics

**What to do**

Read the introduction to the theory of plate tectonics. Discuss 2 of the facts that demonstrate how plate movements relate to earthquakes using 2 of the 3 boundaries discussed.

*Why do plates move?*

*How does your answer support the theory of plate tectonics?*

*How do the movements of these plates trigger earthquakes?*

*Predict how the Earth's land masses have changed over the years.*

Now find The Magic Planet in the Wells Fargo Classroom. Use the buttons on the monitor to control the Planet. You can examine past weather patterns, tectonic plate movements, earthquake zones, trenches, volcanoes, and even past storms!

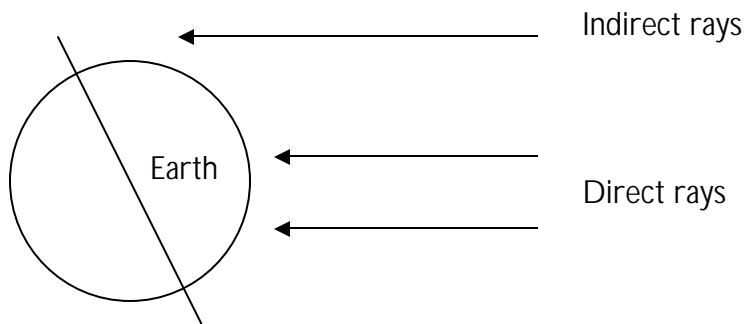
### **Did you know?**

Alfred Wagener from Germany proposed the first ideas that led to the theory of plate tectonics. He called his hypothesis "continental drift" since the world's continents seemed to be slowly "drifting" to new locations in the oceans.

## **Level 4: Solarville in the APS Solar Gallery**

### **The Reason for the Seasons**

Unless you live at the equator, you've noticed that during the summer it is hotter outside and cooler in the winter. Why do we have this change in temperature? Since we get our light and heat from the sun, a natural reaction is to assume the earth must be closer to the sun during the summertime. The reason is that the earth is actually *closer* to the sun during our winter (in the Northern Hemisphere). Seasons have to do with **direct** and **indirect** sun light.



### **Where to go**

Solarville, Season Spin Table

### **What to do**

Spin the seasons table to observe how the tilt of the earth is actually the reason for the seasons.

*During what two seasons would both the southern and northern hemispheres receive equal amounts of sunlight?*

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