PLEASE NOTE: Parts of Level 1 and all of Level 4 are currently under renovation while we prepare your next scientific adventures! For up-to-date construction information, please visit azscience.org/construction_updates.

Third Grade Student Investigation

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ARIZONA SCIENCE CENTER

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Third Grade Investigation

This Investigation contains activities on a variety of topics found throughout the Center. Each activity directly supports the Arizona state science standard (listed in the Teacher Guide). 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

Between Levels 2 and 3: Music Landing

Sounding Off

Pitch is one term used to describe sound waves. It can be described as the highness or lowness of a sound. An example of a high-pitched sound is the buzz of a mosquito. The purr of a cat has a lower pitch.

Where to go

Plucked Strings

What to do

Pluck each string one at a time. Listen to the pitch – how high or low the sound is. Match the length of the string to the pitch of the sound.

Longest string	High sound
Shortest string	Low sound

Imagine a violin and a cello.

Which instrument has longer strings? _____
Which instrument has shorter strings? _____
Which do you think has a higher sound? Why? _____

Did you know?

Plucking the strings makes them vibrate. The vibrations travel from the strings to the soundboard, making the entire soundboard vibrate. The big, hollow shape of this box amplifies, or makes louder, the vibrations from the soundboard. The sound comes out the hole, and is picked up by your ear.

Level 3: Forces of Nature, Sybil B. Harrington Galleries

Why Won't This Work?

Earth's water is constantly in motion through a series of phases called the water cycle which includes precipitation, collection, evaporation, and condensation.

Where to go
Water Goes Round

What to do
Using the ball bearings to represent water, complete the model of the water cycle using all four phases. Then try to complete the water cycle omitting any one of the four phases. Your challenge is to complete the new cycle without that single phase.

Can you go straight from one phase to another? Can that happen in nature?

_____

Are we running out of water?

_____

How long has water been around for?

_____

What are the many ways that water falls to Earth?

_____

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 of 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. Be sure to 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?

_____ _____ _____

Level 3: Hallway

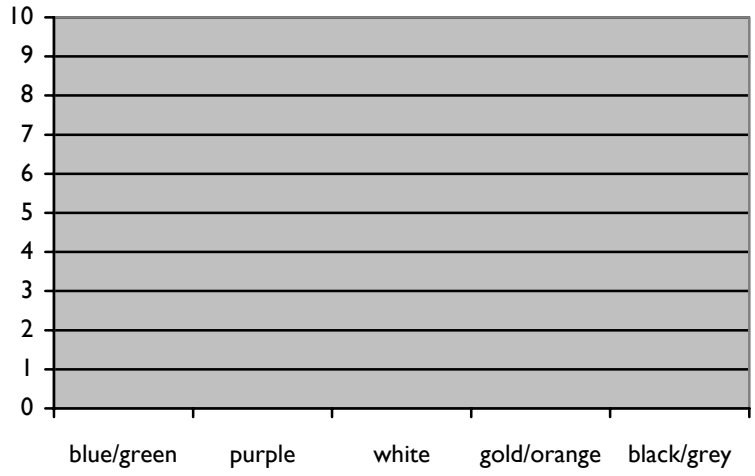
Rocks and Minerals

The Earth is made of rocks and minerals. The main difference between a rock and a mineral is that a mineral is the same all the way through. Rocks are made of two or more minerals, and can be very different in color and texture.

Where to go
Minerals of Arizona

What to do
Look at the specimens in the case, and decide how you would describe the color of each mineral. Put an "X" in a column above each color for each specimen.

Which color is most common in this collection of minerals?



Did you know?
There are about 3000 known minerals on earth. The color of a mineral comes from the chemicals is it made from, plus any trace elements that may be nearby.

Level 4: Solarville, in the APS Gallery

Coming soon! This new, brightly-colored, eco-friendly gallery will offer hands-on exhibits presenting solar energy in a whole new light!