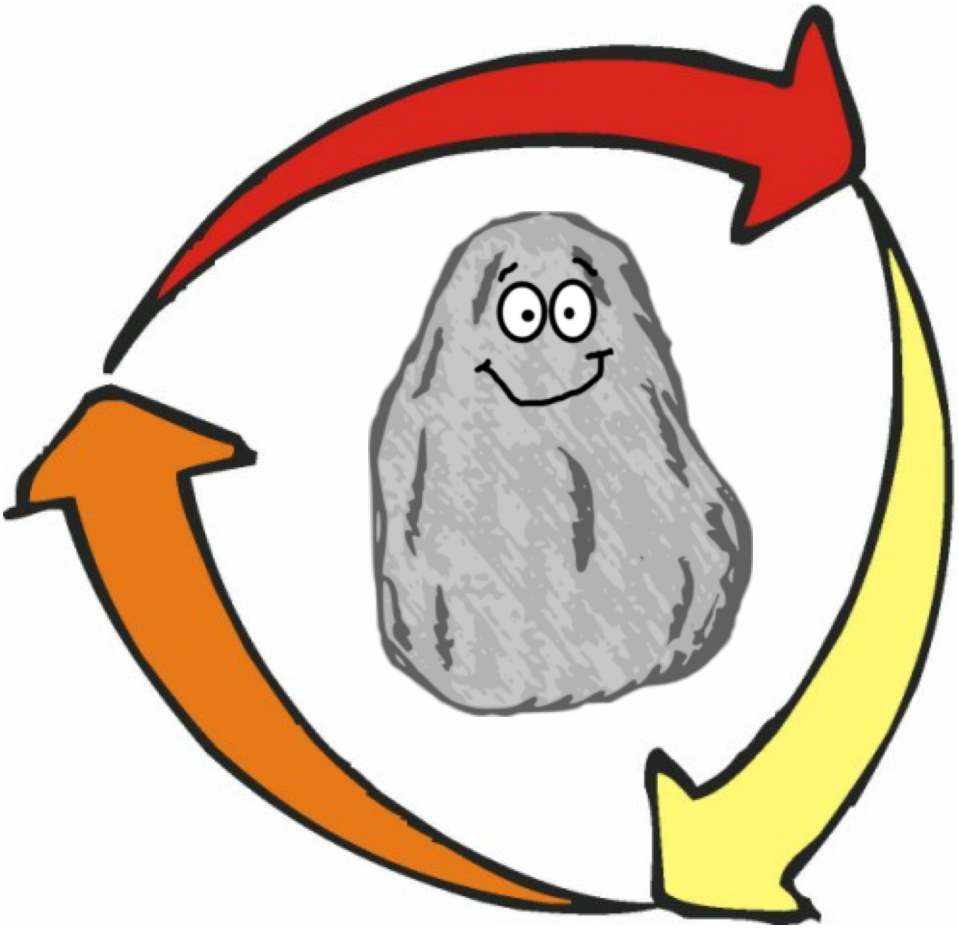
Rock Cycle Reader's Theater



Characters

Teacher 1
Teacher 2
Student 1
Student 2
Student 3
Sedimentary Rock
Crust
Wind
Water
Ice
Sediment 1
Sediment 2
Sediment 3
Metamorphic Rock
Mantel
Magma
Volcano
Lava
Intrusive Igneous Rock
Extrusive Igneous Rock

The Rock Cycle

Student 1: How old is a rock?

Teacher 1: That's very hard to tell. Some rocks are millions of years old!

Student 2: You mean, some rocks out on the playground are the same rocks that dinosaurs walked on?

Teacher 2: Yes, that's possible!

Student 3: How can that be? Wouldn't they have been crushed or buried?

Teacher 1: Actually, you are right! Because of the rock cycle, rocks do get crushed and buried, but that doesn't mean they disappear.

Student 1: What happens to rocks in the ground?

Teacher 2: Great question! Let's explore the rock cycle with a little help from the main participants- rocks!

Sediment 1: Hey there! I am a piece of sediment!

Student 2: What is sediment?

Sediment 2: I'm another piece! Sediments are pieces of rock that have been weathered down from forces of nature.

Wind: Like me, the wind! I break down rocks with my powerful strength!

Sediment 3: Yes, the wind weathers rocks and we are carried away by erosion.

Student 3: What is erosion?

Wind: Erosion is the movement of sediment that has been weathered away.

Water: I help with erosion as well. You can find me in little streams or large rivers. My flowing helps transport pieces of sediment.

Ice: Me too! Me too! Glaciers play a role in weathering and erosion as well. My weathering process is a bit slower than wind and water, but I am still very strong!

Water: We all weather and erode sediment and eventually deposit the pieces in a new place.

Ice: This is called deposition. Sediment piles up over time.

Wind: Eventually, the sediment is compacted and cemented together.

Water: That means it is pressed together tightly.

Sedimentary Rock: Then we have created sedimentary rock! That's me!

Student 3: I've heard of sedimentary rock. The name makes sense since it is made of sediment.

Teacher 1: Sandstone and shale are some examples.

Sedimentary Rock: Yes they are! I am made of many layers of sediment over time. That's why you can find pebbles, stones, and even fossils in me.

Student 1: Wow! What happens though when you stay buried in the ground?

Crust: That's where I come in. I am the Earth's crust, the outer layer of the Earth. Did you know I am always moving?

Student 2: No way!

Crust: Yes! I pull rocks beneath the surface of the earth. The farther down they go, the hotter the temperature. Not only is there a lot of heat, but also there is a lot of pressure.

Student 3: Where is the pressure coming from?

Crust: There are a lot of rocks still on the surface that are now pressing down on the rocks below the surface.

Metamorphic Rock: That's where I come in. Metamorphic rocks are formed from heat and pressure in the earth's crust.

Teacher 2: Some examples are slate and marble.

Metamorphic Rock: That's right! Over time, I can be pushed even further down into the mantle.

Mantle: Did someone say my name?

Metamorphic Rock: I did! What happens when metamorphic rock gets to you?

Mantle: I am the layer under the crust. I contain molten rock, otherwise known as magma.

Magma: Hot hot hot! That's me!

Mantle: Any rock that gets pushed down to the mantle will melt because the temperature is very high.

Magma: The rock will turn to magma. Sometimes I can help a rock to rise back up and cool again.

Intrusive Igneous Rock: The slow cooling of magma forms intrusive igneous rock. You may have seen intrusive igneous rock when you look at granite.

Magma: There's another route that magma can take as well. Do you know how magma gets to the surface of the earth?

Student 1: Through a volcano?

Volcano: That's right! A volcano provides an opening for magma. When I erupt, the magma is forced to rise from the mantle.

Lava: That's where I'm from. Lava is magma that has reached the earth's surface. Once I get out of the volcano, the outside temperature is much colder than deep in the earth. This means I quickly cool down.

Extrusive Igneous Rock: This quick cooling causes lava to harden and form extrusive igneous rock.

Teacher 1: An example is basalt or obsidian.

Extrusive Igneous Rock: Exactly right! Thanks to me, an entire island can be formed!

Student 2: That's pretty impressive. Now that we are back on the earth's surface, what happens next?

Teacher 2: The earth is constantly changing. Weathering and erosion never stops.

Student 3: So igneous rock will become sediment because of wind, water, and ice? It happens all over again?

ALL PARTS: That's the rock cycle!

Use the script to define each vocabulary word.

Weathering:

Erosion:

Deposition:

Sediment:

Sedimentary rock:

Compaction and cementation:

Metamorphic Rock:

Mantle:

Magma:

Intrusive igneous rock:

Extrusive igneous rock:

Lava:

Borders by: