Reader’s Theater

Rocks, Minerals, Soil, and Fossils

Name:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ My part is:\_\_\_\_\_\_\_\_\_\_\_\_\_

R1: I heard you guys were studying rocks and minerals in science. I don’t know much about rocks, but I do know some facts about minerals.

R2: Along with rocks and minerals, we’re also studying about different types of soils, and fossils too.

R3: So what do you know about rocks?

R4: Well, I know that all rocks are made up of minerals. Some rocks have just one mineral in them and others are made up of lots of different minerals.

R2: That’s true. There are also three different types of rocks; igneous, metamorphic, and sedimentary.

R1: So what’s the difference between igneous, metamorphic, and sedimentary rocks?

R3: Well, if you think about something igniting or catching on fire, that will help you remember what igneous rocks are all about. Igneous rocks are formed when rock heats up, melts, and then cools.

R4: That’s right. And if the rocks cool quickly the rock will have a glass-like shine to it. If the rock cools slowly it will have larger grains and be bumpier.

R1 & R3: That’s so cool! What about metamorphic rocks? How are they formed?

R2: That’s easy. Think of a metamorphosis or a change. Metamorphic rocks are rocks that have been changed from temperature and pressure.

R4: That just leaves sedimentary rocks. I always think about a sandwich with sedimentary rocks. A sandwich has different layers of stuff inside of it and so does a sedimentary rock. Its layers are squeezed together until they form a rock.

R1: Do rocks always stay the same?

R2: No! They’re always changing. Rocks that are affected by temperature and pressure will eventually become metamorphic rocks.

R3: Right. And rocks that are affected by melting and cooling will become igneous rocks, while rocks that are affected by wind and water will become sedimentary rocks.

R1: Is that the only way rocks change?

R4: No. Rocks can be broken down into smaller pieces. That’s called weathering. Once rocks are broken down they can be moved. When broken down rocks get moved it’s called erosion.

R1: Very cool. Now let me tell you some things I know about minerals. Minerals are any solid object that is formed in nature and has never been alive.

R4: Well, that doesn’t sound too interesting.

R2: Minerals are very interesting though. They are fun to look at and identify. You can identify minerals by observing their color, their luster or shine, their hardness, or the type of streak they leave.

R3: Cool!

R1: We also use minerals in our everyday lives. We use halite as table salt, graphite in our pencils, gold for coins, and other minerals for jewelry.

R4 & R2: Wow! Minerals are pretty awesome!

R3: So what about soil…that sounds like a pretty weird thing to study about.

R2: It is kind of weird to study about, but there’s a lot to know about soil. There are all different kinds of soils like sand, humus, silt, clay, and loam. Without soil plants couldn’t live and grow.

R1: Different kinds of soils are made up of different things. Humus is made up of broken-down pieces of dead plants and animals. So when a leaf falls from a tree it gets broken down and becomes humus.

R4: Most soils are made up of tiny bits of rock. Sand has grains of rock that you can see with your eyes and feel between your fingers. Silt has rocks that are so small you can only see them with a microscope. Clay has the smallest grains of all and usually feels smooth between your fingers.

R3: What about loam? What is it like?

R2: Well, loam is a mixture of humus, clay, silt, and sand. It is the best soil for growing plants, fruits and vegetables.

R1: That’s good to know. Now let’s talk about fossils. I love looking at fossils! But what is a fossil?

R4: Some fossils look like the actual parts of animals, but the animal part disintegrates over time and the imprint gets filled up with minerals and hardens into rock. That’s why it looks exactly like the animal part.

R3: That’s so cool! Other fossils, like dinosaur tracks, are marks left behind by the animal. The marks leave a space that then hardens into rock so this kind of fossils looks like an empty imprint of the animal part.

R2: Most fossils form in sedimentary rock because those rocks have layers and layers. It’s easy for the animal part to get buried under the sediment and harden into rock.

R1: What can people learn from fossils?

R3: That’s easy! Scientists can learn about plants and animals that existed long ago and figure out what kinds of plants and animals lived in different parts of the world. They can also see how animals have changed over time.

R1: How can you tell how old a fossil is?

R4: Well, fossils that are found deeper in the ground are older than fossils found closer to the top. That’s because the deeper the fossil is, the more time it has spent in the ground and the more layers have been built on top of it.

R2: Ah, that makes sense.

All Readers: Wow! We know more than we thought about rocks, minerals, soils, and fossils!