

# Be a "Rock" Star!

**4-H Project:**  
Geology

**Life Skill:**  
Learning to learn—acquiring  
and evaluating information

**National Education Standard:**  
NS.K-4.4 Earth and Space  
Science

**Success Indicator:**  
Describe three types of rocks  
based on how they were  
formed.

**Time Involved:**  
10–20 minutes

**Suggested Group Size:**  
5–20 children

**D**ifferences in materials and ways rocks were formed give them different properties and appearances. In this activity, youth will learn the three main categories of rocks by acting out parts in three brief skits.

## Getting started

**R**ead through the lesson and gather the necessary materials. If you need more information about the topic, refer to the "Background Information."

## Do the Activity

### Part 1 – Sedimentary Rocks

1. Each child will play a role to demonstrate how rocks were formed in different ways. Divide children into equal groups so all are involved. It may be best for the group leader to assign parts randomly. Four groups will play the following roles:
  - Trees and leaves: will fall to the ground after wind, rain and erosion "strike"
  - Sand and mud: wind, rain and erosion cause shifts and flows
  - Dinosaurs: get stuck in the muddy swamps and perish
  - Wind and rivers: erode sand and sediment, cause trees and leaves to fall
2. These parts will be used to show the formation of sedimentary rock. The children should pretend they are trees, sand, etc. Encourage the children to be creative and use sound effects and other gestures to make his or her part seem realistic.
3. The leader can instruct youth to eventually lay down on the floor, in overlapping layers. Note: Two "layers," barely overlapping is enough to make the point and maintain safety as well.
4. The leader can explain that this is how sedimentary rock such as sandstone formed. Show the children the sedimentary rocks (optional). The children will remain on the floor for the next part.



### Materials Needed

- Rock samples (optional): sedimentary, metamorphic and igneous

### Part 2 – Metamorphic Rocks

1. Another group of children will play this role:
  - The pressure and heat of the Earth
  - The children in this group will very carefully press down upon the children already on the floor. This will demonstrate how metamorphic rock was formed from sedimentary rock after the Earth compressed it or melted it all together. For example, as shale became slate the visible layers disappeared and the rock appeared as a solid mass.
2. Show the children the metamorphic rocks (optional). The metamorphic rock "actors" (all children on the floor) may return to their places.

This online "bonus" activity is part of the *Exploring the Treasures of 4-H* curriculum. © 2005, National 4-H Cooperative Curriculum System.

See [www.n4hccs.org/exploring4h](http://www.n4hccs.org/exploring4h) for more information.

**What do you call a blind dinosaur?**

I-don't-think-he-saurus.

**What kind of wood gets scared?**

Petrified wood.



# Kinds of Rocks

## Part 3 – Igneous Rocks

1. Additional children are needed to demonstrate the formation of some types of igneous rocks:
  - Volcano
  - Lava
  - Steam
  - Fire
  - Ashes
2. Ask the children to act out the roles.
3. A volcano is formed first.
4. Steam and fire shoot from the volcanic mountain.
5. Lava then flows and ashes are sprayed into the air and eventually settle on the ground.
6. As the molten substances cool, they become igneous rock such as obsidian.
7. Show the children the igneous rocks (optional).

## Talking it Over

### Share What You Did:

- What part did you play in making rock?

### Process What's Important:

- What would be different about the rocks on Earth if the part you played hadn't occurred?

### Generalize to Your Life:

- What other things about the world would be different if some things were missing?

### Apply What You Learned:

- Identify the types of rocks and other materials there are in nature and used in building your home, school, etc.

## Activity Summary

Rocks were formed all over the Earth. Rocks are made up of different materials and look different because they were formed in different ways. Without all the materials and forces used to create them, there would be less variety of rocks that make up our planet.

There are three main categories of rocks, based on how they were formed. Differences in materials and ways rocks were formed give them different properties and appearances.

Sedimentary rocks were formed as sediments from rivers, streams, and lakes collected and hardened when the waters dried up. Examples include sandstone, shale, and limestone. These types of rocks are usually soft and the individual sediments or layers that make up the rock are still distinguishable and can be separated without a lot of force or heat.

When the Earth's heat and pressure changed the state of sedimentary rock, they become metamorphic (means change of state) rock. For instance, the shifting of the Earth, which applied pressure on shale, turned it into slate. Coal was changed from layers of dead plants and animals. Of course, this takes place over thousands of years.

Igneous rock (igneous means fire) was formed from the heat of the Earth's core millions of years ago or through volcanic activity. Examples include granite, obsidian, and pumice.

“Geologists don't dislike classical music, they just prefer rock.”

## More Challenges



Collect samples, go to a museum, or purchase a geology kit that contains samples of a variety of rocks and minerals.



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Science Discovery Series