

# Geology Rocks!

Grades 3-5 (5 book set w/Earthquake Simulator)

Have you ever wondered what's going on deep in the ground under your feet? Journey down into the earth and become a geologist as you read, ask questions, conduct investigations and make discoveries. What type of rock is this?" "How can we know when a volcano will explode?" Can a building withstand the magnitude of an earthquake? Once you become a geology wiz, create your own adventure and solve seismic puzzles to complete a mission!

**Books in This Set:** *Journey Into the Earth, Geology Lab For Kids, My Little Book of Rocks, minerals and Gems, The Street Beneath My Feet, Aftershock! Earthquake Lab*

**Learning Objectives:** Understand that the Earth's outer crust is constantly changing as a result of internal and external forces.

## Essential Questions in This Unit:

- Why should geology matter to me?
- How does geology affect our everyday lives?
- Why does the Earth look the way it does?
- How has Earth changed over time?

## Read to Find Out

1. How do we know about Earth's interior?
2. What is a rock?
3. How do you know that we have a "rocky planet"?
4. What is a mineral?
5. How do minerals relate to rocks?
6. How do you distinguish one mineral from another?
7. What do we get from rocks? How do we use rock?
8. Compare and contrast how our ancestors used rock long ago.
9. What are the characteristics of the three major rock groups?
10. What are the Earth's three layers and what do they consist of?
11. Compare and contrast the layers of the Earth.
12. Where do we usually find fossils? Why?

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13. How can an earthquake be modeled?
  14. Distinguish between the 3 categories of rock and describe the processes that create them.
  15. Identify and describe processes that affect features of the Earth's surface, including plate tectonics, weathering and erosion.
  16. Explain how wind, water or ice shape and reshape the Earth's surface.
  17. What are Earth's three layers and what do they consist of?
  18. What are crustal plates?
  19. How has the position of Earth's continents changed over time? What causes plates to move?
  20. How will the Earth look in the future if current plate movement continues?
  21. How do constructive forces build up the Earth?
  22. How do destructive forces tear down the Earth?
  23. Under what circumstances do earthquakes occur?
  24. How are faults, foci, and epicenters related?
  25. How is the epicenter of an earthquake determined?
  26. How is earthquake strength expressed?
  27. How can the different layers of earth's interior be distinguished due to the thermal convection of magma?
  28. Explain how rocks interact along a fault to create an earthquake (focus, faults, elastic rebound, foreshocks, and aftershocks).
  29. Differentiate between intensity and magnitude.
  30. Explain how the Richter Scale and Mercalli Scale are used in reporting earthquake data. Identify and discuss factors that contribute to the amount of destruction an earthquake may cause.
  31. Compare and contrast how the different books in the set approach the topic of geology.
  32. What are the differences between the three main types of volcanoes?
  33. How do natural disasters change the Earth's landscape?



## Research-

Why can earth be regarded as a system?

Describe the basic interactions of the earth's systems that contribute to the rock cycle (melting, crystallization, weathering and transport, lithification, metamorphism). Describe the basic differences in the different forms of rocks created by the various process of the rock cycle.

How does physical geology differ from historical geology?

Draw a diagram of a rock cycle. How does the rock cycle show the movement of matter from one form to another? How does the rock cycle exemplify the idea that matter on earth can exhibit both stability and change?

How are minerals used in industry?

## In Small groups-

- ~ Discuss and use the physical properties of minerals (crystal form, luster, color, streak, hardness, cleavage, fracture, density and specific gravity) to identify minerals and classify them.
- ~ Identify the characteristics for classifying minerals as silicates or non-silicates.
- ~ Discuss common uses for mineral resources.
- ~ Explain what an ore is and its importance as a natural resource.
- ~ Discuss the impact humans have had on mineral resources.
- ~ Argue for proper management of mineral resources based on human need and availability.

Create something from a rock(s)

Choose a project from Geology Lab For Kids. Explain why you chose it and what you learned. Keep a journal throughout the process.

**For more information on this topic, please refer to the books below:**

9781631592850	Geology Lab for Kids
9781609927974	Journey Into the Earth
9781682971475	My Little Book of Rocks, Minerals and Gems
9780760353448	Smart Lab Aftershock Earthquake Simulator
9781682971369	Street Beneath My Feet, The

*Created by Marla Conn, Read-Ability, Inc.*