

Rocks and Soil Review

Week 27 — Friday | Exploring Earth Materials

Reading Time

This week we explored the materials that make up Earth's surface: rocks and soil. Rocks are naturally formed solid materials made of minerals. We learned about the three main rock types and how the rock cycle works. Igneous rocks cool from magma or lava. Sedimentary rocks form from layers of compacted sediment over time. Metamorphic rocks are transformed by heat and pressure. Over millions of years, weathering and erosion break rocks down into smaller pieces that eventually become soil.

Soil is a vital natural resource that supports plant life, filters water, and provides habitats for countless organisms. It is made of mineral particles (sand, silt, clay), organic matter (humus), water, and air. The composition of soil varies depending on location, climate, and the parent rock it formed from. We also investigated how geologists test rock properties like hardness using scratch tests and the Mohs scale, and how they analyze soil by separating particles through sieving or observing settlement layers.

Understanding rocks and soil helps us make important decisions about where to build homes, grow crops, and protect the environment. Healthy soil must be cared for through practices like crop rotation, reducing erosion, and adding organic matter. Without healthy soil and sustainable management of Earth's materials, ecosystems and human communities would struggle to survive.

Reading Questions

1. What are the three main types of rocks and how do they form?

2. What four components make up soil?

3. Why is soil considered a vital natural resource?

4. Explain how weathering and erosion connect rocks to soil formation. Why does this process take so long?

Vocabulary Grid

Write a definition or draw a picture for each word.

 Rock Cycle

 Mineral

 Humus

 Hardness

 Sieve

 Horizon



Comparing Rock Types

Fill in the complete comparison chart.

Feature	Igneous	Sedimentary	Metamorphic
How it forms			
Key word			
Example			
Clues to look for			



Match the Term to the Definition

Draw a line or write the letter connecting each term to its definition.

Term	Definition
Igneous rock	Forms from layers of pressed-together sediment.
Sedimentary rock	Forms when rocks change due to heat and pressure.
Metamorphic rock	Forms from cooling magma or lava.
Organic matter	Tiny broken pieces of rock, sand, and mud.
Sediment	Decayed plants and animals that enrich soil.
Bedrock	Solid rock layer beneath all soil.



Draw a Soil Cross-Section

Draw and label the soil layers from top to bottom: topsoil, subsoil, and bedrock. Show where plant roots grow and where you might find rocks.



Think About It

If you found a rock with visible layers of different colored grains pressed together, what type of rock would it be? How do you know?

Science Journal: Rocks and Soil

Think about everything you learned this week about Earth materials.

Prompt 1: Which rock type do you find most interesting? Why? Would you want to be a rock collector or a soil scientist?

Prompt 2: Imagine you are planting a garden. What type of soil would you want? How could you improve poor soil to make it better for plants?

Prompt 3: How do rocks and soil affect the places where humans and animals live? Give at least two examples.

True or False — Circle Your Answer

- ☐ 1. All rocks are made of at least one mineral.
- ☐ 2. Igneous rocks form from layers of sediment.
- ☐ 3. Metamorphic rocks form from heat and pressure.
- ☐ 4. Soil contains water and air as well as solid particles.
- ☐ 5. Topsoil is the layer richest in organic matter.
- ☐ 6. Hardness measures how easily a rock can be scratched.
- ☐ 7. Sandy soil holds more water than clay soil.
- ☐ 8. Weathering and erosion help turn rocks into soil over time.

Fill in the Blanks

Word Bank: igneous sedimentary metamorphic mineral organic matter topsoil hardness sediment

- 1. Rocks that form from cooling magma are called _____ rocks.
- 2. Rocks formed from compacted layers are _____ rocks.
- 3. Rocks changed by heat and pressure are _____ rocks.
- 4. A naturally occurring substance with a specific structure is a _____.
- 5. Decayed plants and animals in soil are called _____.
- 6. The dark, nutrient-rich top layer of soil is _____.
- 7. Resistance to scratching is known as _____.
- 8. Sand, mud, and pebbles that settle in water are _____.

★ Week 27 Checklist

Check off each concept you feel confident about.

Concept	I Understand This
I can name and describe the three main rock types.	
I can explain how the rock cycle works.	
I can identify the components of healthy soil.	
I can compare sandy, clay, and loamy soil.	
I can test rock hardness using a scratch test.	
I can separate soil particles using a sieve or jar.	
I understand why soil is important for life on Earth.	