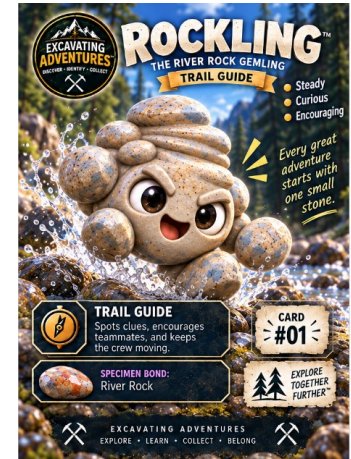


The Rock Cycle

Motherlode Vault with Rockling

Learning target

Trace more than one pathway through the rock cycle using process evidence.



Before you begin

Use the reference page and discussion prompts on their own, or open the optional browser adventure. No earlier lesson or physical kit is required.

For online play: use an internet-connected current browser with local storage enabled. Read the three-part Gemling briefing, answer the quick check, and apply the evidence at three checkpoints. Retry feedback supports review; results are not a secure test or gradebook.

Use for teacher-led review, science centers or partner practice. Independent readers may need support with the vocabulary below. The design target is grades 3-5; choose support based on the learner.

Vocabulary and concepts to discuss

Three rock families; weathering and erosion; burial; melting and cooling; multiple pathways

Open Motherlode Vault - direct lesson link

Scan the QR code or use the clickable link. This guide is usable offline; the adventure runs on an external educational website.



The Rock Cycle - key ideas

1. One Earth, many pathways

The rock cycle connects igneous, sedimentary, and metamorphic rocks. Changes often take a very long time. There is no single starting point or required order.

2. Follow the surface pathway

Any exposed rock can weather into sediment. Erosion moves it; deposition settles it. Compaction and cementation can make a sedimentary rock.

3. Follow the deep-Earth pathways

Heat and pressure can change solid rock into metamorphic rock. Melting makes magma. Cooling that melt makes igneous rock. The paths connect!

Keep the science accurate

Teach multiple pathways, not one required circular order. Stage 6 is a real lesson before the final unlock.

Apply the evidence

Use a specific observation from this lesson to explain one choice. Point to a clue, then connect that clue to a scientific idea.

Curriculum reference: <https://www.nps.gov/subjects/geology/rocks.htm>

Talk through the evidence

1. What turns melted rock into igneous rock?

Expected answer: Cooling

Reasoning: Cooling turns melted rock into solid igneous rock.

2. Which process turns exposed rock into small sediment pieces?

Expected answer: Weathering

Reasoning: Weathering breaks exposed rock into smaller pieces.

3. Granite changes under heat and pressure without melting. Which family is the new rock in?

Expected answer: Metamorphic

Reasoning: Heat and pressure can change solid granite into metamorphic rock such as gneiss.

4. Must every rock follow the same fixed order?

Expected answer: No, rocks can follow different paths

Reasoning: The rock cycle has multiple paths and no single required start.

Guide the discussion

Ask learners to name the evidence that supports their answer. If an answer differs, revisit the matching key idea on page 2 and invite a revised explanation.

Online rewards: this lesson grants one fixed digital Expedition Discovery. Five saved digital Gemling friends become available only after all six distinct subject lessons are complete, in any order. Digital rewards do not establish physical ownership.