

Volcanic Rocks & Landforms

Obsidian Mirror Room with Eruptling

Learning target

Connect volcanic activity to rocks and landforms.



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

Cooling lava; basalt and obsidian; cones and broad volcanoes; new land

Open Obsidian Mirror Room - 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.



Volcanic Rocks & Landforms - key ideas

1. The first clues

Cooling lava becomes solid igneous rock. Basalt commonly has crystals too small to see easily; obsidian is volcanic glass formed when suitable lava cools very quickly.

2. How the clues connect

Repeated eruptions can build volcanoes. Fluid lava may spread into broad shapes, while other materials can build steeper cones. Shape alone cannot identify every eruption detail.

3. Our evidence record

The archive compares a new lava flow with an older solid layer. Their position supports a story of land building over time, not rocks appearing fully formed underground.

Keep the science accurate

No mantle-as-a-liquid-ocean model, exact eruption prediction or visits to active hazards. Plate mechanisms stay qualitative.

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/teachers/classrooms/volcanoes.htm>

Talk through the evidence

1. What process turns lava into solid rock?

Expected answer: Cooling

Reasoning: Cooling lava becomes solid igneous rock. Basalt commonly has crystals too small to see easily; obsidian is volcanic glass formed when suitable lava cools very quickly.

2. Which specimen is volcanic glass?

Expected answer: Obsidian

Reasoning: Cooling lava becomes solid igneous rock. Basalt commonly has crystals too small to see easily; obsidian is volcanic glass formed when suitable lava cools very quickly.

3. What can repeated lava flows build?

Expected answer: New layers of land

Reasoning: The archive compares a new lava flow with an older solid layer. Their position supports a story of land building over time, not rocks appearing fully formed underground.

4. A wide flow spreads before cooling. Which model best matches it?

Expected answer: Broad overlapping lava layers

Reasoning: Cooling lava becomes solid igneous rock. Basalt commonly has crystals too small to see easily; obsidian is volcanic glass formed when suitable lava cools very quickly.

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.