

Eruptions: Lava, Ash & Gases

Lava Waterfall Gorge with Eruptling

Learning target

Compare eruptions using observable 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

Lava flows; volcanic ash; gases; differences among eruptions

Open Lava Waterfall Gorge - 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.



Eruptions: Lava, Ash & Gases - key ideas

1. The first clues

Lava is melted rock that reaches the surface. Volcanic ash is tiny broken rock, mineral and glass fragments; it is not the fluffy ash from burning wood.

2. How the clues connect

Volcanoes release gases as well as lava and ash. Eruptions differ: one record may show flowing lava, while another shows a large ash plume.

3. Our evidence record

Record A shows a glowing flow. Record B shows fine fragments falling from a plume. Both are eruption evidence. We compare supplied records from our fictional station, not approach real eruptions.

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. Which record shows flowing lava?

Expected answer: Record A

Reasoning: Volcanoes release gases as well as lava and ash. Eruptions differ: one record may show flowing lava, while another shows a large ash plume.

2. Which description identifies volcanic ash?

Expected answer: Tiny rock and glass fragments

Reasoning: Lava is melted rock that reaches the surface. Volcanic ash is tiny broken rock, mineral and glass fragments; it is not the fluffy ash from burning wood.

3. What can an eruption release besides solid fragments and lava?

Expected answer: Gases

Reasoning: Volcanoes release gases as well as lava and ash. Eruptions differ: one record may show flowing lava, while another shows a large ash plume.

4. How should we compare these eruptions?

Expected answer: Use the different observed products

Reasoning: Record A shows a glowing flow. Record B shows fine fragments falling from a plume. Both are eruption evidence. We compare supplied records from our fictional station, not approach real eruptions.

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.