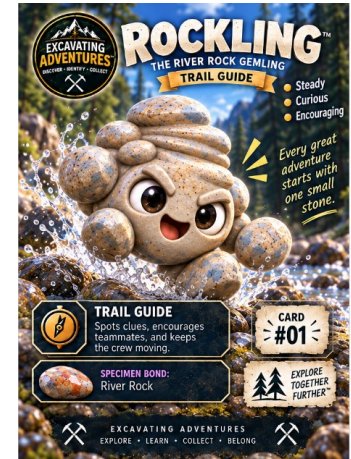


Igneous Rocks

Quartz Mirror Hall with Rockling

Learning target

Connect cooling conditions to igneous rock examples.



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

Magma and lava; cooling; crystal size; granite, basalt and obsidian

Open Quartz Mirror Hall - 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.



Igneous Rocks - key ideas

1. Melted rock has two names

Melted rock below Earth's surface is magma. When it reaches the surface, it is called lava.

2. Cooling makes igneous rock

When melted rock cools and becomes solid, it forms igneous rock. Granite, basalt, and obsidian are igneous rocks.

3. Cooling leaves a texture

Slow cooling gives crystals more time to grow: granite has visible crystals. Fast cooling often makes tiny crystals, as in basalt. Obsidian cools into volcanic glass.

Keep the science accurate

Quartz is a mineral found in more than one rock family; the location name is not a rock classification.

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. Which rock type forms when melted rock cools?

Expected answer: Igneous

Reasoning: Igneous rocks form when melted rock cools and solidifies.

2. Melted rock is still underground. What is it called?

Expected answer: Magma

Reasoning: Magma is melted rock below Earth's surface.

3. Which path can form an igneous rock?

Expected answer: Magma cooling into solid rock

Reasoning: Cooling melted rock produces igneous rock.

4. Which sample is volcanic glass?

Expected answer: Obsidian

Reasoning: Obsidian is igneous volcanic glass.

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.