

How Shaking Travels

Fault Crack Cavern with Quakeling

Learning target

Describe shaking as energy traveling away from a source.



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

Seismic waves; energy transfer; source and surface; changing shaking

Open Fault Crack Cavern - 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.



How Shaking Travels - key ideas

1. The first clues

Earthquake energy travels through Earth as seismic waves. Material vibrates as a wave passes; every rock does not travel all the way from the source to a distant town.

2. How the clues connect

Shaking can differ with distance, ground and other conditions. The underground starting area and the point on the surface above it are not the same place.

3. Our evidence record

Our sensor record detects shaking first near the source and later farther away. The time order supports traveling energy, not every sensor starting the earthquake.

Keep the science accurate

Focus on maps, simple fault/wave models and risk reduction. Detailed seismic calculations and exact prediction are out of scope.

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.nextgenscience.org/dci-arrangement/4-ess2-earths-systems>

Talk through the evidence

1. What travels outward during an earthquake?

Expected answer: Seismic energy

Reasoning: Earthquake energy travels through Earth as seismic waves. Material vibrates as a wave passes; every rock does not travel all the way from the source to a distant town.

2. Why can distant sensors respond later?

Expected answer: Waves take time to travel

Reasoning: Earthquake energy travels through Earth as seismic waves. Material vibrates as a wave passes; every rock does not travel all the way from the source to a distant town.

3. Must every location shake equally?

Expected answer: No, conditions differ

Reasoning: Shaking can differ with distance, ground and other conditions. The underground starting area and the point on the surface above it are not the same place.

4. Which interpretation fits our record?

Expected answer: Energy spread away from a source

Reasoning: Our sensor record detects shaking first near the source and later farther away. The time order supports traveling energy, not every sensor starting the earthquake.

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.