

Reducing Earthquake Risk

Rupture Vault with Quakeling

Learning target

Evaluate a risk-reduction proposal using supplied guidance and 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

Preparedness; safer design; limits of exact prediction; community plans

Open Rupture 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.



Reducing Earthquake Risk - key ideas

1. The first clues

Preparedness and stronger designs can reduce earthquake risk, but cannot prevent Earth from moving. Communities use evidence to plan before shaking occurs.

2. How the clues connect

Scientists cannot reliably predict the exact time and place of every earthquake. Planning for possible shaking is more useful than trusting an exact-date rumor.

3. Our evidence record

Our fictional town plan includes practiced guidance from local officials and tested building improvements. The competing plan does nothing until someone predicts a date. Choose the evidence-based preparation plan.

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. Can preparedness stop plate movement?

Expected answer: No, it can reduce risk

Reasoning: Preparedness and stronger designs can reduce earthquake risk, but cannot prevent Earth from moving. Communities use evidence to plan before shaking occurs.

2. Which claim is reliable?

Expected answer: Exact earthquake prediction is not available

Reasoning: Scientists cannot reliably predict the exact time and place of every earthquake. Planning for possible shaking is more useful than trusting an exact-date rumor.

3. Which town plan uses evidence?

Expected answer: Practice guidance and improve designs

Reasoning: Our fictional town plan includes practiced guidance from local officials and tested building improvements. The competing plan does nothing until someone predicts a date. Choose the evidence-based preparation plan.

4. What does the completed plan achieve?

Expected answer: Better preparation with remaining uncertainty

Reasoning: Our fictional town plan includes practiced guidance from local officials and tested building improvements. The competing plan does nothing until someone predicts a date. Choose the evidence-based preparation plan.

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.