

Rock Layers & Relative Time

Tar Pit Terrace with Dinoling

Learning target

Use a simple layer diagram to reason about relative age.



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

Sedimentary layers; undisturbed order; older and younger; incomplete records

Open Tar Pit Terrace - 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.



Rock Layers & Relative Time - key ideas

1. The first clues

Sedimentary layers are often deposited one above another. In a simple undisturbed stack, lower layers are older than the layers above them.

2. How the clues connect

Relative age means older or younger, not an exact number of years. Missing or disturbed layers make a real record harder to interpret.

3. Our evidence record

Our labeled model is undisturbed: A at the bottom, B in the middle, C on top. A is oldest and C youngest in this model. A tar deposit is not automatically the same kind of layer clock.

Keep the science accurate

Use relative ages and evidence-based interpretations. Do not require exact fossil dates, detailed taxonomy or an unbroken fossil record.

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/3-Is4-biological-evolution-unity-and-diversity>

Talk through the evidence

1. Which layer is oldest in this model?

Expected answer: A

Reasoning: Our labeled model is undisturbed: A at the bottom, B in the middle, C on top. A is oldest and C youngest in this model. A tar deposit is not automatically the same kind of layer clock.

2. What does relative age tell us?

Expected answer: Older or younger

Reasoning: Relative age means older or younger, not an exact number of years. Missing or disturbed layers make a real record harder to interpret.

3. Which layer formed after B?

Expected answer: C

Reasoning: Sedimentary layers are often deposited one above another. In a simple undisturbed stack, lower layers are older than the layers above them.

4. What must we check before applying the lower-is-older rule?

Expected answer: Whether the layers are undisturbed

Reasoning: Sedimentary layers are often deposited one above another. In a simple undisturbed stack, lower layers are older than the layers above them.

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.