

Moons, Gravity & Exploration

Moon Crater Ridge with Spaceling

Learning target

Use evidence from exploration to explain a moon feature.



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

Natural satellites; craters; gravity; probes and observations

Open Moon Crater Ridge - 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.



Moons, Gravity & Exploration - key ideas

1. The first clues

Moons are natural satellites of planets or other bodies. Gravity affects their motion; different worlds have different surface gravity.

2. How the clues connect

Many craters form when objects strike a surface. Images and measurements from probes help scientists investigate places people cannot simply visit.

3. Our evidence record

Our question asks how wide a crater is. A calibrated image with a scale helps answer that; an unscaled picture can show shape but not establish the exact width.

Keep the science accurate

Use relative scale and selected comparisons, not memorized distances, all moons or advanced stellar evolution.

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/5-ess1-earths-place-universe>

Talk through the evidence

1. What is a natural satellite?

Expected answer: A moon

Reasoning: Moons are natural satellites of planets or other bodies. Gravity affects their motion; different worlds have different surface gravity.

2. What commonly forms an impact crater?

Expected answer: A collision with a space object

Reasoning: Many craters form when objects strike a surface. Images and measurements from probes help scientists investigate places people cannot simply visit.

3. Which record helps measure crater width?

Expected answer: An image with a known scale

Reasoning: Our question asks how wide a crater is. A calibrated image with a scale helps answer that; an unscaled picture can show shape but not establish the exact width.

4. Why use probes?

Expected answer: They collect observations from distant places

Reasoning: Many craters form when objects strike a surface. Images and measurements from probes help scientists investigate places people cannot simply visit.

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.