

Water & Materials

Waterproof Grotto with Craftling

Learning target

Compare how materials interact with water.



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

Absorption; waterproofing; porosity; water exposure

Open Waterproof Grotto - 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.



Water & Materials - key ideas

1. The first clues

Absorbent materials take in liquid. Waterproof materials resist water passing through under the conditions for which they are designed.

2. How the clues connect

Porous materials have spaces, but how water behaves depends on the material and its structure. Use test records rather than guessing from looks.

3. Our evidence record

Our equal-water test shows cloth soaking up water and a coated sheet keeping the surface beneath dry. Cloth suits an absorbent pad; the sheet suits the tested cover.

Keep the science accurate

Compare properties through fair tests. Strength, hardness and flexibility are not interchangeable; no live electrical testing required.

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/2-ps1-matter-and-its-interactions>

Talk through the evidence

1. Which material suits an absorbent pad?

Expected answer: The cloth

Reasoning: Our equal-water test shows cloth soaking up water and a coated sheet keeping the surface beneath dry. Cloth suits an absorbent pad; the sheet suits the tested cover.

2. Which suits the tested rain cover?

Expected answer: The coated sheet

Reasoning: Our equal-water test shows cloth soaking up water and a coated sheet keeping the surface beneath dry. Cloth suits an absorbent pad; the sheet suits the tested cover.

3. What does absorption mean?

Expected answer: Taking in liquid

Reasoning: Absorbent materials take in liquid. Waterproof materials resist water passing through under the conditions for which they are designed.

4. Why compare equal-water tests?

Expected answer: To make the materials comparison fairer

Reasoning: Absorbent materials take in liquid. Waterproof materials resist water passing through under the conditions for which they are designed.

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.