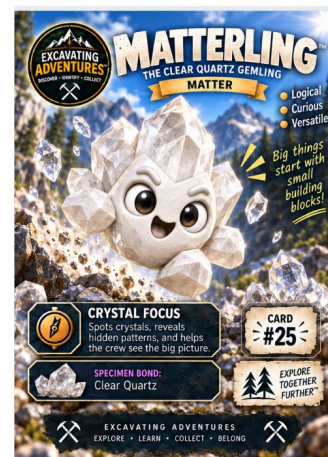


Solids & Their Properties

Solid Stack Yard with Matterling

Learning target

Compare solids using observable properties.



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

Definite shape and volume; texture; hardness; flexibility

Open Solid Stack Yard - 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.



Solids & Their Properties - key ideas

1. The first clues

A solid has its own shape and volume under ordinary conditions. Solids can still bend, stretch or break when forces act.

2. How the clues connect

Hardness, flexibility and texture vary among solids. A flexible rubber strip is still solid; hardness does not define the entire state.

3. Our evidence record

Our table lists a rigid block and a bendable strip. For a flexible strap, the strip fits the requirement better while both remain solid materials.

Keep the science accurate

Use simple particle models and measured mass/volume. Formal density calculations and molecular bonding are extensions.

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-ps1-matter-and-its-interactions>

Talk through the evidence

1. Must every solid be hard and rigid?

Expected answer: No

Reasoning: Hardness, flexibility and texture vary among solids. A flexible rubber strip is still solid; hardness does not define the entire state.

2. Which material fits a flexible strap?

Expected answer: The bendable strip

Reasoning: Our table lists a rigid block and a bendable strip. For a flexible strap, the strip fits the requirement better while both remain solid materials.

3. What do both samples have in ordinary conditions?

Expected answer: Their own volume and shape

Reasoning: A solid has its own shape and volume under ordinary conditions. Solids can still bend, stretch or break when forces act.

4. Which property guides this task?

Expected answer: Flexibility

Reasoning: Hardness, flexibility and texture vary among solids. A flexible rubber strip is still solid; hardness does not define the entire state.

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.