

# Materials, Properties & Purposes

Builder Base with Craftling

## Learning target

Explain why material choice depends on intended use.



## 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

Materials versus objects; observable properties; choosing for a need

## Open Builder Base - 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.



# Materials, Properties & Purposes - key ideas

## 1. The first clues

A material is what an object is made from. One object can combine several materials chosen for different jobs.

## 2. How the clues connect

Useful properties include flexibility, strength, absorbency and resistance to water. Choose based on the task rather than appearance alone.

## 3. Our evidence record

Our repair needs a cover that keeps water out. The test table marks Sample A waterproof and Sample B absorbent. A fits the cover requirement; B may suit a towel instead.

## 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. What is a material?

Expected answer: What an object is made from

Reasoning: A material is what an object is made from. One object can combine several materials chosen for different jobs.

## 2. Which sample fits the water-blocking cover?

Expected answer: A

Reasoning: Our repair needs a cover that keeps water out. The test table marks Sample A waterproof and Sample B absorbent. A fits the cover requirement; B may suit a towel instead.

## 3. Could the absorbent sample suit another task?

Expected answer: Yes, such as taking up water

Reasoning: Our repair needs a cover that keeps water out. The test table marks Sample A waterproof and Sample B absorbent. A fits the cover requirement; B may suit a towel instead.

## 4. What should guide the choice?

Expected answer: Tested properties and purpose

Reasoning: Useful properties include flexibility, strength, absorbency and resistance to water. Choose based on the task rather than appearance alone.

## 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.