

Conduction

Conduction Bridge with Sizzling

Learning target

Explain contact-based heat transfer.



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

Transfer through contact; material differences; conductors and insulators

Open Conduction Bridge - 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.



Conduction - key ideas

1. The first clues

Conduction transfers energy through contact within or between materials. Energy moves from warmer regions toward cooler ones.

2. How the clues connect

Materials conduct at different rates. Many metals transfer heat more readily than materials such as wood under comparable conditions.

3. Our evidence record

Our supplied test puts equal-size samples against the same warm surface. The far end of metal warms sooner than wood. We use the record without handling hot objects.

Keep the science accurate

Convection and radiation are descriptive models, not fluid/thermal equations. No hot-material experiments are 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/4-ps3-energy>

Talk through the evidence

1. Which process uses contact here?

Expected answer: Conduction

Reasoning: Conduction transfers energy through contact within or between materials. Energy moves from warmer regions toward cooler ones.

2. Which sample's far end warms sooner?

Expected answer: Metal

Reasoning: Our supplied test puts equal-size samples against the same warm surface. The far end of metal warms sooner than wood. We use the record without handling hot objects.

3. What makes the comparison fairer?

Expected answer: Same size and warm-surface conditions

Reasoning: Our supplied test puts equal-size samples against the same warm surface. The far end of metal warms sooner than wood. We use the record without handling hot objects.

4. Which choice would slow this transfer in the test?

Expected answer: Wood

Reasoning: Materials conduct at different rates. Many metals transfer heat more readily than materials such as wood under comparable conditions.

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.