

Collisions & Motion Changes

Collision Court with Zoomling

Learning target

Explain how a collision can change motion.



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

Contact; changing speed or direction; energy transfer overview

Open Collision Court - 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.



Collisions & Motion Changes - key ideas

1. The first clues

A collision involves contact that can change motion. Objects may slow, speed up or change direction depending on the conditions.

2. How the clues connect

Energy can transfer between colliding objects and into sound, warming or deformation. A collision does not always mean both objects stop.

3. Our evidence record

Our model shows a moving cart hit a resting cart, which then moves. The observation supports a transfer affecting motion, without requiring advanced momentum calculations.

Keep the science accurate

Keep force and speed comparisons qualitative or simple. No formal Newton-law algebra or momentum calculations.

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/3-ps2-motion-and-stability-forces-and-interactions>

Talk through the evidence

1. What can a collision change?

Expected answer: Speed or direction

Reasoning: A collision involves contact that can change motion. Objects may slow, speed up or change direction depending on the conditions.

2. Which cart begins moving after contact in our record?

Expected answer: The previously resting cart

Reasoning: Our model shows a moving cart hit a resting cart, which then moves. The observation supports a transfer affecting motion, without requiring advanced momentum calculations.

3. Must all colliding objects stop?

Expected answer: No

Reasoning: Energy can transfer between colliding objects and into sound, warming or deformation. A collision does not always mean both objects stop.

4. What supports the energy-transfer interpretation?

Expected answer: Motion changed after contact

Reasoning: Our model shows a moving cart hit a resting cart, which then moves. The observation supports a transfer affecting motion, without requiring advanced momentum calculations.

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.