Marble Track Mystery

Read closely to trace gravity's effect on a moving object.

P.5.6.1 "Obtain and communicate information describing gravity's effect on an object."

NAME _____ DATE _____

1 READ AND MARK

Read it twice

YOUR JOB Underline sentences that explain gravity's pull on the marble, and circle two things that keep the marble from falling.

Mira's Marble Track

1. At a school science fair, Mira builds a marble track from cardboard tubes. She holds a marble near the top of a sloping track. Earth pulls the marble toward its center, even while Mira holds it still. Her fingers stop it from moving. When she lets go, gravity pulls the marble downward, and it rolls along the slope toward the bottom.

2. The track ends before the next piece begins, leaving a small gap. The marble shoots off the first piece and travels through the air. It moves forward, but gravity keeps pulling it downward. Its path curves toward the floor until it lands on the second piece, which is lower. The marble does not need to touch the track for gravity to act on it.

3. At the end, the marble rolls into a level tray and bumps against a soft wall. It stops moving, but Earth's pull has not switched off. The tray supports the marble and keeps it from falling. Mira tips the tray so the marble rolls over an edge. Once the marble passes the edge, gravity pulls it toward the floor, where it lands with a click.

2 ANSWER WITH EVIDENCE

Use the passage

1. How does gravity affect the marble while Mira holds it, and why does it stay still?

2. What happens to the marble when Mira lets go at the top of the slope? Explain gravity's part.

3. How does gravity affect the marble as it crosses the gap?

4. Why does the marble stay in the level tray but fall after it passes the tray's edge?

3 YOUR TURN

Your own words

Invent a short scene with an object other than a marble moving upward and then downward. In three sentences, explain how gravity affects it at two moments and what sends it upward.

ANSWER KEY

Marble Track Mystery

GRADE 5 · P.5.6.1

PART 1 · READ AND MARK

Underline sentences that explain gravity's pull on the marble, and circle two things that keep the marble from falling. Accept any marking that follows this job and points at the right text.

PART 2 · ANSWERS

#	QUESTION	ANSWER
1	How does gravity affect the marble while Mira holds it, and why does it stay still?	**Gravity pulls the marble toward Earth's center, but Mira's fingers keep it from moving.**
2	What happens to the marble when Mira lets go at the top of the slope? Explain gravity's part.	**Gravity pulls the marble downward, so it rolls along the slope toward the bottom.**
3	How does gravity affect the marble as it crosses the gap?	**Gravity pulls the marble downward while it moves forward, so its path curves toward the floor.**
4	Why does the marble stay in the level tray but fall after it passes the tray's edge?	**The tray supports the marble against gravity's pull. Past the edge, gravity pulls it toward the floor.**

PART 3 · YOUR TURN (SAMPLE ANSWER)

A soccer player kicks a ball high above the field. As the ball rises, gravity pulls it downward and slows its climb. At the top, the ball turns and falls because gravity still pulls it toward Earth.

Accept descriptions that show gravity pulling toward Earth even when an object is held still or moving through the air. For Part 3, the upward motion must have a cause, and gravity must pull downward during both the rise and fall.