

Name: \_\_\_\_\_ Date: \_\_\_\_\_

## Answer Key: Your Super Snail Race: Pre-K Advanced Motion Challenge

Preschoolers evaluate path efficiency and speed changes for garden animals to develop early critical thinking skills in kinematics.

---

**1. A turtle and a rabbit start at the same tree. The turtle walks straight to the pond, but the rabbit runs in big circles before reaching the pond. Who traveled the shortest distance?**

**Answer:** B) The turtle

A straight line is the shortest path between two points, meaning the turtle moved the least amount of total distance regardless of speed.

**2. If a red wagon is moving faster than a blue wagon, it will always get to the finish line first, even if it starts much further away.**

**Answer:** B) False

Starting position (displacement) matters; a faster object might not catch up if the distance it has to travel is too great.

**3. When a slide is very steep, a child starts slow at the top and goes \_\_\_\_\_ at the bottom.**

**Answer:** C) Faster

Gravity causes the child to accelerate, meaning their velocity increases as they move down the slide.

**4. Changing your direction while you are running means you are changing your velocity.**

**Answer:** A) True

Velocity includes both speed and direction; changing either one changes the velocity.

**5. Imagine three balls: one heavy, one medium, and one light. If you push the heavy ball and the light ball with the exact same tiny tap, which one will likely have the most motion?**

**Answer:** B) The light ball

Lighter objects require less force to change their state of motion (acceleration) compared to heavy objects.

**6. If you are swinging on a swing, your motion is \_\_\_\_\_.**

Name: \_\_\_\_\_ Date: \_\_\_\_\_

**Answer:** B) Back and forth

Swinging represents periodic or oscillatory motion where the position changes in a repeating pattern.

**7. You drop a feather and a toy block at the same time. The block hits the floor first. Why is the block's motion different?**

**Answer:** B) The air pushes the feather

Air resistance acts against the motion of the feather more than the block, slowing its downward acceleration.

**8. If you walk 3 steps forward and 3 steps backward, you are back where you started.**

**Answer:** A) True

Your total displacement is zero because your final position is the same as your starting position.

**9. To make a toy car stop moving immediately, you must provide a \_\_\_\_.**

**Answer:** B) Force

A change in motion (deceleration) requires an external force to act upon the object.

**10. A ball is rolling on a flat rug. It eventually stops even if no one touches it. What slowed it down?**

**Answer:** B) The floor rubbing it

Friction is a force that acts in the opposite direction of motion, causing the ball to decelerate.