

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

## Sonic's Slopes: High-Speed Motion and Position Lab for 2nd Grade

Rising scientists gain mastery over displacement and speed by analyzing complex patterns of movement and predicting where a racer lands.

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**1. An astronaut walks 5 steps forward on the Moon, then walks 5 steps backward. Where is the astronaut standing now?**

- A. In the exact same spot they started
- B. 10 steps away from the start
- C. 5 steps forward from the start
- D. Higher up in the air

**2. A blue race car travels 10 miles in 1 minute. A red race car travels 5 miles in 1 minute. The blue car has a higher \_\_\_\_\_.**

- A. Weight
- B. Velocity
- C. Engine
- D. Height

**3. True or False: If a skateboarder is slowing down as they go uphill, they are experiencing acceleration.**

- A. True
- B. False

**4. A marble is rolling across a flat table. If no one touches it and the table never ends, why might it eventually stop?**

- A. It gets tired of moving
- B. It runs out of 'push' energy
- C. Friction between the marble and table slows it down
- D. Gravity pulls it sideways

**5. To describe exactly where a toy robot is in a room, you need to know its distance from a wall and its \_\_\_\_\_.**

- A. Color
- B. Direction
- C. Batteries
- D. Name

**6. True or False: A bumblebee flying in circles at the exact same speed is accelerating.**

- A. True
- B. False

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**7. Two squirrels move from the same tree to a bird feeder. Squirrel A runs in a straight line. Squirrel B zigs and zags. Which squirrel had a shorter 'displacement'?**

- A. Squirrel B
- B. Both have the same displacement
- C. Squirrel A
- D. Neither squirrel

**8. If a soccer ball is kicked and moves 2 meters every second, after 5 seconds the ball will have traveled \_\_\_\_\_ meters.**

- A. 2 meters
- B. 7 meters
- C. 10 meters
- D. 52 meters

**9. You are watching a paper boat float down a river. Which of these would mean the boat is accelerating?**

- A. The boat keeps moving at 1 inch per second
- B. The boat turns left around a rock
- C. The boat stays in the exact same spot
- D. The boat is yellow

**10. True or False: If you know an object's velocity, you know both its speed and which way it is headed.**

- A. True
- B. False