Name: _____ **Date:** _____

Answer Key: Sonic Speed: A 3rd Grade Quest into the Science of Motion

Go beyond just watching things move to identifying patterns and rates of change through a mix of real-world scenarios.

---

1. Imagine a colorful snail crawling across a garden leaf. What word do scientists use to describe how its position is changing?

Answer: B) Motion

Motion is the word we use whenever an object changes its position over time.

2. If a toy car is moving at a steady pace and does not turn or speed up, its velocity is staying the same.

Answer: A) True

Velocity includes both speed and direction. If both stay the same, the velocity is constant.

3. A skateboarder starts at the top of a hill and rolls down, getting faster and faster. This change in speed is called _____.

Answer: C) Acceleration

Acceleration happens whenever an object speeds up, slows down, or changes direction.

4. If you walk 10 steps forward and then 10 steps backward to exactly where you started, what is your total displacement?

Answer: C) 0 steps

Displacement measures how far out of place an object is from its starting point. If you end where you started, your displacement is zero.

5. What two pieces of information do you need to know to find out an object's speed?

Answer: B) Distance and time

Speed is calculated by looking at how much distance was covered in a certain amount of time.

6. A honeybee flies 3 meters toward a flower. The measurement of '3 meters toward the flower' describes the bee's _____.

Name: _____ **Date:** _____

Answer: D) Displacement

Displacement tells us the distance and the direction an object moved from its start to its finish.

7. When a school bus hits the brakes to stop at a red light, it is accelerating.

Answer: A) True

In science, acceleration isn't just speeding up; it also includes slowing down (deceleration).

8. Which of these is the best example of an object at rest?

Answer: B) A book sitting on a sturdy shelf

An object 'at rest' is not changing its position; it is staying perfectly still.

9. If a paper airplane flies at 2 meters per second toward the chalkboard, '2 meters per second' is its _____.

Answer: C) Speed

Speed tells us how fast an object is moving, such as meters per second.

10. Distance and displacement are always exactly the same number.

Answer: B) False

Distance is the total path traveled, while displacement is just the straight-line gap between start and end.