

What Is Motion?

Key Ideas

1. Complete the sentence.

Motion occurs when an object changes its _____ over _____.

2. What is a reference point?

3. Why is a reference point useful when describing motion?

At Rest or in Motion?

For each situation, write **MOTION** or **REST** relative to the reference point given.

4. A student is sitting on a chair. The reference point is the classroom wall. _____

5. A bicycle travels past a tree. The reference point is the tree. _____

6. A book is lying on a desk. The reference point is the desk. _____

7. A car drives along a road. The reference point is a traffic light. _____

Reference Points

8. Mia is sitting on a moving bus.

Compared with the **seat beside her**, is Mia at rest or in motion? _____

Compared with a **building outside the bus**, is Mia at rest or in motion? _____

9. Explain why Mia can be considered both at rest and in motion.

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Describing Motion

Use the words **position**, **time**, **reference point**, **direction**, and **distance** where appropriate.

10. A runner moves 50 m east in 10 seconds.

Describe the runner's motion using scientific terminology.

11. A skateboarder moves away from a bench.

What could be used as the reference point? _____

How would you know that the skateboarder is moving?

Motion in Everyday Life

12. Give three examples of motion from everyday life.

a. _____

b. _____

c. _____

13. Choose one example from Question 12 and identify a suitable reference point.

Object in motion: _____

Reference point: _____

14. Challenge: You are sitting in a car travelling along a highway. A person sitting beside you appears not to be moving, but a tree outside appears to move backward.

Explain this observation using the idea of **reference points**.
