

Name \_\_\_\_\_

Period \_\_\_\_\_

Date \_\_\_\_\_

sermon | AN OBJECT IN MOTION CHANGES POSITION.  
**1.1 Reading Study Guide A**

**BIG IDEA** The motion of an object can be described and predicted.  
**KEY CONCEPT** An object in motion changes position.

**Vocabulary**  
 position the location of a place or an object  
 reference point a location to which other locations are compared  
 motion a change of position over time

**Review**  
 1. Name three directions in which an object can move.

**Take Notes**

- Position describes the location of an object.
- Describe your position right now in relation to the position of another person, place, or object.

**A. Describing a Position**  
 3. Why do you need a reference point to describe a location?

- Describing a position on Earth requires two pieces of information. In the two cases below, one piece of information is given. Fill in the missing piece.

Distance \_\_\_\_\_

Longitude \_\_\_\_\_

CHAPTER 1  
Motion

Name \_\_\_\_\_

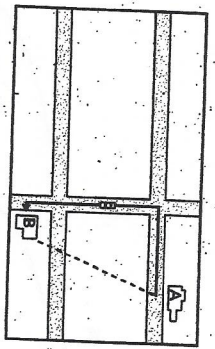
Period \_\_\_\_\_

Date \_\_\_\_\_

CHAPTER 1  
Motion

**B. Measuring Distance**

- A car travels from point A to point B. Describe how the distance that the car travels between point A and point B is different from the distance between point A and point B.



**II. Motion is a change in position.**

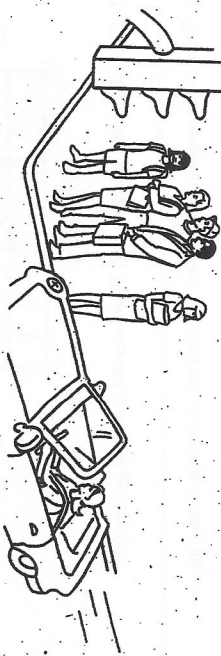
- What two things change when an object is in motion?

**A. Describing Motion**

- How can the motion of an object change?

**B. Relative Motion**

- If you are sitting in a car that is moving, would you say that your seat moved? \_\_\_\_\_ What does your answer depend on? \_\_\_\_\_  
 Use the drawing to answer questions 9 and 10.



- Name two things that the people standing on the street corner would say are in motion.

- Name two things that the driver of the car would say are in motion.

SECTION 1.2 | **Reading Study Guide A**

1D MEASURES HOW FAST POSITION CHANGES

**BIG IDEA** The motion of an object can be described and predicted.

**KEY CONCEPT** Speed measures how fast position changes.

**Vocabulary**

speed a measure of how fast something moves  
velocity a speed in a specific direction  
vector a quantity that has both size and direction

**Review**

1. What type of information should be included when describing an object's location from a reference point?

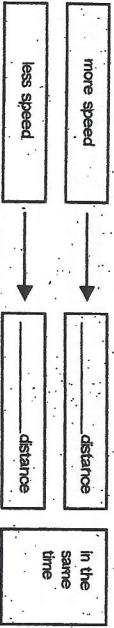
You should note the object's \_\_\_\_\_ and \_\_\_\_\_ from the reference point.

**Take Notes**

I. Position can change at different rates.

2. To measure speed, you need to know distance and \_\_\_\_\_.

3. Fill in the diagram to show how two objects with different speeds move in the same amount of time.



**A. Calculating Speed**

Use the formula for calculating speed ( $S = \frac{d}{t}$ ) to answer questions 4 and 5.

4. What do each of the variables (letters) stand for?

5. If you travel 80 m in 40 s, what is your speed?

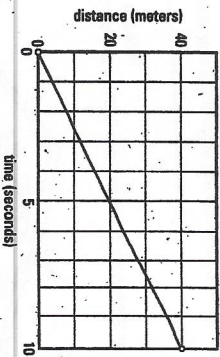
**B. Average Speed**

6. Below is an example of average speed and an example of instantaneous, or moment-by-moment, speed. Fill in the correct title for each.

A police officer uses a radar gun to record the speed of a car as it passes by.	Speed	A race official finds the speed of a runner by using the length of the track and the runner's final time.	Speed
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**C. Distance-Time Graphs**

The distance-time graph below shows the motion of a runner. Use it to answer questions 7 and 8.



7. How far has the runner gone? How long did it take to go that far?

8. What is the speed of the runner? Did this speed change during the 10 seconds shown?

**II. Velocity Includes speed and direction.**

**A. Velocity**

9. What information is needed to determine the velocity of an object?

**B. Velocity Versus Speed**

10. Complete the Venn diagram comparing velocity and speed.

