Describing and Measuring Motion (pages 308–311)

Describing Motion (pages 309–310)

Key Concept: **An object is in motion if it changes position relative to a reference point.**

- **Motion** means moving. To find out if an object is in motion, you must compare it to another object or place. An object is in motion if its distance from another object or place is changing.
- A **reference point** is an object or place that you can use to tell if an object is in motion. A tree, a sign, or a building make good reference points.
- Whether or not an object is in motion depends on the reference point. Suppose you are sitting in a chair. If your chair is your reference point, you are not moving. But if you choose the sun as your reference point, you are moving quite fast. This is because you and your chair are on Earth, which moves around the sun.

Answer the following questions. Use your textbook and the ideas above.

1. Read each word in the box. In each sentence below, fill in the correct word or words.

reference point	force	motion

a. An object is in _____ if its distance from another object or place is changing.

b. To see if an object is moving, you must compare it to a _____.

2. Is the following sentence true or false? Whether or not an object is in motion depends on the reference point.

_____

Measuring Distance (pages 310–311)

Key Concept: **Scientists use SI units to describe the distance an object moves.**

- The system of measurement that scientists all over the world use is called the **International System of Units**. The abbreviation for the system of units is SI.
- The SI unit of length is the meter (m). A meter is a little longer than a yard.
- The length of an object smaller than a meter often is measured in a unit called the centimeter (cm). There are 100 centimeters in a meter.
- Distances too long to be measured in meters often are measured in kilometers. There are 1,000 meters in a kilometer.
- Scientists also use SI units to measure quantities other than length.

Answer the following questions. Use your textbook and the ideas above.

3. When you are measuring in an SI unit, you are using the _____ System of Units.

4. Circle the letter of the SI unit of length.

a. centimeter
b. meter
c. kilometer

5. Is the following sentence true or false? There are 1,000 meters in a centimeter. _____