Answers to pages 164 – 171:

Interpret

1. How do you describe an object's position?

Answers will vary. Students should mention that position is described with a distance and direction from a given reference point.

Apply

2. Analyze the position in each description below. Note the distance, direction, and reference point. Then, in the space to the right, draw a diagram representing the description.

The park is 3 km west of the school.

distance = 3 km

direction = west

reference point = school

A rock fell down from a 30 m-high cliff.

distance = 30 m

direction = down

reference point = cliff

Distinguish

4. Relate the concepts below to speed.

Term	What it means
Speed	Distance an object moves in a unit of time
Constant Speed	When an object moves the same distance over a given unit of time
Changing Speed	When the distance an object moves increases or decreases over a given unit of time
Average Speed	Total distance traveled divided by the total time

Math Skills TEKS 6.8(C); Math TEKS 6.1(A), (B); 6.3(E); 6.4(A)

Use a Formula

The formula for calculating average speed is

$$\text{average speed} = \frac{\text{total distance}}{\text{total time}}$$

A bus carrying students to a soccer game traveled 10 km in 30 min. What was the average speed of the bus in km/h?

1. Change minutes to hours.

30 min = 0.5 h

2. Replace the terms in the formula with the given terms.

$$\text{average speed} = \frac{10 \text{ km}}{0.5 \text{ h}}$$

3. Divide to get the answer.

10 km/0.5 h = 20 km/h

Practice

If, on a hike, you traveled 2,800 m in 2 h, what was your average speed in m/h?

$$\frac{2800 \text{m}}{2 \text{ h}} = 1{,}400 \text{ m/h}$$

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Identify

5. After reading the text under **Changing Velocity**, write two ways to change an object's velocity.

Changes in Velocity

- a change in speed
- a change in direction

LESSON 5.1 Review

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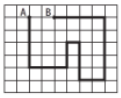
Summarize it!

Differentiate between the distance and displacement for an object that started at point A and traveled as shown to point B.



Distance: 24 units

Displacement: 2 units

Characterize motion using the graphic organizer below.

Motion

- Definition: the process of changing position
- Description depends on: a reference point