Motion

Vocabulary

1 Cars, bicycles, and people can all be objects in motion. What is it about an object in motion that is constantly changing?

- Ⓐ acceleration
- Ⓑ position
- Ⓒ speed
- Ⓓ velocity

2 Forces can affect the rate of an object's motion. Which of these is a force?

- Ⓐ acceleration
- Ⓑ gravity
- Ⓒ speed
- Ⓓ velocity

3 Which **best** describes friction?

- Ⓐ a unit of the metric system
- Ⓑ a unit that is a measure of force
- Ⓒ energy in the form of pushing or pulling
- Ⓓ a force that opposes motion between two surfaces that are touching

4 Velocity is a measurement related to motion. What is velocity?

- Ⓐ the rate at which acceleration changes
- Ⓑ a force that opposes motion between two surfaces that are touching
- Ⓒ a measure of both the speed and direction of a moving object
- Ⓓ the same as speed, that is, a measure of how fast something moves

5 To make sure your measurements are correct, it is important to use appropriate units. Which of these is a unit of distance?

- Ⓐ gram
- Ⓑ liter
- Ⓒ meter
- Ⓓ second

Science Concepts

6 Jareem rode his bike. He traveled 30 km. It took him 3 hr. If Jareem rode at a constant speed, how fast was he traveling?

- Ⓐ 3 km/hr
- Ⓒ 30 km/hr
- Ⓑ 10 km/hr
- Ⓓ 90 km/hr

7 A train travels 200 km in the same direction in 2 hr. What is this train's velocity?

(A) 2 km/hr   (C) 200 km/hr

(B) 100 km/hr   (D) 400 km/hr

8 Velocity and speed are both measurements describing an object's motion. What is a difference between velocity and speed?

(A) Speed depends on acceleration, but velocity does not.

(B) Speed does not depend on direction, but velocity does.

(C) Speed depends on velocity, but velocity does not depend on speed.

(D) Velocity depends only on friction, but speed depends only on gravity.

9 Kinan runs at a rate of 8 min/mi. How long would it take Kinan to run 4 mi at this rate?

(A) 2 min   (C) 32 min

(B) 8 min   (D) 64 min

10

11 Mrs. Panetta's science class was studying motion. Four students rolled tennis balls across the floor. They measured how far and long they rolled. The table shows the results.

Student	Distance tennis ball rolled (m)	Time (s)
Alicia	18	3
Jorge	21	7
Alex	15	3
Lucy	15	5

Which two students had tennis balls that rolled at the same speed?

(A) Alicia and Alex

(B) Alex and Lucy

(C) Lucy and Jorge

(D) Alicia and Jorge

12 Which of the following has the **greatest** average speed?

(A) a car that travels 180 km in 3 hours

(B) a car that travels 250 km in 5 hours

(C) a car that travels 160 km in 4 hours

(D) a car that travels 140 km in 2 hours

13 A truck travels 350 km. Its average speed is 70 km/hr. What is the truck's **approximate** travel time?

(A) 4 hours   (C) 6 hours

(B) 5 hours   (D) 50 hours

14. Nick investigated velocity. He made this table to show his results.

Object	Distance	Time
1	13 m	3 s
2	9 m	4 s
3	22 m	7 s

What important information is missing from Nick's data table on velocity?

(A) the total distance the object traveled

(B) the direction the object traveled

(C) the total time taken to travel the distance

(D) the time taken to complete the experiment

15. The table shows the distances traveled by four cars and the time it took them to travel that distance.

Car	Distance (km)	Time (h)
1	60	3
2	100	4
3	50	2
4	99	3

Which car traveled at the **greatest** average speed?

(A) Car 1   (C) Car 3

(B) Car 2   (D) Car 4

LIVEWORKSHEETS