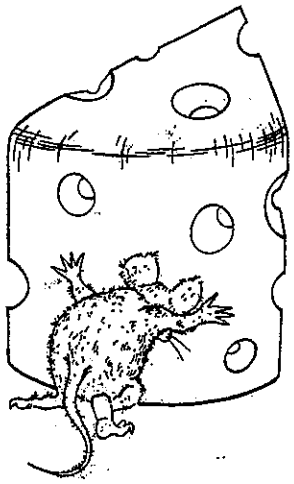
From Here to There



Speed refers to how fast an object is moving. **Motion** is a change in the position of an object when compared to a nonmoving reference point. **Velocity** is the speed of an object and its direction of motion. A change in velocity is called **acceleration**. A decrease in velocity is called **negative acceleration** or **deceleration**. The rate of acceleration depends on both the amount of force used and the mass of the object being moved.

Force is a push or pull that is exerted on an object. When a strong enough force is applied to an object, the object's motion changes. If you apply a small force to a massive object (like a car), you will cause a small amount of acceleration. If you apply a large force to a small object (like a tennis ball), you will cause a large amount of acceleration. Any object that is moving in a straight line at a constant speed is not accelerating.

Use words from the passage above to fill in the blanks.

1. A change in an object's location is _____.
2. A push or pull that is exerted on an object is _____.
3. _____ is the speed of an object and its direction of motion.
4. The rate at which velocity changes is _____.

Circle the answer that correctly completes each sentence.

5. A car sitting at a stoplight (is / is not) accelerating.
6. A car driving at 50 miles per hour for a long time on a straight stretch of highway (is / is not) accelerating.
7. A car that begins to move after a stoplight turns green (is / is not) accelerating.
8. A car slowing down as it pulls into a parking space (is / is not) an example of negative acceleration.
9. As force increases and mass decreases, acceleration (increases / decreases).
10. As force decreases and mass increases, acceleration (increases / decreases).

Use your math skills to solve these problems.

11. A car travels 96 miles in two hours. What is its average speed? (speed = distance ÷ time)

12. If the car continues on but increases its speed (accelerates) at a constant rate of 2 miles per hour each hour, at what speed will it be traveling after 2 hours?

HW 7-2

Directions- Calculate the velocity in each problem below. Remember velocity shows a specific direction. Please show all work. (Velocity = Total distance/ total time)

4. What is the velocity of a train that traveled 112 miles north in 2 hours?

Answer: _____

5. What is the velocity of a car that traveled a total of 328 miles south in 8 hours?

Answer: _____

6. What is the velocity of Mr. Berman's car if he drove 114 miles north to Boston in 6 hours? (round to nearest tenth)

Answer: _____