Velocity and Momentum

Chapter 2.2 Review

Directions: Answer the following questions on the lines provided.

- 1. Define velocity.
- 2. What causes a change in velocity?
- 3. While traveling in a car, why do cars that pass by appear to be moving slowly?
- 4. Describe the theory of plate tectonics.
- 5. What term refers to the product of an object's mass and velocity?
- 6. A car with a mass of 1,400 kg is traveling at a speed of 40 m/s. What is its momentum?
- 7. A bird is flying north with a mass of 2.5 kg has a momentum of 17.5 kg m/s. At what velocity is it flying?
- 8. How can velocity change even if speed stays the same?

Directed Reading for Section 2 = Velocity and Momentum **Section 3** = Acceleration

Directions: Answer the following questions.

1.	Calculate the average velocity in m/y of a tectonic plate that has travelled 9000 km to the south in 60 million years.				
2.	Explain why it is important to identify a reference point for any description of motion.				
3.	How is it possible for two objects to have the same momentum, but different velocities? Give an example.				
	A table tennis ball with a mass of 0.003 kg and a soccer ball with a mass of 0.43 kg are both set in motion at 16 m/s. Calculate and compare the momenta of both balls.				
••					

Directions: Complete the paragraph by filling in the blanks using the terms listed below.

acceleration	
negative	

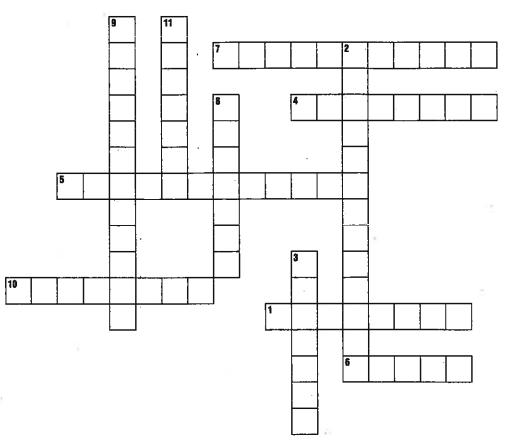
velocity positive

direction time

Acceleration occ	changes.						
When an object sp	acceleration. When						
an object's final velocity is less than its initial velocity, however, it							
has 7	acceleration. An object	ct that is changing					
8	is accelerating, even if its	speed remains the same.					
Acceleration can be calculated by dividing the change in velocity by the							
9	interval in which the char	nge occurred. The SI unit					
of 10.	is m/s^2						

Key Terms Motion

Directions: *Use the clues below to complete the crossword puzzle.*



Across

- 1. includes both the speed of an object and the direction if it moving
- 4. a measure of how far an object has moved from a starting point
- 5. the rate of change of velocity
- **6.** the distance an object travels per unit of time
- 7. _____ is the acceleration towards the inside of a curved path.
- 10. the product of mass and velocity

Down

- 2. The rate of change in position at a given point in time is _____ speed.
- 3. the tendency of an object to resist any change in its motion
- 8. _____ speed is equal to the total distance traveled divided by the total time of travel
- 9. the distance and direction of an object from a starting point
- 11. Change in velocity is the final speed minus the _____ speed.



Motion

I. Testing Concepts

Directions:	In the blank at the left, v	vrite the letter of the ter	m that best completes	each statement.		
1.	is how far an a. Distance	n object has moved. b. Displacement	c. Velocity	d. Rate		
2.	is the distan	position from the				
		b. Displacement	c. Velocity	d. Rate		
3.	a. Speed	ce an object travels p b. Displacement		d. Rate		
4.	a. Speed		•	e of travel. d. Displacement		
5 is the speed at a given point in time. a. Average speed b. Instantaneous speed c. Total displacement d. Velocity						
6.	includes the	speed of the object b. Velocity				
Directions: make it true.	ldentify each statement	as true or false. If the	statement is false, chai	nge the underlined word(s) to		
7.	Acceleration is the rate of change of velocity.					
8	The <u>speed</u> of an object is the product of its mass and velocity.					
9	9. Acceleration toward the center of a curved or circular path is called <u>centripetal</u> <u>acceleration</u> .					
10	10. A reference point is needed to determine the position of an object.					
11.	11. A <u>frame of reference</u> is a coordinate system in which the positions of objects can be measured.					