Marvelous Motion! (Chapter 9 Review)
Online Computer Lab

Directions: Go to http://www.physics4kids.com/ and answer the following questions.

Part I: Click on “Motion” written in orange/yellow on the top right. Now, click on “Velocity” written in red on the right hand side.

1. How are velocity and speed similar? ______________________________. How are they different? ________________________________.

2. Click on the underlined word “vector”. What is a vector? ________________________________.

3. Draw a picture of a vector. Label the direction and the magnitude (size/strength).

4. You need both ___________________ and ___________________ to have a vector.

5. What is an example of vectors in real life? ________________________________.

6. Click the back button to go back to the most recent page on velocity. What is the equation for average speed?
   Average speed = ______________ divided by ______________

7. Velocity is the rate of motion in a specific ___________________. Velocity can be constant, or it can change. Speed with a ____________________ is velocity!

8. Velocity is a vector measurement because it has an ___________________ and a ___________________. Speed is only an ___________________. Speed doesn’t tell the whole story to a physicist.

9. What is instantaneous velocity? ________________________________.

10. When velocity changes, the word ____________________ is used.


12. What is the difference between acceleration and deceleration? ________________________________.

13. Draw the graph to represent acceleration and deceleration. Don’t forget to label your x and y axis.

14. What is instantaneous acceleration? ________________________________.

15. What is an example of when acceleration is constant? ________________________________.

Part II: Go to http://www.physicsclassroom.com/mmedia/kinema/avd.cfm and answer the questions.

16. Draw the animation in three parts. The first part should show the hot wheels car with a positive acceleration, the second part should show the car slowing down, and the third part should show the car stopped. You must label both the velocity vector and the acceleration vector to demonstrate the change in acceleration. You will have to watch the animation several times to see the details that are required for these drawings.
17. What is the rule of thumb??

18. Why is the car accelerating the entire time?? (Hint: think of the definition of acceleration)

Part III: Go to and answer the following questions. http://www.physicsclassroom.com/Class/1DKin/
19. Read through speed and velocity and then click on the animation. This will bring you to a page that is titled “Average vs. Instantaneous speed”. What is the difference between average and instantaneous speed?

20. Click on the back button to take you back to the recent page. Scroll down to “Average speed vs. Instantaneous Speed”. Find the two data tables. The first data table is for “Constant speed” and the second graph is for “Changing speed”. Make a small graph for each data table in this section.

21. Find the slope for the first graph. Remember, pick two coordinates and use the rise/run equation.
   Coordinate #1: ______________, Coordinate #2: ______________
   Work: _______________________
   Answer: _______________________

22. Scroll all the way to the bottom of the website and take the two quiz questions. Show your work and answer for each one. Read the instructions for the questions carefully. Don’t worry about finding average velocity.
   Question #1: The Skier, AVERAGE SPEED
   Work: _______________________
   Answer: _______________________

   Question #2: The Football Player, AVERAGE SPEED
   Work: _______________________
   Answer: _______________________

Part IV: Go to http://teachers.sduhsd.net/mboman/study%20stacks.htm and click on Chapter 9 “Motion and Energy”. This website can also be accessed through Mrs. Boman’s website, under “additional links” and then “Study stacks”.
23. Click on the “Crossword” option and complete the crossword. Write the answers to the questions below.
   Down:
   2. _________________________
   3. _________________________
   5. _________________________
   6. _________________________
   Across:
   1. _________________________
   4. _________________________

   Finished early? Play on the Study Stacks site. Try Hangman or Matching!