2008 Linear Motion 1

1) *Have your Lab Safety and Class Rules sheet signed. (And actually bring it to class.)*
2) *Acquire a scientific calculator. It needs to have sin, cos, and tan. Preferably is should be solar. I like the TI-30. Purchase one or get one of the school's.*

3) Why are closed-toed shoes required in the lab?

4) Give two reasons that we would need to wear goggles in a physics lab?

5) If someone has an idea for an experiment that you have never done before, should you do it? Why or why not?

Go to the website and answer the following:
6) List the songs that are on Mr. Murray's Website (*found in "Study Helps"*).

7) Go to Study Helps, then Physics Study Helps, then Kinematic Equations. Do the first study help: "Kinematic Variables".
   A) What are the units for acceleration?
   B) What does Δy stand for?
   C) What does v_i stand for?

8) Go to Teacher's Notes, Go to Nature of Science, then "How to Set Up a Good Experiment".
   A) What do we call the variables we do not change in an experiment:
   B) What do we call the variable we are reading in the experiment:
   C) How many experimental variables does a good experiment have?

Answer the following using the "Speed" notes.

9) Mark these as Speed, Distance, Time, or Other

   ____ 5 mm/sec   ____ 20 meters/sec   _____15 ft/min

   ____ 10 inches   ____ 228 meters   _____78 sec

   ____ 50 m/s^2 ____ 8 minutes   _____6 Newtons

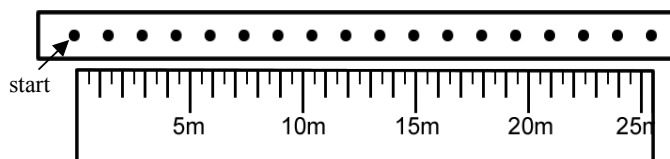10) True or false (and why): "A fast car goes farther."

11) Why do we have to use change of distance (ΔD) instead of just distance (D)?

12) Is the above motion at constant speed?
13) Why or why not?

14) Each dot = 1 sec. How long did it take to go 15 m?

15) Calculate the object's speed.

16) How would the dots change if it were moving faster?

More on back

For each of the next four problems, follow the procedure given.

18. A bike moves 50 m in 10 seconds. Calculate the speed of the bike.		19. A car travels 200 miles in 4 hours. Calculate the car's speed.	
Step 1: Variables: S = ΔD = ΔT = Step 2: Formula:	Step 3: Plug in numbers and solve: Step 4: Give answer with units:	Step 1: Variables: S = ΔD = ΔT = Step 2: Formula:	Step 3: Plug in numbers and solve: Step 4: Give answer with units:
20. A car travels 60 m/s for 10 secs. Calculate how far it traveled.		21. On holiday, a family travels from Meyerville (10 miles away) to Sprytown (70 miles away), in 3 hours. Find their speed.	
Step 1: _____ Step 2: _____	Step 3: _____ Step 4: _____	Step 1: _____ Step 2: _____	Step 3: _____ Step 4: _____

Let's see if we can't remind ourselves of things we have previously learned in math….

22. Positive or Negative?

     A.   _____ The horizontal axis pointing to the left?
     B.   _____ The vertical axis pointing down?
     C.   _____ The horizontal axis pointing to the right?
     D.   _____ The vertical axis pointing up?

23. Using the diagram at the right, calculate the speed of the car. (*Be sure to follow the notes.*)