Physics Name _____

Hour _____

Physics
Approximate Timeline

Students are expected to keep up with class work when absent.

	CHAPTER 2– REPRESENTING MOTION	
Day	**Plans for the day**	**Assignments for the day**
1	• 2.1 – Picturing Motion ○ Motion Diagrams • 2.2 – Where & When ○ Coordinate Systems ○ Vectors v Scalars ○ Time Intervals & Displacement	• Assignment 2.0 • Read section(s) 2.3
2	• Quiz 2.1 • 2.3 – Position-Time Graphs ○ Using a Graph…	• Assignment 2.3 • Read section(s) 2.4
3	• Quiz 2.2 • 2.4 – How Fast • Velocity	• Assignment 2.4
4	• Quiz 2.3 • Experiment 3.1 – Uniform Motion	•
5	• Turn in Experiment 3.1 – Uniform Motion • Review for Chapter 2 Test	•
6	• Chapter 2 Test	• Read section(s) 3.1

Physics Name _____

Hour _____

Study Guide
Chapter 2 Quizzes

Quiz 2.1 – 2.2

2.1 – Picturing Motion

1. How are objects represented in motion diagrams?

2.2 – Where and When?

2. Define the term "vector".
3. Define the term "scalar".
4. What is the name given to the single vector that represents the sum of two (or more) other vectors?
5. Solve simple, one-dimensional vector problems.

Quiz 2.3 – Position-Time Graphs

6. Use a position-time graph to interpolate a runner's position.
7. Use a position-time graph to extrapolate a runner's position.
8. Know what it means when a position-time graph:
    a. is a straight line
    b. curves upward
    c. curves downward
9. Plot a position-time graph and use it to determine:
    a. velocity
    b. position at time not specified in the data

Quiz 2.4 – How Fast?

10. Use a position-time graph to determine a runner's velocity.
11. Solve simple velocity problems.

Study Guide
Chapter 2 Test

At the completion of chapter 2 you should…

1. Know the definitions of the following terms.
    a. Coordinate System
    b. Position
    c. Distance
    d. Vector
    e. Scalar
    f. Resultant
    g. Displacement
    h. Speed
    i. Velocity
2. Be able to identify quantities as a vector or a scalar.
3. Solve one dimensional vector problems.
4. Plot a Position-Time graph.
5. Interpret a Position-Time graph.
6. Determine velocity from a Position-Time graph.

Physics Name _____

Hour _____

Assignment 2.0 – Vocabulary

Define each of the following terms.

1. Position

2. Distance

3. Magnitude

4. Vectors

5. Scalars

6. Resultant

7. Displacement

8. Position-Time Graph

9. Average Velocity

10. Average Speed

11. Instantaneous Velocity

Physics Name _____

Hour _____

Assignment 2.3 – Position-Time Graphs

<u>Short Answer</u>: Answer each question in the space provided. Write or print clearly. IF I CAN'T READ IT… IT'S WRONG.

1. How can you use the position time graphs for two in-line skaters to determine if and when one skater will pass the other one?

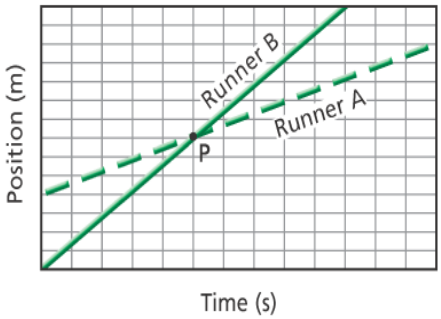
2. A walker and a runner leave your front door at the same time. They move in the same direction at different constant velocities. Describe the position time graphs of each.

3. What does the slope of a position time graph measure?

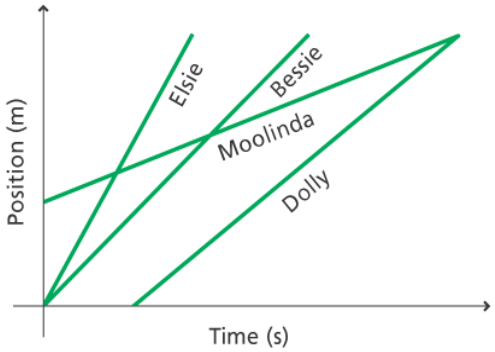
4. The figure to the right is a graph of two people running.
   A) Describe the position of runner A relative to runner B at the *y*-intercept.

   B) Which runner is faster?

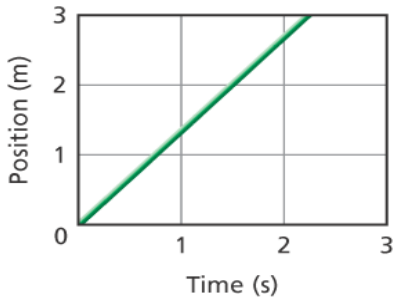
   C) What occurs at point P and beyond?



5. The position-time graph in the figure to the right show the motion of four cows walking from the pasture back to the barn. Rank the cows according to their average velocity, from slowest to fastest.



6. The figure to the right is a position-time graph for a rabbit running away from a dog.



A) Describe how this graph would be different if the rabbit ran twice as fast.

B) Describe how this graph would be different if the rabbit ran in the opposite direction.

Physics Name _____

Hour _____

Assignment 2.4 – How Fast?

<u>Problems:</u> Solve each of the following problems. Show all work. Circle your answer expressed with the correct number of significant figures and units.

1. A bike travels at a constant speed of 4.0 m/s for 5.0 s. How far does it go?

2. Light from the Sun reaches Earth in 8.3 minutes. The speed of light is 3.00×10^8 m/s. How far is Earth from the Sun?

3. A car is moving down a street at 55 km/h. A child suddenly runs into the street. If it takes the driver 0.75 s to react and apply the brakes, how many meters will the car have moved before it begins to slow down?

4. Nora jogs several times a week and always keeps track of how much time she runs each time she goes out. One day she forgets to take her stopwatch with her and wonders if there's a way she can still have some idea of her time. As she passes a particular bank, she remembers that it is 4.3 km from her house. She knows from her previous training that she has a consistent pace of 4.0 m/s. How long has Nora been jogging when she reaches the bank?

5. You and a friend each drive 50.0 km. You travel at 90.0 km/h; your friend travels at 95.0 km/h. How long will your friend have to wait for you at the end of the trip?