

Instructions: Turn to page 36 in your textbook. Follow along in the text to answer the following questions.

### **Motion**

1. (think) What are the two variables of motion? \_\_\_\_\_ and \_\_\_\_\_

### Motion and Position

2. You know it (the truck) moved because its \_\_\_\_\_ to the mailbox changed.

3. A \_\_\_\_\_ is needed to determine the position of an object.

4. \_\_\_\_\_ occurs when an object changes \_\_\_\_\_ relative to \_\_\_\_\_.

### Sidebar – Moving Through Space

5. Using the Sun as your \_\_\_\_\_, you are moving through space at about \_\_\_\_\_.

### Distance

6. An important part of describing the motion of an object is to describe \_\_\_\_\_ it has moved, which is \_\_\_\_\_.

7. The SI unit for distance is \_\_\_\_\_.

### Displacement

8. Sometimes you may want to know not only your \_\_\_\_\_, but also your \_\_\_\_\_ from a reference point. \_\_\_\_\_ is the distance and direction on an object's \_\_\_\_\_ in position from the starting point.

### Figure 2

9. Draw a picture (sideways) showing how distance and displacement can be different:

## Speed & Calculating Speed

10. Speed is the \_\_\_\_\_ an object travels per \_\_\_\_\_.
11. Any change over time is called \_\_\_\_\_.
12. Copy the speed equation here:

## Motion with Constant Speed

13. If the car neither \_\_\_\_\_ nor \_\_\_\_\_, the car is traveling at a \_\_\_\_\_.
14. Average speed is \_\_\_\_\_ divided by the \_\_\_\_\_.

## Figure 4

15. (Think) What kind of speed does a speedometer show? \_\_\_\_\_
16. (Think) This kind of speed is the speed at \_\_\_\_\_.

## Velocity

17. Speed describes only \_\_\_\_\_.
18. Velocity includes the \_\_\_\_\_ of an object and the \_\_\_\_\_ of its motion.
19. Because velocity depends on \_\_\_\_\_ as well as \_\_\_\_\_, the velocity of an object can change even if the speed of the object \_\_\_\_\_.
20. (Think) On an oval racetrack, the car's \_\_\_\_\_ is constantly changing, but it's \_\_\_\_\_ is constant.
21. (Think) You are in the front of a bus traveling 2 m/s forward. You get up and walk at 2 m/s to the back of the bus. What is your motion relative to the bus driver? \_\_\_\_\_  
What is your motion relative to someone outside the bus? \_\_\_\_\_
22. Do Practice Problems 1. and 2. on page 40: