

Name _____
Period _____

JMJ

Date _____
Miss Pisciotta

Chapter 1 HW sheet

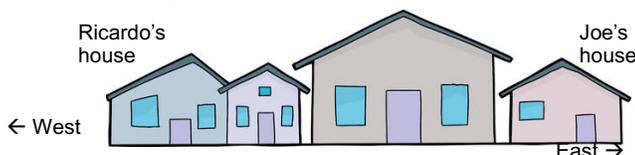
#1: Complete the paragraph by writing the correct terms on the line. Some terms might be used more than once. PLEASE WRITE THE WHOLE PARAGRAPH IN YOUR NOTEBOOK.

To describe an object's _____, you must first choose a(n) _____ as a starting place. From there, you must specify the _____ to the object and the _____ in which it lies from the starting place. If you are giving directions to two objects located in different directions from the same _____, it can sometimes be helpful to describe one object as being in the _____ direction from that place and the other in the _____ direction.

An object is in _____ any time its _____ is changing. In most cases, such a change involves changes in _____ and _____ from the starting point. However, if an object returns to its starting point, its _____ is zero, even though it might have traveled a considerable _____.

#2: Complete the activity in your NOTEBOOK. Use the map to help you answer the questions.

1. Ricardo and Joe live in houses on the same street, as shown in the diagram. Ben plans to visit Ricardo one evening, but he's afraid he won't be able to read the house addresses in the dark. However, he knows where Joe lives.



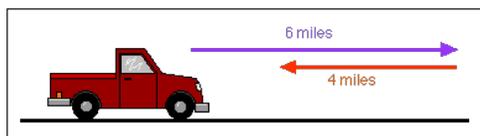
- What simple direction can Ricardo give Ben to enable him to find his house after dark?
- In the example above, what does Joe's house serve as?
- What other two pieces of information form a complete description of a position?
- What two terms are sometimes used to indicate opposite directions from a point?

2. A new family has just moved into your neighborhood. They live next door to you. They would like to know the location of the school, the library, and the grocery store. Draw a map for the family, using their home as the reference point. Assume the following conditions when you draw the map:

- The reference direction is east.
- The school is -1 km from the family's home.
- The library is +2 km from the family's home.
- The grocery store is -4 km from the family's home.

Draw and label each building on your map. Include an arrow showing the reference direction. Also, show the distance from the reference point to each building.

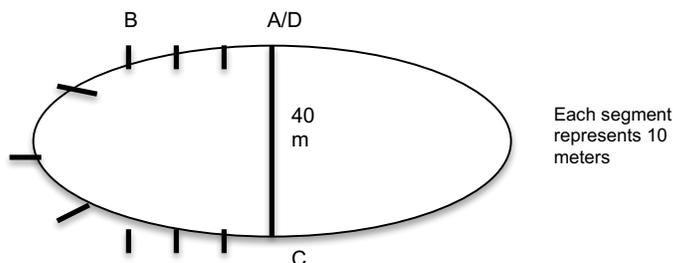
#3: WRITE THE ANSWERS IN YOUR NOTEBOOK.



1. Farmer Joe drives 6 miles down a straight road. He turns around and drives 4 miles back.

- What is the distance he covered?
- What is the displacement?

- If Colleen paces herself from start (A) to finish (D) around the track, what is her displacement?
- What is the *distance* from point A to B?
- What is the *displacement* from point A to B?
- What is the *distance* from point A to C?
- What is the *displacement* from point A to C?



#4: Restate the question in your answer. Please write the answers in your NOTEBOOK.

- What is the difference between constant and instantaneous speed?
- Find the average speed of a marble that takes 6 seconds to roll 30 m across a gymnasium floor.
- A distance-time graph shows the motion of two bicycle riders. Each rider's motion is represented on the graph by a diagonal line sloping upward from left to right. The graph shows that they traveled the same distance. However, the line representing the motion of Rider #1 slopes upward more steeply than the line representing the motion of Rider #2. What can you conclude about the speed of the two riders? Which rider arrived at his or her destination first?
- What is velocity, and how does it differ from speed?
- What is an object's velocity?
- What are three ways that an object can change its velocity?

5: Use the graphs to answer the following questions in your NOTEBOOK.

For graph #1- Study the D-T graph, showing the distances that eight different things cover in 120 seconds or less. The letters below correspond to the lines on the graph. Write the correct average speed in meters per second.

B. airplane C. car D. racehorse E. bike rider F. jogger G. hiker

For graph #2- The D-T graph above shows the varying speeds of a car, a train that stops at a station and a roller coaster. Use the diagram to answer each question.

- A. What is the average speed of the train (Line A) in meters per second?
- B. What is the car's average speed (Line B) in meters per second?
- C. What is the roller coaster ride's average speed (Line C) in meters per second?
- D. What is the approximate maximum speed of the roller-coaster ride in meters per second?
- E. About how long does the train sit at the station?

#6: Answer the following questions in your NOTEBOOK.

- A. An airplane is flying from San Francisco to Washington, D.C. During the middle of the flight, it travels 2,000 km in 2.5 hours. What is its speed during that period?
- B. Another airplane is flying in the opposite direction. It covers the same distance in exactly two hours. What is its speed?
- C. Draw arrows representing the velocities of the two planes.

#7: Answer the following questions in your NOTEBOOK.

- A. What is acceleration?
- B. When a moving object reduces its speed, what happens to the object's acceleration in relation to its velocity?
- C. Why is a car rounding a curve accelerating, even if it is moving at a constant speed?
- D. What does each letter in the following equation stand for: $a = (V_f - V_i)/t$?

#8: Restate the question in your answer in your NOTEBOOK.

- A. What is acceleration, and what are two conditions that can change when an object accelerates?
- B. What type of motion would produce positive acceleration in an object? What type of motion would produce negative acceleration?
- C. What is the acceleration of a car during a 5 seconds interval in which it goes from 10 m/s to 15 m/s?
- D. How would a speed-time graph represent the motion of an object that is speeding up? How would it represent that motion of an object that is moving at a constant speed?

#9: Answer the following questions in your NOTEBOOK.

- A. If a speed-time graph showing the motion of two cars contains two parallel horizontal lines, which line represents the faster car?
- B. What does it mean if those two lines bend toward each other and meet at a point on the right side of the graph?
- C. What is the limitation of speed-time graphs?