

Position and Motion Research Guide

Directions: Research the following questions about the main topic. You can use your textbook, or you can use resources found online. If you use online resources, make sure to validate the sources before obtaining information from the sources.

How do you use a reference point and reference direction to describe an object's position or a person's position? (Reference pages 9 – 12)

Define Reference Point and then write 2 sentences, using information from a textbook or other resources, that will answer the question above:

Reference Point is _____

- _____

- _____

How do you know an object is in motion? (Reference page 13)

Define Motion and then write 2 sentences, using information from a textbook or other resource, that will answer the question above:

Motion is _____

- _____

What is the difference between distance and displacement? (Reference page 13)

Define the following words to answer the question above:

Distance is _____

Displacement is _____

Speed and Velocity

Research Guide

Directions: Research the following questions about the main topic. You can use your textbook, or you can use resources found online. If you use online resources, make sure to validate the sources before obtaining information from the sources.

What is speed? What is the unit used to describe speed? (Reference page 17)

Speed is _____

The SI unit for speed is: _____

Note: SI Unit stands for the International System of Units

What is the difference between constant speed, changing speed, and instantaneous speed? (Reference page 18)

Write one sentence to describe each concept in the table below:

Constant Speed	Changing Speed	Instantaneous Speed

How do you calculate average speed? (Reference page 19)

Average Speed is the _____ traveled divided by the _____ taken to travel that distance.

Average Speed Equation: _____

Abbreviated Equation: _____

The symbol _____ represents the term "average velocity"
It is also the unit used to describe average speed.

What is a distance-time graph? (Reference pages 20 – 22)

- Write a sentence to describe what a distance-time graph can show you:

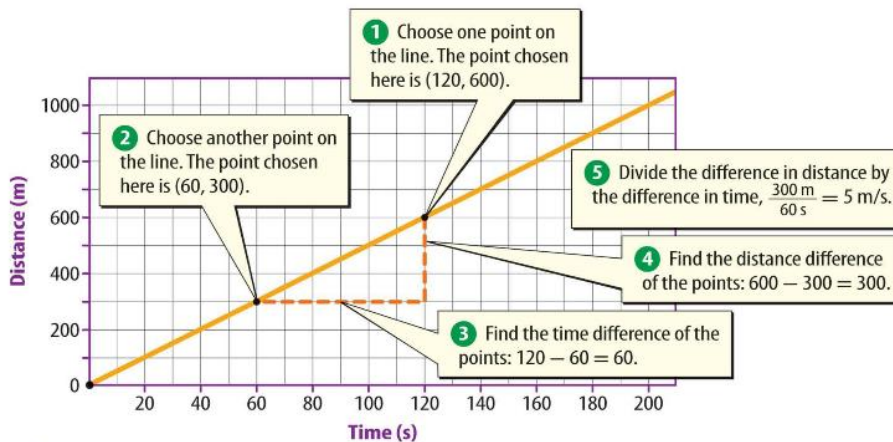
- Write a sentence to describe how you can compare two speeds on a distance-time graph:


- Examine the example given below, then answer the two practice questions given.

Average Speed



Figure 9 The average speed of the horse from 60 s to 120 s can be calculated from this distance-time graph.



 **Visual Check** How does the average speed of the horse from 60 s to 120 s compare to its average speed from 120 s to 180 s?

Practice Work Space: (Complete the problems listed below. Be sure to show all of your work.)

1. Average Speed from 60s to 120s

2. Average speed from 120s to 180s

What is the difference between speed and velocity? (Reference page 23)

Velocity is _____

Velocity is different from speed because _____

Draw a diagram in the space provided below to show the velocity of two soccer balls moving in opposite directions:

How can the velocity of an object change? (Reference page 23)

Describe how you can use arrows to show change in velocity: _____

List the 3 ways velocity can change:

1. _____
2. _____
3. _____