Speed, Velocity, and Acceleration

**Speed:**

Speed is a \_\_\_\_\_\_\_\_\_\_\_ of how \_\_\_\_\_\_\_\_\_\_ something moves or the \_\_\_\_\_\_\_\_ it moves, in a given amount of time.

The \_\_\_\_\_\_\_\_\_\_ the speed an object has, the \_\_\_\_\_\_\_\_\_\_ it changes position!

**Calculating speed:**

To calculate speed, you need to know both \_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_!

d= distance; S= speed; t= time

Speed can be calculated by dividing the \_\_\_\_\_\_\_\_\_\_\_ an object travels by the \_\_\_\_\_\_\_\_\_ it takes to cover the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

The formula is: 

**Units:**

The standard unit for speed is m/s or \_\_\_\_\_\_\_\_\_\_\_\_ per \_\_\_\_\_\_\_\_\_\_\_\_

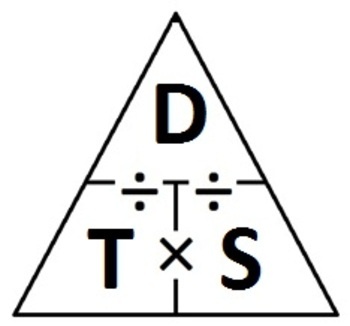
The most common speed unit we all know is \_\_\_\_\_\_\_\_\_\_\_ per \_\_\_\_\_\_\_\_ or mph

**Let’s try a few examples:**

|  |  |  |
| --- | --- | --- |
|  | Distance | Time |
| Carlos | 100 m | 4 s |
| Lakeshia | 400 m | 8 s |
| Mark | 200 m | 10 s |

Show work here!!

**Finding distance and time:**

If you know any two of the three variables (speed, distance, or time), you can find the third- simple algebra!! 

Speed = distance/time

Time = speed/distance

Distance = time X speed

**Finding Distance:**

Maria travels to Raleigh in 2 hours. Her average speed was 60 mph. What is the distance to Raleigh?

**Finding Time:**

Kailee runs 10 miles at an average speed of 5 mph. How long was her run?

**Velocity:**

Velocity is a \_\_\_\_\_\_\_\_\_\_ in a specific \_\_\_\_\_\_\_\_\_\_\_\_. If you are walking east at a speed of three meters per second, you are describing \_\_\_\_\_\_\_\_\_\_\_\_\_\_. A person walking \_\_\_\_\_\_\_\_\_ with a speed of three meters would have the same \_\_\_\_\_\_\_\_\_ as you do, but not the same \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

**Acceleration:**

Acceleration is the \_\_\_\_\_\_\_\_\_ at which \_\_\_\_\_\_\_\_\_\_ changes with time. It is a measure of how \_\_\_\_\_\_\_\_\_\_\_ the \_\_\_\_\_\_\_\_\_\_\_\_ is changing; if velocity does not change, there is no \_\_\_\_\_\_\_\_\_\_\_\_\_\_.

When the acceleration is in the same \_\_\_\_\_\_\_\_\_\_\_\_\_ as the object is moving, the \_\_\_\_\_\_\_\_\_\_\_\_ of the object \_\_\_\_\_\_\_\_\_\_\_ (the car speeds up)

When the acceleration is \_\_\_\_\_\_\_\_\_\_\_\_ to the motion, the \_\_\_\_\_\_\_\_\_\_ of the object \_\_\_\_\_\_\_\_\_\_ (the car slows down). This is also called \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.