

Name: _____

Science 7

Date: Oct 4, 2019

Motion

Aim: I can describe motion.

Do Now:



Notes:

Motion:

- A Change in position relative to or measured from a Stationary reference point (frame of reference).

How can motion be described?

- Speed: how fast something moves; the rate of motion.
- The amount of time it takes for a change in position to take place.

Instantaneous Speed:

- The rate of motion at any given instant.

Constant Speed:

- A speed that does not change.
- Most things are only traveling for a constant speed for a short period of time.

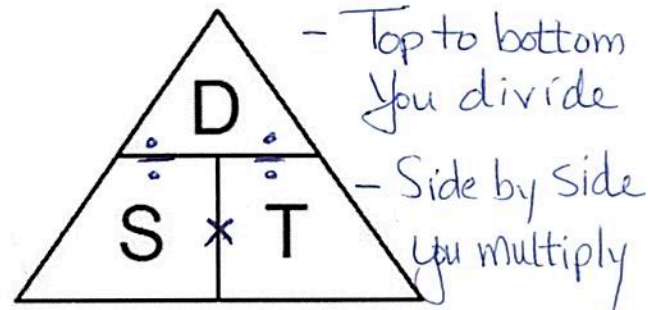
Average Speed:

- The total distance traveled divided by the total time of travel.

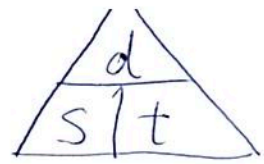
Calculating Speed

- Express the relationship between distance, speed and time.

$$\text{speed} = \frac{\text{distance}}{\text{time}}$$



Practice Problems:



1. A lady bug crawls $\overset{d}{5 \text{ meters}}$ in $\overset{t}{20 \text{ seconds}}$. Calculate the $\overset{?}{\text{speed}}$ at which the lady bug crawled.

Formula	$S = \frac{d}{t}$
Substitution	$S = \frac{5 \text{ m}}{20 \text{ sec}}$
Final Answer with Units	$S = 0.25 \text{ m/sec} \approx 0.3 \text{ m/sec}$

2. Your neighbor says she can skate at a $\overset{\text{Neighbor's Speed}}{S}$ speed of $\overset{S}{4 \text{ meters/second}}$. To see if you can skate faster, you have her time you as you skate as fast as you can for $\overset{d}{100 \text{ meters}}$. Your time is $\overset{t}{20 \text{ seconds}}$. Who skates faster? *You skate faster.*

Formula	$S = \frac{d}{t}$
Substitution	$S = \frac{100 \text{ m}}{20 \text{ sec}}$
Final Answer with Units	5 meters/second

3. Sound travels at a speed of $\overset{S}{330 \text{ meters/second}}$. If a lightning bolt strikes the ground $\overset{d}{1,000 \text{ m}}$ away from you, $\overset{t}{\text{how long will it take for the sound to reach you?}}$

Formula	$t = \frac{d}{S}$
Substitution	$t = \frac{1000 \text{ m}}{330 \text{ m/s}}$
Final Answer with Units	$t = 3.0 \text{ s}$