11/17/14

# MOTION

POSITION

SPEED

MOMENTUM

VELOCITY

ACCELERATION

FORCE

DISPLACEMENT

MASS

DISTANCE

GRAVITY

INERTIA

FRICTION

RESISTANCE

NEWTONS

REACTION

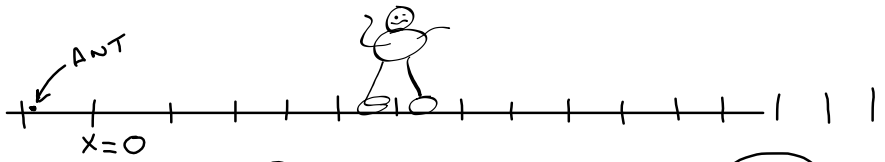
JOULES

CIRCLE = TERMS THAT DESCRIBE MOTION.

Motion (Kinematics) : Describes How Things Move

This is In Contrast To Explaining Why Things Move.

**POSITION**: THE LOCATION OF AN OBJECT WITH RESPECT TO SOME REFERENCE FRAME.




THE POSITION OF CHARLIE IS +5 m

THE POSITION OF THA ANT IS -1 m

**DISTANCE**: THE DIFFERENCE IN POSITION OF TWO POINTS OR OBJECTS.

THE DISTANCE THE ANT MUST WALK TO CHARLIE IS:

$$\text{DISTANCE} = x_f - x_i$$
$$= 5 - (-1) = 6 \text{ m}$$

**DISPLACEMENT**

IS DISTANCE WITH A DIRECTION.

IF THE ANT WALKS TO CHARLIE, ITS DISPLACEMENT IS $+6$ m IN THE POSITIVE DIRECTION

Sometimes Distance & Displacement Are The Same Value, And Sometimes They Are Not.

If the ant walks to Charlie & then returns to its starting position:

Distance Travelled = 12 m

Displacement = 0 m

$$\text{SPEED} = \frac{\text{DISTANCE}}{\text{TIME}} \quad \left(\text{UNITS: } \frac{\text{METERS}}{\text{SECONDS}} \quad \frac{m}{s}\right)$$

$$\text{VELOCITY} = \frac{\text{DISPLACEMENT}}{\text{TIME}} \left(\text{UNITS: } \frac{m}{s}\right)$$

- VELOCITY HAS A DIRECTION, SPEED DOES NOT.

$$\text{ACCELERATION} = \frac{\text{CHANGE IN VELOCITY}}{\text{TIME}} \quad \left(\text{UNITS: } \frac{\frac{m}{s}}{s} \quad \frac{m}{s^2}\right)$$

# TODAY

- FINISH YOUR SURFACE CALCULATIONS FOR YOUR INFLATABLE STRUCTURE.

- MR. B & MR. K WILL BE COMING AROUND TO GRADE ANYONE'S INFLATABLE STRUCTURE WHO DIDN'T GET IT COMPLETED BY FRIDAY - IT IS NOW LATE.