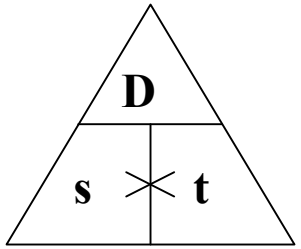
Motion Foldable Notes

Motion	Speed	Velocity
How do we know if something moves? → If the object changes position, then the object has moved. **Motion** → is a change in position. What is a **frame of reference**? → A **frame of reference** is something used to determine motion and is considered not to be moving (even though it may be.) **What is distance?** Distance is <u>how far</u> something has traveled or moved. **What is displacement?** Displacement is the distance between the starting and ending point (and the direction.)	What is speed? → **Speed** is how fast something is moving or how far something travels in a time period. What is **average speed**? → Average speed is the total distance an object travels, divided by the total time the object takes. What is **instantaneous speed**? → Instantaneous speed is like a snapshot of the speed. It is the speed of an object at one moment of time. What is **constant speed?** – Constant Speed is speed that does not change. $\text{Speed (m/s)} = \frac{\text{distance} \rightarrow \text{in meters}}{\text{time} \rightarrow \text{in seconds}}$ $\text{average speed} = \frac{\text{total distance}}{\text{total time}}$  **D = s x t** **t=** $\frac{\text{distance}}{\text{speed}}$ **Example:** **If you travel 35 m in 15 s, what is your speed?** **S =** $\frac{d}{t} = \frac{35\text{ m}}{15\text{ s}}$ **= 7/3 m/s = 2.33 m/s**	What is velocity? → **Velocity** is speed with a direction. Can two objects have the same speed, but different velocities? → Yes – If the two objects have the same speed, but different directions.