Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
Guided Notes: Speed and Acceleration

Calculating Speed

* \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (S) = distance traveled (d) / the amount of time it took (t).
	+ \_\_\_\_\_\_\_\_=\_\_\_\_\_\_\_\_\_ x \_\_\_\_\_\_\_\_\_\_\_

Units for speed

* Depends, but will always be a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ unit / a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ unit
	+ Ex. Cars: mi./h
	+ Jets: km/h
	+ Snails: cm/s
	+ Falling objects: m/s
* If I travel 100 kilometer in one hour then I have a speed of…\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* If I travel 1 meter in 1 second then I have a speed of….\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Average speed

* Speed is usually NOT \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
	+ Ex. Cars stop and go regularly
	+ Runners go slower uphill than downhill
* \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ = total distance traveled/total time it took.
* It took me 1 hour to go 40 km on the highway. Then it took me 2 more hours to go 20 km using the streets.
	+ Total Distance: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
	+ Total Time: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
	+ Avg. Speed: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* I travelled 25 km in 10 minutes. How many meters have I travelled?
	+ A) 25000 m
	+ B) .0112 m
	+ C) .025 m
	+ D) 2.5 m
* I ran 1000 m in 3 minutes. Then ran another 1000 m uphill in 7 minutes. What is my average speed?

Velocity

* \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ – the SPEED and DIRECTION of an object.
	+ Example:
		- An airplane moving North at 500 mph
		- A missile moving towards you at 200 m/s
* What is the difference between speed and velocity?

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

* What does the slope of a distance vs. time graph show you about the motion of an object?

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Acceleration

* Acceleration = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ up
* \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ – the rate at which velocity changes
	+ Can be an:
		- \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ in speed
		- \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ in speed
		- Change in \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Types of acceleration

* Increasing speed
	+ Example: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* Decreasing speed
	+ Example: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* Changing Direction
	+ Example: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_(can be at constant speed)
	+ 

A skydiver accelerates from 20 m/s to 40 m/s in 2 seconds. What is the skydiver’s average acceleration?