NAME: PERIOD: DATE:

NEWTON'S 2nd LAW NOTES

Newton's 2nd Law is basically a math equation:

FORCE = MASS x ACCELERATION

The force an object has is equal to the amount of matter it is made of multiplied by how quickly it is speeding up or slowing down.

Ex. A 15 kg bowling ball is being pushed toward the pins with an acceleration of 2 meters/second/second. What is the force of the bowling ball?

force = mass x acceleration   force = (15 kg) x (2 m/s/s)   force = 30 kg x m/s/s

Nobody wants to say, "kilograms times meters per second per second" so that unit is abbreviated as a Newtons (N).

So, a better answer is 30 Newtons or 30 N.

What does the formula tell you just by looking at it?

A massive, fast moving object has a lot of force.

(Think of you getting hit by a bus moving fast.)

Is this the dark side of the force?

A low mass, slow moving object has very little force.

(Think of you getting hit by a slow moving dust particle.)

Teacher! A butterfly hit me!

After that it's about the numbers.

Which has more force, a slow moving elephant or a bullet fired from a gun?

It's all about the numbers. Do the math, because you won't know until you do.