PHYSICS Newton's 2nd Law of Motion

**** REVIEW ****

0

- is the _____ and the _____ of an object in motion. [v = d / t] 0 = change in / $[a = v / t] [d = \frac{1}{2} a t_2]$
- Galileo's Inclined Planes ... he put bells on a track at distances 1, 4, 9, 16. Ball rolling down the track hit each bell they sounded as if keeping a steady beat.



- Also remember that acceleration must be caused by a ______.
- Force causes ______ (otherwise the object stays at rest or at constant velocity).
 - And furthermore ... net (~ means "directly proportional") - twice the net force, twice the acceleration ... 5 times the force, 5 times the acceleration

_____ causes a force that is in the ______ direction of the motion.

- (Remember that friction is due to atoms pulling electromagnetic bonds apart as one object 0 scrapes its atoms against the atomic sized irregularities of the other.)
- If you can't move something, the friction may be greater than or equal to your force. 0
- Fluid friction is called _______. Fluid usually lessens friction. That is why we use oil in 0 car engines.
- Because a boat's drag has less friction than a car's tires on the road, boats can't turn as sharply 0 as cars.

- Mass & Weight ...
 - _____ is the object's _____.

is the force of _____ on the object.
(In outer space, a heavy object has no weight – but you still feel it's mass if you try to accelerate it!)

- Put it all together ... _____ ~ net _____ / _____
 - or ... a ~ f / m
 - or ... a = f / m
 - Or ... = ____ (Yea! This is the exact statement of <u>Newton's 2nd Law!</u>)
 - So why don't heavier objects fall at a greater acceleration????????? *** Galileo's Famous Thought Experiment ***