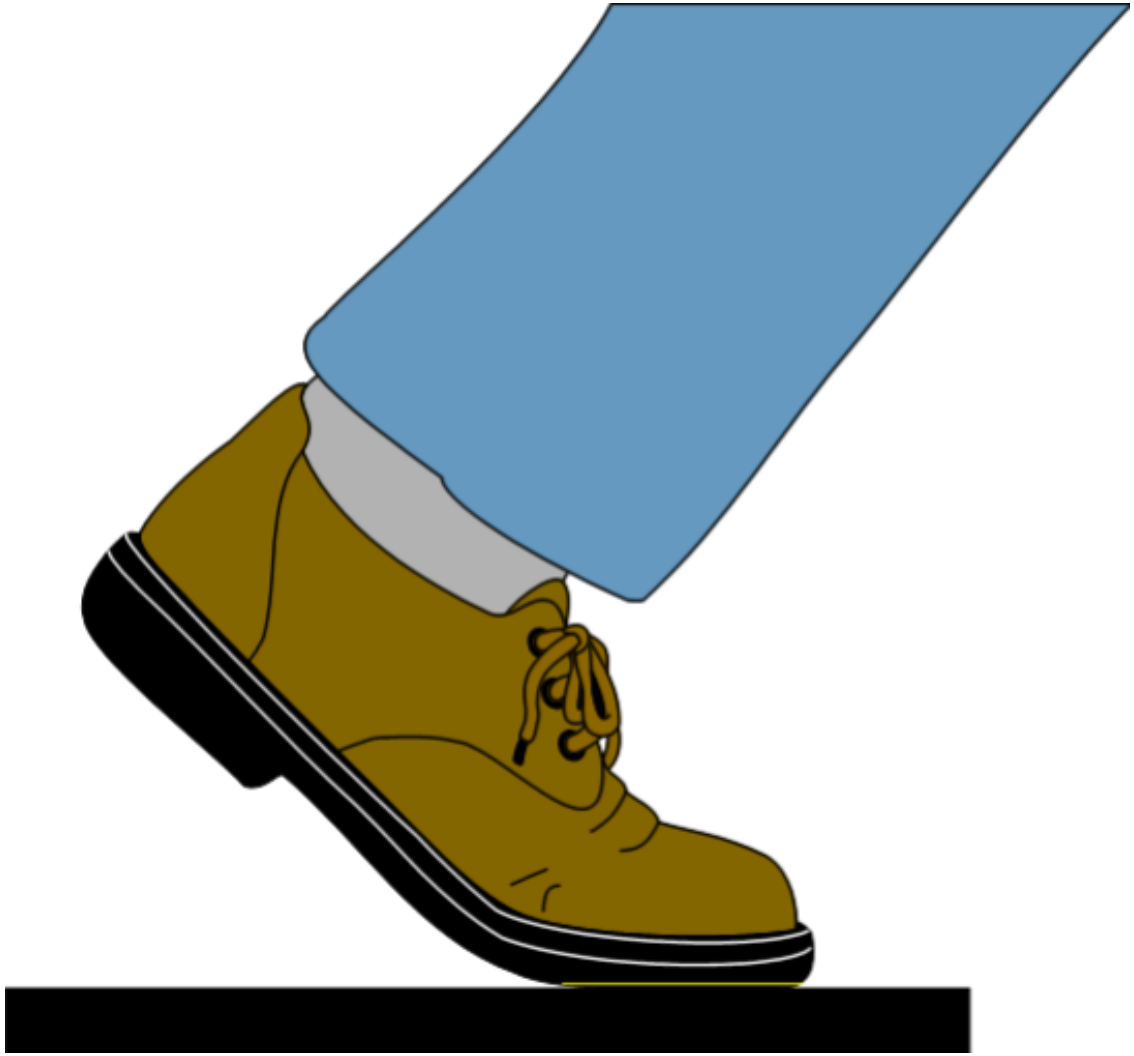
Newton's Laws

1st law: An object at rest remains at rest and an object in motion remains in motion until an outside force acts on it (inertia).


I'm not going anywhere unless something forces me to!
I'll keep going until something stops me.

Force- a push or a pull



Contact Forces

Normal Force

Applied Force

Tension Force

Spring Force

Frictional Force

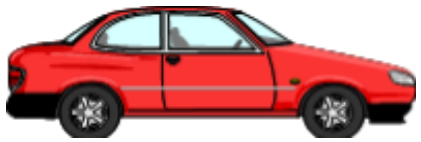
Air Resistance Force

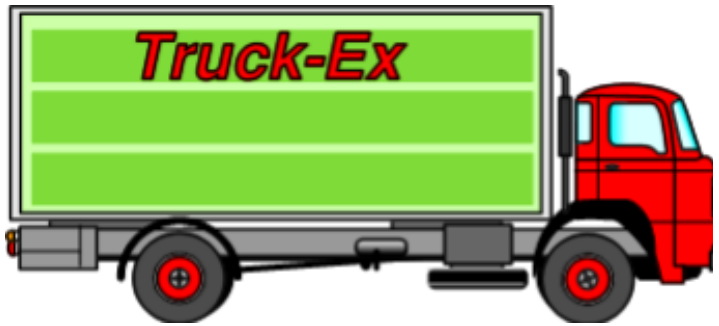
Action-at-a-Distance Forces

Gravitational Force

Electrical Force

Magnetic Force

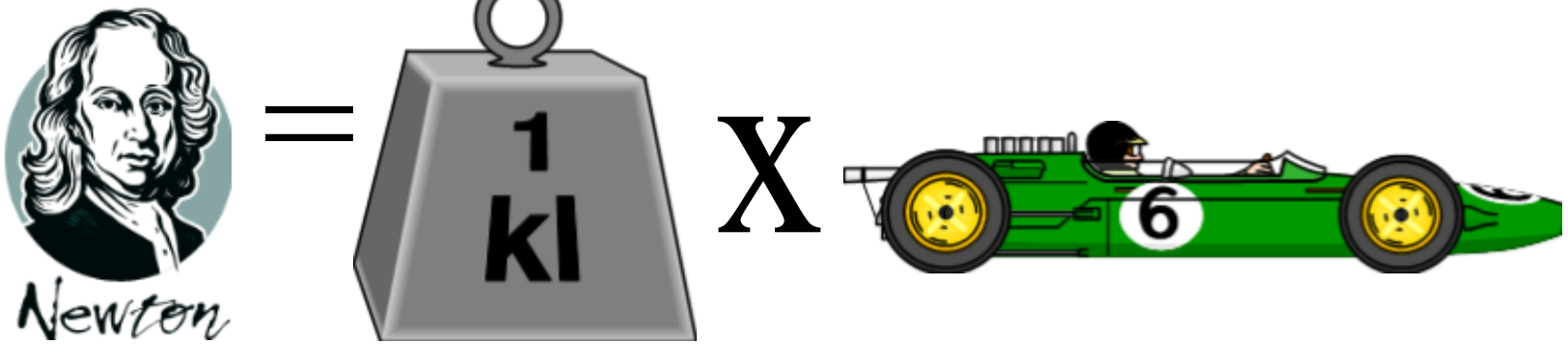




Which go farther?

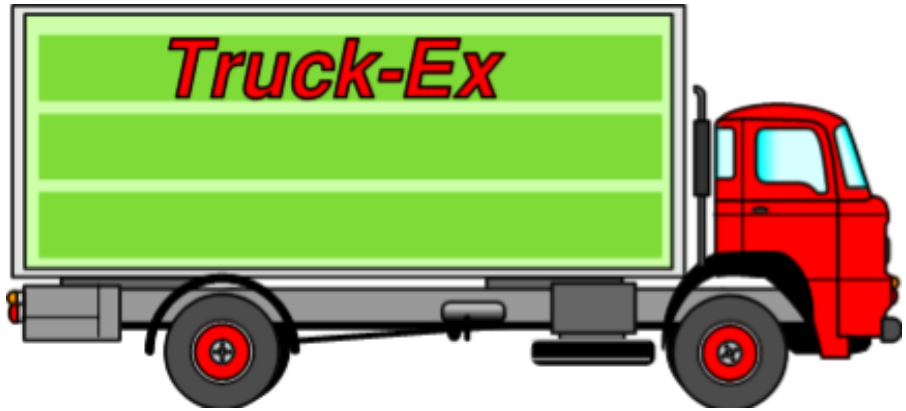
2nd law: the acceleration of an object is dependent upon two variables - the net force acting upon the object and the mass of the object

$$F=ma$$



Force	mass	acceleration
Newton	kg	m/s^2

If you are traveling on the highway in your Honda Civic next to a semi truck, both vehicles are accelerating at 65mph, do they both have the same force?



Would you rather be hit by a football player that weighs 100 lb(45kg) running at 15mph (6.7m/s) or a 300lb. (135kg) player traveling at the same speed?

45kg x 6.7m/s

or

135kg x 6.7m/s

3rd Law For every action there is an equal and opposite reaction