

mass - amount of matter [kg]

force - a push or pull which causes acceleration [Newtons] = [N]

weight - the force due to gravity on an object. Because it is a force, weight is measured in Newtons.

Newton's Laws (3 total, today we are learning two of them)

1st Law - a.k.a. Law of Inertia

An object at rest will stay at rest, and an object in motion will stay in motion with the same velocity, unless acted on by a net external force.

3rd Law - For every force there is an equal and opposite reaction force.

If an object has a mass of 50 kg,  
what is its weight?

$$\text{weight} = g \cdot \text{mass}$$

$$\text{weight} = (9.8)(50 \text{ kg})$$

$$\text{weight} = 499 \text{ N}$$

$$g = a_g = 9.8 \text{ m/s}^2$$

down

= acceleration  
due to gravity