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?

\[
\text{weight} = g \cdot \text{mass}
\]

\[
\text{weight} = (9.8)(50 \text{ kg})
\]

\[
\text{weight} = 499 \text{ N}
\]

\[ g = g_{\text{down}} = 9.8 \text{ m/s}^2 \]

- acceleration due to gravity