*Newton’s Third Law (N3L)*

To any Joe Shmoe, this law is “for every action, there is an equal and opposite reaction.” This definition is not descriptive enough for what is actually happening.

*“If object A applies a force to object B, then object B will apply an equally sized force (but opposite in direction) back on object A”*

At first this may make some sense, but it is somewhat difficult to understand. You must remember that these forces are acting on DIFFERENT OBJECTS!

Simple Examples:

**Astronaut:** Say that an astronaut is holding a wrench and floating in space without a jetpack. If the astronaut wants to move toward the left, what must he do?

**Rocket:** When a rocket blasts off, it is able to move up because:

**Walking:** You apply a force to the ground, therefore…

A 200kg horse is hooked up to a 400kg wagon and you signal the horse to move forward. The horse looks back and says, “Why bother? However hard I pull, the wagon will just exert an equal but opposite force. The wagon won’t move.” Will the wagon move? Is the horse correct? Explain.