

NEWTON'S LAWS

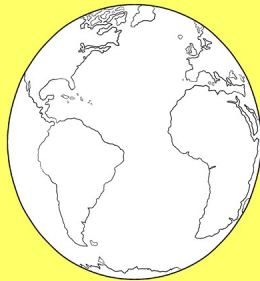
1ST LAW:

"Law of Inertia".

An object in motion will stay in motion and an object at rest will stay at rest unless acted upon by unbalanced forces.

Inertia: a property of matter where anything with mass resists a change in motion. The more mass an object has, the greater inertia.

Example: The Earth keeps spinning.



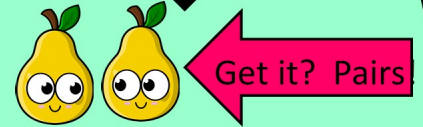
Example: your body flies forward if you have a wreck.



3RD LAW:

"Law of Action/Reaction".

Forces occur in pairs.



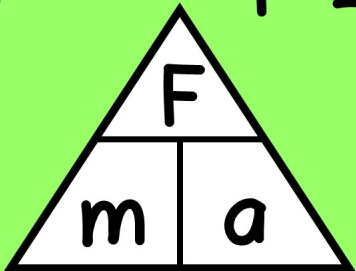
Example: You push really hard against the wall and the wall pushes back against you.

Example: A fish swims and its fins push against the water and the water pushes against the fins.



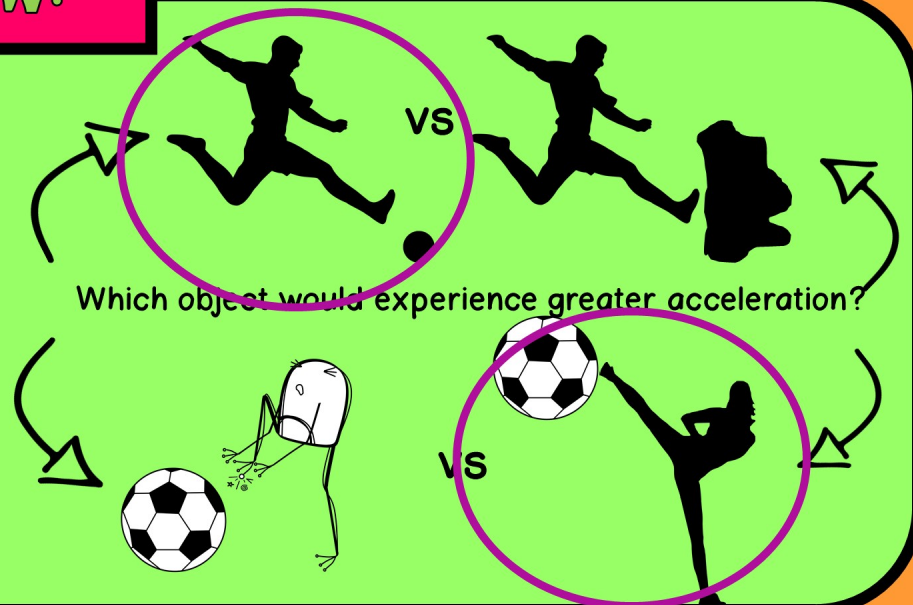
2ND LAW:

$$F = ma$$



F = force (Newtons)
m = mass (kilograms)
a = acceleration (m/s²)

The greater the net force, the greater the acceleration.
The greater the mass, the lower the acceleration.



Directions: Cut apart and glue underneath the appropriate column for your notes

Newton's First Law

Newton's Second Law

Newton's Third Law

<p>You push a heavy bookcase with a big force to get it to move.</p>	<p>Halley's Comet passes by the Earth approximately every 75 years</p>	<p>A rocket pushes against the air and the air pushes against the rocket</p>	<p>Two ice skaters push apart with an equal force.</p>	<p>Your body flies forward when someone slams on the breaks in a car.</p>
<p>A bowling ball rolls until it hits the pins at a bowling alley</p>	<p>Firefighters hold a water hose and the water exerts a force against them, while they exert a force holding the hose.</p>	<p>You can easily pull a wagon when it is empty, but pull hard when 2 kids are in it.</p>	<p>A fish's fins push against water and the water pushes back</p>	<p>The object accelerates in the direction of the net force</p>
<p>It takes a long time and a large force to stop a heavy train.</p>	<p>A frog leaps forward and pushes against the ground and the ground pushes against the frog.</p>	<p>For every action, there is an equal and opposite reaction</p>	<p>A hockey puck slides on the ice until it hits the wall of the skating rink.</p>	<p>You ride a rollercoaster and your head presses back against the headrest</p>
<p>You sit in your chair and your body presses against the chair and the chair presses against your body</p>	<p>Inertia is a property of matter. The more inertia it has, the more resistant it is to change in motion.</p>	<p>The greater the force, the greater the acceleration. The greater the mass, the lower the acceleration.</p>	<p>A sprinter explodes off the starting line in order to have high acceleration.</p>	<p>$F = ma$</p>