

# NEWTON'S LAWS OF MOTION

"Law of Inertia"

1<sup>st</sup>

st

An object in motion will stay in motion and an object at rest will stay at rest until acted upon by an unbalanced force.



Ex. Earth will cont. to spin, your water bottle will sit still until you pick it up

"friction"  
"resist"  
"change"

2<sup>nd</sup>

nd

$$F = ma$$

F: force

m: mass

a: acceleration

The more mass something has the more force it requires to accelerate it.

EX. It requires more force for a train to stop than a family vehicle because the train has more mass.

"speed"  
"accelerate"  
"diff. masses"

"Action/Reaction Law"

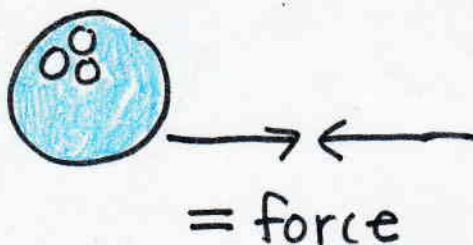
3<sup>rd</sup>

rd

For every action there is an equal and opposite reaction.

You put 1000 g of downward on your chair & it puts 1000g of upward force on you.

To swim you push back on water to move forward.



"opposite"  
"backwards"