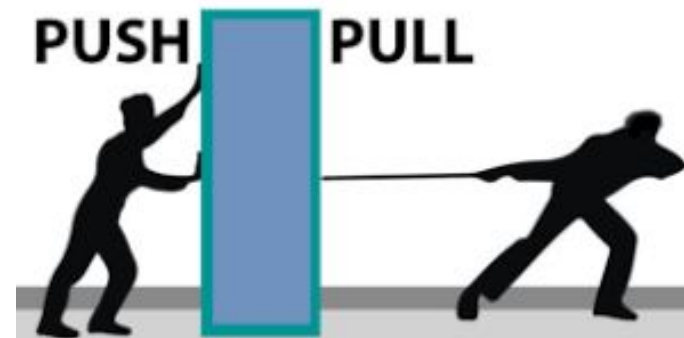


FORCE CHANGES MOTION

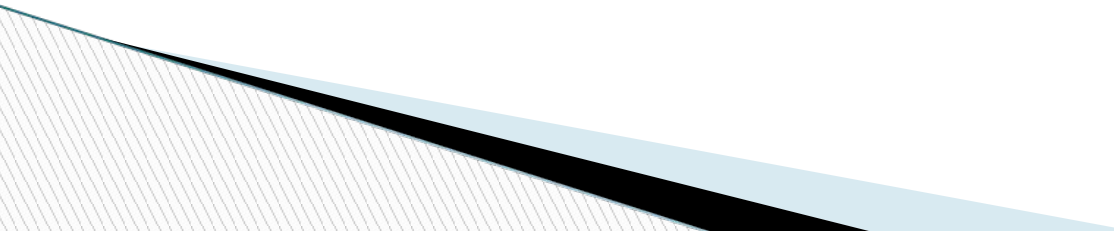
Turn in questions on the speed lab
[Brainpop Forces](#)

FORCE

- Force- A push or pull on an object
- Force is used to change the motion of an object. (Ex: picking up your bookbag, writing with your pencil, closing a car door)
- Three types of forces:
 - Contact force
 - Gravity
 - Friction



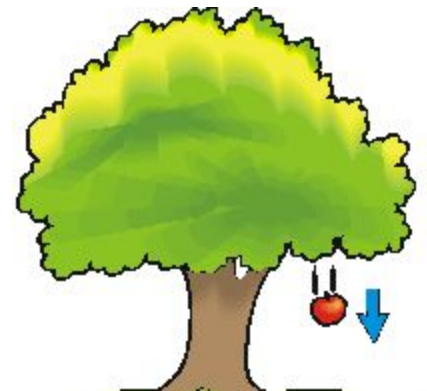
CONTACT FORCE

- Contact force- When one object pushes or pulls by touching another object.
 - Example: An ice skater applies a contact force as they push against the ground AND the ground applies a contact force that pushes back on the skater to allow them to move.
- 

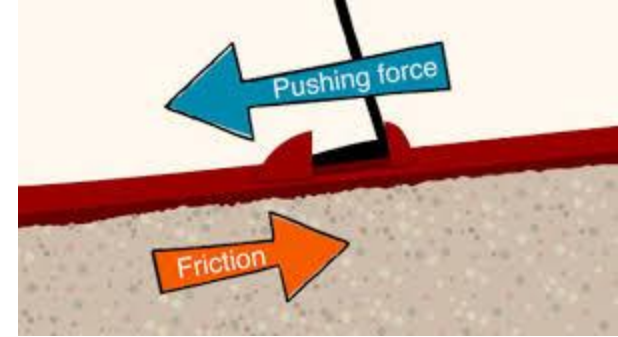
GRAVITY

- Gravity- The weak force of attraction between two masses.
- Earth's gravity is applying a force which is pulling you to the ground.
- The strength of the gravitational force between two objects depends on their masses.

□ [Brain Pop Gravity](#)



FRICTION

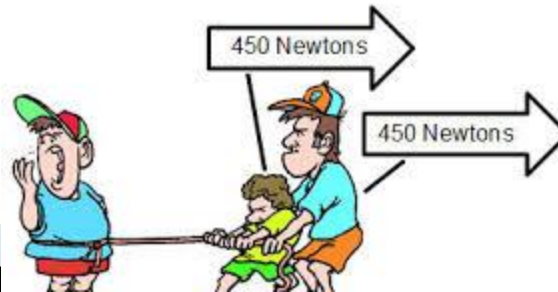


- Friction- The force that resists motion between two surfaces that are pressed together.
- There is friction between your shoes and the ground, which exerts a force that resists your forward motion.

*Most of the forces we will be using are contact forces!

Force on Moving Objects

- Balanced forces cannot change an object's speed or its direction. (Ex: riding a bike)
- If you want to change your speed, you need an unbalanced force.
- Unbalanced forces are like playing tug of war and one side pulls harder and causes the other side to cross over the line.



Sir Isaac Newton

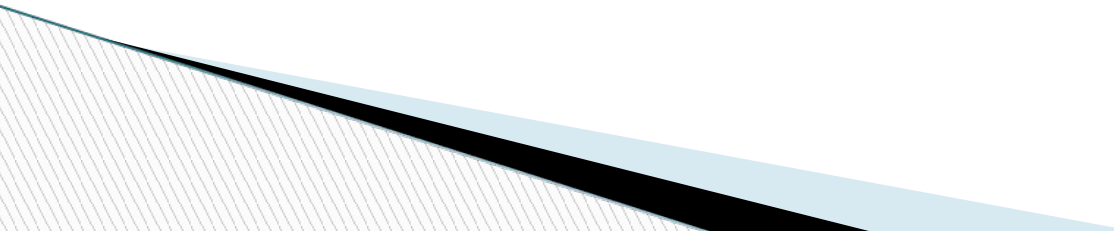
- English scientist from the mid 1600s who studied the effects of forces on objects.
- He developed the three laws of motion with Galileo Galilei.

If I have seen further than others, it is
by standing upon the shoulders of giants.

Isaac Newton

Newton's 1st Law of Motion

An object at rest will remain at rest, and an object in motion will remain in motion UNLESS acted upon by an unbalanced force.



Inertia

- ❑ **Inertia** - The resistance of any physical object to a change in its state of motion or rest, or the tendency of an object to resist any change in its motion.
- ❑ When you measure the mass of an object, you are also measuring its inertia. More mass=more inertia
- ❑ The object wants to resist any change in force (Ex: car coming to a stop)



- <http://player.discoveryeducation.com/index.cfm?guidAssetID=7eaf7c9f-e678-4f37-9832-16846f1d66cb&productCode=DSC&CFID=9656426&CFTOKEN=65286075>
- [Virtual Link](#)
- Homework: Forces & Motion Worksheet