

Grade 5 Science
Week of February 1 – February 5

Contact and Non-Contact Forces



Physics – Forces: https://youtu.be/W55qMEF1a_E

A Non-Contact Force is a force that affects an object **without coming physically in contact with it**. Forces like gravity pulling you down to earth or a magnet pulling a paper clip towards it, are both non-contact forces. They aren't **physically** touching an object in order to apply their force to it.



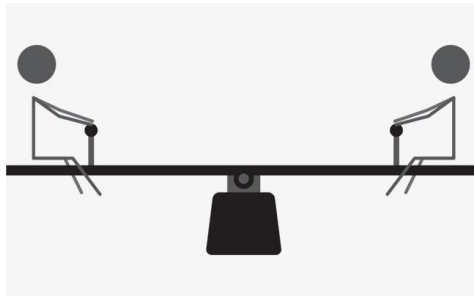
A Contact Force is a force that affects an object by **physically applying a force to it**.

- When you push your friend on a swing you are physically applying a push force to them that is sending them forward.
- When you pull the rope during tug-o-war you are physically applying a pull force that is making the rope come towards you.
- When you kick a soccer ball and there is friction between it and the grass, that friction is also a contact force that is affecting the speed of the soccer ball, slowing it down.

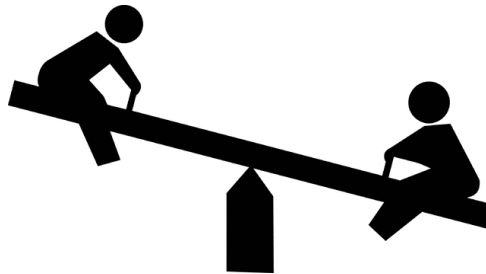


Balanced Force vs. Unbalanced Force

Balanced Force: Forces that are equal in size, but opposite in direction. **Balanced forces cause no movement because they balance each other out!**

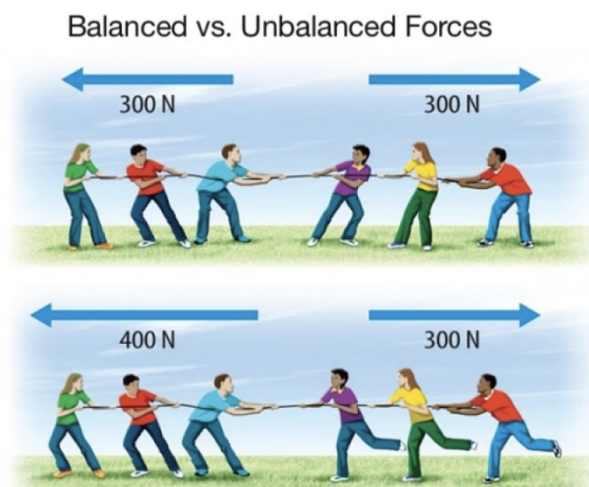


Unbalanced Force: Forces that are unequal in size, will cause **movement** in the direction of the stronger force.



Remember how we learned earlier that forces are measured in Newtons? So, if you and your friends were playing a game of tug-o-war, and each team was **pulling with the force of 300 Newtons**, **the force would be balanced**, and neither side would be moving.

But, if one team was pulling with the force of **400 Newtons** and the other team was only pulling with **300 Newtons**, **the force would be unbalanced**, and the team pulling with the most force would be winning, and pulling the other team closer towards them. Take a look at the graphic below to better understand!



1. Provide the definition of and an example for the following terms:

A Non-Contact Force:

Ex: _____

A Contact Force:

Ex: _____

Balanced Force:

Ex: _____

Unbalanced Force:

Ex: _____

2. Fill in the blanks:

a. Pushing a car is a _____ (contact or non-contact) force.

b. Pulling a wagon is a _____ (contact or non-contact) force.

c. Friction is always a _____ (contact or non-contact) force.

d. Gravity is always a _____ (contact or non-contact) force.

3. In the following pictures, indicate whether you are being shown a **balanced** or **unbalanced** force.

