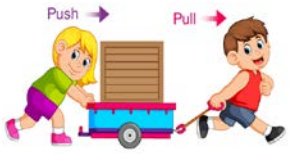
Chracterstics Of Force

Force is a Push or Pull: Force is a push or pull that acts on an object. When you push or pull an object, you are applying a force to it.



Direction: Force has both magnitude (strength) and direction. It can act in different directions like up, down, left, right, or at angles.

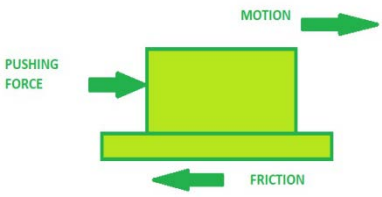
Magnitude: The strength of a force is measured in units called Newtons (N). The greater the force applied, the greater its magnitude.

Contact and Non-contact Forces: Forces can be categorized into contact and non-contact forces. Contact forces, like friction and tension, require physical contact between objects. Non-contact forces, like gravity and magnetism, can act from a distance without direct contact.

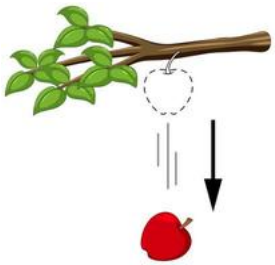
Resultant Force: When multiple forces act on an object, they can combine to produce a single force known as the resultant force. This resultant force depends on the direction and magnitude of individual forces.

Balanced and Unbalanced Forces: Forces can be balanced or unbalanced. Balanced forces do not change an object's motion as they cancel each other out. Unbalanced forces cause an object to accelerate in the direction of the stronger force.

Friction: Friction is a force that opposes the motion of objects in contact with each other. It acts in the opposite direction to the motion and can vary depending on the nature of surfaces and the force applied.



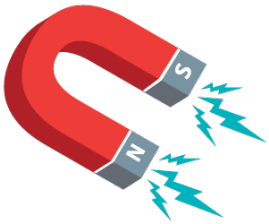
Gravity: Gravity is the force of attraction between objects with mass. It pulls objects toward the center of the Earth and gives weight to objects. The strength of gravity depends on the mass of the objects and the distance between them.



Tension: Tension is the force that pulls on a string, rope, or cable when it is stretched. It acts along the length of the stretched material.

Normal Force: Normal force is the force exerted by a surface to support the weight of an object resting on it. It acts perpendicular to the surface.

Magnetic and Electrical Forces: These forces are non-contact forces that act between objects with magnetic or electrical properties. Magnetism and electricity can exert attractive or repulsive forces.



Action and Reaction: According to Newton's third law of motion, for every action, there is an equal and opposite reaction. This means that whenever one object exerts a force on another, the second object exerts an equal and opposite force on the first.