FORCE AND LAWS OF MOTION

INTRODUCTION & EFFECT OF FORCES

Introduction to Force

A force is an effort that changes the state of an object at rest or at motion. It can change an object's direction and velocity. Force can also change the shape of an object.

Effects of Force

Some effects of force include the following:

Force moves stationary objects
Force stops objects from moving
Force changes the shape of a body
Force changes the direction of motion

Push is defined as an action of force which causes an object to move from its place. The following are the examples of push:

Opening and closing of the door.
Pushing the table.
Pushing a car.
Pushing of the thumb pins.
Walking

Pull is defined as an action to make move by either tugging or dragging. The following are the examples of pull:

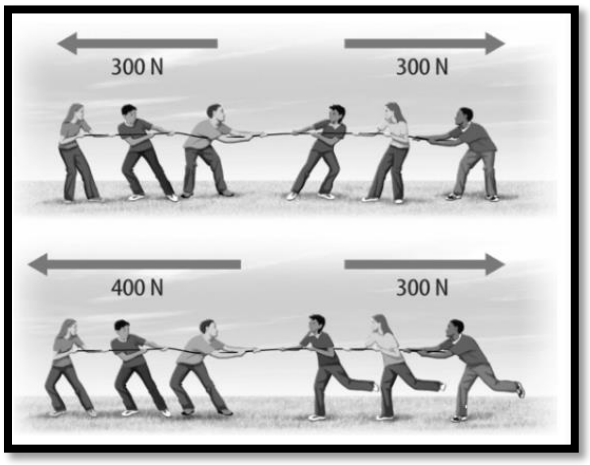
Plucking the string of a guitar.
Pulling ropes while playing tug of war.
Opening the drawer.
Pulling the window curtain.

Opening and closing of the doors.

Balanced and Unbalanced Forces

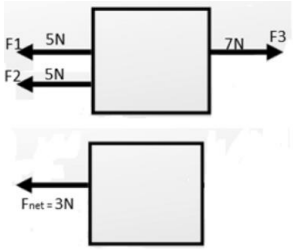
When balanced forces are applied to an object, there will be no net effective force acting on the object. Balanced forces do not cause a change in motion.

Unbalanced forces acting on an object change its speed and/or direction of motion. It moves in the direction of the force with the highest magnitude.



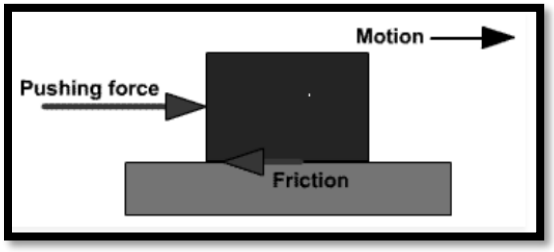
Net force

When multiple forces act on a body, they can be resolved into one component known as the net force acting on the object. The net force decides the direction of motion.



Frictional force

The force that opposes relative motion is called friction. It arises between the surfaces in contact.



Example: When we try to push a table and it does not move is because it is balanced by the frictional force.