• **Force** is a push or pull that can change the state of motion or shape of an object. Force is needed to make things move, stop, speed up, slow down, or change direction.

• **Types of Forces**

- **Muscular Force:** It is a type of contact force exerted by muscles when they contract or relax, meaning it requires physical contact between objects for the force to be applied . For example lifting a book, walking, liftind weight etc.
- **Frictional Force:** Force that opposes motion when two surfaces are in contact. For example: wirtting, breaking, holding objects etc.
- **Gravitational Force:** Force tha pulls objects with mass towards each other.Anything with mass has gravity, but the more massive and object is, the stronger its gravitational pull.
- **Magnetic Force:** Invisible force that attracts or repels objects with magnetic properties. For example: magnet attracting iron nails.
- **Electrostatic Force:** Force that acts between electrically charged objects, causing them to either attract or repel each other. For example: comb attracting paper bits.

• **Contact and Non-contact Forces**

- **Contact Forces:** Need physical contact to act. (e.g., muscular force, friction)
- **Non-contact Forces:** Act without contact. (e.g., gravitational, magnetic, electrostatic)

• **Effects of Force**

Force can:

a. Move a stationary object
b. Stop a moving object
c. Change the speed of an object
d. Change the direction of motion
e. Change the shape or size of an object

• **Friction** is a contact force that resists motion between two surfaces. It helps in walking, writing, and stopping moving vehicles. Too much friction can cause wear.

• **Balanced and Unbalanced Forces**

a. Balanced Forces: Equal forces in opposite directions. No change in motion.
b. Unbalanced Forces: One force is stronger. Causes movement or change in motion.

• **Force Can Change Shape**

When force is applied, the shape of an object can change.

Example: pressing clay or stretching rubber band.