

Force and Pressure

- A push or a pull on a body is called force.
- A force can change the shape of an object, move the object, stop a moving object and change the direction of motion.
- Force has magnitude as well as direction.
- Some forces come into play when at least two objects interact. These forces are called contact forces. Muscular force and friction force are the examples of two such forces. Two important points about contact forces are as follows:
 - Forces applied on an object in the same direction add to one another.
 - If the two forces act in the opposite directions on an object, the net force acting on it is the difference between the two forces.
- Some forces can act on an object without being in contact with it. These forces are called non-contact forces. Magnetic force, electrostatic force and gravitational force of the earth are the examples of non-contact forces.
- Every object in the universe, whether it is small or large, exerts a force on every other object. This force is known as the gravitational force.
- The force acting on the unit area of a surface is called pressure.
- A column of air of the height of the atmosphere and area $10\text{ cm} \times 10\text{ cm}$ exerts a weight as large as 1000 kg on us, but still we are not crushed under this weight because the pressure inside our bodies is equal to the atmospheric pressure and cancels the pressure from outside.
- Liquids and gases exert pressure on the walls of their containers which is same in all directions.
- The pressure exerted by air on us is known as atmospheric pressure.