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SUBJECT:- PHYSICS

CLASS:- IXTH

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CHAPTER 2. (FORCE AND LAWS OF MOTION)(BASED ON NCERT PATTERN)

Laws of motion:-

- Newton gave three laws of motion that describe the motion of bodies. These laws are known as Newton's Laws of motion.
- They describe the relationship between the forces acting on a body and its motion due to those forces.
- The three laws of motion were first compiled by Sir Isaac Newton in his work Principia Mathematica, first published in 1687. Newton used these laws to explain and investigate the motion of many physical objects and systems.
- We shall now learn about Newton's First law of motion

Newton's First Law of motion:-

- The first law of motion is stated as:

An object remains in a state of rest or of uniform motion in a straight line unless compelled to change that state by an applied force.

- All objects resist a change in their state of motion. The tendency of undisturbed objects whether they are at rest or moving with uniform velocity is called inertia. Hence, the first law of motion is also known as the law of inertia.
- Greater the inertia of the body greater will be the force required to bring the change in the state of rest or uniform motion of the body.
- Mass is the measure of the inertia of the body so heavier objects have more inertia than lighter objects. For example a ball of 2Kg has more inertia than a football and it takes more effort to kick a 2Kg ball than it takes to kick a foot ball.
- Another example is even a small child can push a toy car. However, An adult also can't push a loaded vehicle forward.
- Newton's first law of motion gives us a definition of force. It says that

Force is something that changes or tends to change the state of rest or uniform motion of a body