

- **Point Object**

If the length covered by the objects are very large in comparison to the size of the objects, the objects are considered point objects.

- **Reference Systems**

The motion of a particle is always described with respect to a reference system. A reference system is made by taking an arbitrary point as origin and imagining a co-ordinate system to be attached to it. This co-ordinate system chosen for a given problem constitutes the reference system for it. We generally choose a co-ordinate system attached to the earth as the reference system for most of the problems.

- **Total Path Length (Distance)**

For a particle in motion the total length of the actual path traversed between initial and final positions of the particle is known as the 'total path length' or distance covered by it.

## • **Introduction**

Motion is one of the significant topics in physics. Everything in the universe moves. It might only be a small amount of movement and very-very slow, but movement does happen. Even if you appear to be standing still, the Earth is moving around the sun, and the sun is moving around our galaxy.

“An object is said to be in motion if its position changes with time”.

The concept of motion is a re' live one and a body that may be in motion relative to one reference system, may be at rest relative to another.

There are two branches in physics that examine the motion of an object.

(i) Kinematics: It describes the motion of objects, without looking at the cause of the motion.

(ii) Dynamics: It relates the motion of objects to the forces which cause them.