



An Object is at certain position and after some time we observe object changes its position then we say object is under motion means change of position is motion there may be some reason suppose we are applying forces from all the side to object and object does not change its position then we say object is at rest.



WHAT IS MOTION ?

An object is said to be in motion if it changes its position with respect to its surroundings in given time.

Motion is always observed and measured with a point of reference

All living things show motion whereas non-living things show motion only when some force is acting on it.

Therefore, some examples of motion are :

- **Motion** of a simple pendulum.
- **Motion** of a moving bicycle.
- **Motion** of a flying mosquito.
- **Motion** of a merry-go-round.
- **Motion** of the blades of a fan.
- **Motion** of the Earth around the Sun.
- **Motion** of a striker moving on a carrom board.
- **Motion** of a stone falling freely from the roof of a building.

Rest and Motion are relative

Rest and motion are the relative terms because they depend on the observer's frame of reference. So if two different observers are not at rest with respect to each other, then they too get different results when they observe the motion or rest of a body.

Yes motion is a relative term , it totally depends upon the observer. Since observer can be still or be moving that's why it is relative term.

Like if you are sitting on a train and it is standing at the platform then person standing on the platform will look like at rest .

But if train start Moving forward and the person standing at the platform is still at rest the person on the train will feel person on the platform is moving backward.

And if you see at the perspective of platform person the man sitting in the train is moving forward. But if you look both of them they think itself at rest and others at motion.

Types of Motion :

1. Translatory motion
 2. Rotatory motion
 3. Circular motion
 4. Oscillatory motion
 5. Vibratory motion
 6. Periodic motion, and
 7. Non-periodic motion
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TRANSLATORY MOTION

Translatory Motion : The motion in which all points of a moving body move uniformly along a straight line is called translatory motion.



TYPES OF TRANSLATORY MOTION

- RECTILINEAR MOTION

If a body moves in a straight line it is called a Rectilinear motion.



- CURVILINEAR MOTION

If a body moves along a curved path then it is said to have curvilinear motion.



Table shows the differences between rectilinear and curvilinear motions.

Rectilinear motion	Curvilinear motion
1. When an object in translational motion moves in a straight line, it is said to be in rectilinear motion.	1. When an object in translational motion moves along a curved path, it is said to be in curvilinear motion.
2. Examples are a car moving on a straight road and a train moving on a straight track.	2. Examples are a stone thrown up in the air at an angle and a car taking a turn.

Home Work

1. Explain the meaning of the terms rest and motion.
2. Comment on the statement 'rest and motion are relative terms'. Give an example.
3. Fill in the blanks using one of the words : at rest, in motion.
 - (a) A person walking in a compartment of a stationary train is relative to the compartment and is relative to the platform.
 - (b) A person sitting in a compartment of a moving train is relative to the other person sitting by his side and is..... relative to the platform.
4. Name *five* different types of motion you know.
5. What do you mean by translatory motion ? Give *one* example.