Board – CBSE	Class – 6th	Topic – Motion and Measurement of Distances

Stationary objects

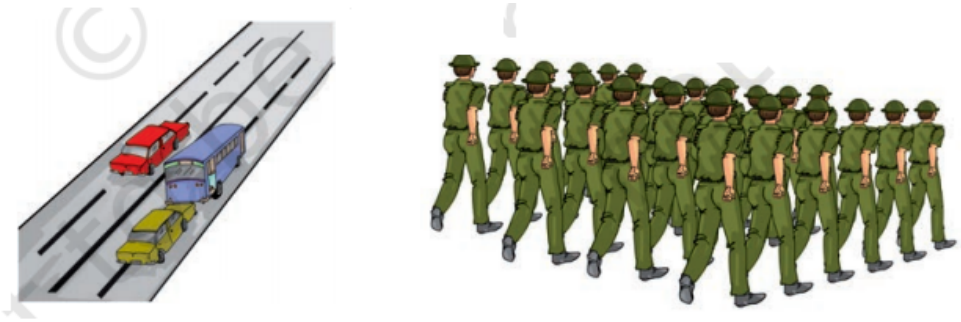
Objects which remain fixed at a place e.g. tree, house, school, factory, telephone pole, electric pole are called stationary objects.

Motion

On the other hand, men, women, animals, birds, car, bus, bicycle, train, aeroplane, ship etc. do not remain stationary all the time, they can move from one place to another. The movement of an object is called motion.

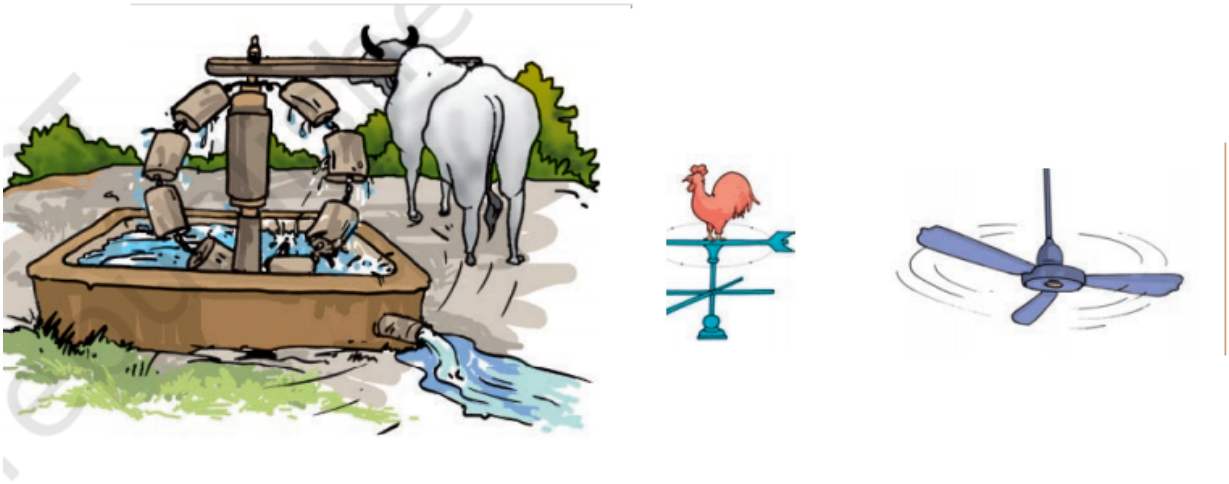
Types of Motion

- Rectilinear Motion: When an object moves along a straight line, it is said to be undergoing rectilinear motion. For Example, A train moving along a railway track.
- Circular Motion: Have you seen the hands of a clock? The motion exhibited by the hands



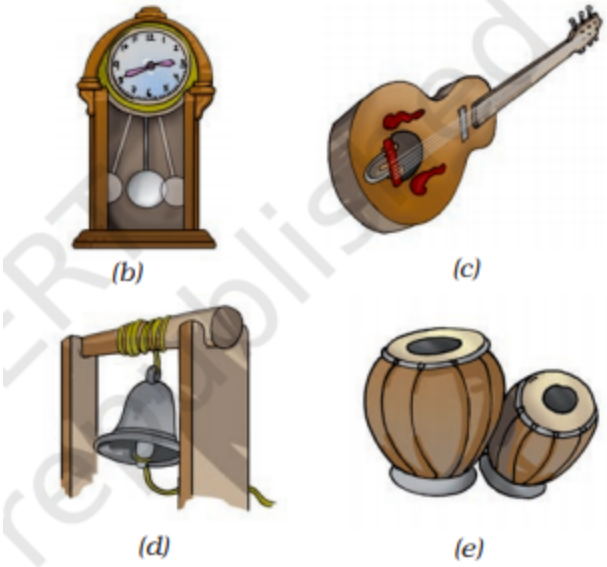
Some examples of rectilinear motion

of a clock is called Circular Motion.



Some objects in circular motion

- Periodic Motion: When an object repeats its motion after a fixed interval of time, it is undergoing periodic motion. For Example, Pendulum



Examples of periodic motion

- Rotational Motion: This motion can be easily understood by imagining Earth's rotation. When the Earth spins on its axis, it is said to be undergoing rotational motion.
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Distance

The length of the space between two points (or two places) is called distance.

Measurement is a process of comprising an object with a standard 'unit of measurement'. Standard unit of measuring length is called meter.

Need of standard units of measurement - we can use a variety of objects as units of measurement of length.

We can measure the length of an an object by using 'hand-span', 'forearm length' or " foot step' as the units of measuring length. But hand span, forearm length and foot step cannot be used as standard units measurements because their length is not the same for all the persons. The length of hand-span, forearm-length and foot step of different persons is different. It varies from person to person. So, hand span, forearm length and foot step are not standard units of measuring length.

Standard Units of Measurement

Nowadays, the International System of units or the SI units has been accepted worldwide as a standard unit of measurement.

1 m = 100 cm

1 kg = 1000 g

1s = 1/60 min

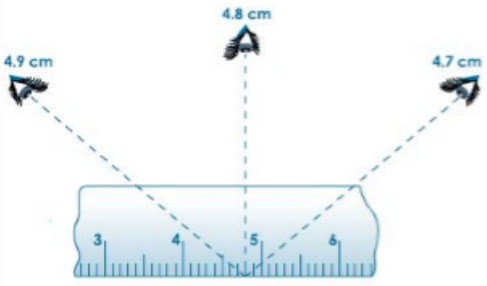
The MKS system, i.e. the metre-kilogram-second system, is called the SI System.

Correct Way to Use a Meter Scale

Step 1: Keep the scale in contact with the object to be measured.

Step 2: Start measuring from the 0 mark of the scale.

Step 3: To avoid taking incorrect measurements, the eye position should be correct. Consider the following figure:

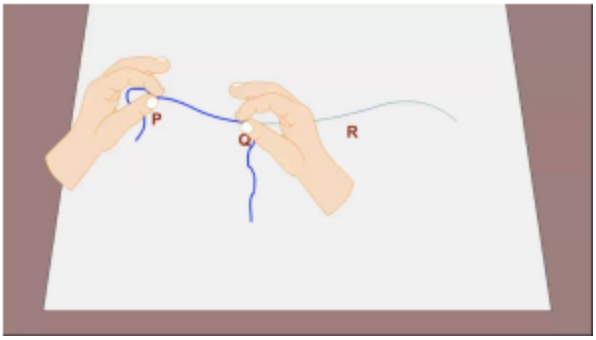


The eye position in the centre is correct to get an accurate measurement. In contrast, the ones in the left and right direction will give some error in measurement.

Measurement Along Curved Line

Is it possible to measure a curved line with a metre scale? Well, it is not so. Hence to measure a curved line, the following steps can be taken into account:

- Take a thread and tie a knot at one end.
- From this end, measure a small portion of the curved line, which is somewhat straight and put the thumb.
- Now again, start from the marked thumb position and measure another small portion of the line.
- Repeat this process until you reach the end of the line. Tie a knot on the thread on reaching the end. Now measure the two knots using a metre scale.



Measuring A Curved Line