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Changing your Tomorrow

# PHYSICAL QUANTITIES AND MEASUREMENT

## CHAPTER NO.1

## SUB: PHYSICS

PHYSICAL QUANTITIES AND MEASUREMENT



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## LEARNING OBJECTIVE

Students will be able to

- Define speed and write its formula
- Solve simple numerical problems based on formula of density and speed

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# Speed

Speed is defined as

The rate of change of position of an object in any direction.

Speed is measured as the ratio of distance to the time in which the distance was covered.

Speed is a scalar quantity .

**Units of speed**

Speed is measured as **v=Distance/Time**

where SI unit of distance is m and that of time is s.

Thus SI unit of speed is m/s.

Sometimes we measure distance in kilo metre and time in hour then the unit of speed is kilo metre per hour km.h-1

**How do you convert km/h to m/s?**

SI unit of distance is a meter according to the International System of Units.

Conversion

We know that

1 km = 1000m

1 h = 3600 s

So 1 km /h = 1000/3600 = 5/18 = 0.28 m/sec

So to **convert km/h to m/s we multiply the given number by 5/18 or 0.28m/sec**

Example

Speed of bicycle = 90 km / hr

To convert the speed into m/sec, we multiply by 5/18

Therefore, speed of bicycle = 90 × 5/18 m/sec = 25 m/sec

## HOME ASSIGNMENT

1. Explain the meaning of the term speed.
2. Write the S.I. unit of speed.
3. A car travels with a speed 12 m/s, while a scooter travels with a speed 36 km $h^{-1}$. Which of the two travels faster ?

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