(Olympiad Excellence Notes)

NOTES

FUNDAMENTALS

- ✓ The standard unit of length is meter and it is denoted by m.
- ✓ The other units of length are Millimeter (mm). Centimeter (cm) and Decimeter (dcm) which are lower units of length. Whereas Decameter (dm), Hectometer (hm), Kilometer are higher units.

Measurement units of length from lower level to higher level

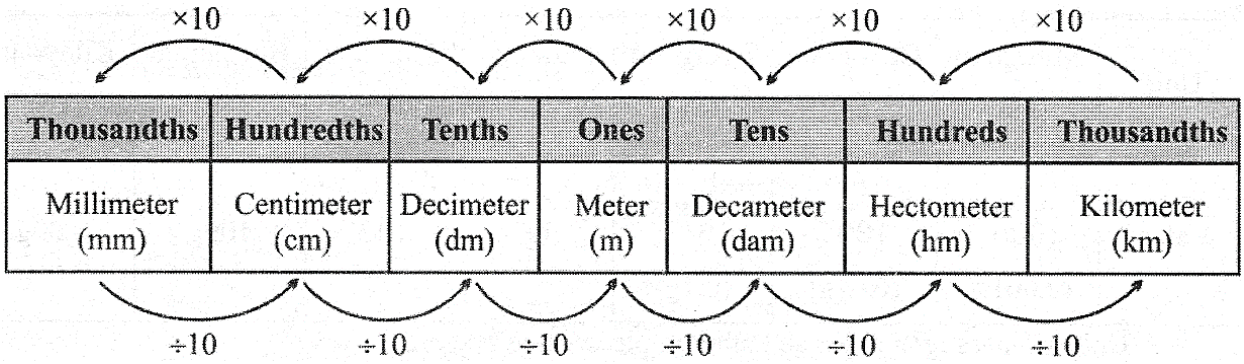
Lower Units				Base Unit	Higher Units		
Unit	Millimeter (mm)	Centimeter (cm)	Decimeter (dam)	Meter (m)	Decameter (dam)	Hectometer (hm)	Kilometer (km)
Value	$\frac{1}{1000}$ (0.001 m)	$\frac{1}{100}m$ (0.01 m)	$\frac{1}{10}m$ (0.1 m)	1	10 m	100 m	1000 m

Thus, we have,

1 mm = 0.001m, 1 cm = 0.01m, 1 dm = 0.1

1 dam = 10 m, 1 hm = 100 m, 1 km = 1000 m

Connection of different units of length in place value system

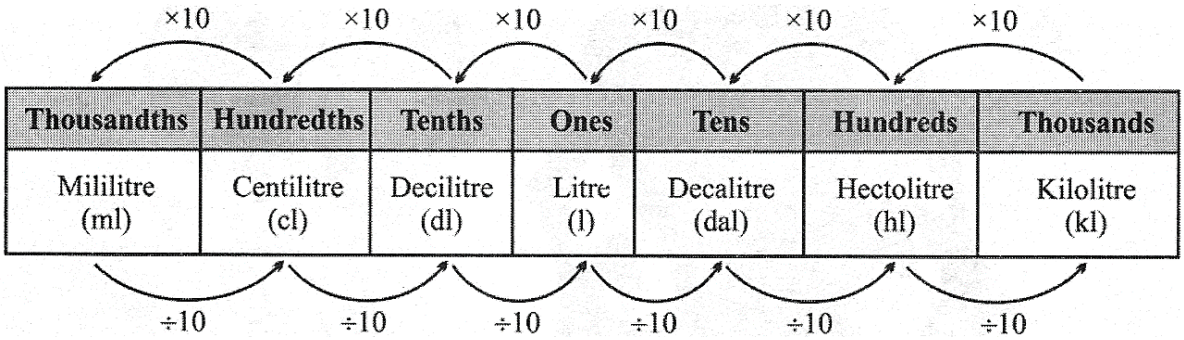


Measurement of Capacity

- ✓ The standard unit of measuring capacity is litre and is denoted by l.
- ✓ The other units of measurement of capacity are milliliter (ml), Cenilitre (cl), dacalitre (dal), Decilitre(d) , Hectolitre (hl) and Kololitre (kl)
- ✓ Measurement units of capacity from level to higher level are shown as below:

Unit	ml (mililitre)	cl (centilitre)	dl (decilitre)	L (litre)	dal (decalitre)	hl (hectolitre)	kl (kilolitre)
Value	$\frac{1}{1000}$ (0.001 l)	$\frac{1}{100}m$ (0.01 l)	$\frac{1}{10}m$ (0.1 l)	1	10 l	100 l	1000 l

✓ Measurement units of capacity related to each other in place value system.



Measurement of Mass

✓ The standard unit of mass is gram and is denoted by g. The other units of measurement of mass are milligram, centigram, decigram, hectogram and kilogram.

✓ Units of mass from lower level to higher level are as follows:

	Lower Units			Base Unit	Higher Units		
Unit	Milligram (mg)	Centigram (cg)	Decigram (dg)	Gram (g)	Decigram (dam)	Hectogram (hg)	Kilogram (kg)
Value	$\frac{1}{1000}g$ (0.001 g)	$\frac{1}{100}g$ (0.01 g)	$\frac{1}{100}gm$ (0.1 g)	1 g	10 g	100 g	1000 g

✓ Units of mass related to each other in place value system.