

Chapter 3 - Units of Measurement

Class : 4th Standard NCERT

School: Ideal Jawa Rotary School

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Mindmap

I. LENGTH

- A. Standard Unit → Metre (m)
- B. Units & Abbreviations:
 - Kilometre (km) = 1000 m
 - Hectometre (hm) = 100 m
 - Decametre (dam) = 10 m
 - Metre (m)
 - Decimetre (dm) = $\frac{1}{10}$ m
 - Centimetre (cm) = $\frac{1}{100}$ m
 - Millimetre (mm) = $\frac{1}{1000}$ m
- C. Conversion Rules:
 - Higher → Lower: Multiply
 - Lower → Higher: Divide

II. MASS (Weight)

- A. Standard Unit → Gram (g)
- B. Units:
 - Kilogram (kg) = 1000 g
 - Hectogram (hg) = 100 g
 - Decagram (dag) = 10 g
 - Gram (g)
 - Decigram (dg) = $\frac{1}{10}$ g
 - Centigram (cg) = $\frac{1}{100}$ g
 - Milligram (mg) = $\frac{1}{1000}$ g

III. CAPACITY (Volume)

- A. Standard Unit → Litre (L)
- B. Units:
 - Kilolitre (kl) = 1000 L
 - Hectolitre (hl) = 100 L
 - Decalitre (dal) = 10 L
 - Litre (L)
 - Decilitre (dl) = $\frac{1}{10}$ L
 - Centilitre (cl) = $\frac{1}{100}$ L
 - Millilitre (ml) = $\frac{1}{1000}$ L

IV. CONVERSION RULES

- Rule 1: Higher → Lower → Multiply
- Rule 2: Lower → Higher → Divide
- Rule 3: For mixed units → Convert separately, then add

V. OPERATIONS

- A. Addition & Subtraction → Align same units in columns
- B. Multiplication → Multiply each unit; carry overs if needed
- C. Division → Divide larger unit first; convert remainder to smaller unit



Chapter Notes

1. Length

- Standard unit: Metre (m)
- Common conversions:
 - 1 km = 1000 m
 - 1 m = 100 cm
 - 1 cm = 10 mm

2. Mass

- Standard unit: Gram (g)
- Common conversions:
 - 1 kg = 1000 g
 - 1 g = 1000 mg

3. Capacity

- Standard unit: Litre (L)
- Common conversions:
 - 1 L = 1000 mL

4. Conversion Tips

- To convert km \rightarrow m: $\times 1000$
- To convert m \rightarrow cm: $\times 100$
- To convert g \rightarrow kg: $\div 1000$
- To convert L \rightarrow mL: $\times 1000$

5. Addition/Subtraction

- Always convert to the same unit before adding/subtracting.
- Use column method:
Example:

$$\begin{array}{r} \text{km} \quad \text{m} \\ 5 \quad 250 \\ + 3 \quad 800 \\ \hline \end{array}$$

$$9 \quad 050 \rightarrow 9 \text{ km } 50 \text{ m (since } 1050 \text{ m} = 1 \text{ km } 50 \text{ m)}$$

6. Multiplication & Division

- Multiply/divide each unit.
- Handle carry-over or borrowing using conversion (e.g., 1000 g = 1 kg).

 **Unit Test (20 Marks)** Time: 40 mins

A. Fill in the blanks (1 mark each × 5 = 5)

- 1 km = _____ m
- Standard unit of mass is _____.
- 1 L = _____ mL
- 5000 g = _____ kg
- 3 m 25 cm = _____ cm

B. Convert the following (2 marks each × 5 = 10)

- 7 km 150 m to metres
- 4500 mL to litres
- 6 kg 300 g to grams
- 85 cm to mm
- 9 L 250 mL to mL

C. Word Problems (2.5 marks each × 2 = 5)

- Ravi bought 2 kg 450 g apples and 1 kg 750 g oranges. Find total weight.
- A rope is 12 m 60 cm long. It is cut into 3 equal pieces. Find the length of each piece.

 **Unit Test – Solutions**

A. Fill in the blanks

- 1000
- gram (g)
- 1000
- 5
- 325

B. Conversions

- $7 \text{ km } 150 \text{ m} = (7 \times 1000) + 150 = 7150 \text{ m}$
- $4500 \text{ mL} = 4500 \div 1000 = 4.5 \text{ L}$
- $6 \text{ kg } 300 \text{ g} = (6 \times 1000) + 300 = 6300 \text{ g}$
- $85 \text{ cm} = 85 \times 10 = 850 \text{ mm}$
- $9 \text{ L } 250 \text{ mL} = (9 \times 1000) + 250 = 9250 \text{ mL}$

C. Word Problems

- Apples = 2 kg 450 g
Oranges = 1 kg 750 g
Total = $(2 + 1) \text{ kg} + (450 + 750) \text{ g} = 3 \text{ kg } 1200 \text{ g} = 4 \text{ kg } 200 \text{ g}$
- Total length = 12 m 60 cm = 1260 cm
Each piece = $1260 \div 3 = 420 \text{ cm} = 4 \text{ m } 20 \text{ cm}$



Worksheet with Solutions

Worksheet – Practice Questions

Q1. Convert:

- (a) 6 m to cm
- (b) 120 mm to cm
- (c) 15 km to m
- (d) 4 kg to g
- (e) 2500 mL to L

Q2. Add:

- (a) 4 km 350 m + 2 km 780 m
- (b) 5 L 450 mL + 3 L 800 mL

Q3. Subtract:

- (a) 7 kg 200 g – 3 kg 850 g
- (b) 10 m 50 cm – 6 m 75 cm

Q4. Multiply:

- (a) 3 m 25 cm × 4
- (b) 2 kg 150 g × 5

Q5. Divide:

- (a) 8 L 400 mL ÷ 6
- (b) 9 km 450 m ÷ 3



Worksheet – Solutions

Q1.

- (a) $6 \times 100 = 600$ cm
- (b) $120 \div 10 = 12$ cm
- (c) $15 \times 1000 = 15,000$ m
- (d) $4 \times 1000 = 4000$ g
- (e) $2500 \div 1000 = 2.5$ L

Q2.(a)

m: $4 + 2 = 6$ km

cm: $350 + 780 = 1130$ m = 1 km 130 m

Total = 7 km 130 m

(b)

mL: $450 + 800 = 1250$ mL = 1 L 250 mL

Total = 5 + 3 + 1 = 9 L 250 mL

Q3.(a) Borrow 1 kg → 6 kg 1200 g – 3 kg 850 g = 3 kg 350 g

(b) Borrow 1 m → 9 m 150 cm – 6 m 75 cm = 3 m 75 cm

Q4.(a) 3 m × 4 = 12 m; 25 cm × 4 = 100 cm = 1 m → 13 m

(b) 2 kg × 5 = 10 kg; 150 g × 5 = 750 g → 10 kg 750 g

Q5.

(a) 8400 mL ÷ 6 = 1400 mL = 1 L 400 mL

(b) 9450 m ÷ 3 = 3150 m = 3 km 150 m

YouTube Video

Title: "Metric Units of Length, Mass and Capacity | Class 4 Maths"

Link: https://www.youtube.com/watch?v=j_iG88PCwKg

(Search "Class 4 Units of Measurement NCERT" for updated videos.)