SUMMARY OF CONCEPTS & DEFINITIONS

CHAPTER 3 : A PEEK BEYOND THE POINT

1. NEED FOR SMALLER UNITS

- Sometimes the basic unit (cm, g, ₹ etc.) is not enough to measure accurately.
- So, we divide the unit into smaller equal parts to get more exact measurements.

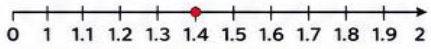
Example:
Two screws look the same but have slightly different lengths.

Measure using smaller divisions on a scale (mm, tenths, etc.).

2. TENTHS (ONE-TENTHS)

- 1 unit is divided into 10 equal parts. Each part is $\frac{1}{10}$ or one-tenth.
- 10 one-tenths make 1 unit.
- Numbers with tenths are written using decimal point.

Fraction	Decimal	Read as
$\frac{4}{10}$	0.4	four-tenths
$\frac{4}{10}$	4.4	four and four-tenths
$\frac{41}{10}$	4.1	four and one-tenth
$\frac{41}{10}$	41.1	forty-one and one-tenth



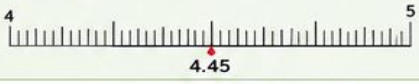
1.4 is 1 unit and 4 one-tenths.

3. HUNDREDTHS (ONE-HUNDREDTHS)

Each one-tenth is divided into 10 equal parts.

- Each part is $\frac{1}{100}$ or one-hundredth.
- 10 hundredths = 1 tenth
  100 hundredths = 1 unit

Example: The folded paper has length $4\frac{4}{10}\cdot\frac{5}{100}$ units (or 4.45 units)



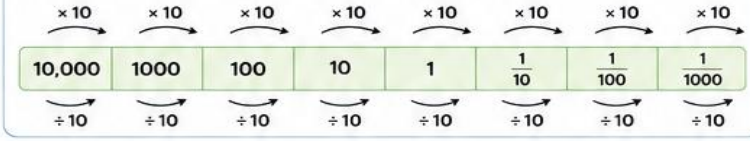
Some equivalent forms:

- $4\frac{4}{10}\cdot\frac{5}{100}$ = four and four-tenths and five-hundredths
- 4.45 = decimal notation
- $\frac{445}{100}$ = four hundred forty-five hundredths

4. DECIMAL PLACE VALUE SYSTEM

Place	Hundreds	Tens	Units	Tenths	Hundredths	Thousandths
Value	100	10	1	$\frac{1}{10}$	$\frac{1}{100}$	$\frac{1}{1000}$
Example	7	0	5	•	5	→ 70.50

- The decimal point (.) separates the whole number part from the fractional part.
- Moving right → place value becomes 10 times smaller.
- Moving left → place value becomes 10 times bigger.



5. READING & WRITING DECIMALS

- Read as "... point ..." (e.g., 4.05 → four point zero five)
- Trailing zeros after decimal do not change the value.

Decimal	Read as	Same as
4.5	four point five	4.50, 4.500
0.2	zero point two	0.20, 0.200
0.02	zero point zero two	— (not same as 0.2)
1.005	one point zero zero five	—

Compare decimals: Compare digits from left to right at each place value.

6. ADDITION & SUBTRACTION OF DECIMALS

- Write numbers one below the other so that the decimal points are in the same column.
- Add or subtract as in whole numbers.
- Put the decimal point in the answer in the same column.

Addition

$$\begin{array}{r} 75.345 \\ +\ 86.691 \\ \hline 162.036 \end{array}$$

Subtraction

$$\begin{array}{r} 84.691 \\ -\ 77.345 \\ \hline 7.346 \end{array}$$

Regroup if needed (just like in whole numbers).

7. UNITS OF MEASUREMENT

Length

1 cm = 10 mm
1 mm = $\frac{1}{10}$ cm = 0.1 cm
1 m = 100 cm
1 cm = $\frac{1}{100}$ m = 0.01 m
1 mm = $\frac{1}{1000}$ m = 0.001 m

Weight

1 kg = 1000 g
1 g = $\frac{1}{1000}$ kg = 0.001 kg

Money

1 rupee = 100 paise
1 paisa = $\frac{1}{100}$ rupee = 0.01 rupee

8. ESTIMATION & COMPARISON

- To estimate sums/diffeences, compare whole number parts first.
- Sum of two decimals is greater than the sum of their whole parts and less than the sum of their whole parts + 2.

Example: For 25.936 + 8.202
25 + 8 < Sum < (25 + 1) + (8 + 1)
33 < Sum < 35

- Locate decimals on the number line to compare.

6.456 < 6.465

9. REAL LIFE APPLICATIONS


Measuring lengths & weights


Money transactions


Shopping & pricing


Medicine doses (decimals are important!)


Fuel, distance & more

Wrong decimal placement or unit conversion can lead to serious mistakes.

10. KEY TAKEAWAYS

- Use smaller units (tenths, hundredths, thousandths) for accuracy.
- Decimal system extends place value system to the right of 1.
- Decimal point separates whole and fractional parts.
- Trailing zeros after decimal do not change the value.
- Add & subtract decimals by aligning decimal points.
- Convert between units carefully (mm ↔ cm, g ↔ kg, paise ↔ rupee).
- Understand, estimate and compare decimals using place value.

Remember: Precision in decimals brings accuracy in mathematics and in life!

A PEEK BEYOND THE POINT

WORKSHEET-1

Section A: MCQs (PART-1) (10 × 1 = 10 marks)

1. The length $2\frac{7}{10}$ cm is read as:

a) Two point seven cm
b) Two and seven-tenth cm
c) Twenty-seven cm
d) Two and seventy cm

2. Ten one-tenths make:

a) 10 units
b) 100 units
c) 1 unit
d) 1 tenth

3. Which decimal represents 4 units and 5 tenths?

a) 4.05
b) 45.0
c) 4.5
d) 0.45

4. One hundred hundredths are equal to:

a) 10
b) 100
c) 1
d) 0.1

5. Which of the following is greater?

a) 0.5
b) 0.05
c) 0.005
d) 0.0005

6. 1 mm = _____ cm

a) 1
b) 0.1
c) 10
d) 0.01

7. 254 g in kilograms is:

a) 2.54 kg
b) 0.254 kg
c) 25.4 kg
d) 0.0254 kg

8. 75 paise is equal to:

a) ₹7.5
b) ₹0.75
c) ₹75
d) ₹0.075

9. Which of the following are equal?

a) 0.2 and 0.02
b) 0.2 and 0.20
c) 0.02 and 0.002
d) 2.0 and 0.2

10. 5.6 cm is equal to:

a) 56 mm
b) 5.6 mm
c) 560 mm
d) 0.56 mm

MCQs (PART-2) (10 × 1 = 10 marks)

11. Which of the following represents 7 units and 35 hundredths?

a) 7.350 b) 7.35 c) 7.305 d) 73.5

12. A ribbon is 2.6 m long and another ribbon is 3.45 m long. What is their total length?

a) 5.95 m b) 6.05 m c) 5.15 m d) 6.95 m

13. Which of the following decimal numbers lies between 4.5 and 4.6?

a) 4.49 b) 4.57 c) 4.61 d) 4.70

14. Which of the following is equal to 0.8?

a) 8 hundredths b) 80 hundredths c) 8 thousandths d) 800 hundredths

15. A notebook is 18 mm thick. Its thickness in centimetres is:

a) 0.18 cm b) 1.8 cm c) 18 cm d) 0.018 cm

16. Which decimal is the greatest?

a) 5.407 b) 5.470 c) 5.4070 d) 5.47

17. Which number is closest to 6?

a) 5.91 b) 6.08 c) 5.98 d) 6.15

18. If 250 g = 0.250 kg, then 750 g is equal to:

a) 7.50 kg b) 0.075 kg c) 0.750 kg d) 75 kg

19. Which of the following statements is correct?

a) $0.45 = 0.450 = 0.4500$ b) $0.45 > 0.450$
c) $0.45 < 0.450$ d) $0.45 \neq 0.4500$

20. A bottle contains 1.75 L of juice. After using 0.85 L, how much juice remains?

a) 0.80 L b) 0.90 L c) 1.00 L d) 0.95 L

Section B: Short Answer (10 × 2 = 20 Marks)

1. Write $\frac{34}{10}$ in mixed form.

2. Express 4 units and 8 tenths as a decimal.

3. What is one-hundredth of a unit?

4. Convert 12 mm into cm.

5. Convert 15 cm into metres.

6. Write 705 in place value form.

7. Write the decimal form of 5 hundredths.

8. Convert 68 g into kilograms.

9. Convert 99 paise into rupees.

10. Arrange in increasing order: 0.4, 0.04, 0.44

Section C: Short Answer (6 × 3 = 18 Marks)

11. Add: $2\frac{7}{10} + 3\frac{6}{10}$

12. Subtract: $12\frac{4}{10} - 6\frac{7}{10}$

13. Convert 234 tenths into decimal form.

14. Explain why 0.2 = 0.20.

15. Convert: (a) 36 cm into m (b) 325 cm into m

16. Convert: (a) 465 g into kg (b) 1560 g into kg

Section D: Long Answer (4 × 5 = 20 Marks)

17. Find: $15\frac{3}{10}\frac{4}{100} + 2\frac{6}{10}\frac{8}{100}$

18. Find: $15\frac{3}{10}\frac{4}{100} - 2\frac{6}{10}\frac{8}{100}$

19. Draw a number line and mark: 1.4, 1.7 and 1.9

20. Explain the decimal place value chart up to hundredths with an example.

21. Riya measured a ribbon of length 3.4 m and another ribbon of length 2.8 m.

(i) Find the total length of both ribbons.

(ii) Which ribbon is longer?

22. A shopkeeper sold 250 g sugar, 500 g rice and 750 g flour.

(i) Find the total weight in grams.

(ii) Convert the total weight into kilograms.

Self Assessment:

I understood all the concepts: ☐ Yes ☐ No

I need more practice: ☐ Yes ☐ No

Name of Concepts having doubts/Not Cleared: _____

Parent's Assessment:

My ward understood all the concepts: ☐ Yes ☐ No

He/She needs more practice: ☐ Yes ☐ No

Name of Concepts having doubts/Not Cleared:_____

Signature of Parent:

Teacher's Assessment:

Answers of Worksheet-1

Q.No.	1	2	3	4	5	6	7	8	9	10
Ans	a	c	c	c	a	b	b	b	b	a
Q.No.	11	12	13	14	15	16	17	18	19	20
Ans	b	b	b	b	b	b	c	c	a	b

Answers of Worksheet-2

Q.No.	1	2	3	4	5	6	7	8
Ans	$3\frac{4}{10}$	4.8	0.01	1.2	0.15	7 Hundreds 5 ones	0.05	0.068
Q.No.	9	10	11	12	13	14	15	16
Ans	0.99	0.04 0.4 0.44	$6\frac{3}{10}$	$5\frac{7}{10}$	23.4	Explanation	0.36, 3.25	0.465, 1.560
Q.No.	17	18	19	20	21	22		
Ans	18.02	12.66	Drawing and marking	Explanation	6.2m, first	1500g, 1.5 kg		