UNIT-4

Measurements

WEIGHT

N1N2U3

4.1 **Able to apply the four operations in solving problems involving weight.**

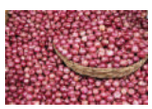
Recall

Sort out the following things and write









Need to measure	No need to measure

Let us recall

10 milligram = _____ centigram

10 centigram = _____ decigram

10 decigram = _____ gram

_____ gram = _____decagram

_____ decagram = 1 hectagram

10 hectagram = _____ kilogram

Weighing Machines:

These are some examples of weighing machines

Simple balance

Analog weighing mechine

Digital weighing mechine

Do you know?

1 gram (g)	=	1000 milligram (mg)
1kilogram (kg)	=	1000 gram (g)
$\frac{1}{2}$ kilogram (kg)	=	500 gram (g)
$\frac{1}{4}$ kilogram (kg)	=	250 gram (g)
$\frac{3}{4}$ kilogram (kg)	=	750 gram (g)

Activity: 1

Tick the suitable unit to measure the following objects

mg/kg

mg/kg

mg/kg

mg/kg

mg/kg


mg/kg


mg/kg


mg/kg


mg/kg


mg/kg

CONVERSION

Examples

Convert the following into grams.

(i) 2 kg 250 g

1 kg = 1000 g

2 kg 250 g = (2 x 1000) + 250 g

= 2000 + 250

2 kg 250 g = **2250 g**

Note:
To convert kilogram into gram multiply the given gram by 1000.

(ii) 15 kg 30 g

15 kg 30 g = (15 x 1000) + 30 g

= 15000 + 30

15 kg 30 g = **15030 g**

Note:
To convert milligram into gram divide the given milligram by 1000.

(iii) 3500 mg

1000 mg = 1 g

3500 mg = 3500 ÷ 1000 g

= 3 g 500 mg

Note:
To convert gram into kilogram divide the given gram by 1000.

```
      3 g
1000 | 3500
       3000
       ----
        500 mg
```

Try this

Convert into gram

1. 2250 mg
2. 5 kg 400 g

Examples

Convert into kilograms

(i) 7500 g

1000 g = 1 kg

$$\begin{array}{r|l} & 7\ \text{kg} \\ 1000 & 7500 \\ & 7000 \\ \hline & 500\ g \end{array}$$

7500 g = 7500 ÷ 1000 g

= 7 kg 500 g

(i) 4250 g

$$\begin{array}{r|l} & 4\ \text{kg} \\ 1000 & 4250 \\ & 4000 \\ \hline & 250\ g \end{array}$$

4250 g = 4250 ÷ 1000 g

= 4 kg 250 g

Try this

Convert into kilogram

1. 4000 gram
2. 7350 gram
3. 4750 gram

Addition

Examples

Find the sum of the following.

(i) 7 kg 400 g + 5 kg 350 g

	kg	g
	7	400
+	5	350
	12	**750**

7 kg 400 g + 5 kg 350 g = 12 kg 750 g

(ii) 14 g 500 mg + 10 g 750 mg

	g	mg
	❶	
	14	500
+	10	750
	25	**250**

Try this

Find the sum of the following:

1. **5 kg 300g + 19 kg 850 g**
2. **15 g 450 mg + 14 g 25 mg + 3 g 700 mg**
3. **18 kg 750 g + 16 kg 400 g + 3 kg 500 g**

14 g 500 mg + 10 g 750 mg = 25 g 150 mg

Example

In a market Rahman bought 12 kg 500 g of brinjal, 15 kg 250 g of ladies finger and 17 kg 350 g of onion what is the total weight of vegetables?

Solution:

		kg	g
		❶	
Weight of the brinjal	=	12	500
Weight of the ladies finger	=	15	250
Weight of the onion	=	+ 17	350
Total weight	=	**45**	**100**

Total weight of the three vegetables = 45 kg 100 g

Subtraction

Examples

Find the difference

(i) 39 kg 500 g - 33 kg 750 g

	kg	g
	39	500
-	33	750
	5	**750**

Difference = 5 kg 750 g

(ii) 750 g 350 mg - 350 g 225 mg

	g	mg
	750	350
-	350	225
	400	**125**

Difference = 400 g 125 mg

Try this

Subtract the following

a. 75 kg - 35 kg 400 g

b. 57 kg 750 g - 23 kg 450 g

c. 975 kg 400 g - 755 kg 550 g

Example

A sack had 25 kg rice. Out of 25kg rice 13 kg 500 g of rice which was used for noon meal. What is the weight of the remaining rice?

Solution:

		kg	g
Rice in the sack	=	25	000
Rice used for noon meal	=	- 13	500
Remaining rice	=	11	500

Remaining amount of rice in sack = 11 kg 500 g

Multiplication

Examples

Write the answer in multiply:

(i) 7 kg 400 g x 3

	kg	g
	7	400
x		3
	22	**200**

7 kg 400 g x 3 = 22 kg 200 g

(ii) 52 kg 350 g x 8

	kg	g
	52	350
x		8
	418	**800**

52 kg 350 g x 8 = 418 kg 800 g

Try this

Multiply the following:

a. 7 kg 350 g x 7
b. 9 kg 750 g x 3
c. 9 kg 750 g x 3
d. 45 kg 800 g x 6

Example

A packet can contain 3 kg 500 g of sugar, how much amount of sugar can 7 such packets contain?

Solution:

		kg	g
Weight of one packet of sugar	=	3	500
Weight of 7 packets sugar	=	3	500 x 7
	=	24	500

Weight of 7 packets of sugar = 24 kg 500 g

Division

Examples

Divide the following:

(i) 70 kg 350 g ÷ 7

```
        kg    g
        10   050
   7 |  70   350
     | - 7
     |   0
     |        35
     | -      35
     |         0
```

70 kg 350 g ÷ 7 = 10 kg 50 g

(ii) 66 g 720 mg ÷ 6

```
        g     mg
        11   120
   6 |  66   720
     | - 6
     |  06
     | - 6
     |         7
     | -       6
     |        12
     | -      12
     |         0
```

66 g 720 mg ÷ 6 = 11 g 120 mg

Try this

Divide the following:

a. 7 kg 490 g ÷ 7
b. 35 kg 650 g ÷ 5
c. 6 g 240 mg ÷ 4
d. 150 g 750 mg ÷ 15

Example

How many packets of 3 kg groundnut cookies can be made from 75 kg of groundnut cookies?

Solution:

Total amount of groundnut cookies = 75 kg

Weight of 1 packet of groundnut cookies = 3 kg

Number of packets of 3 kg groundnut cookies = 75 ÷ 3

= 25 packets

we can separate 75 kg groundnut cookies as 3 kg groundnut cookies in 25 packets.

Exercise 4.1

1 **Fill in the blanks:**

(i) 7 kg 400 g = _____g

(ii) 5g 50mg = _____mg

(iii) 9500 mg = _____g _____mg

(iv) 15 kg 350 g = _____g

(v) 6250g = _____kg _____g

2 **Add the following:**

(i) 4 kg 250 g + 3 kg 450 g

(ii) 75 g 430 mg + 750 g.

(iii) 97 kg 45 g + 77 kg 450 g + 33 kg 250 g

(iv) 75 kg 400 g + 30 kg 250 g

3 **Subtract the following:**

(i) 40 kg 350 g - 25 kg 200 g

(ii) 35 kg 850 g - 18 kg 500 g

(iii) 985 kg 475 g - 275 kg 325 g

(iv) 700 kg - 300 kg 500 g

4 **Multiply the following:**

(i) 4 kg 300 g x 7

(ii) 17 kg 750 g x 8

(iii) 25 kg 550 g x 4

(iv) 72 g 350 mg x 5

5 **Divide the following:**

(i) 99 kg 990 g ÷ 3

(ii) 147 g 630 mg ÷ 7

(iii) 550 kg 220 g ÷ 11

(iv) 484 g 384 mg ÷ 4

6 What is the total weight of 7 kg 500 g of cashew nut and 3 kg 350 g of pista?

7 Vimal had a sack of cotton seeds weighing 50 kg 350 g. He used 7 kg 300 g cotton seeds to feed his cow. How much cotton seed will be remaining after feeding his cow?

8 A glass bottle can contain 25 g 125 mg of medicine, how much medicine can 7 such bottles contain?

9 75 kg 750 g of groundnut seed is filled in five bags, how much groundnut seed can a bag contain?

CAPACITY

4.2 Able to apply the four operation in solving problems involving capacity.

Recall


50ml


250ml


500ml


750ml


1000ml

Let us recall

10 millilitre (ml)	= 1 centilitre (cl)
10 centilitre	= 1 decilitre
10 decilitre	= 1 litre (l)
10 litre (l)	= 1 decalitre
10 decalitre	= 1 hectalitre
10 hectalitre	= 1 kilolitre (kl)

Let us know

1 litre (l)	=	1000ml
$\frac{1}{2}$ litre	=	500ml
$\frac{1}{4}$ litre	=	250ml
$\frac{3}{4}$ litre	=	750ml

CONVERSION

Examples

Convert into millilitre.

(i) 2 l 500 ml

1 l = 1000 ml

2 l 500 ml = (2 x 1000) + 500 ml

= 2000 + 500

= 2500 ml

2 l 500 ml = 2500 ml

Note:
To convert litre into millilitre multiply the given litre by 1000.

(ii) 7 Litre = (7 x 1000) ml

= 7000 ml

(iii) 6 Litre = (6 x 1000) ml

= 6000 ml

(iv) 5 l 700 ml = (5 x 1000) + 700 ml

= 5000 + 700 = 5700 ml

Try this

Convert into millilitre:

a. 5 l 500 ml

b. 9 l 200 ml

c. 2 l 300 ml

Activity: 2

Litre	Millilitre
1 l	1000 ml
2 l	2000 ml
3 l	
4 l	
5 l 300 ml	5300 ml
6 l	
7 l	
8 l 400ml	
9 l	
10 l 200ml	

Example

Conversion Millilitre into litre

(i) 7000 ml

7000 ml = 7000 ÷ 1000

=7 l

$$\begin{array}{r|l} & 7 \\ \hline 1000 & 7000 \\ & 7000 \\ \hline & 0 \end{array}$$

Millilitre	Litre
10000	10
9000	
8000	
7000	
6000	

Note:
To convert millilitre into litre divide the given millilitre by 1000

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Addition

Example

(i) Add 6 l 700 ml and 12 l 800 ml.

	l	ml
	❶	
	6	700
+	12	800
	19	**500**

700 ml + 800 ml = 1500 ml

1500 ml = 1 l 500 ml

Subtraction

Examples

Find the difference

(i) 15 l 500 ml - 6 l 300 ml

	l	ml
	15	500
-	6	300
	9	**200**

Difference = 9 l 200 ml

(ii) 36 l 400 ml - 12 l 550 ml

	l	ml
	❺	❸
	3~~6~~	4~~0~~0
-	12	550
	23	**850**

Try this

1. 4 l 300 ml + 6 l 700 ml
2. 7 l 250 ml + 2 l 300 ml
3. 5 l 500 ml - 4 l 450 ml
4. 46 l 300 ml - 12 l 550 ml

36 l 400 ml - 12 l 550 ml = 23 l 850 ml

Example

Look at the amount of milk bought for three days to make sweets in a bakery.Find the total amount of milk bought for three days?

Monday	7 l	300ml
Tuesday	15 l	350ml
Wednesday	16 l	200ml

Solution:

		l	ml
Amount of milk bought on Monday	=	7	300
Amount of milk bought on Tuesday	=	15	350
Amount of milk bought on Wednesday	= +	16	200
Total amount of milk bought	=	**38**	**850**

Total amount of milk bought on Monday, Tuesday and Wednesday } **=38 l 850 ml**

DO IT YOURSELF

Find the total amount of milk bought in seven days.

Example

A tin contains 10 l 500 ml of coconut oil out of this 7 l 250 ml oil was used. What is the remaining quantity of coconut oil?

Solution:

		l	ml
Total amount of coconut oil	=	10	500
The quantity of coconut oil used	= -	7	250
Remaining coconut oil	=	**3**	**250**

Multiplication in capacity

Example

Multiply the following:

4 l 200 ml x 3

	l	ml
	4	200
x		3
	12	**600**

4 l 200 ml x 3 = 12 l 600 ml

> Try this
> 2 l 250 ml x 2

Example

Deepak fills 1 litre 500 ml petrol in a day. How much amount of petrol will he fill in 5 days?

Solution:

		l	ml
Petrol filled by Deepak in a day	=	1	500
Petrol filled by Deepak in 5 days	=	x	5
Total quantity of petrol	=	**7**	**500**

Division in capacity

Examples

(i) 2 l 320 ml ÷ 2

```
        l   ml
        1  160
     -----------
  2 |   2  320
    | - 2
     -----------
    |       3
    | -     2
     -----------
    |      12
    |      12
     -----------
    |       0
```

2 l 320 ml ÷ 2 = 1 l 160 ml

> Try this
> 18 l 240 ml ÷ 6

(ii) Vimal shared 500 ml cooldrink equally, to his two children. How much amount of cooldrink would each child get?

Solution:

The amount of cooldrink that vimal bought = 500ml

Number of children = 2

The amount of cooldrink that each child get = $\frac{500}{2}$

Each child will get 250ml of cooldrink.

Exercise 4.2

J7Q1M4

1 Fill in the blanks

(i) _____ is the smallest metric measure of capacity.

(ii) _____ is the largest unit of volume and equals _____ litres.

(iii) 7 kl 30l = _____l.

(iv) 5 l 400 ml = _____ml.

(v) 1300 ml = _____l _____ml

2 Match the following

(i) 4500 ml - 6 l 500 ml

(ii) 3250 ml - 8 l 200 ml

(iii) 6500 ml - 7 l 50 ml

(iv) 8200 ml - 4 l 500 ml

(v) 7050 ml - 3 l 250 ml

3 Add and write in litres

(i) 400 l; 50 l; 500 ml

(ii) 3 kl; 400 l; 3 ml

(iii) 1400 ml; 5680 ml; 280 l

4 **Subtract:**

(i) 3 kl from 15485 l

(ii) 15 kl from 20 kl

(iii) 345 ml from 5 l

5 **Multiply the following:**

(i) 3 l 200 ml x 8

(ii) 4 l 450 ml x 4

(iii) 5 l 300 ml x 5

(iv) 6 l 700 ml x 6

6 **Divide the following:**

(i) 18 l 240 ml ÷ 6

(ii) 20 l 600 ml ÷ 2

(iii) 21 l 490 ml ÷ 7

(iv) 25 l 350 ml ÷ 5

7 Kalaiyarasi bought 5 l 500 ml groundnut oil and 750 ml sesame oil. How much amount of oil did she bought in all?

8 In a fuel station there was 70 l 500 ml of fuel. How much amount of fuel will be left after selling 35 l 700 ml of fuel?

9 A pot contains 9 l 500 ml of water, how much amount of water will 7 such pots contain?

10 25 l 500 ml of milk is filled in 5 milk cans, how much amount of milk is filled in one can?