



GOVERNMENT OF TAMIL NADU

# STANDARD FOUR

## TERM - III

## VOLUME 2

MATHEMATICS  
SCIENCE  
SOCIAL SCIENCE

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# MATHEMATICS

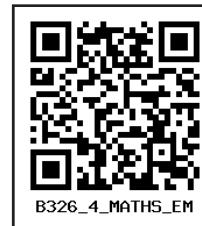
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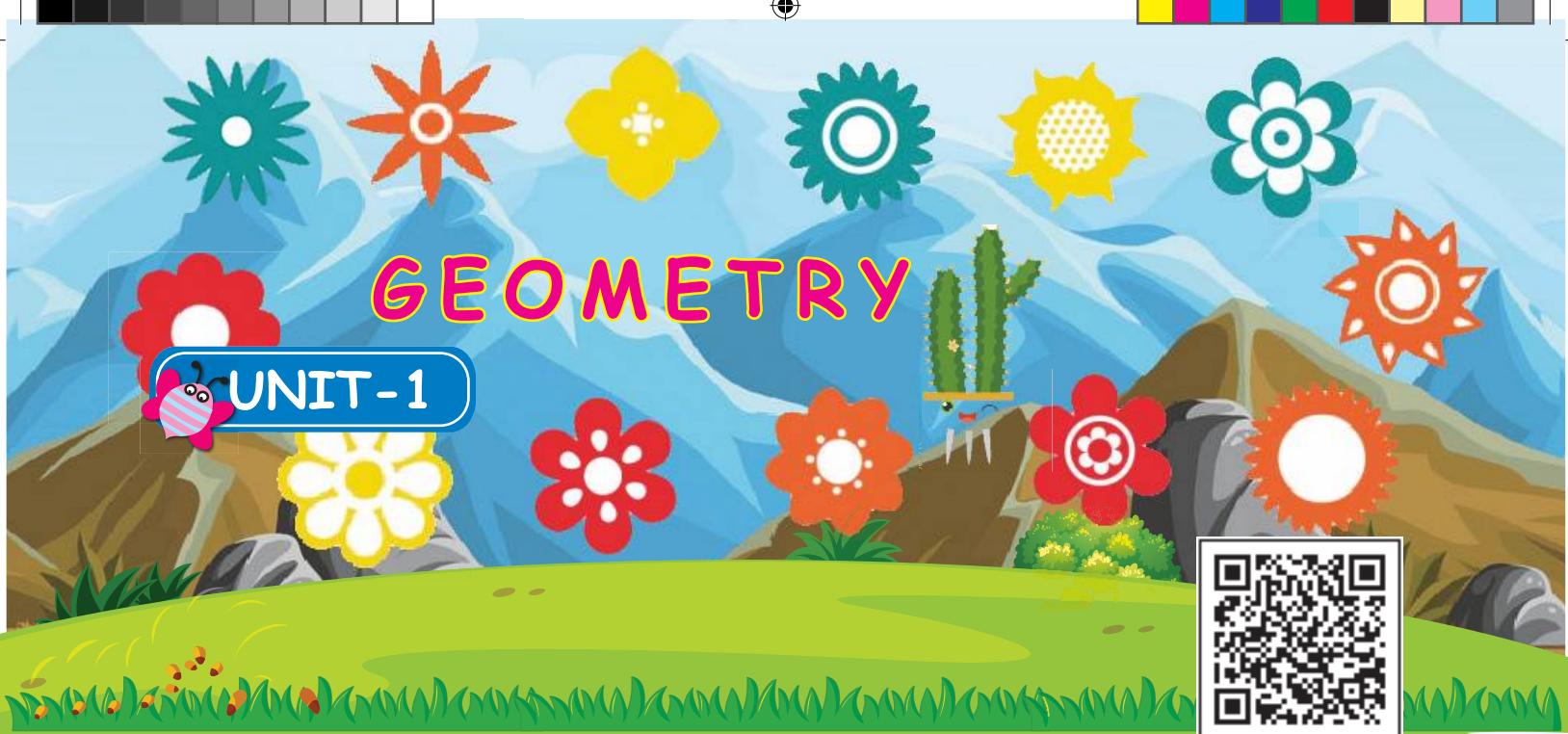
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# MATHEMATICS

IV



## UNIT - 1



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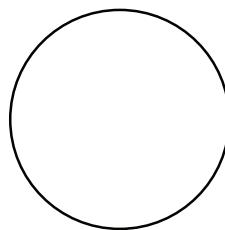
### 1.1 Iterative patterns in shapes



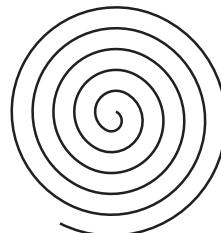
We see patterns in trees, rivers, mountains, shells, clouds, leaves and more. Iteration is the repeated application of a process. Here we are going to see how we use the shapes to form iterative patterns.

#### 1.1.1 Able to draw circles, spirals, ovals.

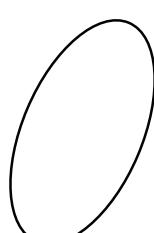
In the earlier class you have learnt to draw circles.



Circle



Spiral



Oval



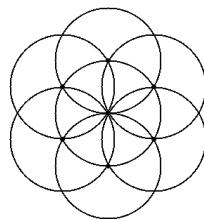
#### Activity

Draw the above shapes and colour it.



Using the above shapes we are going to form iterative patterns.

### EXAMPLES

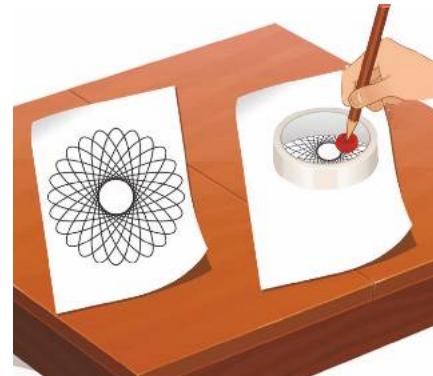


### Activity

**Required things:** Paper, Pencil, unused bottle cap, Cellotape.



Take a sheet of paper, keep the cellotape on it. Make two or three holes in the bottle cap. Keep the bottle cap inside the cellotape and insert the pencil inside the hole, hold the cellotape firmly. Draw the spirograph by dragging the pencil here and there inside the cellotape. We will get the Spirograph.



**Teacher Note:** Teacher can elicit the student to use bangles also instead of cellotape



### Try This

Complete the patterns using the given Shapes and shade with your own colour.



ii)



iii)

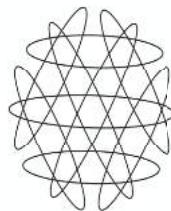




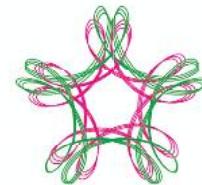
### 1.1.2 To differentiate and to compares the shapes drawn.

Students, "Prepare your own pattern of shapes using circles, spirals and ovals. Exchange it with your friend and discuss".

Pic: 1



Pic: 2



### 1.1.3 To explore visual examples of repeating patterns

#### Do you know

Some visual examples are:



Cactus is the example for oval shaped pattern.



Shell of a Snail is the example for spiral shaped pattern.



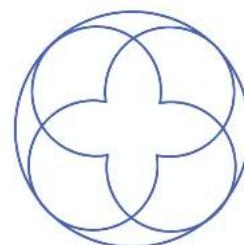
Bangle represents the Circle shaped Pattern.

Students see the visual examples in the surroundings like

Rangoli



Spirograph



Observe the patterns in the surroundings. Fill the rangoli with colours using your creativity. Use petals of flowers and fallen leaves from the trees to fill the Rangoli. Children prepare your circles, ovals and spirals



from the chart (or) colour paper (or) with threads. Colour the prepared patterns with the same.

### Exercise 1.1

- 1) Write the Shapes of the Patterns present in the pictures given below

i)



ii)



- 2) Complete the patterns given below.

i.  $\bigcirc \text{ } \text{ }$

ii.  $\text{ } \bigcirc \text{ } \text{ }$

iii.  $\text{ } \text{ }$

iv.  $\text{ } \text{ }$



- 3) Draw Simple rangoli. Use your own Creativity to fill them.



# UNIT-2



## 13

# NUMBERS



### 2.1 Division: (up to 4 digit number by single digit number)

#### 2.1.1 To divide a given number by another number in various ways.

There are many ways to divide a given number by another number. They are

- (i) Equal sharing
- (ii) Equal grouping
- (iii) Repeated subtraction
- (iv) Long division
- (v) Short division

You have learnt already the type of divisions in previous class. Now we are going to see Equal sharing and short division.

##### (i) Equal sharing

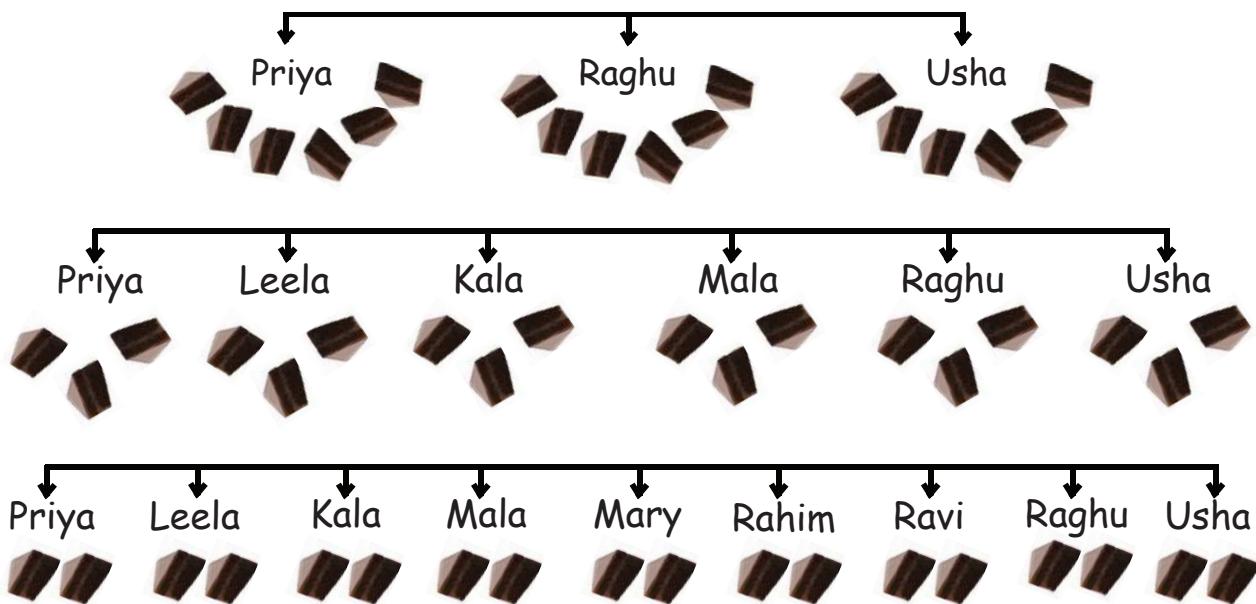
Priya wants to celebrate her birthday along with her Parents Raghu and Usha. Her father bought a cake for her. She makes the cake into 18 pieces and wants to divide it equally along with her parents, each of them got 6 pieces. At that time her friends Leela, Kala and Mala has come with their gifts. So, she wants to share the cake with her friends also, each of them got 3 pieces. After a few minutes three of her father and mother's friends Mary, Rahim and Ravi has come for



In division, equal sharing leaves remainder also.



the party. Now she has decided to share the cake with them also. How much share would all get in total ?



Each gets 2 pieces of cake. Thus 18 pieces of cake is shared equally among 9 members with 2 pieces each.

#### (vi) Short division

Divide  $670 \div 5$

Here 670 is the dividend,  
5 is the divisor



#### Note

Superscript means placing the number in the right side top of the given number as small. e.g.  $3^2, 6^3$

Here, 5(the divisor) divides 6(the first digit of the dividend) in 1 time, with the remainder of 1, place the quotient 1, above  $5 \overline{)6^1}70$  the long division bar. Place as small superscript 1 beside 6.

Combine it with the next dividend digit to the right. Now find out how many times the divisor divides the new two digit number 11. The divisor divides 11, 3 times, with the remainder of 2, place the quotient 3 above the division line, 2 as the superscript beside 7.

$$5 \overline{)6^17^2}0$$

Now consider the last term of the dividend combine the remainder with next dividend to the right. We get a new 2 digit number 20. The divisor 5 divides 20, 4 times. Remainder 0 and the quotient becomes 134.

$$5 \overline{)6^17^20}$$

$$670 \div 5 = 134$$



## Division of three digit number by one digit number:

### Division without remainder

#### EXAMPLE 1

Divide 450 by 6.

$$\begin{array}{r} 075 \quad \text{Quotient} \\ 6 \overline{)450} \\ 42 \\ \hline 30 \\ 30 \\ \hline 0 \quad \text{Remainder} \end{array}$$

**Step 1:** Take 4 in the dividend, Which is not divisible by 6. Hence to combine the next digit in the dividend in the right. We have to put zero above the division line.

**Step 2:** Divide 45 by 6.

6 divides 45, 7 times, (ie)  $6 \times 7 = 42$   
place 42 belows 45,

**Quotient = 7 and Remainder = 3**

**Step:3:** Take 30, Divide 30 by 6,  
**Quotient = 5, Remainder = 0.**

#### EXAMPLE 2

A fruit seller buys 531 apples. He arranges them equally in 9 boxes.  
How many apples does he put in each box?

Total number of apples = 531

Number of boxes = 9

Number of apples in each box =  $531 \div 9$

$$\begin{array}{r} 59 \quad \text{Quotient} \\ 9 \overline{)531} \\ 45 \\ \hline 81 \\ 81 \\ \hline 0 \quad \text{Remainder} \end{array}$$



Number of apples in each box = 59



## Division with remainder:

### EXAMPLE 3

Divide 369 by 7.

$$\begin{array}{r} 52 \\ 7 \overline{)369} \\ 35 \\ \hline 19 \\ 14 \\ \hline 5 \end{array}$$

**Step 1:** Take 3 in the dividend, 3 cannot be divided by 7. Hence to combine the next digit in the dividend (369) in the right. We have to put zero above the division line. So take 36.  
Divide 36 by 7.

7 divides 6, 5 times (ie)  $7 \times 5 = 35$

**Quotient = 5 and Remainder = 1**

**Step:2**

Take 19 ones. Divide 19 by 7.

7 divides 19, 2 times (ie)  $7 \times 2 = 14$

**Quotient = 2, Remainder = 5.**

**Quotient = 52**

**Remainder = 5**

## Exercise 2.1

Simplify the following

1)  $896 \div 5$     2)  $696 \div 6$

3)  $686 \div 7$     4)  $813 \div 8$

5)  $891 \div 8$     6)  $703 \div 2$

7) Rahul has 192 toy cars. He put them equally in 6 boxes. How many toy cars will he put in each box? How many toy cars are left over?

8) Akila has 495 photographs to put in an album. She can put 9 photographs on each page. How many pages can she fill?



## Divide 4 digit numbers by one digit number:

### Divide without remainder:

You have already learnt the division steps in the three digit number

#### EXAMPLE 1

Divide 396 by 7.

$$\begin{array}{r} 1236 \\ \hline 6 \quad 7416 \\ 6 \\ \hline 14 \\ 12 \\ \hline 21 \\ 18 \\ \hline 36 \\ 36 \\ \hline 0 \end{array}$$

Quotient = 1236

Remainder = 0

#### EXAMPLE 2

$$\begin{array}{r} 1211 \\ \hline 8 \quad 9689 \\ 8 \\ \hline 16 \\ 16 \\ \hline 08 \\ 8 \\ \hline 09 \\ 8 \\ \hline 1 \end{array}$$

Quotient = 1211

Remainder = 1

A Company called 8 workers to do the Painting work on one day. At the end of the day workers received an total amount of Rs 9689 as an daily wage. How much money did each one get?

## Exercise 2.2

### Divide the following

- 1)  $5632 \div 6$
- 2)  $7460 \div 7$
- 3)  $4964 \div 8$
- 4)  $8616 \div 6$
- 5)  $8645 \div 7$
- 6)  $5742 \div 9$
- 7) In my school, there are 1115 students from class 1 to 8. If the number of students is same in all the classes, how many students are there in each class?
- 8) The height of a mountain is 7821 m. Raj took 9 days to reach the top. How many metres did he cover daily if he travelled equal distances every day?
- 9) A total of 1787 kg wheat has to be packed equally in 7 bags. What will be the weight of each bag?



## 2.1.2 To frame word problems (using four operations)

### EXAMPLE 1

Observe the following pictures and let us see how questions has been framed.



- i. What is the price of ooty apple? Why do you prefer this?
- ii. Find the cost of 3kg of green banana?
- iii. What is the total cost of 1kg of simla apple, Poovan banana and Peyan banana?
- iv. Find out the difference between the cost of ooty apple and simla apple?
- v. Mala had ₹ 70, how many kg of Peyan banana would she buy?



## Exercise 2.3

S.No.	Name of the Item	Price Per Kg (in ₹)
1	Raw Rice	56
2	Boiled Rice	54
3	Wheat	40
4	Tamarind	180
5	Red chilly	100

What else could you frame some more questions based on this table?

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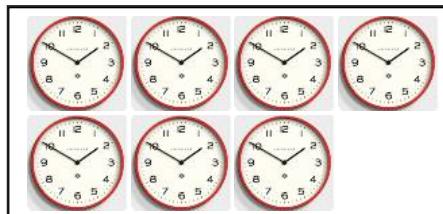
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1) Frame word problems, using the picture given:



Cost of 1 Piece of Cake ₹ 25

2) Frame word problems, using the picture given:



Total Cost of the clocks ₹ 490



## 2.1.3 Estimating sums and differences:

To estimate a number means to round off each number to its nearest tens, hundreds and then add or subtract.



### Steps for estimation:

**Nearest to tens:** check the unit digit of the given number that is to be estimated.

- if it is equal to (or) greater than 5, add 1 to previous digit, make the unit digit as zero. (e.g.) 85 is rounded to 90
- if it is less than 5, make the unit digit as zero. (e.g.) 63 is rounded to 60



We can estimate a number nearest 1000 and more.

### EXAMPLE 1

- Estimate the sum.

$$\begin{array}{rcl} 58 & \text{is rounded to tens} & 60 \\ (+) \quad 73 & \text{is rounded to tens} & (+) \quad 70 \\ \hline \text{Total} \quad 131 & \text{Rounded sum} & \hline 130 \end{array}$$

- Estimate the difference

$$\begin{array}{rcl} 33 & \text{is rounded to tens} & 30 \\ (-) \quad 19 & \text{is rounded to tens} & (-) \quad 20 \\ \hline \text{14} & \text{rounded difference} & \hline 10 \end{array}$$

## Exercise 2.4

Estimate the following numbers to nearest tens and then add or subtract.

$$\begin{array}{rcl} 1) \quad 45 & \longrightarrow & \boxed{\phantom{00}} \\ (+) \quad 93 & & \hline \end{array}$$

$$\begin{array}{rcl} 2) \quad 42 & \longrightarrow & \boxed{\phantom{00}} \\ (+) \quad 38 & & \hline \end{array}$$

$$\begin{array}{rcl} 3) \quad 78 & \longrightarrow & \boxed{\phantom{00}} \\ (-) \quad 32 & & \hline \end{array}$$

$$\begin{array}{rcl} 4) \quad 91 & \longrightarrow & \boxed{\phantom{00}} \\ (-) \quad 75 & & \hline \end{array}$$



### Estimation in multiplication:

A tourism company collected ₹ 95 per head for a field trip. Estimate the amount collected from 28 persons?

	Actual	Estimated amount
Amount per head	= ₹ 95	₹ 100
Amount for 28 persons	= ₹ 2660	₹ 3000
Difference between, Estimated amount and actual amount	$\left. \begin{array}{l} = 3000 - 2660 \\ = ₹ 340 \end{array} \right\}$	$\begin{array}{r} \text{TO} \quad \text{TO} \\ 95 \times 28 \\ \hline 760 \\ 190 \\ \hline 2660 \end{array} \qquad \begin{array}{r} \text{HTO} \quad \text{TO} \\ 100 \times 30 \\ \hline 000 \\ 300 \\ \hline 3000 \end{array}$

### Exercise 2.5

Estimate and calculate:

S.No.	Multiplication fact	Actual value	Estimated value	Difference
1.	$35 \times 12$	420	$40 \times 10 = 400$	20
2.	$82 \times 28$			
3.	$16 \times 12$			
4.	$23 \times 27$			

## 2.2 Mental Arithmetic

### 2.2.1 Able to add and subtract multiples of 10 and 100 mentally.

Multiples of 10 and 100 are useful in counting large number of items and objects (including money).

#### Multiples of 10

10, 20, 30, 40, 50....





## Adding with multiples of 10

$$\begin{array}{ccc} \text{H} & \text{T} & \text{O} \\ (\text{i}) & 2 & 2 \\ & 1 & 0 \\ \hline & 2 & 3 \\ & 3 & 3 \end{array}$$

$$\begin{array}{ccc} \text{H} & \text{T} & \text{O} \\ (\text{ii}) & 3 & 4 \\ & 1 & 0 \\ \hline & 3 & 5 \\ & 3 & 5 \end{array}$$

Here, one's place didn't change, when they are added to zero and hundreds Place also didn't change, only the tens place got changed.

$$\text{i) } 2 + 1 = 3$$

$$\text{ii) } 4 + 1 = 5$$

Now we add the following

### EXAMPLE 1

Add  $374 + 10$

$$\begin{array}{r} 374 + 10 \\ 4 + 0 = 4 \\ 7 + 1 = 8 \end{array}$$

Therefore  $374 + 10 = 384$

### EXAMPLE 2

Add  $286 + 30$

$$\begin{array}{r} 286 + 30 \\ 8 + 3 = 11 \end{array}$$

Here, 11 has two digits, in this keep 1 in the tens place, take the other 1 and add with the hundreds place digit.

Therefore  $286 + 30 = 316$

## Adding with multiples of 100

$$\begin{array}{ccc} \text{H} & \text{T} & \text{O} \\ (\text{i}) & 5 & 8 & 4 \\ & + 1 & 0 & 0 \\ \hline & 6 & 8 & 4 \end{array}$$

$$\begin{array}{ccc} \text{H} & \text{T} & \text{O} \\ (\text{ii}) & 2 & 7 & 5 \\ & + 1 & 0 & 0 \\ \hline & 3 & 7 & 5 \end{array}$$

Here, one's place and ten's place didn't change, when they are added to zero but in the hundreds place it is changed.



### EXAMPLE 3

Add  $682 + 100$

$$\begin{array}{r} \textcircled{6}82 + \textcircled{1}00 \\ 2 + 0 = 2 \\ 8 + 0 = 8 \\ \textcolor{pink}{6} + \textcolor{pink}{1} = 7 \\ \therefore 682 + 100 = 782 \end{array}$$

### EXAMPLE 4

Add  $835$  with  $100$

$$\begin{array}{r} \textcircled{8}35 + \textcircled{1}00 \\ \textcolor{pink}{8} + \textcolor{pink}{1} = 9 \\ \therefore 835 + 100 = 935 \end{array}$$

## Subtracting by multiples of 10

Follow the same procedure of addition for subtraction also, instead of adding the numbers, subtract the numbers in the circle.

### EXAMPLE 5

Subtract  $10$  from  $625$

$$\begin{array}{r} 6\textcircled{2}5 - \textcircled{1}0 \\ 5 - 0 = 5 \\ \textcolor{pink}{2} - \textcolor{pink}{1} = 1 \\ \therefore 625 - 10 = 615 \end{array}$$



### EXAMPLE 6

Subtract 50 from 981

$$\begin{array}{r} 9\textcircled{8}1 \\ - \quad 50 \\ \hline 8 \quad - \quad 5 = 3 \\ \therefore 981 - 50 = 931 \end{array}$$

### Subtracting by multiples of 100

### EXAMPLE 7

Subtract 400 from 546

$$\begin{array}{r} 546 \\ - \quad 400 \\ \hline 5 \quad - \quad 4 = 1 \\ \therefore 546 - 400 = 146 \end{array}$$

### Exercise 2.6

Add and subtract the following problems using multiples of 10, 100 (Mentally)

- |                         |                         |
|-------------------------|-------------------------|
| 1. $745 + 40 =$ _____   | 2. $328 + 30 =$ _____   |
| 3. $566 + 20 =$ _____   | 4. $475 + 100 =$ _____  |
| 5. $686 + 300 =$ _____  | 6. $345 + 600 =$ _____  |
| 7. $6348 - 10 =$ _____  | 8. $541 - 40 =$ _____   |
| 9. $495 - 300 =$ _____  | 10. $657 - 500 =$ _____ |
| 11. $895 - 500 =$ _____ | 12. $365 - 300 =$ _____ |

**2.2.2 Complete multiplication facts by adding partial products mentally.**



Now we break the following numbers, for example,  $53 = 50 + 3$ ,  $98 = 90 + 8$ .

In 53, why should numbers be parted into  $50+3$ , because nearest multiples of 10 to 53 is 50 and add the remaining number 3 with it.

### EXAMPLE 1

Complete the following multiplication facts by adding partial products.

$$\begin{aligned}6 \times 45 &= 6 \times (40+5) \\&= 6 \times 40 + 6 \times 5\end{aligned}$$

Break 45 into two parts  $40 + 5$

Then multiply those two parts separately as:

$$6 \times 40 = 240$$

$$6 \times 5 = 30$$

Then add these two partial results.

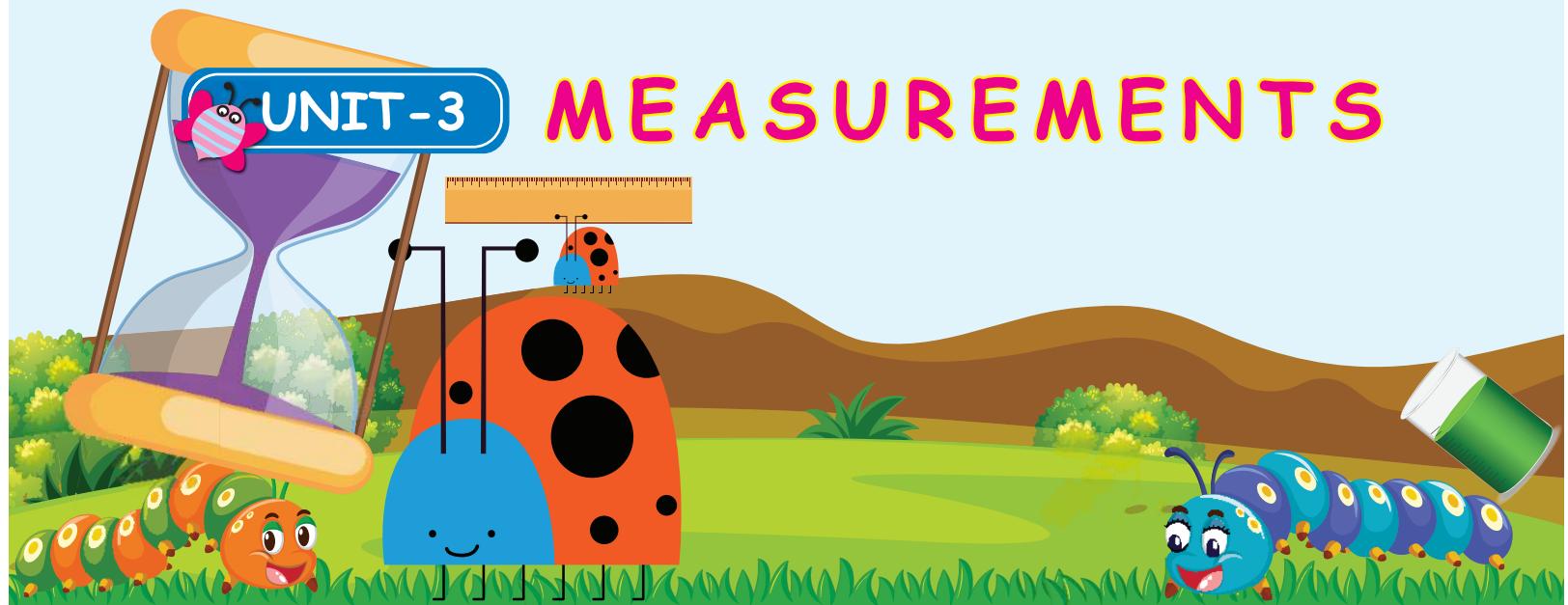
$$\begin{array}{ccc} & \textcircled{4} & \\ 2 & \textcircled{4} & 0 + \textcircled{3} \\ & \textcircled{3} & 0 = 270 \\ 6 \times 45 & = 270 \end{array}$$

### Exercise 2.7

Simplify the following multiplication facts by adding partial products.

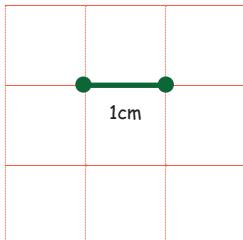
1.  $9 \times 42$
2.  $3 \times 78$
3.  $36 \times 12$
4.  $18 \times 19$
  
5.  $68 \times 31$
6.  $42 \times 21$



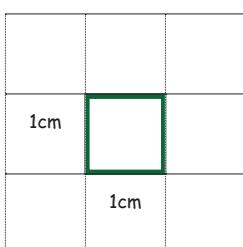


### Recall:

A one dimension quantity - length and it is represented as



Two dimension quantity - length and breadth. Which can be represented as



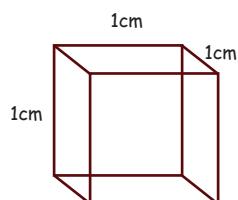
The space occupied here:  $1\text{cm} \times 1\text{cm} = 1\text{ cm}^2$ .

Two dimensional quantity is called as **Area**.



## Definition of volume

When we expand 1 cm from the surface of 2D, it forms 3D.



The space occupied here:  $1\text{cm} \times 1\text{cm} \times 1\text{cm} = 1\text{ cm}^3$ .

Three dimensional quantity is called as volume.

So, volume is the space occupied by any 3D object (cone, cube, cuboid and cylinder).

### 3.1 Measuring volume of given liquid using containers marked with standard units.

#### Do you know

We can write millilitre as "ml" and litre as "l"



$\frac{1}{4}\text{ l}$  (250 ml)

$\frac{1}{2}\text{ l}$  (500 ml)

$\frac{3}{4}\text{ l}$  (750 ml)

1 l (1000 ml)



## Activity

List out the measures used at your home for the following items.

Items	quantity (in litres)
Water	
Milk	
Oil	
Petrol	
Diesel	

### Note:

Measures cannot be accurate if we use non-standard measures. To measure the liquids we use standard units millilitre and litre.



## Activity

Let us find out how many litres and millilitres of water can be filled in this bucket.  
by using bottle. ( $\frac{1}{2}$  litre, 1 litre)

1. 1 litre \_\_\_\_\_ times
2.  $\frac{1}{2} l$  \_\_\_\_\_ times



## Exercise 3.1

1. Rani had 1 litre coconut oil. She shared it equally among her 5 friends. How much does each person have ?
2. A teapot contains 2 litres, it is poured in cups with a capacity of 500 ml. How many cups can be filled ?
3. Ram has 1 litre of juice bottle if he gives his friend 100 ml of juice. How much is left with him?



#### 4. Change litre into millilitre.

1.  $1\ l$  = 1000 ml
2.  $7\ l$  =                  ml
3.  $5\ l$  =                  ml
4.  $9\ l$  =                  ml
5.  $4\ l$  =                  ml

#### 5. Change millilitre into litre

1.  $6000\ ml$  = 6 l
2.  $2000\ ml$  =        l
3.  $8000\ ml$  =        l
4.  $9000\ ml$  =        l

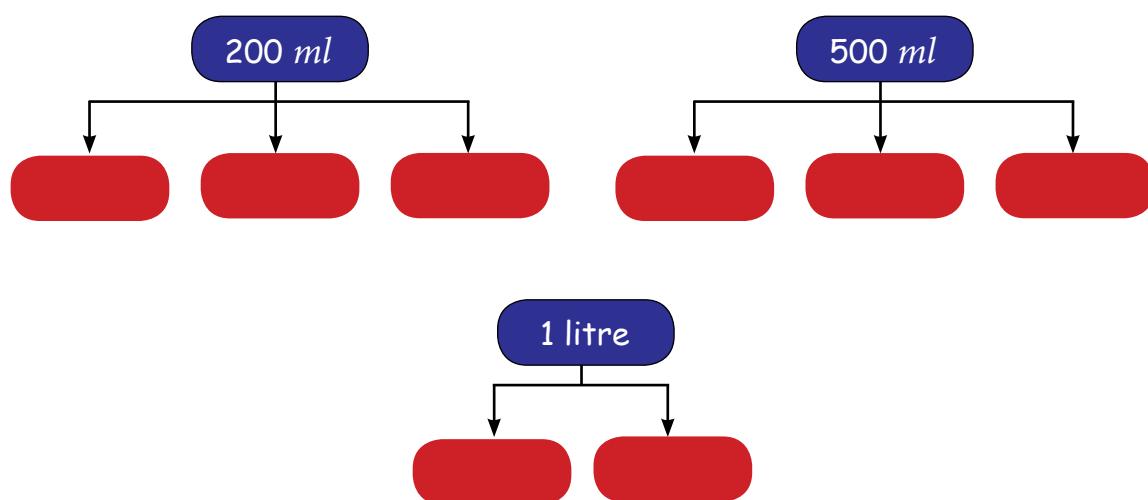
Note:

$1000\ ml = 1\ litre$



#### Activity

Fill in the red boxes below using  $500\ ml$ ,  $200\ ml$ ,  $100\ ml$  and  $50\ ml$ , to get the total in the blue boxes given above the red boxes.





## Addition using standard units (litre and ml)

To add litre and ml, first convert the litre into ml.

### EXAMPLE 1

Add:  $1l + 345ml$

$$\begin{aligned}1l + 345ml &= (1 \times 1000ml) + 345ml \\&= 1000ml + 345ml \\&= 1345ml\end{aligned}$$

Note:

$$1000ml = 1 \text{ litre}$$

### EXAMPLE 2

Add:  $7l + 9ml$

$$\begin{aligned}7l + 9ml &= (7 \times 1000ml) + 9ml \\&= 7000ml + 9ml \\&= 7009ml.\end{aligned}$$

### EXAMPLE 3

Add:  $63l 380ml$  and  $14l 175ml$

l	ml
63	380
(+)	14
77	555

#### Step 1:

Start from millilitres.  
 $380ml + 175ml = 555ml$

#### Step 2:

Then add litres.  $63l + 14l = 77l$

## Exercise 3.2

1. Complete the following. First one is done for you.

i)  $5l + 376ml = 5000ml + 376ml = 5376ml$

ii)  $3l + 735ml = \underline{\hspace{2cm}}ml + \underline{\hspace{2cm}}ml = \underline{\hspace{2cm}}ml$

iii)  $4l + 43ml = \underline{\hspace{2cm}}ml + \underline{\hspace{2cm}}ml = \underline{\hspace{2cm}}ml$

iv)  $8l + 6ml = \underline{\hspace{2cm}}ml + \underline{\hspace{2cm}}ml = \underline{\hspace{2cm}}ml$

v)  $6l + 800ml = \underline{\hspace{2cm}}ml + \underline{\hspace{2cm}}ml = \underline{\hspace{2cm}}ml$



2. Match the following measurements given in the bottles with the measurements in the boxes given below the bottles



3609 ml

3400 ml

1010 ml

2573 ml

### Subtraction using standard units (litre and ml)

#### EXAMPLE 1

Subtract 8 l 450 ml from 28 l 750 ml.

<i>l</i>	<i>ml</i>
28	750
(-) 8	450
<b>20</b>	<b>300</b>

Step 1: Subtract 450 ml from 750 ml

Step 2: Subtract 8 l from 28 l

Therefore  $28 \text{ l } 750 \text{ ml} - 8 \text{ l } 450 \text{ ml} = 20 \text{ l } 300 \text{ ml}$

### Life related problems

#### EXAMPLE 2

Sharma family have 2 buckets in their house.

The capacity of one bucket is 4 l 450 ml and the other one is 5 l 180 ml. What is the total capacity of two buckets?



Answer:

Capacity of first bucket = 4 450

Capacity of second bucket = (+) 5 180

Total capacity of two buckets = **9 630**

Total capacity is 9 l 630 ml.



### EXAMPLE 3

A motor car consumed 188 l of petrol and 145 l 375 ml in the Month of January and February. What is the difference in the petrol consumption?



**Answer:**

$$\begin{array}{rcl} \text{Petrol consumed in the month of January} & = & 188 \quad 000 \\ \text{Petrol consumed in the month of February} & = & (-) \quad 145 \quad 375 \\ \text{Difference} & = & \boxed{42 \quad 625} \end{array}$$

*l      ml*

7 9 9 10

Petrol consumed more in the month of January is 42 l 625 ml.

### Exercise 3.3

#### I Add the following:

$$\begin{array}{rcl} 1. & \boxed{l \quad ml} & \\ & 25 \quad 830 & \\ & (+) \quad 42 \quad 126 & \\ & \hline & \end{array}$$

$$\begin{array}{rcl} 2. & \boxed{l \quad ml} & \\ & 13 \quad 645 & \\ & (+) \quad 54 \quad 143 & \\ & \hline & \end{array}$$

$$\begin{array}{rcl} 3. & \boxed{l \quad ml} & \\ & 13 \quad 250 & \\ & (+) \quad 32 \quad 140 & \\ & \hline & \end{array}$$

#### II Subtract the following:

$$\begin{array}{rcl} 1. & \boxed{l \quad ml} & \\ & 15 \quad 400 & \\ & (-) \quad 7 \quad 300 & \\ & \hline & \end{array}$$

$$\begin{array}{rcl} 2. & \boxed{l \quad ml} & \\ & 29 \quad 910 & \\ & (-) \quad 21 \quad 500 & \\ & \hline & \end{array}$$

$$\begin{array}{rcl} 3. & \boxed{l \quad ml} & \\ & 63 \quad 560 & \\ & (-) \quad 34 \quad 230 & \\ & \hline & \end{array}$$



### III Solve the following.

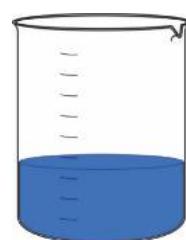
1. Ramu filled the petrol in his two cars. The first one hold the capacity of  $23 l 500 ml$  and the second one hold the capacity  $15 l 750 ml$ . Find the total quantity of petrol .
2. Kannan has some cows. They give milk in the first week  $48 l 480 ml$  and in the second week  $57 l 530 ml$ . Find the total capacity of milk.
3. The fruit juice used in a function are given below.

S. No	Cool drinks	capacity
1.	Apple juice	$16 l 500 ml$
2.	Mango juice	$23 l 160 ml$
3.	Grapes juice	$19 l 650 ml$
4.	Lemon juice	$20 l 350 ml$

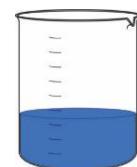
Find the total quantity of juice used in the above table.

1. Apple juice + Lemon juice = -----  $l$  -----  $ml$
2. Mango juice + Grapes juice = -----  $l$  -----  $ml$
3. Lemon juice + Mango juice = -----  $l$  -----  $ml$
4. The shop keeper had  $43 l 750 ml$  of groundnut oil. He sold  $24 l 350 ml$ . How much oil was left with him?
5. A bucket contains  $15 l 500 ml$  of water. Gopi poured out  $5 l 200 ml$  to water the plants. How much water is left in the bucket?
6. I purchased  $73 l$  of milk. My sister has taken  $34 l 500 ml$  of milk. So how much milk is left for me?

7.



$30 l 500 ml$



$22 l 300 ml$

Find the difference between these two cans.



### 3.2 Estimation of the volume of a liquid contained in a vessel and verification by measuring.

#### Situation

Sheela's mother prepared an orange juice for her daughter's friends. Sheela wants to share the juice with her four friends equally. But before that they want to know how much juice does the bottle contain. They have given an estimated measurement of 950 ml. They want to measure the juice in a 200 ml glass through that they want to verify. They found that the bottle juice fills the five 200 ml glasses completely. From this they have come to know that the bottle 1000 ml of juice.



#### Activity

Measure your daily consumption of water for drinking, washing and bathing. If you don't have marker, you can use bottles to do rough calculation. For which you are using more water and give reason to reduce water.



## Exercise 3.4

- 1) Estimate how much liquid each object can hold.  
(Hint: 500 ml, 100 ml, 50 ml, 25 ml, 20l)



i)  Can hold (l/ml) \_\_\_\_\_ of Milk.

ii)  Can hold (l/ml) \_\_\_\_\_ of Water.

iii)  Can hold (l/ml) \_\_\_\_\_ of Syrup.

iv)  Can hold (l/ml) \_\_\_\_\_ of Ink.

v)  Can hold (l/ml) \_\_\_\_\_ of Water.



#### 4.1 Estimate the duration of Familiar Events

Observe the table below which shows the time duration of the following activities at your home.

S.No.	Work	Starting Time	Finishing Time	Duration
1	Brushing teeth	6.30 am	6.35 am	5 Minutes
2	Bathing	6.35 am	6.45 am	10 Minutes
3	Cooking	6.45 am	7.30 am	45 Minutes
4	Washing Clothes	7.30 am	7.50 am	20 Minutes
5	Cleaning Vessels	7.50 am	8.20 am	30 Minutes

From the above table duration of the time intervals are seen.



## Activity

Prepare a table for time duration to chop vegetables, Cleaning the room at your home.

### 4.2 Can you Compute the number of days between two given dates.

In one week there are 7days.

If one week over another one week begins.

If Sunday = 1, Monday = 2, Tuesday = 3, Wednesday = 4, Thursday = 5, Friday = 6, and Saturday = 7.

If today is 6, What day was Yesterday, day before yesterday? and what will be tomorrow and day after tomorrow?

**Finding the day in previous or upcoming week.**

E.g. Day 14 denotes Saturday. Can you guess what is 21st day?

You have already learnt in the previous class, that how many weeks are there in a month and year.

#### Note:

Two weeks make a fortnight, that is, 14 days make a fortnight.



## Computing the number of days between two given dates:

To compute days between two given dates, count the number of days in between the given dates. If month falls in between two dates, calculate the number of days in month.

### Note:

Note: Generally,  
1 month = 4 weeks.

### EXAMPLE

Calculate the number of days between Independence day and Gandhi Jayanthi day?

Solution:

Independence day= 15<sup>th</sup> August

Gandhi Jeyanthi = 2<sup>nd</sup> October

### Note:

In the August month we have 31 days, Independence day falls on 15th August, so, we have to subtract 15 from 31.

S. No	Name of familiar events	Month	Days
1	Independence Day	August	16 (31 - 16 = 16)
		September	30
2	Gandhi Jayanthi	October	1
		Total	47



## Try These

- 1 Calculate the number of days between Christmas and Republic day?
- 2 Calculate the number of days between Pongal and May day?
- 3 Calculate the number of days between Teacher's day and Children's day?

### 4.3 Use calendar (interlinking with patterns)

Now we will learn how 60 is used in time

60 seconds = 1 minute

60 minutes = 1 hour

1 hour =  $60 \times 60 = 3600$  Seconds

24 hours = 1 day

Normally 12 hours is used . But in Railways, airlines, armed forces and TV channels 24 hours are used.

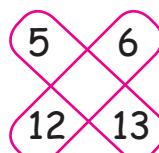
Now, learn the patterns in the Calendar.

JANUARY 2020						
SUN	MON	TUE	WED	THU	FRI	SAT
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	



Consider 2 X 2 square in the nearby month

Add the numbers in the following way so that you will get the same total as 18



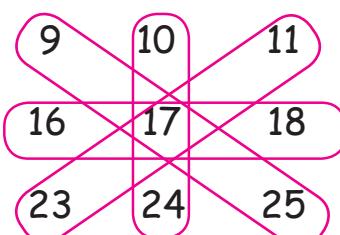
$$5 + 13 = 18$$

$$12 + 6 = 18$$



See the patterns in 3 X 3 square in the nearby month

Add the numbers in the following way so that you will get the same total as 51



$$9 + 17 + 25 = 51$$

$$23 + 17 + 11 = 51, \quad 16 + 17 + 18 = 51, \quad 10 + 17 + 24 = 51$$

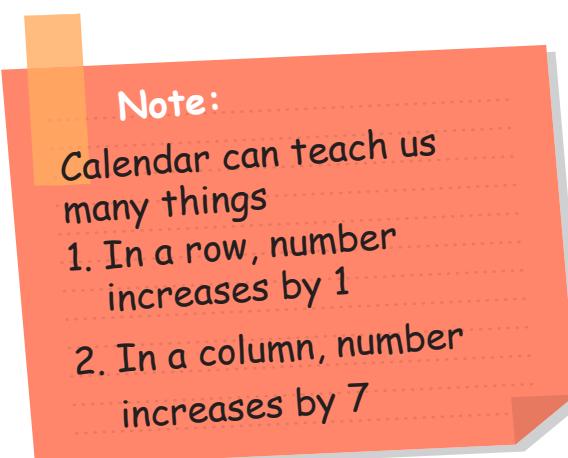


### Activity

Select any month and try to find 3 X 3 square and 2 X 2 square.

Let us see some more patterns in the following month.

Consider the line: 5 6 7 8 9 10 11



JANUARY 2020						
SUN	MON	TUE	WED	THU	FRI	SAT
				1	2	3
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	



Middle number is 8

JANUARY 2020						
SUN	MON	TUE	WED	THU	FRI	SAT
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

Sum of 5 and 11 is double the middle number ( $2 \times 8 = 16$ )

Sum of 6 and 10 is double the middle number ( $2 \times 8 = 16$ )

Sum of 7 and 9 is double the middle number ( $2 \times 8 = 16$ )



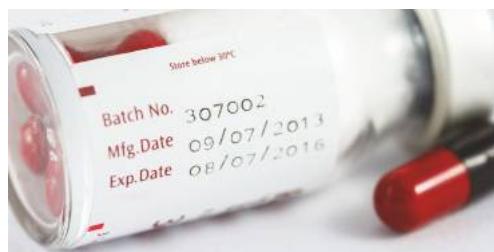
### Try This



1 Select any month in a year. Find out the sum of any row and column. You wonder that the sum doubles the middle number.

### Exercise 4.1

- Find out the days between manufacturing and expiry date of a medicine given below.



- Select a month in the calendar and find out any creative pattern of your own in the numbers.



## UNIT - 5

# 312

# MONEY



### 5.1 Convert rupees to paise:

Our government of India indicates money as the symbol of ₹.

Sankar is preparing to go for an Excursion. He asks his father ₹ 400 as his pocket money. Father sees that ₹ 2000 notes only in the purse. Soon father goes to shop to get change for ₹ 2000.

**Father** : Sir, (I need change for ₹ 2000) give me change for ₹ 2000.

**Merchant** : I have following varieties of combination which are as follows:

$$\text{₹} 2000 = \text{₹} 100 + \text{₹} 100 + \text{₹} 100 + \text{₹} 100$$

$$\text{₹} 2000 = \text{₹} 250 + \text{₹} 250 + \text{₹} 250 + \text{₹} 250 + \text{₹} 250 \\ + \text{₹} 200 + \text{₹} 200$$

$$\text{₹} 2000 = \text{₹} 500 + \text{₹} 500 + \text{₹} 500 + \text{₹} 500 + \text{₹} 500 \\ + \text{₹} 200 + \text{₹} 200 + \text{₹} 200$$

Which one do you prefer?

**Father** : Ok sir. I select the third variety of combination. That is

$$\text{₹} 2000 = \text{₹} 500 + \text{₹} 500 + \text{₹} 500 + \text{₹} 500 + \text{₹} 500 \\ + \text{₹} 200 + \text{₹} 200 + \text{₹} 200$$



**Merchant** : Ok sir. I will give you the same.

**Father** : Thank you sir.

**Father** : Sankar, here is your ₹ 400, get it.

**Sankar** : Father, shall I get the change as one ₹ 50 note, one ₹ 20 note, two ₹ 10 notes, one ₹ 5 note and 5, ₹ 1 coins.

**Father** : Ok.

### Do you know?

Our fore father had used various kinds of coins. Among them 1 paise, 2 paise, 5 paise, 10 paise, 20 paise, 25 paise, 50 paise. But they are not in use now.

### Denomination

₹ 2865 =  ₹ 2000  ₹ 500  ₹ 200  ₹ 100  ₹ 50  ₹ 10  ₹ 5

₹ 2865  
₹ 2000 × 1 = 2000

₹ 500 × 1 = 500

₹ 200 × 1 = 200

₹ 100 × 1 = 100

₹ 50 × 1 = 50

₹ 10 × 1 = 10

₹ 5 × 1 = 5

Total ₹ 2865

₹ 565 =

₹ 200 × \_\_\_\_ =

₹ 100 × \_\_\_\_ =

₹ 50 × \_\_\_\_ =

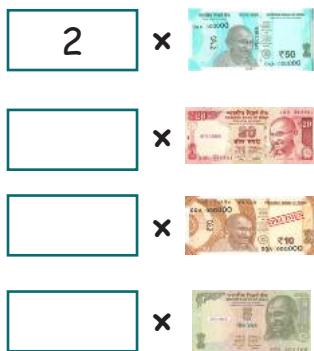
₹ 10 × \_\_\_\_ =

₹ 5 × \_\_\_\_ =

Total \_\_\_\_\_

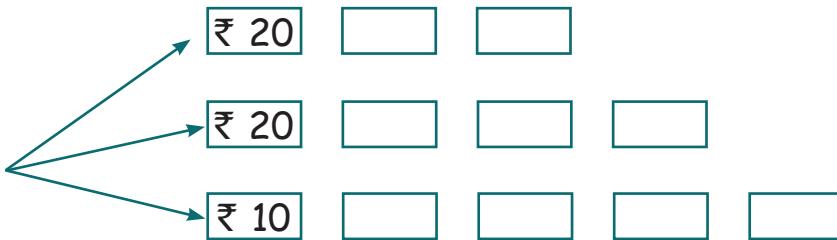


### Try This



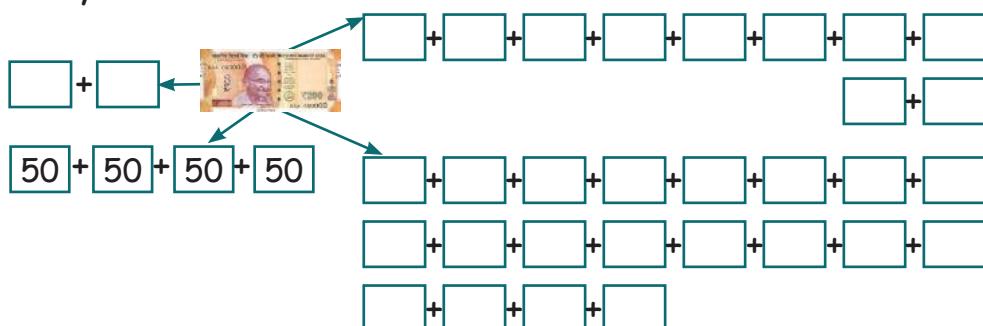
### Activity

Fill in the box with model notes.



### Activity

Take a sheet of paper and cut out the model notes (₹ 10, ₹ 20, and ₹ 100). Affix it below the boxes provided to get the total of ₹ 200. One is done for you.



Have you ever gone to petrol bunk?

The price of 1 litre petrol is ₹78.12. Have you ever notice?

Although paise is not in circulation in the form of currency, but the cost of goods in paise are in use.

₹1 = 100 paise



## Conversion of rupees into paise.

This conversion is useful while you are bargaining in the vegetable shop and so on.

To convert rupees into paise, multiply the rupees by 100.

### EXAMPLE 1

Convert ₹ 2 into paise

$$₹ 1 = 100 \text{ paise}$$

$$\text{So } ₹ 2 = 2 \times 100 = 200 \text{ paise}$$

### EXAMPLE 2

Convert ₹ 8.50 into paise

$$₹ 1 = 100 \text{ paise}$$

8 is in rupees and 50 is in paise.

So we multiply by ₹ 8 with 100 and add 50 paise.

$$\therefore ₹ 8.50 = 8 \times 100 + 50$$

$$= 800 \text{ paise} + 50 \text{ paise}$$

$$= 850 \text{ paise}$$

### EXAMPLE 3

Ravi's father went to the shop and bought 1 kg of dhal for ₹ 38.70.  
Convert the cost of dhal into paise.

Cost of 1 kg dhal = ₹ 38.70

$$₹ 38.70 = 38 \times 100 \text{ paise} + 70 \text{ paise}$$

$$= 3800 \text{ paise} + 70 \text{ paise}$$

Cost of dhal = 3870 paise.



## Conversion of paise into rupees,

To convert paise into rupees, divide the paise by 100.

### EXAMPLE 1

Convert 900 paise into rupees

To change the paise into rupees, divide the paise by 100.

$$900 \text{ paise} = 900 \div 100$$

$$900 \text{ paise} = ₹ 9$$



### EXAMPLE 2

Convert 1950 paise into rupees

To change the paise into rupee, divide the paise by 100.

$$1950 \text{ paise} = 1950 \div 100$$

$$= 19.50$$

$$= ₹ 19.50$$

## Exercise 5.1

1. In ₹ 1000 How many ₹ 500 notes are there?
- How many ₹ 200 notes are there?
- How many ₹ 100 notes are there?
- How many ₹ 50 notes are there?
- Kamala had a change of ₹ 100, ₹ 50, ₹ 20 and ₹ 10 notes. How many rupees did she have in each to get the total of rupees 500?
- Convert the following rupees into paise
  - i. ₹ 7.50      ii. ₹ 18.75      iii. ₹ 54.68      iv. ₹ 102.50
  - v. ₹ 129.45      vi. ₹ 308.61



4. (i) Write the denomination for the following amount.

₹ 466 = ₹ 200 ₹ 100 ₹ 100 ₹ 50 ₹ 10 ₹ 5 ₹ 1

₹ 200 × \_\_\_\_\_ =

₹ 100 × \_\_\_\_\_ =

₹ 50 × \_\_\_\_\_ =

₹ 10 × \_\_\_\_\_ =

₹ 5 × \_\_\_\_\_ =

₹ 1 × \_\_\_\_\_ =

Total = ₹ \_\_\_\_\_

(ii) Use and fill in the boxes with the amounts given below, to get the given amount (₹ 845)

₹ 845 = [ ] [ ] [ ] [ ] [ ]



5. + = ₹100

+ = ₹50

= ?

6. + + = ₹75

+ = ₹45

+ = ?

5. Convert the following paise into rupees.

- i. 800 paise      ii. 500 paise      iii. 2075 paise      iv. 6860 paise  
v. 200 paise      vi. 150 paise      vii. 1000 paise      viii. 2000 paise



## 5.2 Addition and Subtraction on Money

To add and subtract simple amounts of money in denominations of rupees and paise which are multiples of ten using column addition and subtraction with regrouping

### Addition without conversion

Sankar purchased 1kg rice for ₹ 45.50 and 1kg of dhal for ₹ 78.60

#### Correct method

Cost of 1 kg of rice = ₹ 45.50

Cost of 1 kg of dhal = ₹ 78.60

Total cost                      ₹ 124.10

### Addition with conversion

A groundnut burfi seller uses many ingredients to prepare it. So, he sells the burfi along with the ingredients. Original price of burfi is Rs.20 and he includes ingredients cost as 0.75 paise. Find the cost of burfi.

#### Correct method

Original cost of burfi = ₹ 20.00

Cost of ingredients = ₹ 0.75

Cost of burfi = ₹ 20.75

### EXAMPLE

Irusan went to electronic shop and bought 100 watts, 120 watts, 150 watts bulbs for amount ₹12.50, ₹14.70 and ₹18.50. What is the total amount he spent in all?

Cost of 100 watts bulb = ₹12.50

Cost of 120 watts bulb = ₹14.70

Cost of 150 watts bulb = ₹18.50

The total amount he spent in all = ₹45.70



### Let us try

₹ 24.60

₹ 23.30

\_\_\_\_\_

₹ 39.80

₹ 64.70

\_\_\_\_\_

₹ 44.50

₹ 22.20

\_\_\_\_\_

₹ 48.35

₹ 54.67

\_\_\_\_\_

### Exercise 5.2

#### I. Add the following Rupees (without conversion)

1. ₹38.40

+ ₹41.25

\_\_\_\_\_

2. ₹19.27

+ ₹10.31

\_\_\_\_\_

3. ₹28.50

+ ₹41.32

\_\_\_\_\_

4. ₹34.20

+ ₹12.11

\_\_\_\_\_

#### II. Add the following rupees (with conversion)

1. ₹19.56

+ ₹23.64

\_\_\_\_\_

2. ₹64.75

+ ₹36.25

\_\_\_\_\_

3. ₹28.37

+ ₹17.65

\_\_\_\_\_

4. ₹64.15

+ ₹41.18

\_\_\_\_\_

- III.
1. Elangovan bought a bat for ₹105.15 and a ball for ₹24. How much money did he spend in all?
  2. Sadham went to vegetable shop and bought 1 kg of brinjal for ₹28.50, 1 kg of ladies finger for ₹10.50, 1 kg of pumpkin for ₹11.50. Find the total amount he spent in all.
  3. Kanmani bought pad and pen for her daughter at the cost of ₹65.50 and ₹48.75. How much money did she pay for the things?
  4. Ramya bought Vegetable rice, Idly and Dosai for ₹74.50, ₹28.50 and ₹60.50. Find the total amount he spent in all.



## Subtraction

### EXAMPLE

Ramu bought chocolate in his trip at the cost of ₹60.75 and has given ₹70 to the shopkeeper. How much money did he get back?

$$\text{Amount given to the shopkeeper} = \text{₹70.00} -$$

$$\text{Cost of chocolate} = \text{₹60.75}$$

$$\text{Balance amount he got back} = \text{₹9.25}$$

∴ The balance amount get by Mr. Ramu in ₹ 9.25 subtract the following:



### Let us try

Subtract the following

$$\text{₹ } 85.45$$

$$- \text{₹ } 65.75$$

---

---

$$\text{₹ } 94.27$$

$$- \text{₹ } 36.18$$

---

---

$$\text{₹ } 58.45$$

$$- \text{₹ } 49.15$$

---

---

$$\text{₹ } 74.50$$

$$- \text{₹ } 55.50$$

---

---

## Exercise 5.3

1. Subtract the following:

i. ₹83.50

- ₹24.00

---

---

ii. ₹63.50

- ₹27.50

---

---

iii. ₹74.00

- ₹43.50

---

---

iv. ₹98.67

- ₹58.49

---

---

v. ₹78.50

- ₹69.50

---

---

2. Cost of a pen from shop A is ₹7.50 and from shop B is ₹5.50. What is the difference between the cost from two shops.

3. Mala went to textile shop and had bought chudithar for ₹58.70 and gave ₹100 to the shopkeeper. How much money did the shopkeeper return to Mala.



## Introduction

To learn to use Operations to find totals, change, multiple costs and unit cost.

Panneerselvam and his three friends went to seashore. They played and took rest. By that time they bought 4 packets of cereals from the seller for ₹20. Panneer does not know the cost of one packet then he asked his friend.

His friend explained him to find out the cost.

$$4 \text{ packets of cereals} = ₹20$$

$$\therefore 1 \text{ packet of cereals} = ₹20 \div 4$$

$$\text{So, } 1 \text{ packet of cereals} = ₹5.$$

Panneer and his friends have eaten cereals and went to a tea shop. The price of tea was 5 rupees. Panneer and his friends drunk tea and gave ₹20 to the seller.

Panneer does not know the total cost of tea. He asked his friend to explain him,

$$\text{Cost of one tea} = ₹5$$

$$\text{Cost of four tea} = ₹5 \times 4$$

$$\text{Cost of four tea} = ₹20$$



### Let us try

Find the cost per item, if the total cost is given. One is done for you.

Items	Number of Items	Total cost of the item	Cost per item
Book	5	₹250	$\text{₹}250 \div 5 = \text{₹}50$
Bulb	9	₹1350	
Clock	6	₹1500	

Fill in the following:

S.No.	Items	Cost per item	Number of items	Total cost of the item
1.	Top	₹8	25	$\text{₹}8 \times 25 = \text{₹}200$
2.	Marble	—	30	$— \times 30 = \text{₹}210$
3.	Ball	₹9	23	—
4.	Ring Ball	₹11	—	$\text{₹}11 \times — = \text{₹}200$
5.	Doll	₹6	18	—

Panneer and his friends spent the amount for cereals ₹20 and another for tea ₹20. Also they spent ₹40 for horse - riding. They went home happily. After he went home he calculated the amount left in ₹100.

Let us help Panneer,

Cost of cereals = ₹20 +

Cost of tea = ₹20

The amount spent for horse - riding = ₹40

Total expenditure = ₹80

Total amount with Panneer = ₹100

Amount Spent by Panneer and his friends = - ₹80

Balance amount = ₹20



## Activity

1. Make the students to form a model market to display the price list of the things to learn addition and subtraction.
2. Write the value of currency in the paper, make a student to act like a shopkeeper and the other students are like customer, calculate the cost of things to learn addition and subtraction.

### EXAMPLE 1

Nandakumar spent the amount of ₹750 for 10 l petrol. What is the cost of 1 l petrol.

$$\begin{aligned}\text{Nandakumar spent the amount for petrol} &= ₹750 \\ \therefore \text{Cost for } 1 \text{ l petrol} &= ₹750 \div 10 \\ &= ₹75\end{aligned}$$

### EXAMPLE 2

Madhumitha bought 8 sweet packets. If one packet costs ₹65, find the cost of 8 packets.

$$\begin{aligned}\text{Cost of one packet} &= ₹65 \\ \therefore \text{Cost of eight packets} &= ₹65 \times 8 \\ \therefore \text{Cost of eight packets} &= ₹520\end{aligned}$$



### EXAMPLE 3

Selvam went to vegetable market and bought onion for ₹10.50 and cucumber for ₹8.75. If he has given ₹20 to the shopkeeper then find the balance amount received by selvam.

$$\text{Cost of onion} = ₹ 10.50$$

$$\therefore \text{Cost of cucumber} = ₹ 8.75$$

$$\text{The amount spent for vegetables} = ₹ 19.25$$

$$\text{The amount given to the shopkeeper} = ₹ 20.00$$

$$\text{The amount spent for vegetables} = ₹ 19.25$$

$$\text{Balance amount} = ₹ 0.75$$

### Exercise 5.4

- Priya bought 20 balloons. If the cost of one balloon is ₹6, then find the cost of 20 balloons.
- Chinthamani bought 28 chocolate for her birthday. If the cost of a chocolate is ₹7 then find the total cost of 28 chocolates?
- Ashok purchased 9 decorative papers at the cost of ₹450 for his town festival. Find the cost of a decorative paper?
- Geethanjali bought 10 pencils at the cost of ₹70 from the supermarket. Find the cost of a pencil?
- Kuppan bought pencil and pen for ₹24.50 and ₹6.50 from his total amount ₹50. Find the total cost of things that he bought. Also find the balance amount?
- A teacher went to the science exhibition with their student. The entry fee is ₹250 and the teacher bought some materials for the school for ₹320, she had the balance amount of ₹330, find the amount that she had?



## Finding the estimation of the total cost

Tharun went to footwear shop with his father. A pair of footwear cost ₹99.50 in the price tag.

**Tharun** : Appa, what is the cost of the footwear?

**Appa** : ₹100

**Tharun** : Appa, the price tag shows ₹99.50 but you said ₹100.

**Appa** : Yes tharun. The amount ₹99.50 is difficult to tell. So I rounded off to ₹100.

**Tharun** : Appa, why don't you say ₹99 instead of ₹100?

**Appa** : Yes, here the amount is ₹99.50. If the amount is more than or equal to 50 paise, round to the nearest value.

**Tharun** : Appa, Suppose if the amount is less than 50 paise, then keep the value as it is leaving the 50 paise?

**Appa** : Yes Tharun, you are correct. (They bought, footwear and went happily)

To measure the money accurately, we can use the approximation

Rate	Estimated value	Reason
₹27.60	₹28	60 paise is greater than 50 paise.
₹12.30	₹12	30 paise is smaller than 50 paise.

The approximate value of ₹1 is the whole number of before or after.



Let us try

Rate	Estimated value	Reason
₹ 8.50	₹9	The estimated value of 50 paise or above 50 paise rounded off to the next nearest rupees.
₹ 7.30		
₹ 4.60		
₹45.70		
₹34.50		

### Note:

If the paise is more than 50 or equal to 50 add 1 to the previous digit, if it is less than 50 keep the previous digit as it is.





Estimate the following rupees (before or after) using the multiples of ₹10.

Actual Price	Estimated Price
₹53	₹50
₹67	
₹48	
₹24	
₹97	

Deepak bought groundnut cookies for ₹24.40, Dhal mixture for ₹34.60 and murukku for ₹28.75. He prepared to estimate the value to the nearest rupees.

Things	Actual price	Estimated price	Difference in paise
Groundnut	₹24.40	₹24	40 paise
Dhal mixture	—	₹35	40 paise
murukku	₹28.75	₹29	—
Total	₹87.75	₹88	25 paise

### Exercise 5.5

- Meera went to vegetable shop. He bought brinjal for ₹29.75, drumstick for ₹14.60, radish for ₹34.50 and carrot for ₹42.80. Find the total amount and estimate to the nearest one rupee?
- Vasu bought car toy for ₹37, Bear toy for ₹24, monkey toy for ₹86. Find the estimated cost and find the difference in estimation close to nearest 10 rupees.
- In the book fair Manibalan bought Bharathiyar book for ₹26.40, Gandhi book for ₹18.60, Abdul kalam book for ₹43.70 and Kumaran book for ₹51.90. Find the estimated cost and difference in estimation closes to nearest one rupee.
- Geetha bought Jasmine for ₹37, Rose for ₹58, Mullai for ₹26 and Marigold for ₹82. Find the estimated cost and difference in estimation, close to the nearest ten rupees.





UNIT-6



# 3 1 FRACTION



Z9L2F2



## 6.1 Symbolic Representation of Simple Fraction:

- Relating parts to whole eg: filling up water in a measured bottle partially, fixing up puzzles circularly, vertically, horizontally in places and completes the whole.

### Introduction

Part and parts:



Rani and Gowri wants equal share from 4 dosas. Could you please suggest an idea?  
How many dosas are there?



How many people are there?

Two

So, how many shares have to be done for each?



So, Rani will get 2 out of 4 dosas and Gowri will get 2 out of 4 dosas.



### Activity 1

Divide the following figure into different segments. (either vertically or horizontally)

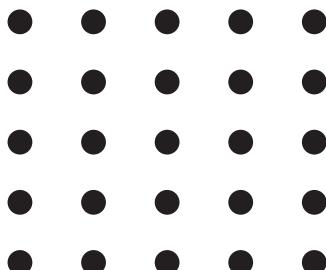


There are \_\_\_\_\_ equal parts.

Shade as many parts as you wish. It can be written as \_\_\_\_\_ out of \_\_\_\_\_ parts are shaded.



### Activity 2



Draw lines using the dots above. It could be vertically/horizontally/diagonally.

There are equal parts. Shade as many parts as you wish. It can be written as \_\_\_\_\_ out of \_\_\_\_\_ parts are shaded.

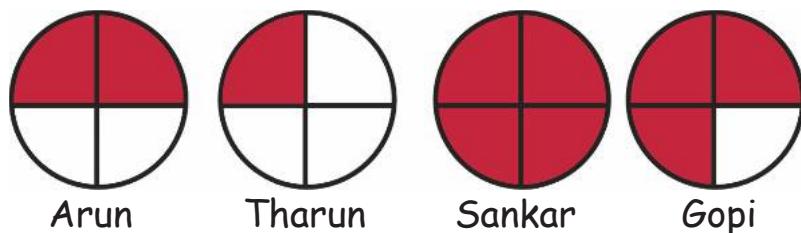


### Activity 3

(The four equal parts of a circle)

A Circle which is divided into four equal parts are given to Arun, Tharun, Sankar and Gopi, to colour it.

They could complete the task of colouring in two minutes, which is given below.



In the above pictures one fourth (quarter) portion was coloured by Tharun.

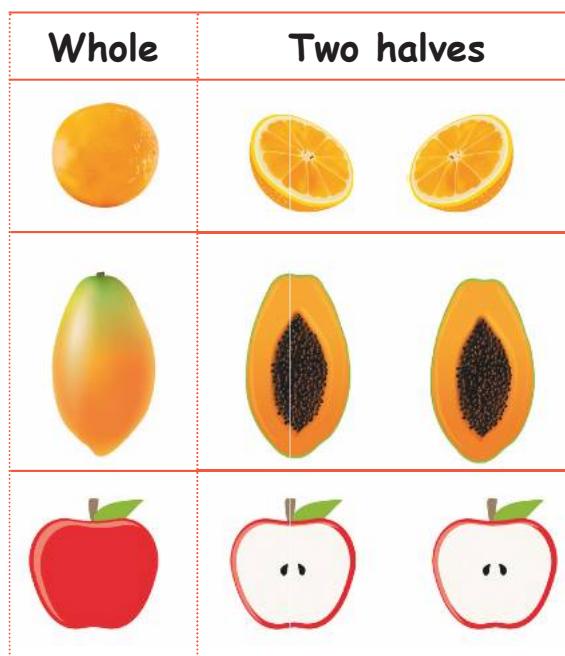
1/2 portion was coloured by \_\_\_\_\_

Whole portion was coloured by \_\_\_\_\_

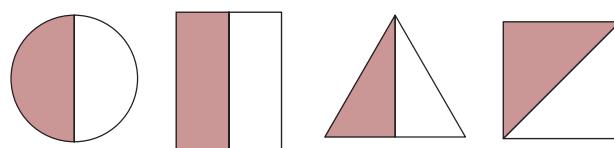
Three fourth of the portion was coloured by \_\_\_\_\_

Identify half, one fourth, and three fourths of a whole.

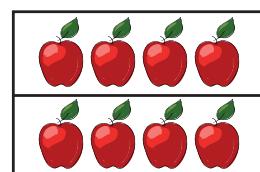
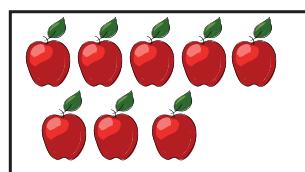
Half



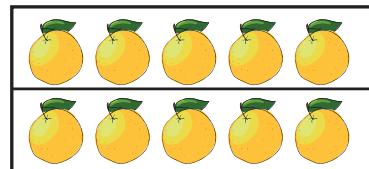
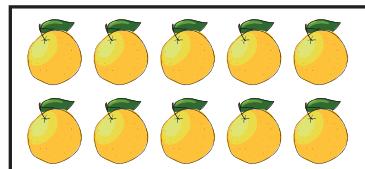
The above pictures were divided into two equal halves.



The above shapes are divided into two equal parts. In the two equal parts, one part was shaded. The shaded portion was one half and the unshaded part was another half.



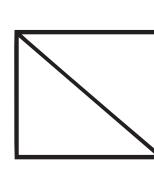
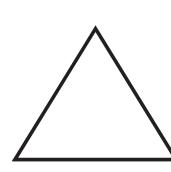
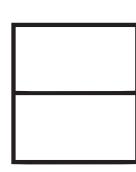
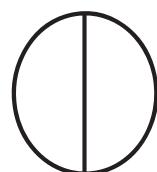
Half of  
8 is 4.



The above collection of whole was divided into two equal parts.

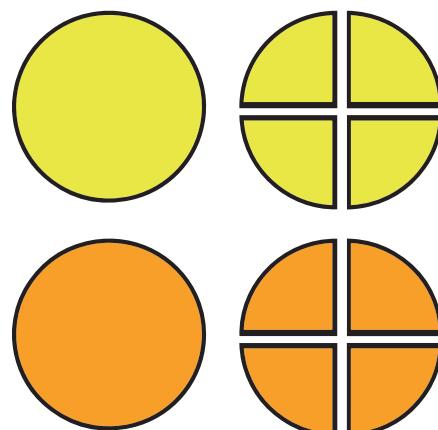
### Exercise 6.1

I. Shade the half portion of the given pictures

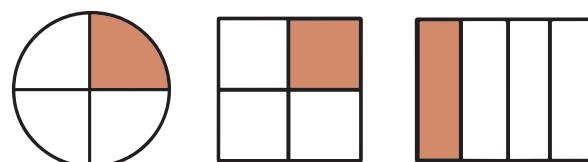




## One fourth (quarter)



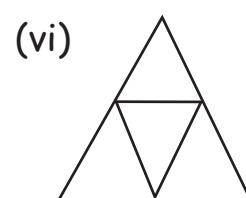
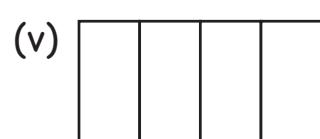
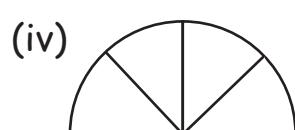
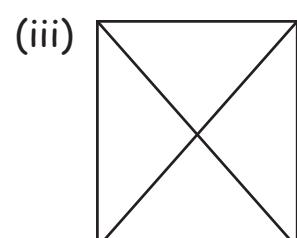
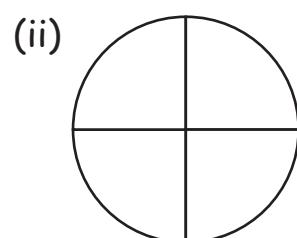
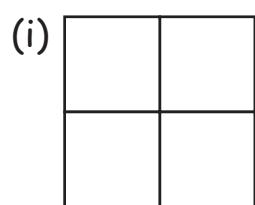
Each fruit was divided into four equal quarters.



Every picture was divided into four equal parts. And shaded portion represent quarter or one fourth.

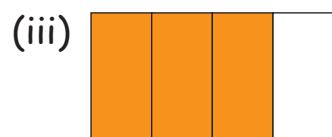
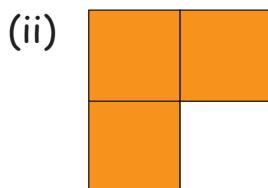
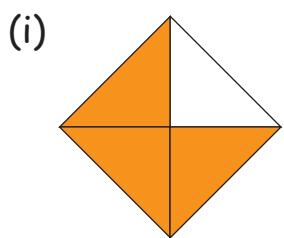
## Exercise 6.2

Shade the quarter portion in the following figures.





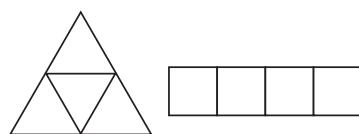
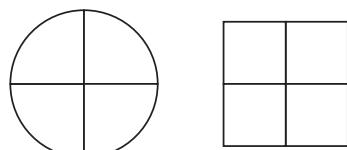
## Three Fourth



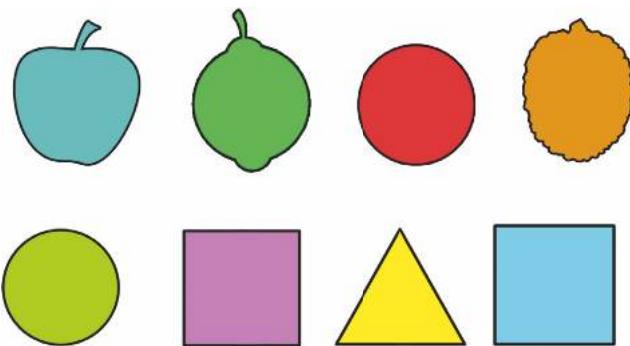
Each picture is divided into 4 parts. In this 3 parts are shaded. Shaded portion is called as 'three fourth'.

### Exercise 6.3

#### I. Colour three fourth of the following pictures



#### Whole



The shaded portion of the above pictures or things represents (1) whole, whole means complete portion of a thing or collection of similar things.



Identifies the symbols  $\frac{1}{4}$ ,  $\frac{1}{2}$ ,  $\frac{3}{4}$

### Agriculture

Anitha had a vegetable garden which was rectangular shape. It was divided into four equal parts. In one part she planted brinjal, another part she planted pumpkin and in the remaining two parts she planted ladies finger.

She used all the 4 equal parts. Which means 1 whole.

The portion of brinjal planted out of the whole =  $1/4$ , we call this as 'quarter' or 'one-fourth'.

The portion of Pumpkin planted out of the whole =  $1/4$ , we call this as 'quarter' or 'one-fourth'.

The portion of Pumpkin and brinjal planted out of the whole =  $1/2$ , we call this as 'half'.

The portion of Ladies finger and Pumbkin planted out of the whole =  $3/4$ , this is called as **three fourth**

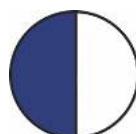
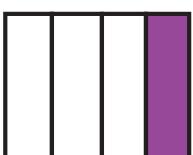
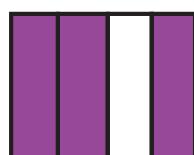
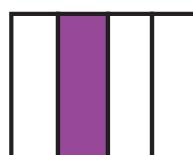
Can we try this:

1. Anitha's rectangular garden was divided into \_\_\_\_\_ parts.
2. Portion of brinjal planted part = \_\_\_\_\_
3. Portion of Ladies finger planted part = \_\_\_\_\_
4. Portion of pumpkin planted part = \_\_\_\_\_



## Exercise 6.4

- I. Write suitable fractions as  $\frac{1}{4}$ ,  $\frac{1}{2}$ ,  $\frac{3}{4}$  in the circle given below against the pictures.



Explains the meaning of  $\frac{1}{4}$ ,  $\frac{1}{2}$ ,  $\frac{3}{4}$



### Activity

Take an old newspaper.

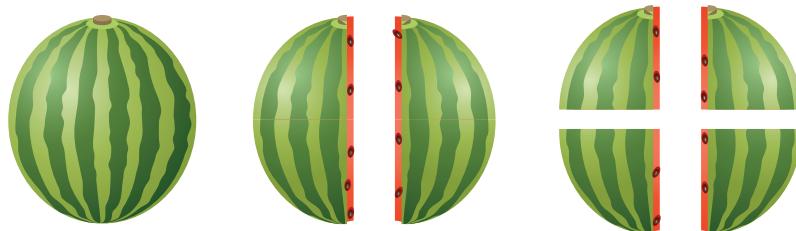
1. The game is that you should occupy it with yourself. Can you try it out.  
[hint: sit]
2. Fold it into two equal halves. What is your plan to occupy this space?  
[hint: stand]
3. Fold it further into two equal halves. Could you try it?  
[hint: stand in one leg]
4. Fold it further into two equal halves. Can... you..?  
[hint: stand on your toe]

Do you want to do it further.

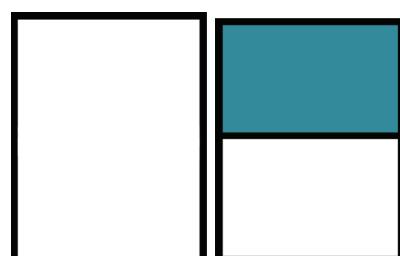


## Understanding the equivalences of $\frac{2}{4}$ and $\frac{1}{2}$ and of $\frac{2}{2}$ , $\frac{3}{3}$ , $\frac{4}{4}$ and 1

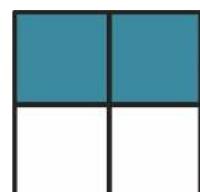
Four friends were walking in a Sunny day. All are became thirsty so they went to a fruit vendor and bought a watermelon. They sliced it into four equal parts and ate it. how they shared their parts with themselves



- Take a square sheet of paper and fold it into two equal parts. Colour one part of the paper

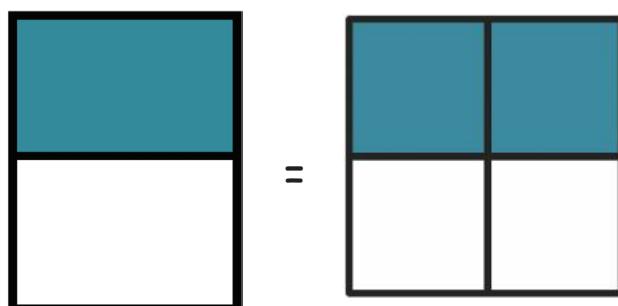


$$\text{Fraction of coloured portion} = \frac{1}{2}$$



- Now observe keenly, the fraction of coloured portion =  $\frac{2}{4}$

There is no change in the paper



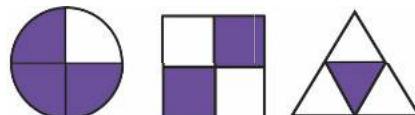
$$\frac{1}{2} = \frac{2}{4}$$

Two parts become four parts and the coloured one part changed into two parts

Thus it represent both  $\frac{2}{4}$  and  $\frac{1}{2}$  are equal it is said to be equivalence.

### Exercise 6.5

- I. Choose the appropriate picture given below for the fraction  $\frac{2}{4}$ .



- II. Choose the appropriate picture given below for the fraction  $\frac{1}{2}$ .



- III. Choose the equivalence according to the fraction given against the pictures

1.	$1/2$	
2.	$2/4$	
3.	$1/4$	

