



**Government of Tamilnadu**

# **STANDARD THREE**

**TERM III**

**Volume 2**

**MATHEMATICS**

**SCIENCE**

**SOCIAL SCIENCE**

**NOT FOR SALE**

*Untouchability is Inhuman and a Crime*

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**MATHEMATICS**  
**STANDARD THREE**  
**TERM III**

# 1

# TIME

## Reading the time



Clock tells us time

Observe the face of the clock.

The face of the clock is marked with numerals (1 to 12).

The clock has two hands. One hand is long and the other is short.

The long hand is the minute hand. It shows minutes.

The short hand is the hour hand. It shows hours.

When the minute hand is at 12, the hour hand tells the hour of the day.

The short hand of the clock is at 3.

The long hand of the clock is at 12.

So the time is 3 o'clock.

We write it as 3 : 00



After 1 hour



In this clock, the hour hand is at 4.

The minute hand is at 12.

So, the time is 4 o'clock.

## Note to the teacher

Give practice to the children with a model clock.



## Exercise 1

1) Tick the correct clock.

	After 1 hour			
	After 2 hours			
	After 3 hours			
	Before 2 hours			
	Before 1 hour			
	Before 3 hours			

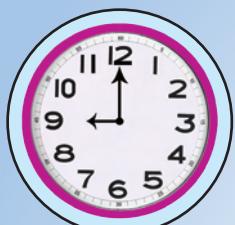
2) Tell the time and write your answer in the box.



10 o'clock



3) Draw the hands in the following clocks for the given time.



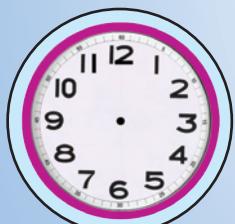
9 o'clock



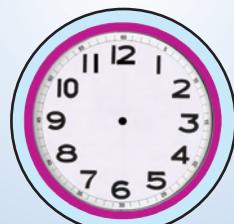
7 o'clock



12 o'clock



2 o'clock



4 o'clock



8 o'clock



## Reading the minute

Look at the movement of the hands in a working clock.

The minute hand is much faster than the hour hand.

The minute hand crosses every small mark in the clock.

There are 60 such small marks and each one is called a minute

The minute hand takes 5 minutes to go from one number to the next. The hour hand takes 60 minutes to go from one number to the next.

$$1 \text{ hour} = 60 \text{ minutes}$$

### Example

Look at the pictures.



What do you observe?

The time is 9 o'clock.

The long hand is at 1.

So the time is 9 : 05



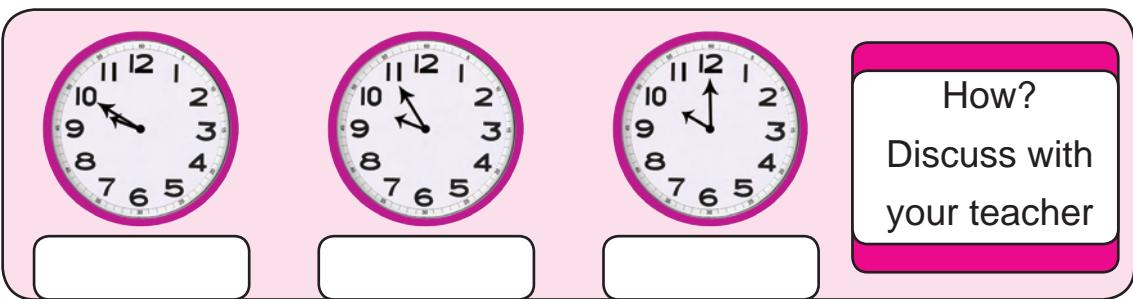
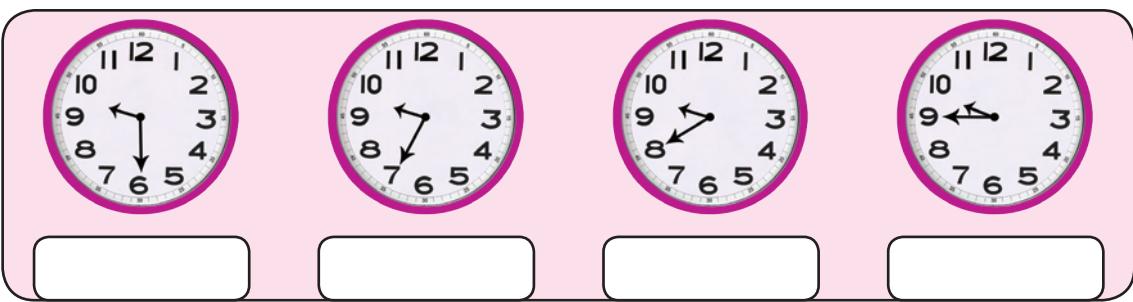
### Exercise 2

- 1) Count in steps of five minutes and write the time :

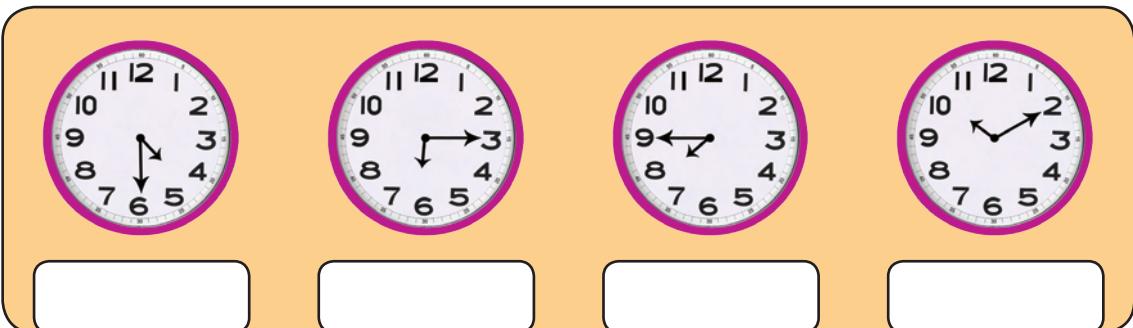


9 : 10

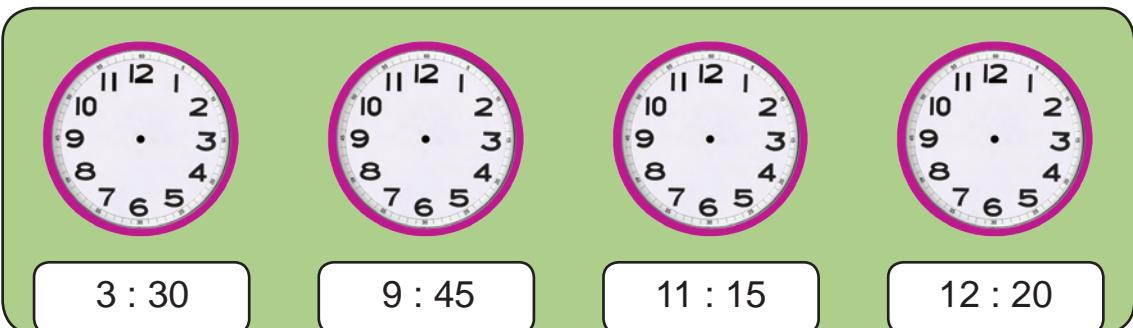




- 2) Tell the time in the clock and write your answer in the box :



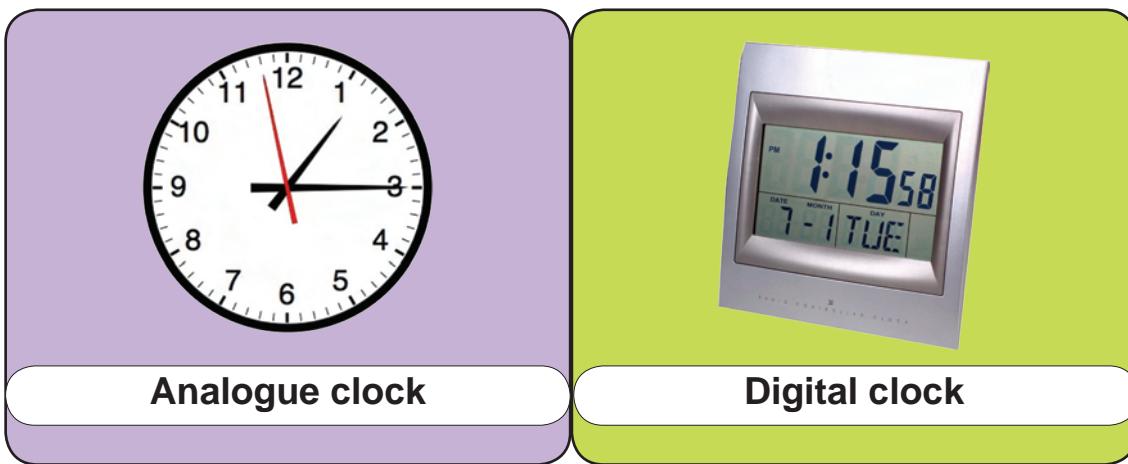
- 3) Draw the hands in the clock to show the time as given below :





## Digital clock

Observe the following.



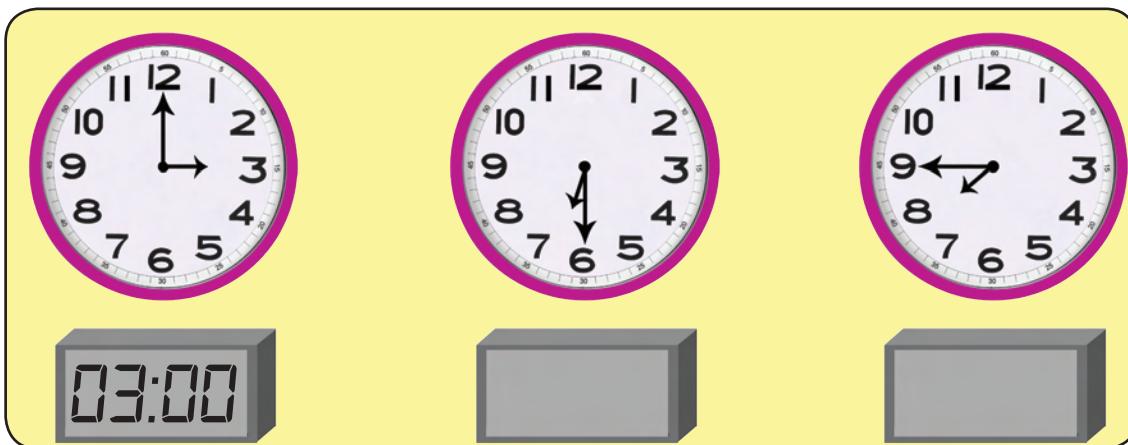
What do you observe?

In digital clock there is no minute hand and hour hand.



### ACTIVITY 1

1) Mark the time in digital clock.



- 2) Draw the hands of these clocks to show the time given in the digital clocks.

08:00



11:45



09:30



1 day = 24 hours

12 hours

12 midnight to 12 noon

12 hours

12 noon to 12 midnight

Time between  
12 midnight and 12 noon  
is denoted by a.m.

Time between  
12 noon and 12 midnight  
is denoted by p.m.



It is neither a.m. nor p.m. at 12 midnight  
and at 12 noon.



## Exercise 3

- 1) Write a.m. or p.m. suitably to the events given below.

- |   |             |
|---|-------------|
| 1. Breakfast at 7 : 45                    | 7 : 45 a.m. |
| 2. Lunch break at school at 12 : 15       |             |
| 3. Karate class in the school at 3 : 30   |             |
| 4. Morning prayer in the school at 8 : 30 |             |
| 5. School gets over at 4 : 00             |             |
| 6. The Sun rises at 5 : 00                |             |
| 7. The Sun sets at 6 : 00                 |             |
| 8. Night 11 : 35                          |             |
| 9. Night 2 : 30                           |             |
| 10. Afternoon 1 : 30                      |             |

2) Write the time with a.m. or p.m. for your daily activities.

Wake up at	:	
Brushing the teeth at	:	
Breakfast at	:	
Going to school at	:	
Lunch break at	:	
Playing at	:	
Watching TV at	:	
Dinner at	:	
Doing homework at	:	
Retiring to bed at	:	



### Project

Collect the pictures of different types of clocks and watches.



## Calendar

### Recall

1 Week = 7 Days

1 Month = 30 Days

1 Year = 365 Days

I know !

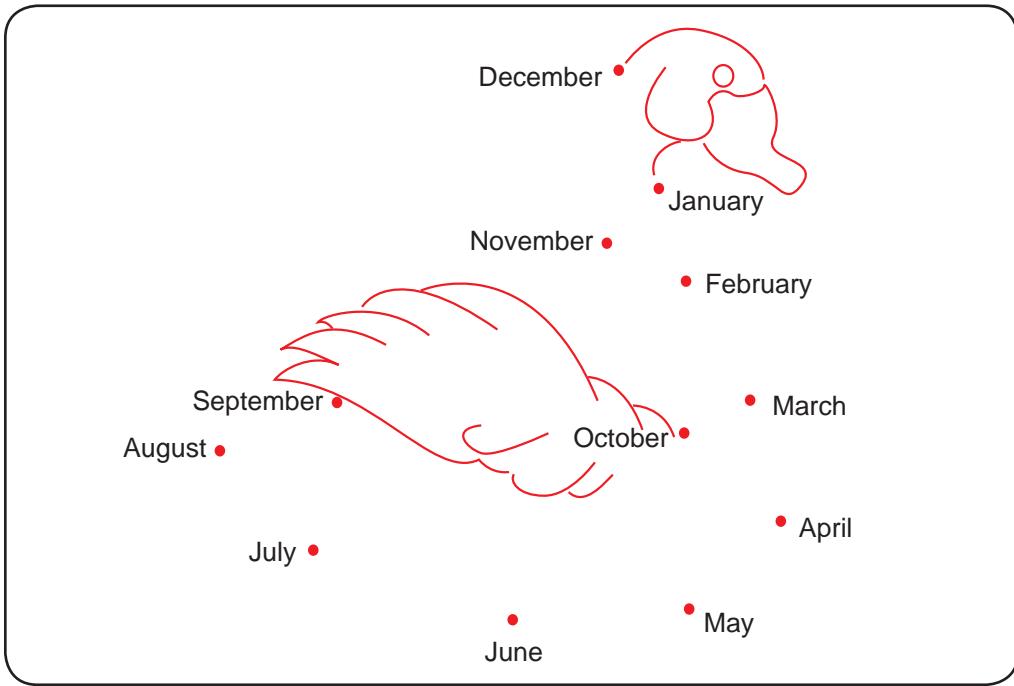
1 year = 12 months



### I. Fill in the blanks:

- 1) A year has  days.
- 2) In a week there are  days.
- 3)  is the first day of the week.
- 4) Twelve months are  year.
- 5) First month of the year is

### II. Join the dots in the order of the months and colour the picture.

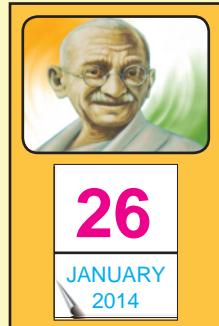


## Reading the calendar

A calendar shows the days, weeks and months of a particular year. The days from **1<sup>st</sup> January** to **31<sup>st</sup> December** of a year is called a **calendar year**.

There are two types of calendar.

**Daily calendar**



**Monthly calendar**

March 2014						
S	M	T	W	T	F	S
30	31					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

**January**

S	M	T	W	T	F	S
			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	

**February**

S	M	T	W	T	F	S
						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	

**March**

S	M	T	W	T	F	S
30	31					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

**April**

S	M	T	W	T	F	S
			1	2	3	4
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			

**May**

S	M	T	W	T	F	S
				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

**June**

S	M	T	W	T	F	S
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					

**July**

S	M	T	W	T	F	S
			1	2	3	4
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		

**August**

S	M	T	W	T	F	S
31				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

**September**

S	M	T	W	T	F	S
			1	2	3	4
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30				

**October**

S	M	T	W	T	F	S
			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	

**November**

S	M	T	W	T	F	S
30					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

**December**

S	M	T	W	T	F	S
			1	2	3	4
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			

**2014**

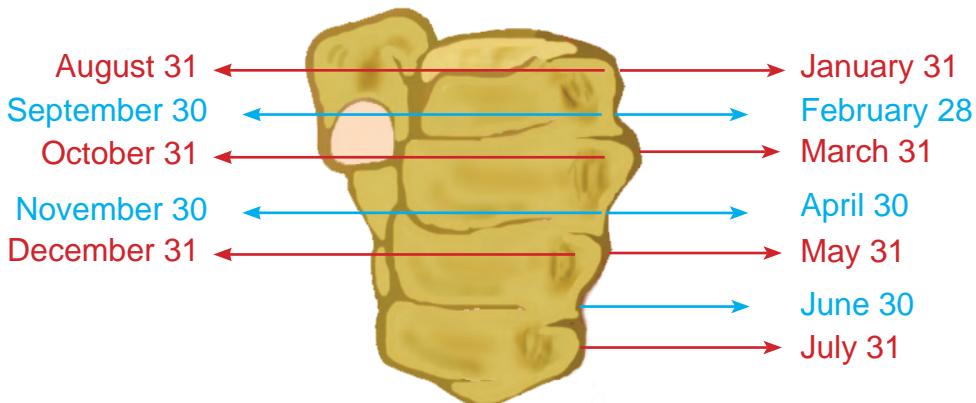
**ACTIVITY 2**

Read the calendar and fill in the blanks.

1.  months have 31 days.
2.  months have 30 days.
3. November has  days.
4. There are  weeks in the month of February.
5.  is the last month of the year.
6.  is the sixth month of the year.
7. In the month of  you get your summer holidays.
8. The month of August has  days.
9.  comes between June and August
10. The month which starts with the letter F is

Picture of hand. (The Knuckle trick)

It is an easy way to remember the days in every month.





### ACTIVITY 3

Look at the picture and fill in the boxes

- |             |         |              |  |
|-------------|---------|--------------|--|
| 1. January  | 31 days | 7. July      |  |
| 2. February |         | 8. August    |  |
| 3. March    |         | 9. September |  |
| 4. April    |         | 10. October  |  |
| 5. May      |         | 11. November |  |
| 6. June     |         | 12. December |  |

**Leap year :**

February 2012						
S	M	T	W	T	F	S
			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			

February 2013						
S	M	T	W	T	F	S
						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		

February 2013 has 28 days,  
February 2012 has 29 days.  
why?

Because 2012 is the leap year.  
A leap year comes once in four years. In a leap year, February has 29 days.

**ACTIVITY 4**

January 2014						
S	M	T	W	T	F	S
			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	

Look at the above calendar and fill in the boxes:

- Number of days in January 2014 is
- The number of Sundays
- The number of holidays
- January 14<sup>th</sup> is on
- Republic Day is on
- On which day does the year begin


**ACTIVITY 5**

Look at the calendar 2013 and fill in the boxes.

Date & Month	Day

- Teachers' Day is on
- Independence Day is on

3. Republic Day is on \_\_\_\_\_
4. Gandhi Jayanthi is on \_\_\_\_\_
5. Children's Day is on \_\_\_\_\_
6. Education Development Day is on \_\_\_\_\_


### Reading the date

A girl with blonde hair in pigtails asks, "What is Gandhiji's date of birth?" A boy replies, "2<sup>nd</sup> October 1869."

Date of birth is written as :

Date	Month	Year
02	10	1869

### Chronological order

Recording events in the order of happenings is called the “chronological order”

Look at the date of birth of the following leaders from a calendar and tabulate them in the chronological order.

Kamarajar, Gandhiji, Arignar Anna, Dr. Ambedkar, Jawaharlal Nehru



Date:.....

1. In a year, there are  months.
2. In a leap year, February has  days.
3. 2013 is not a  year.
4. The short hand in a clock is  hand.
5. Write down the time.
6. Draw the hands.



12 : 15

7. Write down a.m. or p.m.

Sachin plays cricket in the evening at 4.00

The Sun rises at 5.30  in the morning.

8. Write your date of birth:

DD	MM	YYYY
<input type="text"/>	<input type="text"/>	<input type="text"/>

9. Leap year comes once in  years.

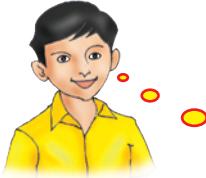
Comments

Teacher's signature

# 2

# MONEY

Money is a medium of exchange. We use money for buying goods. In India, the unit of money is rupee.



We express the Indian money  
in terms of rupees and paise.

We use 'p' to write paise, 'Re' to write rupee and 'Rs' to write rupees. Also we use a dot (•) to separate rupees and paise.

## Example

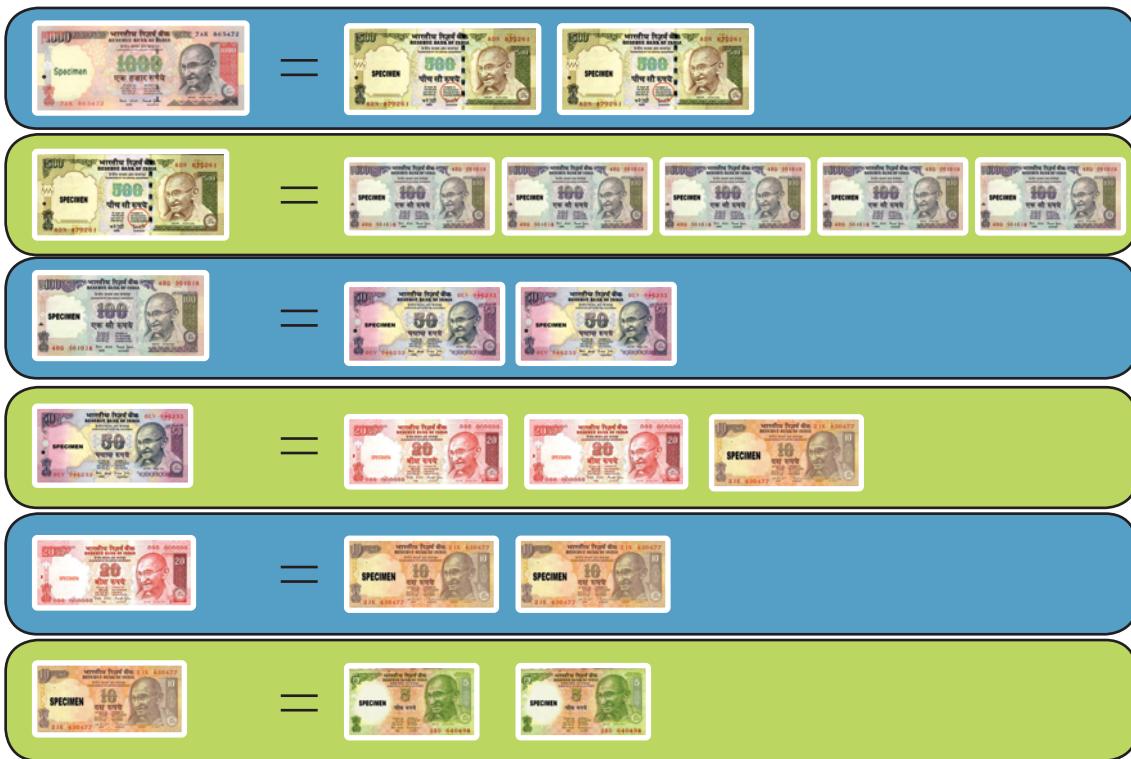
We express Rupees sixty and fifty paise in figure as Rs. 60.50

Our Indian government has introduced the symbol for denoting rupees as ₹ . So Rs. 60.50 is written as ₹ 60.50

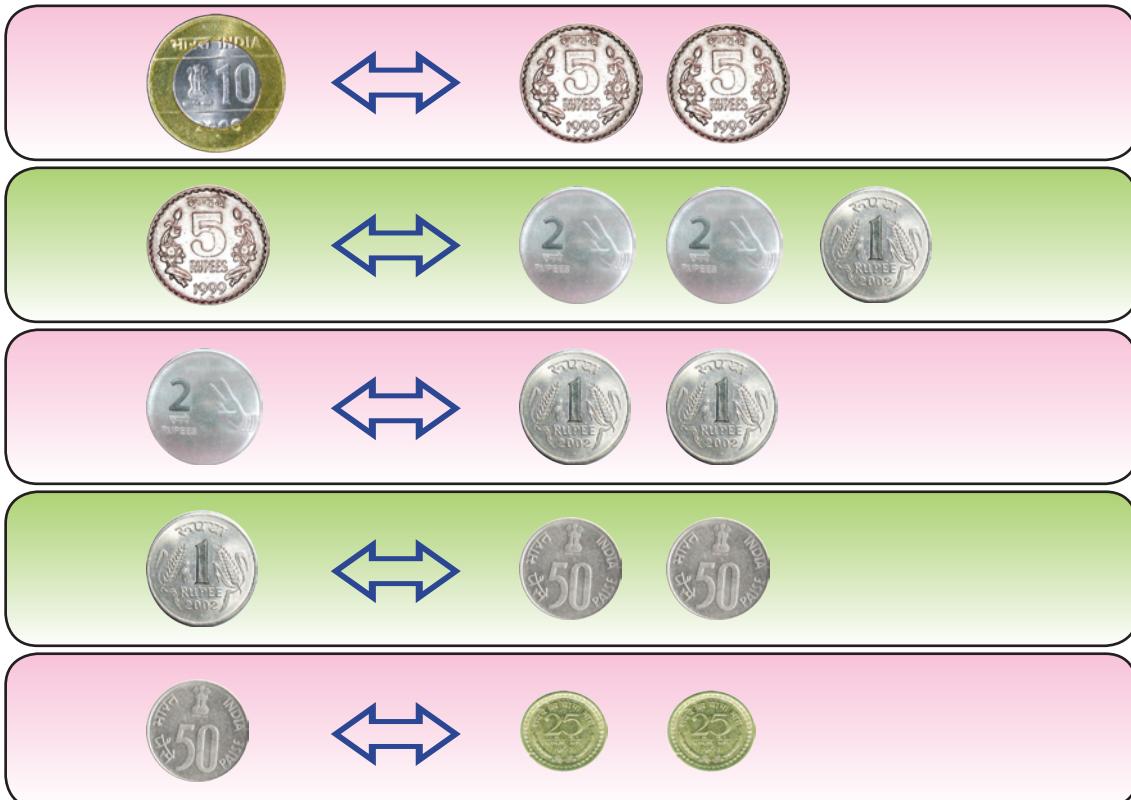
## Our Indian money



## Denomination of rupees :



## Denomination of coins :

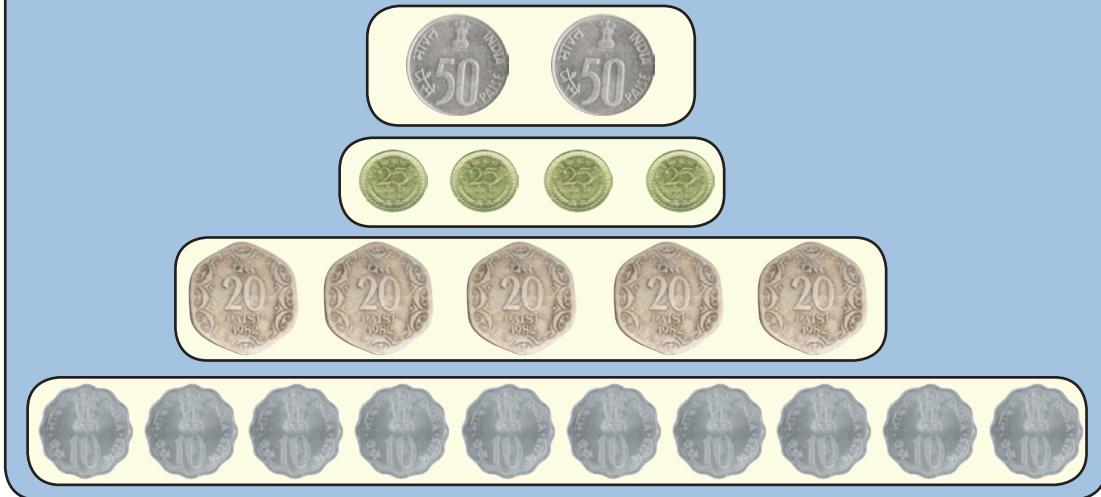


## Relationship between rupee and paise

100 paise = 1 rupee



We can make one rupee by using different coins



### Note to the teacher

Tell the fact that,

- ◆ Coins of 1 paise, 2 paise, 5 paise, 10 paise, 20 paise are not in circulation.
- ◆ Notes of Re. 1 and Rs. 2 are not in circulation



### Exercise 1

1. Match the following :

₹ 250 ..			
₹ 650 ..			
₹ 1000 ..			



Do you know how we read and write Rupees and Paise?



Here we have 20 Rupees and 50 Paise.  
We read it as Rupees 20 and 50 Paise.  
We write this as Rs. 20.50 or ₹ 20.50



2. Fill in the boxes :

	₹ 50. 25

3. Look at the picture :



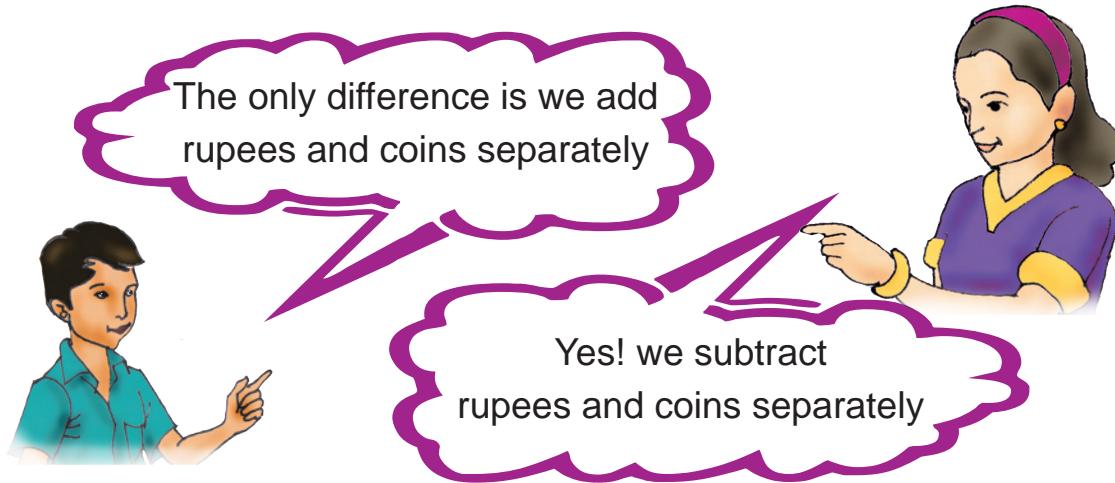
Tick the correct denomination of the prices of the objects :

Item	Price									
Ball	<input checked="" type="checkbox"/> ₹150 <input checked="" type="checkbox"/> ₹400 <input type="checkbox"/> ₹30 <input type="checkbox"/> ₹320									
Book	<input type="checkbox"/> ₹600 <input type="checkbox"/> ₹800 <input type="checkbox"/> ₹700 <input type="checkbox"/> ₹120 <input type="checkbox"/> ₹280									
Pencil box	<input type="checkbox"/> ₹150 <input type="checkbox"/> ₹400 <input type="checkbox"/> ₹30 <input type="checkbox"/> ₹320 <input type="checkbox"/> ₹600 <input type="checkbox"/> ₹800									
Bag	<input type="checkbox"/> ₹150 <input type="checkbox"/> ₹400 <input type="checkbox"/> ₹30 <input type="checkbox"/> ₹320 <input type="checkbox"/> ₹600 <input type="checkbox"/> ₹800									
Shoes	<input type="checkbox"/> ₹150 <input type="checkbox"/> ₹400 <input type="checkbox"/> ₹30 <input type="checkbox"/> ₹320 <input type="checkbox"/> ₹600 <input type="checkbox"/> ₹800									
Shirt	<input type="checkbox"/> ₹150 <input type="checkbox"/> ₹400 <input type="checkbox"/> ₹30 <input type="checkbox"/> ₹320 <input type="checkbox"/> ₹600 <input type="checkbox"/> ₹800									
Pant	<input type="checkbox"/> ₹150 <input type="checkbox"/> ₹400 <input type="checkbox"/> ₹30 <input type="checkbox"/> ₹320 <input type="checkbox"/> ₹600 <input type="checkbox"/> ₹800 <input type="checkbox"/> ₹280									
Torch	<input type="checkbox"/> ₹150 <input type="checkbox"/> ₹400 <input type="checkbox"/> ₹30 <input type="checkbox"/> ₹320 <input type="checkbox"/> ₹600 <input type="checkbox"/> ₹800									
Teddy bear	<input type="checkbox"/> ₹150 <input type="checkbox"/> ₹400 <input type="checkbox"/> ₹30 <input type="checkbox"/> ₹320 <input type="checkbox"/> ₹600									
Bat	<input type="checkbox"/> ₹150 <input type="checkbox"/> ₹400 <input type="checkbox"/> ₹30 <input type="checkbox"/> ₹320 <input type="checkbox"/> ₹600 <input type="checkbox"/> ₹800									



## Addition and Subtraction in money

Addition and subtraction of money is done as in addition and subtraction of numbers.



### Example

Add ₹ 60.50 and ₹ 70.00.

₹	60	.	50
+			
₹	70	.	00
₹	130	.	50

Write rupees and paise in two columns.

Add paise and write the sum under paise.

Add rupees and write the sum under rupees.

Subtract rupees 20 from rupees 40 and 50 paise.

₹	40	.	50
-			
₹	20	.	00
₹	20	.	50

Write rupees and paise in two columns.

Subtract paise and write the answer under paise.

Subtract rupees and write the answer under rupees.



## Exercise 2

### 1) Addition

$\text{₹ } 10 . 50$ $\text{₹ } 15 . 00$	$\text{₹ } 70 . 50$ $\text{₹ } 20 . 10$	$\text{₹ } 300 . 10$ $\text{₹ } 200 . 40$
$+$  <span style="background-color: #ffffcc; display: inline-block; width: 100px; height: 20px;"></span>	$+$  <span style="background-color: #ffffcc; display: inline-block; width: 100px; height: 20px;"></span>	$+$  <span style="background-color: #ffffcc; display: inline-block; width: 100px; height: 20px;"></span>

### 2) Subtraction

$\text{₹ } 90 . 50$ $\text{₹ } 70 . 20$	$\text{₹ } 80 . 60$ $\text{₹ } 30 . 50$	$\text{₹ } 450 . 70$ $\text{₹ } 150 . 20$
$-$  <span style="background-color: #ffffcc; display: inline-block; width: 100px; height: 20px;"></span>	$-$  <span style="background-color: #ffffcc; display: inline-block; width: 100px; height: 20px;"></span>	$-$  <span style="background-color: #ffffcc; display: inline-block; width: 100px; height: 20px;"></span>

### Example

- 1) Raja bought a bottle of jam for ₹ 40.50 and a loaf of bread for ₹ 20.25. What was the total amount spent ?

$$\begin{array}{rcl}
 \text{Cost of jam bottle} & = & \text{₹ } 40 . 50 \\
 \text{Cost of a loaf of bread} & = + & \text{₹ } 20 . 25 \\
 \text{Total amount spent} & = & \underline{\text{₹ } 60 . 75}
 \end{array}$$

- 2) Radha took ₹ 50.50 with her to the market. She bought some chocolates for ₹ 20.25. How much money does she have now ?

$$\begin{array}{rcl}
 \text{Total amount} & = & \text{₹ } 50 . 50 \\
 \text{Amount spent} & = - & \text{₹ } 20 . 25 \\
 \text{Amount remaining} & = & \underline{\text{₹ } 30 . 25}
 \end{array}$$



### Exercise 3

How much money I have to pay to buy these toys?



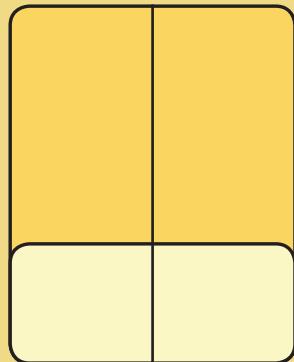

I have ₹ 500 now. How much money I have after buying the bat and the ball?




How much money I have to pay to the shopkeeper after getting the biscuits and chocolate?




I have ₹ 30.75. Will I have any balance after I buy a pen and a sharpener ?

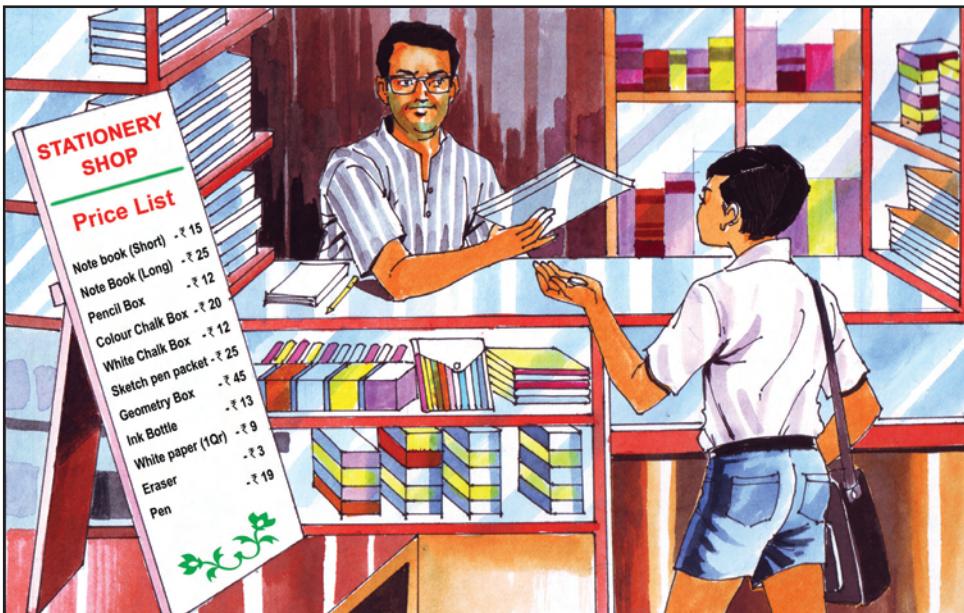


## Project

Set up a mock shop in your class.

### Bills and Rate charts

Bills help us to know the items of purchase, its prices, total amount paid, date of purchase, bill number and name of the shop.





Ram went to the bookshop and bought the following items. The following bill shows the rate of the articles and the total amount he paid.

Bill No : 767		Guru Stationery shop 104. Main Road, Chennai.			
Sl. No.	Particulars	Quantity	Rate	Amount	
				Rs.	p.
1.	Ballpoint pen	10	5.00	50	00
2.	Notebook	10	10.00	100	00
3.	Sketch pen set	6	15.00	90	00
4.	Crayons	2	20.00	40	00
5.	Marker	4	15.00	60	00
			Total	340	00

Using the above bill fill in the blanks:

1. Name of the shop \_\_\_\_\_
2. Bill number \_\_\_\_\_
3. Date of the bill \_\_\_\_\_
4. Total number of items purchased \_\_\_\_\_
5. Total amount of money paid \_\_\_\_\_
6. Rate of one marker pen \_\_\_\_\_
7. Cost of two crayons \_\_\_\_\_
8. Rate of one sketch pen set \_\_\_\_\_
9. Rate of one ballpoint pen \_\_\_\_\_
10. Cost of ten notebooks \_\_\_\_\_



## Exercise 4

The following items are purchased from the supermarket. Find out the total amount to be paid.

Sl. No.	Items	Quantity	Rate	Amount	
				Rs.	P.
1.	Jam bottle	2	30.00	60	00
2.	Honey bottle	3	15.00		
3.	Ghee packet	1	70.00		
4.	Cool drinks	2	40.00		
5.	Chocolate	4	6.00		
Total					



### ACTIVITY 1

Prepare a rate chart for the above bills.

Sl. No.	Particulars	Quantity	Rate



### Project

Ask the students to collect different types of bills, group-wise and ask them to prepare an album.

## 3

## FRACTIONAL NUMBERS

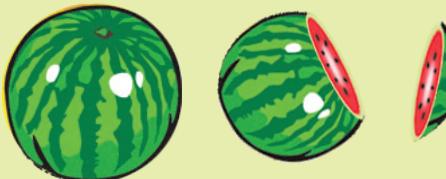
Here is a watermelon.

It has been cut into two parts.

Look at these two parts.

Are these two parts equal?

No, the two parts of the watermelon are unequal.



Here is another watermelon.

It has been cut into two parts.

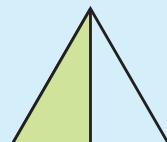
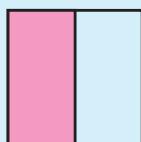
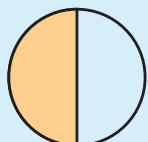
Observe these two parts.

Are these two parts equal?

Yes, the two parts of the watermelon are equal.



## One Half



What do you observe from the above figures.

In each figure, there are two equal parts.

One of them is shaded.

Each part is called one half.

It is written as  $\frac{1}{2}$  and read as 'one half'.

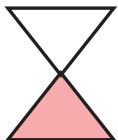


## Exercise 1

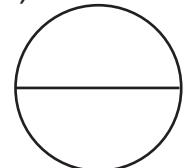
Shade one half of each figure:



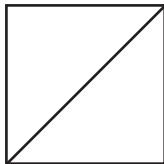
### Example



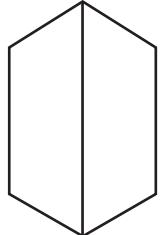
(a)



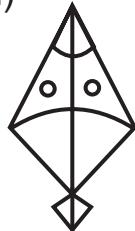
(b)



(c)

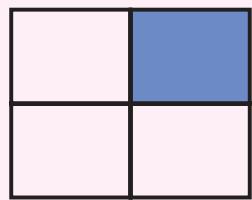
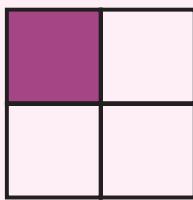
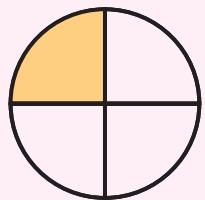


(d)



### One quarter

What do you see in the following figures?



In each figure, there are four equal parts.

One of them is shaded.

The shaded portion is called one quarter.

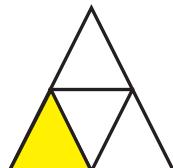
It is written as  $\frac{1}{4}$  and read as 'one-fourth'



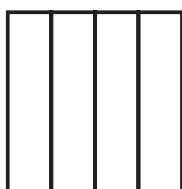
## Exercise 2

Shade one-fourth of each figure.

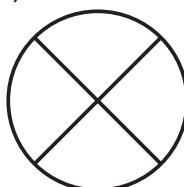
### Example



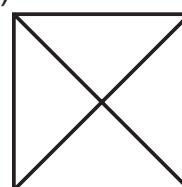
(a)



(b)



(c)

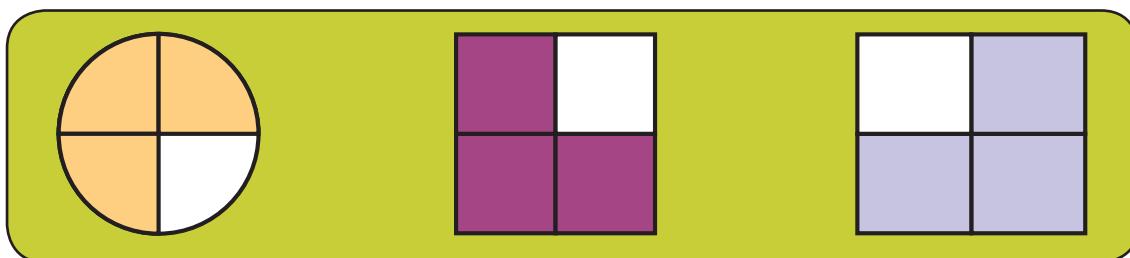


(d)



### Three-Fourth

What do you see in the following figures?



In each figure, there are four equal parts.

Three among them are shaded.

So, the shaded portion represents three fourth.

It is written as  $\frac{3}{4}$  and read as **three-fourth**.

$\frac{1}{2}, \frac{1}{4}, \frac{3}{4}$  are fractional numbers.



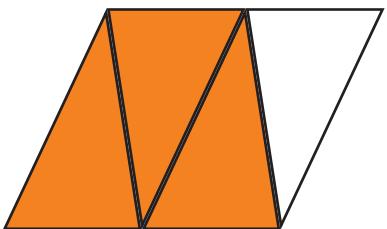


### Exercise 3

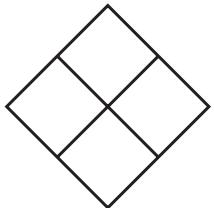


**Shade three-fourth of each figures.**

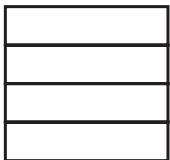
#### Example



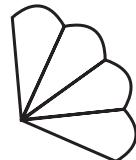
(a)



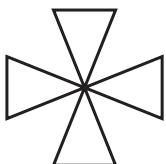
(b)



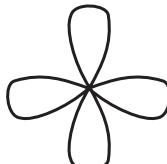
(c)



(d)



(e)



#### Fraction in part of collection

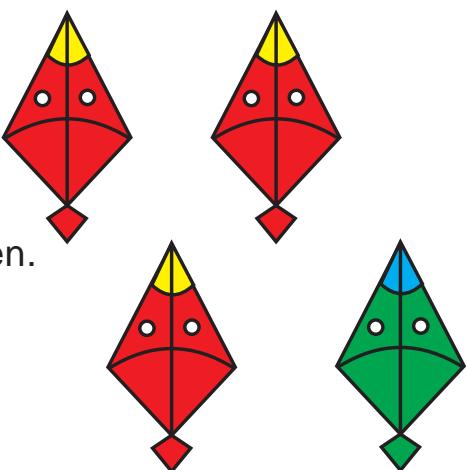
Consider the following example.

There are four kites.

Three are red kites.

So three fourth of the kites are red.

Then one fourth of the kites are green.

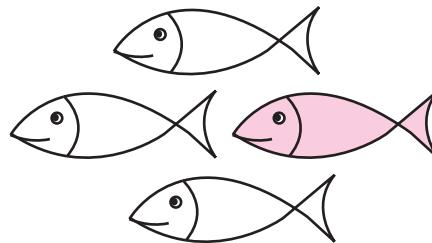




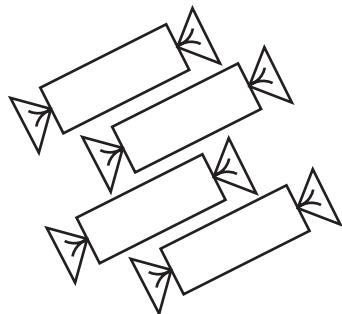
## Exercise 4

### Example

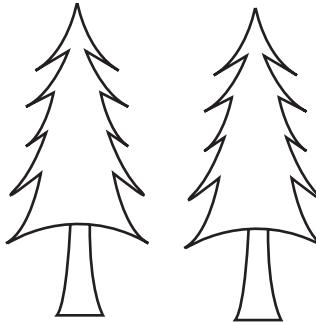
Shade one-fourth



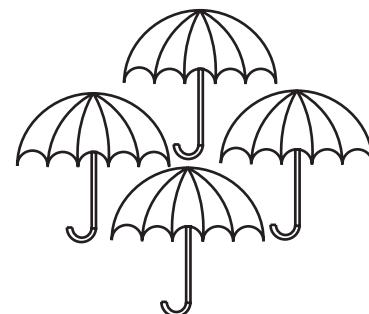
(a) Two-fourth



(b) One-half



(c) Three-fourth



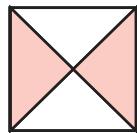
## Exercise 5

(a) Write the fraction which represents the shaded portion.

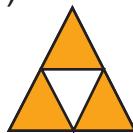
### Example



(a)



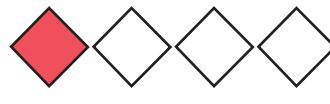
(b)



(c)

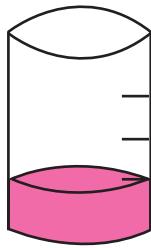


(d)



**(b) Circle the correct fraction.**

**Example**

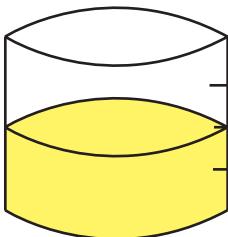


$\frac{2}{4}$

$\frac{1}{4}$

$\frac{3}{4}$

a)

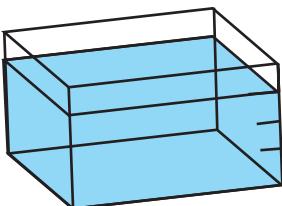


$\frac{1}{4}$

$\frac{2}{4}$

$\frac{3}{4}$

b)



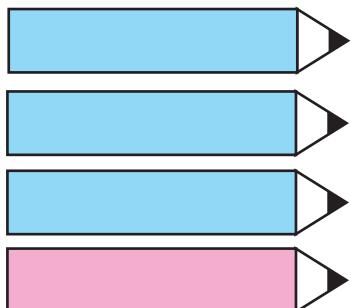
$\frac{1}{4}$

$\frac{2}{4}$

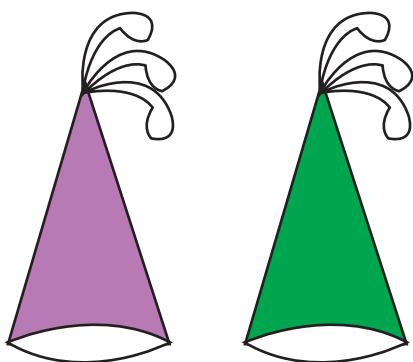
$\frac{3}{4}$

**(c) Write the fraction for the shaded object in each collection.**

**Example**



a)



$\frac{3}{4}$

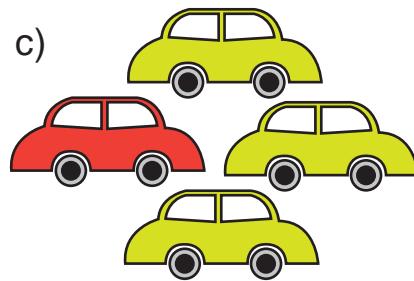
of the pencils are blue.



of the caps are green.

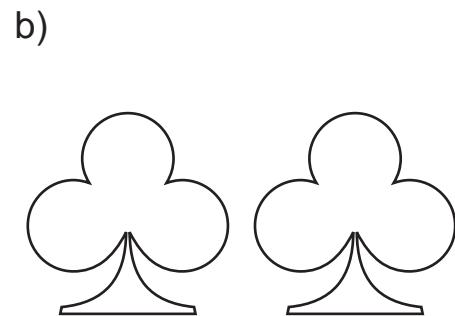
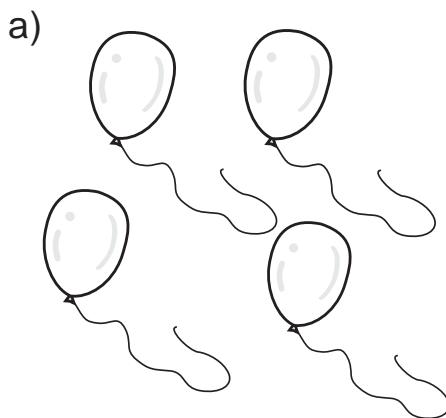



of the combs are black.

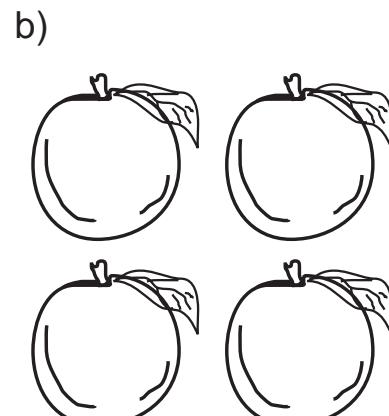
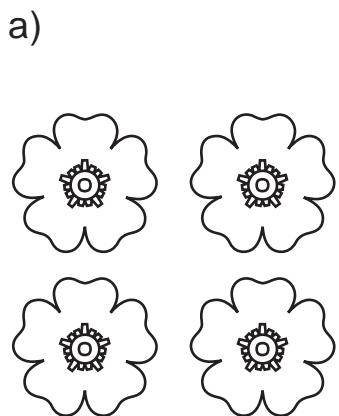



of the cars are red.

**(d) Colour one half of each collection.**

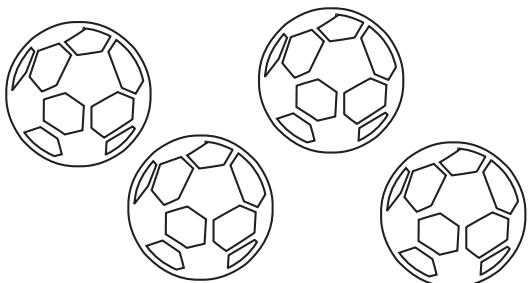


**(e) Colour one-fourth of each collection.**

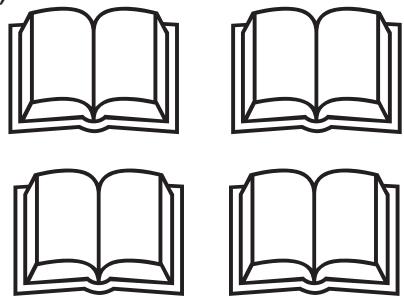


(f) Colour three-fourth of each collection.

a)

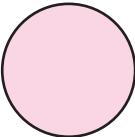


b)

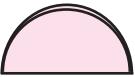


### ACTIVITY 1

☺ Take a sheet of paper and cut it round as shown.



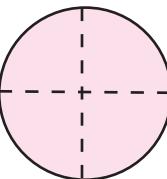
☺ Fold it and form two halves.



☺ Again fold it and form two halves as shown.



☺ Unfold the sheet.



Look at the four quarters in the sheets.

**Find out the fractions  $\frac{1}{2}$ ,  $\frac{1}{4}$ ,  $\frac{3}{4}$  in the sheet.**



## Numerator and Denominator

The numbers  $\frac{1}{2}$ ,  $\frac{1}{4}$  and  $\frac{3}{4}$  are fractional numbers.



Fractions	Numerator	Denominator
$\frac{1}{2}$	1	2
$\frac{1}{4}$	1	4
$\frac{3}{4}$	3	4

## Equivalent Fraction

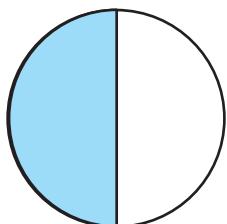


Fig (1)

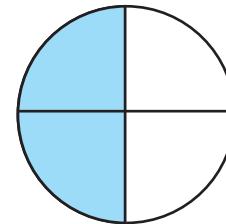


Fig (2)

In Figure (1), a circle is divided into two equal parts and one is coloured. The fraction of coloured portion is  $\frac{1}{2}$ .

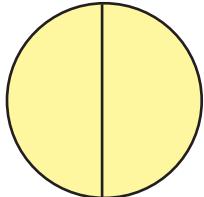
In Figure (2), the circle is divided into four equal parts and two are coloured.

The fraction of the coloured portion is  $\frac{2}{4}$ .

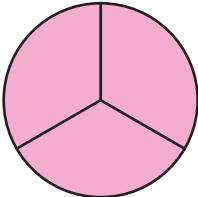
Can you see the coloured portion of two circles is the same?

**So,  $\frac{1}{2}$  and  $\frac{2}{4}$  are equivalent fractions.**

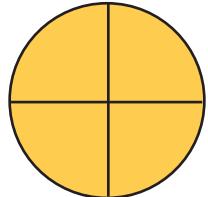
**Look at the figures given below**



Fig(1)



Fig(2)



Fig(3)

In Figure (1) a circle is divided into 2 equal parts and both are coloured. The fraction of the coloured portion is  $\frac{2}{2}$ .

In Figure (2) the circle is divided into 3 equal parts and 3 are coloured. The fraction of the coloured portion is  $\frac{3}{3}$ .

In Figure (3) the circle is divided into 4 equal parts and all are coloured. The fraction of the coloured portion is  $\frac{4}{4}$ .

What do you observe from the above circles?

Coloured portions of the circles are the same.

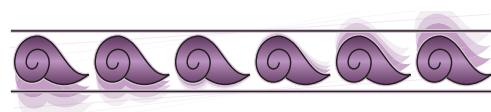
**$\frac{2}{2}$ ,  $\frac{3}{3}$  and  $\frac{4}{4}$  are also called equivalent fractions.**

**4****PATTERNS****Patterns Around us**

In everyday life, we see many patterns



**“When objects , events and numbers are repeated uniformly in a specific way, a pattern is formed”**

**Example**



We can create various forms of patterns using objects, geometrical shapes, pictures, numbers, sounds, touch actions [tapping] and physical actions [clapping, jumping]

### Pattern in geometrical shapes

There are two types of patterns. They are

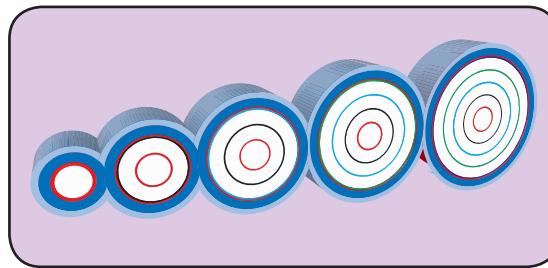
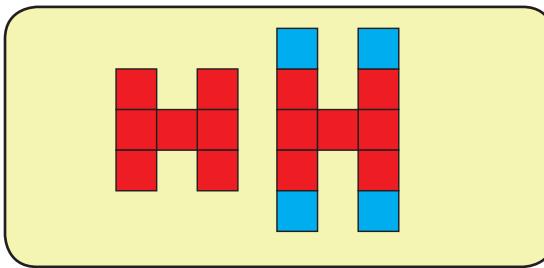
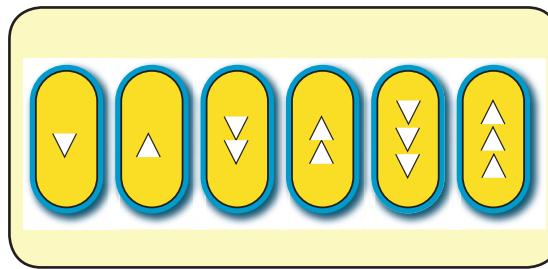
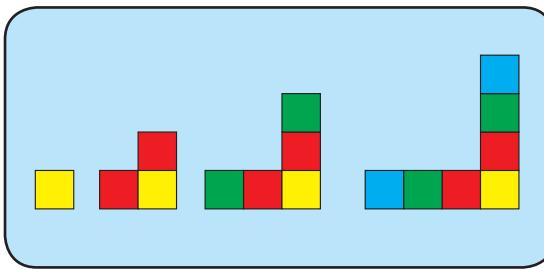
**Growing patterns**

**Repeated patterns**

### Growing patterns.

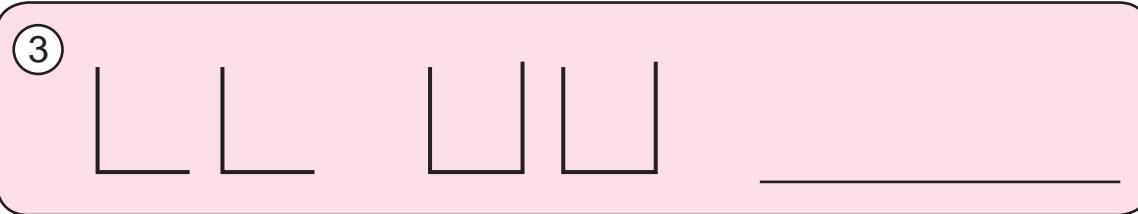
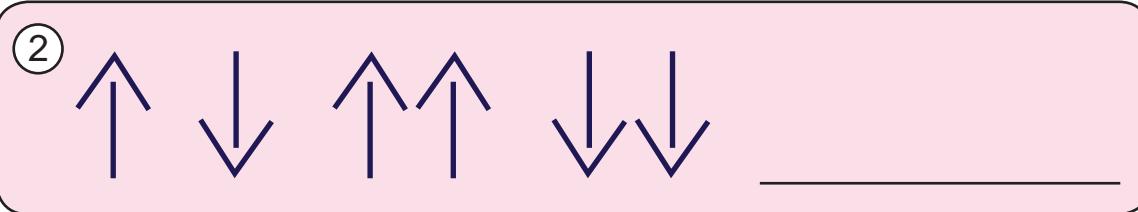
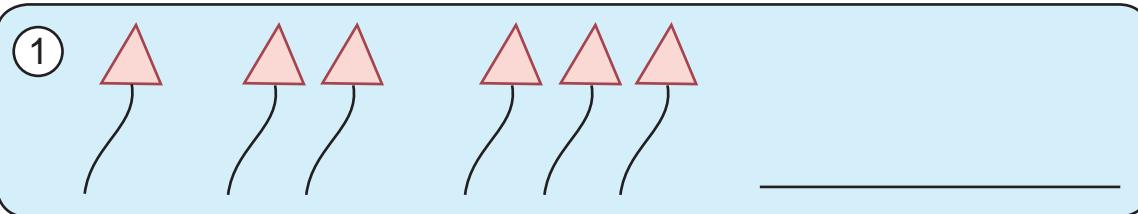
If some patterns and designs grow with straight lines and geometrical shapes, they are called **growing patterns**.

## Example



## Exercise 1

**Continue the pattern :**



## Repeated Patterns

If some patterns and designs repeat with straight lines and geometrical shapes they are called **repeated patterns**.

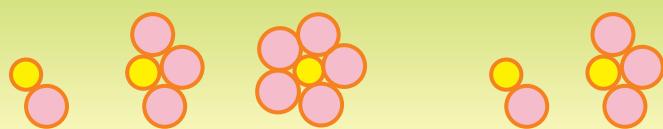
### Example



### Exercise 2

Continue the pattern :

(1)



(2)

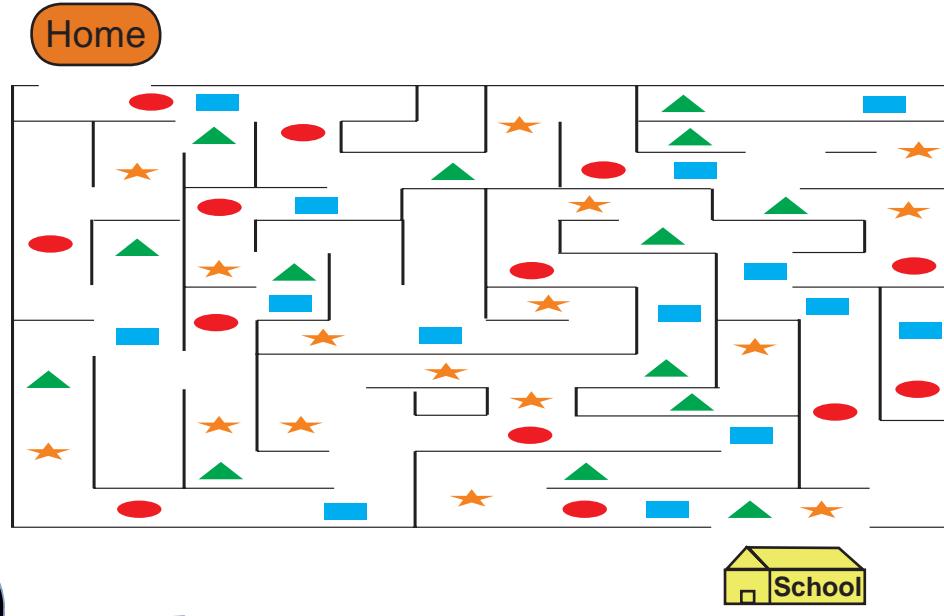


(3)



**ACTIVITY 1**

Follow the pattern  $\textcolor{red}{\circlearrowright} \rightarrow \textcolor{blue}{\square} \rightarrow \textcolor{green}{\triangle} \rightarrow \textcolor{orange}{\star}$  to reach the school from home.

**Project**

**Make your own patterns by using :**

- (i) leaves,
- (ii) flowers.
- (iii) colour buttons.
- (iv) bindhis, stickers, jamkkies in paper plate

**Pattern in numbers**

We have made some patterns with pictures. We can make patterns with numbers too.

**5, 10, 15, 20, ...****10, 20, 30, 40, ...****20, 40, 60, 80, 100, ...**

In numbers also there are two types of patterns.

They are :

**Growing patterns**  
**Repeated patterns**

### Growing patterns :

If some number patterns grow with odd and even numbers, they are called **growing patterns**

#### Example

1, 3, 5, 7, ...

10, 20, 30, ...

17, 19, 21, ...

### Repeated patterns :

If some number patterns repeat with odd and even numbers, they are called **repeated patterns**

#### Example

744, 744, 744, .....

1, 5, 6, 1, 5, 6, 1, 5, 6, .....

101, 102, 101, .....



### Exercise 3

### Complete the following patterns :

a) 2, 4, 6, 2, 4, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_

b) 1, 3, 6, 10, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_

c) 1, 3, 7, 13, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_

d) 15, 25, 35, 15, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_

e) 111, 222, 333, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_

f) 10, 20, 30, 10, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_



## Exercise 4

a) Complete the patterns:

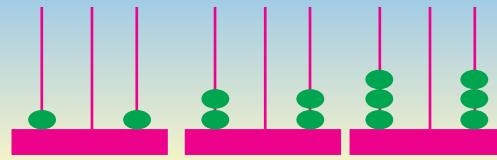
(1)



(2)



(3)



b) Match the following and complete the pattern :


**c) Observe the pattern and complete the series :**

a) 3, 6, 9, 12, 15,

b) 4, 8, 12, 16, 20,

c) 395, 390, 385, 380, 375,

d) 120, 130, 140, 150,

e) 11, 22, 33, 44, 55, 11 ,

**d) Complete the following :**



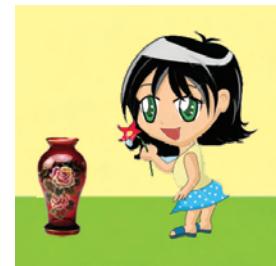
2 Flowers



4 Flowers



7 Flowers



\_\_\_\_\_Flowers



3 Balloons



5 Balloons



7 Balloons



\_\_\_\_\_Balloons

## Symmetry



### ACTIVITY 2

#### Step 1 :

Take a sheet of paper and fold it.



#### Step 2 :

Draw any shape at the folded edge of the sheet.



#### Step 3 : Cut the shape.



#### Step 4 : Unfold it.

Line of Symmetry.



Note that one half of the shape is exactly like the other half. The line which divides the figure into two exact halves is called the '**line of symmetry**'.

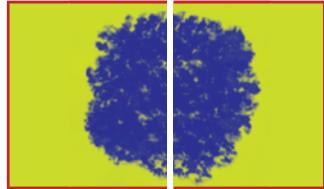
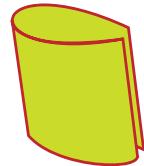


Try it !

In symmetrical shapes, one half is the mirror image of the other.

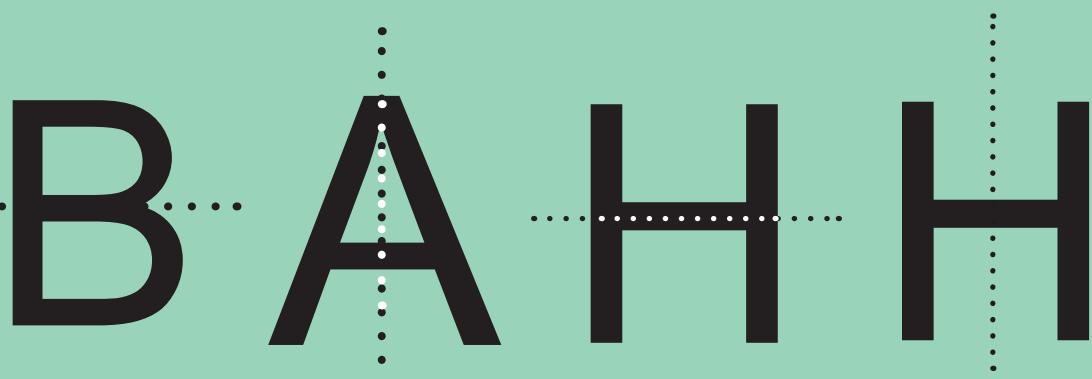
**ACTIVITY 3**

- ★ Take a piece of paper.
- ★ Spill few drops of ink on the paper.
- ★ Now fold the paper and press it.
- ★ You will get a symmetric figure.

**Example**

Look at the following symmetrical letters. Observe the symmetrical lines in the letters.

How to divide the figure into two equal parts?





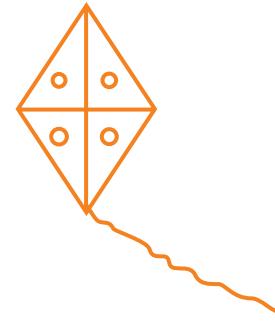
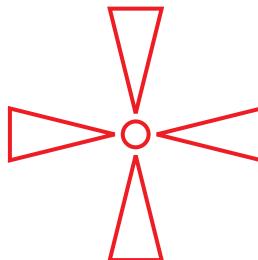
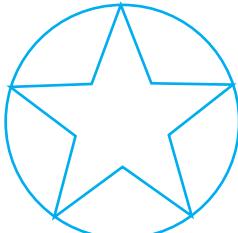
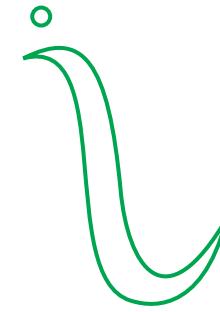
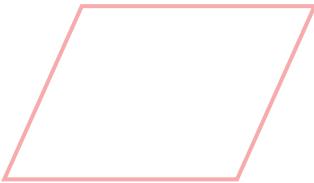
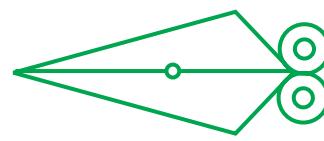
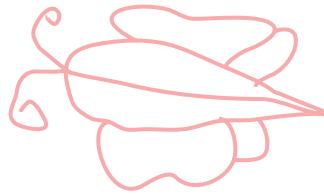
## Project

Make the students to create symmetrical patterns as given in the examples and display them in the class.

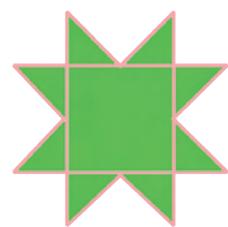
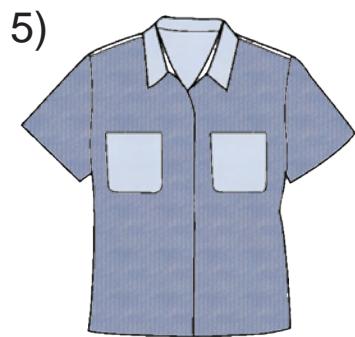
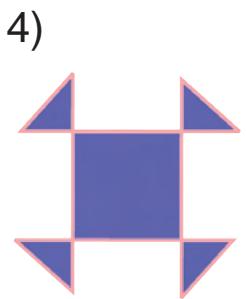
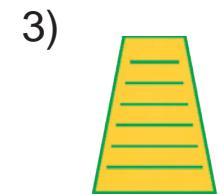
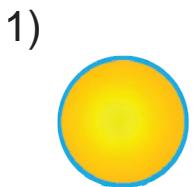


### Exercise 5

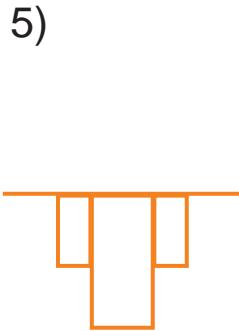
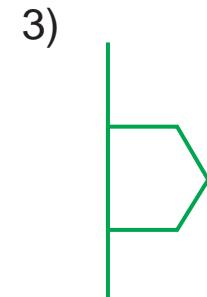
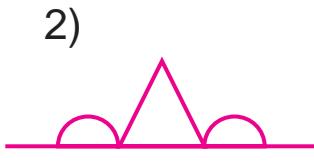
#### 1) Colour the symmetrical figures :



**2) Draw the lines of symmetry for the following figures :**

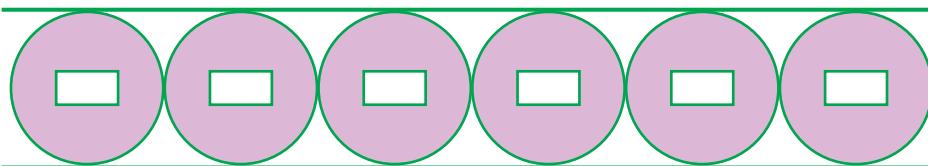
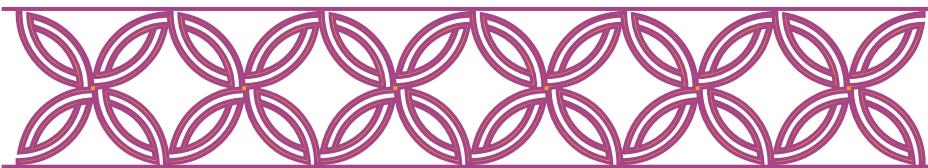
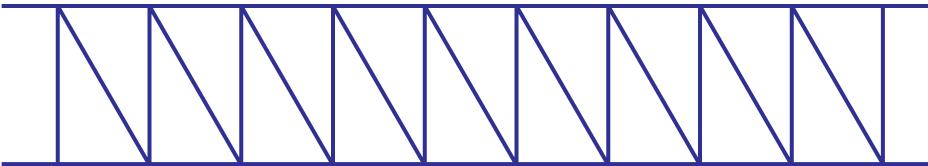
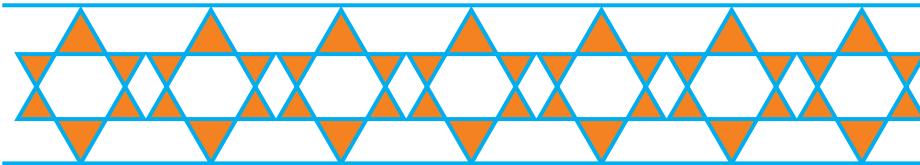
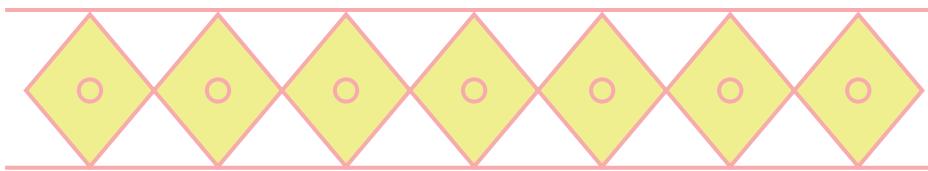


**3) Draw the other half of the figure to make it symmetrical :**



4) Classify whether the following are symmetrical patterns or not by putting ✓ or ✗ in the box.

**Example**



# 5

# STUDY OF DATA



Look at the above picture and fill in the required data:

1) Number of buildings

4) Number of trees

2) Number of birds

5) Number of ducks

3) Number of lotus

6) Number of fish



## ACTIVITY 1

Try to collect data for the following questions from your school.

1) Number of classrooms

2) Number of teachers

3) Number of male teachers

4) Number of female teachers

5) Number of trees, bikes, bicycles, toilets, taps.

6) Number of students in standards I, II, III, IV and V.



## Questionnaire model:



**Data gives us information !  
Collection of information helps us to know many facts!**



**Questionnaire is one of the methods to collect information**

**Questions are framed to get the information we need**

Name of the head of the family

Number of persons in the family

Adult	<input type="text"/>	Children	<input type="text"/>
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Number of literates

Number of children studying in

School	<input type="text"/>	College	<input type="text"/>
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Occupation of the head of the family

Total income of the family

Mother tongue of the student

**“A survey is a method of collecting information through data gathering ,interview and questionnaire”**



## ACTIVITY 2

The following table shows the hours spent by friends in the playground during summer holidays.

NAME \ DAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	TOTAL
Balu	2	1	2	1	.....
Raja	2	1	2	3	.....
Malar	1	3	3	2	.....
Varun	2	1	0	2	.....
Sandhya	3	2	1	1	.....

1. Who spent maximum time in the playground?

2. Who spent minimum time in the playground?

3. Who spent maximum time in the playground on Thursday?

4. How many hours did Sandya spend in the playground on Monday?

**Project**

**Ask your classmates about their favourite subjects and record them in the table. (Group work).**

Sl.no	Subjects	No.of.students
1.	Tamil	
2.	English	
3.	Maths	
4.	Science	
5.	Social science	
6.	Drawing	
7.	Music	
8.	Sports	
9.	Computer Science	
10.	General Knowledge	

**Subject is liked by the most.**

**Tally marks**

Before the invention of numbers, ancient people used fingers, knots and tally marks for counting. 'I' is called "tally mark". To make it easier to count, after 4 tally marks the fifth tally mark is entered as **UH**

Number	Tally Marks
1	I
2	II
3	III
4	
5	UH
6	UH
7	UH
8	UH
9	UH
10	UH



### ACTIVITY 3

The following statement shows the marks scored by III standard students in Mathematics.

40	60	48	52	58	43	58	40	60	52
52	58	48	40	60	40	40	53	52	43
43	52	40	48	53	60	60	52	40	48

Convert the above marks into the table using tally marks.

Marks	Tally Marks	No. of students
40		7
43		
48		
52		
53		
58		
60		
	Total	



## Exercise 1

The physical education master in a school recorded the height of the 20 students (in cm). The following statement shows the details.

100	118	110	118	118
118	100	100	118	100
110	100	118	110	110
100	110	100	100	110

Prepare a table with tally marks for the above data :

Height (cm)	Tally marks	Number of students
100		
110		
118		
Total		

## Pictographs

Symbols and pictures can be used to represent data. This helps us to study and understand data easily. This kind of representation is called “PICTOGRAPH”.



## ACTIVITY 4

The following pictograph shows the sale of toys in a shop :

CAR	
VAN	
BUS	
BALL	
DOLL	

Look at the above pictograph and fill in the required data in the following boxes :

a) The total number of toys sold

b) The total number of balls sold

6

c) Name the toy which are sold least in number

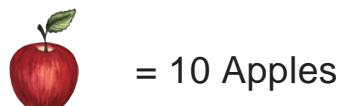
d) Name the toy which are sold most in number

e) The total number of buses sold



## ACTIVITY 5

The following pictograph represents the number of apples sold at a shop in a week.



Monday	
Tuesday	
Wednesday	
Thursday	
Friday	
Saturday	

Answer the following questions from the data given in the above table.

- 1) The total number of apples sold in six days
- 2) The total number of apples sold on Thursday
- 3) The sale was maximum on
- 4) The sale was minimum on
- 5) Sales was equal on

 40 and



## ACTIVITY 6

Represent the following data in terms of pictograph.

= 5 Students

Standard	No.of Students
I	15
II	20
III	25
IV	20
V	30

I Std	
II Std	
III Std	
IV Std	
V Std	



Date:.....

- 1) In a cricket selection match, 25 students participated. The number of runs scored by each student is given below.

30	30	32	40	45
32	30	40	45	40
32	32	32	30	40
45	40	45	45	40
30	30	32	32	30

Prepare a table with tally marks for the above data.

Runs	Tally marks	No. of students



- 2) The number of computers supplied to few schools is given below.

= 4 Computers

School A			
School B			
School C			
School D			
School E			

From the above pictograph, fill in the following data.

a) The number of computers supplied to the school A

b) The total number of computers supplied to all schools

c) The number of computers supplied to the school D

d) The number of computers supplied to the school B

- 3) Represent the number of students in each class of your school through pictograph.

Comments



Teacher's signature

**'I can, I did'**  
**Student's Activity Record**

Subject :

Sl. No.	Date	Lesson No.	Topic of the Lesson	Activities	Remarks