# Unit 4



You have read about  $\frac{1}{2}, \frac{1}{4}, \frac{3}{4}, \frac{1}{3}$  in class III. Do you remember we said  $\frac{1}{2}$  as half and exhibited in figure in this way –



Shahnaz and Mala have prepared some diagrams and figures. What is the value of this coloured part. Write the names below the figures.



## Numerator and denominator

You must know that in  $\frac{2}{8}$ , 2 is numerator and 8 is denominator.

		Numerator
Now tell which number is numerator	$\frac{3}{4}, \frac{2}{3}, \frac{1}{2}, \frac{1}{3}, \frac{1}{4}$	Denominator

Now do the fractions in figures also. If some fraction is exhibited by figure how can you recognize numerator and denominator. Let see the examples .

**Example-** We can exhibit  $\frac{1}{4}$ 



Uncoloured and coloured portion (total) = 4 means denominator.

In this way do  $\frac{2}{3}$ ,  $\frac{1}{2}$ ,  $\frac{1}{3}$  and  $\frac{3}{4}$ 

The total number of divisions of a thing is its denominator and the coloured divisions are numerators

See these figures and tell what is the total number of parts and the number of coloured parts. Then tell the numerator and the denominator.

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## Write in Fraction:

Here we have distributed a piece of paper into 8 equal

parts.

One part is coloured.

Coloured part of paper = 1

Total number of parts of the paper = 8

Therefore the coloured part is  $\frac{1}{8}$  (1 upon 8) of the whole

piece of paper.



In the same way if 2 parts of the paper are coloured then the coloured part is  $\frac{2}{8}$  (2) upon 8) of the whole piece of paper. Here numerator is 2 and denominator is 8.

•	To tell $\frac{3}{8}$ how many parts will you colour ?	
•	If we colour 4 parts then what part will be	
	the coloured part of whole piece of paper?	
•	If we colour 7 parts of whole piece of paper then	
	coloured part of whole piece of paper?	
•	5 parts of whole piece of paper?	

If all parts of whole piece of paper is coloured, then write in fraction.

## Write the coloured parts as fraction in the figure given below –



## Write as directed:

- A fraction in which denominator is 8 & numerator is 5 ———— 1.
- A fraction in which denominator is 5 and numerator is 13 -----2.
- 3. Three fractions in which denominator is double of numerator
- Two fractions of equal denominators -4.
- Two fractions in which numerators are same but denominators are different. 5.

## **Division is also fraction**

Do you know that collection of things can be divided into equal parts. You may have divided things equally between your two friends, this means both of them have taken the things half-half.

Sushila and Chandar collected 16 jamuns. If they distributed it equally between themselves. How many jamuns will each get.

## We can explain this as follows –

Total number of jamuns was 16

equally divided in two parts

Sushila's share is half of the total or Chandar's share is half of the total or  $\frac{-}{2}$ 

Each portion have 8 jamuns

Therefore half of 16 = 8 or  $\frac{1}{2}$  of 16 = 8

## Now you do







Total number of mangoes

How many equal portion of mangoes were made?

What part of total number is represented by each protion? -----

What is the number of mangoes in each portion?

There fore  $\frac{1}{6}$  of 30 = 5



Total number of kites ------In how many equal portions it is divided ------How will you write each portion in fraction ------Number of kites in each portion ------

Therefore  $\frac{1}{3}$  of 18 = ------





Total number of balls------In how many equal parts it has been divided-----How will you write one part in fration?-----How will you write two parts in fration?-----State the number of balls in two parts------Therefore $\frac{2}{3}$  of 15 =------

Now do it (Draw the figure first, if needed)

- There were 16 bananas out of which I ate 4. Tell what fraction of bananas are left?
- In a basket there are 6 mangoes, 4 bananas and 5 apples. What is the fraction of the apples among the entire friuts?
- Kailash has 10 biscuits. Out of which he gave 2 bisucuits to Shubha. Tell what fraction did Shubha get ?

### **Big & Small Fraction**

In your previous class you read about half  $(\frac{1}{2})$ , quarter  $(\frac{1}{4})$ , three fourth  $(\frac{3}{4})$  and one third  $(\frac{1}{3})$ . These words are also used in other examples.

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Where do you use these words in daily life?



Here coloured portion is ..... of the whole.

Among all of these, which figure has maximum coloured part? Which fraction exhibits the maximum coloured part? ————

This fraction is the greatest fraction among all three.

Now see the figures and fill which fraction is greater and which fraction is smaller ?





If denominator of two fractions are equal then the fraction having greater value of numerator is a greater fraction.

### Arrange the numbers in order

You have already arranged the number like 1, 2, 3, 4, and 98, 99, 100, 101, 102, ..... etc. Now arrange the fractions in increasing order.

 $\frac{8}{9}, \frac{6}{9}, \frac{5}{9}, \frac{3}{9}, \frac{1}{9}, \frac{4}{9}, \frac{7}{9}, \frac{2}{9}$ 



You can also write them by using the sign - <, >



Which is the greatest and the smallest fraction among these ?

## **Addition of Fraction**

Mother gave guava to Seema. Seema told "I want to eat half  $(\frac{1}{2})$  only." She ate half  $(\frac{1}{2})$ . The guava was sweet, so she took the other half also and ate that also.

We can show the guava, which Seema ate, in this way







It means ate both the parts (a whole Guava)

We can also write this in following way –

1		1	ate both the portions	_ 2 _	1+1
$\overline{2}$	+	$\overline{2}$	In all 2 portions were	2	2
			made		

### Let us see one more example -

Sakina started sowing the field. The field was big so it cannot be completed within a day. She divided the field in 6 equal portions.

She thought that she would sow one portion of the field every day. She did the same.



The sowing done in first day	$\frac{1}{c} = \frac{\text{Sowed portions}}{\text{Total portions of the field}}$
Sowing done till second day.	$\frac{1}{6} + \frac{1}{6} = \frac{1+1}{6} = \frac{2}{6}$
Sowing done till 5th day $\frac{1}{6} + \frac{1}{6} + \frac{1}{6} + \frac{1}{6}$	$+\frac{1}{6}+\frac{1}{6}=\frac{1+1+1+1+1}{6}=\frac{5}{6}$
And sowing done till 6th day $\frac{1}{6}$ +	$\frac{1}{6}$ +++++
=.	=

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It means sowing is done in the whole field.



The fraction you have just seen had equal denominators. If denominator is equal it means the portions of both the fractions are equal.

### Subtraction of Fraction :

A sugar cane seller cut the sugarcane into 10 equal parts. He gave 7 parts i.e.  $\frac{7}{10}$  part of the sugar cane to Jayant. He gave the remaining part i.e.  $\frac{3}{10}$  part of the sugar cane to Sweety. Now tell how much part is with Jayant than Sweety ?



How much more did Jayant get = Jayant's portion - Sweety's portion  $\frac{7}{10} - \frac{3}{10}$ =  $\frac{7-3}{10}$ =  $\frac{4}{10}$ = Jayant has  $\frac{4}{10}$  part more than sweety. Now see them :  $\frac{5}{6}$  $=\frac{3}{6}$ 6 6 5 shaded part 5 shaded part of the circle Remaining 3 - 2 shaded part of the circle Shaded part  $\frac{4}{5}$  $\frac{5}{9}$ 

In the same way

	1	4 - 1	3	8		3	8 - 3
_	_	= =		_	_	_	==
	5	5	5	9		9	9

### Fill in the blanks given below :

A)	$\frac{5}{8} - \frac{4}{8} =$	$=\frac{5-4}{8}=\frac{\boxed{3}}{8}$
C)	$\frac{6}{7} - \frac{2}{7}$	= =

Subtract –



### Fractions which are equal

You have read about big and small fractions and did some exercises also. Here some more diagrams along with fractions are given.

B)  $\frac{7}{10} - \frac{3}{10} = \frac{7-3}{10} = \frac{4}{10}$ 

D)  $\frac{3}{4} - \frac{1}{4} = \frac{\Box - \Box}{\Box} = \frac{\Box}{\Box}$ 



Colour one part of a rectangle which is divided into 3 equal parts. If you had 6 parts of the same rectangle, colour 2 parts of it. In both the conditions the coloured parts are equal.

Therefore Thus



Write the fraction of the diagrams given below. Then join the equal fractions with lines.











.....

### Fraction more than one

Suppose we have two apples. If you ate half of an apple what part is left

with us ?





Only half 1/2 apple is left from the apple which you ate.

The other apple remains unused. Divide the other apple into two equal halves. Then it is equal to 2 halves of an apple.

We are left with - half of the first apple and two halves of the other apple.

It means total three halves.

$$= \frac{1}{2} + \frac{1}{2} + \frac{1}{2}$$
$$= \frac{1 + 1 + 1}{2}$$
$$= \frac{3}{2}$$

We are left with  $\frac{3}{2}$  apples.