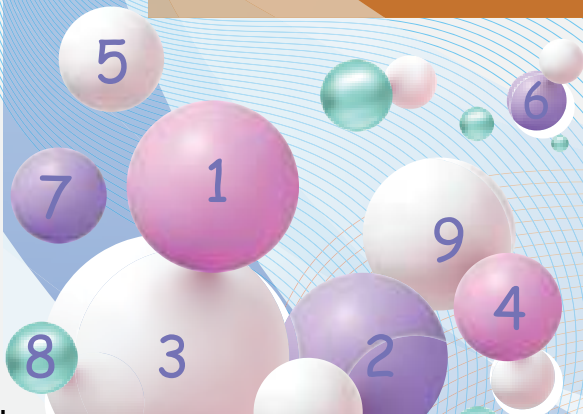


Mathematics

1



With the blessings of :
Our Parents

Mathematics (Part-1)

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Based on:

- National Education Policy 2020
- NCF 2022
- Activity Based Format
- Innovative Approach
- Learning with fun
- Eco-Friendly Paper

Preface

Mathematics, a well arranged series of Mathematics strictly confirms to the vision of National Curriculum Framework 2022 and also meets the requirement of the NCERT latest syllabus. It is an activity-based maths textbook created to give the students a National Education Policy 2020-based interactive learning foundation in mathematics while also fostering the holistic development of learners through critical thinking and creativity.

These traits will aid the students in better understanding the fundamental ideas through play. Core educational ideas are the foundation of this textbook. The goal is to encourage youngsters to look beyond the theoretical side of arithmetic and to learn about practical applications.

The book's design emphasises effectiveness and logical progression. Through teaching and interactive learning, NEP 2020 seeks to enhance higher order thinking.

The purpose of this book's design and presentation is to reinforce mathematical concepts through the use of simple games. This book includes enough questions in accordance with the NEP 2020 criteria.

Salient Features of the series:

Learning Objectives: Learning objective shows the right path of learning to the teacher as well as students. It determines the direction of learning for effective and quality learning outcomes.

Warm-Up: It aids pupils in remembering lessons learnt in previous years and lets them ready for new concepts. Also, allows learners to process and explore mathematical concepts while applying, extending, and analysing information within their own unique range of understanding.

Teacher's note: A "Teacher's Note" is a set of instructions laid out for the teachers to follow in the classroom in order to make class interactive and discussion based.

Quick Tip: It offers suggestions on how to quickly solve the questions.

Facts To know: The inclusion of it gives the learner plenty of chances to investigate the information regarding the topics..

Think Wisely: These questions have been included to encourage learners to think, analyse and apply.

Mental Maths: The main goal of teaching Mental Maths to the learners is to focus on improving their arithmetic abilities through memory, practice and number manipulation.

Maths Lab Activities: These are provided with the intention of making maths learning efficient, engaging, pleasant, and intellectually stimulating.

This series of Mathematics books from class 1-8 contains sufficient questions for practice on each topic.

I am very appreciative of the entire staff and the management for working so hard to get this book into such a wonderful arrangement.

The books are always open to suggestions and enhancements.

Author

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1



Counting



Learning Objectives

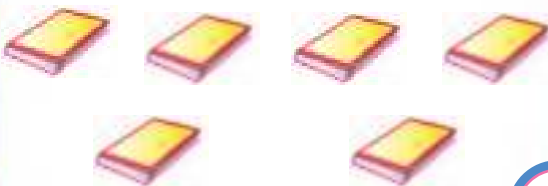
At the end of this lesson, students will be able to:

- Enumerate and read numbers upto 100.
- Identify what comes before, after and in between the numbers.
- Organise numbers in ascending and descending order.



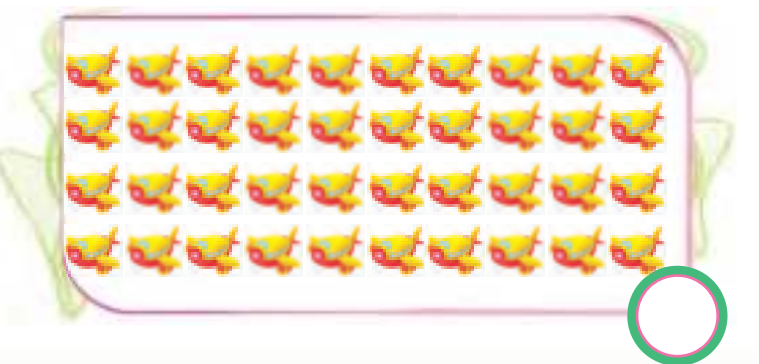
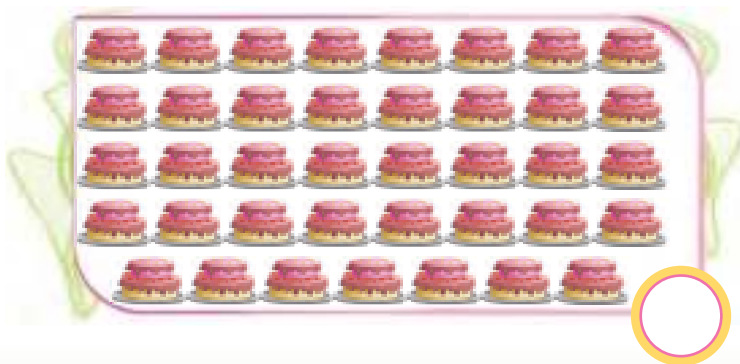
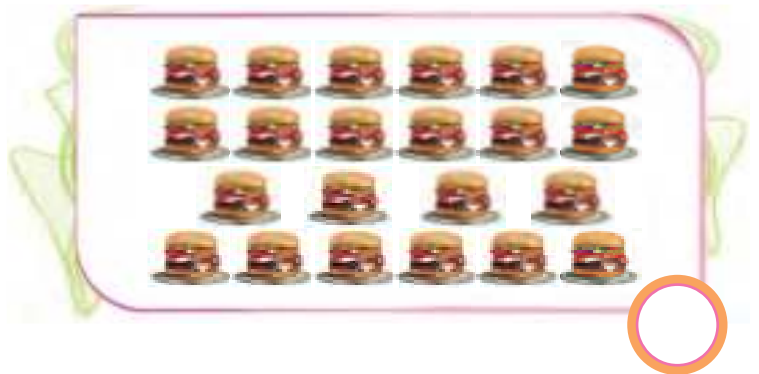
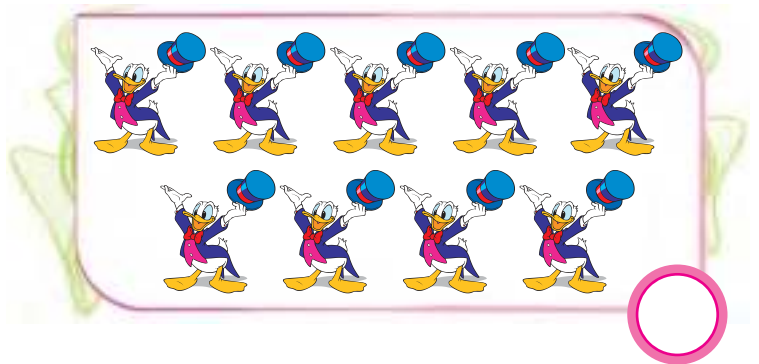
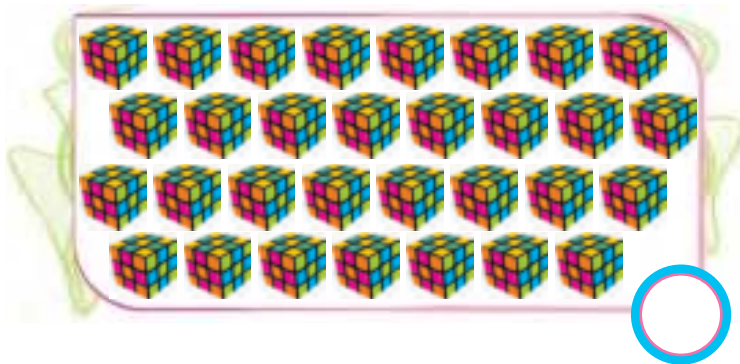
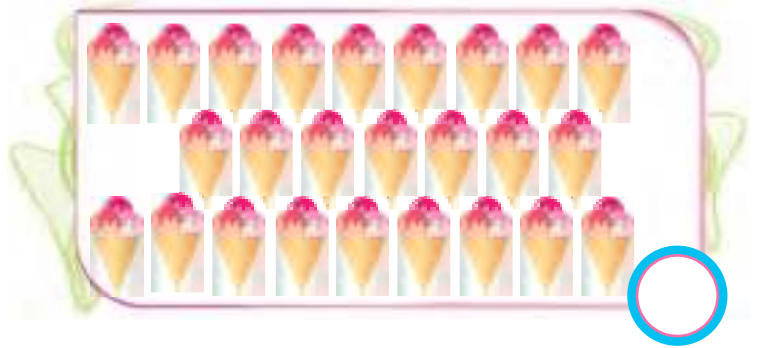
Warm Up

Find out which group has more objects and which has less. Write 'M' for more and L for less:





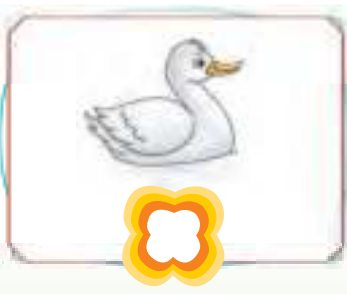
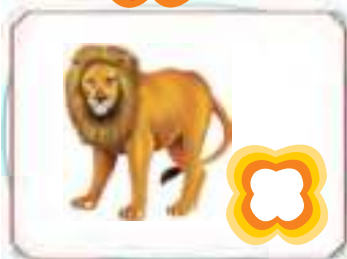
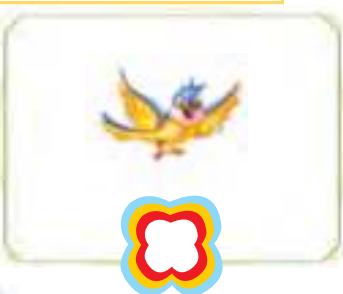
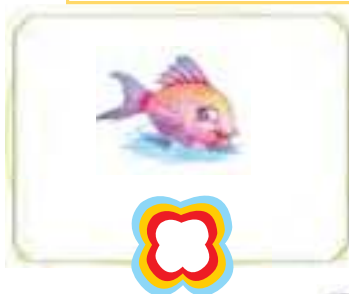
Count the number of objects and write their answer in the circle:

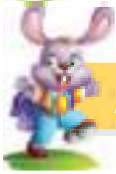




Watch and Count:

Look at the picture given below and count the number of objects:





1-50 Counting Forward:

Fill the missing numbers:

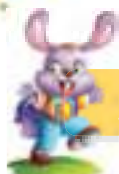
1 1 1 1 1 1 1 1 9 1



Facts to Know

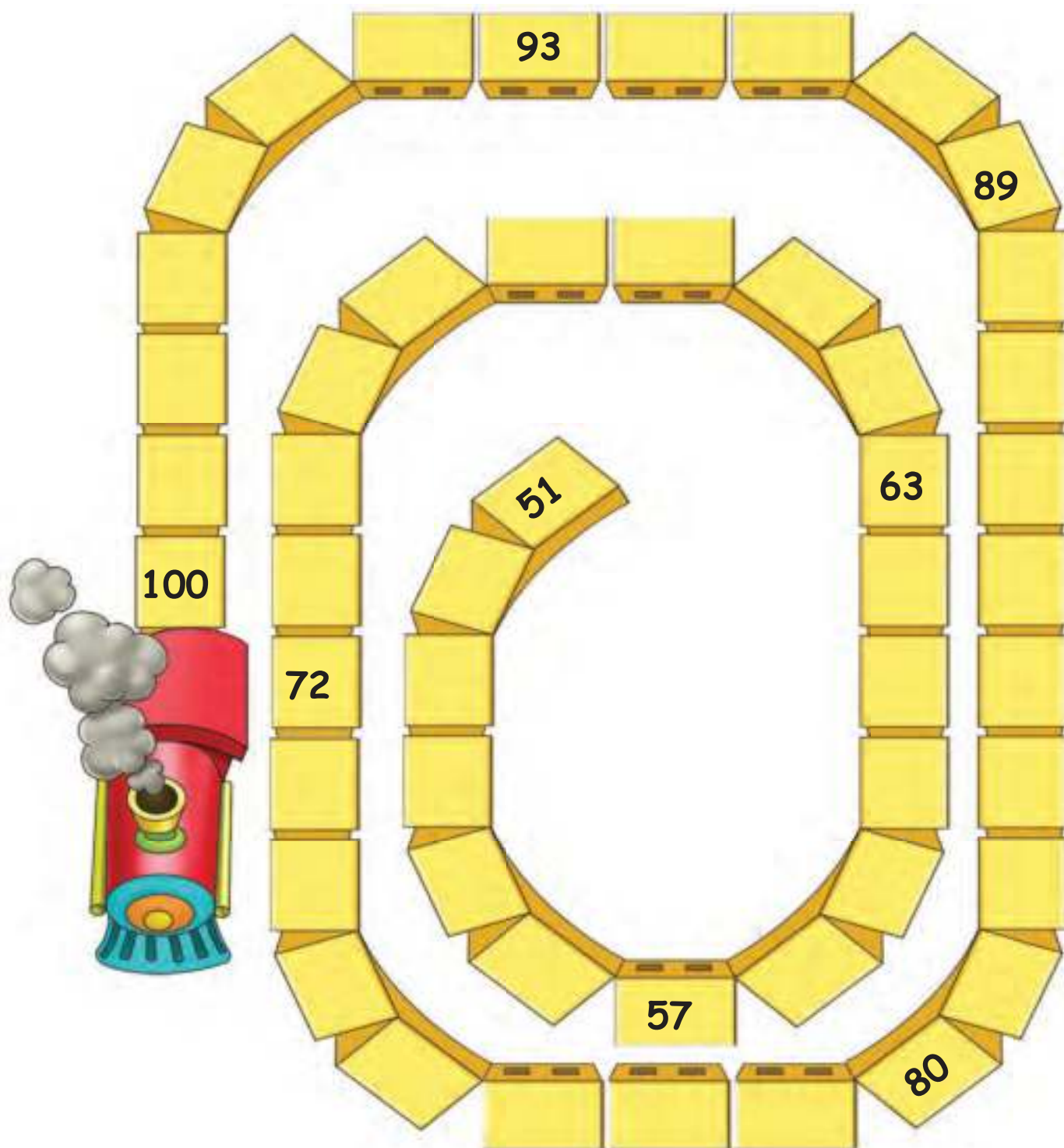
In ancient Greeks, one is not even considered as a number. Instead the number system began at Two.

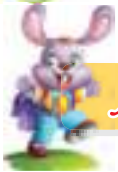




100-51 Counting Backward:

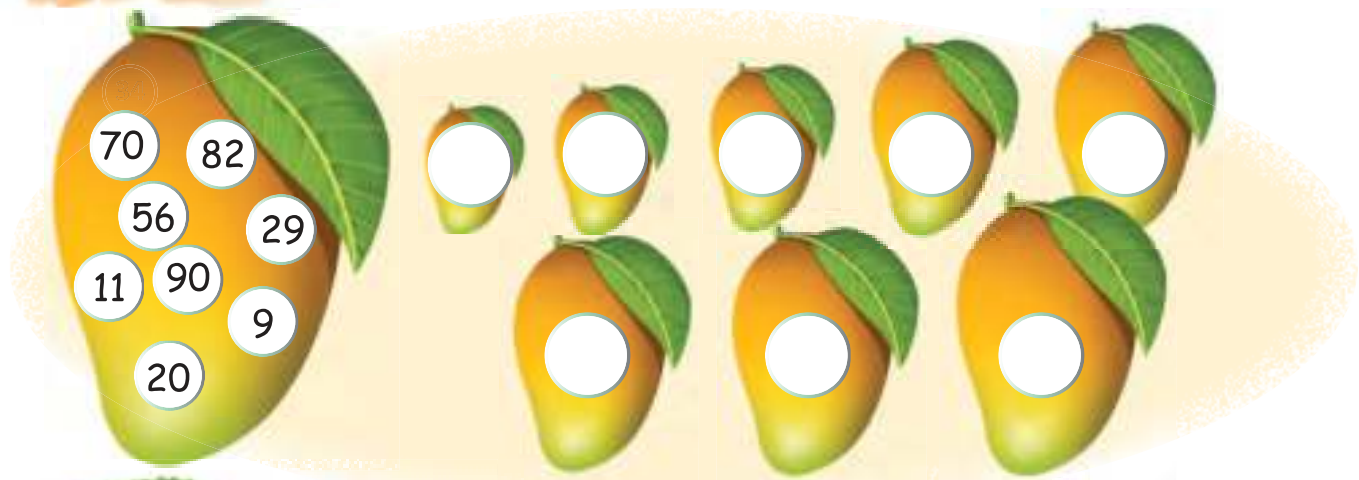
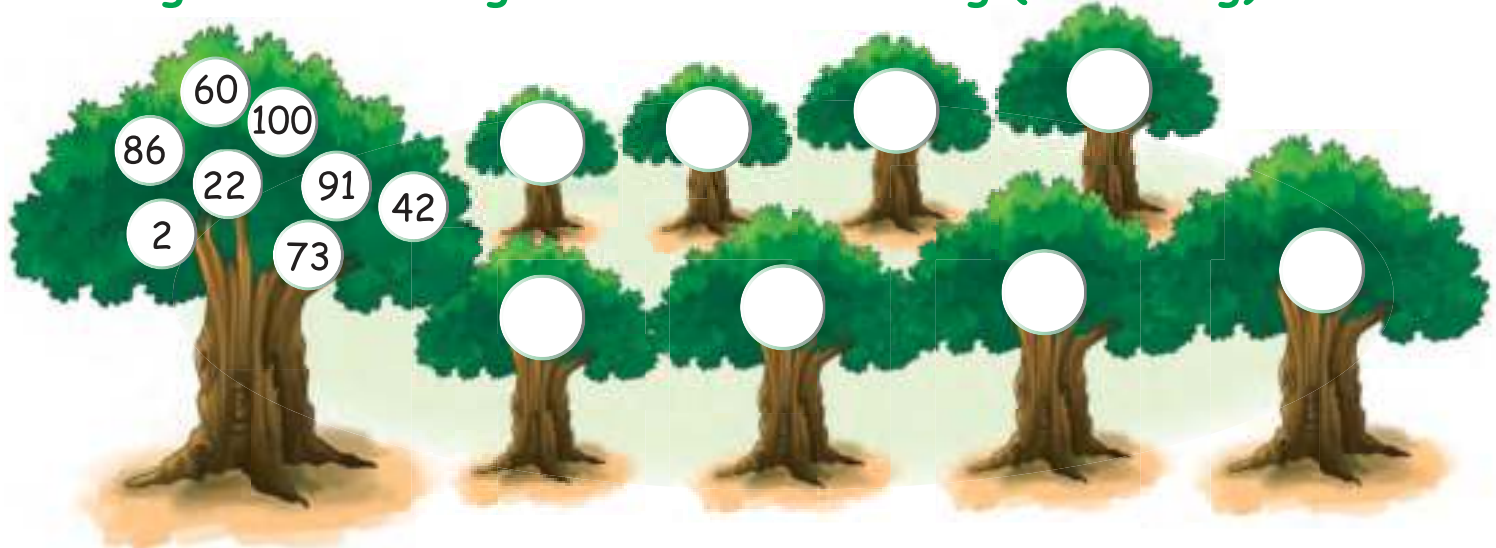
Fill the missing numbers:





Ascending Order:

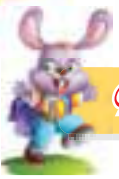
Arrange the following numbers in ascending (increasing) order:



Teacher's Note:

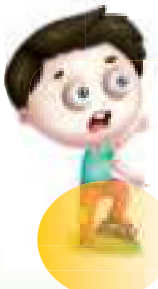
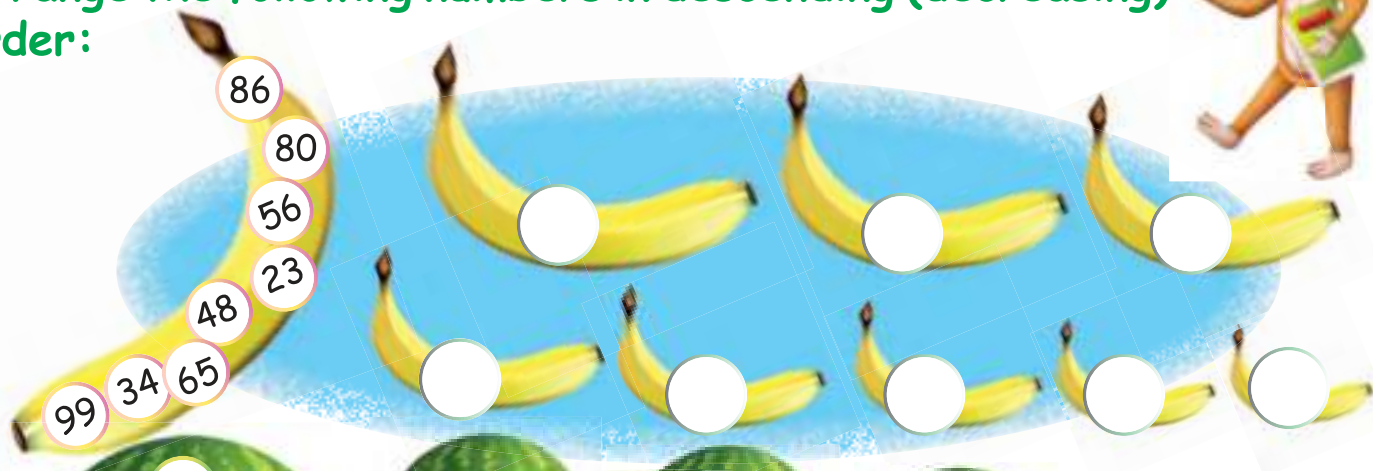
Ascending order means, going from smaller number to bigger number. Arrange the children according to their height in a line to emphasise the concept.





Descending Order:

Arrange the following numbers in descending (decreasing) order:



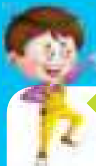
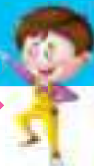
Quick Tip

Always start with the largest number.
Always ensure that the numbers are in order from largest to smallest.
Always end with the smallest number.





Just Before-Just After - In Between

Just Before		Just After		In Between		
 48	49	51	52 	63	64 	65
	90	22		90		92
	53	59		86		88
	29	11		22		24
	86	26		11		13
	42	9		98		100
	99	90		88		90
	81	84		29		31
	60	23		55		57
	98	54		42		44

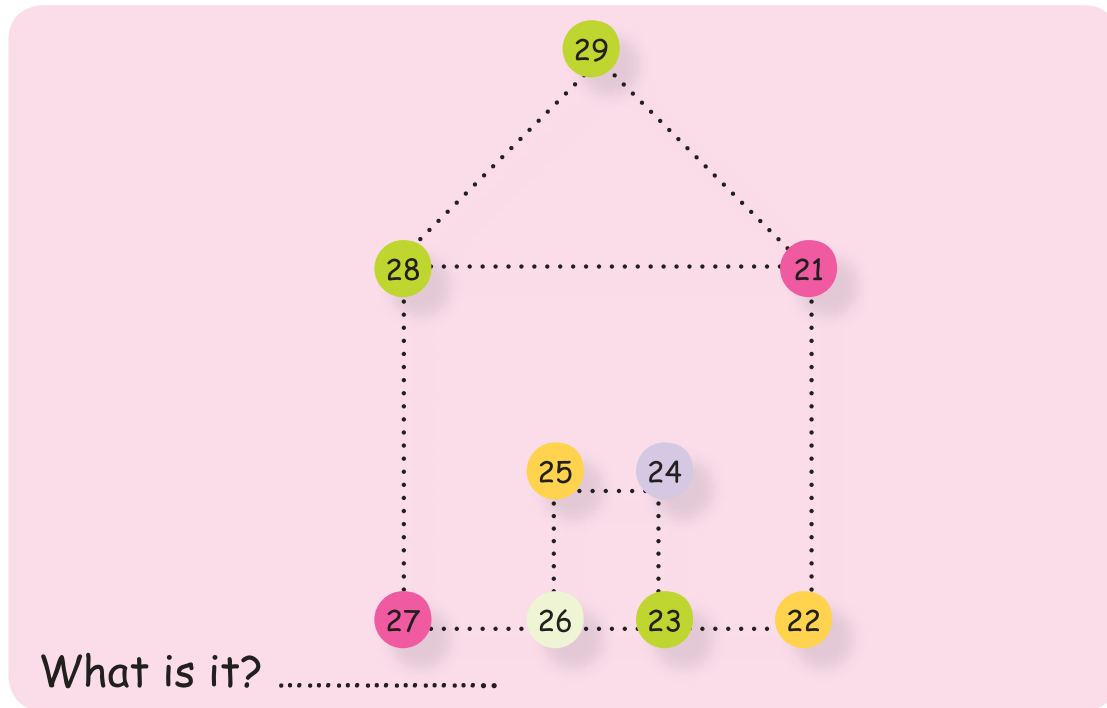




Think Wisely

Join the numbered dots from 21 to 29 in sequence and complete the picture.

Starting from 21, join the dots in ascending order.



What is it?



Mental Maths

1. Circle the largest number.

- a. 20 14 7 9
b. 5 7 10 13

2. Write the number that comes in between.

- a. 98 ____ 100 b. 14 ____ 16 c. 5 ____ 7
d. 83 ____ 85 e. 18 ____ 20 f. 57 ____ 59

3. How many 5's are there in the box?

2	3	5	1	5	3
4	5	5	6	2	5





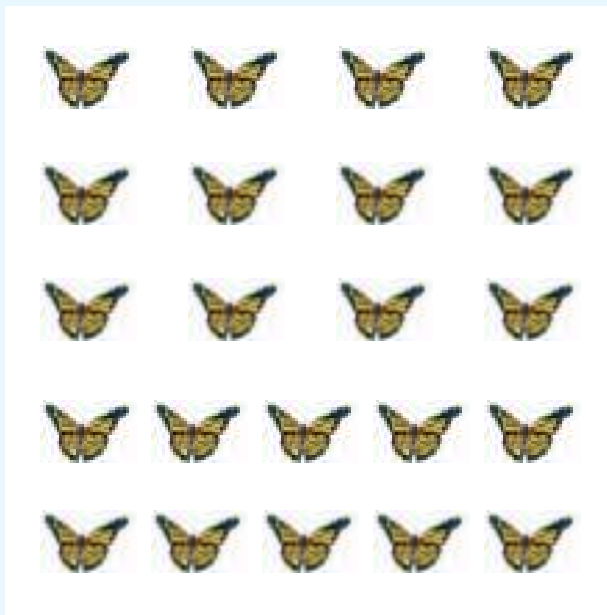
Maths Lab Activity

Materials required:

Number cards from 21 to 30 and sheets of paper.

Steps:

1. Divide the class into two teams.
2. Keep the material on your table.
3. A student from team 1 chooses a number card.
4. The student reads out that number to the other students of team 2, for example, 22.
5. Now, team 2 students will have to draw 22 butterflies on a sheet of paper and show it to his / her team members.
6. Team members will count and tell the number. If the answer comes out correct, then one point will be given otherwise points will be given to team 1.





Numerals on Abacus



Learning Objectives

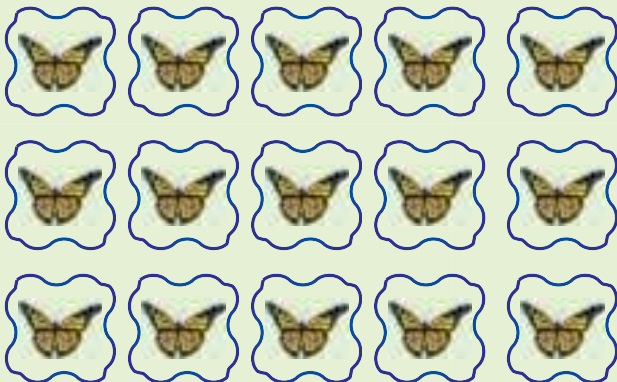
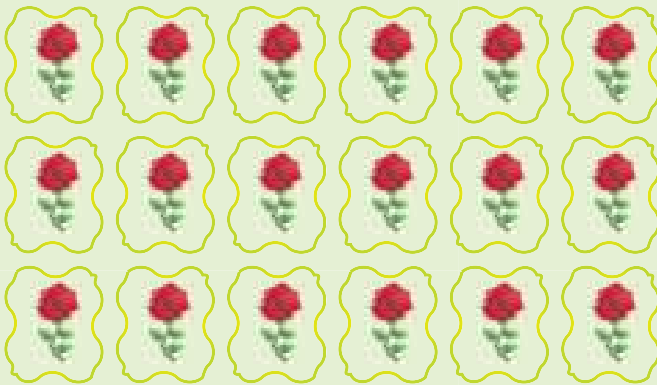
At the end of this lesson, students will be able to:

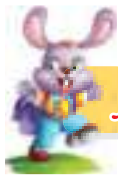
- Know about the working on the abacus.
- Learn the place value - Ones , tens and hundreds with the help of abacus.
- Count, write numerals and number names according to the beads on abacus.



Warm Up

Look at the picture carefully and circle the group of 10.



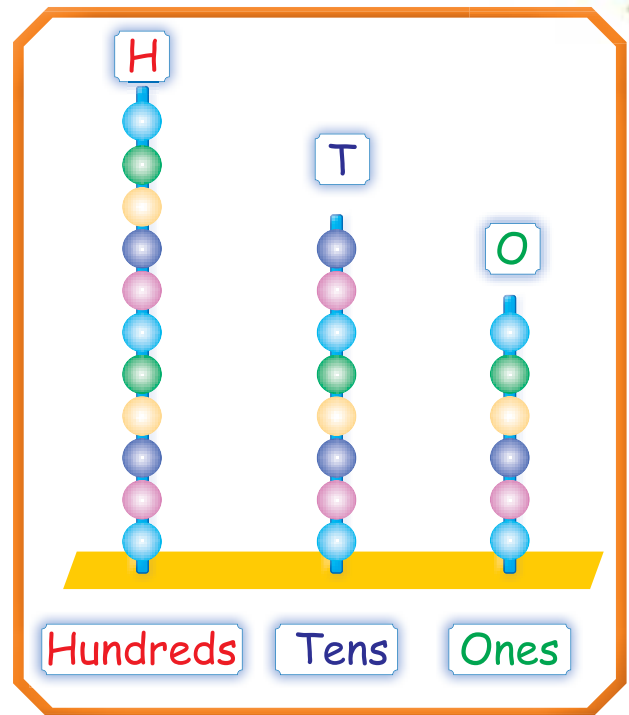


ABACUS:

An **ABACUS** is a calculating machine, used for counting numbers.

- ♦ Abacus consist of rods.
- ♦ Each rod of Abacus represents a place value.

The rod on the extreme right is **ONES** rod.



The rod in the middle is **TENS** rod.

The rod on the extreme left is **HUNDREDS** rod.

- ♦ Rod consist of beads.
- ♦ Slide the beads in the rod to represent numbers.



Place Value:



= 1 ones



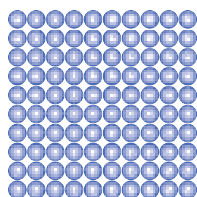
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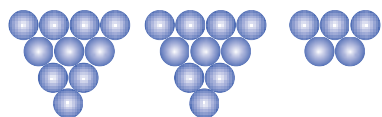
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Count and Write:

Count and write numeral and number name. Also draw the beads on the **ABACUS**.



100

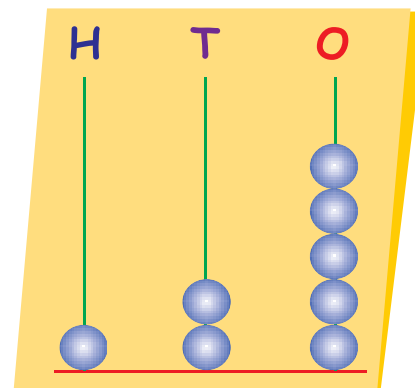


10

10

5

H	T	O
1	2	5



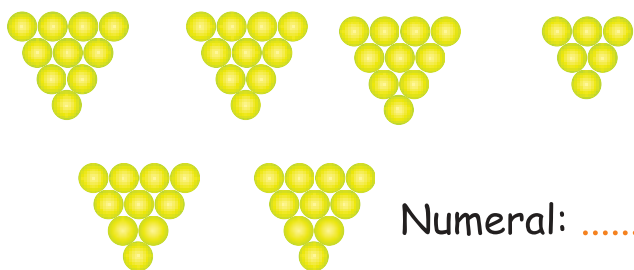
Numeral: 125

Number Name: One Hundred Twenty-five

Teacher's Note:

Use physical objects to represent the numbers to help children visualise what they are doing on the abacus. For example, you can use twenty five pebbles to represent the number 25. Once they understand how to count with physical objects, they will be able to transfer that knowledge on the abacus.



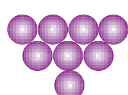
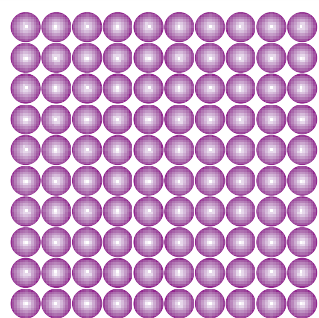


H	T	O

H	T	O

Numeral:

Number Name:



H	T	O

H	T	O

Numeral:

Number Name:

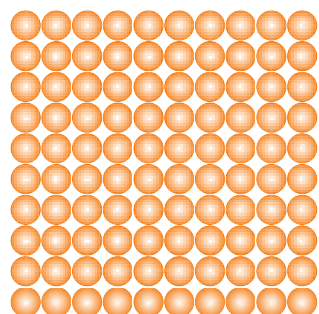


H	T	O

H	T	O

Numeral:

Number Name:



H	T	O

H	T	O

Numeral:

Number Name:

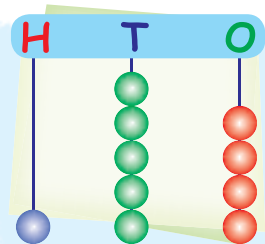


Quick Tip

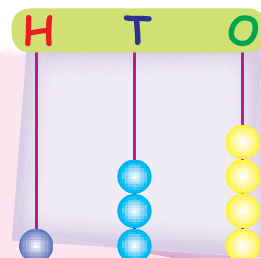
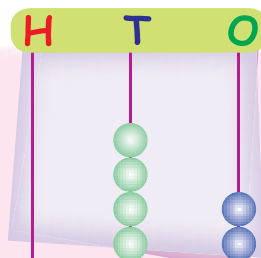
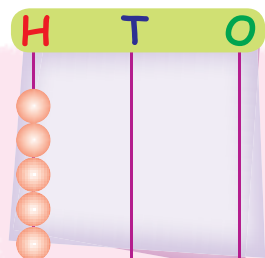
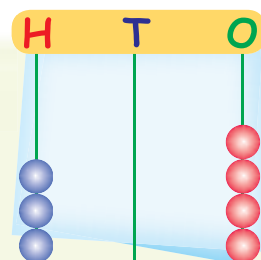
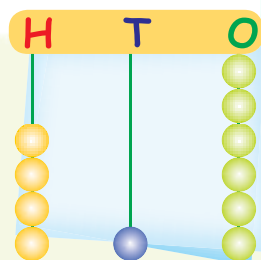
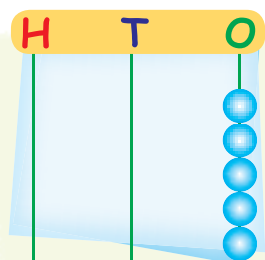
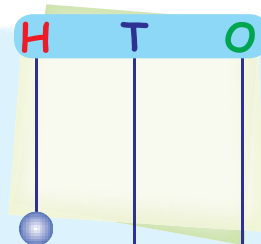
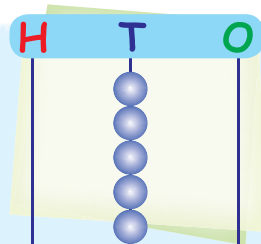
Assign each column a place value. As on a modern calculator, each column of beads represent a "place" value from which you build a numeral. So, the farthest column on the right would be the "ones" place (1-9), the second farthest the "tens" place (10-99), the third farthest the "hundreds" place (100-999) and so on.



Write the numerals shown on the Abacus:



154



Facts to Know

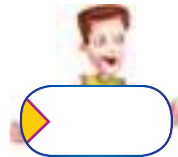
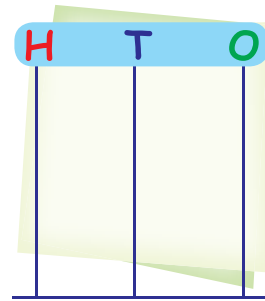
- Abacus is one of the most primitive calculating devices known. It is still being used in some countries for calculations.
- China is majorly considered to be the place of origin of Abacus. The originally written documentation on Chinese abacus is dated in the second century BC.





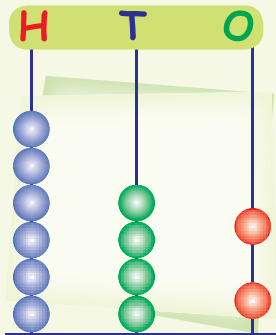
Think Wisely

I come after 125 but before 127. Who am I?
Represent me on the given abacus below.

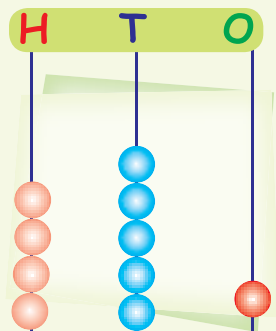


Mental Maths

Hundreds, Tens and Ones. Write how many.



Hundreds	Tens	Ones



Hundreds	Tens	Ones





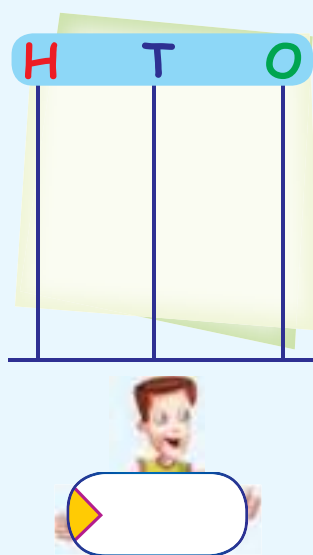
Maths Lab Activity

Materials required:

Multicoloured beads, four sticks and a fevicol.

Steps:

1. Divide the class into two groups.
2. Give the materials to both the groups.
3. Ask the groups to create an abacus and show the number '671' on it using the beads.
4. The group which will create the abacus first will get the points.



3



Addition



Learning Objectives

At the end of this lesson, students will be able to:

- Add by putting together and on fingers.
- Recognise the symbol '+' for addition.
- Add two digit numbers vertically.
- Solve story sums of addition.

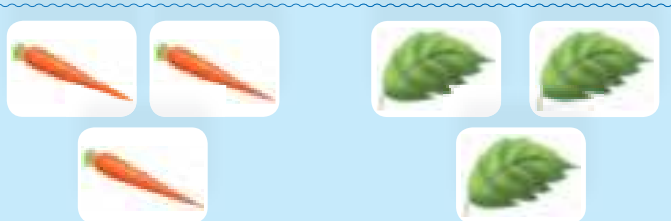


Warm Up

Count the number of objects in both the boxes and write the total number in the given box:



6 pencils and 5 apples make



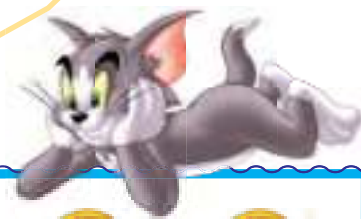
carrots and 3 leaves make



7 lilies and birds make



Addition means putting things together.



Shagun
has 2 Dolls



Shagun got
1 more Doll



Now, Shagun
has 3 Dolls



2

+



1

=



3



'+' is known as **plus** sign.
It means **add** or **sum** numbers.



Count and Add:

Count the objects and add the numbers:

2 dogs and 3 dogs make 5 dogs



3 tortoises and 4 tortoises make 7 tortoises



1 cake and 3 cakes make 4 cakes



5 toys, 1 toy and 2 toys make 8 toys



6 chocolates, 1 chocolate and 3 chocolates makes 10 chocolates



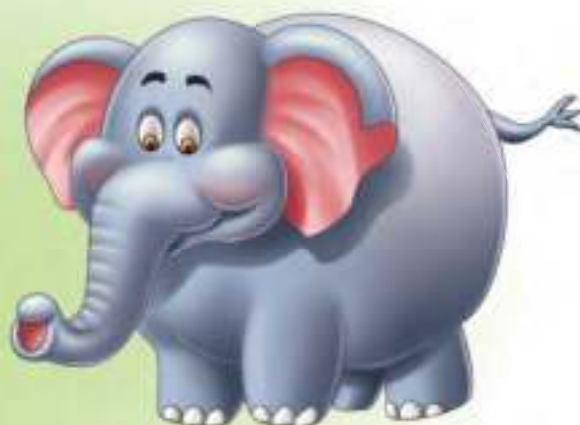
Counting on fingers:



This is your left-hand palm.

Open your palm as shown above.

Now, your fingers act as a counting board and thumb of your hand act as a counting stick.



Now, add 2 and 3 using fingers



+



=



2

+

3

=

5





Count and Add:

Count on your fingers and add the following numbers:

$$5 + 2$$

=



$$2 + 4$$

=



$$1 + 6$$

=



$$7 + 2 + 1$$

=



$$2 + 5 + 2$$

=



$$2 + 2 + 3$$

=





Vertical Addition:

Draw the standing lines and then perform the addition:



1	
+	3
4	



	2	
+	3	

4	
+	2



Quick Tip

Addition of two numbers give the same result irrespective of the order in which they are added. For instance, $4 + 3 = 3 + 4$ as both give the same result i.e. 7.



Word Problems:

Read the statements and do the additions:

1. Kishan has 6 pencils.
Vijay has 2 pencils.



How many pencils are there in all?

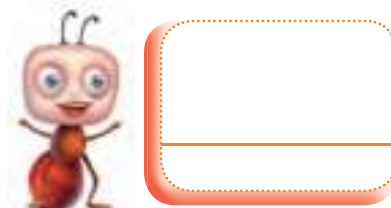
	6
+	2
	8



3. Hema has 5 skirts and 3 tops.



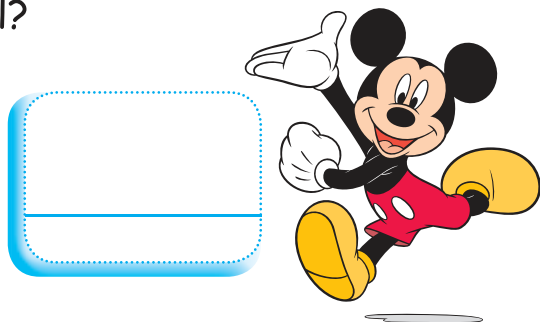
How many clothes does she have in all?



2. Shagun has 2 balloons.
Mini has 4 balloons.



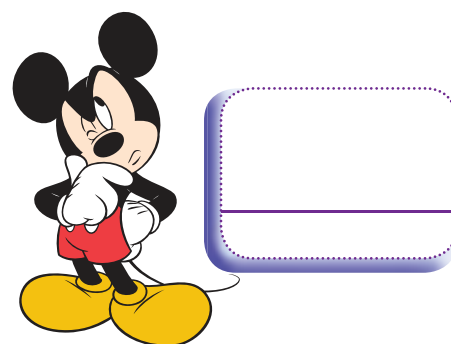
How many balloons are there in all?



4. Komal has 2 cakes.
She gets 1 more.



How many cakes are there in all?



5. 8 birds are flying.
2 more birds join them.



How many birds are there in all?



6. Nikhil picked 3 flowers.
Ajay picked 1 flower.
Vijay picked 5 flowers.



How many flowers did they pick together?



Facts to Know

The symbol for addition, +, was invented by Michael Stiple in 1544. The symbol owes its origin to the word "et" in Latin.





Count and Add:

Objects	Tens	Ones
	$\begin{array}{r} 1 \\ + \\ 1 \\ \hline \end{array}$	$\begin{array}{r} 0 \\ 5 \\ \hline 5 \end{array}$
	$\begin{array}{r} + \\ \hline \end{array}$	$\begin{array}{r} \\ \hline \end{array}$
	$\begin{array}{r} + \\ \hline \end{array}$	$\begin{array}{r} \\ \hline \end{array}$
	$\begin{array}{r} + \\ \hline \end{array}$	$\begin{array}{r} \\ \hline \end{array}$
	$\begin{array}{r} + \\ \hline \end{array}$	$\begin{array}{r} \\ \hline \end{array}$
	$\begin{array}{r} + \\ \hline \end{array}$	$\begin{array}{r} \\ \hline \end{array}$



2-Digit Addition:

Add 36 and 49:

Step-1 : Add the ones.

$$6 \text{ ones} + 9 \text{ ones} = 15 \text{ ones}$$

$$15 \text{ ones} = 1 \text{ tens} + 5 \text{ ones.}$$

Write 5 in the ones column and take 1 ten to the tens column.

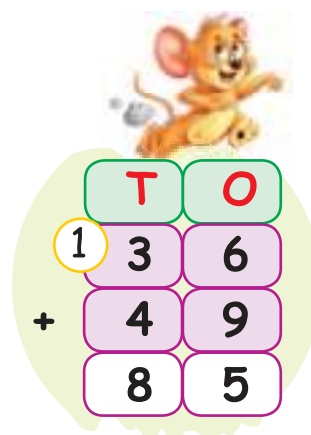
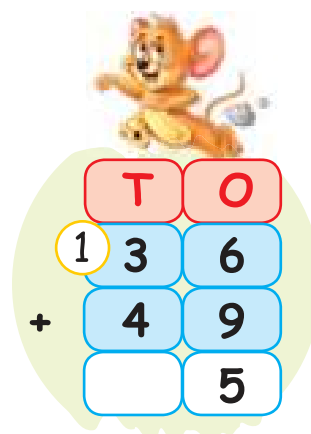
It is known as **carry**.

Step-2 : Add the tens.

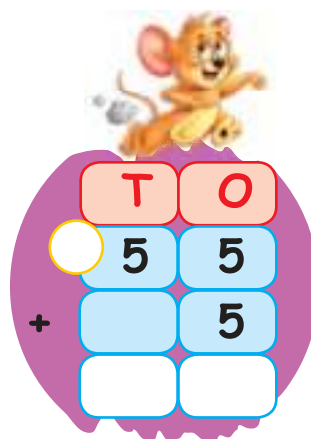
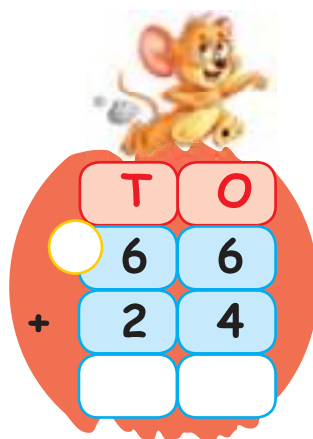
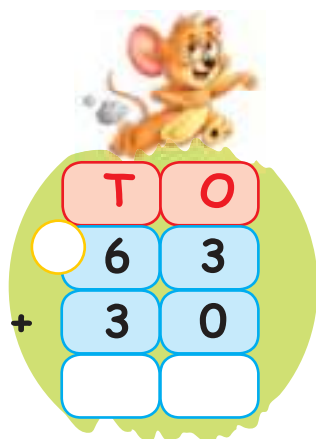
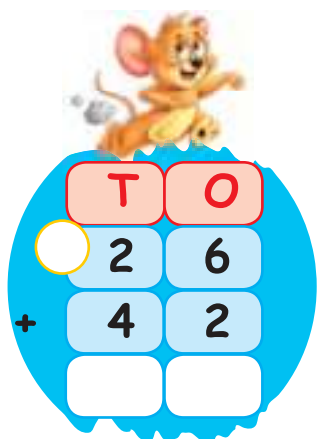
$$1 \text{ tens} + 3 \text{ tens} + 4 \text{ tens} = 8 \text{ tens}$$

Write 8 in the tens column.

$$\therefore 36 + 49 = 85$$

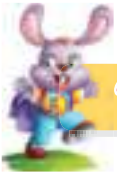


Add the following:



Teacher's Note:

Explain the concept of adding the ones and then adding the tens to arrive at the complete answer.



Word Problems:

1. 5 children are studying.
12 more children join them.
How many children are there?



+	

2. There are 17 fishes in a pond.
3 more join them.
How many fishes are there?



+	

3. A fruitseller had 11 bananas,
2 watermelons and 5 mangoes.
How many fruits did fruitseller had?



+	

4. 25 children went for swimming.
26 more children join them.
How many children are swimming there?



+	





Think Wisely

Samaira's age is less than 25 years.

It is more than $21 + 2$.

Samaira is _____ years old.

Draw the candles on the cake.



Mental Maths

1. Circle any two numbers together that add up to 9.
The numbers can go straight, downwards or diagonally.

1	2	3	4	5	6
2	9	6	3	8	2
0	9	1	5	2	9
2	8	2	4	3	7
6	8	9	2	2	10

2. How much is 6 added to 2 ?

3. 3 sparrows and 8 sparrows makes how many sparrows?





Maths Lab Activity

Materials required:

A big dice

Steps:

1. Ask the students to look at the side that shows 5.
2. Now see the number to its opposite side. Add the number to 5. $\square + \square = \square$
3. Now look at the number 3 and also the number on its opposite side.
Add these two numbers. $\square + \square = \square$
4. Now look at the number 1 and number at its opposite side. Add the numbers $\square + \square = \square$

What do you observe?



4



Subtraction



Learning Objectives

At the end of this lesson, students will be able to:

- Subtract the numbers horizontally as well as vertically.
- Identify the symbol - (minus) for subtraction.
- Solve the problem sums based on subtraction.



Warm Up

Count and write:



5



Take away-



Left-2



Take away-



Teacher's Note:

Tell the children that taking something away from a collection is called subtraction. (-) is the sign of subtraction and is read as "minus". Make sure that the children subtract a smaller number from a bigger number and not vice-versa



Subtraction means **taking away**.



Yash have 5 chocolates



Yash gave 2 chocolates to his sister



Now, Yash have 3 chocolates left.



-



=



5

-

2

=

3

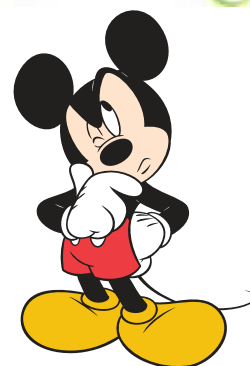


'-' is known as **minus** sign.
It means **subtract** the numbers.



Count and Subtract:

Count the objects and subtract the numbers:



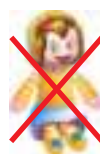
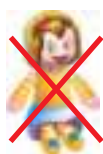
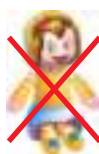
3

-

2

=

1



-

=



-

=



-

=



-

=





Subtraction Facts:

Subtraction table of 2

	$2 - 0 = 2$
	$2 - 1 = 1$
	$2 - 2 = 0$

Subtraction table of 3

	$3 - 0 = 3$
	$3 - 1 = 2$
	$3 - 2 = 1$
	$3 - 3 = 0$

Subtraction table of 4

	$4 - 0 = 4$
	$4 - 1 = 3$
	$4 - 2 = 2$
	$4 - 3 = 1$
	$4 - 4 = 0$

Subtraction table of 5

	$5 - 0 = 5$
	$5 - 1 = 4$
	$5 - 2 = 3$
	$5 - 3 = 2$
	$5 - 4 = 1$
	$5 - 5 = 0$





Subtraction table of 6

						$6 - 0 = 6$
						$6 - 1 = 5$
						$6 - 2 = 4$
						$6 - 3 = 3$
						$6 - 4 = 2$
						$6 - 5 = 1$
						$6 - 6 = 0$

Subtraction table of 7

							$7 - 0 = 7$
							$7 - 1 = 6$
							$7 - 2 = 5$
							$7 - 3 = 4$
							$7 - 4 = 3$
							$7 - 5 = 2$
							$7 - 6 = 1$
							$7 - 7 = 0$

Subtraction table of 8

								$8 - 0 = 8$
								$8 - 1 = 7$
								$8 - 2 = 6$
								$8 - 3 = 5$
								$8 - 4 = 4$
								$8 - 5 = 3$
								$8 - 6 = 2$
								$8 - 7 = 1$
								$8 - 8 = 0$





Vertical Subtraction:

Draw the standing lines and then perform the subtraction:

$$\begin{array}{r} 4 \\ - 2 \\ \hline 2 \end{array}$$

$$\begin{array}{r} 3 \\ - 1 \\ \hline \end{array}$$

$$\begin{array}{r} 6 \\ - 3 \\ \hline \end{array}$$

$$\begin{array}{r} 5 \\ - 4 \\ \hline \end{array}$$

$$\begin{array}{r} 9 \\ - 2 \\ \hline \end{array}$$

$$\begin{array}{r} 8 \\ - 6 \\ \hline \end{array}$$



Quick Tip

To check the answer of a subtraction problem, add the difference to the smaller number. You should get a greater number.



Subtraction:

Subtract these numbers:

$5 - 3 = \boxed{}$

$4 - 3 = \boxed{}$

$1 - 0 = \boxed{}$

$5 - 4 = \boxed{}$

$7 - 6 = \boxed{}$

$8 - 4 = \boxed{}$

$3 - 1 = \boxed{}$

$9 - 5 = \boxed{}$

$6 - 4 = \boxed{}$

$2 - 1 = \boxed{}$

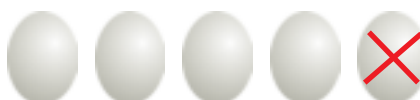
$10 - 6 = \boxed{}$

$10 - 4 = \boxed{}$

Word Problems:

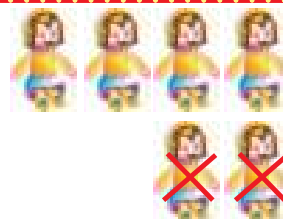
Read the statements and do the subtraction:

1. Shriyanshi bought 5 eggs.
One of them got broke.
How many eggs are left?



$$\begin{array}{r} 5 \\ - 1 \\ \hline 4 \end{array}$$

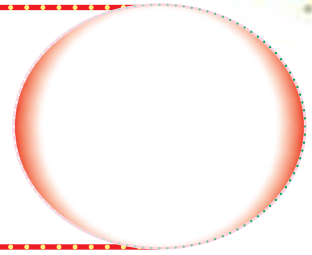
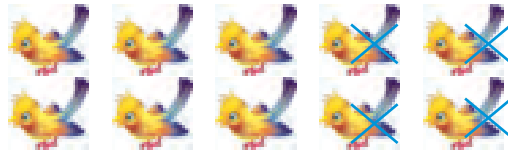
2. Shagun has 6 dolls.
She gave 2 dolls to her brother.
How many dolls are left with her?



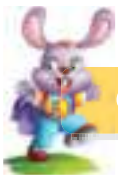
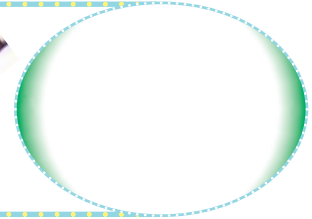
3. Abhi had 8 pencils.
He lost 3 of them.
How many pencils are left with him?



4. There are 10 birds on the branch of a tree.
Four birds flew away.
How many birds are left on the branch?



5. Rajat has 7 chocolates.
He gave 2 to his friend.
How many chocolates are left with him?



Fun Time:

Find the subtraction:

$2 - 1 =$

$9 - 4 =$

$3 - 1 =$

$8 - 2 =$

$8 - 5 =$

$9 - 2 =$

$10 - 6 =$

$10 - 2 =$



Facts to Know

Early use of the minus (-) sign that we use today was discovered in a German manuscript dating from 1481. After studying this manuscript, Johannes Widman published his book Mercantile Arithmetic using the minus sign to indicate subtraction.





Now, colour the following picture of butterfly using colour codes given in subtraction:

1 Red
2 Yellow
3 Blue
4 Purple

5 Black
6 Orange
7 Pink
8 Green



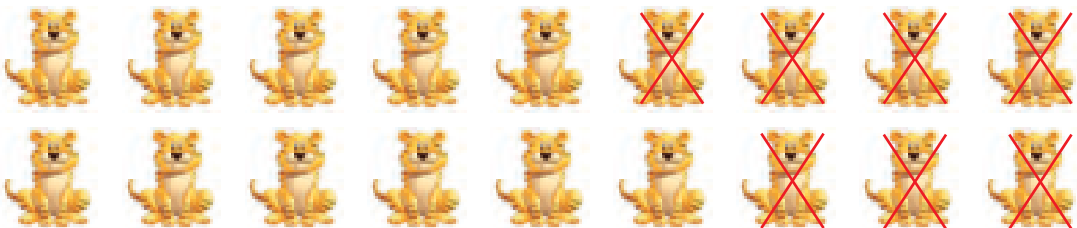
Count and Subtract:

Objects

Tens Ones





Objects	Tens	Ones
		
		
		
		



Find the subtraction:

15	-	5	=	
16	-	6	=	
19	-	5	=	
18	-	6	=	
11	-	0	=	

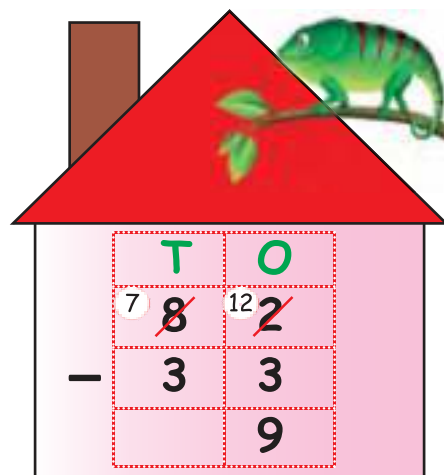
12	-	2	=	
19	-	9	=	
11	-	1	=	
16	-	5	=	
17	-	6	=	



2-Digit Subtraction:

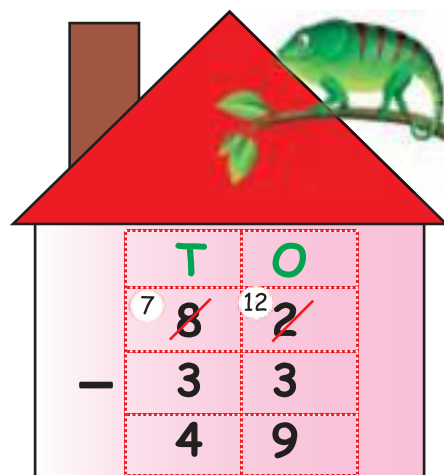
Subtract 33 from 82:

Step-1: Subtract the ones.
 $2 < 3$.
 There are not enough ones, so now regroup.
 8 tens and 2 ones = 7 tens and 12 ones.
 $12 \text{ ones} - 3 \text{ ones} = 9 \text{ ones}$.
 Write 9 in the ones column.

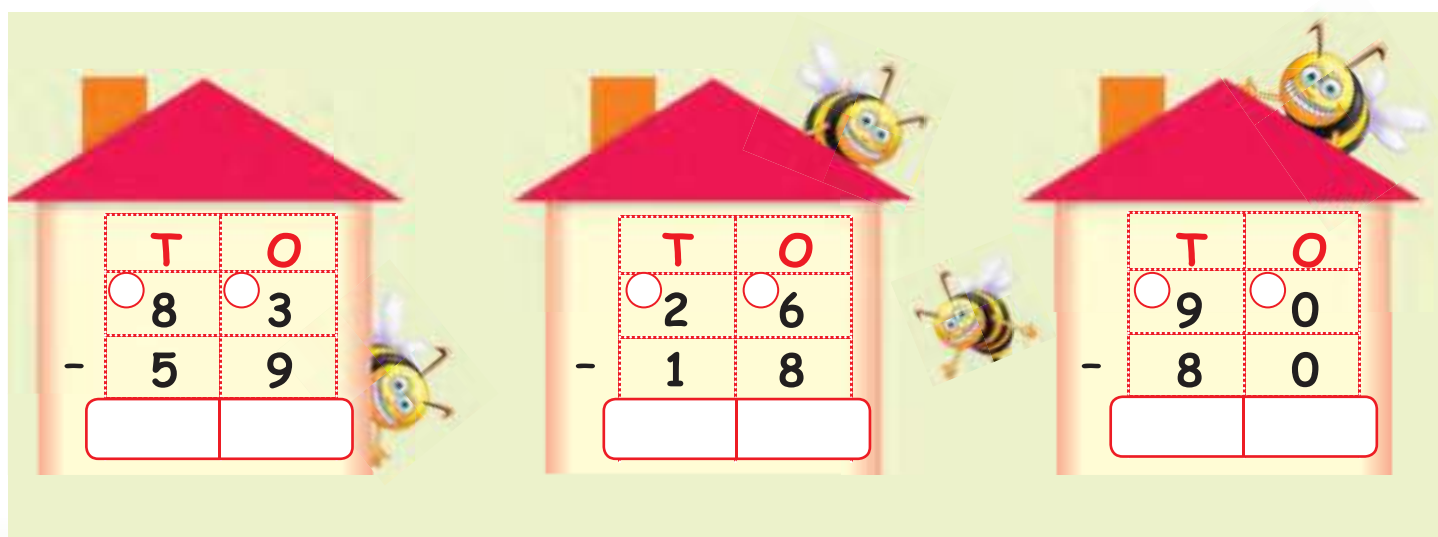


It is known as **borrow**.

Step-2: Subtract the tens.
 $7 \text{ tens} - 3 \text{ tens} = 4 \text{ tens}$
 Write 4 in the tens columns.
 $\therefore 82 - 33 = 49$

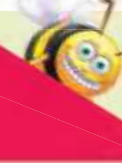


Subtract the following:





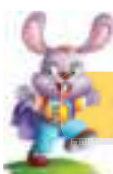
T	O
7	2
4	1



T	O
5	2
2	8



T	O
2	0
1	8



Word Problems:



1. There are 18 birds sitting on a branch of a tree.
4 birds flew away.
How many birds are left on a branch of a tree?



2. Raj had 12 chocolates.
He ate 2 of them.
How many chocolates are left with him?



3. Rajesh had 20 samosas.
He gave 2 samosas to Rahul.
How many samosas are left with him?



4. Shahil had 82 colour pencils.
He gave 26 colour pencils to his friend.
How many colour pencils were left with him?





Think Wisely

In a zoo, there are 20 elephants. 12 of them have tusks. How many elephants do not have tusks?



Mental Maths

A. Tick (✓) the correct option.

1. There were 8 apples in a basket. Raman ate 2. How many apples are left?

a. 6 ☐

b. 5 ☐

c. 2 ☐

2. Jasbir had 5 pencils. He lost 1. How many pencils are left?

a. 7 ☐

b. 4 ☐

c. 9 ☐

3. There were 9 rabbits in the garden. 6 ran away. How many rabbits are left?

a. 5 ☐

b. 3 ☐

c. 2 ☐

B. Subtract and match the answer.

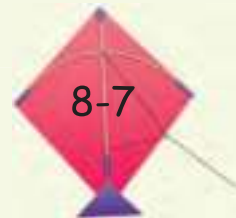
1.



2

0

2.



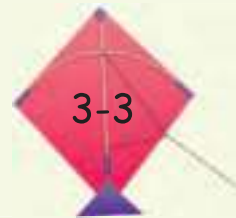
3.



3

1

4.





Maths Lab Activity

Materials required:

Marbles or beads, dice.

Steps:

1. Divide the class into groups of 10 students each.
2. The students will sit in a circle.
3. Give 10 marbles or beads to each student of a group.
4. The first student throws the dice and notes down the number on its top face. (say 5)
5. He/she then puts as many marbles or dice in the middle as the number on dice.
6. The student sitting next, takes away all the marbles or beads, so that nothing is left in the middle. So, $5-5 = 0$
7. Now this second student throws the dice and notes down the number on its top face and likewise all 10 students to get a chance.

By this activity, students will be able to verify that when a number is subtracted from itself, the result is 0.





Concept of Zero



Learning Objectives

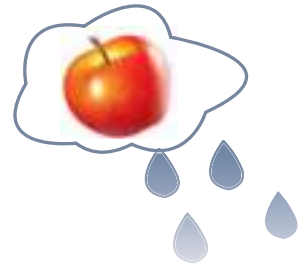
At the end of this lesson, students will be able to:

- Know the value of zero.
- Learn when we add or subtract 0 from any number, the result is always the number itself.



Warm Up

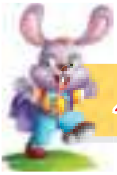
Colour all the clouds that have zero objects.



Teacher's Note:

Elucidate students about the word 'zero' that it is used to indicate emptiness or nothing.





Zero (0) means nothing:

Yash have 3 kites

He gave 2 kites to Prince

$$3 - 2 = 1$$

One kite flew away.

$$1 - 1 = 0$$

How many kites are left with Yash now?

None

It means zero.





5 apples on the tree



One monkey comes and eat 3 apples



Another monkey comes and eat 2 apples



Zero apple is left on the tree

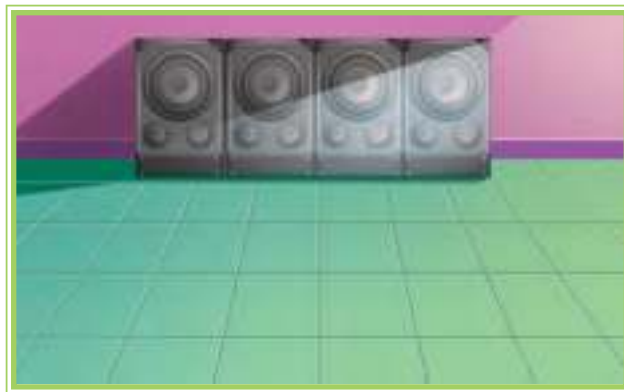




8 girls are dancing on the DJ floor.



All girls gets tired.



No girl is dancing on the DJ floor.

Fill in the blanks:

$$0 - 0 = \bigcirc$$

$$\square - 56 = \bigcirc$$

$$11 - 11 = \bigcirc$$

$$16 - 16 = \bigcirc$$

$$25 - 25 = \bigcirc$$

$$72 - \square = \bigcirc$$

$$40 - \square = \bigcirc$$

$$99 - 99 = \bigcirc$$



Facts to Know

The definition and the usage of zero was first developed by Brahmagupta, an Indian Astronomer and Mathematician in 628.



Addition Property of Zero:



So, $0 + 4 = 4$



There
are no girls
on the DJ floor.

4 girls
come to dance
on the DJ floor.

Now,
4 girls are
dancing on the
DJ floor.

Tip: When we add zero to any number, we get the same number.



5

Rajat has 5
chocolates.

0



His friend gave
him no chocolates.

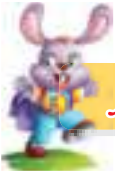


So, $5 + 0 = 5$

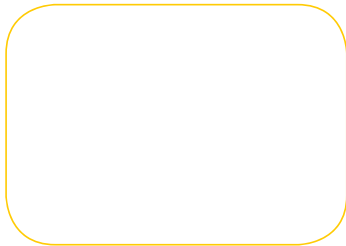
Chocolates left
with Rajat.

Tip: When we add any number to zero, we get the same number.





Addition with Zero:

 and  makes 

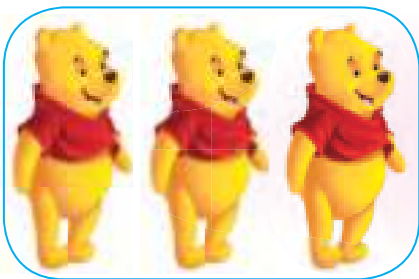
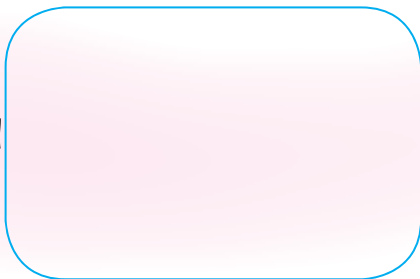
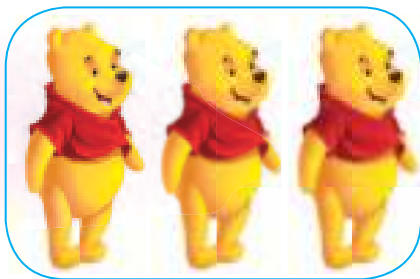
4 + **0** = **4**

 and  makes 

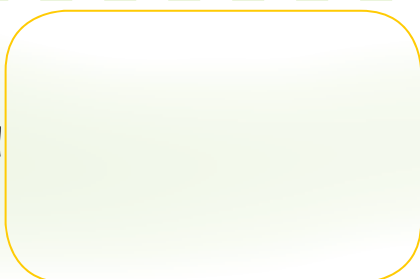
0 + **5** = **5**



Count and Add:

 and  makes 

+ =

 and  makes 

+ =



Subtraction Property of Zero:



$$\text{So, } 4 - 0 = 4$$



A boy had 4 chocolates.
He ate nothing.
So, he had 4 chocolates left.



Quick Tip

When you are asked to take away 0 from a number, you are actually taking away nothing. So, the remainder is the number itself.



There are five birds sitting on the branch of a tree.

5



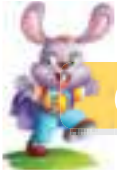
None of the birds flew

0

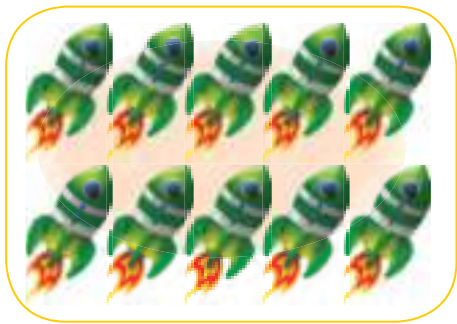


5 birds are left

5



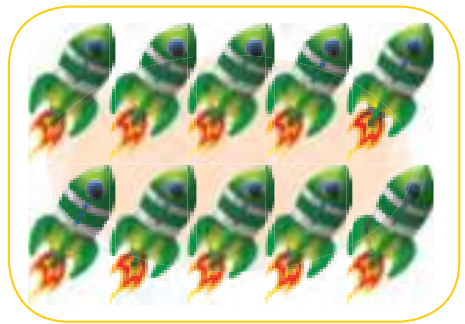
Count and Subtract:



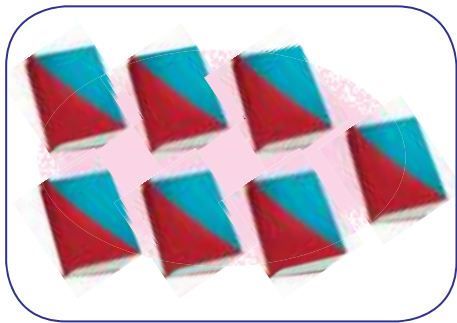
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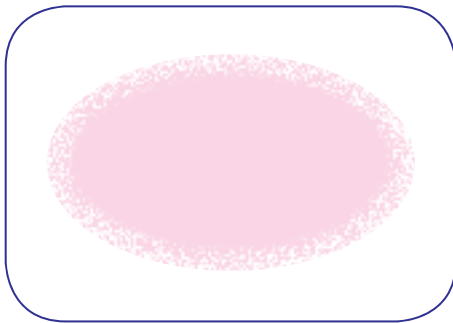
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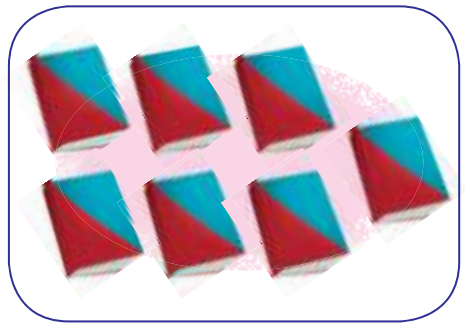
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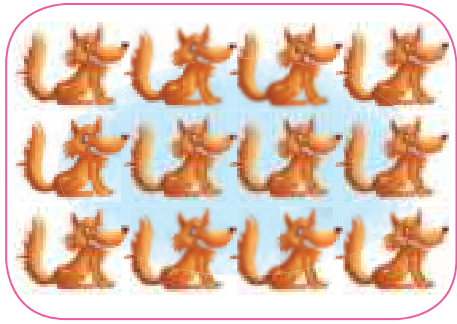
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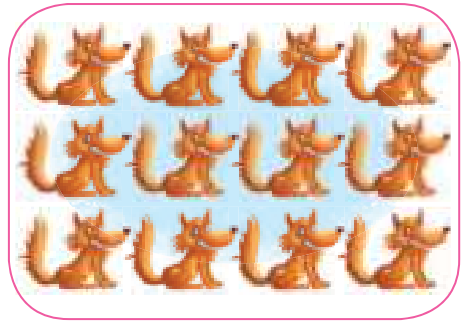
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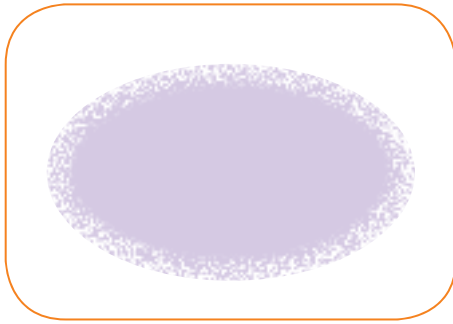
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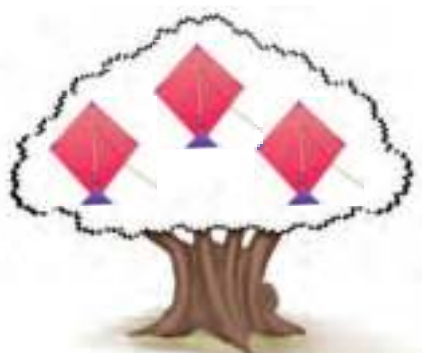
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Think Wisely

Tom had 3 kites but Sam had no kites.
How many kites did they have actually?



+



=



Mental Maths

A. Subtract.

1. $2 - 0 =$

2. $9 - 0 =$

3. $21 - 0 =$

4. $1 - 0 =$

B. Add.

1. $3 + 0 =$

2. $7 + 0 =$

3. $4 + 0 =$

4. $5 + 0 =$





Materials required:

Flash cards with '0' marked on them , paper cups and marbles

Steps:

1. Give flash cards with '0' marked on them to the students and ask them to stand in a circle.
2. Place the paper cups face down in the centre, some of them with a few marbles under them and some empty.
3. Ask one student to run around the circle as the others clap.
4. When the clapping stops, the student has to stand in front of one of the cups.
5. If there are no marbles under the cup when he/she lifts it, he/she should show the zero flash card. But if there are marbles under the cup, he should count and say how many.
6. Play the game several times till all the students understand that '0' means 'nothing' is there.



6



Comparing Numbers



Learning Objectives

At the end of this lesson, students will be able to:

- Know the rules of comparing numbers.
- Arrange numbers in ascending or descending order.
- Compare numbers using the number line.
- Add, subtract and solve problem sums using the number line.



Warm Up

There were 5 dogs in the show. Give each dog it's prize.



1

I came First



3

Where did I come?



5

Two dogs were in front of me.



2

One dog came after me.



4

I came last



Rules for Comparison:

Comparing one-digit, two-digit and three-digit numbers:



Joker Jonny



Joker Liver

Symbols

'<' less than
'>' greater than
'=' equal to

Symbols



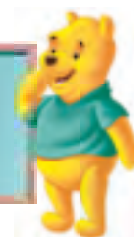
Rule 1:

H	T	O
4	9	2
5	2	0

First compare hundreds place digit of given numbers.

It means Joker Jonny number is lesser and Joker Liver number is greater.

$$4 < 5$$



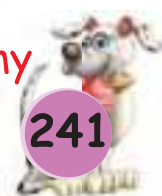
$$492 < 520$$

Rule 2:

Dog Jacky



Dog Tomy



H	T	O
2	6	9
2	4	1

If hundreds place of given numbers are same, then compare tens place digit.

It means Dog Jacky number is greater and Dog Tommy number is lesser.

$$6 > 4$$



$$269 > 241$$

Teacher's Note:

Using real things, teach the pupils about the concept of larger and smaller numbers. Show 20 pencils on one side and 25 notebooks on the other. Instruct them to count and determine which number is the larger of the two.

Rule 3:

Cat
Lussy



Cat
Pussy

H	T	O
6	2	5
6	2	8

If both hundreds place and tens place of given numbers are same, then compare ones place digit.

It means Cat Lussy number is lesser and Cat Pussy number is greater.

$$5 < 8$$



$$625 < 628$$

Rule 4:

Doll
Marie



Doll
Barbie

H	T	O
4	6	5
4	6	5

If hundreds place, tens place and ones place of given numbers are same, then it means Doll Marie number is same as Doll Barbie number.

$$465 = 465$$





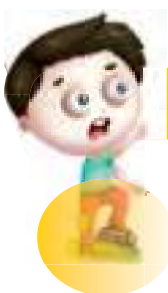
Compare Numbers:

Put the correct symbols '>' '<' or '=' in the placeholders:

 14 10	 265 50	 495 395	 900 400
 205 100	 102 109	 990 990	 83 96

Write the greatest number in the center and smallest number in the leaf of the flower:

 52 25 96 41 63 	 30 50 11 20 10 	 88 66 77 44 22 	 2 7 3 1 6 	 56 29 42 49 63
--	--	--	---	--



Quick Tip

Lesser than and greater than signs:

Alligator method: Imagine greater and lesser than sign as little alligators with the numbers on either side representing a number of fish. The alligator always wants to eat the larger number of fish, so whatever number the mouth is open toward is the larger number.





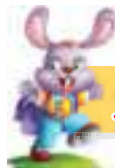
Arranging Numbers:

Numbers can be arranged in two ways:

Ascending Order



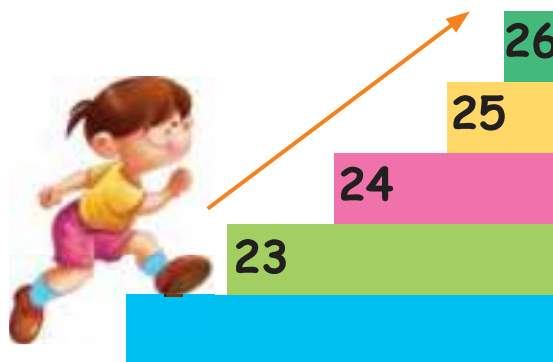
Descending Order



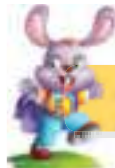
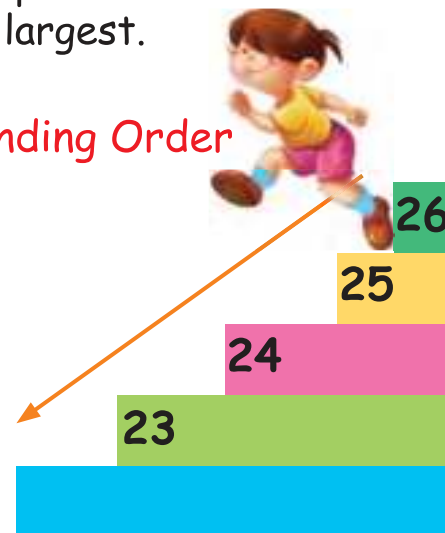
Ascending Order:

To arrange the numbers in ascending order, put the numbers in the order from the smallest to the largest.

Ascending Order



Descending Order

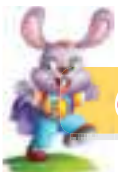
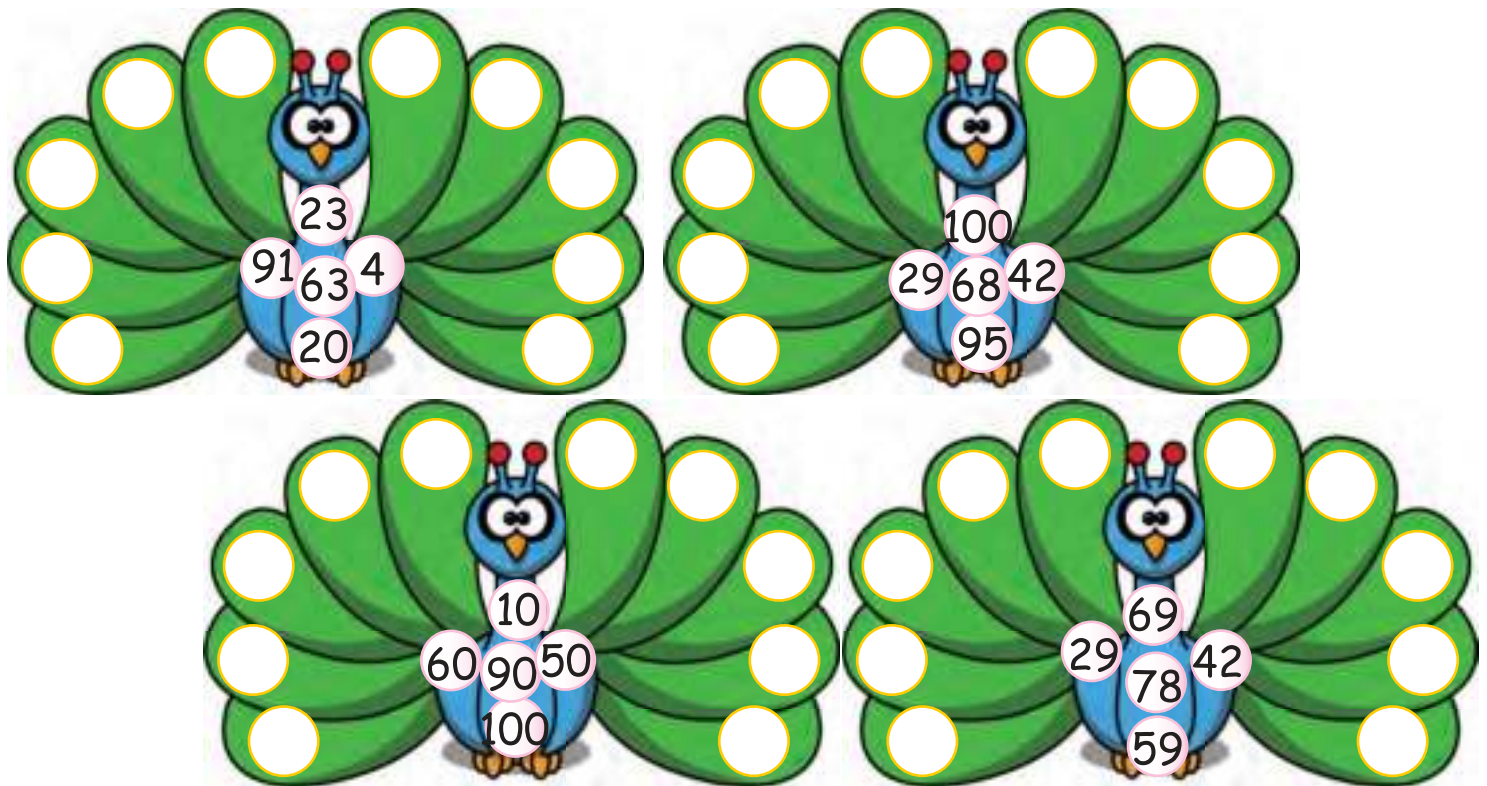


Descending Order:

To arrange the numbers in descending order, put the numbers in the order from the largest to the smallest.

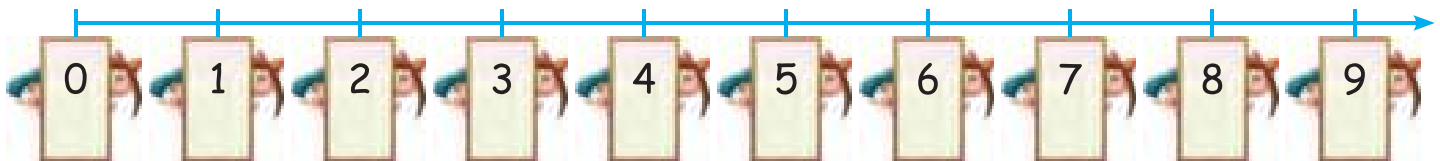


Arrange the given numbers in ascending order and descending order in the left wing and right wing of the peacock respectively.

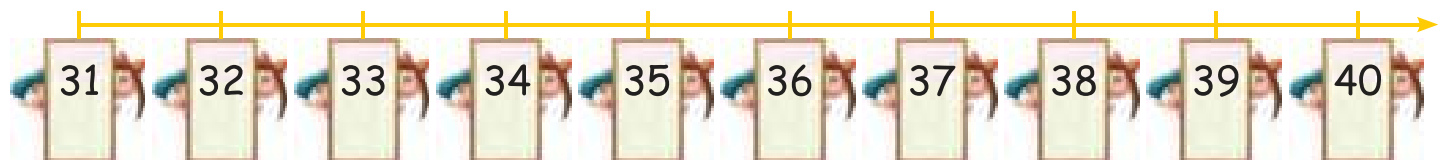


Comparing Numbers on Number Line:

A number line consist of an array of numbers.



- ○
- Rule 1:** The number which lies to the right of a given number on the number line is greater than that number which lies on the left of the number line.

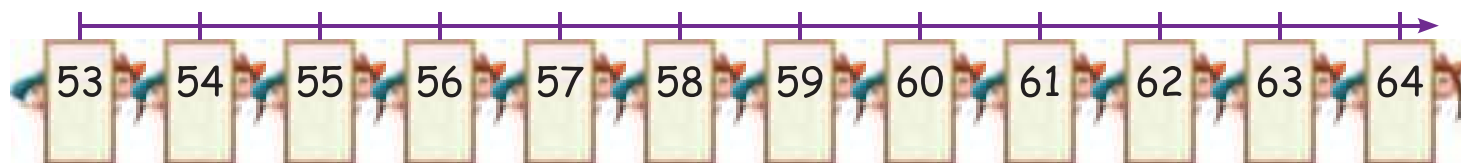


Moving left to right
(Increasing Number)



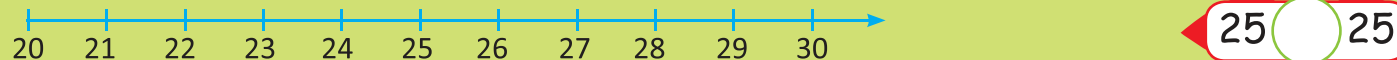


Rule 2: The number which lies to the left of a given number on the number line is smaller than that number which lies on the right of the number line.



Moving right to left
(Decreasing Number)

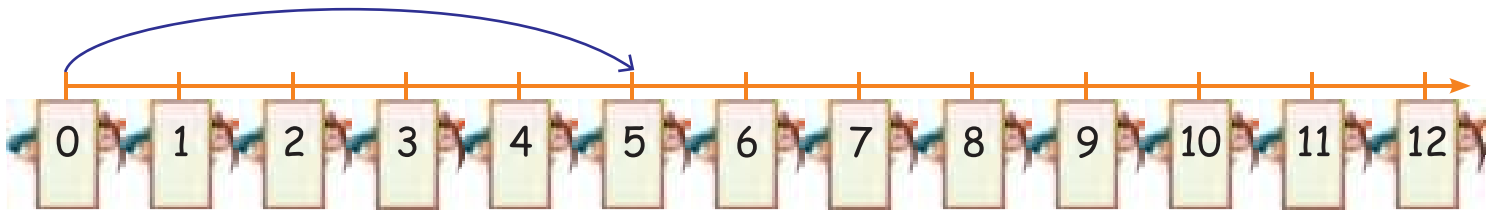
Compare numbers using number line and put the correct symbols '>', '<' or '=' in the placeholders:



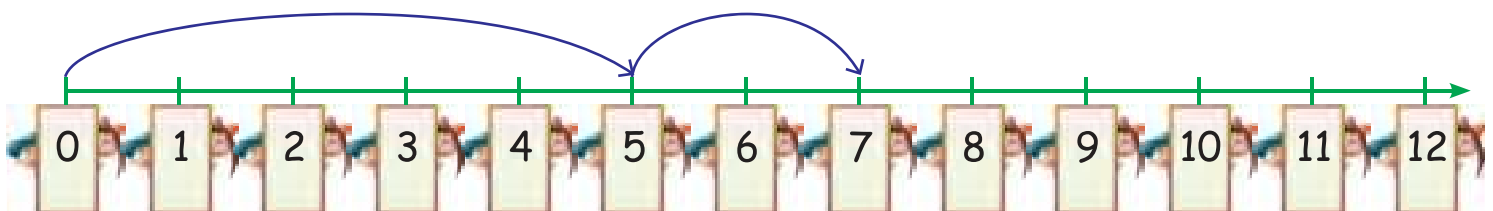


Addition using Number Line:

Raj has 5 coins.



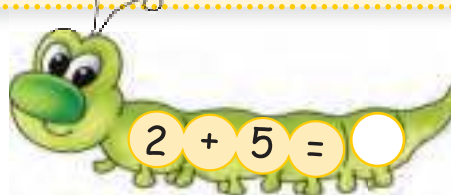
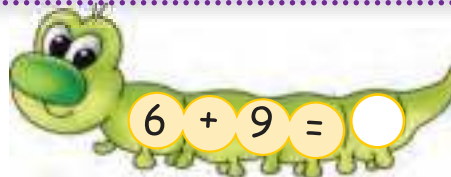
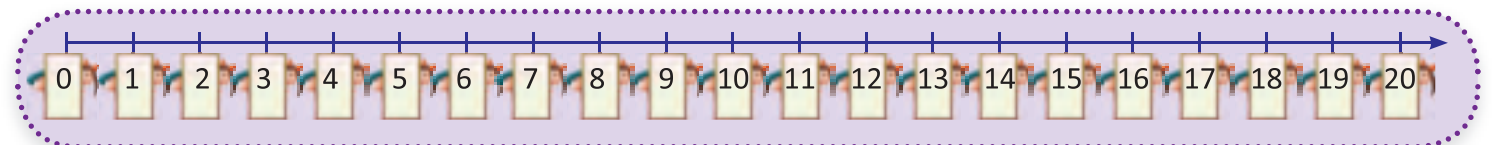
His father gave him 2 coins more.

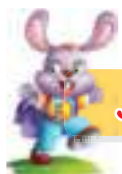
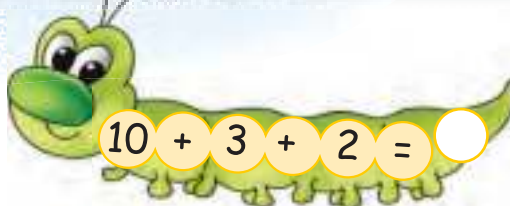
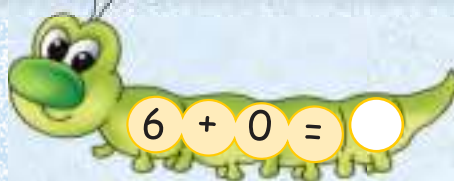
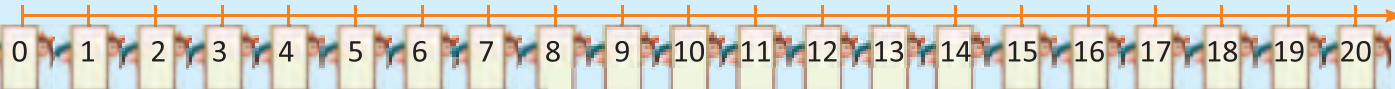
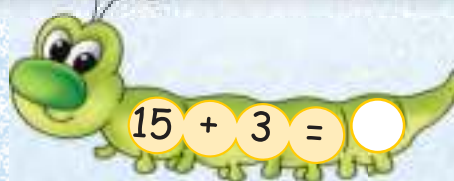
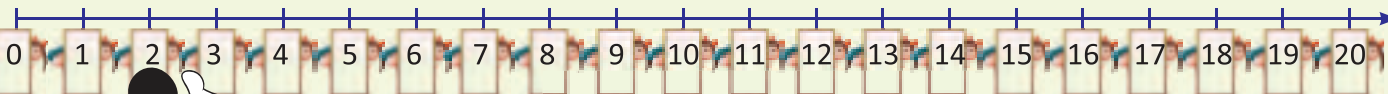


$$5 + 2 = 7$$

Total number of coins Raj had = 7.

Add the numbers on the number line:



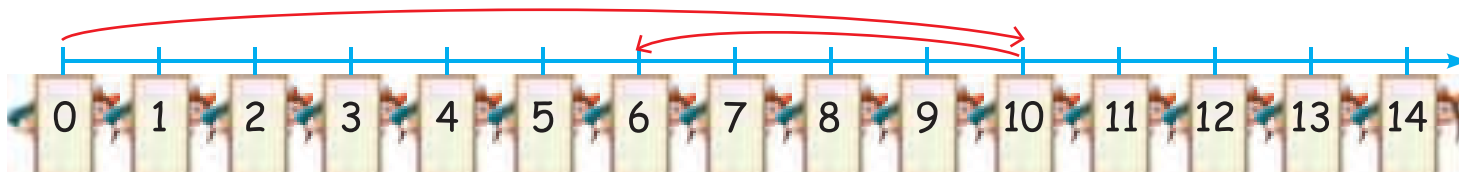


Subtraction using Number Line:

Mini has 10 chocolates



She gave 4 chocolates to her friend.



$$10 - 4 = 6$$

Total number of chocolates left with Mini = 6.



Subtract the numbers on the number line:

0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20

$$20 - 1 =$$



0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20

$$5 - 0 =$$



0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20

$$12 - 5 =$$



0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20

$$8 - 8 =$$



0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20

$$17 - 8 =$$



Facts to Know

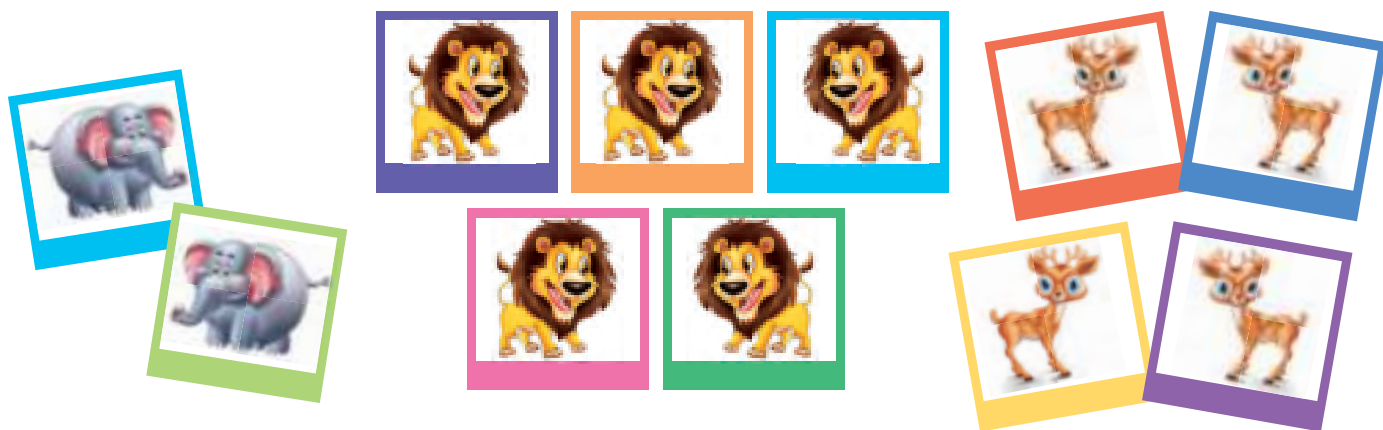
A number line can be extended infinitely in any direction and is usually represented horizontally.



Word Problems:

Solve the following word problems using number line:

1. Jennie bought a new camera. He took different pictures at the zoo. He took 2 pictures of the elephant, 5 pictures of the lion and 4 pictures of the deer. How many pictures did he took in all?



2. Cherry bought 15 chocolates. She gave 5 to her brother. How many chocolates does Cherry have now?





Think Wisely

Who am I?

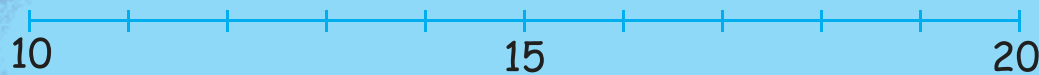
Find the number whose digits are as following:

- Ones place is 9 less than 10.
- Tens place is 2 more than 4.
- Hundreds place is between 2 and 4.



Mental Maths

A. Complete the number lines.



B. Put the correct symbols '>', '<' or '=' in the following.

2		3
6		9
1		11
12		12
5		15
10		3

18		20
15		13
17		17
4		14
8		16
12		20





Maths Lab Activity

Materials required:

Flash cards representing three digit numbers.

Steps:

1. Divide the class into 5 groups.
2. Ask the student of 1st group to choose any 4 flashcards.
3. Now, ask the students to arrange these flash cards in ascending and descending order. E.g. - 856, 595, 663, 454
4. Repeat the same with other groups.

Ascending order:

454

595

663

856

Descending order:

856

663

595

454





Ordinal Numbers



Learning Objectives

At the end of this lesson, students will be able to:

- Know the difference between ordinal and cardinal numbers.
- Understand when ordinal numbers are used.
- Speak and write ordinal numbers upto 10.



Warm Up

In a class test of 50 marks, the following marks were obtained by the students:

Roll No.	Marks
1	46
2	42
3	28
4	49
5	35
6	39
7	43
8	45
9	36
10	41

Now, fill in the blanks:

1. Roll No. _____ stood first in the class.
2. Roll No. _____ stood second in the class.
3. Roll No. _____ stood third in the class.
4. Roll No. _____ stood fourth in the class.
5. Roll No. _____ stood fifth in the class.



When we count the numbers, 1 (one), 2 (two), 3 (three), 4 (four) and so on, then they are known as **cardinal numbers**.

When we count the numbers in any order (or position) of an object or a person, then they are known as **ordinal numbers**.

First Ten Numbers:

Cardinal Numbers:

1	One
2	Two
3	Three
4	Four
5	Five
6	Six
7	Seven
8	Eight
9	Nine
10	Ten



Ordinal Numbers:

1st	First
2nd	Second
3rd	Third
4th	Fourth
5th	Fifth
6th	Sixth
7th	Seventh
8th	Eighth
9th	Ninth
10th	Tenth



Facts to Know

The transfinite ordinal numbers, which first appeared in 1883, originated in Cantor's work with derived sets.





Comes First (1st)

Comes Second (2nd)

Comes Third (3rd)

Comes Fourth (4th)

Comes Fifth (5th)

Comes Sixth (6th)

Comes Seventh (7th)

Comes Eighth (8th)

Comes Ninth (9th)

Comes Tenth (10th)



Teacher's Note:

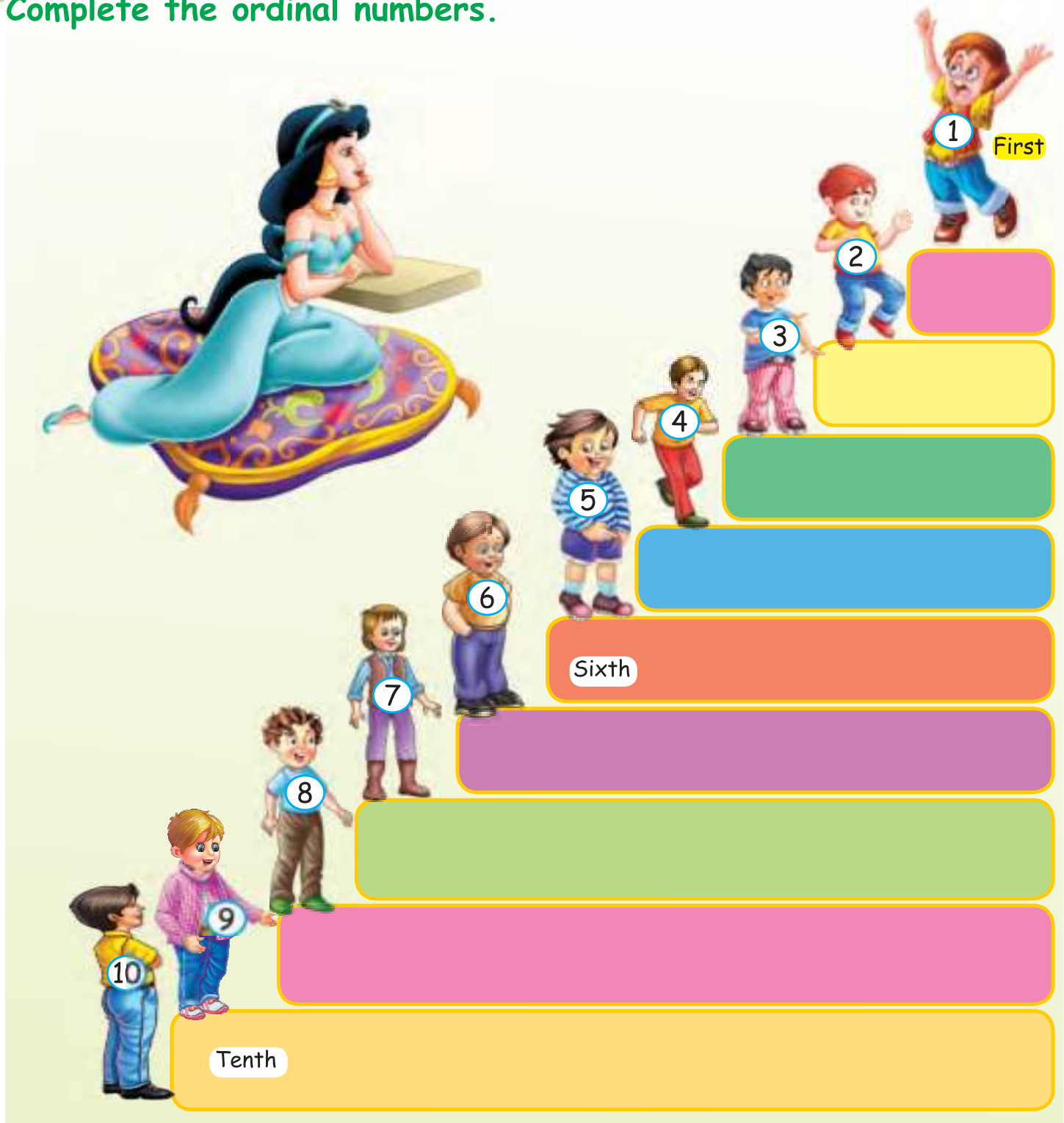
Make children learn about ordinal numbers using real life examples such as: Sarita is the third girl standing in a row.

Library is on the fourth floor of the school.

That table is kept at the ninth position in the class display .



Complete the ordinal numbers.



Quick Tip

The first, second and third ordinal numbers are represented by adding letter 'st', 'nd' and 'rd' respectively. All the others are represented by letter **th**.





Think Wisely

Which alphabet am I?

Find the alphabet whose position is as following:

1. I come after the fourth alphabet but before the sixth alphabet. _____
2. _____ is the seventh letter from the start.
3. _____ is the second letter from the end.



Mental Maths

Fill in the blanks with right ordinal numbers.



- a. A bird is present in the _____ place.
- b. The _____ and _____ places have trees.
- c. A tiger is there in the _____ place.
- d. The _____ place has an animal whose name begins with 'E'.





Maths Lab Activity

Materials required:

15 strips having one sentence each from the popular story 'The thirsty crow'.

Steps:

1. Tell the children that order is not just a part of numbers alone. It is essential in language activities such as stories too. Read aloud a story to the children. Then write out the story in strips of paper and give each group a strip.
2. Keep the strip with you at the beginning of the story.
3. Read it aloud and pin it up on the board.
4. Ask all the groups to look at the strips with them to find out the next part of the story.
5. One child from that group should come forward and pin it next to the first strip.
6. All others must carefully read their sentences and one by one come forward with the next part of the story each time and do the same.
7. Once the entire story is up on the board, read it aloud to the class and give them a big round of applause.





Multiplication



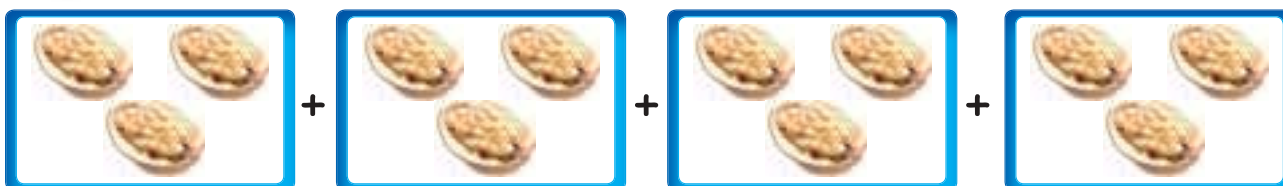
Learning Objectives

At the end of this lesson, students will be able to:

- Recite multiplication tables from 2 to 10.
- Multiply by repeated addition.
- Multiply two digit numbers with and without carry over.



Warm Up



To get the total number of walnuts, we do $3 + 3 + 3 + 3 = 12$

Or we are adding 3 four times to get 12.

We can say 4 times 3 = 12 or 4 threes are 12.

Now, look at this:



How many fingers are there in all?

_____ + _____ + _____ = _____

Or 3 times 5 = _____



'Multiplication' means
'Repeated Addition'.

Multiplication is indicated
by 'x' sign.

Raj gave 2 flowers
to the teacher.



Anjali gave 2 more
flowers to the teacher.



Komal gave 2 more
flowers to the teacher.



Vijay gave 2 more
flowers to the teacher.



Total number of flowers teacher have

$$= 2 + 2 + 2 + 2 = 8$$

This can also be written as,

$$4 \times 2 = 8$$

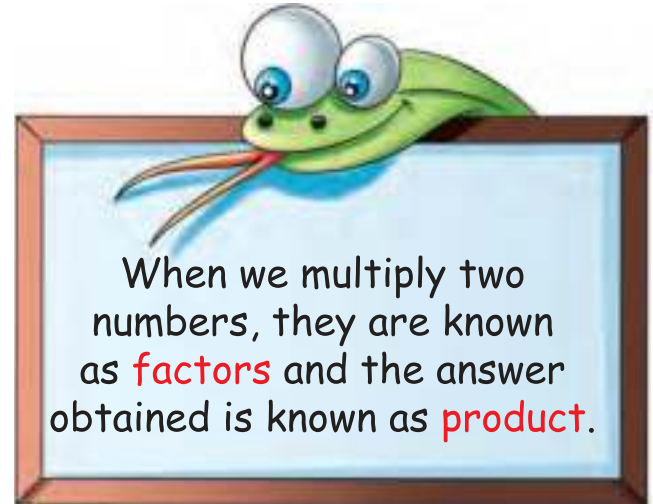
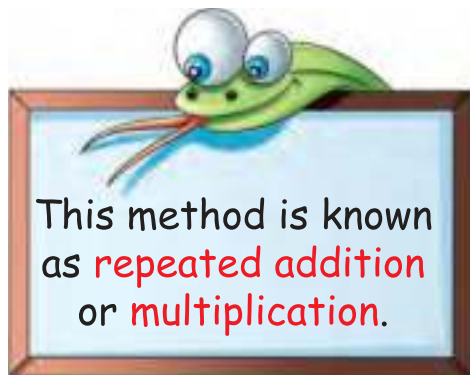
$$\text{or, } 2 \times 4 = 8$$

It is a **multiplication fact**.





This can be read as,
 4 multiplied by 2 is equal to 8.
 or, 2 multiplied by 4 is equal to 8.

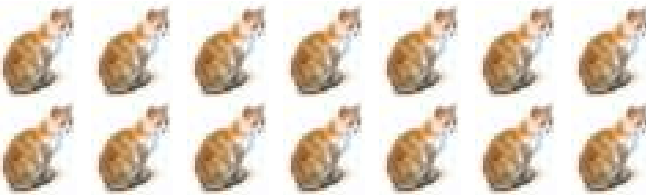


Count and Write:

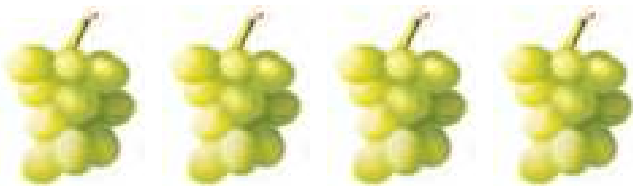
Factors

Product

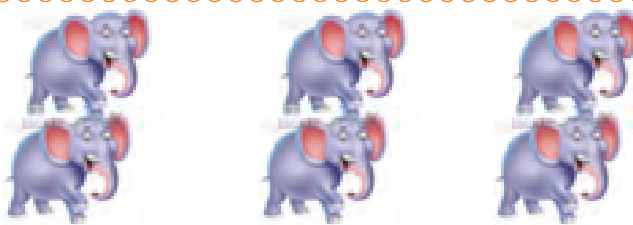
 $3 + 3 + 3 + 3 + 3 = 15$ 		
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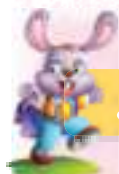




$$\boxed{} \times \boxed{} = \boxed{}$$



$$\boxed{} \times \boxed{} = \boxed{}$$



Multiplication Facts:

Any number multiplied by zero is zero.

$$0 \times 0 = 0$$

$$2 \times 0 = 0$$

$$5 \times 0 = 0$$

$$8 \times 0 = 0$$

$$10 \times 0 = 0$$


Any number multiplied by 1 is the number itself.

$$1 \times 1 = 1$$

$$2 \times 1 = 2$$

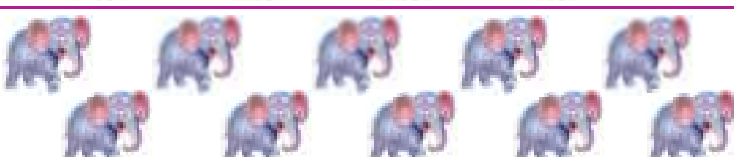
$$5 \times 1 = 5$$

$$6 \times 1 = 6$$

$$7 \times 1 = 7$$



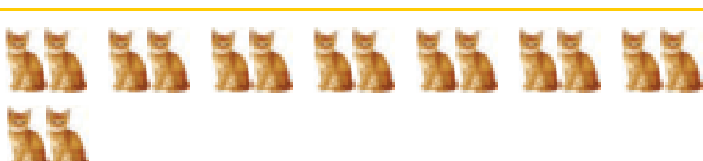
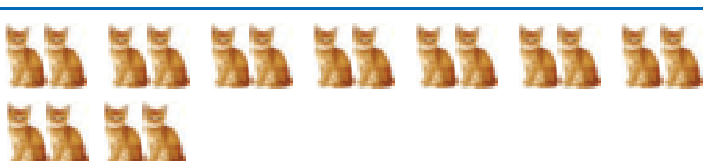

Multiplication Table of 1

Objects	Repeated Addition	Multiplication
	1 1 taken 1 time	$1 \times 1 = 1$
	$1 + 1$ 1 taken 2 times	$1 \times 2 = 2$
	$1 + 1 + 1$ 1 taken 3 times	$1 \times 3 = 3$
	$1 + 1 + 1 + 1$ 1 taken 4 times	$1 \times 4 = 4$
	$1 + 1 + 1 + 1 + 1$ 1 taken 5 times	$1 \times 5 = 5$
	$1 + 1 + 1 + 1 + 1 + 1$ 1 taken 6 times	$1 \times 6 = 6$
	$1 + 1 + 1 + 1 + 1 + 1 + 1$ 1 taken 7 times	$1 \times 7 = 7$
	$1 + 1 + 1 + 1 + 1 + 1 + 1 + 1$ 1 taken 8 times	$1 \times 8 = 8$
	$1 + 1 + 1 + 1 + 1 + 1 + 1 + 1 + 1$ 1 taken 9 times	$1 \times 9 = 9$
	$1 + 1 + 1 + 1 + 1 + 1 + 1 + 1 + 1 + 1$ 1 taken 10 times	$1 \times 10 = 10$





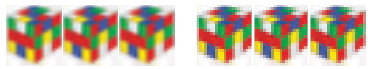
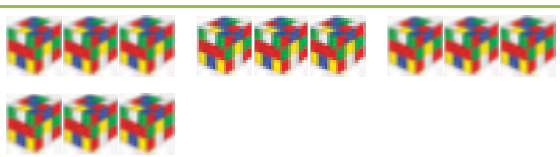
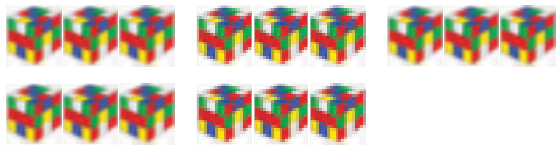
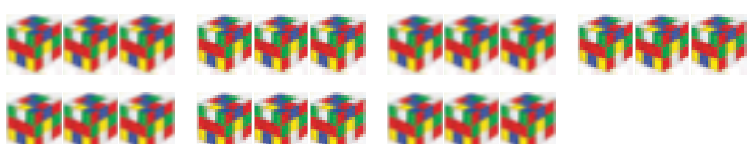
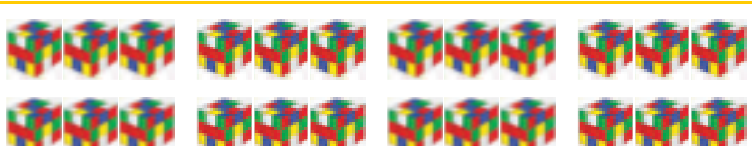
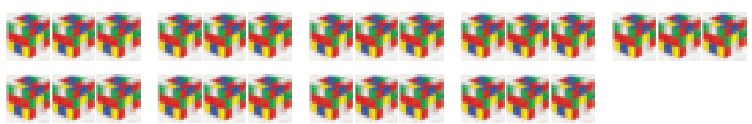
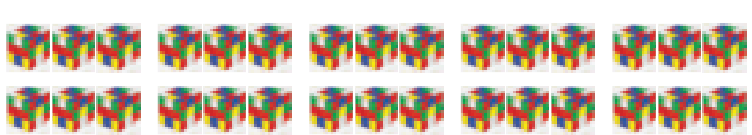
Multiplication Table of 2

Objects	Repeated Addition	Multiplication
	2 2 taken 1 time	$2 \times 1 = 2$
	$2 + 2$ 2 taken 2 times	$2 \times 2 = 4$
	$2 + 2 + 2$ 2 taken 3 times	$2 \times 3 = 6$
	$2 + 2 + 2 + 2$ 2 taken 4 times	$2 \times 4 = 8$
	$2 + 2 + 2 + 2 + 2$ 2 taken 5 times	$2 \times 5 = 10$
	$2 + 2 + 2 + 2 + 2 + 2$ 2 taken 6 times	$2 \times 6 = 12$
	$2 + 2 + 2 + 2 + 2 + 2 + 2$ 2 taken 7 times	$2 \times 7 = 14$
	$2 + 2 + 2 + 2 + 2 + 2 + 2 + 2$ 2 taken 8 times	$2 \times 8 = 16$
	$2 + 2 + 2 + 2 + 2 + 2 + 2 + 2 + 2$ 2 taken 9 times	$2 \times 9 = 18$
	$2 + 2 + 2 + 2 + 2 + 2 + 2 + 2 + 2 + 2$ 2 taken 10 times	$2 \times 10 = 20$





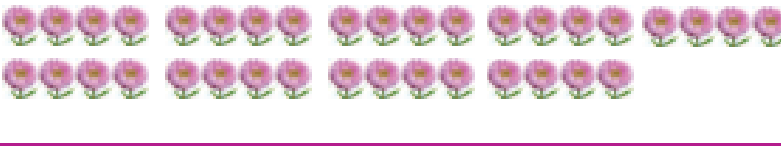
Multiplication Table of 3

Objects	Repeated Addition	Multiplication
	3 3 taken 1 time	$3 \times 1 = 3$
	$3 + 3$ 3 taken 2 times	$3 \times 2 = 6$
	$3 + 3 + 3$ 3 taken 3 times	$3 \times 3 = 9$
	$3 + 3 + 3 + 3$ 3 taken 4 times	$3 \times 4 = 12$
	$3 + 3 + 3 + 3 + 3$ 3 taken 5 times	$3 \times 5 = 15$
	$3 + 3 + 3 + 3 + 3 + 3$ 3 taken 6 times	$3 \times 6 = 18$
	$3 + 3 + 3 + 3 + 3 + 3 + 3$ 3 taken 7 times	$3 \times 7 = 21$
	$3 + 3 + 3 + 3 + 3 + 3 + 3 + 3$ 3 taken 8 times	$3 \times 8 = 24$
	$3 + 3 + 3 + 3 + 3 + 3 + 3 + 3 + 3$ 3 taken 9 times	$3 \times 9 = 27$
	$3 + 3 + 3 + 3 + 3 + 3 + 3 + 3 + 3 + 3$ 3 taken 10 times	$3 \times 10 = 30$





Multiplication Table of 4

Objects	Repeated Addition	Multiplication
	4 4 taken 1 time	$4 \times 1 = 4$
	$4 + 4$ 4 taken 2 times	$4 \times 2 = 8$
	$4 + 4 + 4$ 4 taken 3 times	$4 \times 3 = 12$
	$4 + 4 + 4 + 4$ 4 taken 4 times	$4 \times 4 = 16$
	$4 + 4 + 4 + 4 + 4$ 4 taken 5 times	$4 \times 5 = 20$
	$4 + 4 + 4 + 4 + 4 + 4$ 4 taken 6 times	$4 \times 6 = 24$
	$4 + 4 + 4 + 4 + 4 + 4 + 4$ 4 taken 7 times	$4 \times 7 = 28$
	$4 + 4 + 4 + 4 + 4 + 4 + 4 + 4$ 4 taken 8 times	$4 \times 8 = 32$
	$4 + 4 + 4 + 4 + 4 + 4 + 4 + 4 + 4$ 4 taken 9 times	$4 \times 9 = 36$
	$4 + 4 + 4 + 4 + 4 + 4 + 4 + 4 + 4 + 4$ 4 taken 10 times	$4 \times 10 = 40$





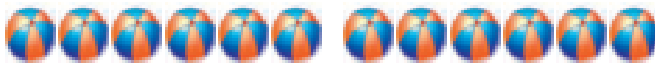
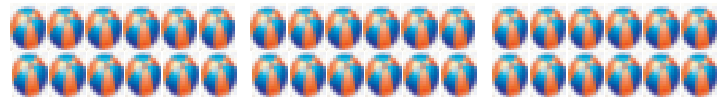
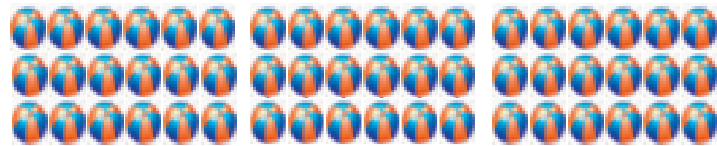
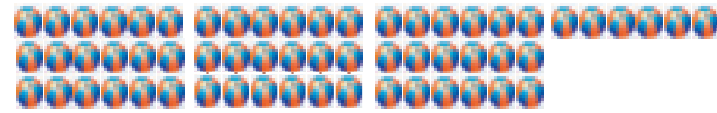
Multiplication Table of 5

Objects	Repeated Addition	Multiplication
	5 5 taken 1 time	$5 \times 1 = 5$
	$5 + 5$ 5 taken 2 times	$5 \times 2 = 10$
	$5 + 5 + 5$ 5 taken 3 times	$5 \times 3 = 15$
	$5 + 5 + 5 + 5$ 5 taken 4 times	$5 \times 4 = 20$
	$5 + 5 + 5 + 5 + 5$ 5 taken 5 times	$5 \times 5 = 25$
	$5 + 5 + 5 + 5 + 5 + 5$ 5 taken 6 times	$5 \times 6 = 30$
	$5 + 5 + 5 + 5 + 5 + 5 + 5$ 5 taken 7 times	$5 \times 7 = 35$
	$5 + 5 + 5 + 5 + 5 + 5 + 5 + 5$ 5 taken 8 times	$5 \times 8 = 40$
	$5 + 5 + 5 + 5 + 5 + 5 + 5 + 5 + 5$ 5 taken 9 times	$5 \times 9 = 45$
	$5 + 5 + 5 + 5 + 5 + 5 + 5 + 5 + 5 + 5$ 5 taken 10 times	$5 \times 10 = 50$





Multiplication Table of 6

Objects	Repeated Addition	Multiplication
	6 6 taken 1 time	$6 \times 1 = 6$
	$6 + 6$ 6 taken 2 times	$6 \times 2 = 12$
	$6 + 6 + 6$ 6 taken 3 times	$6 \times 3 = 18$
	$6 + 6 + 6 + 6$ 6 taken 4 times	$6 \times 4 = 24$
	$6 + 6 + 6 + 6 + 6$ 6 taken 5 times	$6 \times 5 = 30$
	$6 + 6 + 6 + 6 + 6 + 6$ 6 taken 6 times	$6 \times 6 = 36$
	$6 + 6 + 6 + 6 + 6 + 6 + 6$ 6 taken 7 times	$6 \times 7 = 42$
	$6 + 6 + 6 + 6 + 6 + 6 + 6 + 6$ 6 taken 8 times	$6 \times 8 = 48$
	$6 + 6 + 6 + 6 + 6 + 6 + 6 + 6 + 6$ 6 taken 9 times	$6 \times 9 = 54$
	$6 + 6 + 6 + 6 + 6 + 6 + 6 + 6 + 6 + 6$ 6 taken 10 times	$6 \times 10 = 60$





Multiplication Table of 7

Objects	Repeated Addition	Multiplication
	7 7 taken 1 time	$7 \times 1 = 7$
	$7 + 7$ 7 taken 2 times	$7 \times 2 = 14$
	$7 + 7 + 7$ 7 taken 3 times	$7 \times 3 = 21$
	$7 + 7 + 7 + 7$ 7 taken 4 times	$7 \times 4 = 28$
	$7 + 7 + 7 + 7 + 7$ 7 taken 5 times	$7 \times 5 = 35$
	$7 + 7 + 7 + 7 + 7 + 7$ 7 taken 6 times	$7 \times 6 = 42$
	$7 + 7 + 7 + 7 + 7 + 7 + 7$ 7 taken 7 times	$7 \times 7 = 49$
	$7 + 7 + 7 + 7 + 7 + 7 + 7 + 7$ 7 taken 8 times	$7 \times 8 = 56$
	$7 + 7 + 7 + 7 + 7 + 7 + 7 + 7 + 7$ 7 taken 9 times	$7 \times 9 = 63$
	$7 + 7 + 7 + 7 + 7 + 7 + 7 + 7 + 7 + 7$ 7 taken 10 times	$7 \times 10 = 70$





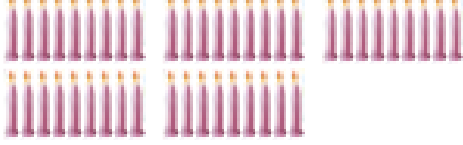
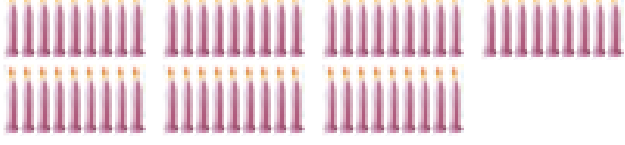
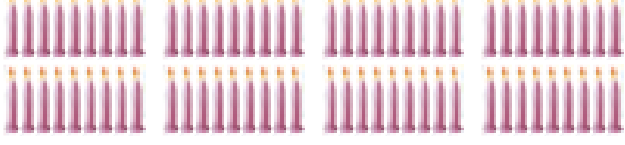
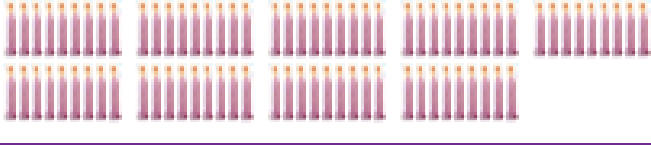
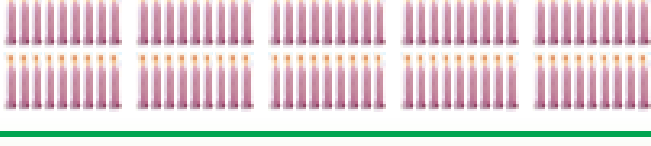
Multiplication Table of 8

Objects	Repeated Addition	Multiplication
	8 8 taken 1 time	$8 \times 1 = 8$
	$8 + 8$ 8 taken 2 times	$8 \times 2 = 16$
	$8 + 8 + 8$ 8 taken 3 times	$8 \times 3 = 24$
	$8 + 8 + 8 + 8$ 8 taken 4 times	$8 \times 4 = 32$
	$8 + 8 + 8 + 8 + 8$ 8 taken 5 times	$8 \times 5 = 40$
	$8 + 8 + 8 + 8 + 8 + 8$ 8 taken 6 times	$8 \times 6 = 48$
	$8 + 8 + 8 + 8 + 8 + 8 + 8$ 8 taken 7 times	$8 \times 7 = 56$
	$8 + 8 + 8 + 8 + 8 + 8 + 8 + 8$ 8 taken 8 times	$8 \times 8 = 64$
	$8 + 8 + 8 + 8 + 8 + 8 + 8 + 8 + 8$ 8 taken 9 times	$8 \times 9 = 72$
	$8 + 8 + 8 + 8 + 8 + 8 + 8 + 8 + 8 + 8$ 8 taken 10 times	$8 \times 10 = 80$





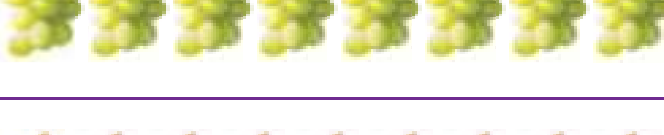
Multiplication Table of 9

Objects	Repeated Addition	Multiplication
	9 9 taken 1 time	$9 \times 1 = 9$
	$9 + 9$ 9 taken 2 times	$9 \times 2 = 18$
	$9 + 9 + 9$ 9 taken 3 times	$9 \times 3 = 27$
	$9 + 9 + 9 + 9$ 9 taken 4 times	$9 \times 4 = 36$
	$9 + 9 + 9 + 9 + 9$ 9 taken 5 times	$9 \times 5 = 45$
	$9 + 9 + 9 + 9 + 9 + 9$ 9 taken 6 times	$9 \times 6 = 54$
	$9 + 9 + 9 + 9 + 9 + 9 + 9$ 9 taken 7 times	$9 \times 7 = 63$
	$9 + 9 + 9 + 9 + 9 + 9 + 9 + 9$ 9 taken 8 times	$9 \times 8 = 72$
	$9 + 9 + 9 + 9 + 9 + 9 + 9 + 9 + 9$ 9 taken 9 times	$9 \times 9 = 81$
	$9 + 9 + 9 + 9 + 9 + 9 + 9 + 9 + 9 + 9$ 9 taken 10 times	$10 \times 9 = 90$





Multiplication Table of 10

Objects	Repeated Addition	Multiplication
	10 10 taken 1 time	$10 \times 1 = 10$
	$10 + 10$ 10 taken 2 times	$10 \times 2 = 20$
	$10 + 10 + 10$ 10 taken 3 times	$10 \times 3 = 30$
	$10 + 10 + 10 + 10$ 10 taken 4 times	$10 \times 4 = 40$
	$10 + 10 + 10 + 10 + 10$ 10 taken 5 times	$10 \times 5 = 50$
	$10 + 10 + 10 + 10 + 10 + 10$ 10 taken 6 times	$10 \times 6 = 60$
	$10 + 10 + 10 + 10 + 10 + 10 + 10$ 10 taken 7 times	$10 \times 7 = 70$
	$10 + 10 + 10 + 10 + 10 + 10 + 10 + 10$ 10 taken 8 times	$10 \times 8 = 80$
	$10 + 10 + 10 + 10 + 10 + 10 + 10 + 10 + 10$ 10 taken 9 times	$10 \times 9 = 90$
	$10 + 10 + 10 + 10 + 10 + 10 + 10 + 10 + 10 + 10$ 10 taken 10 times	$10 \times 10 = 100$





Find the multiplication:



$$3 \times 5 = 15$$

$$2 \times 1 = \square$$

$$4 \times 3 = \square$$

$$1 \times 6 = \square$$

$$5 \times 5 = \square$$

$$6 \times 2 = \square$$

$$7 \times 4 = \square$$

$$8 \times 9 = \square$$

$$10 \times 3 = \square$$

$$9 \times 7 = \square$$



Quick Tip

Every multiplication has a twin, which may be easier to remember. For example if you forget 8×2 , you might remember $2 \times 8 = 16$. This way, you only have to remember half the table.



Vertical Multiplication:

$$6 \times 2 = 12$$

can be written as

$$\begin{array}{r} 6 \\ \times 2 \\ \hline 12 \end{array}$$

Multiply

$$\begin{array}{r} 5 \\ \times 6 \\ \hline \end{array}$$

$$\begin{array}{r} 7 \\ \times 2 \\ \hline \end{array}$$

$$\begin{array}{r} 1 \\ \times 7 \\ \hline \end{array}$$

$$\begin{array}{r} 6 \\ \times 3 \\ \hline \end{array}$$

$$\begin{array}{r} 4 \\ \times 9 \\ \hline \end{array}$$

$$\begin{array}{r} 6 \\ \times 6 \\ \hline \end{array}$$

$$\begin{array}{r} 8 \\ \times 4 \\ \hline \end{array}$$

Teacher's Note:

Tell students that a change in the order of the factors does not change the product.



Word Problems:

1. If one cow has 4 legs, how many legs do 5 cows have?



×

2. If one elephant has 2 ears, how many ears do 4 elephants have?



×

3. If there are six grapes in one bunch of grapes, how many grapes are there in 7 bunches of grapes?



×

4. If one pencil box has 8 pencils, how many pencils are there in 3 pencil boxes?



×

5. If one clown has 2 eyes, how many eyes do 5 clowns have?



×



Multiplication of 2-digit Numbers (Without Carry over):

Multiply 24 by 2

Step- 1 : Multiply the ones.
 $2 \text{ ones} \times 4 \text{ ones} = 8 \text{ ones}$
 Write 8 in the ones column.



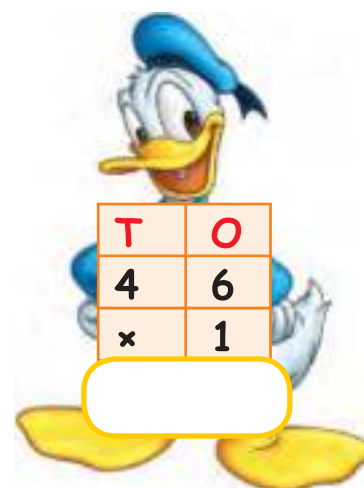
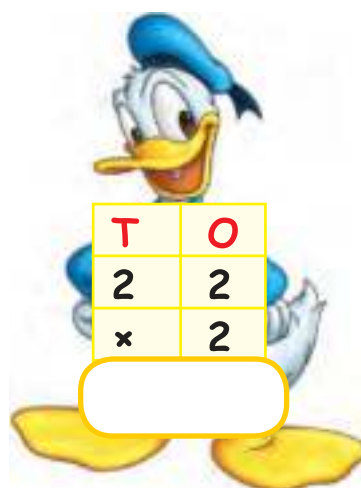
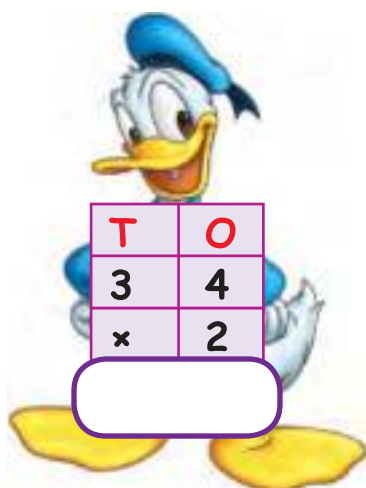
T	O
2	4
$\times$	2
	8

Step- 2 : Multiply the tens.
 $2 \text{ ones} \times 2 \text{ tens} = 4 \text{ tens}$
 Write 4 in the tens column.
 Product = 48



T	O
2	4
$\times$	2
4	8

Multiply:



Facts to Know

In multiplication, the number being multiplied is called the multiplicand and the number by which it is being multiplied is called the multiplier.

$14 \longrightarrow$ Multiplicand
 $\times 2 \longrightarrow$ Multiplier
 $= 28 \longrightarrow$ Product





Multiplication of 2-digit Numbers (With Carry over):

Multiply 24 by 3:

Step- 1 : Multiply the ones.

$$\begin{aligned} 3 \text{ ones} \times 4 \text{ ones} &= 12 \text{ ones} \\ &= 1 \text{ tens } 2 \text{ ones} \end{aligned}$$

Write 2 in the ones column and carry 1 in the tens column.



T	O
① 2	4
×	3
	2

Step- 2 : Multiply the tens.

$$2 \text{ tens} \times 3 \text{ ones} = 6 \text{ tens.}$$

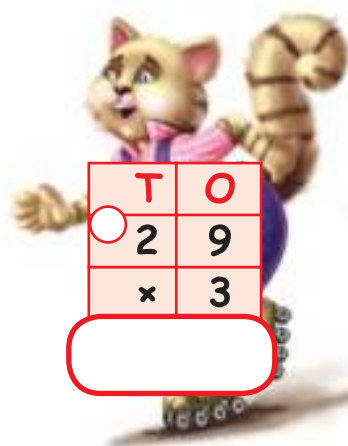
$$6 \text{ tens} + 1 \text{ tens (carried over)} = 7 \text{ tens.}$$

$$\text{Product} = 72$$

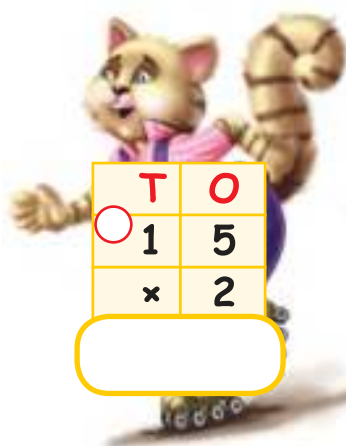


T	O
① 2	4
×	3
7	2

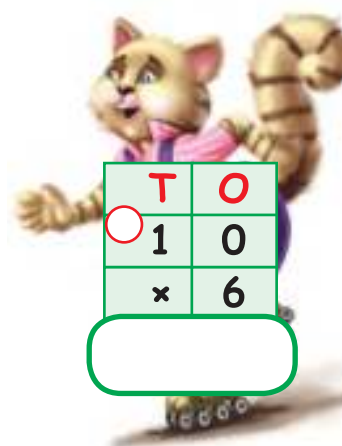
Multiply:



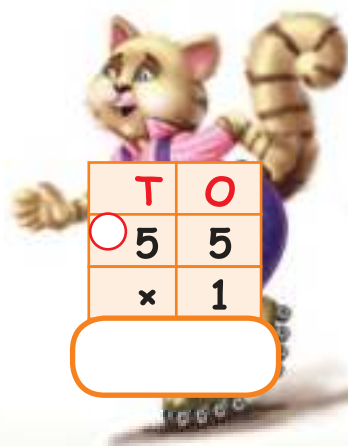
T	O
○ 2	9
×	3



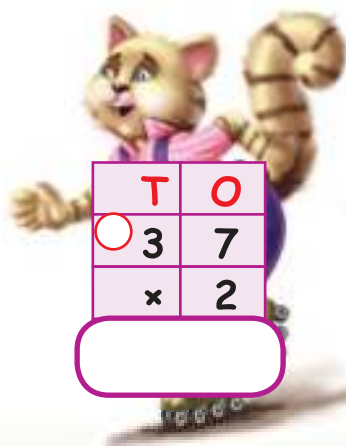
T	O
○ 1	5
×	2



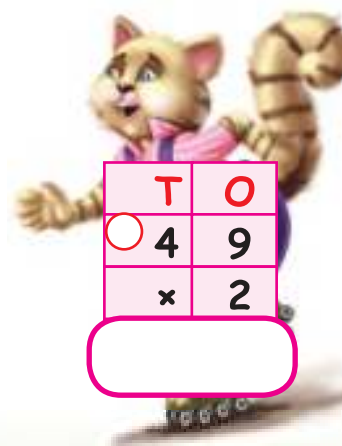
T	O
○ 1	0
×	6



T	O
○ 5	5
×	1



T	O
○ 3	7
×	2



T	O
○ 4	9
×	2



Word Problems:

1. 2 children sit in each row of a classroom. How many children will sit in 15 rows?



×

2. There are 3 buses. Each bus has 25 passengers. How many passengers are there in all?



×

3. There are 50 students in a class. Each student has 7 books. How many books are there in all?



×

4. There are 35 cars. Each car has 4 people inside it. How many people are there in all?



×

5. A shopkeeper bought 5 baskets of mangoes. If there are 15 mangoes in each basket, how many mangoes did he buy?



×



Think Wisely

One child has 2 eyes.

How many eyes do 5 children have?



By repeated addition: _____ + _____ + _____ + _____ + _____ = _____

By multiplication: _____ $\times$ _____ = _____



Mental Maths

A. Learn the tables and write the product:

1. $3 \times 5 =$ -----
2. $8 \times 6 =$ -----
3. $5 \times 9 =$ -----
4. $3 \times 7 =$ -----

B. Tick the correct answer:

1. 4 times _____ = 12
i. 3 ☐ ii. 5 ☐ iii. 2 ☐ iv. 4 ☐
2. When we multiply any number by 0, the products is always
i. 1 ☐ ii. 0 ☐ iii. 3 ☐ iv. 2 ☐
3. $11 \times$ _____ = 11
i. 11 ☐ ii. 0 ☐ iii. 1 ☐ iv. 3 ☐





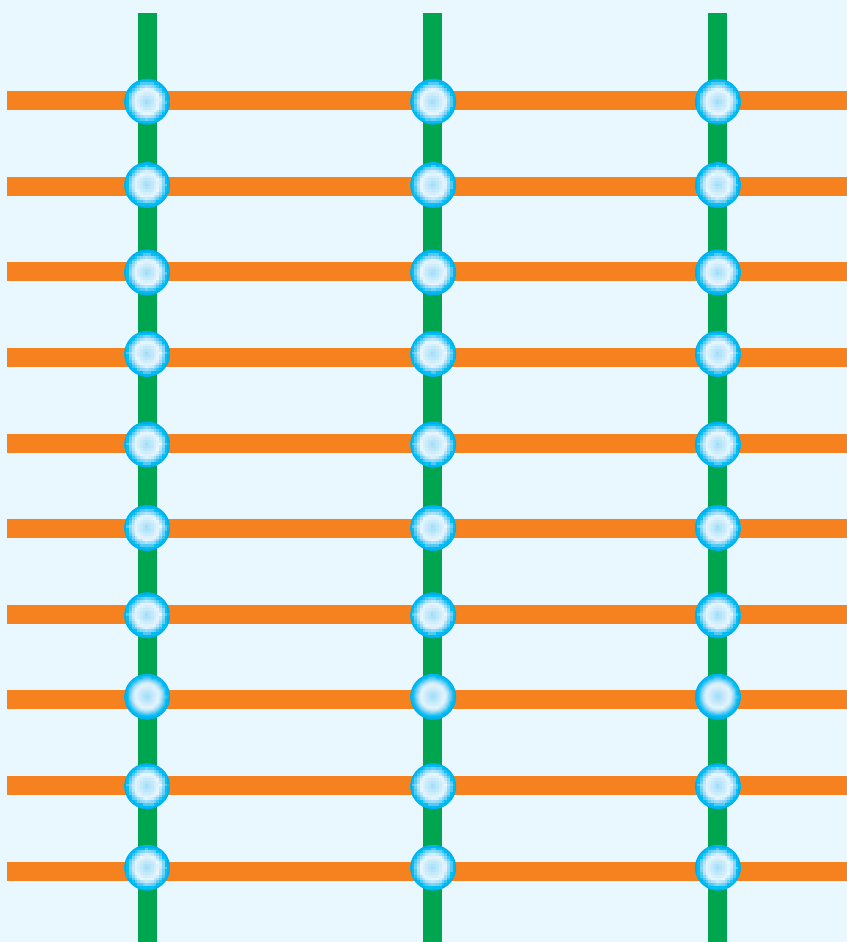
Maths Lab Activity

Materials required:

Straws, sketch colours.

Steps:

1. Arrange three straws vertically on a sheet of paper.
2. Now, take another straw and put horizontally on the previous three straws and colour the point of intersection with sketch colours. It represents $3 \times 1 = 3$.
3. Repeat the above steps by putting one more straw horizontally, intersecting at three more points. These represents $3 \times 2 = 6$
4. By continuing this activity , we have the multiplication table of 3.





Division



Learning Objectives

At the end of this lesson, students will be able to:

- Make equal sets of the objects.
- Divide using repeated subtraction.



Warm Up

It is Aman's birthday today. He is celebrating it with 5 of his friends. He buys 10 packets of chocolates. He distributes them equally among his friends. How many chocolates does he give to each of them?



When 10 chocolates are divided equally among 5 friends, each will get 2 chocolates.

We can write it as

$$10 \div 5 = 2 \text{ in a}$$

This is called equal distribution.

We also call it **division**.



'Division' means
'Equal Sharing'.

Division is indicated
by ' $\div$ ' sign.

Division is done using
'Repeated Subtraction'
method.

A teacher had 5 chocolates.
She wants to give 5 chocolates equally
among 5 students.



Teacher gave 1 chocolate to Radha.
Now 4 chocolates are left.



Teacher gave 1 chocolate to Mona.
Now 3 chocolates are left.



Teacher gave 1 chocolate to Mini.
Now 2 chocolates are left.



Teacher gave 1 chocolate to Komal.
Now 1 chocolate is left.



Teacher gave 1 chocolate to Rashi.
No chocolate is left.
 $5 - 1 - 1 - 1 - 1 - 1 = 0$
 $5 \div 5 = 1$



Division makes equal sets



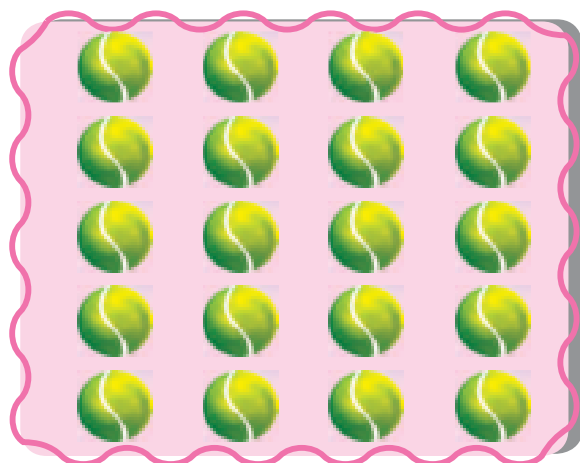
**Teacher's
Note:**

Elucidate the students that repeated subtraction is a method that subtracts the equal number of items from a group, also known as **division**. Using this method, the same number is subtracted repeatedly from another larger number until the remainder is zero, or smaller than the number being subtracted.



Divide by Repeated Subtractions:

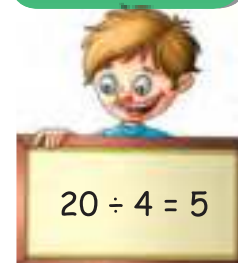
Objects



Repeated Subtraction

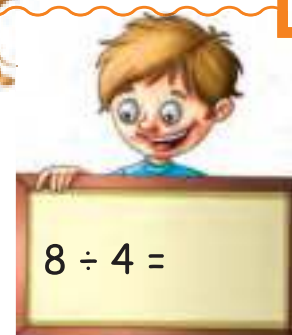
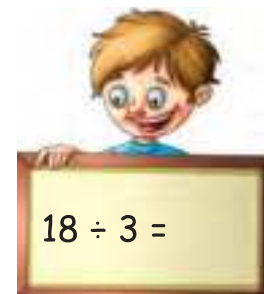


Division



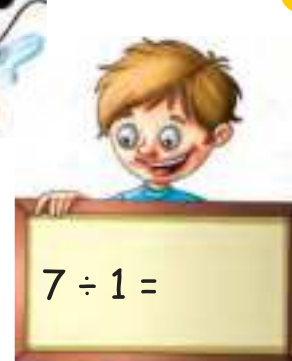
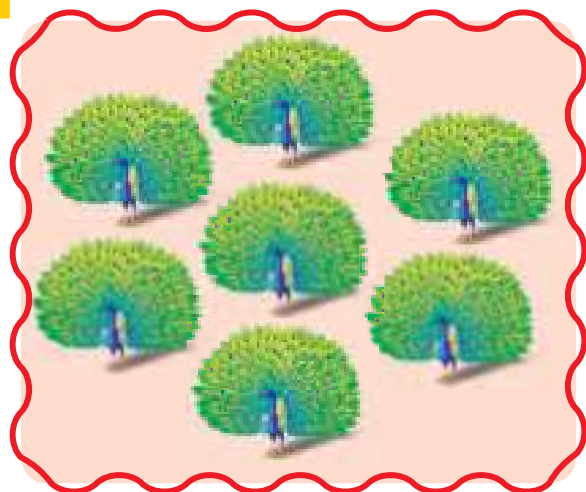
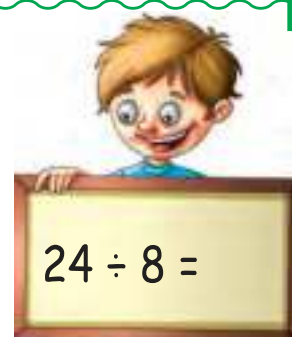
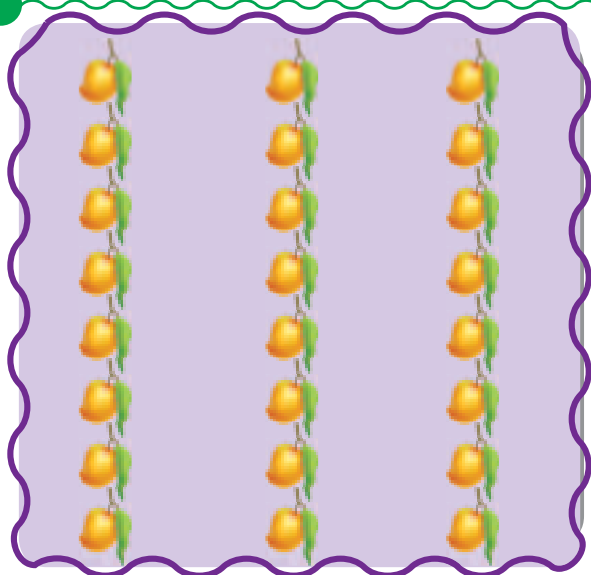
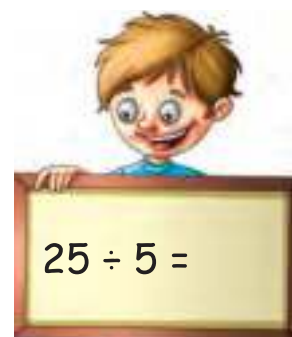
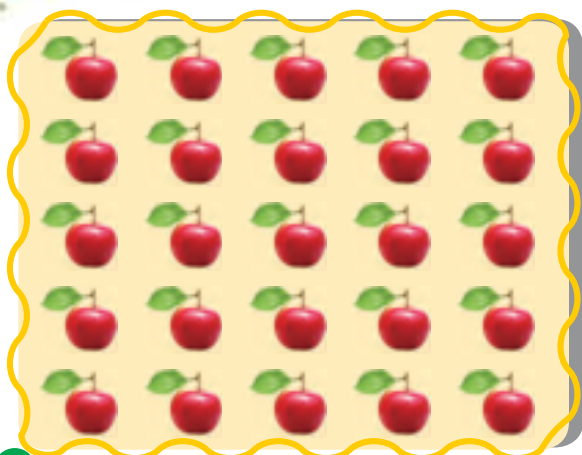
Procedure:

$$\begin{array}{rcl} 20 & - & 4 = 16 \\ 16 & - & 4 = 12 \\ 12 & - & 4 = 8 \\ 8 & - & 4 = 4 \\ 4 & - & 4 = 0 \end{array}$$



Quick Tip

Any number divided by 1 is the number itself! For instance, 5 divided by 1 is 5.



Facts to Know

0 divided by anything is 0.

When two same numbers are divided, the answer is 1.





Think Wisely

Give an equal number of crayons to each.



Mental Maths

Tick the correct option.

1. Division is a way of

a. repeated addition



b. equal distribution



c. repeated addition



d. None of these



2. Which of the following is the division fact?

a. $5+3=8$



b. $8-2=6$



c. $7 \times 2 = 14$



d. $16 \div 4 = 4$



3. Among how many students can we distribute 18 chocolates, so that each student may get 6 toffees?

a. 9



b. 2



c. 3



d. 5



4. We get the same number on dividing a number by

a. 0



b. 10



c. 5



d. 1



5. $14 \div 2$ is equal to

a. 6

c. 4

b. 7

d. 2



Maths Lab Activity

Materials required:

Some toffees and a bowl.

Steps:

1. Take 12 toffees and put them in a bowl.
2. Now call three students near the table. Ask each of them to pick one toffee from the bowl and mark a (✓) on the blackboard.
3. Now ask each of them to pick one more and put mark on the blackboard.
4. Ask them to repeat the activity until the bowl is empty.
5. Now ask them to count (✓) and write the division facts using repeated subtraction, $12 \div 3 = \underline{\hspace{2cm}}$
6. Repeat this activity with different numbers of toffees and different group of students.





Learning Objectives

At the end of this lesson, students will be able to:

- Compare length.
- Observe and measure length using objects and body parts.
- Measure and compare weights and capacities of the objects.



Warm Up

Mr. Fox welcomes you to the world of the jungle. Observe the picture, think and circle the appropriate answer.



Who is smaller?

(fox / squirrel)

Who is the biggest ?

(duck / parrot / elephant)

Who is the tallest ?

(peacock / giraffe)





Let us revise some of the basic concepts.
Tick (✓) the one that is:

Long



Short



Small



Big



Thick



Tall



Heavy



Thin



Light



**Teacher's
Note:**

Give the students pairs of objects. E.g. a water bottle and a lunch box. Let them take those in each hand and decide which is heavier.



Length:

Measuring length using objects

We can measure an approximate length of an object with the help of another object.



The length of this pencil is equal to 8 erasers.

Watch and Write:



Length of the snake is about sharpners.



Length of the toothbrush is about crayons.



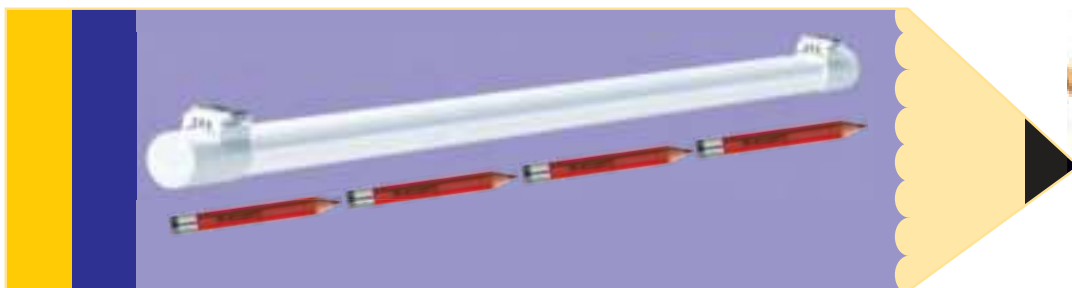
Length of the book is about erasers.



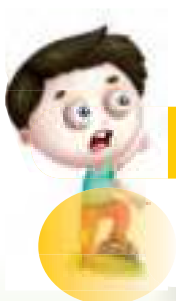
Length of the table is about pencils.



Length of the bat is about pens.



Length of the tubelight is about pencils.



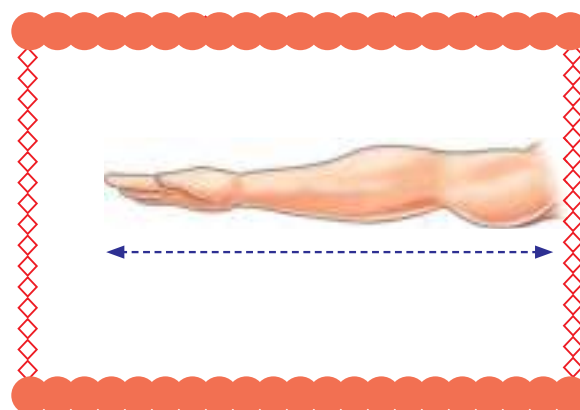
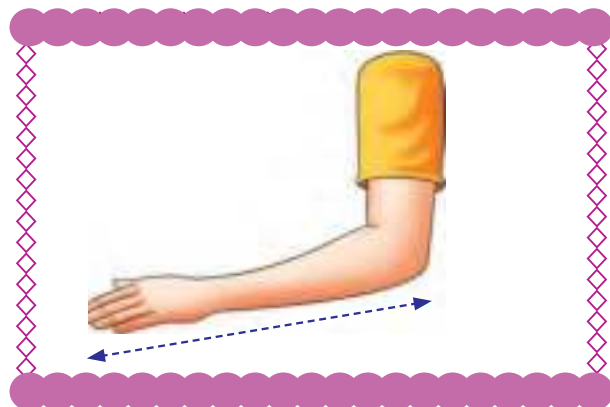
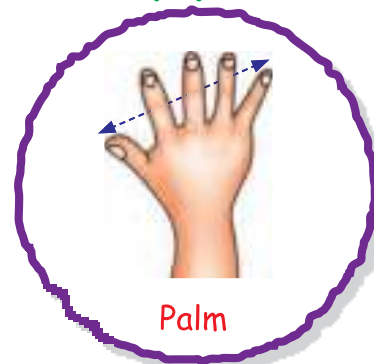
Quick Tip

A longer body always has more length than a shorter body and it is big in size as compared to the small body.



Measuring Length Using Body Parts:

We can measure the length of an object using our body parts.



Facts to Know

In ancient times, the length of a foot, the width of a finger, and the distance of a step were all accepted measurements.

Look at the pictures carefully:



Measurement by Finger / Digit



Measurement by Hand Span



Measurement by the Palm



Measurement by Cubit



Measurement by Arm Length



Measurement by Foot Span



Measurement by Pace

Observe and Measure:

Use actual objects to measure the following objects using your body parts:

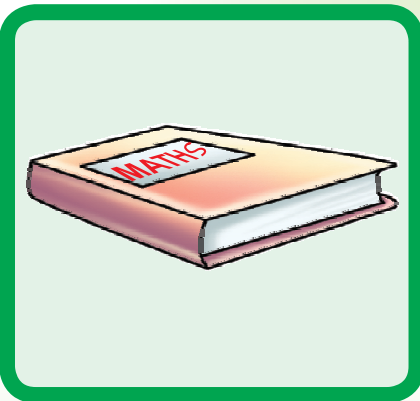
1. My desk is cubits long.



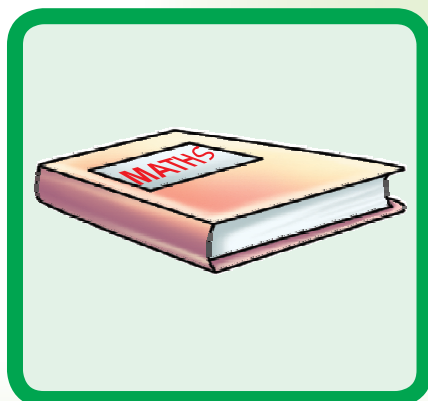
2. My pencil is digits long.



3. My bat is hand spans long.

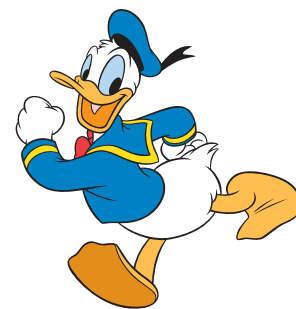


4. My mathematics book is palms long.

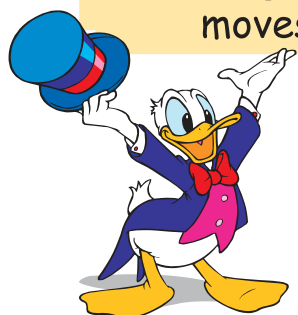


Weight:

We can measure weight of an object with the help of **weighing scale**. Weighing scale has two pans.



The lighter side of a weighing scale moves up.



The heavier side of a weighing scale moves down.

If the weights on both sides is equal, then the pans will remain at the same level.



Look at the pictures and read the sentences carefully:

A lion is heavier than a monkey.



A monkey is lighter than a lion.



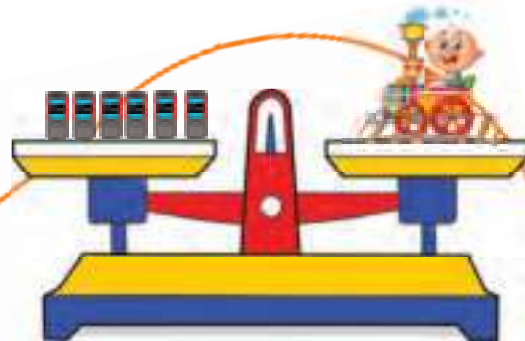
A crow and a parrot weigh the same.



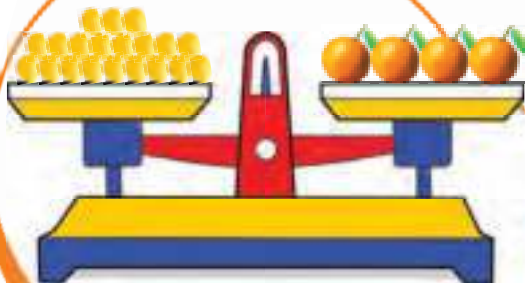
Watch and Write:



One bat weighs as much as apples.



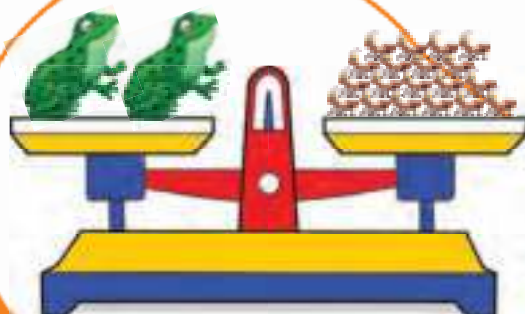
6 mobiles weigh the same as toy.



20 lemons weigh the same as oranges.



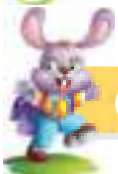
1 pencil box weighs the same as mangoes.



20 ants weigh the same as frogs.



1 book weighs the same as bananas.



Capacity:

We can measure capacity of liquids (such as water, milk, juice, etc.) using cups, glasses, mugs, bottles, jugs, buckets, etc.



Look at the pictures and read the sentences carefully:



A glass can hold 1 glass of water.



A jug can hold 8 glasses of water.

It means,

A glass holds less water than a jug.

A jug holds more water than a glass.



Put a tick (✓) on the heavier object in each set:





Think Wisely



Amaira measures the blackboard.

It is 8 handspans long.

Can you tell why? _____



Amaira's teacher measures the same blackboard.

It is 5 handspans long.



Mental Maths

Use the following body parts to measure the length.

- My desk is _____ handspans long.
- My eraser is _____ digits long.
- My blackboard is _____ palms long.
- My classroom is _____ footspans long.
- The distance between the table and the black board is about _____ paces.





Maths Lab Activity

Materials required:

Long ribbon strips and ice cream sticks.

Steps:

1. Take a ribbon strip and measure your table with it.
2. Mark the point up to which the ribbon strip comes.
3. Now, use the ice cream sticks to measure this length of ribbon and note down the reading.

My table is _____ ice cream sticks.

4. Repeat the above steps to find the length of your shirt, skirt or trousers, etc.

Length of my shirt is _____ ice cream sticks.

Length of my skirt / trousers is _____ ice cream sticks.





Time and Calendar



Learning Objectives

At the end of this lesson, students will be able to:

- Use the clock to tell the time to the nearest hour.
- Draw the minute and hour hand on the clock according to the time said.
- Name the days of the week and months of the year in proper order.



Warm Up

Tick (✓) the correct columns.

Activity	Morning	Afternoon	Night
 Brushing teeth			
 Having lunch			
 Sleeping			
 Having dinner			
 Watering plants			





Time:

The period for which the sun rises.

The period after which the sun sets.



MORNING

Sun Rises



EVENING

Sun Sets



NOON

Sun is Overhead



The time interval between noon and evening is known as afternoon.



Teacher's Note:

Brief the children that:

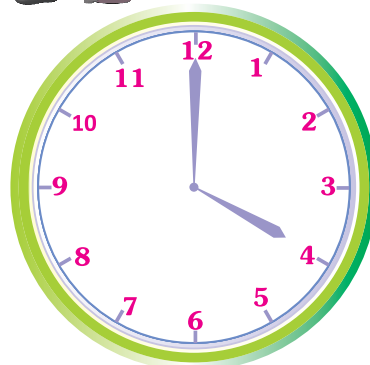
- Morning is from sunrise to 11:59 AM.
- Noon is at 12:00 PM.
- Afternoon is from 12:01 PM to around 5:00 PM.
- Evening is from 5:01 PM to 8 PM, or around sunset.
- Night is from sunset to sunrise, so from 8:01 PM until 5:59 AM.

Measuring Time:



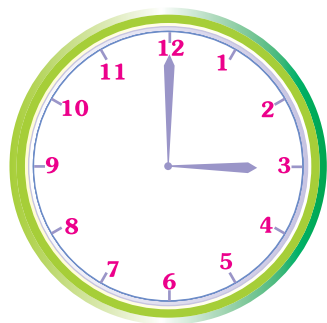
This is a clock.

Clock
tells us
time.



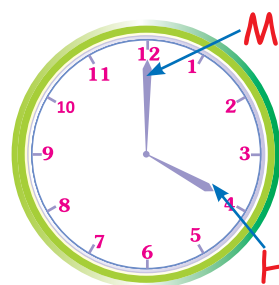
The face of the
clock is known
as its dial.

There are twelve numbers on the face of the clock.
These are 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12.



The short hand is the hour hand.

The long hand is the minute hand.



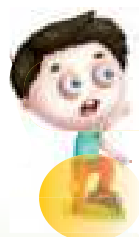
Minute hand

Hour hand

The minute hand (long hand) is at 12.
The hour hand (short hand) is at 4.

The time is **4 o'clock**. It can be read as four o'clock.

It can also be written as, **4:00**

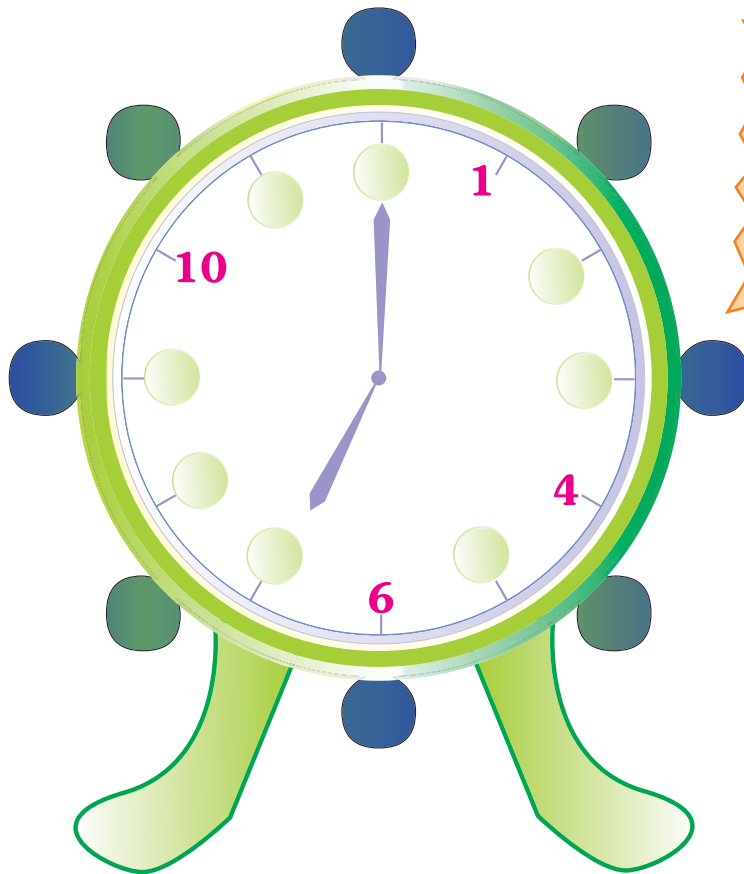


Quick Tip

The numbers in a clock face are for counting hours.
The 60 small lines are for counting minutes.



Complete the clock numbers:



When both minute hand and hour hand is at 12, then the time is 12 o'clock or 12:00



Tell Time:

Fill in the blanks:

1. The minute hand is on
2. The hour hand is on
3. It is o'clock.

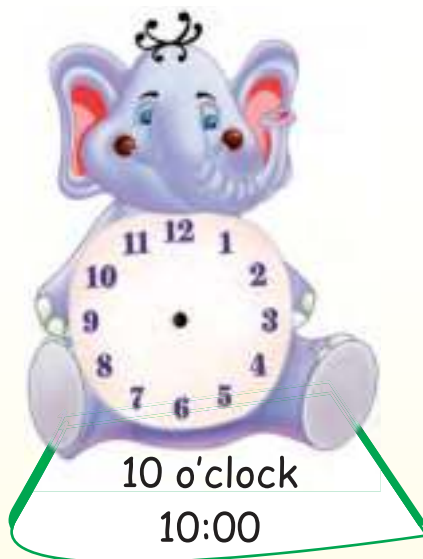


2 o'clock
2:00





Draw hour hand and minute hand on each clock to show the time given:

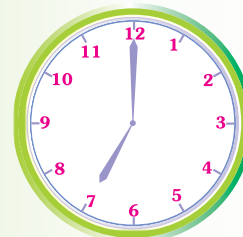




Daily Routine:



I get up at 6 o'clock in the morning.



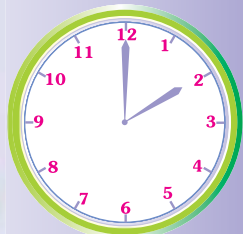
I take my breakfast at
in the



I go to school at in
the



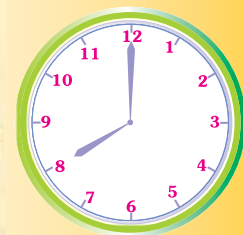
I come back home from school
at in the



I take my lunch at
in the



I do my homework at
in the



I take my dinner at
in the



I go to bed at in the
.....



Calendar:

2024

January 	February 	March 	April
May 	June 	July 	August
September 	October 	November 	December



Facts to Know

A calendar is a dating system that is used all over the world to keep a track of days, weeks, months, and years.

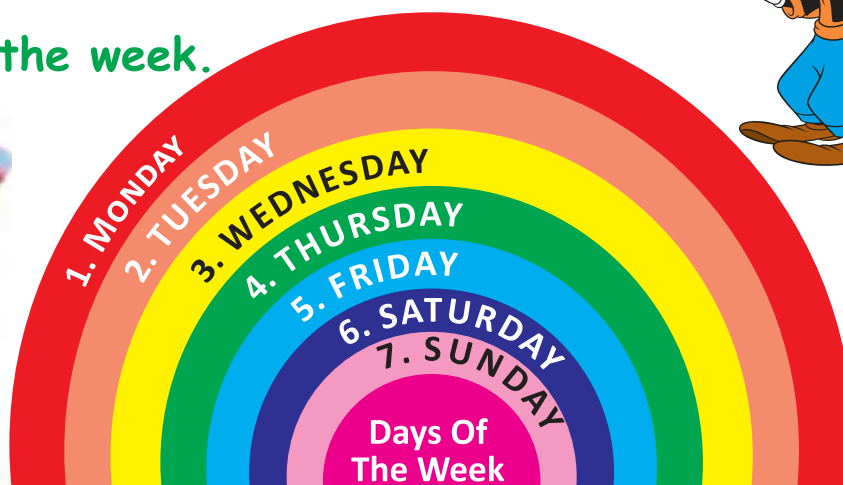
During the ancient days, the course of the Moon and Sun were used for timekeeping. Gradually these techniques were optimised to create a more systematic tool called Calendar.



Days of the Week:



There are seven days in the week.



Monday is the **first** day of the week.

Tuesday is the **second** day of the week.

Wednesday is the **third** day of the week.

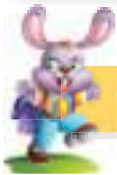
Thursday is the **fourth** day of the week.

Friday is the **fifth** day of the week.

Saturday is the **sixth** day of the week.

Sunday is the **seventh** day of the week.

 **Remember** The cycle of the days of the week goes on and on.



Fill in the blanks:



..... is the first day of the week.

..... is the last day of the week.

Wednesday comes before

..... comes after thursday.

On the school remains closed.

..... comes between monday and wednesday.

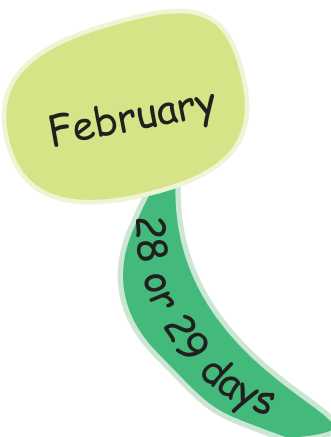


Months of the Year:

There are 12 months in the year.



Days In Month:



Remember

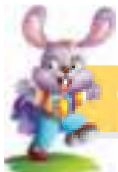
The cycle of the months of the year goes on and on.

Write the months of the years.

Months having 31 days

Months having 28/29 days

Months having 30 days



Fill in the blanks:

January is the month of the year.

..... is the last month of the year.



October has days.

..... comes before April.

..... has 28/29 days.

June comes before





Think Wisely

Kanchan owns a cosmetic shop. She doesn't open her shop on Saturday and Sunday every week.

Today is Monday. Did Kanchan open her shop yesterday? _____

Will she open it tomorrow? _____



Mental Maths

A. Fill in the blanks:

- There are _____ days in a week.
- _____ comes between Wednesday and Friday.
- _____ comes before March.
- There are _____ months in a year.

B. What is the time when the:

- Minute hand is at 12, hour hand is also at 12? _____
- Hour hand is at 3, minute hand is at 12? _____
- Minute hand is at 12, hour hand is at 6? _____
- Hour hand is at 7, minute hand is at 12? _____





Maths Lab Activity

Materials required:

Pencils and crayons.

Steps:

1. Divide your day into 4 parts - morning, noon, evening and night, Draw a picture in each box showing an activity that you generally do in that part of the day and colour the picture.

 Morning	 Noon
 Evening	 Night



**Learning Objectives**

At the end of this lesson, students will be able to:

- Identify different coins and notes.
- Utilise money for shopping activities.
- Count the amount of money.

**Warm Up**

Peeku and Pihu wants to buy a teddy bear from a toy shop. The shopkeeper is showing them the toys and they choose one out of them. What will they give to the shopkeeper to buy that teddy bear?



My mummy goes to market for shopping. She takes money along with her.

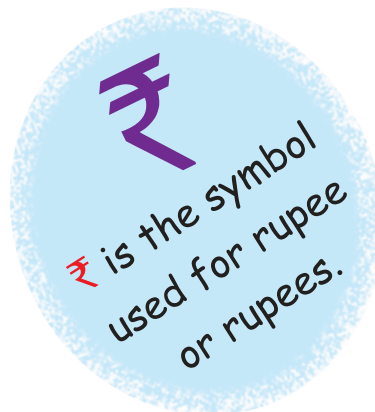
Money is very important to buy things.



Money is in the form of currency notes and metallic coins.



Commonly Used Coins:



Did You Know?

	+		=	
50	+	50	=	₹ 1
50 paise		50 paise		
50 p		50 p		



Teacher's Note:

Show the students different coins and notes. Also, tell them that there are various symbols on the notes and coins which help our currency to stand out from others and helps to differentiate it from similar currencies which are Pakistan, Sri Lanka and Indonesia.



1. Radha bought one pencil  , one eraser  and 1 sharpner  . How much money did she spend?

2. Shivani bought one ice cream  and one packet of uncle chips  . How much money did she spend?

3. Ruchi bought one burger  and 1 cake  . How much money did she spend?

4. Rajat has ₹ 50. He bought 2 balloons  , 1 chocolate  and 1 kite  . How much money is left with Rajat?

5. Kushal had ₹ 65. He bought 2 samosas  , 5 toffees  and 1 packet of uncle-chips  . How much money is left with Kushal?



Facts to Know

The lines (horizontal) on the Symbol ₹ is known as Shrio Rekha which is a unique feature of the Devnagri Script. The Rupee symbol preserves this feature of the Indian script.

The current currency notes, which is also known as the Mahatma Gandhi Series, were originated in the year 1996.





Think Wisely

How many 50 paise coins will be required to make 3 rupees ?



Mental Maths

A. Tick (✓) the correct option.

1. The commonly used coins are

a. ₹ 1

☐

b. ₹ 2

☐

c. ₹ 5

☐

d. All of these

☐

2. ₹ 10 coin + ₹ 5 coin is equal to

a. ₹ 10

☐

b. ₹ 5

☐

c. ₹ 15

☐

d. None of these

☐

3. We can exchange ₹ 50 note with

a. Five notes of ₹ 10

☐

b. Ten notes of ₹ 10

☐

b. Five notes of ₹ 20

☐

d. Five notes of ₹ 5.

☐

4. 3 coins of ₹ 1 is equal to

a. ₹ 6

☐

b. ₹ 3

☐

c. 50 paise

☐

d. ₹ 9

☐

5. ₹ 50 + ₹ 25 is equal to

a. ₹ 70

☐

b. ₹ 65

☐

c. ₹ 75

☐

d. ₹ 80

☐



Maths Lab Activity

Materials required:

coins and notes of different denominations and a table.

Steps:

1. Place coins and notes on the table.
2. Allow pupils to touch and feel the information presented on each.
3. Now, invite students to make a decision about how much money is placed on the table:

₹ 20

₹ 14

₹ 35

₹ 9

For instance, ₹ 14 can be formed in a variety of ways, as seen below.

