MATHEMATICS

STANDARD TWO

The Coordination Committee formed by GR No. Abhyas - 2116/(Pra.Kra.43/16) SD - 4
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MATHEMATICS

Standard Two

**Maharashtra State Bureau of Textbook Production and
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The Constitution of India

Preamble

WE, THE PEOPLE OF INDIA, having solemnly resolved to constitute India into a SOVEREIGN SOCIALIST SECULAR DEMOCRATIC REPUBLIC and to secure to all its citizens:

JUSTICE, social, economic and political;

LIBERTY of thought, expression, belief, faith and worship;

EQUALITY of status and of opportunity; and to promote among them all

FRATERNITY assuring the dignity of the individual and the unity and integrity of the Nation;

IN OUR CONSTITUENT ASSEMBLY this twenty-sixth day of November, 1949, do HEREBY ADOPT, ENACT AND GIVE TO OURSELVES THIS CONSTITUTION.

NATIONAL ANTHEM

Jana-gana-mana-adhināyaka jaya hē
Bhārata-bhāgya-vidhātā,

Panjāba-Sindhu-Gujarāta-Marāthā
Drāvida-Utkala-Banga

Vindhya-Himāchala-Yamunā-Gangā
uchchala-jaladhi-taranga

Tava subha nāmē jāgē, tava subha āsisa māgē,
gāhē tava jaya-gāthā,

Jana-gana-mangala-dāyaka jaya hē
Bhārata-bhāgya-vidhātā,

Jaya hē, Jaya hē, Jaya hē,
Jaya jaya jaya, jaya hē.

PLEDGE

India is my country. All Indians are my brothers and sisters.

I love my country, and I am proud of its rich and varied heritage. I shall always strive to be worthy of it.

I shall give my parents, teachers and all elders respect, and treat everyone with courtesy.

To my country and my people, I pledge my devotion. In their well-being and prosperity alone lies my happiness.


Preface


My dear friends,

Welcome to std II. You have read the books of std I and studied them well. And now you are in std II. You will enjoy the studies of std II as well, won't you? Your friends Yash and Rama are also with you. You will have several occasions to play games as you study maths.

You already know how to count objects. You will now learn to do small additions and then small subtractions. Make an effort to understand the method or procedure well. That will help you to experience the fun of maths. Just as you ask your teacher for help in school, you can get help from your parents, older brothers or sisters or anyone else, at home.

While studying lines and various other shapes, you are to draw figures or pictures. Drawing pictures and colouring them is something you like and enjoy, isn't it? You will get opportunities to do just that. You will also find some fun games useful for learning to add or subtract small numbers. Once you learn to add and subtract small numbers, you will find the maths problems of higher classes easier to solve.

The different types of mathematics help to make many of our tasks easier to do. Adding the same number again and again is a boring task. See how multiplication will help to make it quick and easy. You could also play game of asking each other small multiplications from the tables.

In order to understand how to subtract by borrowing, use ten-rupee notes and one-rupee coins. You can yourself make mock notes from paper and coins from card board. You don't need to use real currency notes and coins.

Q.R. Code is given at the end of each chapter. You will find interesting information in the Q.R Codes.

Maths in Std II is really quite easy. Learn as you play and enjoy your studies.

(Dr. Sunil Magar)
Director

Maharashtra State Bureau of
Text Book Production and
Curriculum Research, Pune

Pune
Date : 7 May 2019, Akshayya Trutiya
Indian Solar Date : 17 Vaishakh, 1941

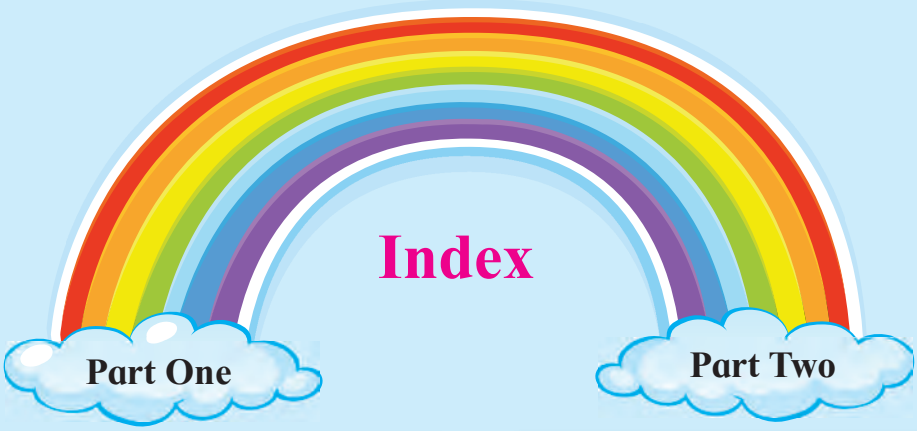
Mathematics Standard II - Learning Outcomes

Suggested Pedagogical Processes	Learning Outcomes
All learners may be provided opportunities in pairs/groups/ individually and encouraged to- • Telling the names of numbers and recognizing their pattern of writing on paper. Reading and writing numbers up to 99. • Understanding the place value of a digit in a number and use it to recognize or form groups. • Using addition facts up to 9 to carry out additions of two-digit numbers up to 99. • Developing other methods of addition and subtraction and using them. • Finding situations where addition or subtraction is involved, e.g. merging two groups, enlarging a group by increasing the number of things in a group. • Framing questions/ problems based on addition and subtraction, which the students themselves can relate to. • Creating a real or supposed situation in which a particular number will have to be added repeatedly. • Drawing diagrams of various faces of three-dimensional objects and naming the corresponding two-dimensional shapes. • Classifying various shapes by recognizing their physical characteristics with the help of their cut-outs or by folding a paper. • Describing the shape and physical characteristics of objects either by handling them or by observation. • Putting together an amount up to Rs 100 using mock money of different denominations. • Observing various balances and scales used to weigh things and discussing the experiences gained. • Making a simple balance and weights and use them to compare weights of various objects.	**The learner —** 02.71.01 Can carry out operations on two-digit numbers. — Can read numbers up to 99 and write numbers up to 50 in words. — Can make up tables of the numbers 2, 3, 4 and 5 with the help of easily available objects and can use the tables. — Can use the place value of numbers while writing or comparing two-digit numbers. — Can make the greatest and the smallest two-digit numbers using two given digits (with or without repetition of digit) — Can solve simple everyday problems or questions involving addition of two-digit numbers. — Can solve simple everyday problems or questions involving subtraction of two-digit numbers. — Can put together an amount up to Rs 100 using various notes and coins of different denominations. 02.71.02 Can describe the visual characteristics of two-dimensional and three-dimensional objects. — Can recognize and name common three-dimensional shapes, e.g. cube, cylinder, cone and sphere. — Can draw two-dimensional diagrams of three-dimensional objects — Can recognize two-dimensional shapes, e.g. rectangle, square, triangle, circle. 02.71.03 Can distinguish between straight and curved lines. 02.71.04 Can draw straight lines in different ways – vertical, horizontal, inclined.

Suggested Pedagogical Processes	Learning Outcomes
• Measuring some lengths of small objects in the surroundings using non-standard unit such as a finger, hand-span, length of arm or foot, etc. • Being able to tell the criteria or characteristics used while classifying different solids/ shapes. • Discussing the household tasks done or time spent with their family on some specific occasion. • Visualizing both a feature that repeats itself in a pattern as well as the final pattern obtained due to that feature, and expressing in words what has been visualized. • Extending the pattern formed from various shapes, fingerprints, prints of leaves or numbers. • Collecting information from people in the surrounding, maintaining a record of the information collected and drawing conclusions from it.	02.71.05 According to their physical characteristics, can describe solid objects in their own words. e.g. a ball rolls, a box slides, etc. 02.71.06 Can estimate and measure the length of objects using non-standard units such as fingers, hand span, arm, foot, etc. 02.71.07 Can compare two objects using a common balance and can express the comparison in words such as '…..is heavier than….', '…is lighter than….' 02.71.08 Can tell the names of the days of a week and the months of a year. 02.71.09 Can analyse the information collected and draw inferences from it. e.g. the number of vehicles used in Sameer's house is more than those used in Anjalee's house. 02.71.10 Can tell the values of notes and coins up to hundred rupees and can carry out the operations of addition and subtraction on them.

For teachers

Please note that children are expected to learn to write in words, numbers from 1 to 50 only. The mathematical concepts to be taught are the same as before. Do give enough time and practice for learning addition by carrying over and subtraction by borrowing. It is important for children to learn how ten Units make a Ten, and how a Ten can be untied to obtain ten units. Besides using beads, strings and sticks of Ten, you will also find ten-rupee notes and one-rupee coins to be very useful. Get the children's help in cutting out rectangular pieces of card paper of the same size to make ten-rupee notes and small discs of cardboard to make one-rupee coins. Encourage them to use these mock notes and coins to learn addition by carrying over and subtraction by borrowing. Also guide them in making the multiplication tables of the numbers 2, 3, 4 and 5. Give the children plenty of practice to solve examples through various activities.



Index

Part One

Part Two

Let's find the Shapes !

A picnic on Sunday, in farm fresh air
All shaped veggies, we could find there

When he dug the soil, Motya had found
Cone like carrots, under the ground.

Yash brought tomatoes red and round
some long brinjals also he found.

Rama got the cucumbers, green and fresh
Some straight cylinders, some bent at the waist.

Tarmarind from a tree and a little bit of garlic
Was all that Gampu and Pussy could pick.

Mamma roasted rotis, Pappa cooked veggies
Such a nice picnic, could we come again, Please ?

DR28EK

Let's handle geometric shapes

Let's collect : Match stick boxes, cartons of tooth paste, *mithai* etc. water bottles, balls of different sizes, a clowns cap and pipes made of card paper.

Observe the objects on the table. Separate the objects of similar shapes.

Cuboid or Parallelepiped :

Pick up and handle a mithai box. A shape such as this is called a cuboid or a parallelepiped.

You must have seen bricks on construction sites. Any object shaped like a brick is called a cuboid.

How many edges does this shape have ? How many corners ? Let's see.
A cuboid has - _____ edges and - _____ corners.

Now let us look at the surfaces of a cuboid ....

They are all flat. A cuboid has six surfaces altogether. If we place a cuboid on a slide in a park, it will slip down the slope because of its flat surface.

Find out

The objects on the table of cuboid shape.

Cone :

Now, let's take a look at the clown's cap you have made.
It's shape is called a cone.

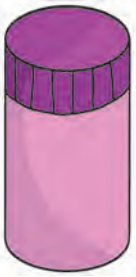
Cone - The shape like a clown's cap or fool's cap is called a cone. You are familiar with an ice-cream cone and a *mehandi* cone.

A cone has one edge and one corner.
The flat base of a cone is circular. See how the sloping surface of a cone turns continuously around. It is called the curved surface.

Cylinder :

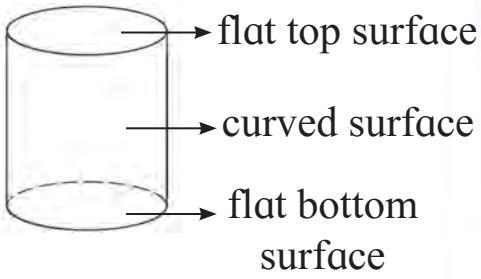
Now look at the water bottle.

The shape of the bottle is called a cylinder.



Cylinder - A bottle like shape which has a circular base is called a cylinder or a circular prism.

A cylinder has two edges but not a single corner. The base and the top surfaces of a cylinder are alike, flat and circular. The turning surface between them is a curved surface.



Try this.

Place a cylinder on a slide in a park. Does it slip downwards or roll down ?

When we place an object with its flat surface on a slide it slips down, but if we place its curved surface on the slide the object rolls down. You can see this clearly with the help of a cylinder.

Sphere :

A ball is said to be spherical.

Sphere - A shape like a ball is called a sphere.

A sphere has no edges and no corners.

No part of a sphere is flat. It turns continuously. Thus a sphere has only a curved surface.

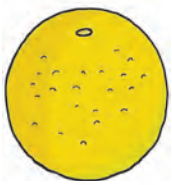
Try this.

Does a sphere slip or roll down when it is placed on a slide ?

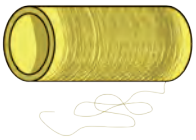
* **Match the pairs.**

Shape	Name of shape
1) 	1) Cylinder
2) 	2) Cuboid
3) 	3) Cone
4) 	4) Sphere

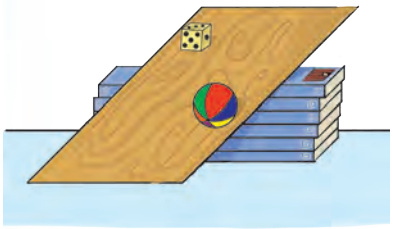
* **Which of the following objects will slide, which ones will roll?**

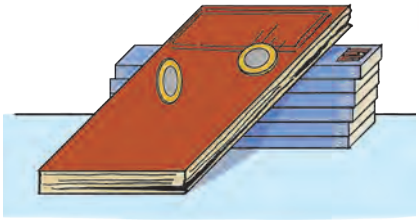



* **Handle the objects shown below. Observe and write how many edges and corners each object has.**

			
Edges - ☐ Corners - ☐	Edges - ☐ Corners - ☐	Edges - ☐ Corners - ☐	Edges - ☐ Corners- ☐

* **Say which of the objects in the pictures will slide, which ones will roll?**





Instructions for teachers

Place many solid objects before the children. Ask them to identify known geometric shapes and to count the edges and corners of each.

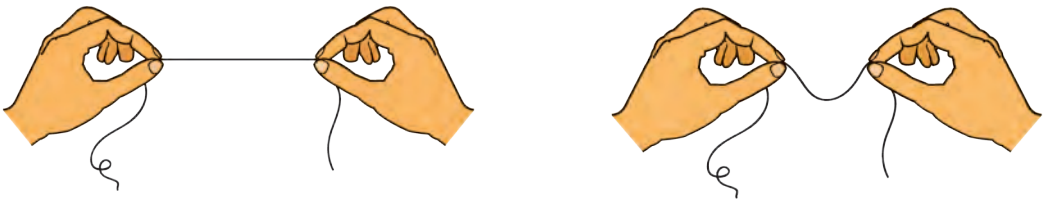
ICT Tools

Using the 'paint brush' app draw various geometric shapes and colour them.

QMN34G

Fun with Line

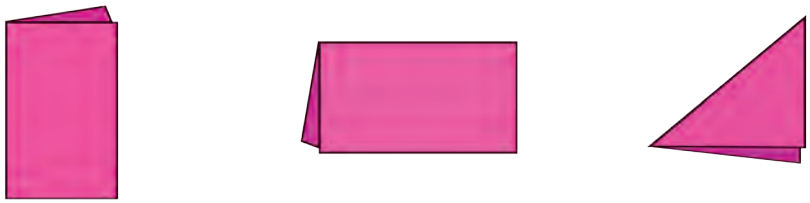
* **If we hold a thread in our two hands and stretch it tight, we get a straight line. If we let it hang loose we get a curved line. (See how we get a straight line if we tie a stone to one end of a thread and let it hang.)**



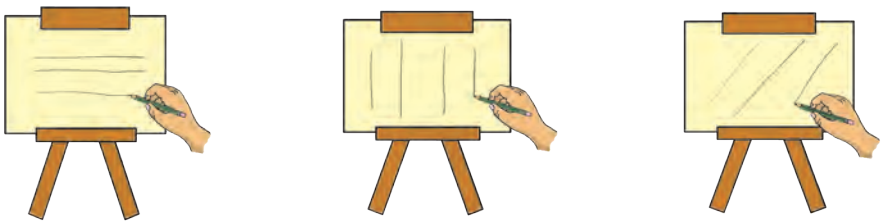
In this book we shall be learning about the straight line. So when we say 'line' we mean 'straight line'.

Neha drew vertical or standing line	Anagha drew horizontal or sleeping lines	Hamida drew inclined or sloping lines
		

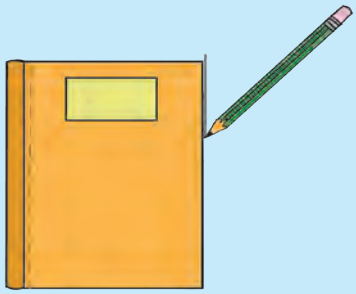
* **Activity : Fold a paper and show vertical, horizontal and inclined line.**



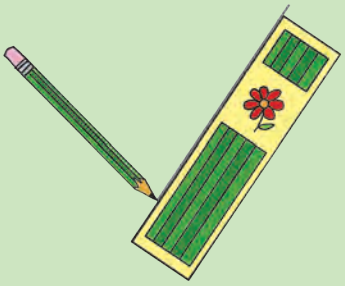
* **Draw lines like the ones shown below.**



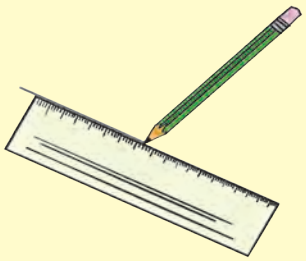
* I draw a line with the help of a book.



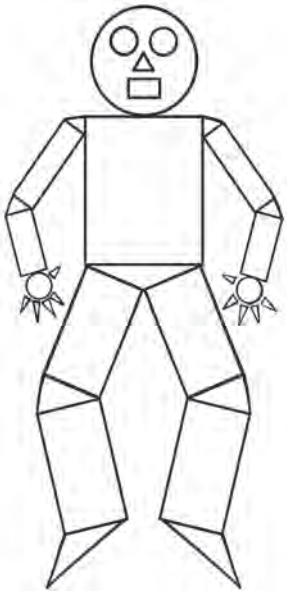
* I use a box to help me draw a line.



* I used a ruler to draw a line.



* I drew a line just by hand, without the help of any device.



Identify the shapes and colour them

Identify the shapes like △, ○ and □, in the picture alongside. Colour △ red, ○ yellow and the □ blue.

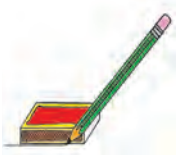
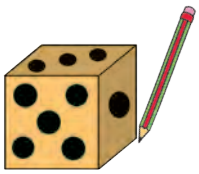
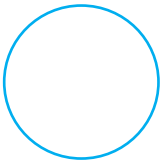
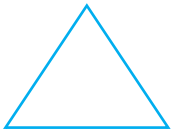
Instructions for teachers

See that the children carry out the above activities in their nootebooks.

FFVRI8

Let's identify geometrical shapes

* **As shown in the picture, trace the edges of the objects with your pencil and draw the shape of the object. Observe the sides of the object.**

			
			
This is a rectangle. A rectangle has 4 sides.	A circle has only one curved edge and no straight side.	This is a triangle. A triangle has 3 sides.	This is a square. A square has 4 sides.

Try the fun activities given below :

* **Activity 1 :** Make a paper boat. Unfold it and count the numbers of triangles and four-sided figures; and colour any two triangles and four-sided two figures.
* **Activity 2 :** Make triangles and four-sided figures using match sticks or small wooden strips.
* **Activity 3 :** Find out the tools of games in which you see triangles, four-sided figues and circles.
* **Activity 4 :** Make a picture using the shapes Δ, □, ○ etc.

Instructions for teachers

Give children practice in drawing various shapes using articles of daily use. Also give them practice in drawing these shapes free-hand.

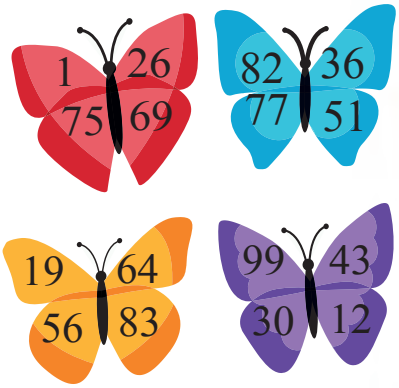
SCHL84

In the world of numbers

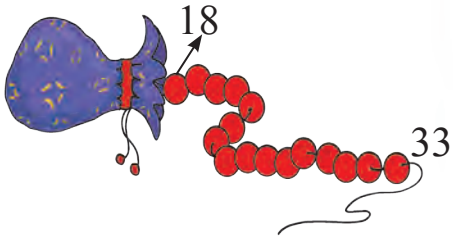
*** Come, lets complete the numbers chart.**

1			4		6		8		10
	12	13		15		17		19	
21			24		26		28		30
	32			35		37		39	
41		43	44				48		50
	52		54		56			59	
		63		65			68		70
	72				76			79	
81			84			87			90
	92			95			98		100

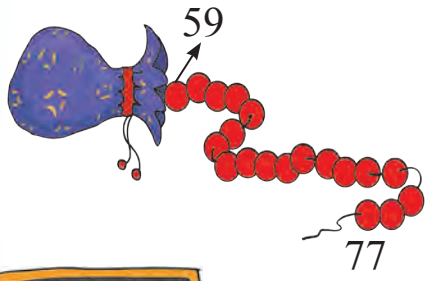
Let us try to read the numbers on the butterflies' wings.

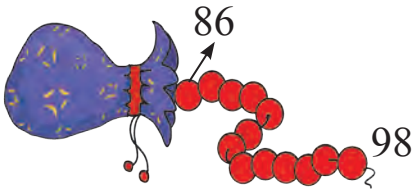


Given along side is a number chain. Read the numbers at the ends of the chain. Recite all numbers between those numbers, in serial order.



Observe the chains given below and recite the numbers in the middle, in serial order.





Instructions for teachers

Take 'number reading', showing number cards of numbers from 1 to 100.

594FWZ

Let's read and write in words

Twenty-one to Hundred (Writing numbers from 21 to 100 in words)

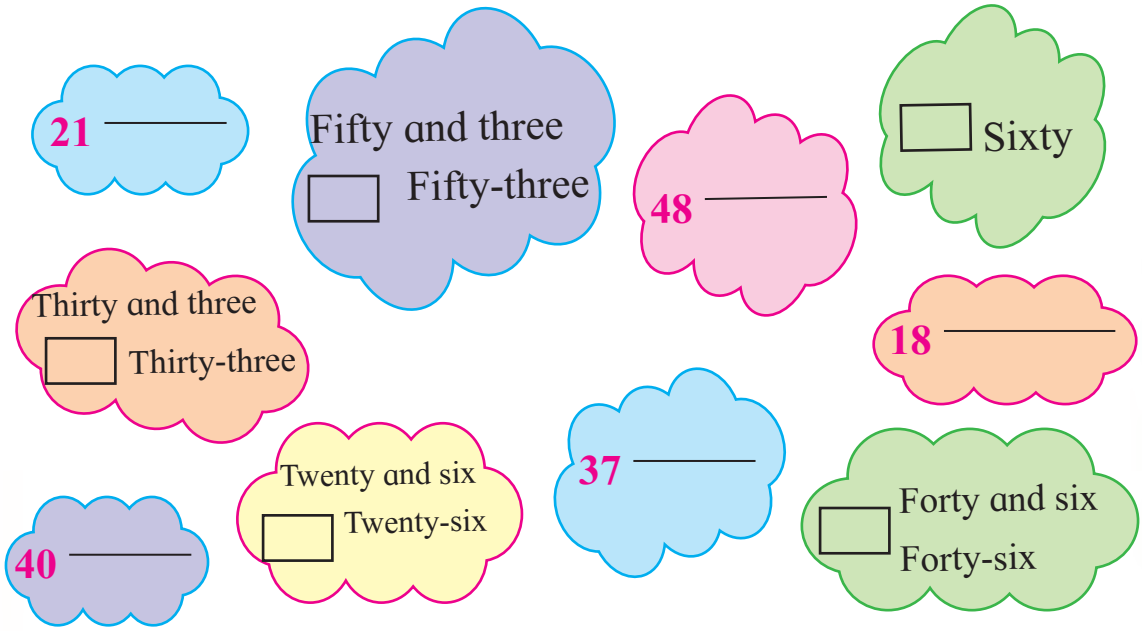
21	Twenty and one - twenty one	31	Thirty and one - thirty one	41	Forty and one - forty one
22	Twenty and two - twenty two	32	Thirty and two - thirty two	42	Forty and two - forty two
23	Twenty and three - twenty three	33	Thirty and three - thirty three	43	Forty and three - forty three
24	Twenty and four - twenty four	34	Thirty and four - thirty four	44	Forty and four - forty four
25	Twenty and five - twenty five	35	Thirty and five - thirty five	45	Forty and five - forty five
26	Twenty and six - twenty six	36	Thirty and six - thirty six	46	Forty and six - forty six
27	Twenty and seven - twenty seven	37	Thirty and seven - thirty seven	47	Forty and seven - forty seven
28	Twenty and eight - twenty eight	38	Thirty and eight - thirty eight	48	Forty and eight - forty eight
29	Twenty and nine - twenty nine	39	Thirty nine - thirty nine	49	Forty and nine - forty nine
30	Thirty	40	Forty	50	Fifty

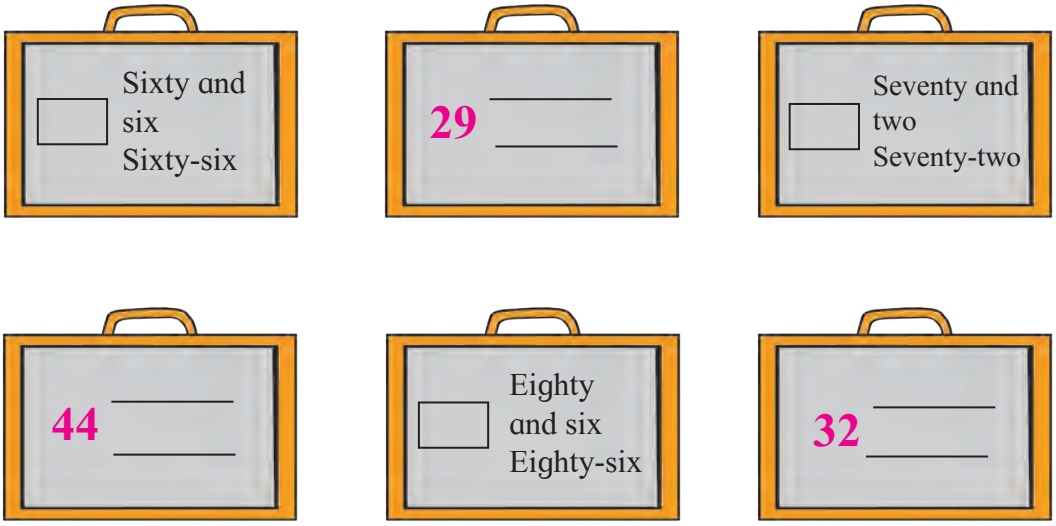
N. B. It is expected that children should be able to recite numbers upto 100 and write upto 50.

51	Fifty and one - fifty one	61	Sixty and one - sixty one	71	Seventy and one - seventy one
52	Fifty and two - fifty two	62	Sixty and two - sixty two	72	Seventy and two - seventy two
53	Fifty and three - fifty three	63	Sixty and three - sixty three	73	Seventy and three - seventy three
54	Fifty and four - fifty four	64	Sixty and four - sixty four	74	Seventy and four - seventy four
55	Fifty and five - fifty five	65	Sixty and five - sixty five	75	Seventy and five - seventy five
56	Fifty and six - fifty six	66	Sixty and six - sixty six	76	Seventy and six - seventy six
57	Fifty and seven - fifty seven	67	Sixty and seven - sixty seven	77	Seventy and seven - seventy seven
58	Fifty and eight - fifty eight	68	Sixty and eight - sixty eight	78	Seventy and eight - seventy eight
59	Fifty and nine - fifty nine	69	Sixty and nine - sixty nine	79	Seventy and nine - seventy nine
60	Sixty	70	Seventy	80	Eighty

81	Eighty and one - eighty one	88	Eighty and eight - eighty eight	95	Ninety and five - ninety five
82	Eighty and two - eighty two	89	Eighty and nine - eighty nine	96	Ninety and six - ninety six
83	Eighty and three - eighty three	90	Ninety	97	Ninety and seven - ninety seven
84	Eighty and four - eighty four	91	Ninety and one - ninety one	98	Ninety and eight - ninety eight
85	Eighty and five - eighty five	92	Ninety and two - ninety two	99	Ninety and nine - ninety nine
86	Eighty and six - eighty six	93	Ninety and three - ninety three	100	Hundred
87	Eighty and seven - eighty seven	94	Ninety and four - ninety four		

* Complete the activity given below :





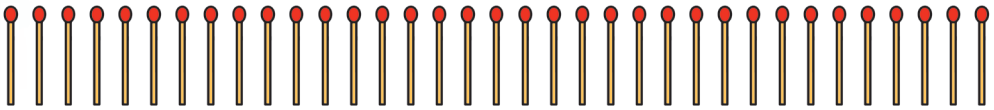
Instructions for teachers

When writing numbers in words, children are expected to write in one way only. For example, 47 as either 'forty and seven' or 'forty-seven'.

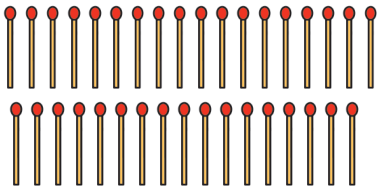
H5QALV

Counting in groups

Count and write.



Yash and Rama counted these sticks by two different methods.



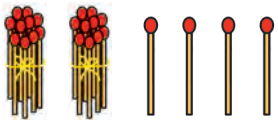
Like this : 1, 2, 3, 4, ... 35.

And like this :
3 tens and 5 units or singles.

It is easier to count if we make groups of ten.

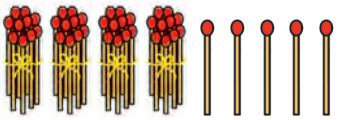
Ahmed's friends have some sticks. They have been counted by making groups of ten.

Salma had 24 sticks



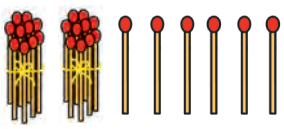
2 T + 4 U = 24

Sharad had 45 sticks

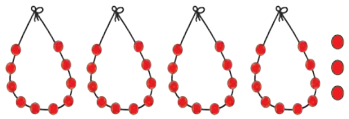


☐ T+☐ U=☐

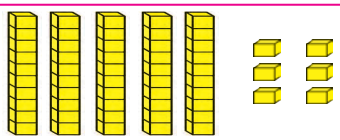
Let us also count the things shown below, in the same way.



☐ Tens +☐ Units = ☐



☐ Tens +☐ Units = ☐



☐ Tens +☐ Units = ☐

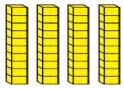
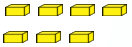
U2C5BR

Number given in a picture

See how the numbers given in the pictures have been written.

Tens	Units
	
1	2
Twelve	

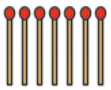
Tens	Units
	
2	8
Twenty Eight	

Tens	Units
	
4	7
Forty Seven	

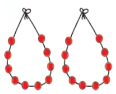
Look at the pictures and write the numbers in words as well as in numerals.

Tens	Units
	

Tens	Units
	

Tens	Units
	

Write the proper number in the blank space.

Tens	Units
	
Twenty Six	

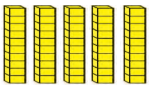
Tens	Units
	

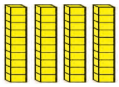
Tens	Units
	

Think :

*** Look at the objects, count them and write their number in the circle below.**

Tens	Units
	
3	4

Tens	Units
	

Tens	Units
	

*** Read the numbers and show the same number of things.**

(strings of beads - singles, bundles of sticks - singles)

39

Tens	Units

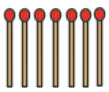
41

Tens	Units

22

Tens	Units

Place value of the digits in a number.

Thirty Seven	
	
3	7

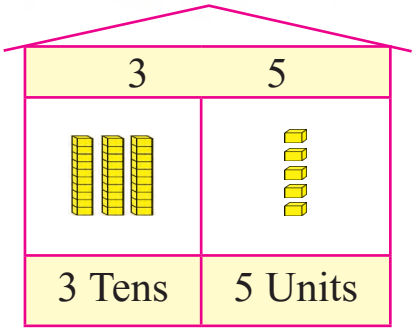
37

To understand a two-digit number we look at how many bundles of ten there are in the tens place and how many units or singles there are.

For example, in 37 there are three bundles in the tens place and 7 single sticks in the units place.

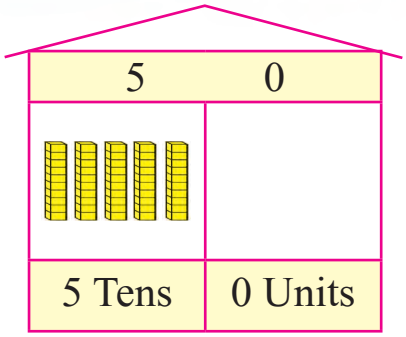
6XXZ1M

What is the meaning of 'Place Value'?



Thirty and Five / Thirty-five

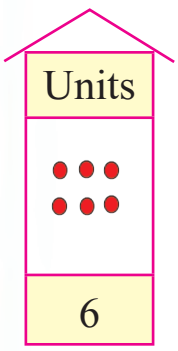
In the number 35, we have 3 in the tens place. If we open three tens bundles we get 30 units. That is why, the place value of 3 in the number 35 is 30. As 5 is in the units place; its place value is 5.



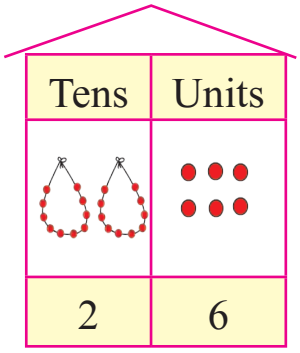
Fifty and zero / Fifty

In the number 50, 5 is in the tens place. When we open 5 tens bundles we get 50 units. Therefore, in the number 50, the place value of 5 is 50. In the units place we have 0 whose place value is also 0.

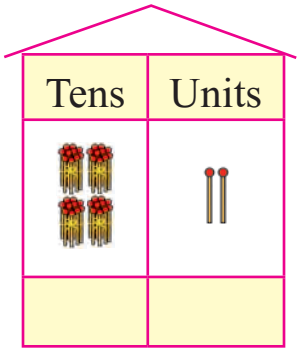
Can you tell the value of each digit in the numbers shown below ?

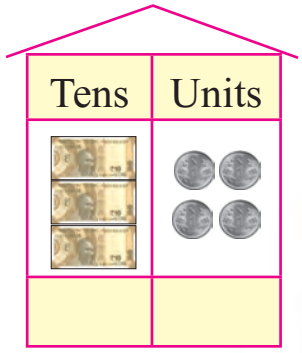


6



20 6

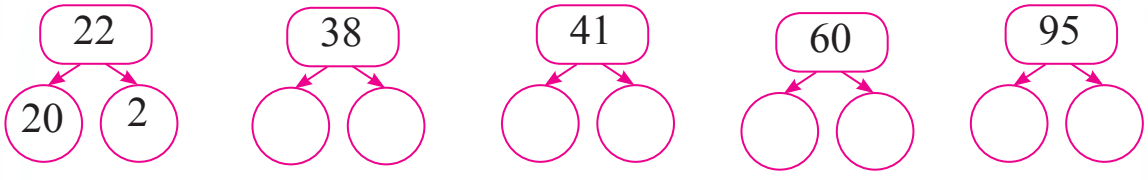




Tell the place value of each underlined digit.

1̲8	The place value of 1 is 10	as 1 is in the tens place.
2̲3	The place value of 3 is 3.	as 3 is in the units place.
6̲5	The place value of 5 is 5	as 5 is in the units place.
7̲2	The place value of 7 is 70	as 7 is in the tens place.
5̲0	The place value of 0 is ☐	.....
4̲0	The place value of 4 is ☐	.....
8̲8	The place value of 8 is ☐	.....
8̲8	The place value of 8 is ☐	.....
6̲1	The place value of 6 is ☐	.....

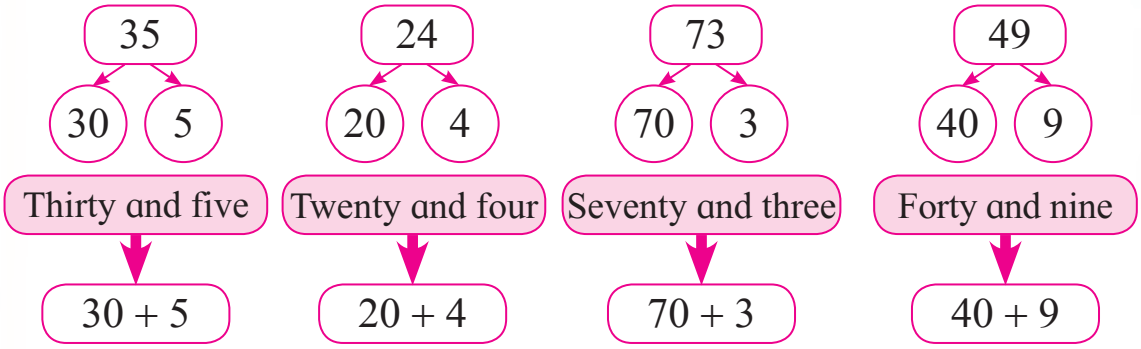
Now write the place value of each digit in the numbers given below.



ZK4PMD

The expanded form of a number

The place value of 3 in the number 35 is 30.
The place value of 5 is 5.
Therefore the number 35 means 30 + 5.
30 + 5 is called the expanded form of 35.
The expanded form of 94 is 90 + 4.
The expanded form of 60 is 60 + 0.



From the above, can you see that the expanded form of

35 is → 30 + 5
24 is → 20 + 4
73 is → 70 + 3
49 is → 40 + 9

Write the expanded forms of the following numbers.

Number	Number in words	Expanded form
32	Thirty and two	30 + 2
10	..... and	
64	..... and	
17	..... and	

A little bit of fun :

Look at the chart you completed on page 9 and tell.

- **In the numbers from 10 to 100...**

→ How many times do we see the digit 5 in the tens place? ☐

→ Write those numbers in your notebook.

- **In the numbers from 10 to 99...**

→ How many times do we see the digit 0 in the units place ? ☐

→ Write those numbers in your notebook.

Practice :

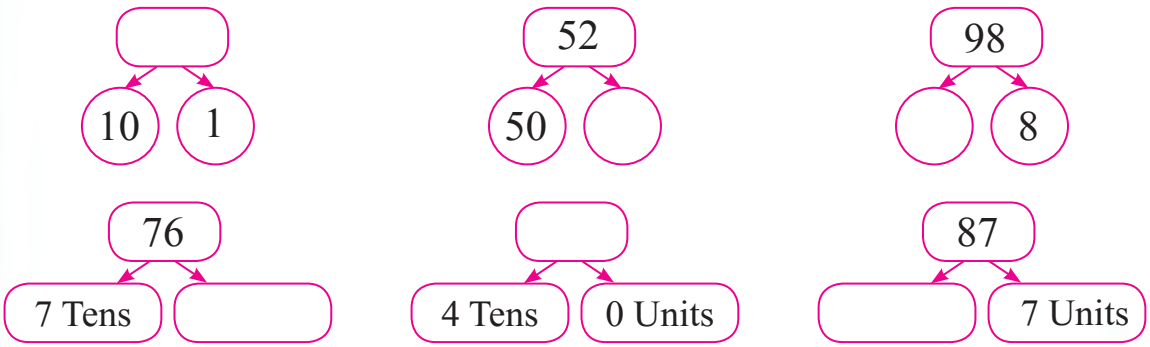
- Write the place value of the underlined digit.

1<u>6</u> = ...	<u>7</u>7 = ...
<u>4</u>8 = ...	8<u>2</u> = ...
5<u>4</u> = ...	<u>9</u>1 = ...

- Write the number from its expanded form.

70 + 8 = ☐	90 + 7 = ☐
60 + 1 = ☐	80 + 0 = ☐

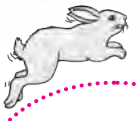
- Fill in the blank spaces.



XVA6IQ

Let's count numbers in steps

- Look at the rabbit's jumps.



1	2	3	4	5	6	7	8	9	10	11	12	13	14	15

Look at the numbers in boxes from which the rabbit jumped.

3 — 6 — 9 — 12 — 15

If we count 3 numbers after the number 3 we get the number 6. On counting 3 numbers after 6 we get 9. Here, by counting 3 forward every time, we get each next number.

Starting from 3 and counting in steps of 3 the numbers we get are 6, 9, 12, 15.

- Now look at the deer's jumps.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25

Write the numbers from which the deer takes a jump.

( ) — ( ) — ( ) — ( ) — ( )

From 4 onwards, the numbers we get by counting in steps of 5 are 9, 14, 19, 24.

Look at the numbers in the coloured boxes, given below.
We get these numbers when we count in steps of a certain number.
Which is that number?

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
16	17	18	19	20	21	22	23	24	25	26	27	28	29	30

Instructions for teachers

Draw as large a grid as possible on the floor or ground and write numbers in it in serial order. Now conduct an activity in which you give any number and the children jump from one box to the next in steps of that number.

ARW18L

Fun with Addition

5 + 2 = 7

2 + 5 = 7

5 and 2 make 7 together and so do 2 and 5 together. What a fun ! That's nice !

It means that changing the order does not change the sum.

That's right ! Now, to check this out, do the following additions.

4 + 1 = ☐	1 + 4 = ☐
5 + 9 = ☐	9 + 5 = ☐
3 + 7 = ☐	7 + 3 = ☐
8 + 3 = ☐	3 + 8 = ☐
8 + 4 = ☐	4 + 8 = ☐
5 + 6 = ☐	6 + 5 = ☐
0 + 3 = ☐	3 + 0 = ☐

MNHUXH

Addition-by counting forward

Teacher : Salma, take these two seedlings and plant them in your garden.

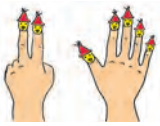
Salma : Sure, Ma'm, I already have 5 in my garden.

Teacher : Now, children, how many plants will there be in Salma's garden altogether ?

How Rama counted

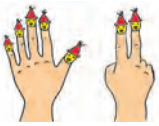
Seven

2 fingers + 5 fingers



How Yash counted

5 fingers + 2 fingers



Seven

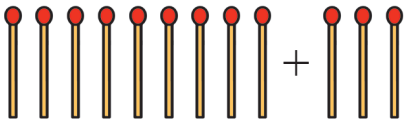
(Rama counted 1, 2, 3... on her fingers from 1 to 7 while Yash counted only two fingers, forward from 5, that is 6, 7.)

Teacher : Both got the same sum and both are right. But, whose addition was quicker?

Yash : Mine !

Teacher : Suppose we put together 9 sticks and 3 sticks in order to add them. What answer would we get?

Rama : The answer is 12. I counted from 1 to 12.



Teacher : But you get 12 even if you count 10, 11, 12 forward from 9. Here, knowing that we have 9 sticks, we counted serially only the extra sticks we got.

Yash : Even if we have 3 sticks and get 9 new sticks and we count forward from 3, we get the same answer 12. However, it is easier to count 3 forward from 9 than to counting 9 forward from 3 !

Add by counting forward.

25 + 3, 5 + 38, 5 + 19, 4 + 23.

In the boxes given alongside, write the numbers from 1 to 50 in serial order. This is now your counting tape. Use it to carry out additions. In order to add 8 and 9, place your finger on the digit 8 and count 9 boxes forward from there. Did you reach the number 17 ? Thus, the sum of 8 and 9 is 17.

- Add by counting forward.
- Rama has 8 peanuts and Yash has 7. How many do they have together ?

What is given ? Rama's and Yash's peanuts

What is asked ? Total peanuts

What to do ? Addition

		Rama's peanuts
+		Yash's peanuts
		Total peanuts

- Anand has 27 stickers. He bought 5 more. How many stickers does Anand have now ?

What is given ? _____

What is asked ? _____

What to do ? _____

		_____
+		_____
		_____

- Add by counting forward.

1	2	1	5	6	2	5	4	4	1
+	5	+	4	+	3	+	8	+	9

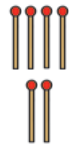
CGQJC9

27 + 8 = ☐ 8 + ☐ = 14 67 + 3 = ☐

☐ + 9 = 16 54 + 9 = ☐ 49 + 2 = ☐

Addition - Without carry over

Revision : Addition of single-digit numbers.

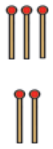
Units	Units
+ 	4 + 2
	6

There are 4 units. We write them in the units place. 2 are also units. We write them too in the units place. On adding them we get 6 units. So we write 6 in the units place.

5 + 3	6 + 2	5 + 4	4 + 4	3 + 6
Units	Units	Units	Units	Units

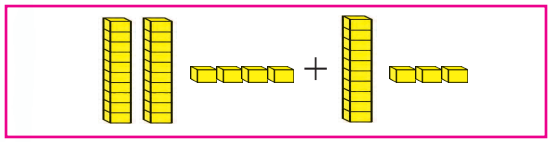
Addition of two-digit numbers :

23 + 12 = ?

Tens	Units
+ 	

Tens	Units
2	3
+ 1	2
3	5

2 Tens 3 Units
+ 1 Ten 2 Units
3 Tens 5 Units



+ ☐ Tens ☐ Units
☐ Tens ☐ Units
☐ Tens ☐ Units

Tens	Units
2	3
+ 3	2
5	5

Tens	Units
2	4
+	3
2	7

Tens	Units
1	2
+ 3	6
4	8

Tens	Units
4	7
+ 4	1
8	8

- Carry out the following additions.

T	U
1	2
+ 1	3

T	U
1	5
+ 1	2

T	U
2	4
+	5

T	U
1	6
+ 2	3

T	U
3	7
+	2

- Write 'T' for tens and 'U' for units and carry out the additions.

T	U
1	5
+ 2	1

1	2
+ 3	5

1	7
+ 2	2

3	3
+ 1	6

1	7
+ 3	2

2	3
+ 3	6

5	2
+ 2	0

1	8
+ 3	0

4	4
+ 1	4

6	1
+ 2	4

- Make your own examples of addition and solve them.

+	

+	

+	

+	

+	

PDCE25

Addition and subtraction of Zero

Adding zero and subtracting zero.

Three apples in one dish. None in the other. Only three apples in all.

3 + 0 = 3

Rama has 2 apples. Her little sister loves apples. So, she kept both for her. She did not eat any.

2 – 0 = 2

If zero is added to any number, we get the same number again. We get the same result when we subtract zero.

Write the proper number in each empty box :

2 + 0 = ☐	4 + 0 = ☐	7 + 0 = ☐
19 + 0 = ☐	27 + 0 = ☐	65 + 0 = ☐
78 + 0 = ☐	0 + 0 = ☐	6 + ☐ = 6
3 – 0 = ☐	5 – 0 = ☐	8 – 0 = ☐
11 – 0 = ☐	19 – 0 = ☐	23 – 0 = ☐
55 – 0 = ☐	82 – ☐ = 82	☐ – 0 = 17

29Y8R1

Stories of Addition - 1

- Manjyot planted 14 almond trees and 21 guava trees. How many trees did he plant altogether?

What is given ? Almond and guava trees

What is asked ? Total trees

What shall we do ? Add

T	U	
1	4	Almond trees
+ 2	1	Guava trees
3	5	Total trees

- Ravi has 15 balloons and Neeta has 21. How many do they have together ?

What is given ? ----------

What is asked ? ----------

What shall we do ? ----------

+		

Solve :

- Dada had 15 rupees. His aunt gave him 20 more. How many rupees does he have now ?
- There were 24 books in a cupboard and 12 more were placed in it. How many books are there in the cupboard now ?
- There were 18 boxes in the house, mother bought 11 more boxes from the market. How many boxes are there altogether in the house now ?
- Sajid has 24 eggs and Shabana has 32. How many eggs in all do they have ?
- Maria collected 30 coins. Mihir has 24 coins. How many coins do they have altogether ?

E6K3FW

Let's reduce by subtraction

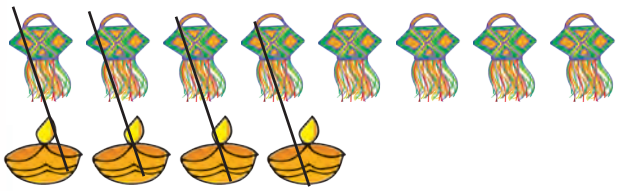
5 − 3 = ☐

Kshitij had 5 cups. He gave 3 cups to Aanchal. How many cups are left with Kshitij ?

Units	
5	Cups with Kshitij
− 3	Cups given to Aanchal
☐	Cups left with Kshitij

Subtraction by pairing off.

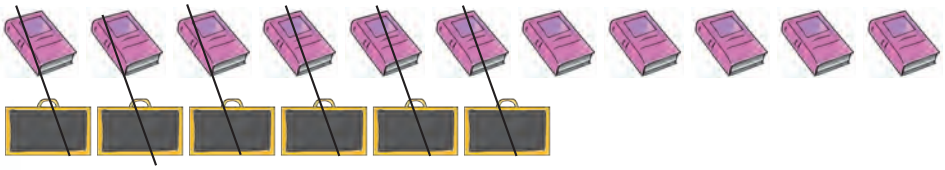
- There are 8 paper lanterns and 4 lamps. How many more lanterns are there than the lamps ?



$$\begin{array}{r} 8 \\ -\ 4 \\ \hline \boxed{4} \end{array}$$

There are 4 more lanterns than there are lamps.

- There are six slates and 11 books. By how many is the number of slates less than the number of books ?



$$\begin{array}{r} \square \\ -\ \square \\ \hline \square \end{array}$$

There are ☐ fewer slates than there are books.

- There are 8 strawberries and 6 pomegranates. How many more strawberries are there ? Let us subtract to find the answer.

$$\begin{array}{r} 8 \\ -\ 6 \\ \hline \boxed{2} \end{array}$$

Hence, there are two more strawberries than pomegranates.
Or, there are 2 fewer pomegranates than strawberries.

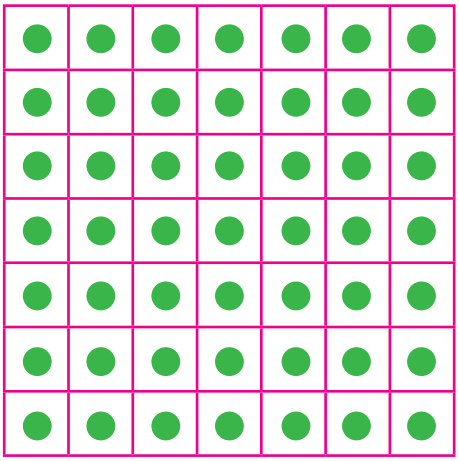
Subtraction by counting backward

Try playing the game given below.

I have this chart. Let us place 49 blocks on it. Pick off 5 or less than 5 blocks at a time. You will get one chance at a time, but you cannot pick off zero blocks.

The one who has to pick up the last block, loses the game.

Rama started the game. Counting backward from 49 she picked up 4 blocks. 45 blocks are left. Now it is Yash's turn to pick up blocks. Playing on like this, Yash picked up the last block. So, Rama won.



At first there were	Picked off	Remaining
49	4 (Rama)	45
45	5 (Yash)	40
40	5 (Rama)	35
35	4 (Yash)	31
31	3 (Rama)	28
28	5 (Yash)	23

At first there were	Picked off	Remaining
23	5 (Rama)	18
18	5 (Yash)	13
13	5 (Rama)	8
8	4 (Yash)	4
4	3 (Rama)	1
1	1 (Yash)	0

Suresh and Ramesh decided to make Diwali greeting cards. They had to bring the required materials. Suresh had 9 rupees. Ramesh also brought some. Altogether they had 14 rupees. How many rupees did Ramesh bring ?

Rama : So we must subtract 9 from 14.

Yash : I drew 14 circles and crossed out 9. Circles left are 5. It means that Ramesh brought 5 rupees.

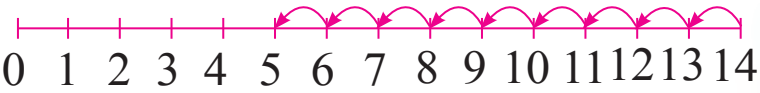
Rama : I counted numbers forward from 9 up to 14. There were 5 numbers. My answer is 5 too.

Discuss whose method is the easier one.

We can use the number line to carry out a subtraction by counting either backward or forward. Let us see the subtraction 14 - 9.

9 + 5 = 14. Therefore, 14 - 9 = 5

14 - 9 = 5.



In the first diagram above, there were 5 jumps towards the right from 9 to 14. In the second, 9 jumps were taken towards the left from 14, which stopped at 5. Both the methods give us the answer 5. Thus, subtraction can be done by both methods using the number line. Practise this by carrying out the following subtractions.

(1) 12 - 8 = ☐ (2) 32 - 1 = ☐ (3) 15 - 10 = ☐

(4) 43 - 2 = ☐ (5) 13 - 11 = ☐ (6) 39 - 3 = ☐

(7) 20 - 18 = ☐ (8) 44 - 40 = ☐ (9) 11 - 2 = ☐

While carrying out the subtraction 43 - 2, which is easier ? Counting the jumps towards the right from 2 to 43, or counting two jumps towards the left from 43 ?

While carrying out the subtraction 44 - 40, what is easier ? Counting 40 jumps towards the left of 44 or count jumps from 40 to 44 to the right ?

R36X5S

Addition and subtraction - a pair

10 + 12 = 22

22 - 10 = 12 | 22 – 12 = 10

From every example of addition we can get two examples of subtraction. Check this for yourself.

71 + 22 = 93

93 - 71 = 22 | 93 - 22 = 71

But from 5 + 5 = 10, we get only one subtraction 10 - 5 = 5.

Fill in the boxes.

99 → 12, 87 : 87 + 12 = 99 ; 99 – 12 = 87 ; 99 – 87 = 12

84 → 50, 34 : 34 + ☐ = ☐ ; ☐ – ☐ = ☐ ; ☐ – ☐ = ☐

75 → ☐, ☐ : ☐ + ☐ = ☐ ; ☐ – ☐ = ☐ ; ☐ – ☐ = ☐

Make one example of your own, like the above, and solve it.

● → ☐, ☐ : ☐ + ☐ = ☐ ; ☐ – ☐ = ☐ ; ☐ – ☐ = ☐

- Vedashree read 9 pages of a book. How many more pages should she read to finish reading 15 pages?

  What is given ? Number of pages to be read, number of pages already read.

What should we do ? Add or subtract ?

I will subtract. I'll take away 9 from 15 and see how many are left.

I will count from 9 forword upto 15 to get the subtraction.

$15 - 9 = \square$ $\qquad$ $9 + \square = 15$

Therefore, 15 - 9 = 6

- Hasan collected 30 seeds. Some of them are chikoo seeds and the remaining 22 are of custord apples. How many chikoo seeds are there?

  What is given ? _____

  What is asked ? _____

$\square - 22 = \square$ $\qquad$ $22 + \square = 30$

Therefore, $\square - \square = \square$

Solve.

$8 + \square = 17$ therefore, $\square - 9 = 8$ and $17 - 8 = \square$

$29 + \square = 32$ therefore, $\square - 3 = 29$ and $32 - 29 = \square$

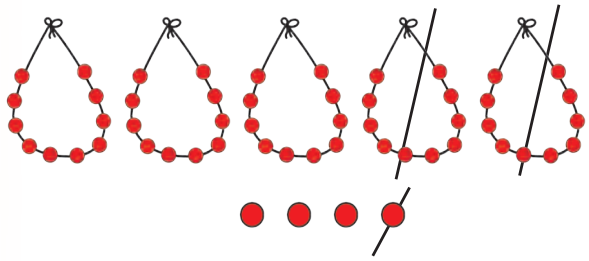
$42 + \square = 49$ therefore, $\square - 7 = 42$ and $49 - 42 = \square$

3YSRUN

A subtraction story

- Vaishali had brought 54 beads. She had 21 beads left after making a string of beads. How many beads did she thread into the string?

  What is given ? Vaishali brought 54 beads and had 21 beads left.
  What is asked ? How many beads were threaded in the string ?
  What must be done ? Subtraction .



Tens	Units	
5	4	beads brought
− 2	1	beads left
3	3	beads threaded

- Carry out subtraction by the above method.

Tens	Units
2	7
− 1	3

Tens	Units
3	7
− 2	5

Tens	Units
6	8
− 3	4

Tens	Units
9	8
− 4	0

- Anand read 28 story books. Sagar read 14. How many more books did Anand read than Sagar ?
- Sudhir had 46 marbles. He lost 12 of them. How many does he still have ?
- In a basket, there are 58 periwinkle (*sadaphuli)* flowers and 32 of hibiscus. (*jasvanda*) By how many are the hibiscus flowers less than the periwinkle flowers ?
- There were 16 bananas in a basket. Manpreet added some bananas to the basket and then there were 29 bananas in it. How many bananas did Manpreet add ?

WKYHGE

Twelve Months in a Year

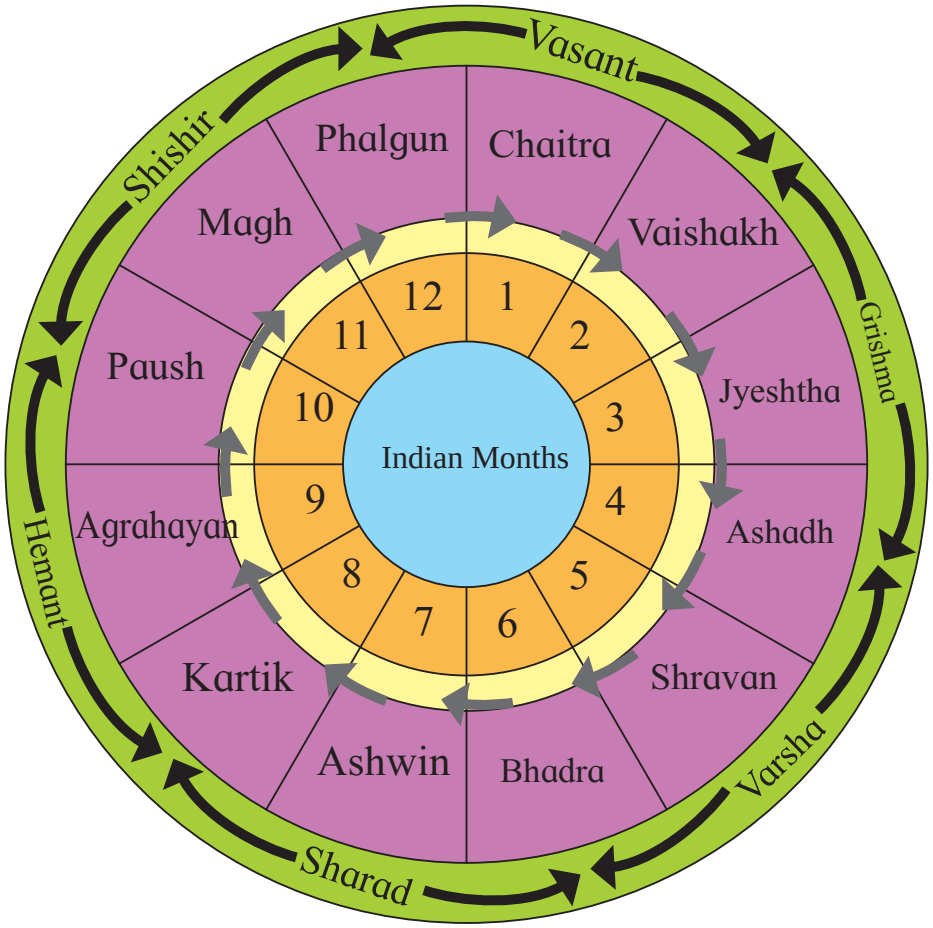
Months of the English Calendar

The year begins with the month of January and ends with December.

- Name the months that have 30 days.
- How many months of 31 days are there in the whole year ?
- How many days does February have ?
- Which month comes before June ?
- Which is the month before January?

Thirty days has September,
April, June and November,
All the rest have thirty-one,
Except February alone.

Months of the Indian Calendar

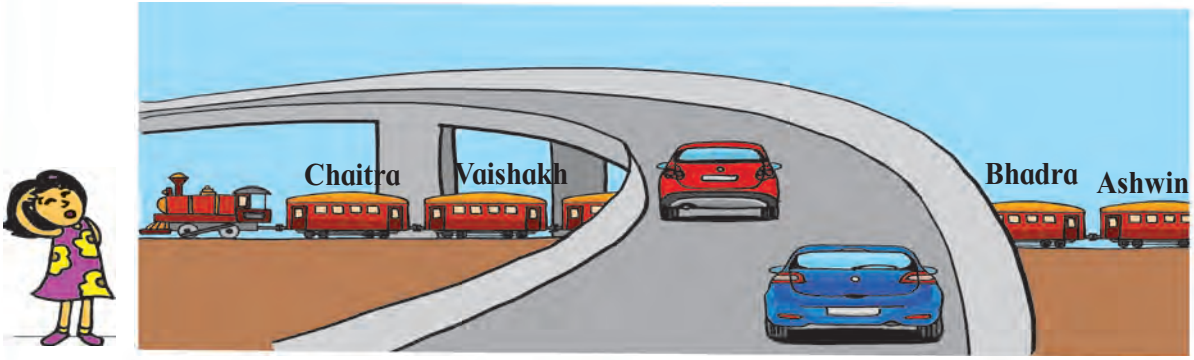


The year begins with the month of Chaitra and ends with Phalgun.

Observe the picture above and fill in the empty boxes.

Season	Vasant	Grishma				

What are the names of the months on the coaches under the bridge ?



A school calendar

Month - December					
Sun	**1**	**8**	**15**	**22**	**29**
Mon	2	9	16	23	30
Tue	3	10	17	24	31
Wed	4	11	18	25 Christmas	
Thu	5	12 Sports competition	19	26	
Fri	6	13 Sports competition	20 Drawing competition	27	
Sat	7 Picnic	14	21	28	

Rama : Yash, do you know which events will take place in our school in December?

Yash : Yes, of course! Its given in our school calendar !

Rama : Ok, now tell me, on which day is the drawing competition?

Yash : _____

Rama : And the sports competition ?

Yash : _____

It's your turn now. Which festival do we celebrate on 25 December?

Rama : Easy! It's _____.

Yash : Ok then, I'll leave now. I have to get ready for the picnic tomorrow.

Think :

Can you give the date on which Rama and Yash had this conversation?

Activity : Take any calendar and tell :

- What is special about the dates of any month, that fall on a Tuesday?
- What is special about the dates of any month, that fall on a Friday?

Think :

- The date on a Wednesday of a month is 4.
  What is the date on the following Wednesday?

UW4YCR

Comparing numbers

Comparing two numbers

- Circle the smaller number in each box.

3, 8	1, 9	2, 20

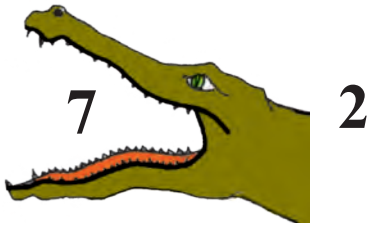
- Circle the bigger number in each box.

4, 7	2, 7	8, 9

The symbols 'smaller than' and 'greater than.'

* The symbols '<' stands for 'smaller than' and '>' stands for 'greater than.' From the examples below, we shall see how they are used.

3 < 7	1 < 9	20 > 2
3 is less than 7.	1 is less than 9.	20 is greater than 2.
7 > 3	9 > 1	2 < 20
7 is greater than 3.	9 is greater than 1.	2 is less than 20



The crocodile is greedy. It eats the bigger number.

* If we take any two 2-digit numbers how would we decide which one is the greater number?

The number with the greater tens digit is the greater number.

Yash : Let's take 37 and 52. There are 3 tens in 37 and 5 tens in 52. Therefore, 52 > 37 as also 37 < 52.

Rama : Quite right ! When we count numbers on a measuring tape, 37 comes first and 52 comes later. The number that comes later is bigger. If both the numbers have the same digit in tens place, how do we decide?

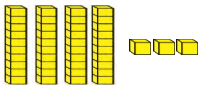
If the tens are equal, the digits in units' place will help.

Yash : Let's take 72 and 78. 2 < 8. So, 72 < 78.

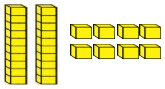
Let us expand numbers and verify the rules for comparing numbers.

43 and 28

43 = 40 + 3



28 = 20 + 8

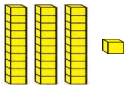


In the number 43, the tens place digit is 4 while 2 is the tens place digit in the number 28.

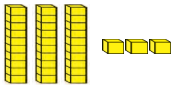
So, 43 > 28

31 and 33

31 = 30 + 1



33 = 30 + 3



In both numbers, the tens place digit is 3, i.e. the tens digits are equal. However, 33 has 3 in the units place and 31 has 1 in the units place.

So, 31 < 33

Now, compare the numbers in each pair given below and insert the sign '<' or '>' between the two numbers.

43, 46	84, 86	67, 57
43 < 46		
30, 50	13, 9	23, 32

Try this : Take 10 pairs of any numbers and compare the two numbers in each pair.

7SQT2M

Neighbouring numbers on each side

Here is how we get a number line. A mark is made for the number zero at the left side of a line. From there counting forward towards the right, the numbers 1, 2, 3, 4, ... are marked, at equal distances.

Look at any part of this line. Let us take any number on this line, say 23.

The number before is 22 ← **23** → 24 is the number after.

What do we see ?

For any number, the neighbour on the left is one less and the neighbour on the right is one more!

In the empty boxes, write the number that comes immediately before and the one that comes immediately after.

	54			79			40	
	37			62			99	
	50			78			32	
	39			30			68	

JPCMRI

Ascending and Descending order of numbers

Let us see how to put the numbers 36, 23, 17 in ascending (increasing) order. First, let us compare the pairs (36, 23) (23,17) (36, 17)

36, 23, 17

36, 23, ~~17~~

- 23 < 36, 17 < 23 and 17 < 36. So 17 is the smallest number. Cross out 17 and write it on your slate.

36, ~~23~~, ~~17~~

- Of the remaining numbers, 23 is the smaller number. So, we cross out 23 and write it after 17.

~~36~~, ~~23~~, ~~17~~

- Now cross out the last number 36 and write it after 23.

That is the ascending order of the numbers! Let's write it like this

17 < 23 < 36

In the same way, put the three numbers in each set given below in ascending (increasing) order.

(1) 25, 12, 54 (2) 67, 9, 32 (3) 44, 92, 30

Let us see how to put the numbers 36, 23, 48 in descending (decreasing) order.

36, 23, ~~48~~

- Observe the numbers 36, 23 and 48 and find out the greatest number. It is 48. Cross it out and write it on your slate.

~~36~~, 23, ~~48~~

- Now, choose the bigger number from the two remaining numbers. Cross it out and write it after 48.

~~36~~, ~~23~~, ~~48~~

- Now cross out the last number left and write it at the end.

That's the descending order of the numbers! We can write it like this.

48 > 36 > 23

Put the given numbers in ascending and descending order.

Number	Ascending order	Descending order
26, 19, 47	19 < 26 < 47	47 > 26 > 19
62, 85, 50		
32, 9, 13		
43, 76, 89, 60	43 < 60 < 76 < 89	89 > 76 > 60 > 43
15, 9, 75, 52		

Instructions for teachers

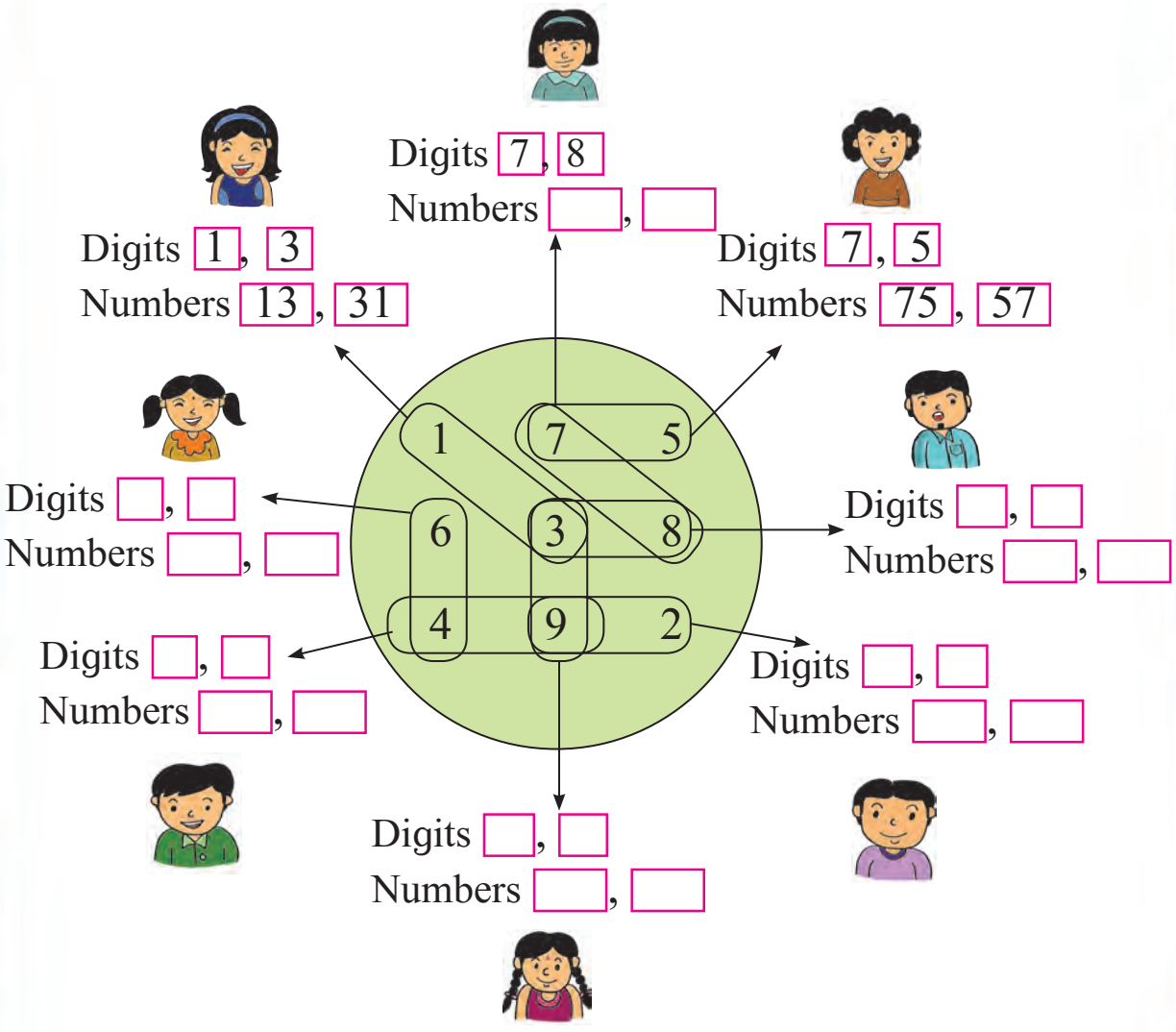
Teachers can make number cards of different numbers, give each child any 3 or 4 of them and tell them to put their set of numbers in ascending or descending order.

9HKC6A

Come, let's make numbers.

Rama and Yash are playing the game of making numbers. Let's join them.

Some numbers are given in circles. Each child should choose two digits and make two numbers.

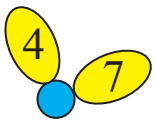


Instructions for teachers

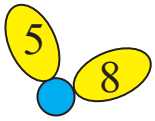
Activity : Cut out 5 or 6 discs from a thick paper. On each disc, write a non-zero number and place the discs with the number side down. Each child is to pick up any two discs and make two numbers from the digits seen on them.

To make the smallest and the biggest two-digit numbers using the given digits.

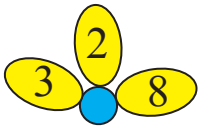
Take two different numbers from the petals and use them to make as many 2-digit numbers as possible. Now, write down the smallest and the greatest of the numbers you have made.



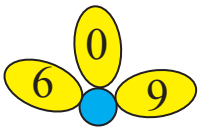
Numbers made : 47, 74	
Greatest number - 74	Smallest number - 47



Numbers made :	
Greatest number -	Smallest number -



Numbers made : 23, 28, 32, 38, 83, 82	
Greatest number -	Smallest number -



Numbers made :	
Greatest number -	Smallest number -

We do not write the numbers like 5 and 9 as 05 or 09. We write 5 or 9. They are single-digit numbers.

Think : How many two-digit numbers can we make using the same digit repeatedly ?

LE76V6

Cardinal numbers
Ordinal numbers

A Picnic

Once in a forest, at a pot-luck for seven,
Each brought a dish, by all to be eaten.

Rabbit came a-hopping, the first of the lot.
But oh, in the hurry, his tiffin he forgot !

Second was Deer, golden and swift.
With tender green grass, bagged like a gift.

Monkey came third with a basket of veggies.
Swinging from the trees with so much ease.

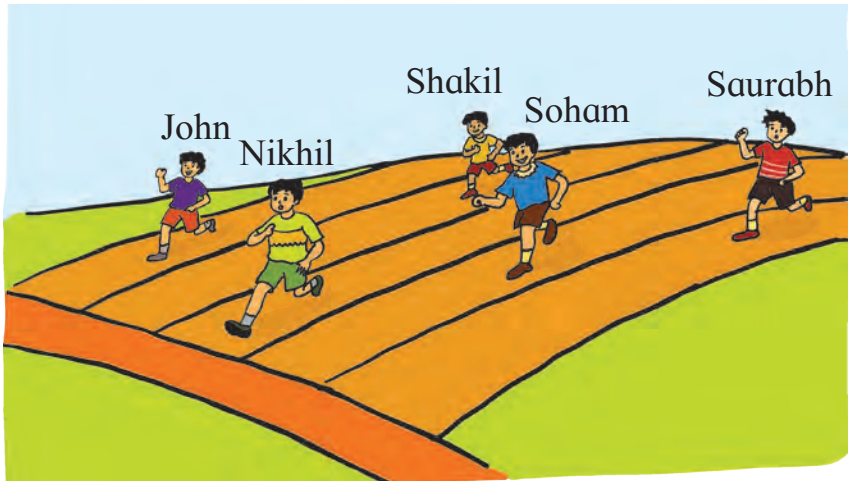
Fourth came Cow, swinging her tail,
Happy she could bring her yummy carrot cake.

A bundle on his trunk, Elephant came fifth,
The bundle was of sugarcane, oh, what a thrill !

Sparrow was sixth, with corn or the cob
Seventh with roasted gram strutted in Peacock.

Seven happy picnickers shared the dishes six
A better feast you couldn't have wished !

Here, the words six, seven are cardinal numbers which give values. 'Sixth', 'seventh' are ordinal numbers that give the order in a sequence.



- In the picture above, how many children are taking part in a running race ? 5 5 is a cardinal number.
- What was Saurabh's rank in the race ? 5^{th}
  5^{th} is an ordinal number.
- Who came first ?
- Who was fourth ?

- In which carriage is the peacock ?
- Who is in the first coach ?
- In which bogie is the rabbit ?
- Who is in the seventh wagon ?
- At which place is the lion's coach ?
- At which place is the coach next to that of camel?
- What is the ordinal number of the carriage before the elephant's carriage ?

Instructions for teachers

1, 2, 3, 4, ... are cardinal numbers. First, second, third,..... are ordinal numbers. See that they are used properly.

Sania is watering the flowering plants in the garden.


Rose


Periwinkle


Marigold


Jasmine

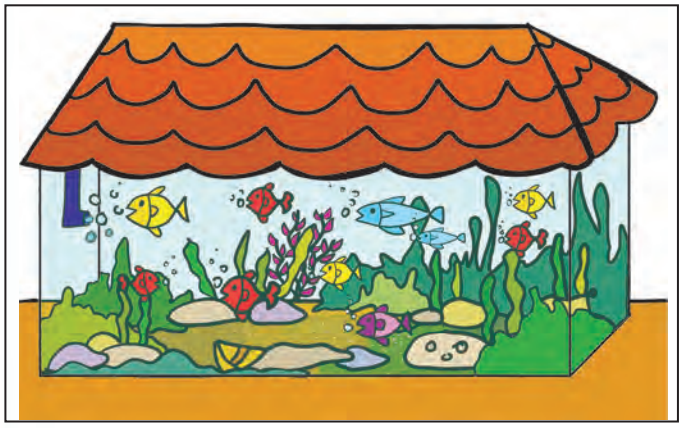

Sunflower

Look at the picture above and write the proper words in the blank spaces.

- The first plant in order from Sania is ..... .
- The *Jasmine* is ..... in order from Sania.
- The total number of plants is ..... .

See page 33 and 34 of this book and tell :

- Which is the fifth month in the English calendar from the start of the year ? ☐
- Counting from the start of the Indian calendar year, which is the eight month ? ☐



Write the cardinal number.

- How many purple fish are there in the tank? ☐
- How many red fish? ☐
- How many yellow fish? ☐

Remember : The numbers we use to count things are **cardinal** numbers. The words we use to tell the place or order in a row of things are called **ordinal** numbers.

YAT1K2

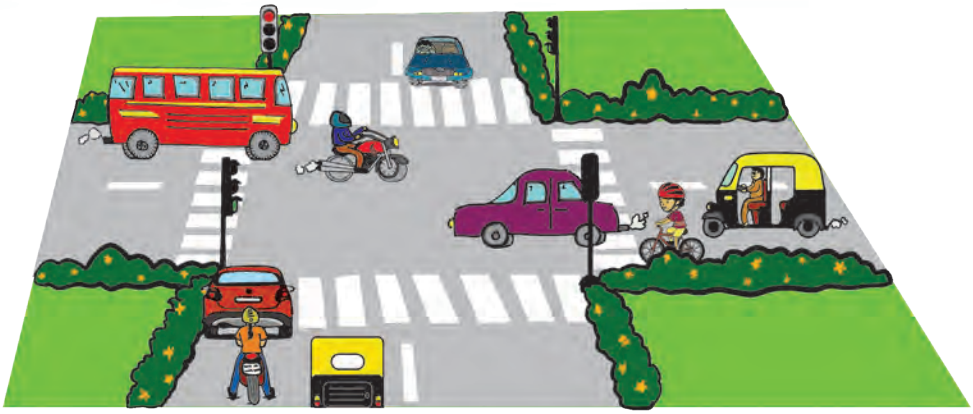
Reading Pictures

Classification

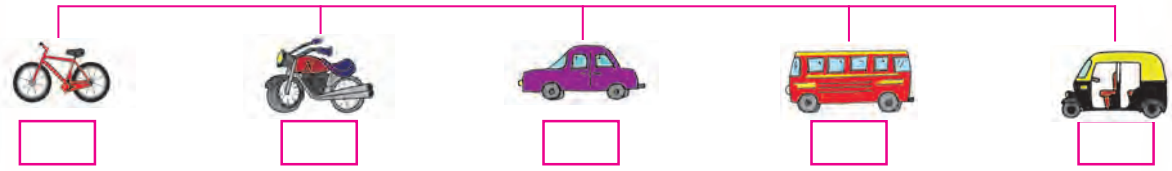
Observe the picture of the weekly market above and fill in the empty boxes.

1) The number of vegetable carts - ☐
2) The number of people selling fruits - ☐
3) Four fruits on sale in the market - ☐
4) Five vegetables being sold in the market - ☐
5) The number of boys to be seen in the market - ☐
6) The number of girls to be seen in the market - ☐
7) The number of people who have brought their own cloth bags to the market - ☐

Observe the picture and complete the flow chart given below it.



Count the number of vehicles in the picture and write.



Look at the picture and answer the questions.

1) Name the vehicles that have stopped at the red signal.
2) Which vehicles are moving at the green signal ?
3) Which vehicles in the pictures cause air pollution ?
4) Which of the vehicles - bicycles, motorcycles, cars, buses, rickshaws - are the most in number ?

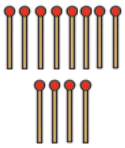
Count and Observe.

- With your parent or guardian stand on the side of a road with a flow of traffic and count the number of cars of different colours you see passing by. From what you see, can you tell which colour of cars is the most popular?
- Scatter some grains for sparrows or pigeons and count the number of birds that come to pick them. Will you be able to tell if one of the birds comes again ?

B7EV9X

A special way to add by carrying over

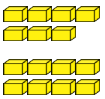
8 sticks and 4 make 12 sticks. Let us tie 10 of them in a bundle to make one ten.

Tens	Units
	

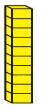
→

Tens	Units
	

Adding 7 and 8 units make 15 units. Let us make a bundle of 10.

Tens	Units
	

→

Tens	Units
	

Remember : We cannot put a number bigger than nine in the units place. That is why we make a bundle of ten and move it into the tens place. Units are single items.

Use sticks or beads or dots to carry out the following additions and write the answers.

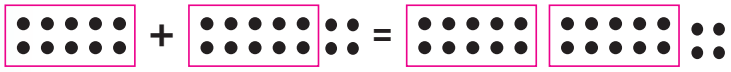
T	U
	9
+	6

T	U
	6
+	5

T	U
	7
+	4

T	U
	6
+	6

T	U
	4
+	9



10 + 14 = 24

The same addition can be written like this :

Tens	Units
1	0
+ 1	4
2	4

Carry out the following additions.

T	U
2	0
+ 1	6

T	U
1	7
+ 3	0

T	U
1	3
+ 4	0

T	U
1	5
+ 5	0

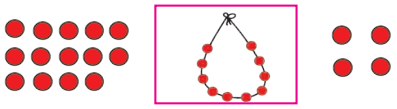
- Let us first add the units and write in the units place.

Number carried over

Tens	Units
(1)	
1	5
+	9
2	(1)4

5 U + 9 U = 14 U

Of these units, let's make a string of 10 and write the remaining 4 units in the units place.



14 U = 1 T 4 U

- We make a new ten with the 10 units and carry it over to the tens place.
- Now, 1 T + 1 T = 2 T. Thus we have two tens in the sum. We write those in the tens place.

Number carried over

Tens	Units
1	
2	3
+	
1	7
4	0

- 3 U + 7 U = 10 U
  10 U = 1 T 0 U
- The 1 T in this is carried over and written in the tens place. We write zero in the units place.
- The sum 4 T + 0 U means 40.

23 + 17 = 40

Tens	Units
1	4
+ 2	9
3	13

- 4 U + 9 U = 13 U
  13 U = 1 T + 3 U
- 2 + 1 + 1 tens make 4 tens

4 tens and 3 units = 43

14 + 29 = 43

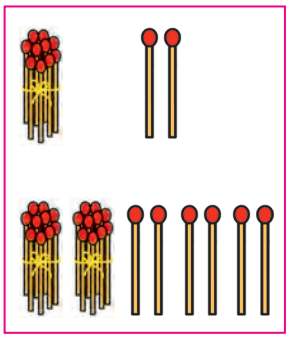
Number carried over

Tens	Units
(1)	
1	4
+ 2	9
4	(1)3

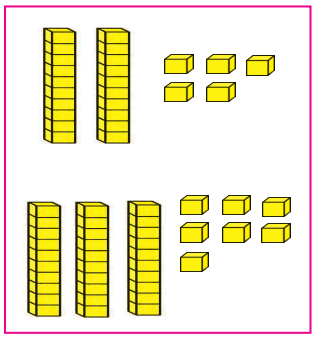
14 + 29 = 43

Remember : When adding numbers, first add the numbers in the units place.

- Look at the picture, make a problem of addition and solve it.



Tens	Units



Tens	Units

- Add.

T	U
3	6
+ 2	5

T	U
3	2
+ 2	8

T	U
4	7
+	5

T	U
6	8
+ 2	2

T	U
4	4
+ 4	8

T	U
3	8
+ 1	4

T	U
7	1
+ 1	9

T	U
2	5
+ 3	7

T	U
3	5
+ 2	9

T	U
4	2
+ 1	9

T	U
2	7
+ 3	4

T	U
4	4
+ 2	7

T	U
4	9
+	3

T	U
5	5
+	8

T	U
6	9
+	9

T	U
6	3
+ 2	8

T	U
6	5
+ 2	6

Instructions for teachers

For these sums, the teacher should provide the students with materials like bundles of 10 sticks and single sticks, strings of ten beads and single beads and ten rupee notes and one rupee coins and conduct learning activities.

N41PYT

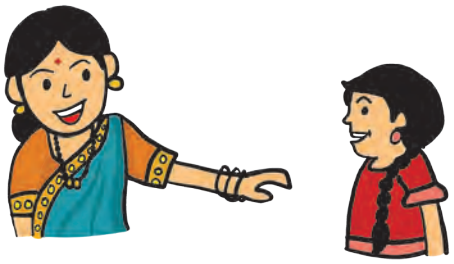
Stories of Addition - 2

- Gauri had 15 rupees. Mother gave her 26 rupees more. How many rupees does she have now?

  What is given ? Gauri has Rs 15. Mother gave Rs 26.

  What is asked ? Total amount that Gouri has.

  What shall we do ? ----------



T	U	
1		
1	5	Rupees with Gouri
+ 2	6	Rupees that Mother gave
4	1	Total rupees

Read the example. Draw columns for tens and units, write the digits in the proper places and add.

- There were 24 cows and 28 buffaloes grazing in a pasture. What was the total number of cattle there ?
- Yesterday Salma stitched 34 handkerchiefs. If she stitches 38 more today how many handkerchiefs would she have stitched in two days?
- Wasim had 25 marbles. He won 13 more while playing today. How many marbles does he have now?
- A shopkeeper had 35 kites. If he brought 19 more kites today how many kites does he have in all now?

Make your own stories for the additions given below, and do them.

- 22 + 37
- 34 + 28
- 30 + 19
- 26 + 34
- 59 + 29
- 49 + 17

Simple additions and subtractions by increasing or reducing tens.

41 + 10 = 

4 Tens + 1 Units = 5 Tens 1 Units

41 + 10 = 51

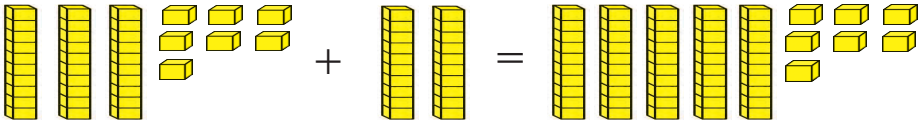
41 - 10 = 

4 Tens 1 Units – 1 Units = 3 Tens 1 Units

41 – 10 = 31

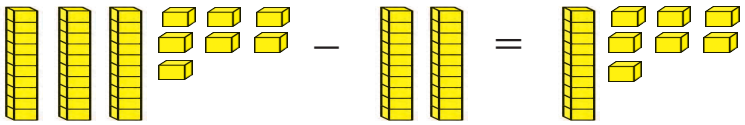
Here we learnt to add or subtract by jumps of 10.

Addition (by increasing by 20), Subtraction (by decreasing by 20)

37 + 20 = 

3 Tens 7 Units + 2 Tens = 5 Tens 7 Units

37 + 20 = 57

37 - 20 = 

3 Tens 7 Units – 2 Tens = 1 Ten 7 Units

37 – 20 = 17

• Add.

6 + 10 = ☐ 18 + 20 = ☐

29 + 30 = ☐ 62 + 10 = ☐

77 + 20 = ☐ 84 + 10 = ☐

• Subtract.

15 – 10 = ☐ 26 – 10 = ☐

34 – 20 = ☐ 53 – 10 = ☐

67 – 20 = ☐ 92 – 30 = ☐

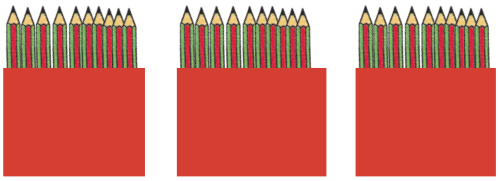
Think : What is to be done when adding 10 or 20 to a number or when reducing a number by 10 or 20?

ZZMJNP

Let's untie a ten in order to subtract

Every box has 10 pencils

I want 20 pencils.



I want 4 pencils.

I want 25 pencils.

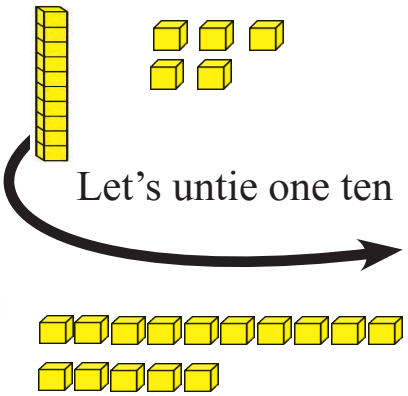
How to give them?

Rama : I have two boxes, each containing 10 pencils and 5 loose pencils. I want to give 7 of them to my friends. How to do that ?

Yash : Open one box. You will get 10 and 5, that is 15 loose pencils. Count 7 of them to give to your friends.

15 is equal to

1 Tens 5 Units

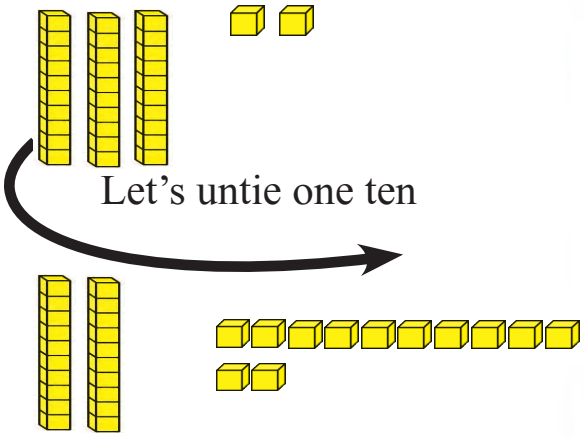


15 Units

1 Ten 5 Units equals 15 Units

32 is equal to

3 Tens 2 Units



2 Tens 12 Units

3 Tens 2 Units equals 2 Tens 12 Units

Subtraction : by untying or borrowing or opening out a ten.

22 – 7 = ☐

Tens	Units
1	12
–	7
1	5

22 – 7 = 15

30 – 9 = ☐

Tens	Units
2	10
–	9
2	1

30 – 9 = 21

63 – 6 = ☐

Tens	Units
5	13
–	6
5	7

63 – 6 = 57

Untie or borrow or open out a ten and subtract.

23 – 5 = ☐

Tens	Units
1	13
–	☐
1	☐

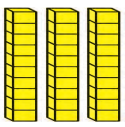
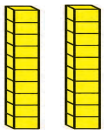
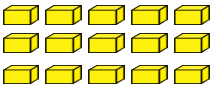
25 – 8 = ☐

Tens	Units
1	☐
–	☐
☐	☐

37 – 9 = ☐

Tens	Units
☐	☐
–	☐
☐	☐

Let us present the subtraction 35 - 17 as shown below.

Tens	Units	
		3 T 5 U
		2 T 15 U

Tens	Units
2	15
~~3~~ – 1	~~5~~ 7
1	8

While adding or subtracting we sometimes put a number greater than 9 in the units place. However, in the end we do not write a number greater than 9 in the units place. Please explain this to the students.

Subtract : by untying or borrowing or opening out a ten.

Tens	Units
4	0
− 1	1

Tens	Units
6	7
− 2	9

Tens	Units
9	2
− 5	3

17 – 9 = ☐
30 – 12 = ☐
51 – 18 = ☐
46 – 17 = ☐
83 – 59 = ☐
74 – 25 = ☐

- Bhavana has watered 27 of 43 trees. How many does she still have to water ?

  What is given ? Total trees 43, of them 27 watered. What is asked ? How many to be watered. What shall we do ? Subtract.

We cannot subtract 7 units from 3 units Hence, we borrow 1 ten and make 10 units of it. Thus we get 13 units.

We will subtract 27 from 43

Tens	Units	
3	13	
~~4~~	~~3~~	Total trees
− 2	7	Watered trees
1	6	Trees to be watered.

- In a mathematical grid, 70 counters are placed of which 42 are green and the others are red. How many red ones are there ?
- Swara had 92 beads. She gave Pari 59 of them. How many does she have now ?
- For Diwali, Aai made 67 *karanjis* and 48 *anarasas*. By how many is the number of *anarsas* less than that of *karanjis* ?
- In a Zilla Parishad School annual gathering, 78 of the 81 students took part. How many students did not take part ?

TLTAAF

Do you know Notes and Coins?

Yash and Rama have come to their Uncle's village with their mother. There is a fair today. When they left for the fair their uncle gave them Rs. 100/- each.

Rama went to Nandu Kaka's shop and asked for change. Nandu Kaka gave her the following.

1	2					

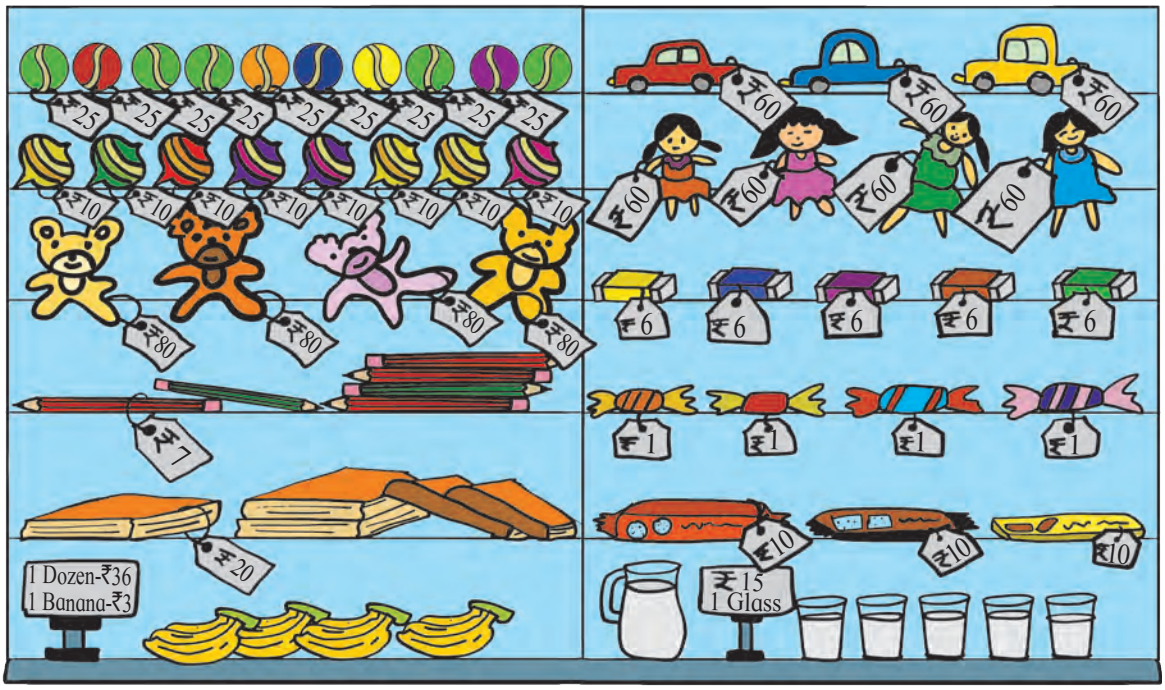
In the empty box, write the value of the note or coin above it.

Now convert Rs.100 into small change in three different ways.

Let's go to the market

Look at our shop.

Here we pick up whatever we need. Calculate their total price. Before leaving the shop we place the amount in the box for money.



John bought a ball and a car.

He put ☐ rupees in the box.

Soni bought a doll and a top.

She put ☐ rupees in the box.

Devansh bought 2 bananas and a glass of milk.

He put ☐ rupees in the box.

Pari bought 1 notebook and 2 pencils.

She put ☐ rupees in the box.

You choose: What would you like to buy from this shop? After buying the things how much money will you put into the box?

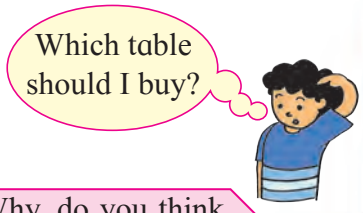
RWYR6S

Let's measure Length

Let's measure : Yash wants a study table in his room. With a stick, he measured the length of the wall, where the table was to be placed. It was 4 sticks and a little more.

Yash went to the shop to select the largest possible table. He saw several tables there. He used the same stick as before to measure the tables. Observe the picture and decide which table Yash would choose. Colour the box under the selected table.

2 Sticks 3 Sticks 4 Sticks 5 Sticks



Why, do you think, Yash did not choose the table that measured 5 sticks?

Rama wants to make flower garlands for her classroom door and the school gate. She brought a thick thread and used it to measure the width of the door and the school gate. Keeping 2 hand spans extra at each end of each garland she cut the thread. Why, do you think, she kept extra lengths of the thread?

Try this : • Find out the length of the thread you will need to make garlands for your classroom door and the school gate.

• Go to a construction site with your teacher or parent and observe how measurements are taken and what devices are used for that purpose.

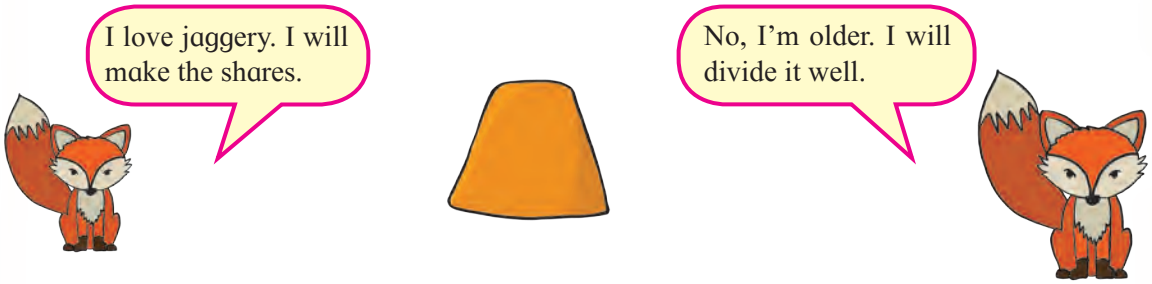
4TKKVN

Let's weigh

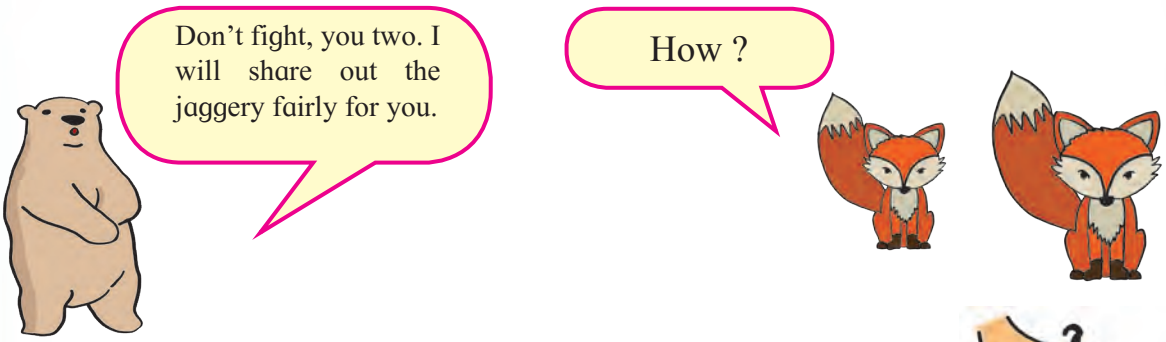
Colour the box below the heavier object.

Colour the box below the lighter object.

One night Chintoo and Bittoo, the two foxes, were passing by a jaggery factory. They saw a lump of jaggery there and were thrilled.



Bholu the bear was watching them quarrel. He went to help them.

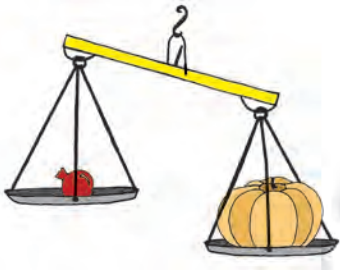


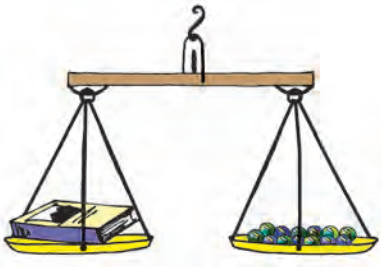
Bholu the bear brought something to help them.
What did Bholu bring to make equal shares ?
What does a green grocer use to weigh vegetables ? .....

Instructions for teachers

Conduct activities to enable children to actually handle and weigh things and compare the weights.

*** Look at the balances below and name the lighter and heavier thing in each pan.**





Go to a provisions shop and watch how various groceries are weighed.

Note the different types of balances used for weighing things.

Additional information : Find out about the different kinds of weights that were used in olden times.

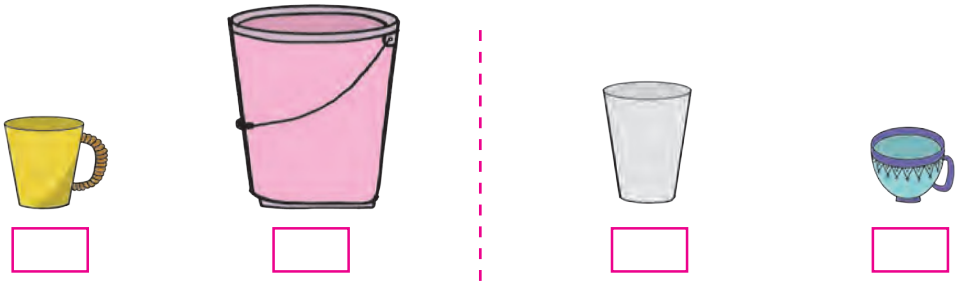
Instructions for teachers

Conduct activities to compare weights of different things using balances. Get children to make their own weighing balance.

GQ7FKJ

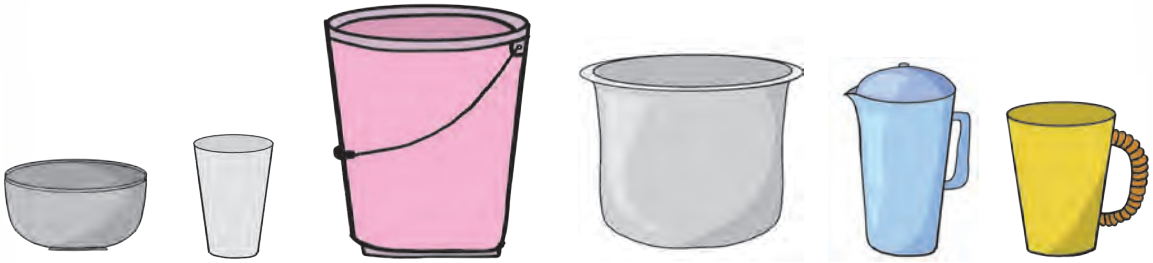
Let's measure Capacity

*** Colour the box under the vessel which will hold more water.**



Yash and Rama brought several different vessels from the kitchen. They had a mug, a bucket and a tumbler.

They used a  to fill all these vessels with water.



Yash : Rama can you tell which vessel holds the most water ?

Rama : Yes, ·····.

Now you tell me, which one holds the least water ?

Yash : ·····.

Instructions for teachers

Repeat the above activity using vessels of many different shapes.

Activity : Collect vessels of various shapes from your kitchen. Use a small bowl to fill each of them with water. First guess how many bowls of water a vessel will hold. Then count the number of bowls as you fill the vessels with water and verify your guess.

Which vessel was filled?	Number of bowls of water for filling the vessel	
	Your guess	Actual count
		
		
		
		

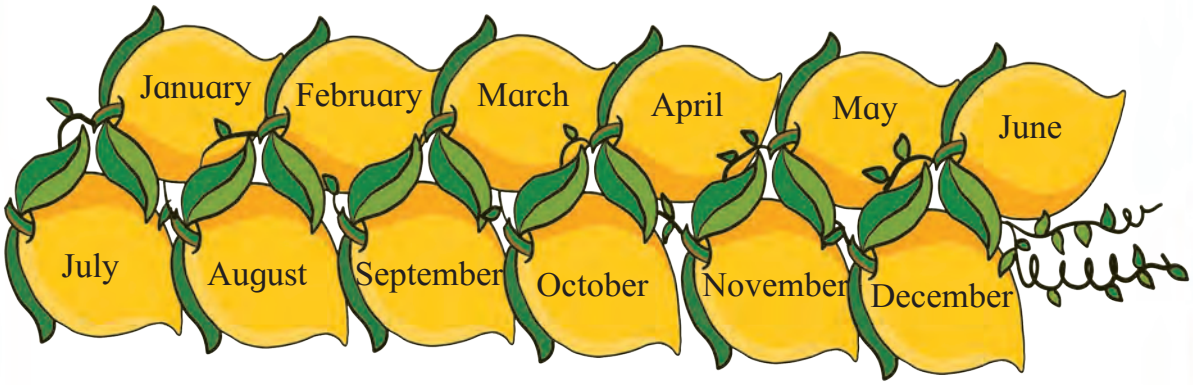
Activity : We get a small plastic cup fitted over the lid of a bottle of cough syrup. It is used to measure out the medicine.

Take a glass or a tumbler. See how many of those plastic cups are needed to fill the glass or tumbler with water.

6IF4ZB

Managing Information

In the picture below, the mangoes are labelled with the months of a year. Write the number of days in the respective months.



Use the picture above to complete the sentences.

1) The picture gives the names of ____ months.
2) In the picture there are ____ months of 31 days.
3) There are ____ months of 30 days.
4) The month with 28 or 29 days is ____.
5) The first 31-day month after May is ____.

Look at this year's calendar and fill in the boxes.

1) Ramzan Id falls in the months of _____.
2) Christmas is in _____.
3) Holi is in the month of _____.
4) My birthday is in _____.
5) _____ is Maharashtra Day.
6) The _____ is Teachers' Day.

Ask the children the date and month of their birthday and note it down as shown below.

Month	Jan	Feb	Mar	Apr	May	Jun
Birthday	Maya Tanaya	Amit, Sahil, Kanak	Hema, Mary, Madhu, Neeraj	Veena, Vedant, Shakil	Fatima, Ved	Zaina, Yug
Month	**Jul**	**Aug**	**Sept**	**Oct**	**Nov**	**Dec**
Birthday		Chandu, Dnyan, Bakul	Eva, Pranav	Joseph, Chaitali	Jay, Rajiya, Maithili	Padma, Rouni

Answer the following questions orally.

1) In which month do Chaitali and Joseph have their birthdays?
2) How many students have their birthdays in April?
3) Which month has the maximum number of birthdays?
4) In which month are there no birthdays?
5) Name the children whose birthdays are in January.

Riya, how did you celebrate your birthday ?

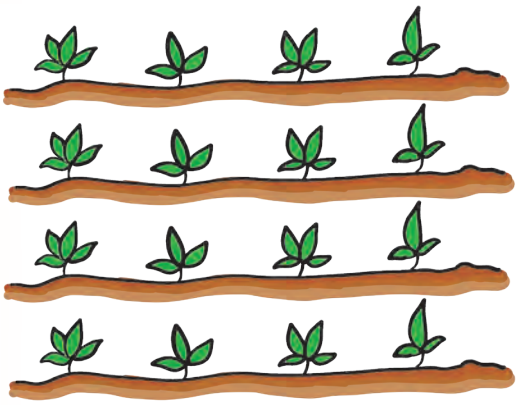
Wow, Riya that's great! I planted a tree on my birthday.

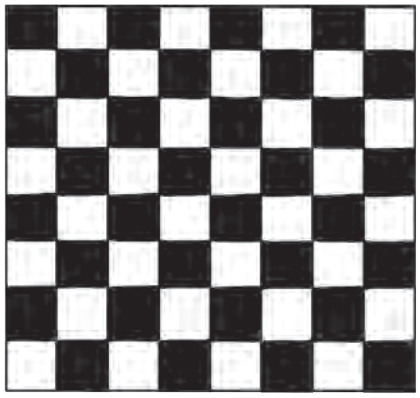
I paid my respects to all the elders in my house. In the afternoon, I went to an orphanage and shared sweets with the children there. In the evening, I had a party with my friends.

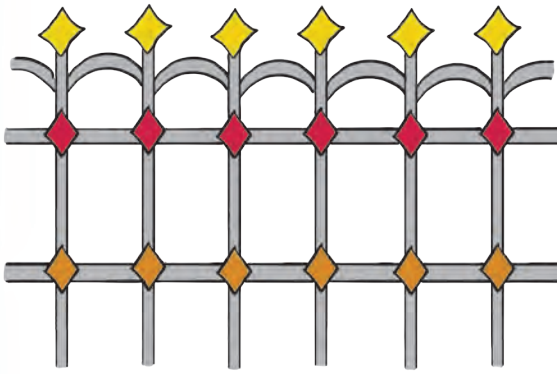
IF1YP7

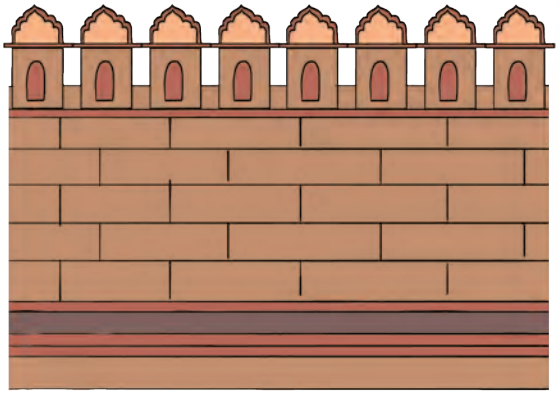
Patterns

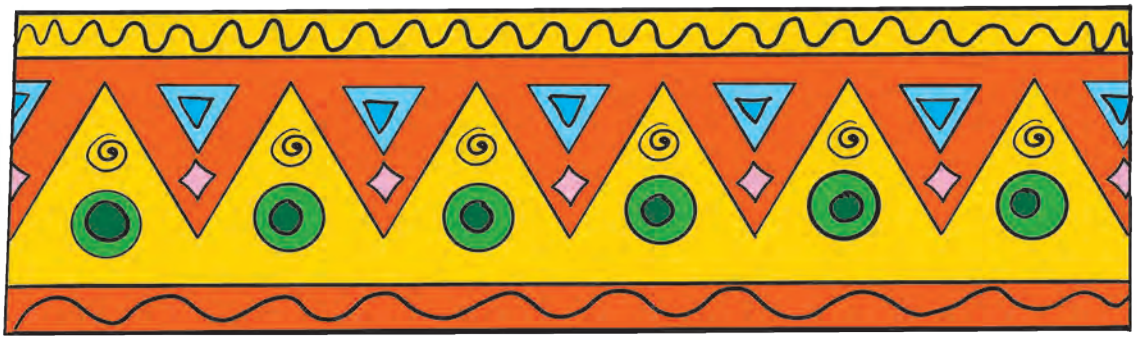
Observe the patterns shown below. We see many such patterns in our surroundings.







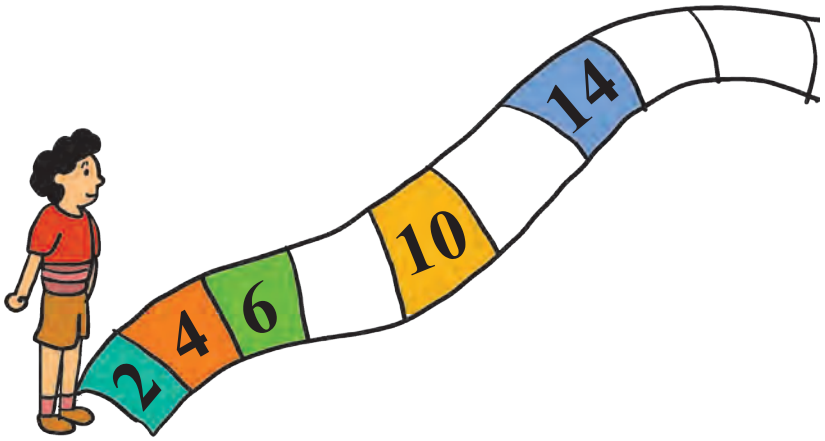




Activity :

Get a pod of lady finger (*Bhendi*), chop it to make a printing stamp. Dip it in a paint and create your own pattern on a paper with it.

Complete the pattern shown in the picture below.



Observe the patterns given below and fill in the proper letter or number in each of the empty boxes.

A	V	M	A	V	M	A	V				

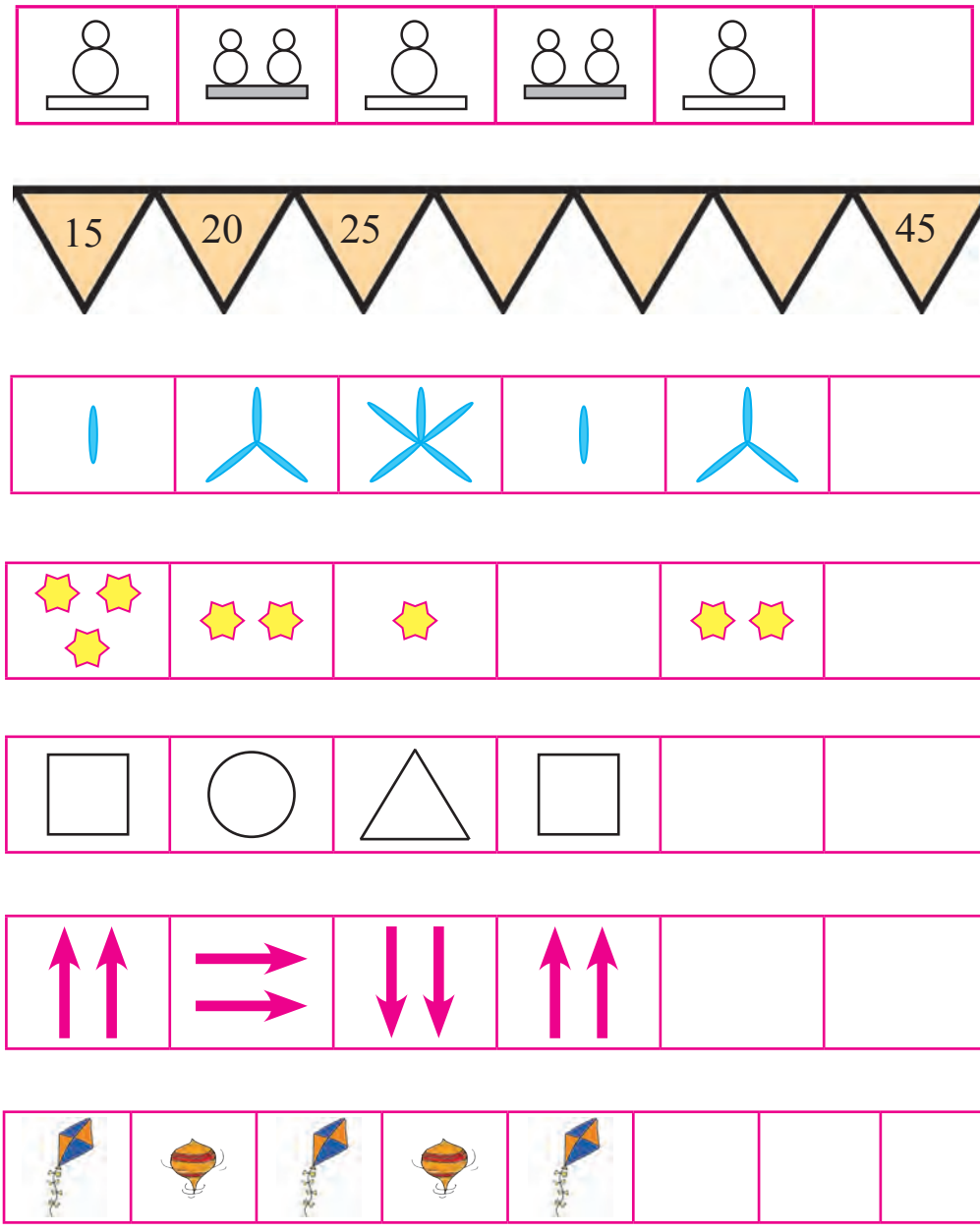
1	3	1	3	1	3				

1	0	0	0	1	0	0	0	1	1	0	0			

Instructions for teachers

Tell children to collect seeds of custard apples and chikoos. Wash and dry them, and then use them to make different patterns. They can also use types of dry beans to make patterns.

Complete the following patterns.



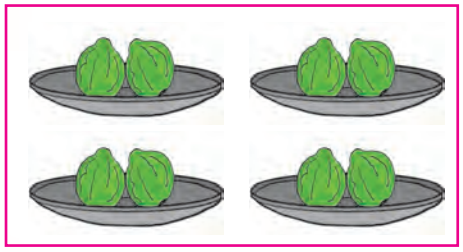
Instructions for teachers

Get children to recognize samples of patterns. Discuss different types of patterns made by using numbers.

VBMTE3

Multiplication Preparation

Count quickly !



Tai : How many guavas are there in each dish?

Yash : Two.

Tai : How many guavas are there in all the dishes together ?

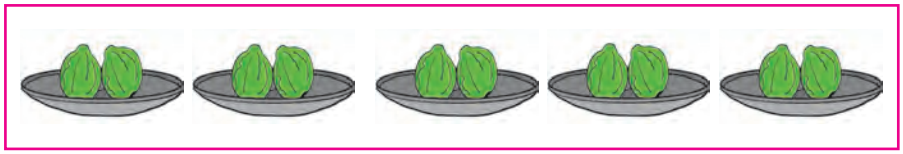
Rama : Adding 2 + 2 + 2 + 2 is eight.

Tai : How many guavas would there be if we filled 8 dishes like these ?

Yash : Then we would have to take 2 eight times and add them all. 2 + 2 + 2 + 2 +2 + 2 + 2 + 2 is 16. But it took so long to add !

Tai : Tables are useful if we have to add a number again and again. Let's learn about it. If you prepare some tables yourself you will be able to do such additions quickly.
See how tables are made in the pictures below.

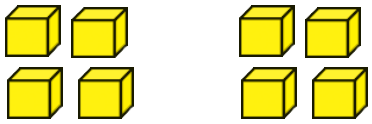
Look at the pictures, count and write.

1) 

☐ + ☐ + ☐ + ☐ + ☐ = ☐

2) 

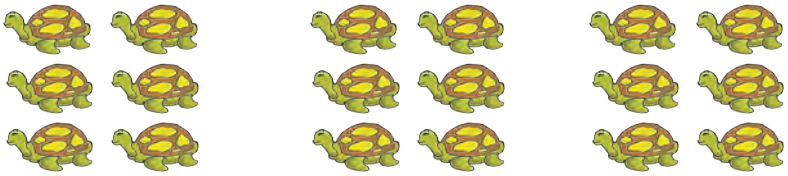
☐ + ☐ + ☐ = ☐

3) 

☐ + ☐ = ☐

4) 

☐ + ☐ + ☐ + ☐ = ☐

5) 

☐ + ☐ + ☐ = ☐

6) 

☐ + ☐ + ☐ + ☐ = ☐

Let's play :

1) 

How many dishes ? ☐

How many oranges in each? ☐

Total oranges ? ☐

3, taken 4 times is 3+3+3+3 = 12

2) There are rows of rose bushes in a garden.

Total rows ? ☐

Bushes in each row ? ☐

Total bushes ? ☐

Thus, 3 + 3 + 3 + 3 + 3 = ☐

This is 5 times 3, added together.

Let's write this as 3 × 5 = 15.

Read this as '3 multiplied by 5 is equal to 15'.

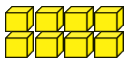
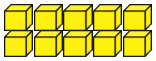
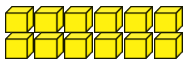
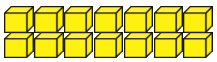
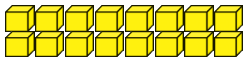
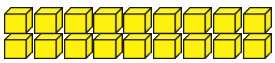
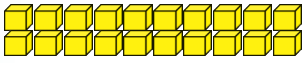
The symbol '×' is used for multiplication.

When we add the same number again and again, we get the table of that number.

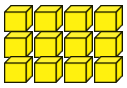
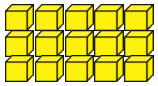
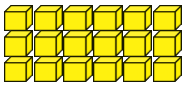
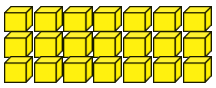
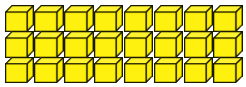
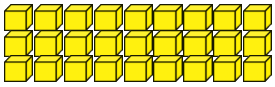
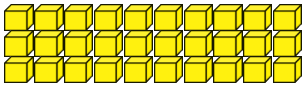
889N3Y

Let's make Tables

The table of 2 :

	2 × 1	Two, once	2	Two ones are two
	2 × 2	Two, twice	4	Two twos are four
	2 × 3	Two, thrice	6	Two threes are six
	2 × 4	Two, four times	8	Two fours are eight
	2 × 5	Two, five times	10	Two fives are ten
	2 × 6	Two, six times	12	Two sixes are twelve
	2 × 7	Two, seven times	14	Two sevens are fourteen
	2 × 8	Two, eight times	16	Two eights are sixteen
	2 × 9	Two, nine times	18	Two nines are eighteen
	2 × 10	Two, ten times	20	Two tens are twenty

The table of 3:

	3 × 1	Three, once	3	Three ones are three
	3 × 2	Three, twice	6	Three twos are six
	3 × 3	Three, thrice	9	Three threes are nine
	3 × 4	Three, four times	12	Three fours are twelve
	3 × 5	Three, five times	15	Three fives are fifteen
	3 × 6	Three, six times	18	Three sixes are eighteen
	3 × 7	Three, seven times	21	Three sevens are twenty-one
	3 × 8	Three, eight times	24	Three eights are twenty -four
	3 × 9	Three, nine times	27	Three nines are twenty-seven
	3 × 10	Three, ten times	30	Three tens are thirty

You can easily make the four times table in the same way.

Yash : I plucked 4 guavas from the tree today.

Tai : Let's use them to make the four times table.

Yash : Just 4 guavas to make the whole table ? Won't we need more ?

Tai : No, we won't. See how we make the table. Place the guavas in a row. Now, Yash you count them once and write $4 \times 1 = 4$. That is 'four ones are four'.

(Yash did that.) 

Tai : Rama, you count the guavas again, but start counting after 4. (Rama counted 5, 6, 7, 8 and wrote the next line of the table : $4 \times 2 = 8$ or four twice are eight'.)

Rama : Yash, now you make the next line. (Yash counted the same guavas a third time counting after eight. He wrote the next line as, $4 \times 3 = 12$ or four thrice are twelve')

Yash : Now I got it. We can count only 4 guavas again and again to get the 4 times table. So, I'll complete the table.

Rama : Making the 10 times table is the easiest ! No need to count at all!

Tai : Right ! That's because we know that ten once makes one 'ten'.
Ten, once = 10 or $10 \times 1 = 10$, or 'Ten ones are ten'
Ten, twice = 20 or $10 \times 2 = 20$, or 'Ten twos are twenty.'
We continue like this till we come to
Ten, tens = 100 or $10 \times 10 = 100$, 'Ten tens are hundred'.

Table of 4	
$4 \times 1 =$	4
$4 \times 2 =$	
$4 \times 3 =$	
$4 \times 4 =$	
$4 \times 5 =$	
$4 \times 6 =$	
$4 \times 7 =$	
$4 \times 8 =$	
$4 \times 9 =$	
$4 \times 10 =$	

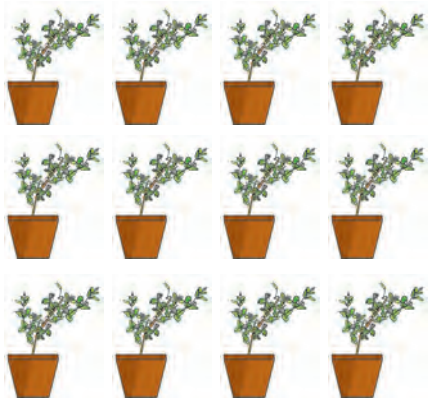
Table of 10	
$10 \times 1 =$	10
$10 \times 2 =$	
$10 \times 3 =$	
$10 \times 4 =$	
$10 \times 5 =$	
$10 \times 6 =$	
$10 \times 7 =$	
$10 \times 8 =$	
$10 \times 9 =$	
$10 \times 10 =$	

Now, make the table of 5 for yourself. Draw 5 stars or flowers in the space below to help you make the table.

★ ★ ★ ★ ★ 5, taken once	5	5
5, taken twice	5 + 5	10
5, taken thrice	10 + 5	15
	15 + 5	20
5, taken 6 times	25 + 5	30

Have some fun :

3 pots in one column.
Four columns like this.
Total pots, 12.
It means that 3, 4 times is 12 or 4 threes are 12 or $3 \times 4 = 12$



4 pots in a row.
3 rows like this.
Total pots, 12.
That is 4,3 times 4 is 12 or 3 fours are 12 or, $4 \times 3 = 12$

That's funny, isn't it? By Rama's method we get 12 pots, and by Yash's method too we get 12 pots. It means that whether we take 3, four times or 4, three times we get the same total, 12.

Like Rama and Yash, draw a picture and verify that $3 \times 8 = 8 \times 3$.

Tables

2 × 1	= 2
2 × 2	= 4
2 × 3	= 6
2 × 4	= 8
2 × 5	= 10
2 × 6	= 12
2 × 7	= 14
2 × 8	= 16
2 × 9	= 18
2 × 10	= 20

3 × 1	= 3
3 × 2	= 6
3 × 3	= 9
3 × 4	= 12
3 × 5	= 15
3 × 6	= 18
3 × 7	= 21
3 × 8	= 24
3 × 9	= 27
3 × 10	= 30

4 × 1	= 4
4 × 2	= 8
4 × 3	= 12
4 × 4	= 16
4 × 5	= 20
4 × 6	= 24
4 × 7	= 28
4 × 8	= 32
4 × 9	= 36
4 × 10	= 40

5 × 1	= 5
5 × 2	= 10
5 × 3	= 15
5 × 4	= 20
5 × 5	= 25
5 × 6	= 30
5 × 7	= 35
5 × 8	= 40
5 × 9	= 45
5 × 10	= 50

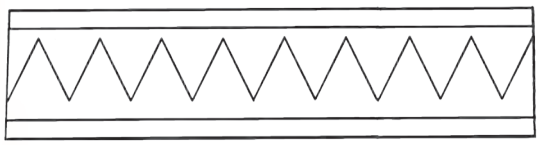
10 × 1	= 10
10 × 2	= 20
10 × 3	= 30
10 × 4	= 40
10 × 5	= 50
10 × 6	= 60
10 × 7	= 70
10 × 8	= 80
10 × 9	= 90
10 × 10	= 100

K4VHSU

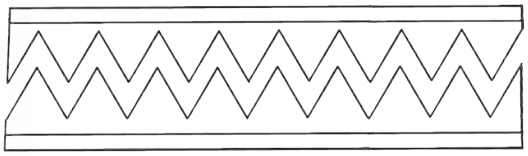
Maths in a story

Rama and five other children had gathered to play at Yash's house. Thus, altogether there were ..... children. Yash's Suresh Mama was staying there too.

He taught the children to make crowns of Greek Kings.



He took a strip of card paper and on it he drew a zigzag line made of slanting lines.



Cutting the strip along that line, he made two parts.

Then the children made drawings of their choice on the two parts, and coloured them.

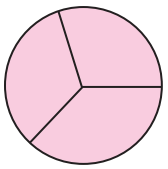
Then Suresh Mama pinned them and made the crowns.

They got 2 crowns from one strip. Thus, how many strips did they need ?

After all the children had worn a crown each, they put the left over crown on Suresh Mama's head !

Rama said "When we made little caps for our fingers from discs of paper, we got 3 caps from each disc. Now, let's make caps for the fingers of one hand for each child. How many caps will we need for the 7 of us?" " That's easy" said Yash; 'because we know the table of 5.'

Can you tell how many paper discs are needed to make all those caps ?



X1HCHQ

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