Government of Tamilnadu

STANDARD THREE

TERM I

Volume 2

MATHEMATICS | SCIENCE | SOCIAL SCIENCE

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Untouchability is Inhuman and a Crime

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MATHEMATICS (1-78)

SCIENCE (79-133)

SOCIAL SCIENCE (134-180)

MATHEMATICS

STANDARD THREE

TERM I

1 SHAPES AND FIGURES - I

Recall

There are number of shapes all around us.

The four basic shapes

Triangle

Square

Rectangle

Circle

Basic shapes

Look at the basic shapes :

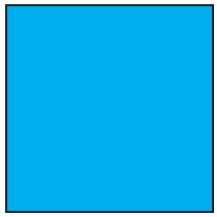
Square

Rectangle

Triangle

Circle

Square :

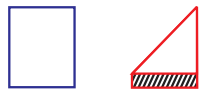


It is a square
It has four sides and four corners.

ACTIVITY 1

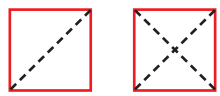
We will make a square through paper folding.

Step 1 : Take a paper and fold it as shown in the figure.



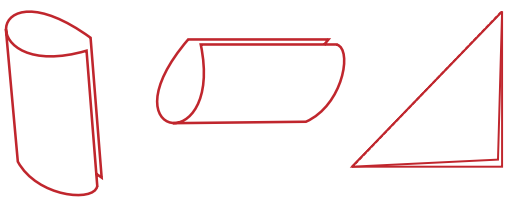
Step 2 : Cut the shaded portion.

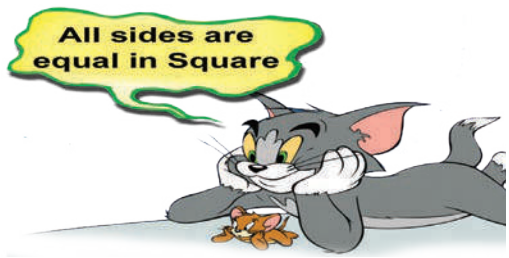
Step 3 : Now unfold the paper. We get a square.



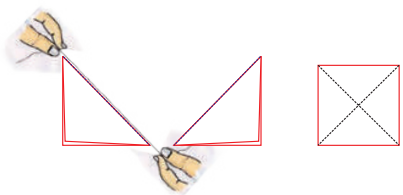
The dotted line is a diagonal obtained by joining the respective opposite corners. There are two diagonals in a square.

To compare the sides of the square, fold the paper as shown in the figure.





Measure the diagonals with a thread.



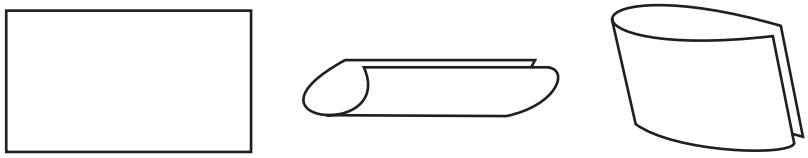
Diagonals are equal.

ACTIVITY 2

List the things around you which are square in shape.

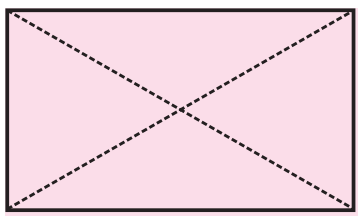
Rectangle :

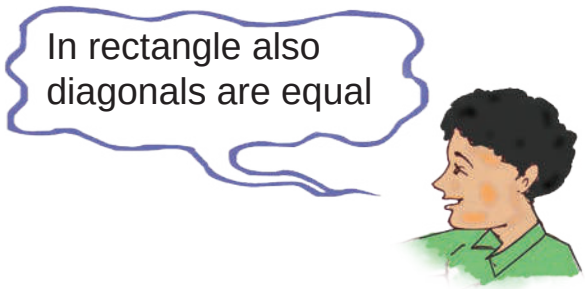
It has four sides and four corners. To measure the sides of the rectangle fold its opposite sides .



What do you observe? The sides coincide.

As you did for the square, make the diagonals in the rectangle and measure the diagonals using a thread.

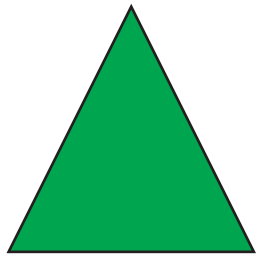




ACTIVITY 3 List the things around you which are rectangular in shape.

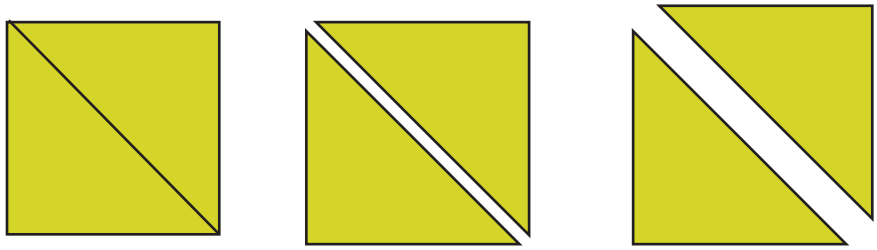
Triangle :

This is a triangle

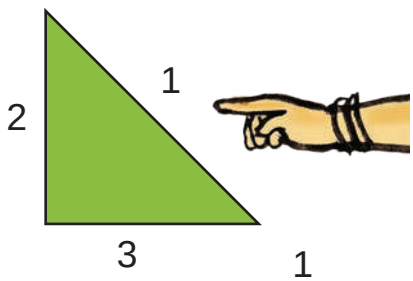


We will make a triangle through paper folding.

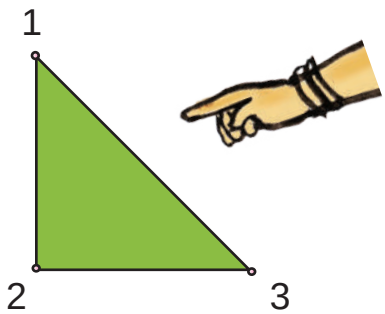
Take a paper and cut it along its diagonal, we get two triangles.



Triangle has three sides.



Triangle has three corners.



ACTIVITY 4

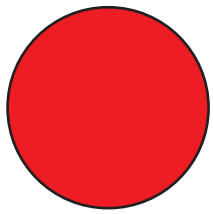
List the things around you which are triangular in shape.

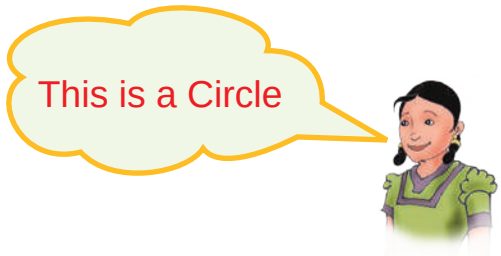
Vicks toffee			

Circle :

Circle is a closed curve.

It has no corner.



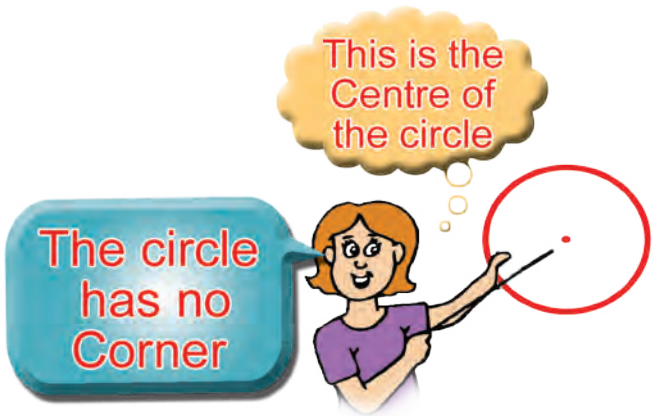


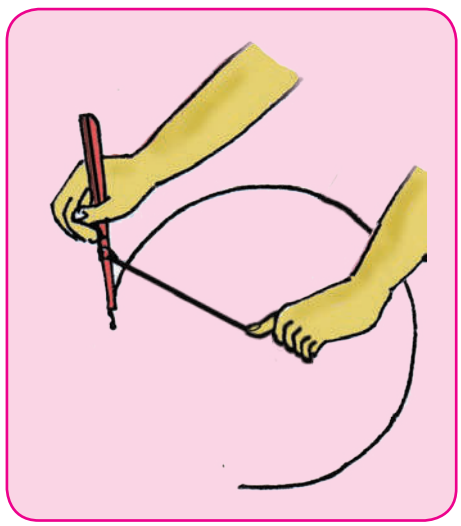
Project

Draw a circle using pencil and thread.

Tie one end of the thread to the pencil as shown in the figure.

Press the other end of the thread on the paper and draw a curved line with the pencil. We get a circle.



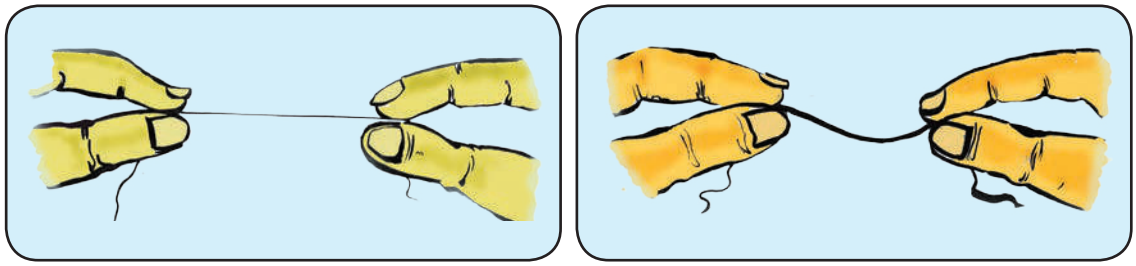


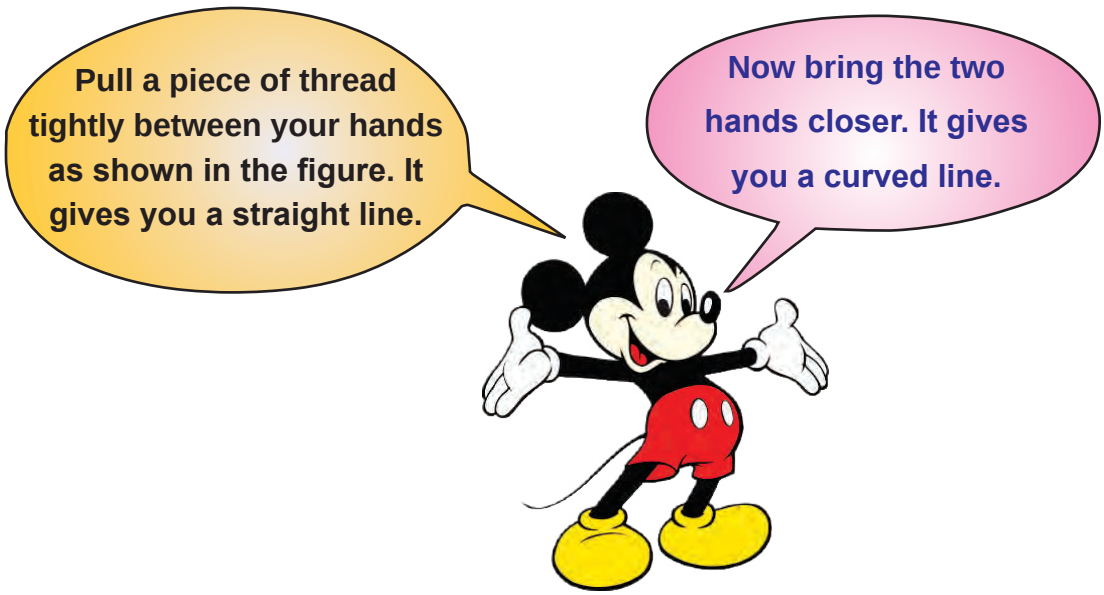
ACTIVITY 5

List the things around you which are circular in shape.

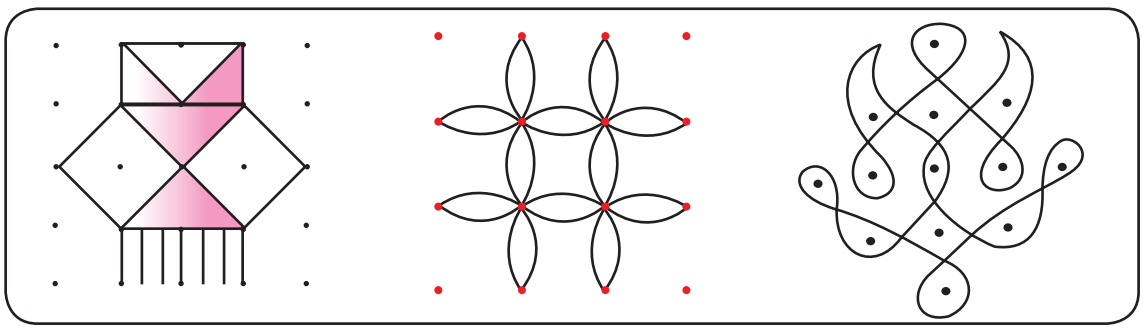
Disc			

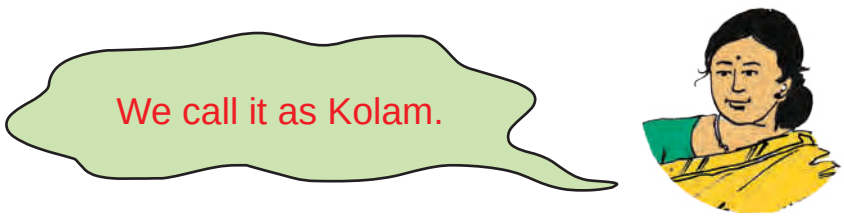
Curved and Straight Lines





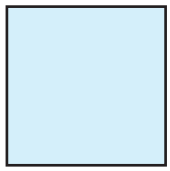
Curved lines and straight lines can be drawn with the help of dots. Look at these designs.

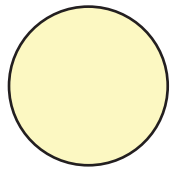
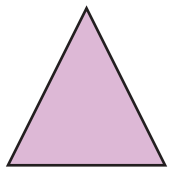




Exercise 1

Write the number of corners and sides of the shapes in the boxes :



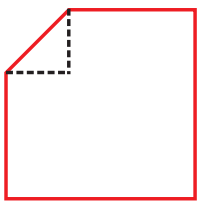
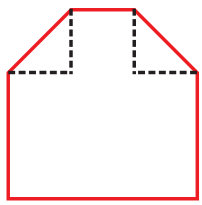
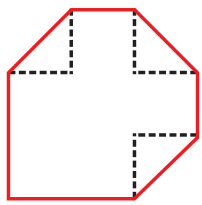
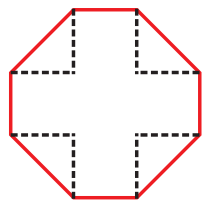



☐ corners ☐ corners ☐ corners ☐ corners

☐ sides ☐ sides ☐ sides ☐ sides

ACTIVITY 6

Fold a square paper at the corners as shown here and write the number of corners and sides obtained.

☐ corners ☐ corners ☐ corners ☐ corners

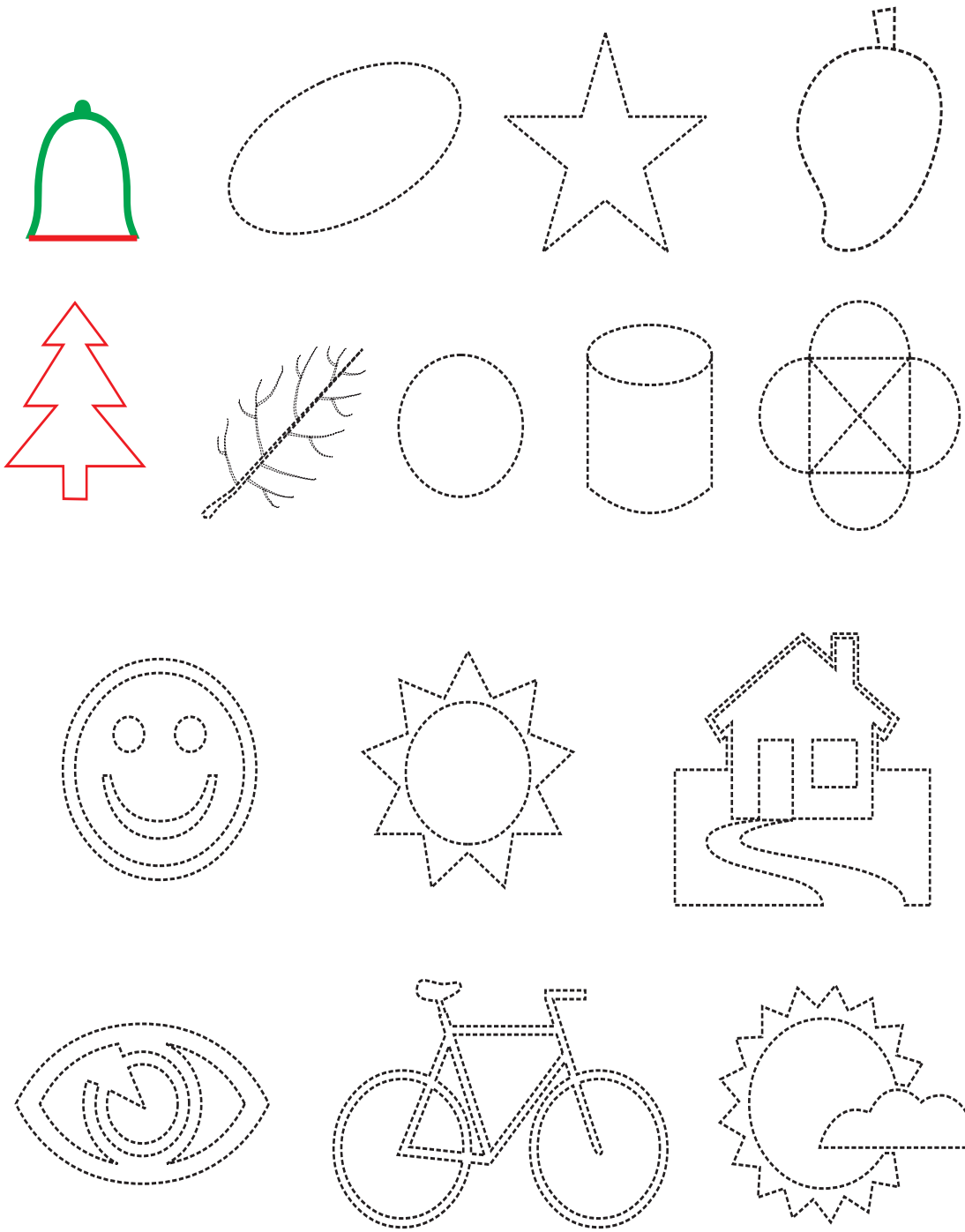
☐ sides ☐ sides ☐ sides ☐ sides

Try it !

☐ Fold all the corners of a square sheet in such a way that it still has only four corners!

ACTIVITY 7

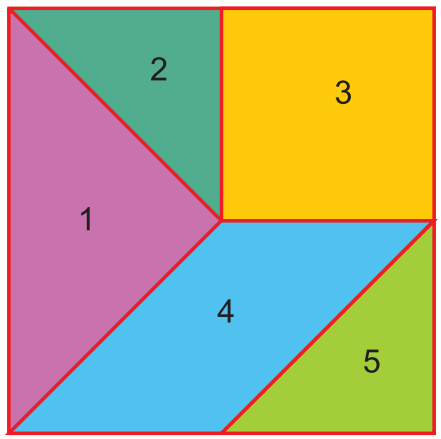
Complete the diagram given below by using green colour and red colour crayons on curved lines and straight lines respectively.



Tangram

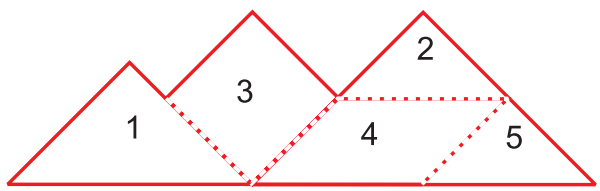
The tangram is an ancient chinese puzzle. From the pieces of the tangram, we can make many figures of animals, people and other things.

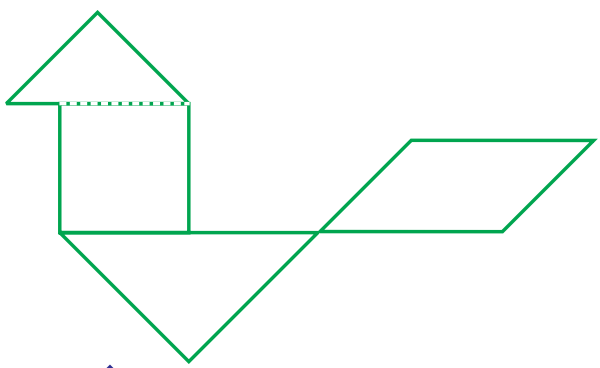
5 Pieces tangram

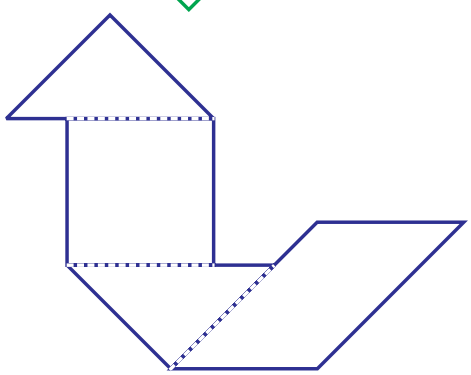


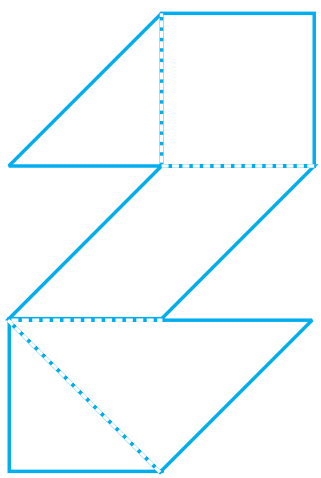
ACTIVITY 8

Prepare 5 pieces tangram and try to make the following figures with the suitable pieces.





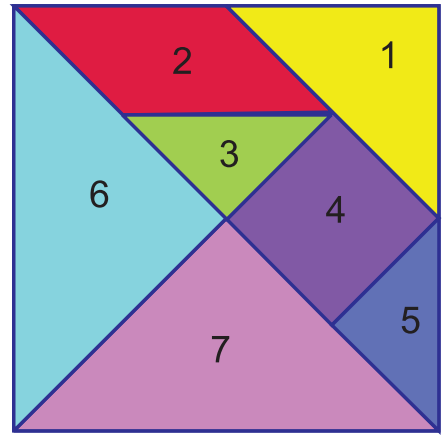




MATHEMATICS

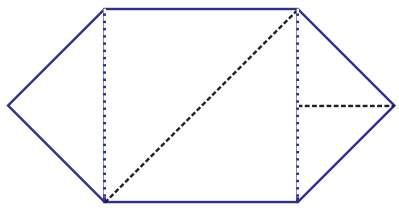
Project

7 pieces tangram

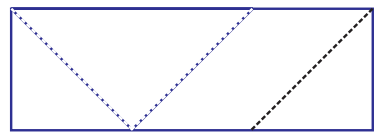


Prepare 7 pieces tangram and make the following shapes.

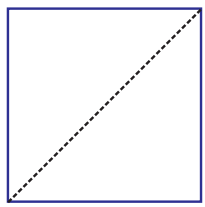
i) use all the 5 triangles



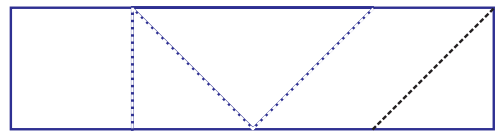
ii) use pieces 1, 2, 3 and 5



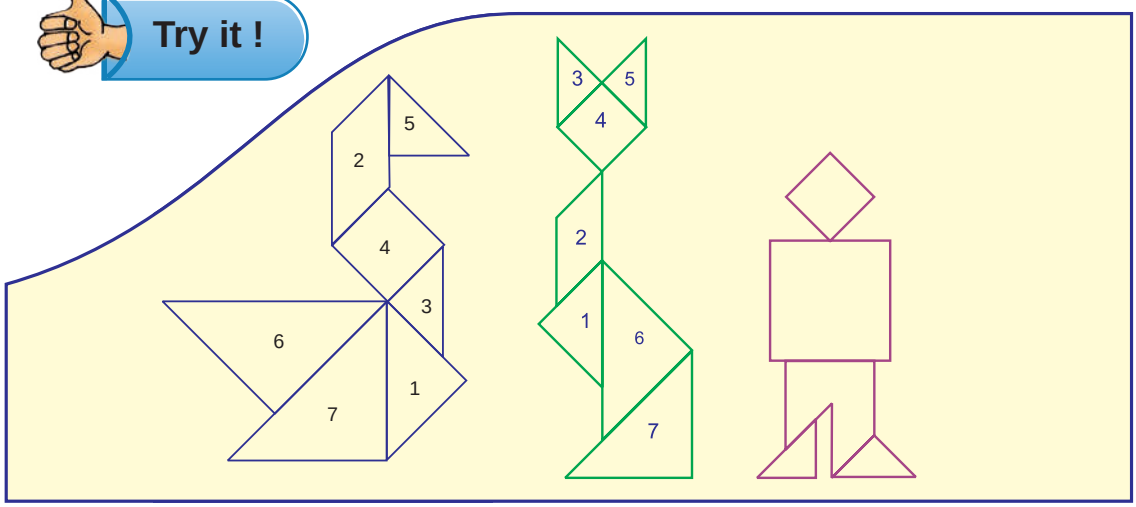
iii) use only two triangles



iv) use pieces 1,2,3,4 and 5

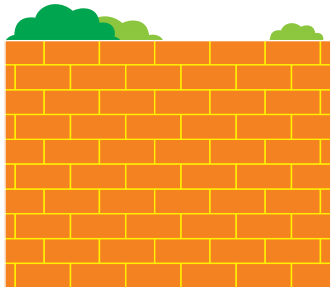


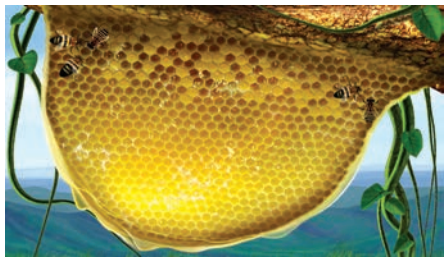
Try it !

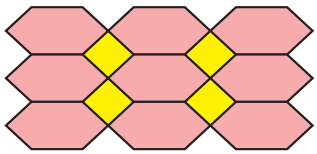


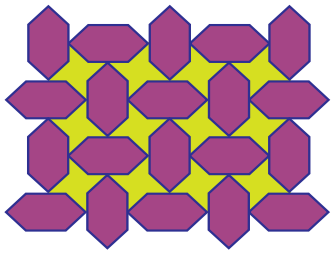
Tessellation

Observe the following pictures and discuss:





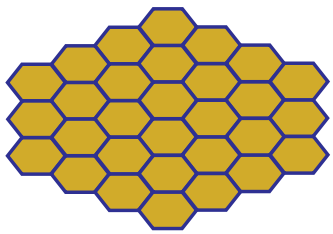


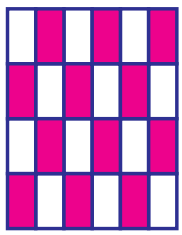


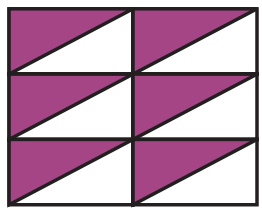
When you fit individual tiles together with no gaps or overlaps to fill a flat space, you have a tiling.

Example

Here are some examples :

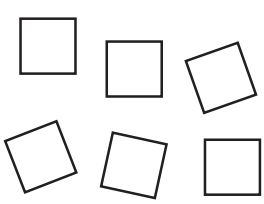


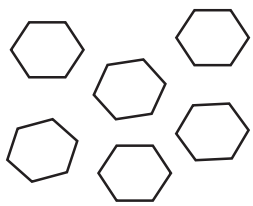


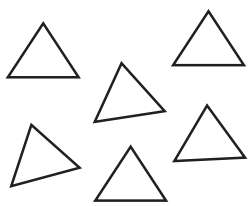


ACTIVITY 9

Tessellate a new region using the following shapes :





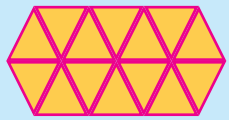


A tessellation is created when a shape is used over and again covering a plane without any gaps or overlaps.

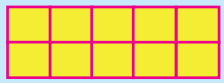
Triangles, Squares, Hexagons are the regular polygons tessellate in the plane.

Here are the examples of

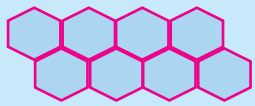
a tessellation of triangles



a tessellation of squares

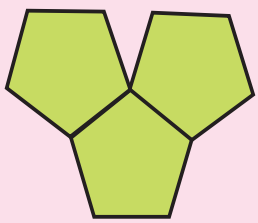


a tessellation of hexagons

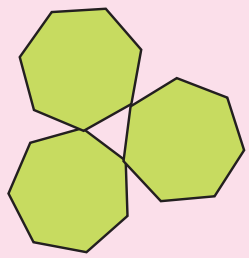


Observe the following Pictures :

Pentagons
(Five equal sides)



Heptagons
(Seven equal sides)



Though Pentagons and Heptagons are regular Polygons they do not tessellate.

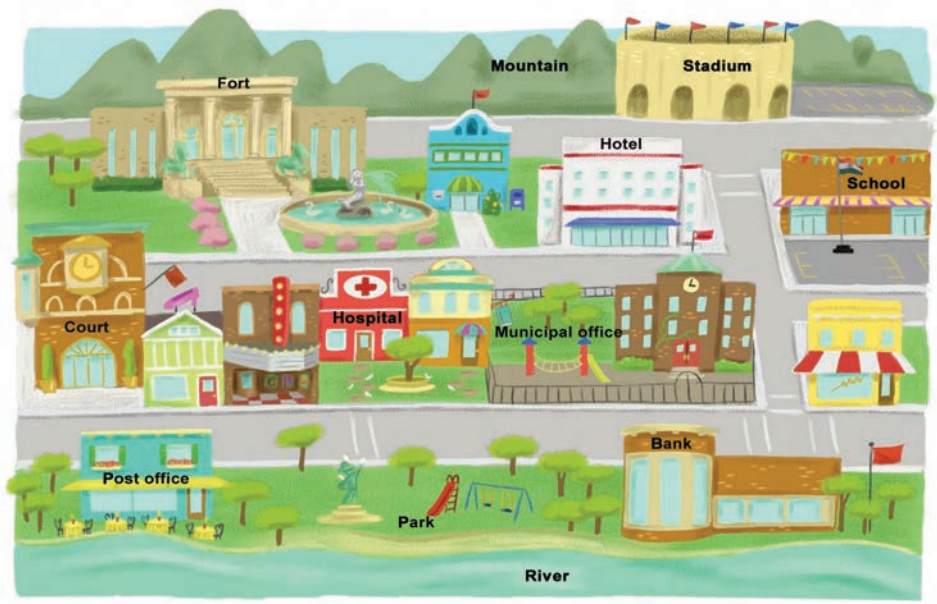
Project

Observe the tessellated shapes around you and discuss

2 SHAPES AND FIGURES - II

Map

Mapping means locating the place with the help of landmarks.



Look at the above picture and discuss about the spatial relationship such as - nearer, in front of, between, behind, far away, above, below, adjacent, bottom, top, etc.....

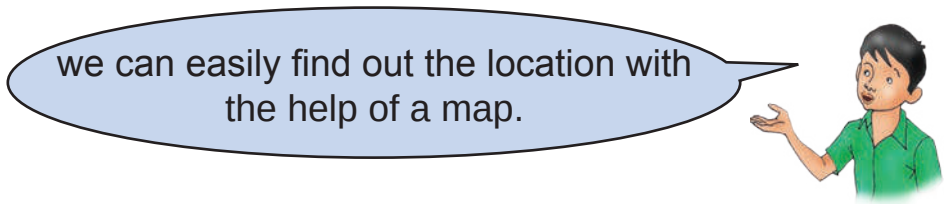
Exercise 1

1. ..... is adjacent to the school. (hotel / bank)

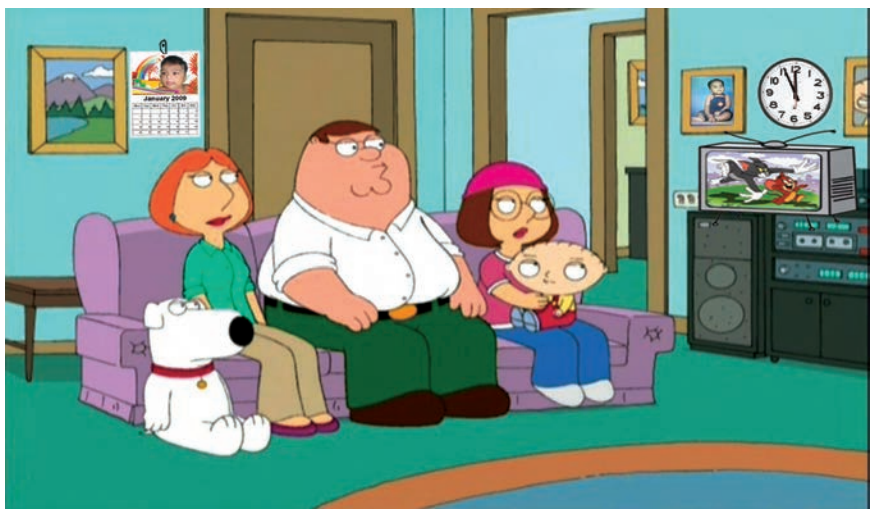
2. ..... is in front of the hospital. (park / fort)

3. ..... is far away from the post office. (stadium / mountain)

4. Stadium is ..... the school. (adjacent to / behind)
5. Park is ..... the post office and the bank. (in between / in front of)
6. Court and hospital are ..... each other. (behind / adjacent to)
7. Flagpole is ..... of the school. (in front / at the centre)
8. River is in front of the ..... (Park / Stadium)
9. The post office is surrounded by ..... (mountain / trees)
10. Stadium is situated at the ..... of the map. (top / bottom)



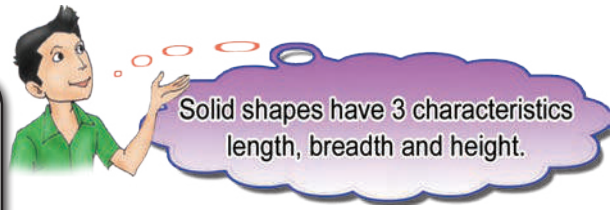
Discuss the spatial relationship among the persons, objects and places found in the picture using the words such as below, above, under, on, in, between, etc.,



Project

Try to draw a map of your house and school.

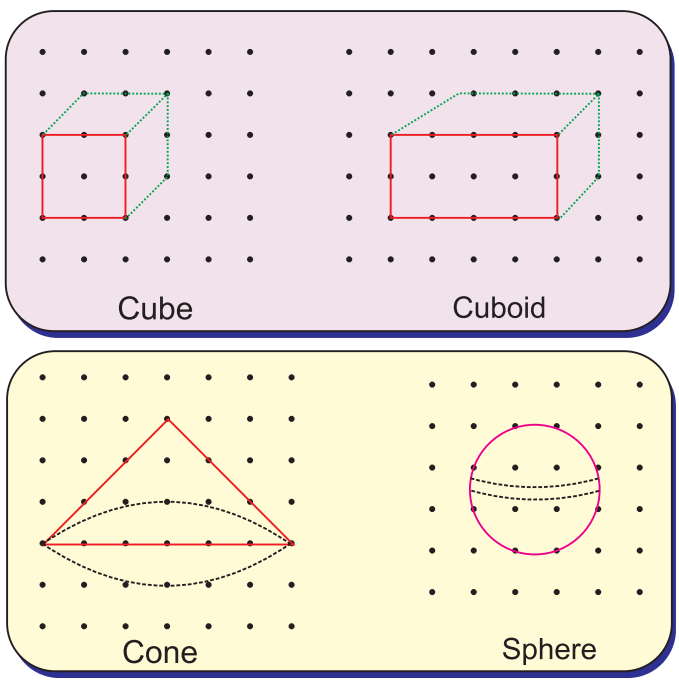
Solid shapes



These are also called 3-D objects.

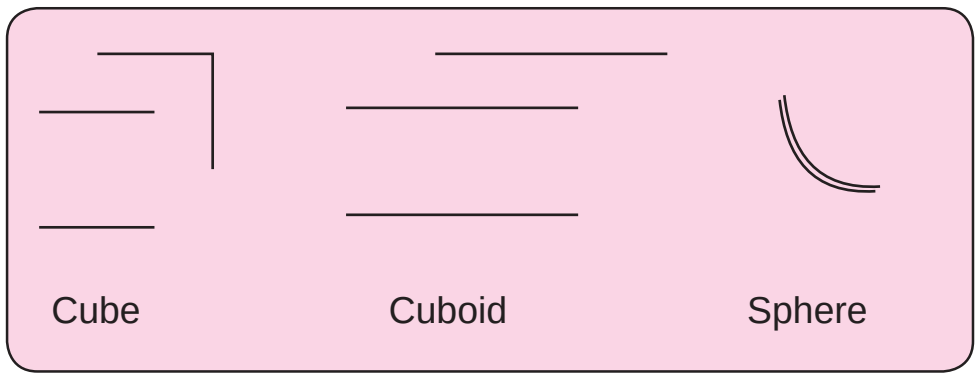
ACTIVITY 1

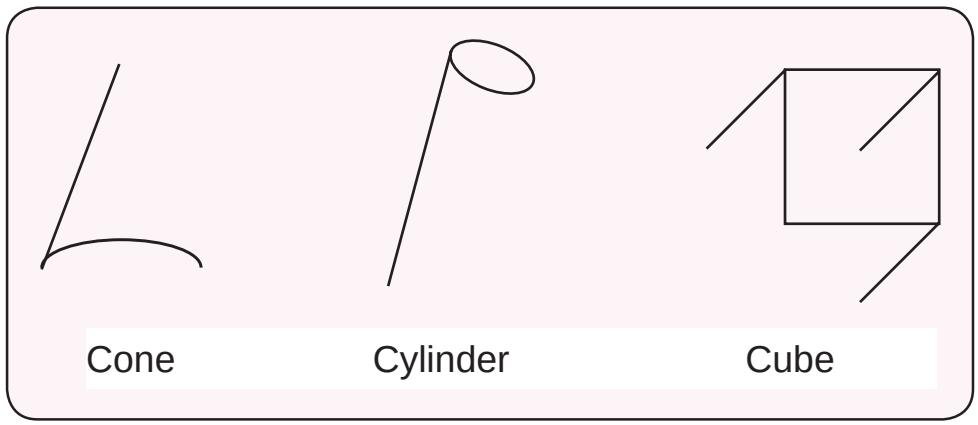
Draw the solid shapes on the dot-grid using straight lines and curves :



ACTIVITY 2

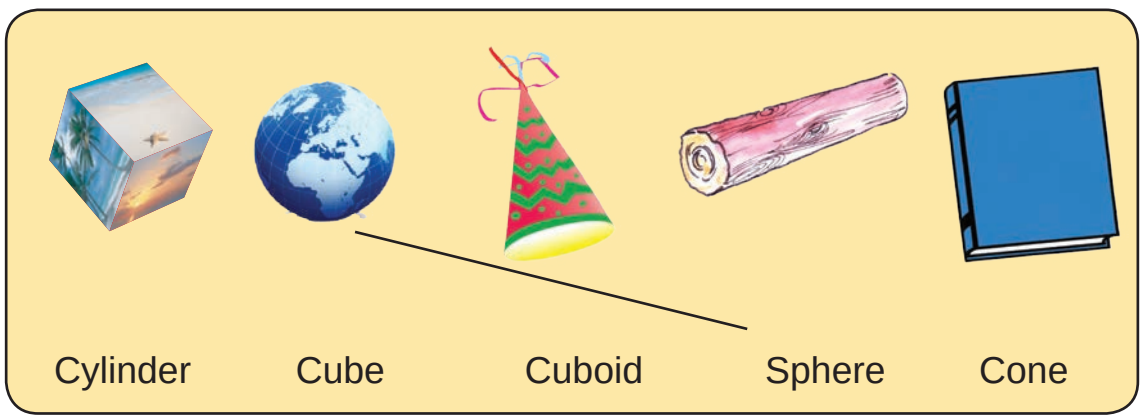
Draw the incomplete solid shapes and colour it :





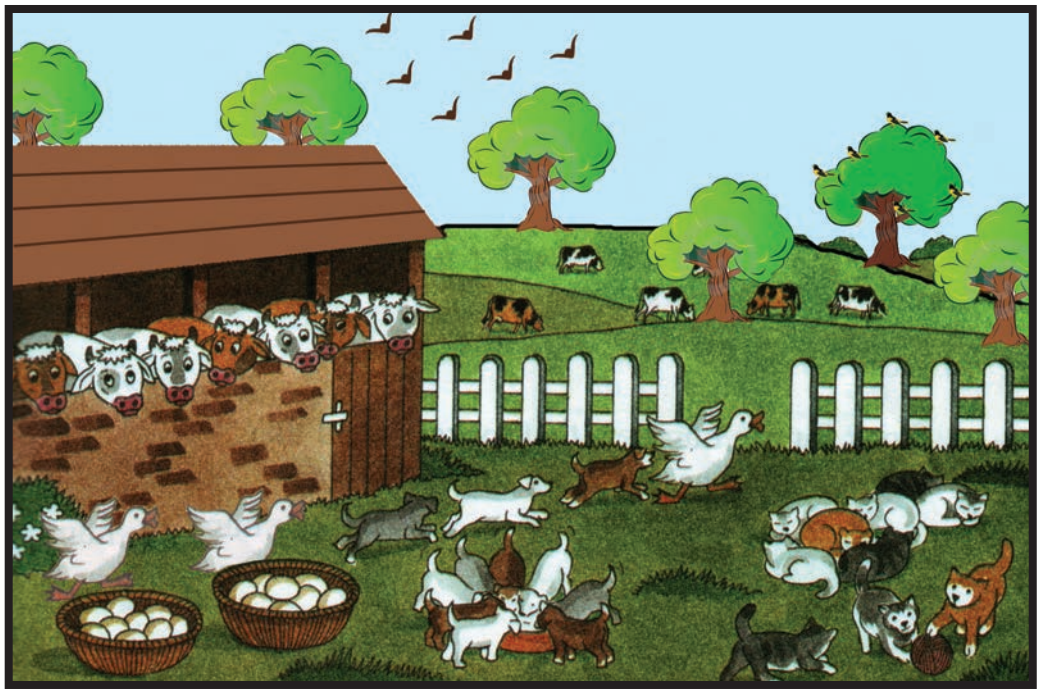
Exercise 2

Match the solid shapes to its name :



3 NUMBERS

Recall



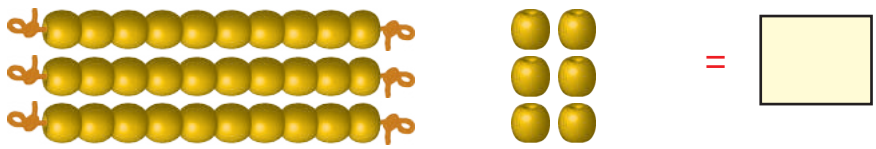
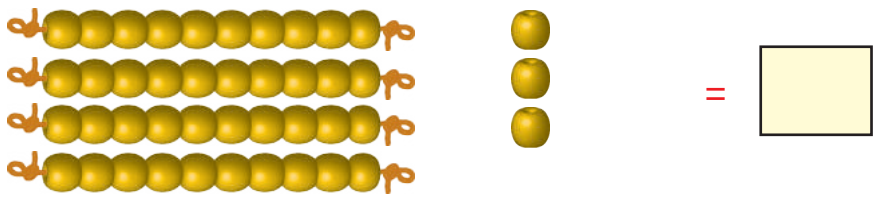
1. **Look at the picture and answer the following :**

1. Number of cows. ☐
2. Number of cats. ☐
3. Number of trees. ☐
4. Number of eggs. ☐
5. Number of birds. ☐
6. Number of ducks. ☐
7. Number of dogs. ☐
8. Number of flowers. ☐

2. Write the place value of the circled digit :

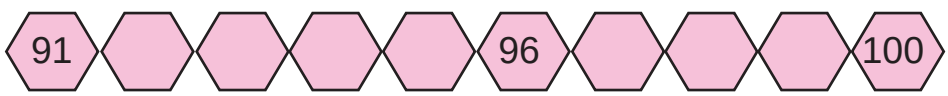
1. 5 (4) — 4 ones
2. (7) 1 —
3. (6) 3 —
4. 9 (8) —

3. Count the beads and write the numerals in the boxes :

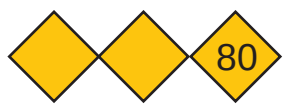
1.  = 24
2.  =
3.  =

4. Write the missing numbers :

1. 

2. 

3. 

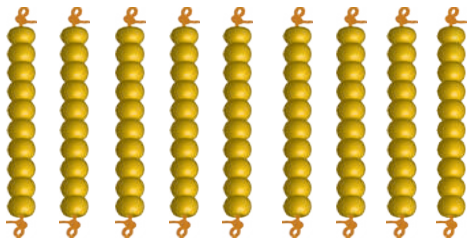
4. 

Try it !

If you add 1 to me, I will become one less than 100. Who am I ?

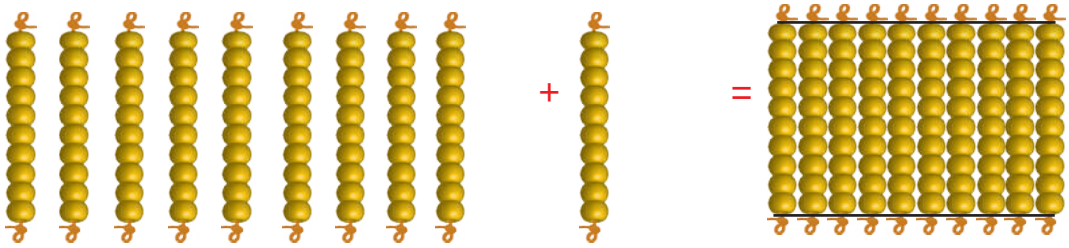
Number sequence upto 1000

Numbers 0, 1, 2, 3, 4, 5, 6, 7, 8, 9 are one digit numbers.
Numbers from 10 to 99 are called two digit numbers.
Number 99 is the biggest two digit number.



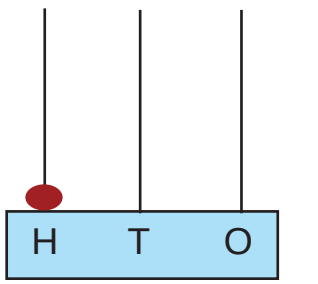
Tens	Ones
9	9

Adding 1 more bead to 99 beads, we get one hundred.



9 tens + 1 ten = 1 hundred

Shall we represent the number 100 in abacus?



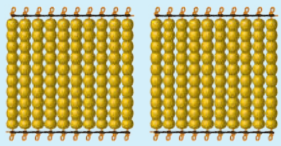
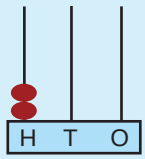
No beads in the ones place shows 0 Ones.
No beads in the tens place shows 0 Tens.
1 bead in the hundreds place shows 1 Hundred.

Hundreds	Tens	Ones
1	0	0

Counting in Hundreds

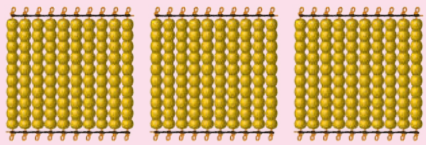
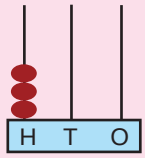
Representing numbers from 200 – 1000

Place value	Number name

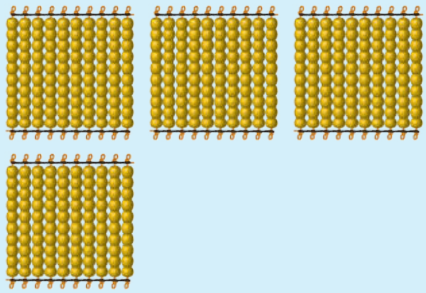
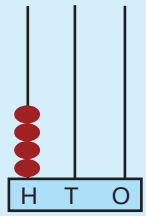
H	T	O
2	0	0

Two Hundred

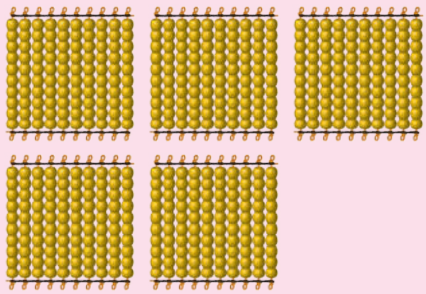
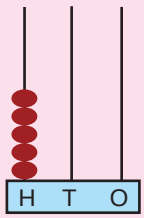
H	T	O
3	0	0

Three Hundred

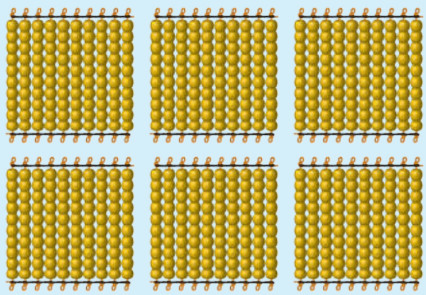
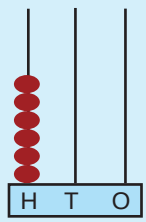
H	T	O
4	0	0

Four Hundred

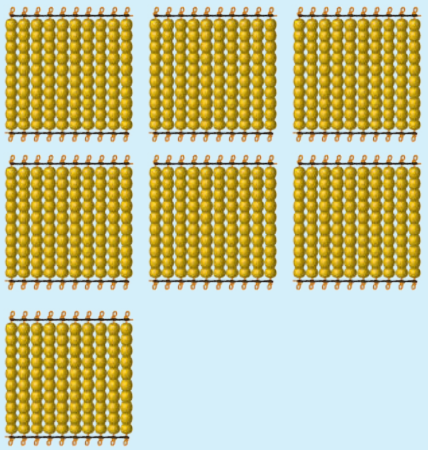
H	T	O
5	0	0

Five Hundred

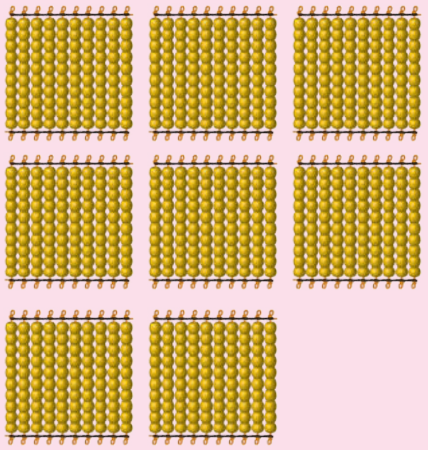
H	T	O
6	0	0

Six Hundred



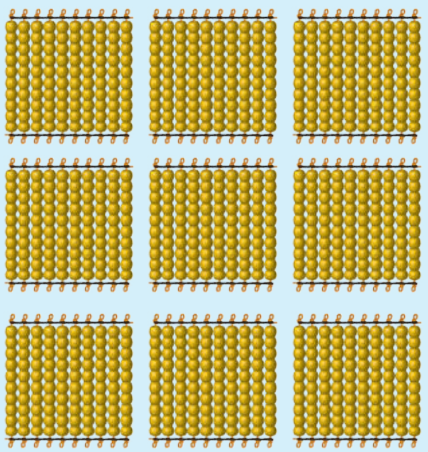
H	T	O
7	0	0

Seven Hundred



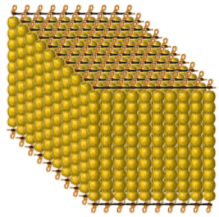
H	T	O
8	0	0

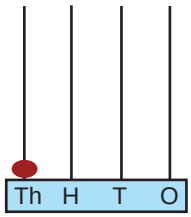
Eight Hundred



H	T	O
9	0	0

Nine Hundred



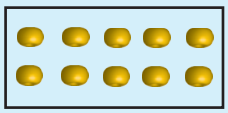


Th	H	T	O
1	0	0	0

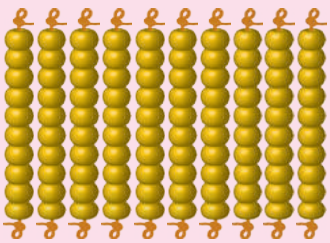
Ten hundred
or
One Thousand

Thousand comes after
Hundreds place

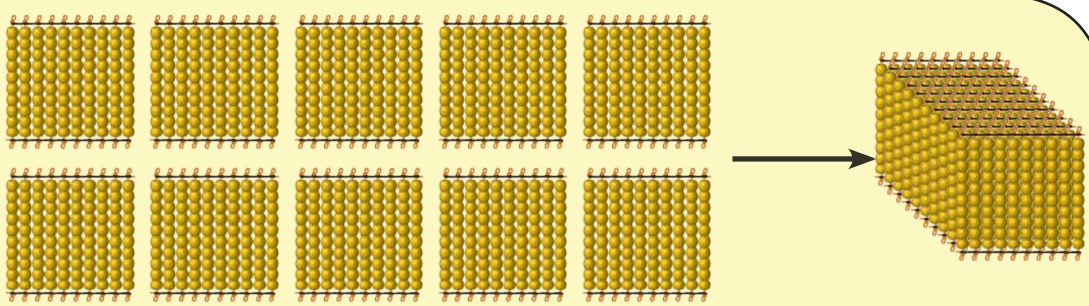
Remember



10 Ones make 1 Ten



10 Tens make 1 Hundred



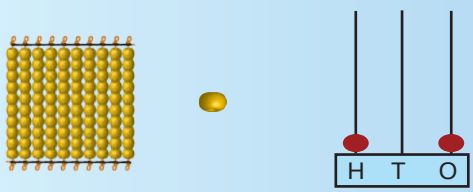
10 Hundreds make 1 Thousand

10 Ones = 1 Ten | 10 Tens = 1 Hundred | 10 Hundreds = 1 Thousand

MATHEMATICS

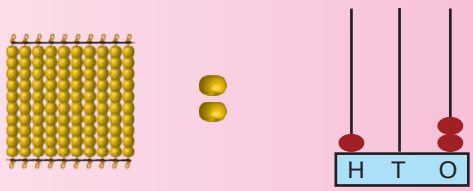
Forming Numbers from 101 – 110

Place value	Number name



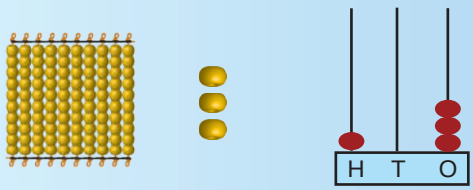
H	T	O
1	0	1

One hundred and one



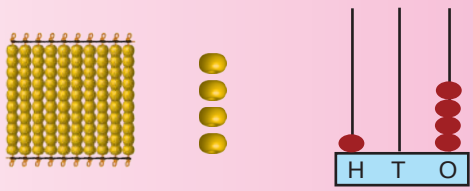
H	T	O
1	0	2

One hundred and two



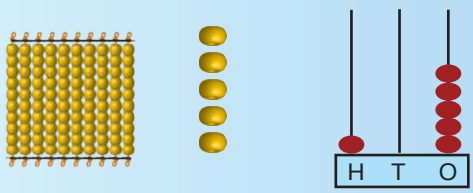
H	T	O
1	0	3

One hundred and three



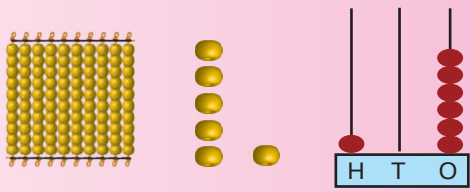
H	T	O
1	0	4

One hundred and four



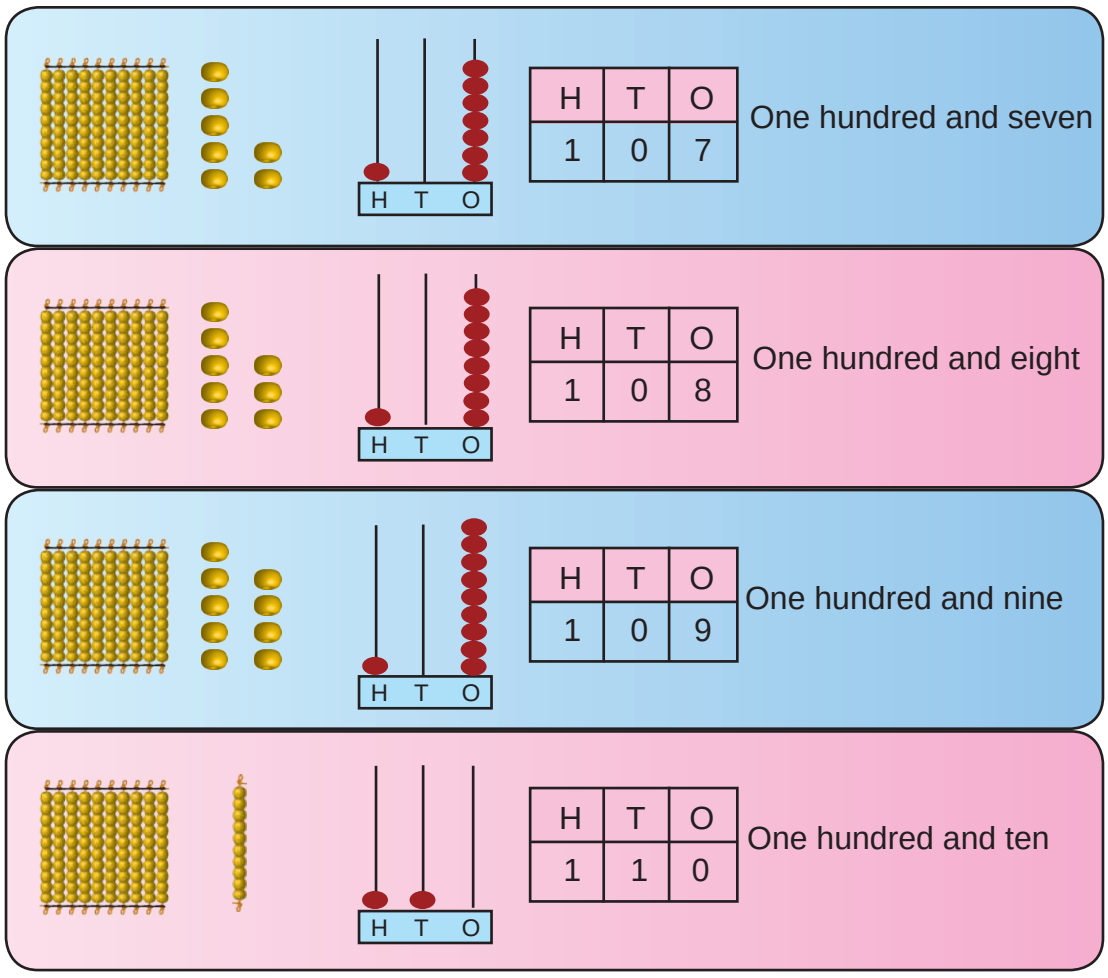
H	T	O
1	0	5

One hundred and five



H	T	O
1	0	6

One hundred and six



H	T	O
1	0	7

One hundred and seven

H	T	O
1	0	8

One hundred and eight

H	T	O
1	0	9

One hundred and nine

H	T	O
1	1	0

One hundred and ten

Note to the teacher

Use beads and spike abacus to teach numbers from 111 – 1000

Practise the students to read and write the numbers from 101 to 1000 as given in the next page.

Read the numbers from 101 – 200.

101	111	121	131	141	151	161	171	181	191
102	112	122	132	142	152	162	172	182	192
103	113	123	133	143	153	163	173	183	193
104	114	124	134	144	154	164	174	184	194
105	115	125	135	145	155	165	175	185	195
106	116	126	136	146	156	166	176	186	196
107	117	127	137	147	157	167	177	187	197
108	118	128	138	148	158	168	178	188	198
109	119	129	139	149	159	169	179	189	199
110	120	130	140	150	160	170	180	190	200

Write the missing numbers from 201 – 300.

201	211						271		
202									
					253				
			235						
				247					
						269			
210		230						290	300

Number names

The numeral 28 is read as twenty eight.
Similarly 128 is read as one hundred and twenty eight.

Now write the number names

Number	Number Names
137	One hundred and thirty seven
172	
225	
248	
301	
346	
439	
482	
535	Five hundred and thirty five
591	
648	
672	
720	
776	
800	
875	
909	Nine hundred and nine
992	
999	
1000	One thousand

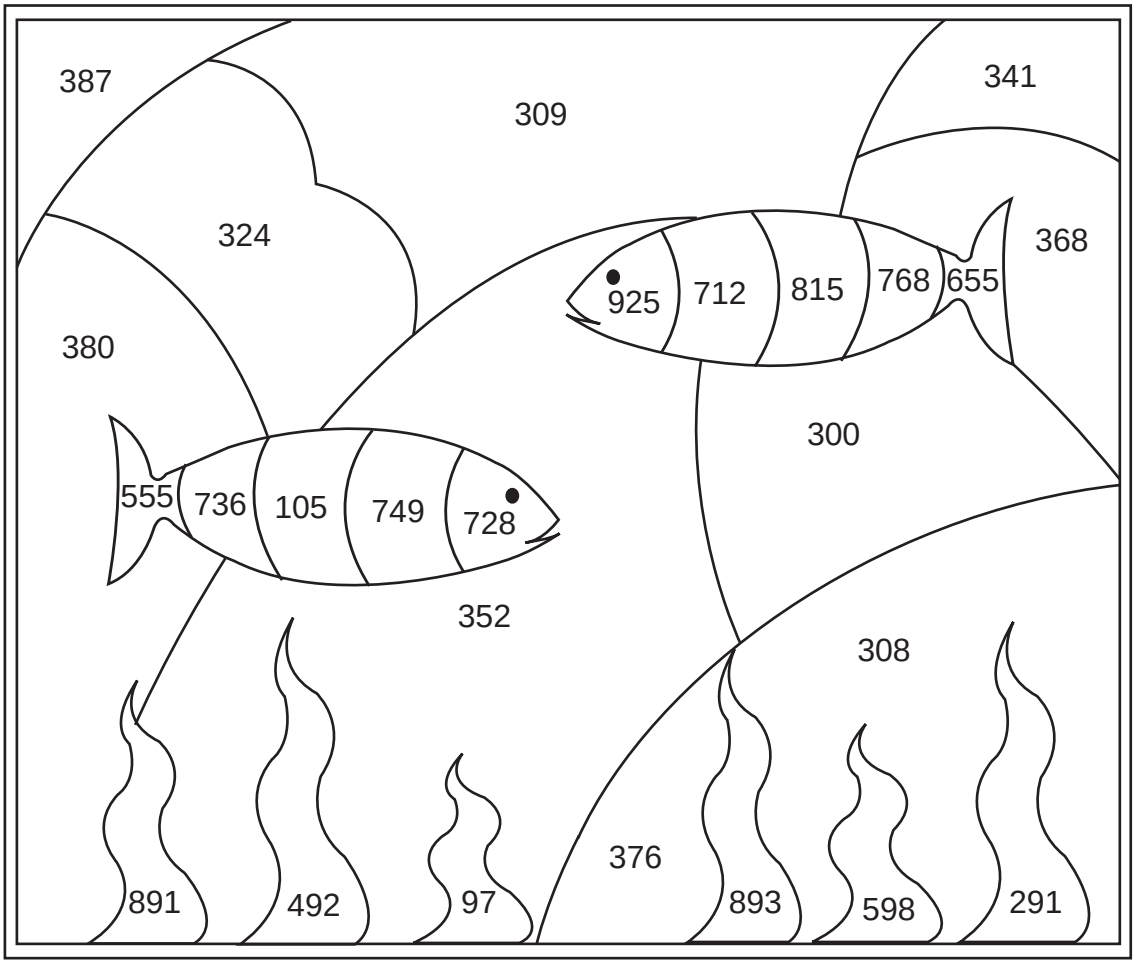
Note to the teacher

Practise the students to write the number names upto 1000 in their note book.

ACTIVITY 1

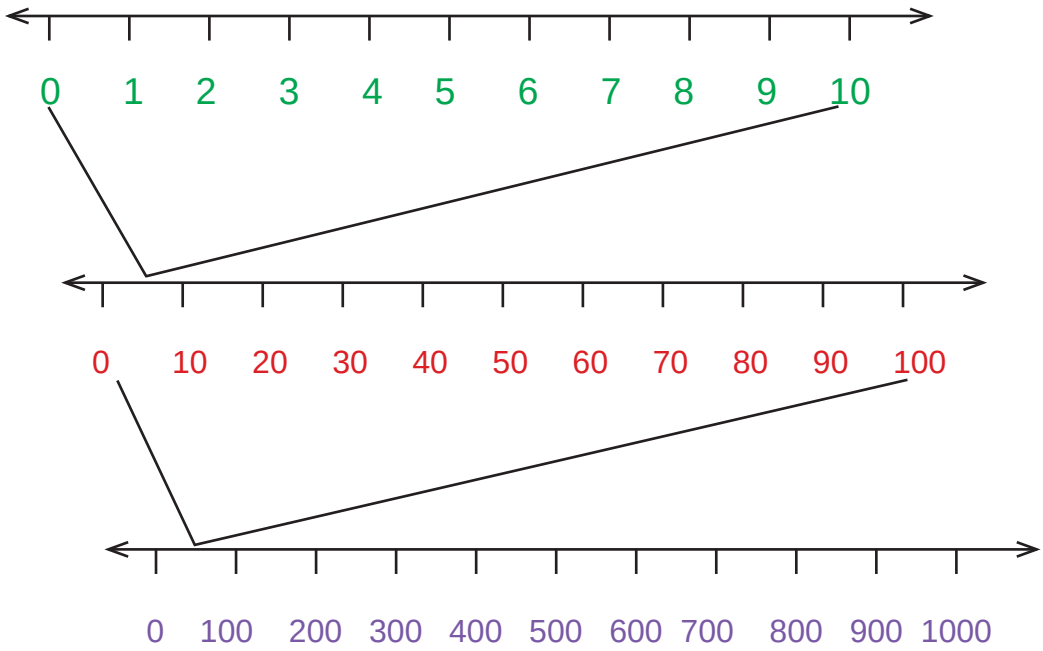
Colour the numbers with

- 3 in the hundreds place by blue.
- 9 in the tens place by green.
- 5 in the ones place by orange.
- 7 in the hundreds place by red.

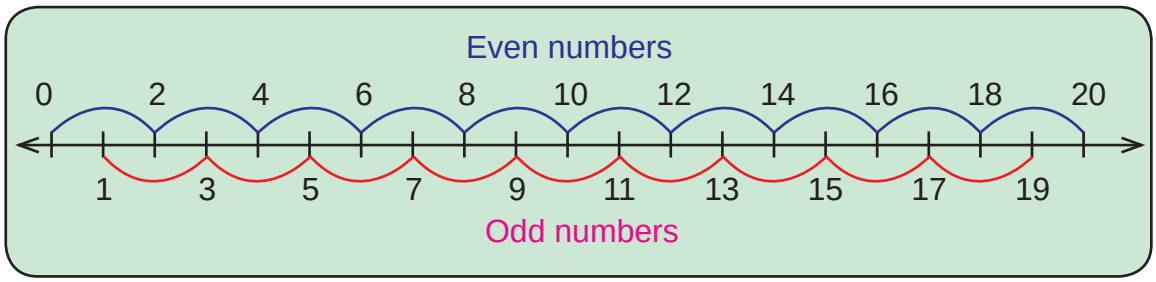


Number line

We can mark the numbers in a straight line at equal distances. Number line starts at 0 and goes on endlessly.



Even numbers and Odd numbers



The numbers 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30..... are even numbers.

The numbers 1, 3, 5, 7, 9, 11, 13, 15, 17, 19, 21, 23, 25, 27, 29..... are odd numbers.

Note that even numbers end with 0, 2, 4, 6, 8 and odd numbers end with 1, 3, 5, 7 and 9.

In a class if there are 24 students then we can group them into two equal groups.

24 = 12 + 12

Even numbers form two equal groups.

In a class if there are 17 students we cannot group them into two equal groups.

17 = 8 + 8 and balance is 1

Odd numbers do not form two equal groups.

Try it !

Try the above activity for other odd and even numbers.

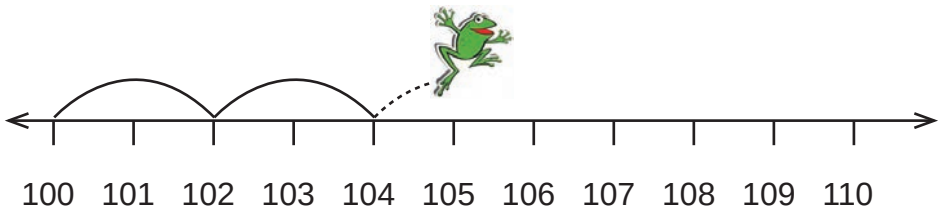
After every odd number there is an even number and after every even number there is an odd number.

Exercise 1

Circle the even numbers	Circle the odd numbers
47, 52, 69, 70, 84	32, 41, 50, 67, 93
132, 145, 149, 174, 199	105, 116, 125, 142, 151
216, 400, 401, 432, 455	217, 232, 245, 342, 357
522, 564, 575, 587, 600	535, 540, 557, 561, 592
921, 926, 932, 938, 947	830, 841, 853, 862, 899

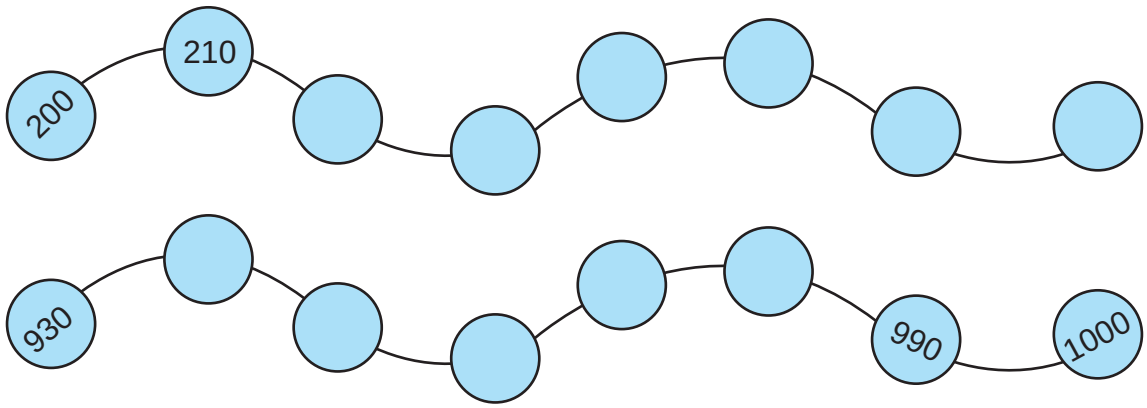
Skip counting in three digit numbers

A frog jumps on the number line in 2s.

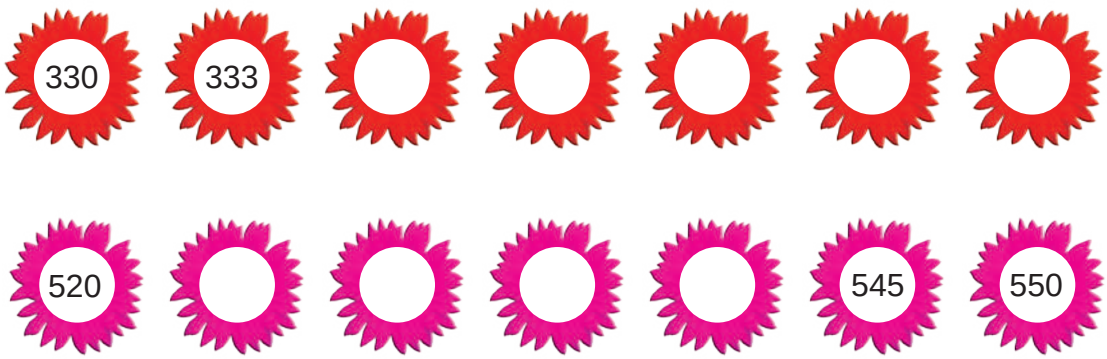


Help the frog to continue: 100, 102, 104, _____, _____, _____, _____,

Count in 10s and complete the blanks :



Observe the patterns and complete the blanks:



Comparison of numbers

Anitha has 2 chocolates and her sister Vanitha has 6 chocolates.

Who has more?

They compare as follows:

2 comes before 6 6 comes after 2

In a number line,

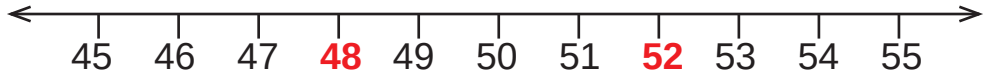
- Number that comes before is smaller.
- Number that comes after is greater.

6 is greater than 2

It is written as 6 > 2

So Vanitha has more chocolates.

If Abinaya has collected 48 stamps and Gayathiri has collected 52 stamps who has collected less number of stamps?



In the number line, 48 comes before 52.

Hence 48 is less than 52.

It is written as 48 < 52.

So Abinaya has collected less stamps.

Balu has 12 sketch pens. Mani also has 12 sketch pens. Who has more and who has less?

While comparing, they have **equal** sketch pens.

It is written as 12 = 12.

Comparison of numbers with different digits.

The number which has more digits is a greater number.

Note:
All one digit numbers are smaller than any two digit number.
All two digit numbers are smaller than any three digit number.

Compare 98 and 112.

H	T	O
	9	8

H	T	O
1	1	2

The number 112 has **3** digits and 98 has only **2** digits.

So the number 112 is greater than 98.

we write 112 > 98.

Compare the following sets of numbers and circle the smaller number.

87, 145	191, 32
123, 46	29, 165

Comparison of numbers with equal digits :

If the number of digits are equal, compare the digit in the hundreds place. The number which has a greater digit in the hundreds place is greater.

Compare 123 and 200

H	T	O
1	2	3

H	T	O
2	0	0

2 is greater than 1, so the number 200 is greater than 123.

We write 200 > 123. We can also say 123 < 200.

If the digits in the hundreds place are same, compare the digits in the tens place. The number which has the greater digit in the tens place is the greater number.

Compare 156 and 131

H	T	O
1	5	6

H	T	O
1	3	1

The digits in the hundreds place are the same. Compare the digits in the tens place.

5 is greater than 3. So the number 156 is greater than 131.

We write 156 > 131. We can also say 131 < 156.

If the digits in the hundreds and the tens place are same, compare the digits in the ones places. The number which has the greater digit in the ones place is the greater number.

Compare 165 and 168

H	T	O
1	6	5

H	T	O
1	6	8

The digits in the hundreds place and tens place are the same. Compare the digits in the ones place.

8 is greater than 5. So the number 168 is greater than 165.

We write 168 > 165. We can also say 165 < 168.

Compare 326 and 326

H	T	O
3	2	6

H	T	O
3	2	6

The digits in the hundreds place, tens place and ones place are same.

So, 326 = 326

Compare the numbers in each of the following sets and circle the smaller number.

173, 165

592, 595

335, 383

440, 404

Exercise 2

Write < , > or = in the boxes provided:

312	☐	483	761	☐	683
419	☐	547	416	☐	419
408	☐	308	394	☐	387
387	☐	487	782	☐	782
512	☐	512	983	☐	990

Order of numbers

When we write the numbers from smaller to greater, we call it ascending order. When we write numbers from greater to smaller, we call it descending order.

We arrange the numbers **144, 148** and **145** in ascending order and in descending order.

Look at the number line :

144 is smaller than 145 and

145 is smaller than 148.

Ascending order:

144 < 145 < 148

144, 145, 148

Descending order:

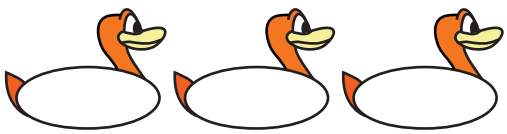
148 > 145 > 144

148, 145, 144

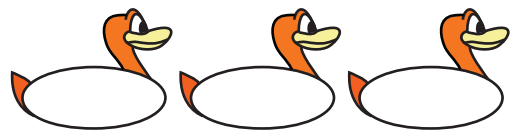
Exercise 3

1. Arrange the following numbers in ascending order :

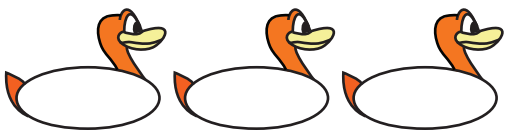
(a) 253, 248, 384



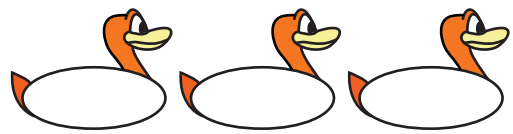
(b) 492, 499, 493



(c) 569, 539, 589

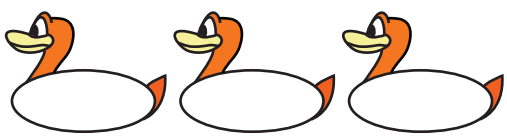


(d) 795, 759, 756

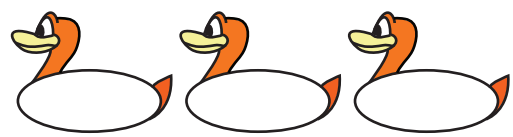


2. Arrange the following numbers in descending order :

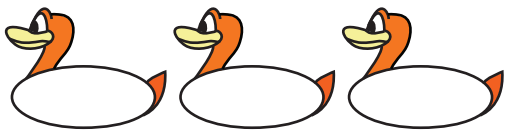
(a) 205, 210, 290



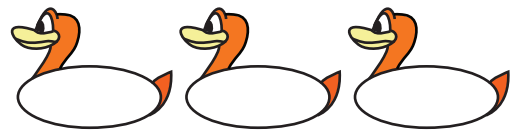
(b) 212, 503, 369



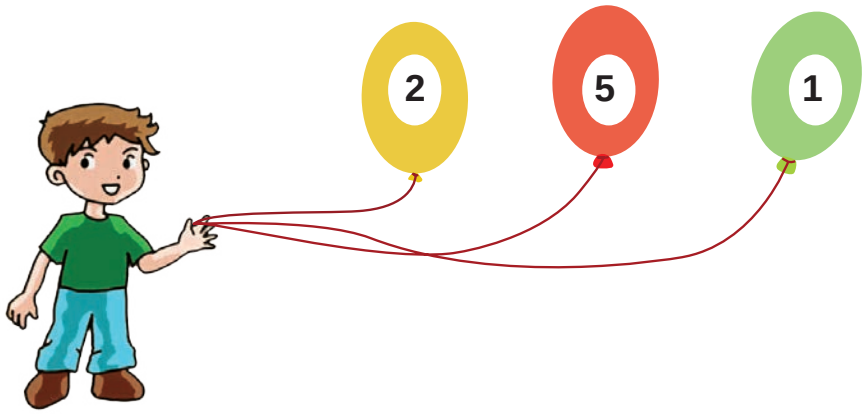
(c) 323, 303, 332



(d) 405, 407, 437

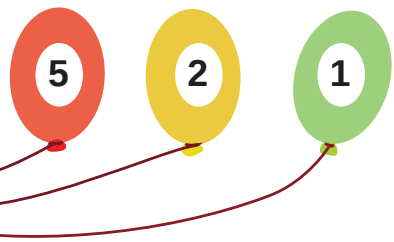


Form the greatest and the smallest numbers using the given digits

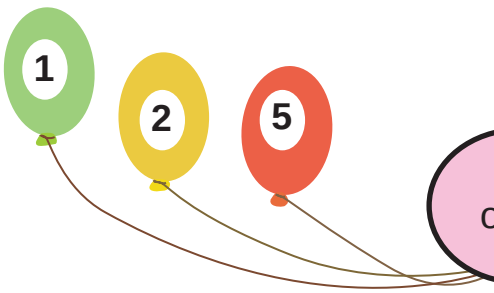


How can we form the greatest number from these given digits?

Arrange the digits in descending order to form the greatest number.



Greatest number : 521



Arrange the digits in ascending order to form the smallest number.

Smallest number : 125

Let us see another example :

1, 0, 3 are the given numbers.

By using these numbers shall
we form the greatest
and the smallest 3 - digit number?

The greatest number is 310.

The smallest number is 013.

But, 013 is a two digit number.

Oh! sorry!
What to do ?

Numbers should not begin with zero.

Yes I got it.
So the smallest number is 103.

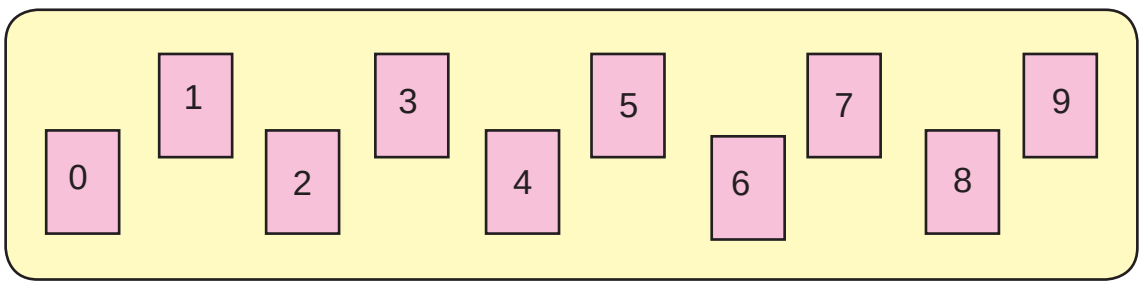
Exercise 4

Form the greatest and the smallest 3 digit number.

Digits	Greatest number	Smallest number
5 7 4		
3 6 9		
8 0 1		

ACTIVITY 2

- Make 10 number cards from 0 to 9 .
- Put the cards downward.
- Turn any three cards and make all possible three digit numbers.
- Ask the students to form the greatest number.
- Ask the students to form the smallest number.



Date:.....

1) Fill in the missing numbers.

551		561							596
552									
553									
			570						600

MATHEMATICS

2) Write the number names.

3. Fill in the blanks.

a) 266 has _____ Hundreds _____ Tens _____ Ones

b) 405 has _____ Hundreds _____ Tens _____ Ones

c) 574 has _____ Hundreds _____ Tens _____ Ones

d) 896 has _____ Hundreds _____ Tens _____ Ones

e) 999 has _____ Hundreds _____ Tens _____ Ones

4. Put a box around the correct number.

a) 3 Hundreds 9 Tens 0 Ones — 309, 390, 903

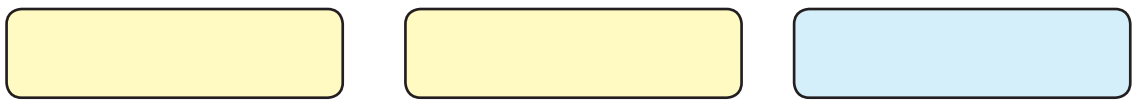
b) 5 Hundreds 2 Tens 2 Ones — 522, 225, 520

c) 6 Hundreds 5 Tens 1 Ones — 156, 651, 516

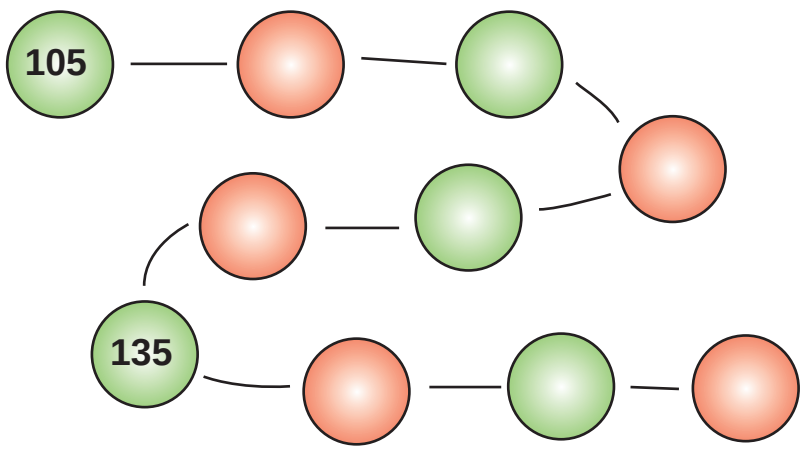
d) 9 Hundreds 0 Tens 9 Ones — 990, 909, 900

5. Write the place value for the circled digits.

a) (7) 2 5 b) 9 (4) 7 c) 1 4 (5)



6. Skip count by fives.



7. Find out the odd and the even numbers.

133, 146, 327, 548, 575, 932, 601, 99, 74, 500.

Odd numbers :

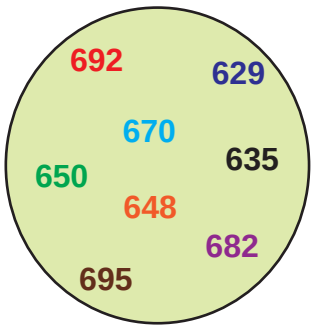
Even numbers :

8. Compare the numbers and write <, >, or = in the box.

118		340
225		176
347		325

875		600
500		500
925		928

9. Write the numbers in ascending and descending order.



Ascending order :

Descending order :

10. Using the numerals 7, 4, and 5, write the greatest and the smallest 3 digit number.

Greatest number :

Smallest number :

Comments

Teacher's signature

4 ADDITION

Recall

Complete the table:

+	11	12	13	14	15	16	17	18	19	20
0										
1										
2										
3			16							
4										
5										
6										
7						23				
8										
9										
10										30

Fill in the blanks using the above table :

3 + 15 = ☐ ☐ + 14 = 20

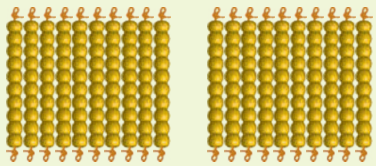
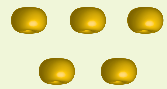
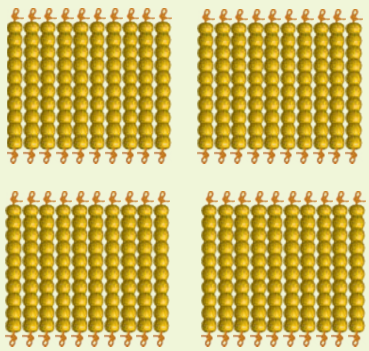
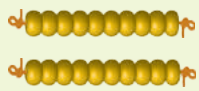
4 + 19 = ☐ 13 + ☐ = 22

16 + 3 = ☐ ☐ + ☐ = 28

Addition of three digit numbers (without regrouping)

Add :

$$\begin{array}{r} 215 \\ +\ 423 \\ \hline \\ \hline \end{array}$$

H	T	O
		
2	1	5
		
4	2	3

Step 1 : Add ones:

5 + 3 = 8

H	T	O
2	1	5
4	2	3
		8

We write 8 in ones place.

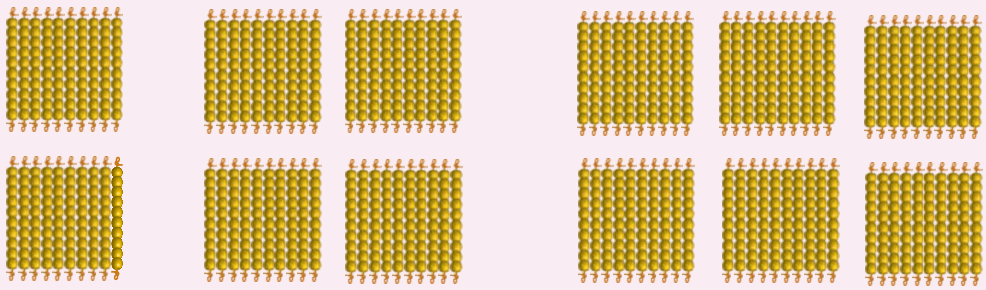
Step 2 : Add tens :

1 + 2 = 3

H	T	O
2	1	5
4	2	3
	3	8

Write 3 in tens place.

Step 3 : Add hundreds :



2 + 4 = 6

Write 6 in hundreds place

H	T	O
2	1	5
4	2	3
6	3	8

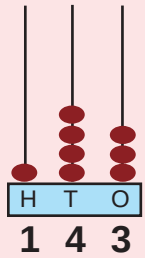
```
  2 1 5
+ 4 2 3
-------
  6 3 8
-------
```

Keep in mind:
In addition, first we add ones then tens and hundreds in order.

Addition through spike abacus.

Add

$$\begin{array}{r} 143 \\ +\ 512 \\ \hline \\ \hline \end{array}$$

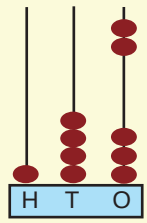


Now we have to add 512 with 143.

Step 1 :

Add ones:

	H	T	O
	1	4	3
+	5	1	2
			5



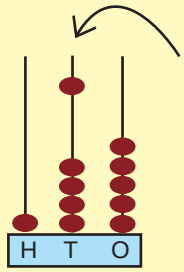
Put **2** beads in ones place

3 + 2 = 5

Step 2 :

Add tens

	H	T	O
	1	4	3
+	5	1	2
		5	5



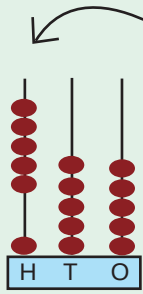
Put **1** bead in tens place

4 + 1 = 5

Step 3 :

Add hundreds :

	H	T	O
	1	4	3
+	5	1	2
	6	5	5



Put 5 beads in hundreds place

1 + 5 = 6

So the sum is 655

Example

Add:

	5	2	2
+	4	5	3

Add ones

Add tens

Step 1 :

	H	T	O
	5	2	2
+	4	5	3
			5

Step 2 :

	H	T	O
	5	2	2
+	4	5	3
		7	5

MATHEMATICS

Step 3 :

Add hundreds

	H	T	O
	5	2	2
+	4	5	3
	9	7	5

$$\begin{array}{r} 522 \\ +\,453 \\ \hline 975 \end{array}$$

Exercise 1

MATHEMATICS

Add the following numbers :

a)
$$\begin{array}{r} 543 \\ +\,421 \\ \hline \end{array}$$

b)
$$\begin{array}{r} 238 \\ +\,631 \\ \hline \end{array}$$

c)
$$\begin{array}{r} 522 \\ +\,426 \\ \hline \end{array}$$

d)
$$\begin{array}{r} 101 \\ 121 \\ +\,703 \\ \hline \end{array}$$

e)
$$\begin{array}{r} 630 \\ 254 \\ +\,113 \\ \hline \end{array}$$

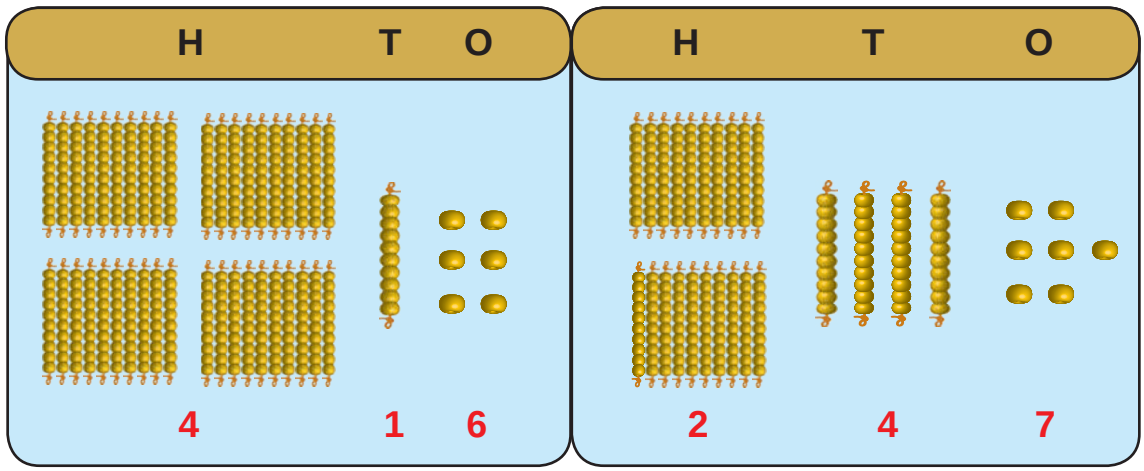
f)
$$\begin{array}{r} 234 \\ 103 \\ +\,311 \\ \hline \end{array}$$

Addition of three digit numbers (with regrouping)

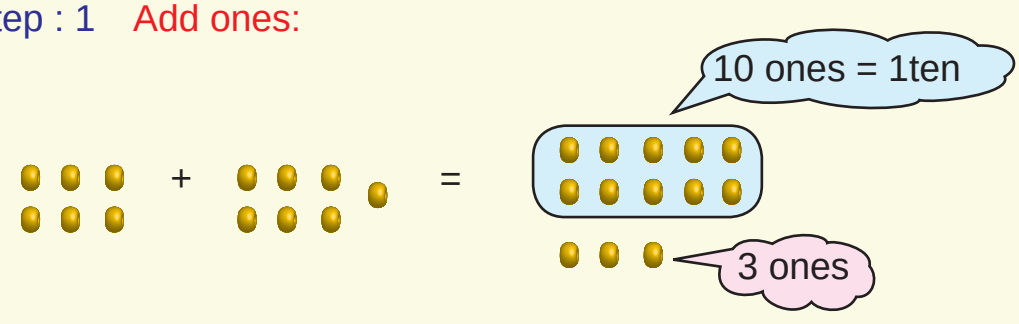
Example

Add :

$$\begin{array}{r} 416 \\ +\ 247 \\ \hline \\ \hline \end{array}$$



Step : 1 Add ones:



13 ones = 1 ten + 3 ones

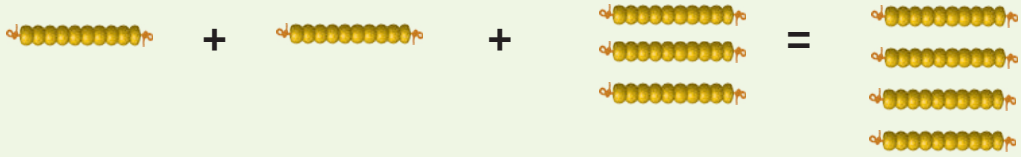
So, we put 3 in ones place and carry over 1 ten to tens place.

H	T	O
	1	
4	1	6
+ 2	4	7
		3

6 + 7 = 13 ones

13 ones = 1 ten + 3 ones

Step : 2 Add tens:



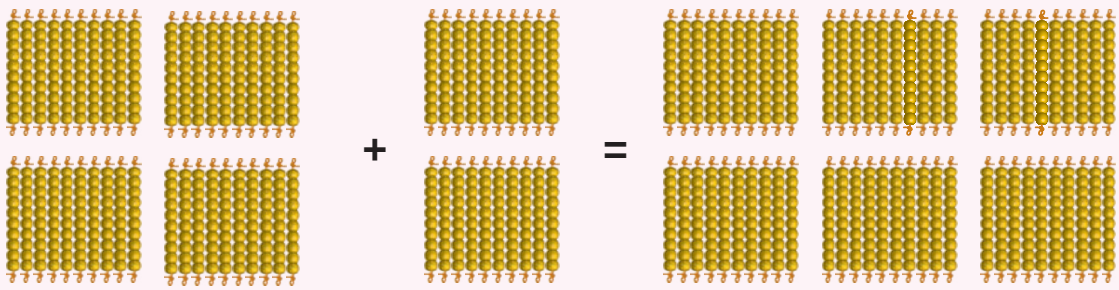
1 + 1 + 4 = 6

1 1 4 6

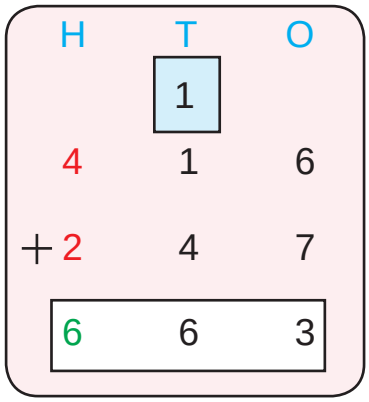
H	T	O
	1	
4	1	6
+ 2	4	7
	6	3

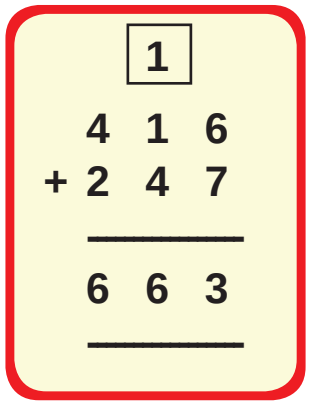
1 + 1 + 4 = 6 tens

Step : 3 Add hundreds:



4 + 2 = 6



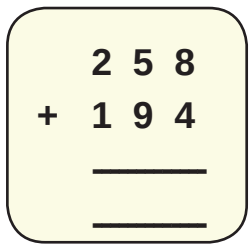


Note to the teacher

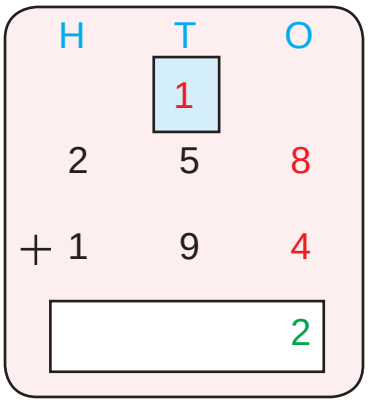
Demonstrate addition with regrouping through Spike abacus.

Example

Add:



Step 1 : Add ones :



8 + 4 = 12 ones,

Regroup 12 ones = 1 ten + 2 ones

Put 2 in ones place and carry over

1 to tens place.

Step 2 : Add Tens :

H	T	O
1	1	
2	5	8
+ 1	9	4
	5	2

1 + 5 + 9 = 15 tens ,

Regroup 15 tens = 1 hundred + 5 tens

Put 5 in tens place and carry over

1 to hundreds place.

Step 3 : Add Hundreds :

H	T	O
1	1	
2	5	8
+ 1	9	4
4	5	2

1 + 2 + 1 = 4 hundreds,

Put 4 in hundreds place.

$$\begin{array}{r} \overset{1}{2}\ \overset{1}{5}\ 8 \\ +\ 1\ 9\ 4 \\ \hline 4\ 5\ 2 \\ \hline \end{array}$$

MATHEMATICS

Exercise 2

Add the following numbers :

a) $\begin{array}{r} 3\ 5\ 8 \\ +\ 4\ 9\ 0 \\ \hline \end{array}$

b) $\begin{array}{r} 3\ 3\ 9 \\ +\ 2\ 7\ 2 \\ \hline \end{array}$

c) $\begin{array}{r} 2\ 8\ 5 \\ +\ 5\ 4\ 2 \\ \hline \end{array}$

d) $\begin{array}{r} 5\ 9\ 8 \\ +\ 2\ 0\ 9 \\ \hline \end{array}$

e) $\begin{array}{r} 4\ 5\ 5 \\ +\ 5\ 4\ 5 \\ \hline \end{array}$

ACTIVITY 1

INDIAN MATHEMATICIAN

Srinivasa Ramanujan
1887 - 1920

Materials required:

0 to 4 number cards (8 sets).

Step 1 :

Form small groups with less number of students.

Step 2 :

Give 2 sets of number cards to each group.

Step 3 :

Using the number cards, form two 3-digit numbers and add them.

Step 4 :

The group which worked out more problems correctly is the winner group. The teacher can award the winner group as

Ramanujan group

Note to the teacher

Tell the interesting facts about great mathematician Ramanujan.

Statement problems

Exercise 3

1. In a parking place there are 275 scooters and 112 cars.

   How many vehicles are there totally ?

Scooters = 275

Cars = 112

Total vehicles = ☐

2. A fruit seller sold 195 apples, 287 mangoes and 35 bananas.

   How many fruits did he sell?

Apples = 195

Mangoes = 287

Bananas = 35

Total fruits Sold = ☐

3. In a train, a compartment is carrying 132 people. Another compartment is carrying 129 people. How many people are there in both the compartments?

First compartment =

Second compartment =

Total number of people = ☐

4. In a school 456 students like to play cricket and 395 students like to play foot ball. How many students altogether like to play in the school?

Cricket =

Football =

Total Students =

5. In a library there are 427 story books, 152 college books and 133 engineering books. How many books are there totally?

Story books =

College books =

Engineering books =

Total books =

Exercise 4

Do the statement problems in your notebook.

1. A tailor bought 125 white buttons and 165 red buttons. How many buttons did the tailor buy?

2. A book seller supplied 789 Tamil books and 149 English books to a library. How many books did he supply to the library?

3. In a grove there are 279 coconut trees and 387 mango trees. How many trees are there in the grove?

Date:.....

MATHEMATICS

1) Add the following:

a)
$$\begin{array}{r} 3\ 1\ 2 \\ +\ 4\ 6\ 5 \\ \hline \square \end{array}$$

b)
$$\begin{array}{r} 3\ 3\ 4 \\ +\ 4\ 3\ 2 \\ \hline \square \end{array}$$

c)
$$\begin{array}{r} 5\ 7\ 6 \\ +\ 4\ 0\ 3 \\ \hline \square \end{array}$$

d)
$$\begin{array}{r} 5\ 4\ 8 \\ +\ 3\ 2\ 4 \\ \hline \square \end{array}$$

e)
$$\begin{array}{r} 6\ 0\ 3 \\ +\ 1\ 5\ 8 \\ \hline \square \end{array}$$

f)
$$\begin{array}{r} 7\ 8\ 5 \\ +\ 1\ 2\ 9 \\ \hline \square \end{array}$$

2) Express the following in numerals and add them.

a) One hundred and eighty,
Four hundred and sixty five.

$$\begin{array}{r} 1\ 8\ 0 \\ +\ 4\ 6\ 5 \\ \hline \square \end{array}$$

b) Four hundred and ten,
Two hundred and ninety five.

$$+ \quad \square$$

c) Five hundred and ninety seven,
Three hundred and thirty two.

$$+ \quad \square$$

d) Two hundred and seventy nine,
Six hundred and forty one.

+

e) Three hundred and eighty two,
Two hundred and ninety one.

+

3) Answer the following statement problems.

a) In a shop 101 dresses were sold on Monday and 221 dresses were sold on Tuesday. How many dresses were sold in two days?

b) In a village, there are 272 men, 231 women and 211 children. What is the total population of the village?

c) The Principal of a school gave 111 medals to those who had done well in sports and 99 medals to those who had done well in exams. Altogether, how many medals did the Principal give?

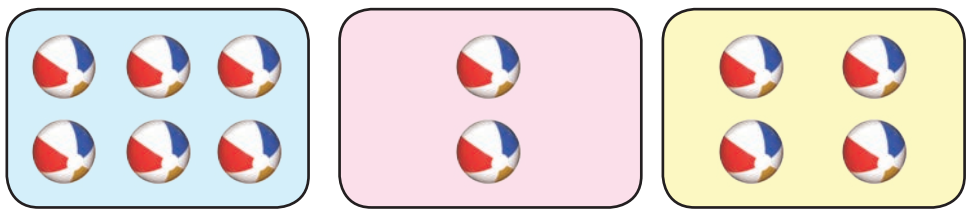
Comments

Teacher's signature

5 SUBTRACTION

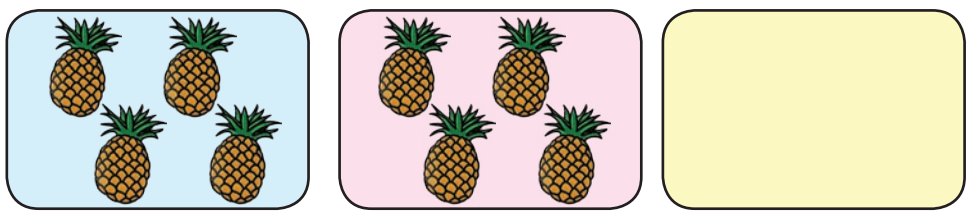
Recall

In the previous class, we have studied about the subtraction.



Balls in all | Take away | Balls left

6 – 2 = ☐



Pine apples in all | Take away | Pine apples left

4 – 4 = ☐

Flowers in all | Take away | Flowers left

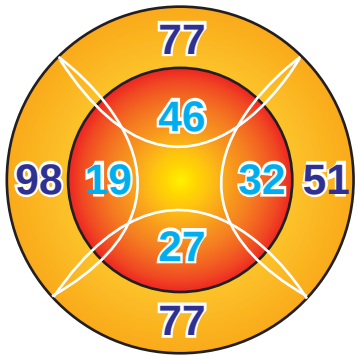
5 – 0 = ☐

ACTIVITY 1

Colour the subtraction problems that give you the number in the first column.

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

ACTIVITY 2



Frame subtraction problems from the numbers .

Example

$$\begin{array}{r} 5\ 1 \\ -\ 3\ 2 \\ \hline 1\ 9 \end{array}$$

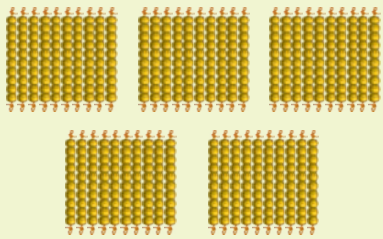
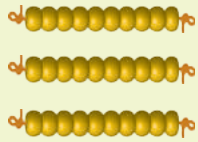
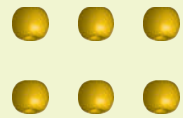
Kiruba framed the above problem and got the answer correctly.

How many problems can you make? Do it in your notebook !

Subtraction of 3 digit numbers (without regrouping)

Subtract :

$$\begin{array}{r} 536 \\ -\ 321 \\ \hline \\ \hline \end{array}$$

H	T	O
		
5	3	6

Step 1 : Subtract ones :

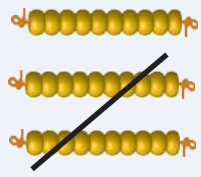
H	T	O
5	3	6
− 3	2	1
		5

6 ones – 1 ones = 5 ones

Put 5 in ones place

Step 2 : Subtract tens :

H	T	O
5	3	6
− 3	2	1
	1	5

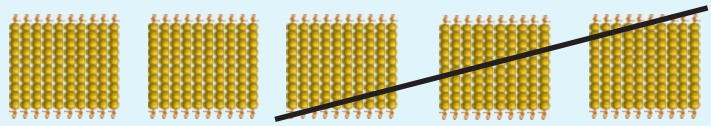


3 tens – 2 tens = 1 ten

Put 1 in tens place.

Step 3 : Subtract hundreds :

H	T	O
5	3	6
– 3	2	1
2	1	5



5 hundreds – 3 hundreds = 2 hundreds

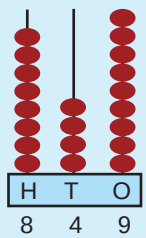
Put 2 in hundreds place

```
   5  3  6
–  3  2  1
  ----------
   2  1  5
  ----------
```

Keep in mind :
In subtraction, first we subtract ones, then tens and hundreds in order.

Subtraction through spike abacus :

H	T	O
8	4	9
– 5	2	4

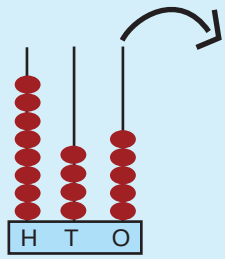


MATHEMATICS

Step 1 :

Subtract ones:

	H	T	O
	8	4	9
–	5	2	4
			5



We take 4 beads from ones place. 5 beads remain in ones place.

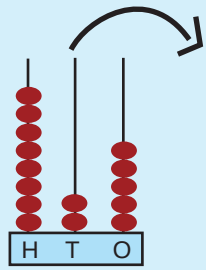
9 ones – 4 ones = 5 ones.

Write 5 in ones place.

Step 2 :

Subtract tens:

	H	T	O
	8	4	9
–	5	2	4
		2	5



Take 2 beads from tens place. 2 beads remain in tens place.

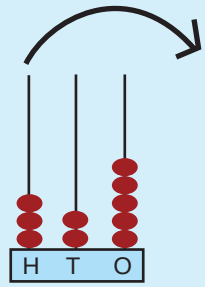
4 tens – 2 tens = 2 tens .

write 2 in tens place.

Step 3 :

Subtract hundreds:

	H	T	O
	8	4	9
–	5	2	4
	3	2	5



Take 5 beads from hundreds place. 3 beads remain in hundreds place.

8 hundreds – 5 hundreds = 3 hundreds.

Write 3 in hundreds place.

Now the abacus represents 325

Example

Subtract:

	H	T	O
	4	5	7
–	2	4	3

Step 1 : Subtract ones

	H	T	O
	4	5	7
–	2	4	3
			4

Step 2 : Subtract tens

	H	T	O
	4	5	7
–	2	4	3
		1	4

Step 3 : Subtract hundreds

	H	T	O
	4	5	7
–	2	4	3
	2	1	4

```
  4  5  7
– 2  4  3
----------
  2  1  4
----------
```

MATHEMATICS

Exercise 1

Subtract the following numbers:

a)
$$\begin{array}{r} 257 \\ -\ 143 \\ \hline \end{array}$$

b)
$$\begin{array}{r} 454 \\ -\ 232 \\ \hline \end{array}$$

c)
$$\begin{array}{r} 591 \\ -\ 360 \\ \hline \end{array}$$

d)
$$\begin{array}{r} 738 \\ -\ 502 \\ \hline \end{array}$$

e)
$$\begin{array}{r} 869 \\ -\ 735 \\ \hline \end{array}$$

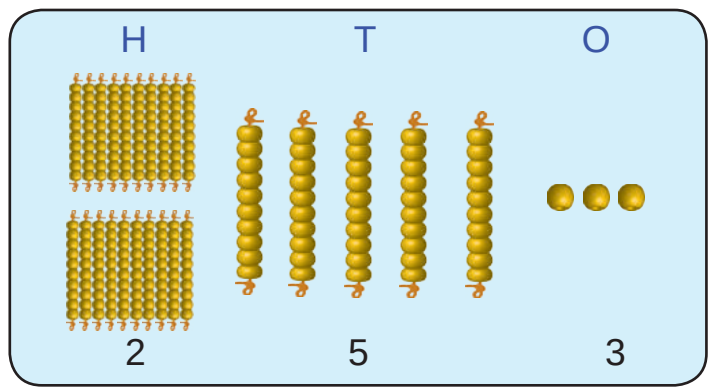
f)
$$\begin{array}{r} 948 \\ -\ 437 \\ \hline \end{array}$$

Subtraction of three digit numbers (with regrouping)

Example

Subtract :

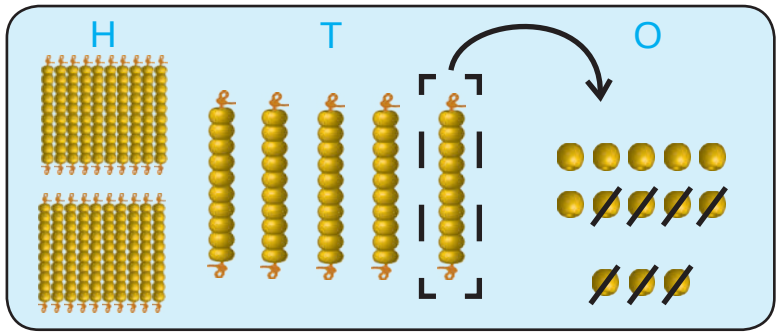
$$\begin{array}{r} 253 \\ -\ 127 \\ \hline \end{array}$$



Step 1 :

Subtract ones

H	T	O
	4	13
2	~~5~~	~~3~~
– 1	2	7
		6



We cannot subtract 7 ones from 3 ones. From 5 tens we take 1 ten and regroup it as 10 ones and add with 3 ones.

Subtract 13 ones – 7 ones = 6 ones

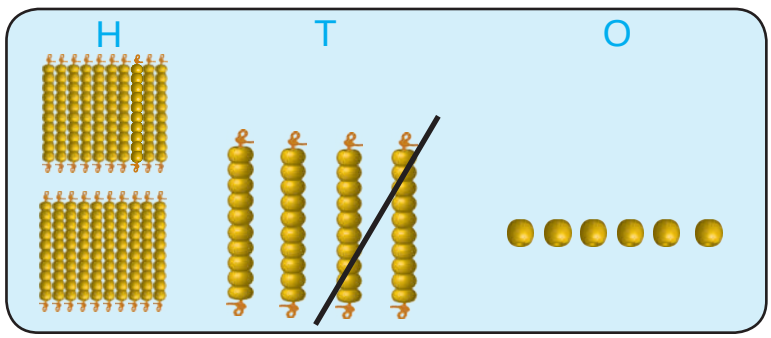
13 – 7 = 6

Write 6 in ones place.

Step 2 :

Subtract tens

H	T	O
	4	13
2	~~5~~	~~3~~
– 1	2	7
	2	6



Subtract 4 tens – 2 tens = 2 tens

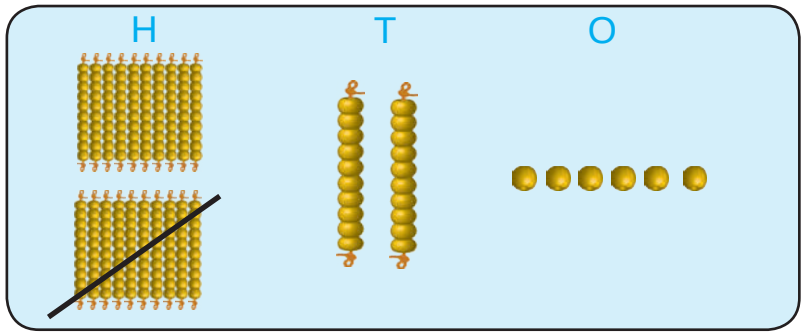
4 – 2 = 2

Write 2 in tens place

Step 3 :

Subtract hundreds

H	T	O
	4	13
2	~~5~~	~~3~~
– 1	2	7
1	2	6



Answer is 126

Subtract 2 hundreds – 1 hundred

2 – 1 = 1

Write 1 in hundreds place.

Example

Subtract

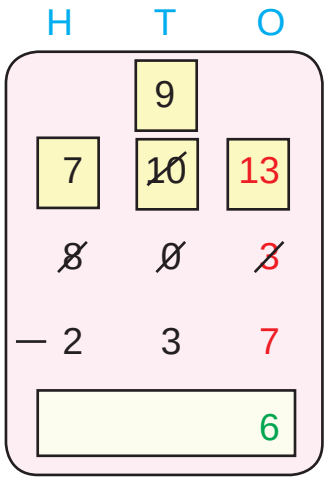
8	0	3
– 2	3	7

Step 1 :

Subtract ones.

7	10	
~~8~~	~~0~~	3
– 2	3	7

We cannot subtract 7 from 3. So regroup tens. There is no tens. So regroup 1 hundred into 10 tens.



Take 1 ten and regroup it as 10 ones and add with 3 ones, we get 13 ones.

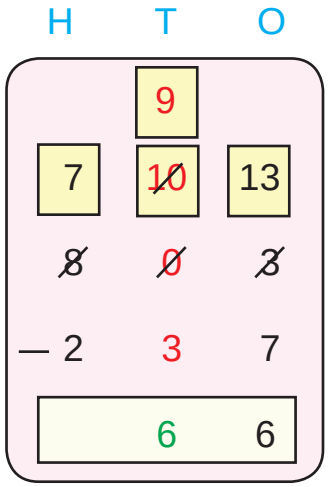
subtract 13 ones - 7 ones = 6 ones.

13 – 7 = 6

Write 6 in ones place.

Step 2 :

Subtract tens



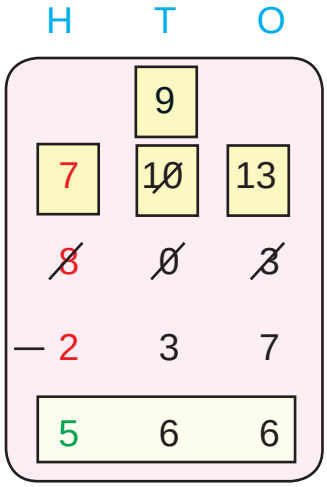
Subtract 9 tens - 3 tens = 6 tens.

9 – 3 = 6

Write 6 in tens place.

Step 3 :

Subtract hundreds



Subtract 7 hundreds - 2 hundreds = 5 hundreds

7 – 2 = 5

Write 5 in hundreds place

Answer is 566

Exercise 2

a)

$$\begin{array}{r} 365 \\ -\ 229 \\ \hline \end{array}$$

b)

$$\begin{array}{r} 518 \\ -\ 109 \\ \hline \end{array}$$

c)

$$\begin{array}{r} 247 \\ -\ \ 28 \\ \hline \end{array}$$

d)

$$\begin{array}{r} 506 \\ -\ 452 \\ \hline \end{array}$$

e)

$$\begin{array}{r} 784 \\ -\ 195 \\ \hline \end{array}$$

f)

$$\begin{array}{r} 982 \\ -\ 176 \\ \hline \end{array}$$

ACTIVITY 3

Take three numbers. (4, 3, 8)

Form the smallest three digit number. (348)

Interchange the digits. (843)

Subtract the smaller number from the greater number. (843 - 348)

Do it for various numbers !

Fun!

Take a two digit number. (98)

Interchange the digits. (89)

Subtract the smaller number from the greater number. (98 - 89 = 09)

Interchange digits in the answer. (90)

Add the interchanged number with the answer. (9 + 90 = 99)

Do it for other two digit numbers ! What do you get?

Statement problems

Exercise 3

a) There are 985 students in a school. 490 of them are girls How many boys are there in the school?

Total number of students = **985**
No. of girls = **490**
No. of boys = ____

b) The population of a village is 992. The number of male is 547. Find the number of female in the village.

Total Population = **992**
No. of male = **547**
No. of female = ____

c) A factory made 842 toys in a day. 575 of them were sold to a dealer. How many toys were left unsold.

Total number of toys = **842**
No. of toys sold = **575**
No. of toys unsold = ____

d) The sum of two numbers is 700. If one number is 300. Find the other number?

Sum of two numbers = **700**
One number = **300**
Other number = ____

MATHEMATICS

Date:.....

1) Subtract the following :

a)

$$\begin{array}{r} 568 \\ -\ 342 \\ \hline \end{array}$$

b)

$$\begin{array}{r} 632 \\ -\ 410 \\ \hline \end{array}$$

c)

$$\begin{array}{r} 987 \\ -\ 863 \\ \hline \end{array}$$

d)

$$\begin{array}{r} 782 \\ -\ 358 \\ \hline \end{array}$$

e)

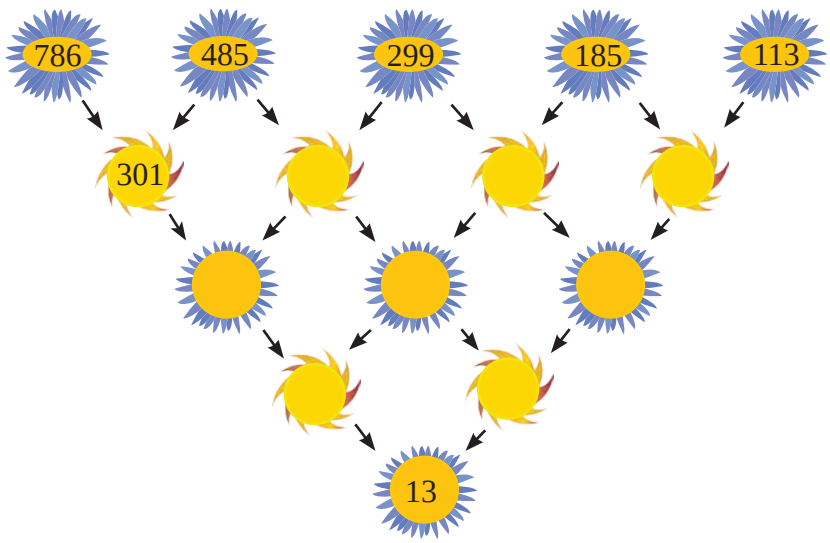
$$\begin{array}{r} 542 \\ -\ 359 \\ \hline \end{array}$$

f)

$$\begin{array}{r} 430 \\ -\ 124 \\ \hline \end{array}$$

MATHEMATICS

2) Begin at the top by subtracting the two numbers that are connected with arrows. The first one is done for you. The last number is given to you as a check.



3) Express the following in numeral and subtract the second number from the first number.

a) Four hundred and sixty five , two hundred and forty

b) Three hundred and thirteen, one hundred and two

c) Six hundred and twenty four, five hundred and twenty nine

d) Eight hundred and seventy two, five hundred and thirteen

e) Seven hundred and sixty four, five hundred and fifty seven

4) Answer the following:

a) There were 895 notebooks in a box. 500 notebooks were distributed. How many notebooks were left in the box?

b) 780 packets of sweets were bought to distribute to the children in a school. 512 packets were distributed. How many packets were left?

c) In an India - Pakistan one day cricket match, the two teams scored a total of 700 runs. If Pakistan scored 208 runs, how many runs did India score?

Comments

Teacher's signature

Stories for addition and subtraction facts

Story 1

Balu collected firewood from a jungle. He wanted to sell them in the market. He made 15 bundles of firewood. On the way to the market, he met an old lady. She was not well. She had no firewood to cook. She was sad. By seeing this, Balu took pity on her. So he gave one bundle to her.

Now, how many bundles are there?

He sold 7 bundles in the market .

How many bundles are left with him?

He uses 10 firewood to make 1 bundle

2 Bundles have _____ firewoods.

Like Balu you have to help the people!

Story 2

Mrs. Rukmani is a social worker. She used to help the children to get their uniform dresses and notebooks. On visiting two different schools, she came to an idea of ordering dresses for 43 boys and 42 girls for one school and 117 boys and 108 girls in another school. While distributing the dresses to the children, she was informed that on the whole 16 boys and 13 girls were absent on that day. So kindly help Mrs. Rukmani to calculate the total number of uniforms she will have to give.

Framing stories for problems :

Let us create a word problem to match these addition facts.

Example

22 + 12 = ?

There are 22 children in 2nd standard and 12 in 3rd standard .

How many children are there in all?

Frame a story for each given addition facts:

a) 3 + 4 = ?

The gardener planted _____ rose saplings and _____ jasmine saplings. How many saplings did he plant in all ?

b) 144 + 142 = ?

In a school there are _____ boys and _____ girls. How _____ _____ ____ ?

c) 253 + 317 = ?

Frame a story for each given subtraction facts :

a) 100 - 12 = ?

Ramu, a fruit seller, has 100 mangoes. He gave 12 mangoes to the poor, free of cost. Then how many mangoes he would have sold for money?

b) 50 - 15 = ?

Geetha has ____ rupees. She bought a pen for _____ rupees. How much money does she have?

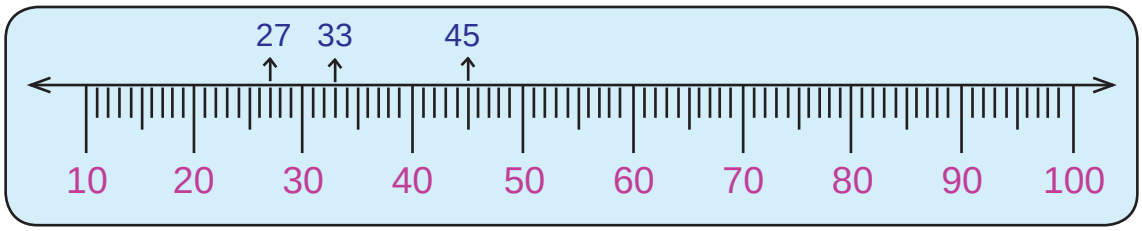
c) 130 - 125 = ?

ACTIVITY 4

The teacher has to start saying stories for simple addition and subtraction facts. The children have to continue and finish the story by telling one by one. Finally the teacher has to sum up the story.

Estimation of numbers

Let us round off these numbers 27, 33 and 45 to the nearest ten.



We can see that 27 is between 20 and 30 but it is closer to 30 than 20. So, 27 round off to 30. 33 is between 30 and 40 but it is closer to 30 than 40. So 33 round off to 30. 45 is between 40 and 50 but it is exactly on the middle point. So 45 round off to 50.

Example

1) Estimate the sum to the nearest ten and also find the actual sum.

Problems	Estimated Answer	Actual Answer
12 + 15	10 + 20	12 + 15
Sum	30	27

2) Estimate the difference to the nearest ten and also find the actual difference.

Problems	Estimated Answer	Actual Answer
18 - 12	20 - 10	18 - 12
Difference	10	6

Exercise 4

1) Round off to the nearest 10:

(a) 16 ☐ (b) 10 ☐ (c) 23 ☐

(d) 35 ☐ (e) 46 ☐ (f) 47 ☐

2) Estimate the sum to the nearest ten and also find the actual sum.

Problem	Estimated Answer	Actual Answer
13 +15	10 +20	13 +15
Sum		

Problem	Estimated Answer	Actual Answer
27 +33		
Sum		

3) Estimate the difference to the nearest ten and also find the actual difference.

Problem	Estimated Answer	Actual Answer
48 – 41	50 – 40	48 – 41
Difference		

Problem	Estimated Answer	Actual Answer
39 – 21		
Difference		

5. There are 12 pencils in a box. If 12 more had been put in, then there would be ____pencils in the box.

1. A shopkeeper has 25 eggs and he buys 10 more eggs. Now he has _____ eggs.

6. I am 7 years elder than my sister. My sister's age is 6. Then what is my age ?

2. Class III has 36 students. If 16 of the students are boys then how many girls are there?

7. A factory made 30 bulbs on the first day. On the second day it did not make any bulbs. How many bulbs did they make altogether?

3. Gopu has 40 marbles and he gives 13 marbles to his sister. How many marbles does he have now ?

8. Meena has 12 green ribbons and 10 white ribbons. Then how many ribbons does she have?

4. In a city there are 28 primary schools, 20 higher secondary schools. How many schools are there in the city in all?

9. In a school cricket match, Anand scored 30 runs in the Ist innings and scored 20 runs in the 2nd innings. Find the total runs scored by him.

'I can, I did'

Student's Activity Record

Subject :

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

MATHEMATICS