Government of Tamilnadu

STANDARD FOUR

TERM I

VOLUME 2

MATHEMATICS

SCIENCE

SOCIAL SCIENCE

NOT FOR SALE

Untouchability is Inhuman and a Crime

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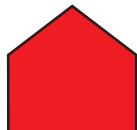
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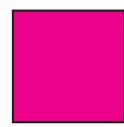
Observe the following pictures.
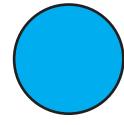
Identify and write the names of the pictures that have the following shapes.

Pentagon - Front view of the house.

_____

_____

_____

_____

_____

MATHEMATICS

Interesting facts
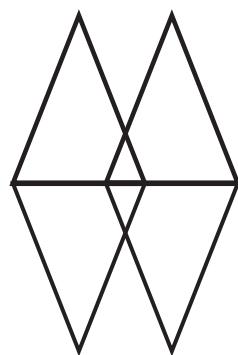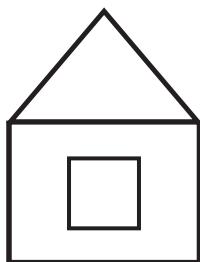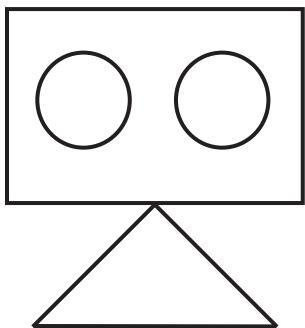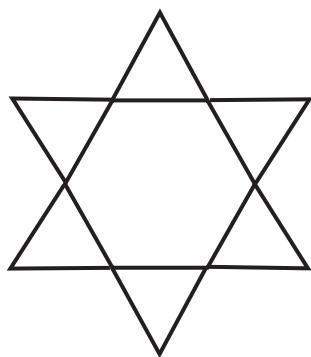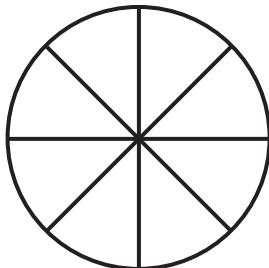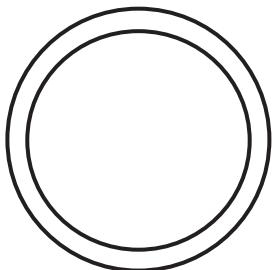
When people construct buildings, they use different shapes, because every shape has special characteristics that are best suited for a particular purpose.

A circle has curved line segment.
Other shapes like triangle, square, rectangle and pentagon have line segments.
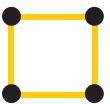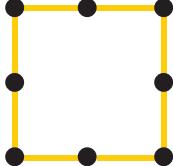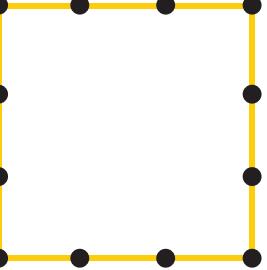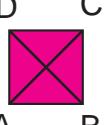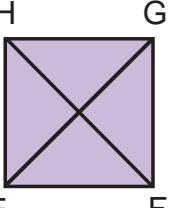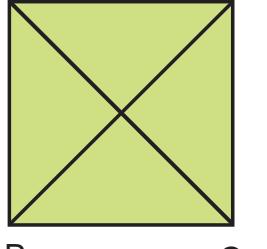
Line segment   Curved line segment

Colour the shapes

Squares

Squares are formed using the matchsticks			
Squares are formed by the line segments	D C A B figure (1)	H G E F figure (2)	S R P Q figure (3)

In figure (1)

◈   A, B, C and D are corners.

◈   AB, BC, CD and DA are the sides.

◈   AC and BD are the diagonals.

◈   All sides are equal.

AB = BC = CD = DA
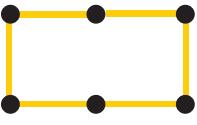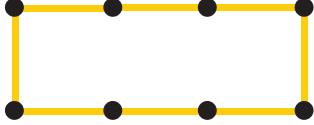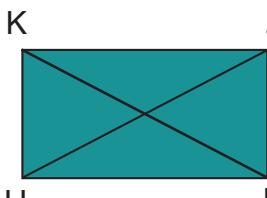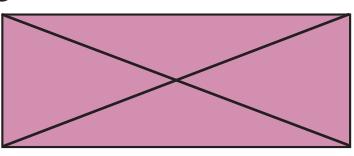
A square has four corners and four sides. All sides are equal.

Practice

Name the corners, sides and diagonals for the figure (2) and figure (3).

Rectangle

Rectangles are formed using the matchsticks		
Rectangles are formed by the line segments	figure (1)	figure (2)

In figure (1)

◈ H, I, J and K are corners.

◈ HI, IJ, JK and KH are the sides.

◈ HJ and IK are the diagonals.

◈ Opposite sides are equal.

HI = JK   IJ = KH
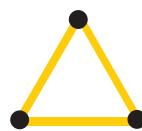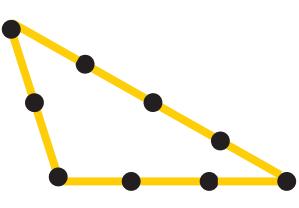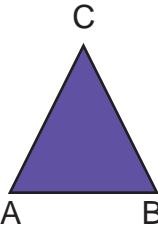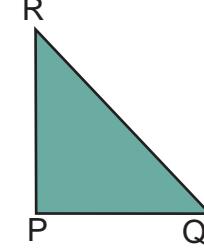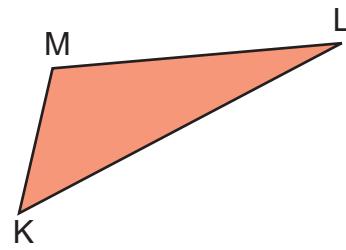
A rectangle has four corners and four sides.
Its opposite sides are equal.

Practice

Name the corners, sides and diagonals for the figure (2).

Triangle

	figure (1)	figure (2)	figure (3)
Triangles are formed using the matchsticks			
Triangles are formed by the line segments	C A B figure (1)	R P Q figure (2)	M L K figure (3)

In figure (1)

◊   A, B and C are corners.

◊   AB, BC and CA are the sides.

A triangle has three corners and three sides.
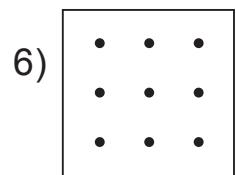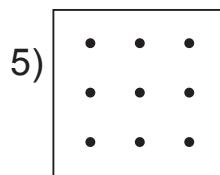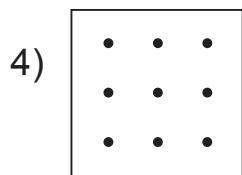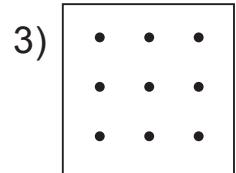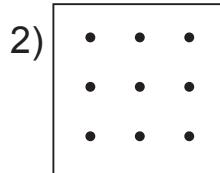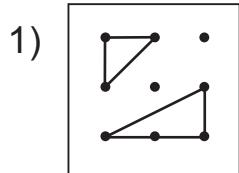
Practice

Name the corners and sides for the figure (2) and figure (3)

Lab activity
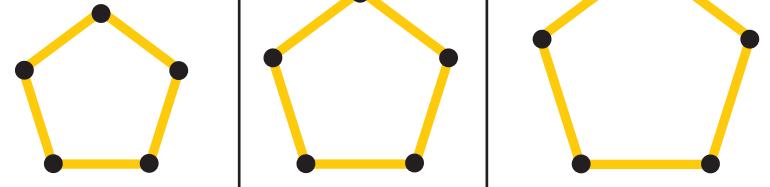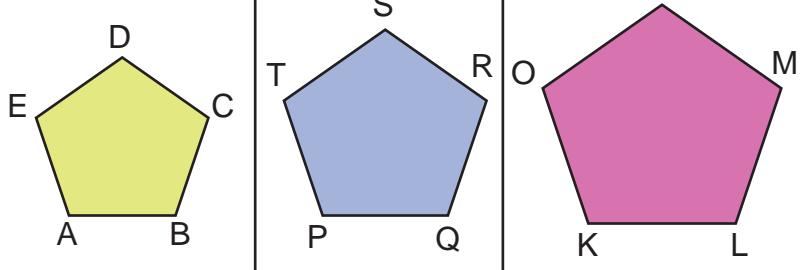
Use the following dots to draw different triangles, each triangle should be different from the others.

1)

2)

3)

4)

5)

6)

Pentagon

Pentagons are formed using the matchsticks			
Pentagons are formed by the line segments	figure (1)	figure (2)	figure (3)

In figure (1)
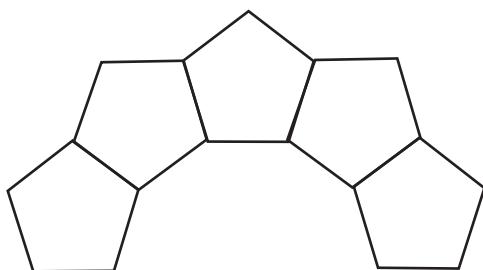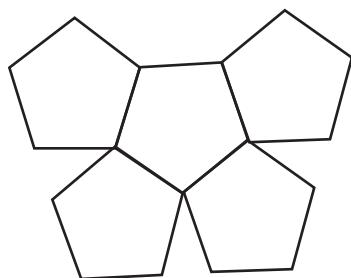
➤ A, B, C, D and E are corners.

➤ AB, BC, CD, DE and EA are the sides.
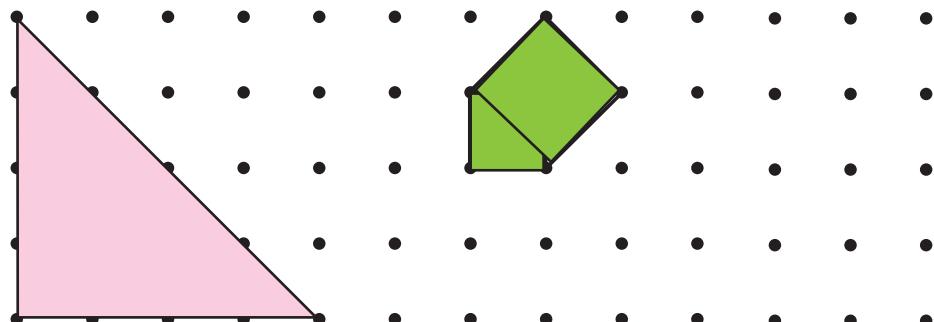
A pentagon has five corners and five sides.

Practice

1) Name the corners and sides for the figure (2) and figure (3).

2) Shade the pentagons by different colours.

3) Connect the dots to form shapes and colour them.

Drawing circle

Draw a circle in each of the following boxes.

Use a coin	Use a bangle	Use a bottle cap

Freehand drawing of a circle
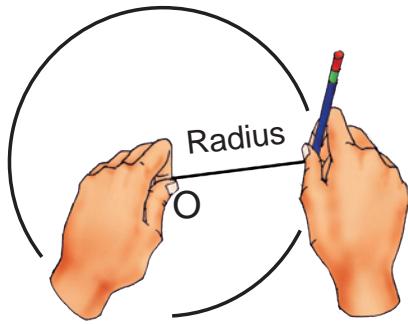
I am going to draw a circle by using a piece of string and pencil.

O.K, how will you do?

Very simple. Let me show, look here...

- ◉ Tie one end of the string with a pencil and another end with a pin.

- ◉ Press the pin in the paper and keep a finger on its top.

Radius

O

- ◉ Rotate the pencil till a circle is formed.

The touching point of the pin and the paper at 'O' is called the centre of the circle. The length of the string is the radius of the circle.

Practice
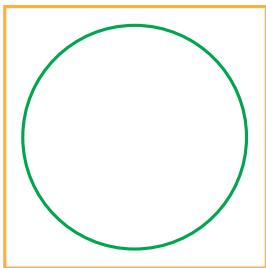
Using a string, without changing the centre, draw three circles with different lengths of string. You will get the diagram as given below.
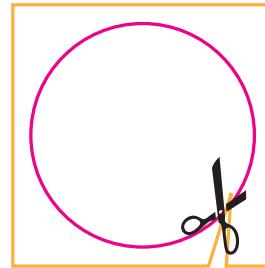
Finding centre and radius by paper folding.
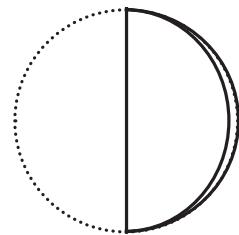
✦ Draw a circle in a paper.
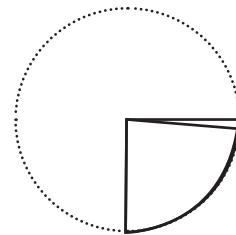
✦ Cut the circle.

✦ Fold the circle into half.
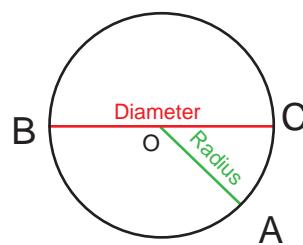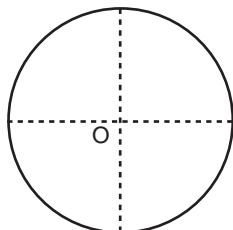
✦ Then fold it again like this.

✦ Now open the foldings.

The two creased lines cross each other.

O

Diameter

B   O   Radius   C

A
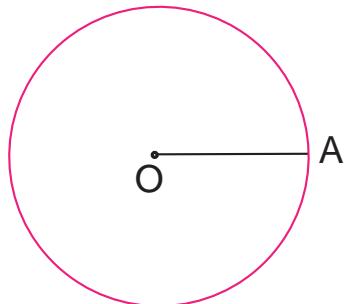
Two creased lines meet at a point O, is the centre of the circle.

OA = Radius of the circle
BC = Diameter of the circle
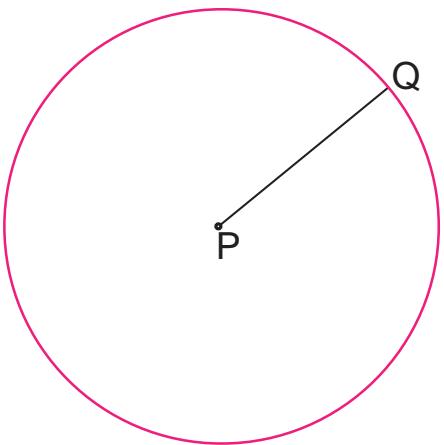
The line segment joining any two points on the boundary of the circle, which is passing through the centre of the circle is called diameter.

MATHEMATICS

1) With the help of your ruler, measure the radius of the following circle.

Q

A

O

P
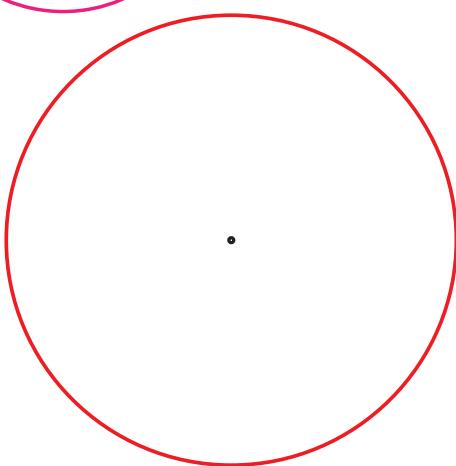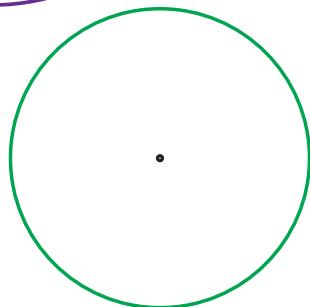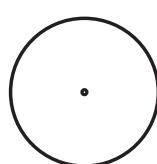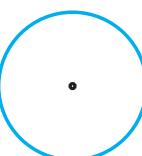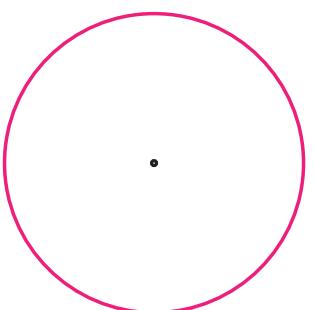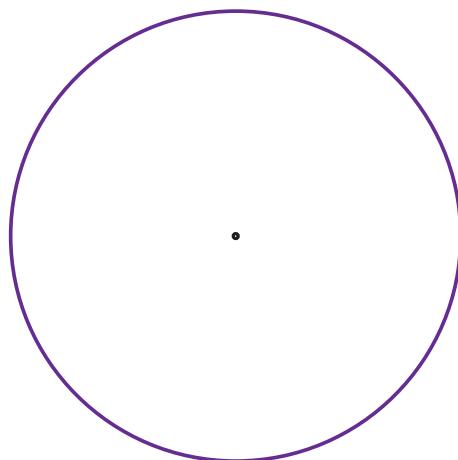
Radius =   OA = _2cm_
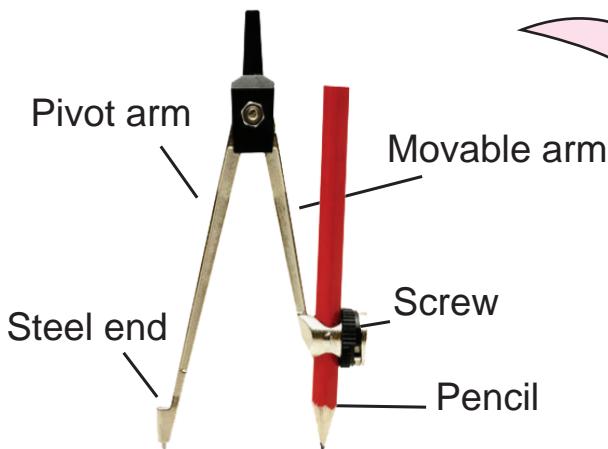
Radius = PQ = _____

2) Draw the radius for the following circles and measure them.

About compass

Pivot arm
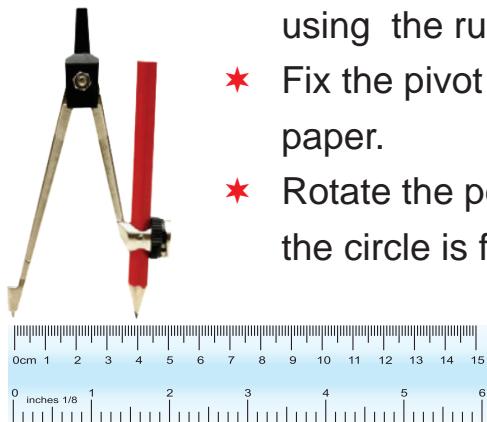
Movable arm
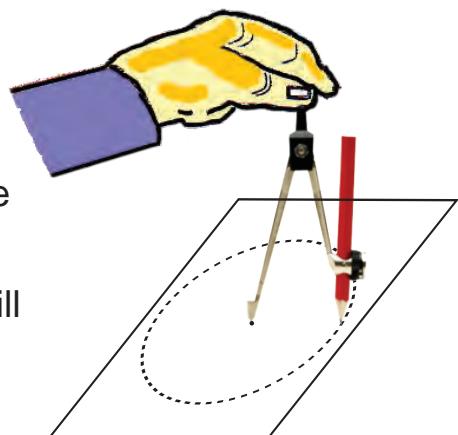
Steel end

Screw

Pencil

- I am a compass.
- I have two arms.
- One arm has the steel end, called pivot arm.
- Movable arm has a screw to fix a pencil.

Drawing a circle with a compass

★ Take a radius of 4cm using the ruler.
★ Fix the pivot point on the paper.
★ Rotate the pencil point till the circle is formed.

0cm 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

0 inches 1/8 1 2 3 4 5 6
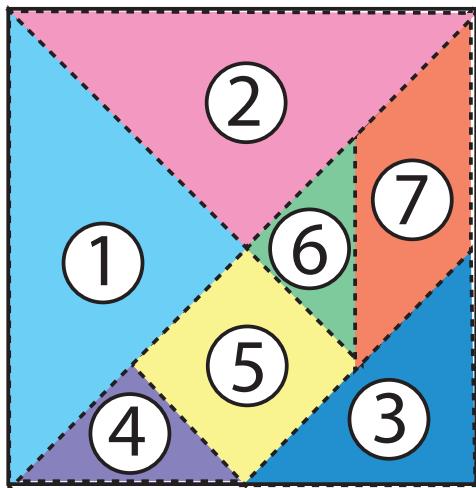
Practice

Draw circles using compass for the given radius.
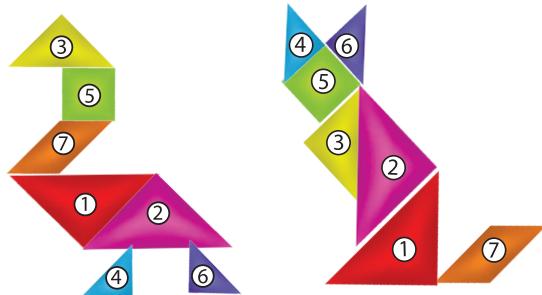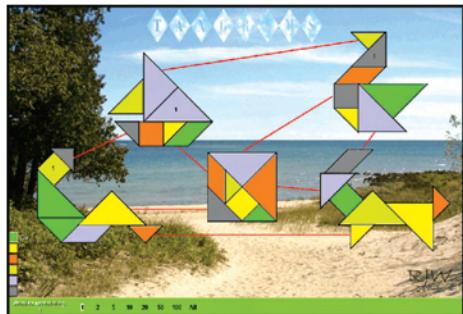
1) 4 cm   2) 5 cm   3) 3 cm   4) 6 cm

Geometric shapes with tangrams

Tangram is a thousand years old chinese puzzle. It consists of seven geometrical pieces called tans, which are put together to form shapes. Using tans we can create different patterns, geometric designs, human beings, birds and animals.
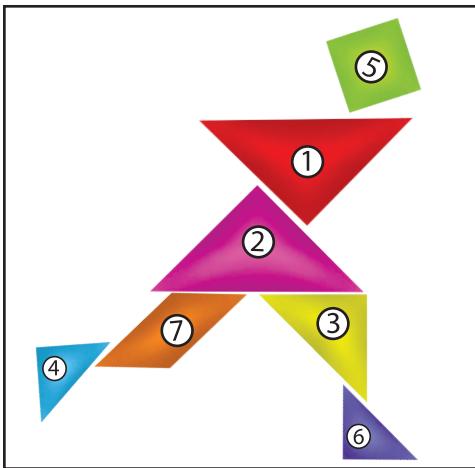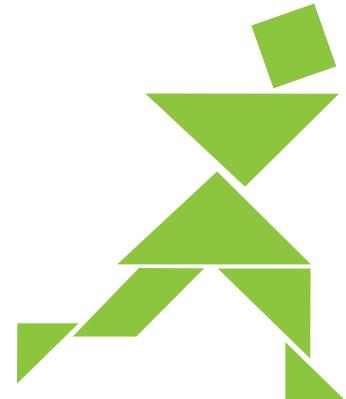
Different shapes using tangram
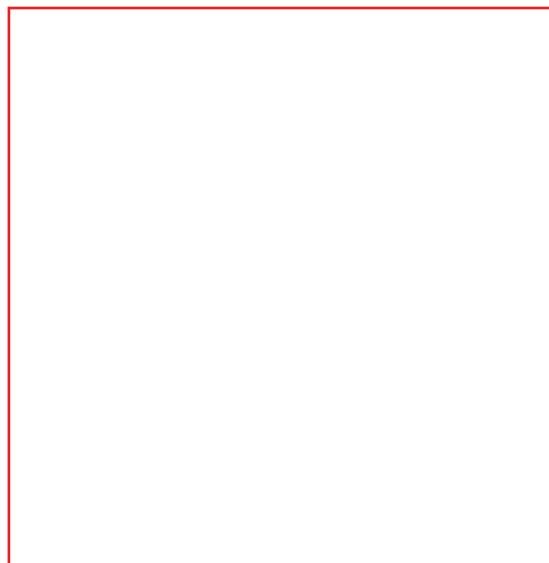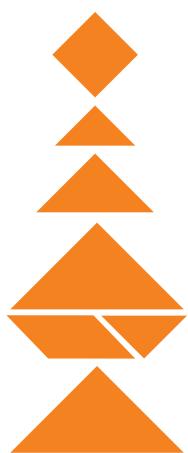
Practice

Tangram pieces are arranged into a picture of a man.
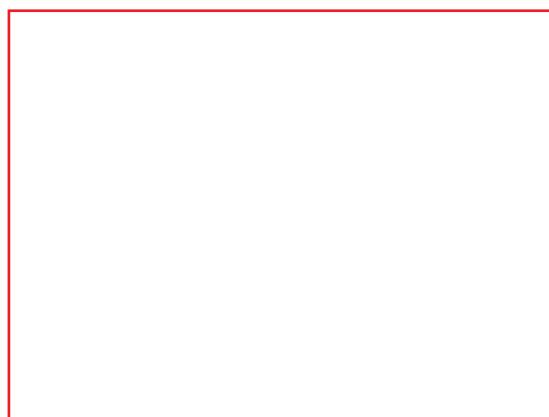
Arrange the tangram pieces
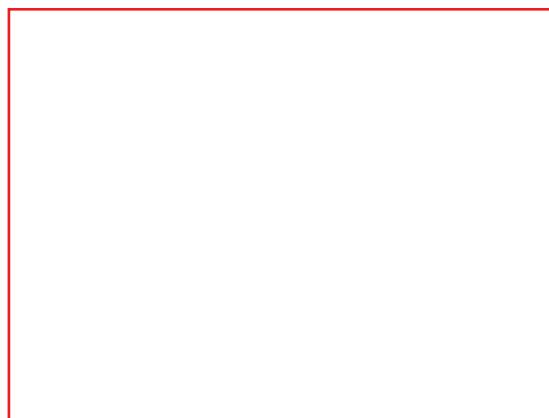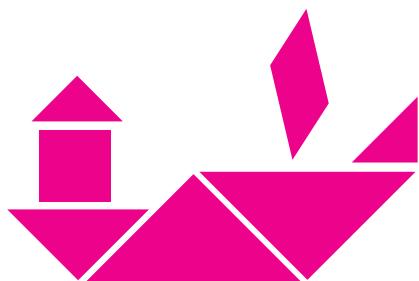
1)

2)
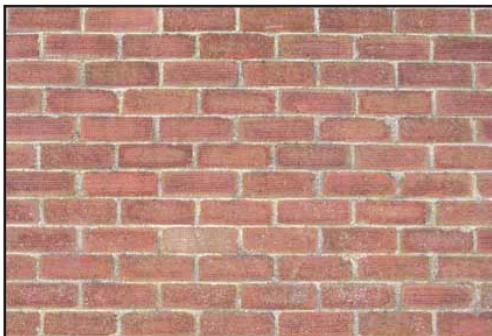
3)
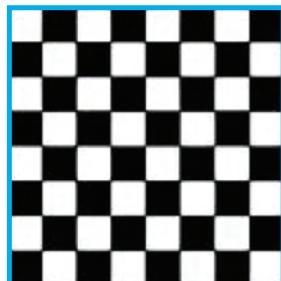
Tiling

Observe the following pictures.

Brick wall

Chess board

Beehive
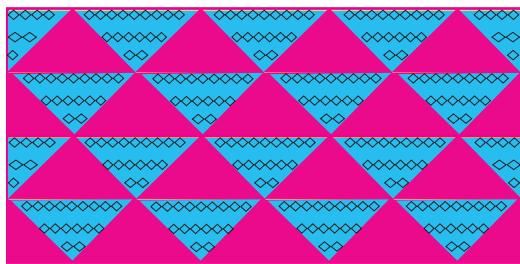
Floor tiles
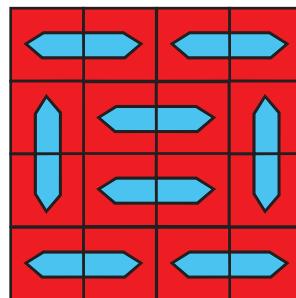
The above pictures are formed by arranging different tiles without gaps and over laps.

Tiling the space with one or two shapes

This space is filled by triangle shapes
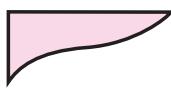
This space is filled by two shapes
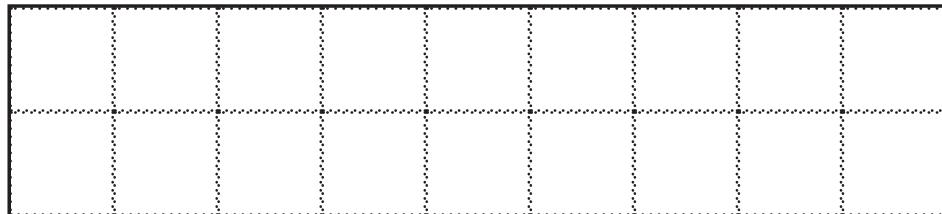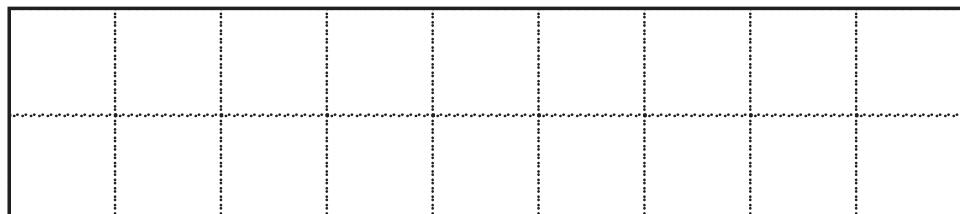
Select the two suitable shapes and tile the space given below.
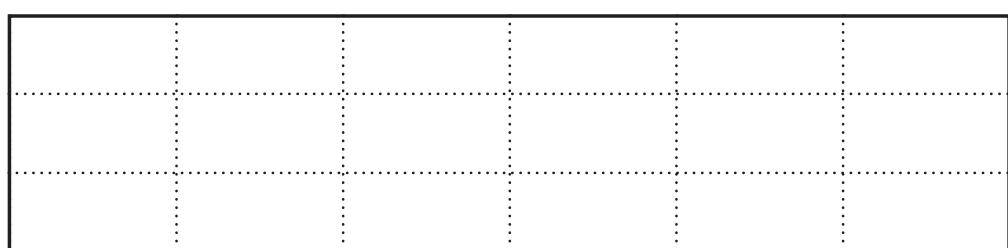
1)

2)
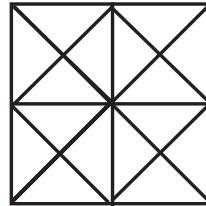
3)
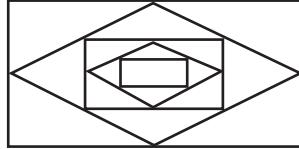
1) Count and write the number of squares and rectangles.

   Number of squares _____   Number of rectangles _____
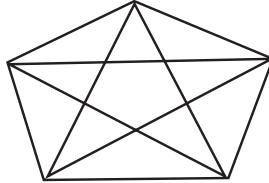
2) Count and write the number of rectangles and triangles.

   Number of triangles _____   Number of rectangles _____

3) Count the number of triangles and pentagons.

   Number of triangles _____   Number of pentagons _____

4) A square and a rectangle have _____ sides and _____ corners.

5) A _____ has 5 sides and 5 corners.

6) _____ sides of a rectangle are equal.

7) The line joining centre point and any point on the boundary of the circle is called _____.

8) The line segment joining any two points on the boundary of the circle, which is passing through the centre of the circle is called _____.

9) Create two shapes using tangrams.

MATHEMATICS
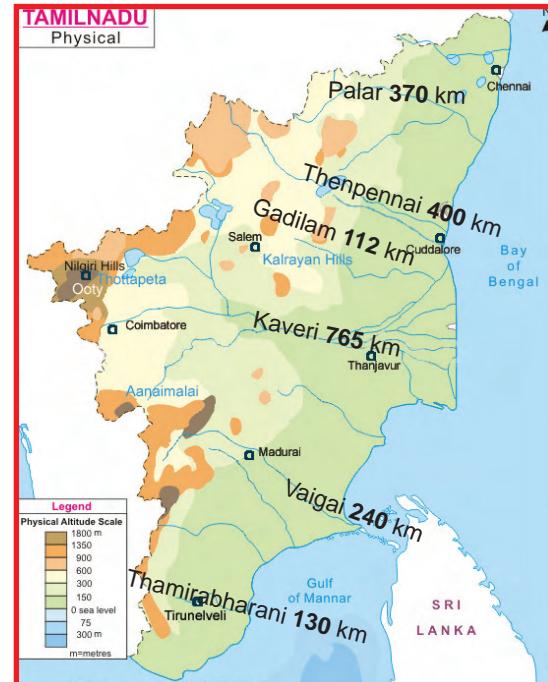
2 KNOWING NUMBERS

Uma and Deepa are friends. One day Deepa visited Uma's house. Deepa noticed a Tamilnadu map hanging on the wall.

Deepa read the names of the rivers from the map, Uma read the length of the rivers. Deepa read "Thamirabharani".

Uma said, "130 km".
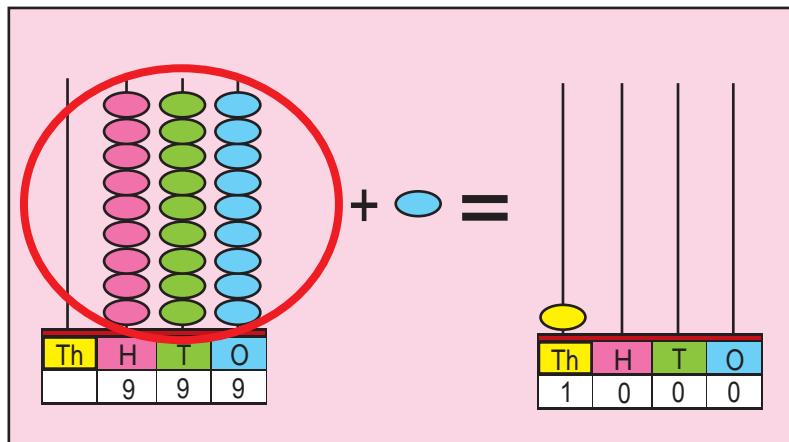
Fill up the following table.

Length of the rivers	Numerals	Number name	Expanded form
Thamirabharani 130 km.	130	One hundred and thirty	100 + 30+0
Vaigai 240 km.	240		
Kaveri 765 km.			
Gadilam 112 km.			
Thenpennai 400 km.			
Palar 370 km.			

Use abacus to express the numbers

Chitra and Jothi are sisters. They are playing with the beads in an abacus. Jothi asked Chitra to put the beads for the number 999. Chitra placed successfully.

Can you put one more bead? asked Chitra. Jothi observed the abacus from 'ones' place to 'thousands' place. She removed all the beads and placed one bead in the 'thousands' place because,

10 ones = 1 ten	10 tens = 1 hundred	10 hundreds = 1 thousand

999 + 1 = 1000.   We read it as   One thousand

Comparing the two numbers 999 and 1000

★   999 has 3 digits, 1000 has 4 digits.

★   1000 has 0 in ones, tens and hundreds places.

★   999 has 9 in ones, tens and hundreds places.

★   The greatest 3 digit number is 999.

★   The smallest 4 digit number is 1000.

1) Fill up the boxes.
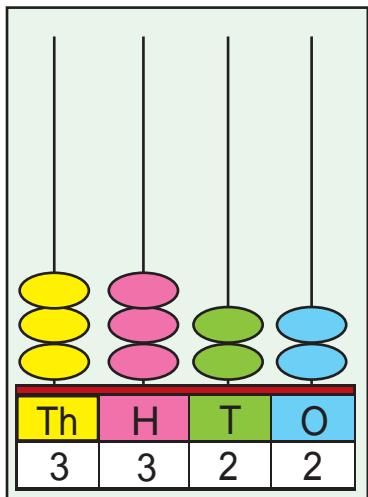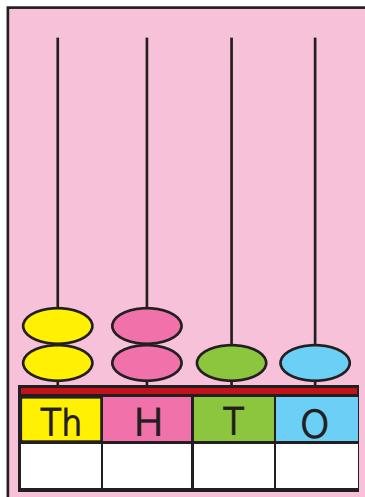
9 + 1 = 10	10 + 1 = 11	10 - 1 = 9
99 + 1 = ☐	100 + 1 = ☐	100 - 1 = ☐
999 + ☐ = 1000	1000 + ☐ = 1001	1000 - ☐ = 999
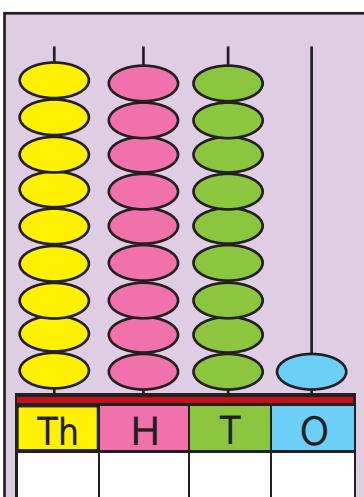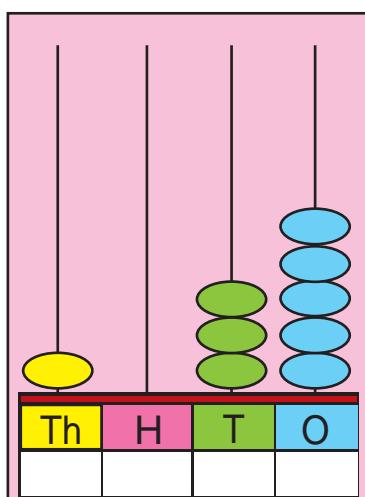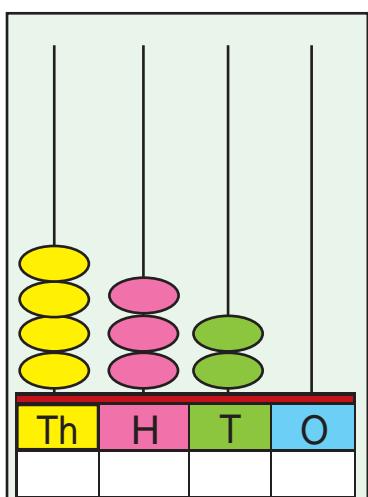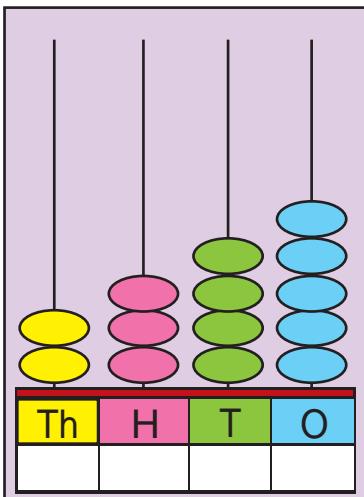
2) Write the numbers shown in the following abacus.

Th	H	T	O
3	3	2	2

3322

Th	H	T	O

Th	H	T	O

Th	H	T	O

Th	H	T	O

Th	H	T	O
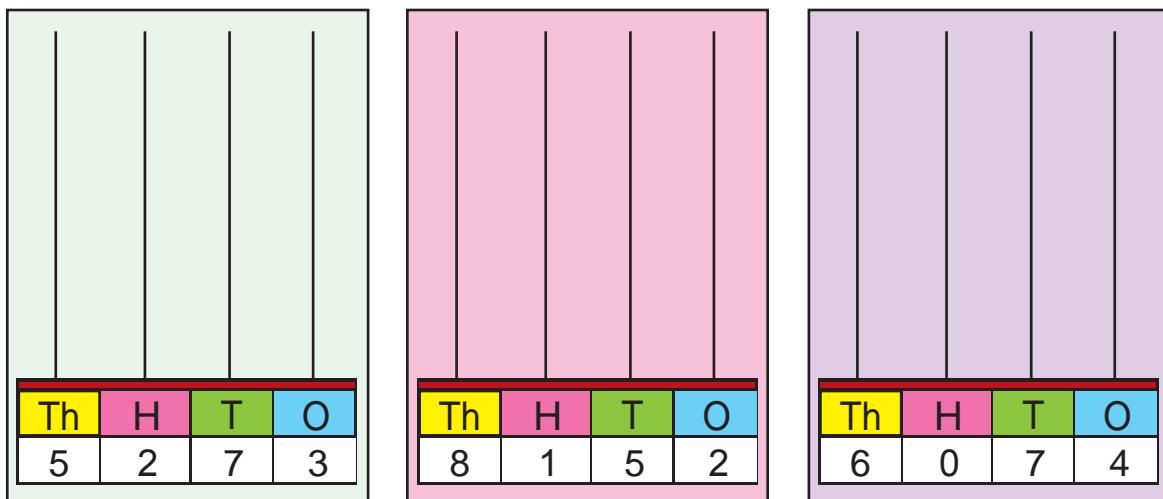
MATHEMATICS

3) Draw beads for the number shown in the following abacus.

Th	H	T	O
5	2	7	3

Th	H	T	O
8	1	5	2

Th	H	T	O
6	0	7	4

4) Write the missing numbers.

1001	1002			1005				1009	
2005	2010				2030				2050
3010	3020				3070				
4020	4040					4160		4200	
5050	5100						5450		
6100	6200						6900		
7200	7400					8600		9000	
5000	5500				8000				
9990	9991				9995		9998		
1000	2000			5000					10000

The greatest four digit number is 9999

22

Read the following sentences.

- ❖ Thirukkural has 1330 Kurals.
- ❖ The depth of Indian ocean is 7258 metres.
- ❖ Commonwealth games were held in New Delhi in 2010.
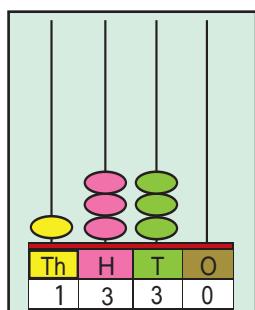
Shall we read the numbers ?

1330 - One thousand three hundred and thirty
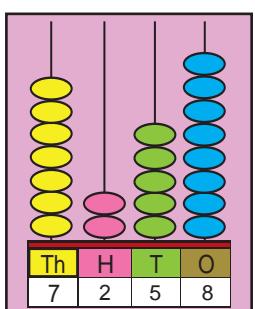
7258 - Seven thousand two hundred and fifty eight

2010 - Two thousand and ten

Place value

Th	H	T	O
1	3	3	0

1 3 3 0
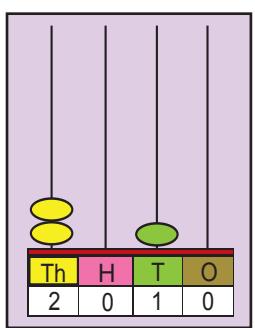
digit	place		place value
0 ×	1 =	0 =	0 ones
3 ×	10 =	30 =	3 tens
3 ×	100 =	300 =	3 hundreds
1 ×	1000 =	1000 =	1 thousand

Th	H	T	O
7	2	5	8
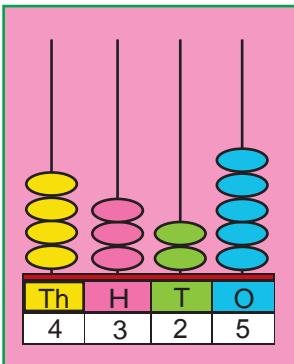
7 2 5 8

8 ×	1 =	8 =	8 ones
5 ×	10 =	50 =	5 tens
2 ×	100 =	200 =	2 hundreds
7 ×	1000 =	7000 =	7 thousands

Th	H	T	O
2	0	1	0

2 0 1 0

0 ×	1 =	0 =	0 ones
1 ×	10 =	10 =	1 ten
0 ×	100 =	0 =	0 hundreds
2 ×	1000 =	2000 =	2 thousands

23

Expanded form

Number: 4325

Number name:

Four thousand three hundred and twenty five

Expanded form: 4325 = 4000 + 300 + 20 + 5

Th	H	T	O
4	3	2	5

Practice

1) Write the place value of the encircled digits.

⑧ 3 4 5 - The place value of 8 is 8 thousands

② 7 5 1 - _____
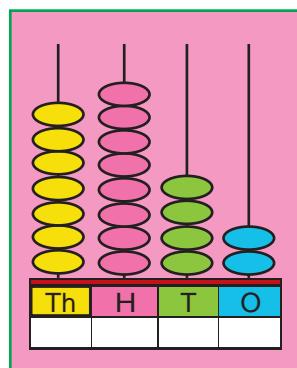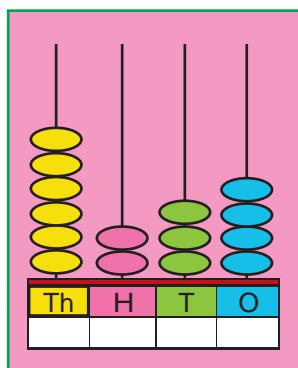
3 ② 6 8 - _____

9 0 ⓪ 4 - _____
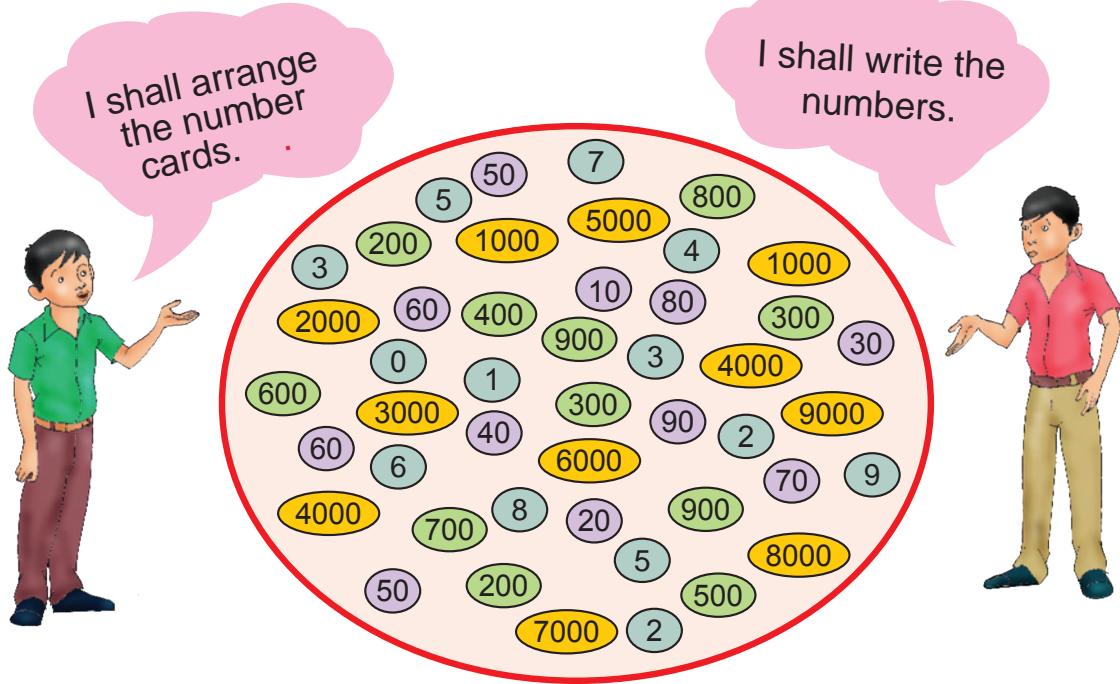
1 9 7 ④ - _____

5 4 ③ 0 - _____

2) Write number, number name and expanded form for the beads in the abacus.

Th	H	T	O

Th	H	T	O

24

3) Form the numbers using number cards.

I shall arrange the number cards.

I shall write the numbers.

Balu arranges the number cards according to place value.

Velu writes the corresponding numbers.

Will you help them?

2000 + 200 + 30 + 5 = 2235

1000 + 300 + 10 + 8 = ( )

8000 + ( ) + 60 + 6 = 8066

4000 + 400 + 40 + 4 = ( )

5000 + ( ) + ( ) + 3 = 5503

Balu writes the numbers.

Velu arranges the number cards.

9687 = 9000 + ( ) + ( ) + 7

6722 = ( ) + 700 + 20 + 2

4359 = 4000 + ( ) + 50 + ( )

3970 = ( ) + 900 + 70 + ( )

8001 = ( ) + ( ) + ( ) + 1

Formation of the greatest and the smallest number

In which order they should stand to form the greatest 4 digit number?

In 4, 6, 9, 2 the greatest digit is 9
In 4, 6, 2 the greatest digit is 6
In 4 and 2, 4 is greater than 2
In 4, 6, 9, 2 the smallest digit is 2

They stand from the greatest digit to smallest digit.

Now the number formed is 9642

This is the greatest 4 digit number, using the given digits.

In the same way in which order they should stand to form the smallest 4 digit number?

In 4, 6, 9, 2 the smallest digit is 2
In 4, 6, 9 the smallest digit is 4
In 6 and 9, 6 is smaller than 9
In 4, 6, 9, 2 the greatest digit is 9

They stand from the smallest digit to the greatest digit.

Now the number formed is 2469

This is the smallest 4 digit number formed from the given digits.

The greatest number is **9642**
The smallest number is **2469**

Practice

1) Form the greatest and the smallest 4 digit number.

Digits	Greatest Number	Smallest Number
0,4,2,8	8420	2048
3,7,4,9		
9,3,6,5		
5,0,1,7		

2) Pick out the smaller number, greater number and compare them using > or <.

Numbers	Smaller Number	Greater Number	use > or <
4910, 3618	3618	4910	3618 < 4910
2897, 5110			
2375, 5732			
8000, 6070			

27

Ascending order and Descending order

Look at the marks scored by four students in XII Standard Examination.

Velu	Jayashree	Anandan	Radhika
992	1187	1074	1126

Of these four marks, 992 is the lowest mark as 992 has 3 digits.

992 is the smallest of these numbers.

But the other three marks are 4 digit numbers.

First compare the digits in the 'thousands' place.

1187   1074   1126

All the three numbers have 1 in the 'thousands' place.

So, compare the digits in the 'hundreds' place.

1187   1074   1126

1187, 1126 has 1 in the 'hundreds' place.

1074 has 0 in the 'hundreds' place.

So 1074 is smaller than 1187 and 1126.
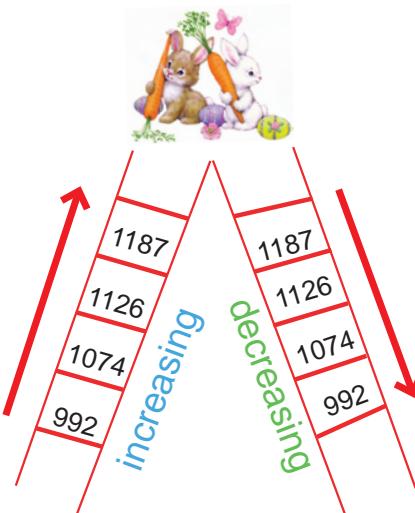
Now compare the digits in the 'tens' place.

1187   1126

1187 has 8 tens, 1126 has 2 tens.

So 1126 is smaller than 1187.

1187 is the greatest number.

Ascending order	992, 1074, 1126, 1187
Descending order	1187, 1126, 1074, 992

Arranging the numbers from the smallest to the greatest is called ascending order and from the greatest to the smallest is called descending order.

Practice

1) Arrange the measurement of the heights in ascending order and descending order.

Height in metres	Kalvarayan Hills	Nilgiri Peak	Aanai Malai Hills	Doddabetta Peak
	914	2474	2695	2637

Ascending order	
Descending order	

2) Arrange the numbers in ascending order and descending order.

1) 8000, 4105, 7400, 3050   2) 6345, 6789, 9876, 4567

3) 4248, 1375, 5615, 1360   4) 1178, 1068, 1368, 1278

5) 7800, 5300, 8800, 6400   6) 4999, 1809, 4959, 2829

Odd numbers and Even numbers

From the above coloured numbers write odd numbers and even numbers.

Odd numbers	_____, _____, _____, _____, _____, _____, _____, _____, _____, _____.
Even numbers	_____, _____, _____, _____, _____, _____, _____, _____, _____, _____.

The digits in the 'ones' place for odd numbers are 1, 3, 5, 7 and 9

The digits in the 'ones' place for even numbers are 0, 2, 4, 6 and 8

To identify whether the given number is odd or even,
it is enough to look at the digit in 'ones' place.
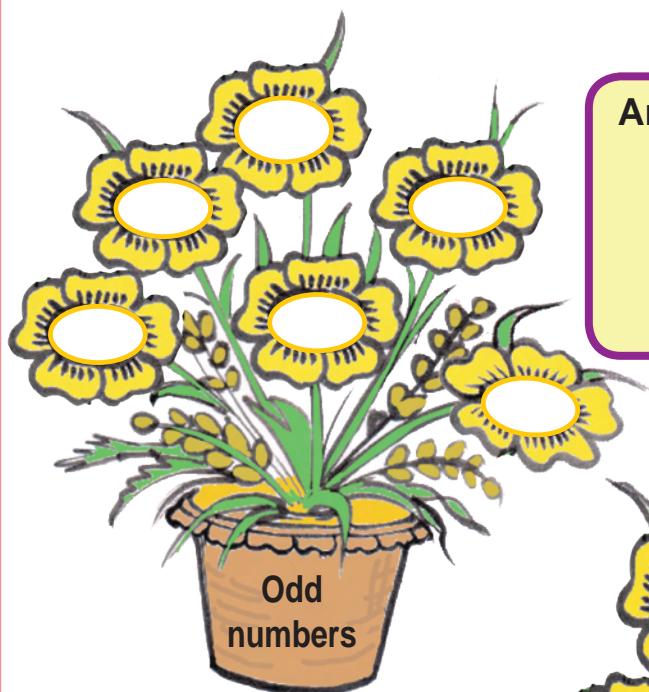
Identify the odd and even numbers. Fill them in flowers given below.

2765　4862　5047　4751　6404　3006

8354　7298　9433　8450　1239　5237

Odd numbers

Arrange the odd numbers in ascending order.

Arrange the even numbers in descending order.

Even numbers

Complete the table.

Family members	Name	Year of Birth
My name		
Father		
Mother		
Grandfather		
Grandmother		

Write the numbers from the above table and answer the following questions.

★ Write the number names.

★ Write in expanded form.

★ Write the place value of each digit in the numbers.

★ Arrange the numbers in ascending and descending order.

Puzzle

I am a 4 digit number.

My 'ones' place is 3.

Digit in 'tens' place is 2 more than in 'ones' place.

Digit in 'hundreds' place is 1 less than in 'tens' place.

Digit in 'thousands' place is 3 more than in 'hundreds' place.

I am

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Estimation in numbers

Look at the apples, without counting say approximately, how many apples are there ?

Approximately 30 apples.
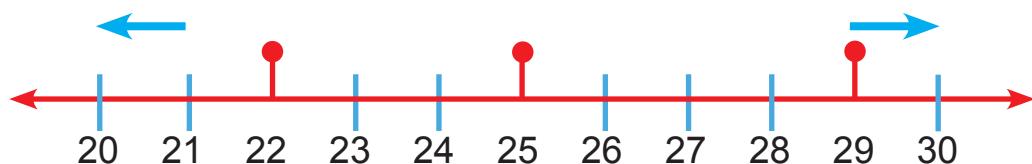
Your answer is close to actual number. But actual number of apples kept in the basket is 28.

What do you learn from the above conversation ?
We use estimation for counting in our daily life.

Estimation using number line
Estimation (round off) of numbers to the nearest 10
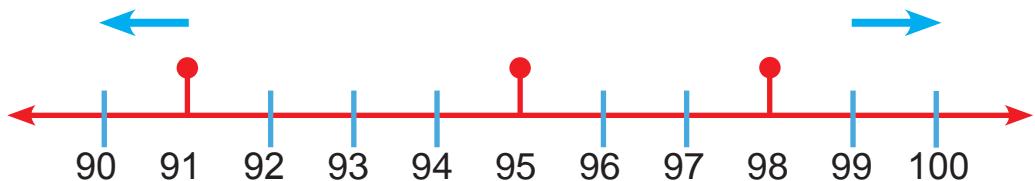
20 21 22 23 24 25 26 27 28 29 30

★ 22 is rounded off to 20 since it is close to 20

★ 29 is rounded off to 30 since it is close to 30

★ 25 is rounded off to 30 since it is half way between 20 and 30

We can estimate the number more easily by using number line.

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Estimation (round off) of numbers from 91 to 99 to the nearest 10

90 91 92 93 94 95 96 97 98 99 100

★ 95 is rounded off to 100 since it is halfway between 90 and 100

★ 98 is rounded off to 100 since it is close to 100

★ 91 is rounded off to 90 since it is close to 90

Practice

Estimate to the nearest 10.

1) 23   2) 46   3) 54   4) 65

5) 14   6) 35   7) 88   8) 91

9) 76   10) 99   11) 87   12) 94

While rounding off a number check its 'ones' place,
if it is 5 or more than 5, round off the number to the next nearest 10.
If it is less than 5, round off the number to the nearest 10.

1) Write the missing numbers.

   (i) 7430, 7440, _____ , _____, _____, _____, _____ , 7500.

   (ii) 1300, 1400, _____ , _____, _____, _____, _____ , 2000.

2) Write the number names for the following numbers.

   (i) 3906 _____

   (ii) 10000 _____

3) Write the numerals for the following.

   (i) Four thousand nine hundred and eighty two ⬭

   (ii) Six thousand two hundred and five ⬭

4) Write the place value of the circled digits.

   (i) 7 ④ 5 0 _____

   (ii) 3 9 ⑧ 5 _____

5) Express the following in the expanded form.

   (i) 3 4 6 0 _____

   (ii) 9 0 1 7 _____

6) Write the short form of the following numbers.

   (i) 5000 + 400 + 30 + 9 = ⬭

   (ii) 4000 +   0 +   0 + 4 = ⬭

7) Write the ascending order and descending order.

   8275   8555   8150   8325

8) Encircle the even numbers.
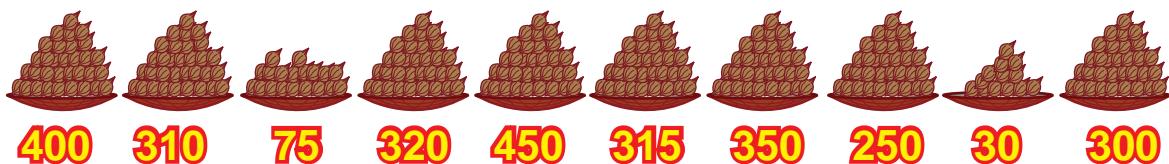
   3645   9450   8564   3718   6071

9) Put '<' or '>'

   (i) 4375 _____ 3747   (ii) 10000 _____ 9999

10) Round off the following numbers to the nearest tens.

   (i) 75   (ii) 83   (iii) 94   (iv) 36

Addition

| 400 | 310 | 75 | 320 | 450 | 315 | 350 | 250 | 30 | 300 |

Four vendors went to a coconut grove to buy coconuts. Each one needed 700 coconuts. Help them to select the heaps.

First vendor	Second vendor	Third vendor	Fourth vendor
350 320 + 30	400 + 300		
700	700	700	700

Write the missing numbers in the magic squares for the given total.

Total 45

16	11	18
17	15	13
12	19	14

Total 210

80	30	
90	70	50
	110	60

Total 165

65	15	
75	55	35
	95	

Fill in the boxes.

0 + 1 = 1	2 + 4 = 6	4 + 5 = 9 = 5 + ☐
1 + 0 = ☐	4 + 2 = ☐	5 + 3 = 8 = ☐ + 5
2 + 0 = 2	0 + 0 = 0	2 + 6 = 8 = 6 + ☐
0 + 2 = ☐	0 + 3 = ☐	7 + 2 = 9 = ☐ + 7

The sum of any number and zero is the number itself.
The sum of two numbers does not change even if we change the order of the numbers.

Practice

1)
H	T	O
3	2	4
+ 5	7	5

2)
H	T	O
6	0	0
+ 2	3	2

3)
H	T	O
5	3	6
+ 3	0	1

4)
H	T	O
7	0	2
+ 2	1	4

Addition without carrying

1) A library has 3242 story books and 435 rhymes books. Find the total number of books.

Solution:

To find the total number of books, we have to add the number of story books and rhymes books.

Th	H	T	O
3	2	4	2
	4	3	5
3	6	7	7

Number of story books = 3 2 4 2 = 3000 + 200 + 40 + 2
Number of rhymes books = + 4 3 5 = 400 + 30 + 5
Total number of books = 3 6 7 7 = 3000 + 600 + 70 + 7

Total number of books in the library = **3677**

Another method:
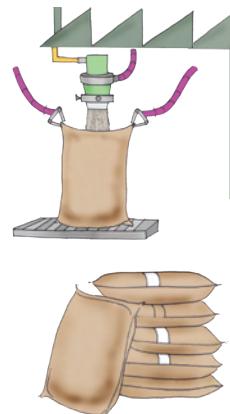
Th	H	T	O
3	2	4	2
+	4	3	5
3	6	7	7

Steps
* Add ones
* Add tens
* Add hundreds
* Add thousands

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2) A factory produced 1154 bags of fertilizer on the first day and 2832 bags on the second day. Find the total number of bags of fertilizer.

Solution:

Fertilizer produced on first day = 1154
Fertilizer produced on second day = + 2832
Total number of bags of fertilizer = 3986

3986 bags of fertilizer are produced.

Practice

1)
Th	H	T	O
2	4	6	3
+ 4	2	3	0

2)
Th	H	T	O
2	2	0	4
+ 3	4	8	5

3)
Th	H	T	O
4	5	0	2
+ 5	3	0	4

4)
Th	H	T	O
8	4	1	0
+ 1	0	6	7

5)
Th	H	T	O
2	0	0	0
+ 4	0	0	0

6)
Th	H	T	O
5	1	2	1
+ 2	3	7	4

7) In a factory 3850 persons worked in the first shift and 3106 persons worked in the second shift. Find the total number of persons.

8) In a function 2274 people had breakfast and 3015 people had lunch. Find the total number of people in the function.

Recall and write

10 ones = 1 ten
70 ones = _____
25 ones = 2 tens 5 ones
43 ones = _____
10 tens = 1 hundred
50 tens = _____

36 tens = 3 hundreds 6 tens
29 tens = _____
10 hundreds = 1 thousand
40 hundreds = _____
78 hundreds = 7 thousands 8 hundreds
64 hundreds = _____

Addition with carrying

Balaji and Ramji bought two mobiles. The cost of mobiles are ₹ 2495 and ₹ 1628 respectively. Find the total cost of the mobiles.

Solution:

Cost of Balaji's mobile = ₹ 2495
Cost of Ramji's mobile = ₹ 1628
To find out the total cost, add the cost of the mobiles.

Th	H	T	O
		①	
2	4	9	5
+ 1	6	2	8
			3

Step 1

Add the ones

5 ones + 8 ones = 13 ones
13 ones = 1 ten 3 ones
Write 3 under the ones place
Carry ① to tens place

Th	H	T	O
	①	①	
2	4	9	5
+ 1	6	2	8
		2	3

Step 2

Add the tens

① ten + 9 tens + 2 tens = 12 tens
12 tens = 1 hundred 2 tens
Write 2 under the tens place
Carry ① to hundreds place

Th	H	T	O
①	①	①	
2	4	9	5
+ 1	6	2	8
	1	2	3

Step 3

Add the hundreds

① hundred + 4 hundreds + 6 hundreds = 11 hundreds
11 hundreds = 1 thousand 1 hundred
Write 1 under the hundreds place
Carry ① to thousands place

Th	H	T	O
①	①	①	
2	4	9	5
+ 1	6	2	8
4	1	2	3

Step 4

Add the thousands

① thousand + 2 thousands + 1 thousand = 4 thousands
Write 4 under the thousands place

Total cost of 2 mobiles is ₹ 4123

1)

Th	H	T	O
4	3	2	7
2	8	6	2

2)

Th	H	T	O
2	7	4	5
5	4	6	3

3)

Th	H	T	O
3	5	4	6
4	6	8	7

4)

Th	H	T	O
5	3	6	9
3	2	4	3

5)

Th	H	T	O
4	2	5	9
3	8	3	5

6)
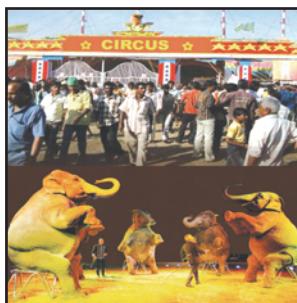
Th	H	T	O
3	0	9	4
4	6	3	8
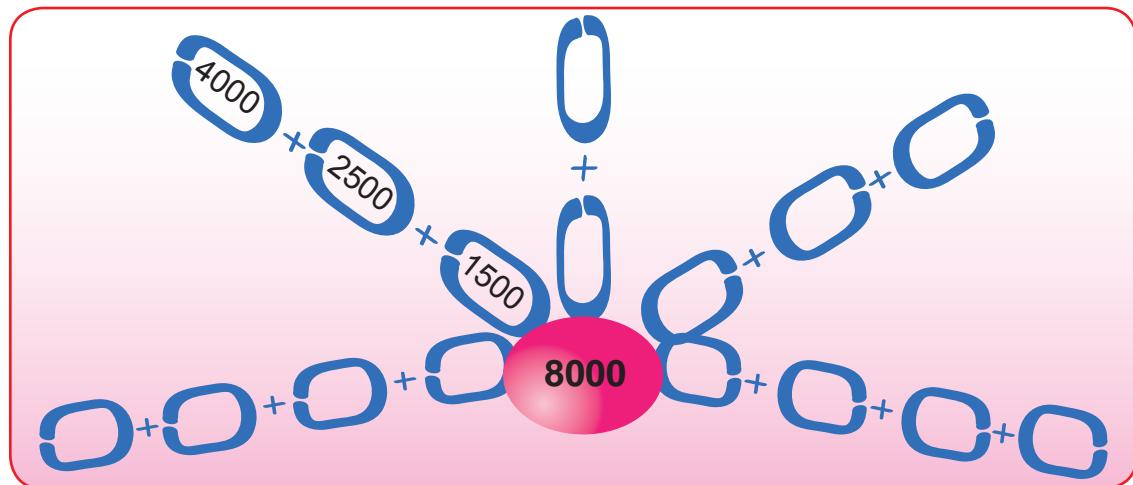
7) In a circus 2625 persons visited the noon show, and 3768 persons visited the night show. Find the total number of persons.

8) In a mango grove, 1243 malgova, 2132 sendura and 2644 neelam mangoes were plucked from mango trees. Find the total number of mangoes plucked.

Lab activity

1) Fill up the addition chain
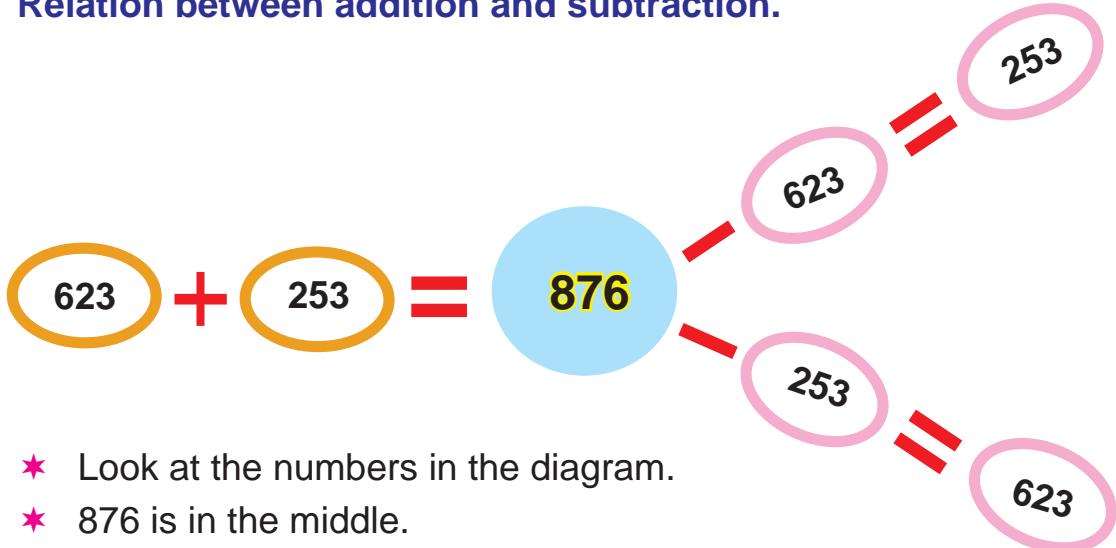
2) Take two sets of number cards from 0 to 9. Using the number cards form eight 4 digit numbers. Take two numbers at a time and add.

MATHEMATICS
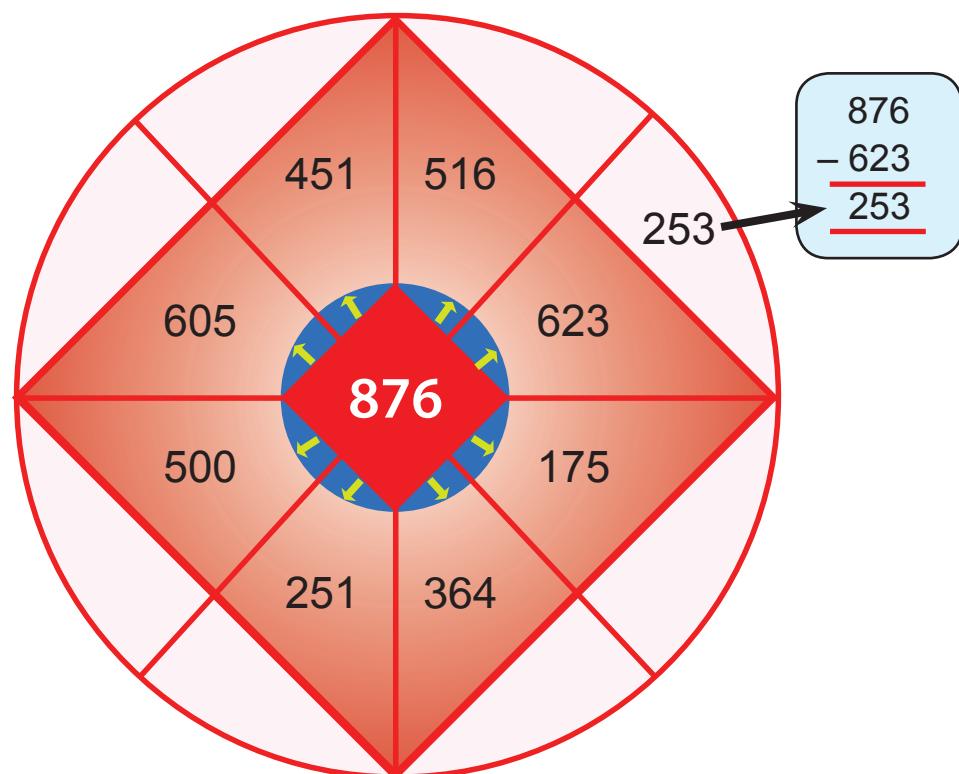
Subtraction

Relation between addition and subtraction.

623 + 253 = **876**

623 = 253

253 = 623

★ Look at the numbers in the diagram.

★ 876 is in the middle.

★ 876 is written as the addition of two numbers.

★ Every addition has two subtractions.

Write the missing numbers by subtraction.

451   516

605   623

876

500   175

251   364

253 →

$$\begin{array}{r} 876 \\ -\ 623 \\ \hline 253 \\ \hline \end{array}$$

Subtraction without grouping

Bharath purchased an aircooler and a water heater for his house. The total cost is ₹ 8965. Find the cost of water heater, if the cost of the air cooler is ₹ 4650.

Solution:

Total cost of the air cooler and the water heater = ₹ 8965

Cost of the air cooler = ₹ 4650

The cost of water heater = ₹ 8965 − ₹ 4650

Th	H	T	O
8	9	6	5
− 4	6	5	0
			5

Step 1

Subtract the ones

5 ones – 0 ones = 5 ones

Write 5 in the ones place.

Th	H	T	O
8	9	6	5
− 4	6	5	0
		1	5

Step 2

Subtract the tens

6 tens – 5 tens = 1 ten.

Write 1 in the tens place.

Th	H	T	O
8	9	6	5
− 4	6	5	0
	3	1	5

Step 3

Subtract the hundreds

9 hundreds – 6 hundreds = 3 hundreds.

Write 3 in the hundreds place.

Th	H	T	O
8	9	6	5
− 4	6	5	0
4	3	1	5

Step 4

Subtract the thousands

8 thousands – 4 thousands = 4 thousands.

Write 4 in the thousands place.

The cost of water heater is ₹ 4315.

MATHEMATICS

1) 9865
    − 2334
    _____
    _____

2) 7650
    − 2310
    _____
    _____

3) 4030
    − 2010
    _____
    _____

4) 8897
    − 3405
    _____
    _____

5) 8743
    − 1212
    _____
    _____

6) 7329
    − 2018
    _____
    _____

7) 9000
    − 7000
    _____
    _____

8) 5678
    − 2400
    _____
    _____

9) Population of a village is 8625. Of them 4314 are working in fields. Find the remaining population.

10) Number of vehicles parked in a shed is 2448. If 1236 vehicles are taken out, calculate the vehicles left in the shed.

11) A car manufacturing company produced 2680 cars. 1570 cars are sold. How many cars are left in the company?

MATHEMATICS

Subtraction with grouping

There were 8260 tea packets in a van. Of these 6984 tea packets were sold out. Find the remaining tea packets.

Solution:

Tea packets in the van	= 8260
Sold tea packets	= 6984
Remaining tea packets	= 8260 – 6984

Step 1

Th	H	T	O
		⑤	⑩
8	2	6̶	0̶
– 6	9	8	4
			6

Subtract the ones

4 cannot be subtracted from 0
Take 1 ten from 6 tens, (we get 1 ten =10 ones)
⑩ ones – 4 ones = 6 ones

Step 2

Th	H	T	O
	①	⑮	⑩
8	2̶	6̶	0̶
– 6	9	8	4
		7	6

Subtract the tens

8 cannot be subtracted from 5
Take 1hundred from 2 hundreds,
(1hundred = 10 tens) and adding with ⑤ tens
we get ⑮ tens – 8 tens = 7 tens

Step 3

Th	H	T	O
⑦	⑪	⑮	⑩
8̶	2̶	6̶	0̶
– 6	9	8	4
	2	7	6

Subtract the hundreds

9 cannot be subtracted from 1
Take 1 thousand from 8 thousands,
(1 thousand = 10 hundreds) adding with ① hundred
we get ⑪ hundreds – 9 hundreds = 2 hundreds

Step 4

Th	H	T	O
⑦	⑪	⑮	⑩
8̶	2̶	6̶	0̶
– 6	9	8	4
1	2	7	6

Subtract the thousands

⑦ thousands – 6 thousands = 1 thousand

The remaining tea packets = 1276

1)
Th	H	T	O
5	2	8	6
− 3	4	5	2

2)
Th	H	T	O
7	3	4	5
− 2	6	5	2

3)
Th	H	T	O
9	2	5	6
− 4	6	7	8

4)
Th	H	T	O
8	5	6	3
− 3	7	6	8

5)
Th	H	T	O
5	0	5	0
− 2	2	4	0

6)
Th	H	T	O
7	0	6	4
− 3	4	3	7

7)
Th	H	T	O
6	4	0	0
− 2	1	2	0

8)
Th	H	T	O
6	0	0	0
− 2	1	5	0

H	K	W	D	R	O	R	A
2810	4795	1834	3850	4280	4693	4578	3627

**Write the letters for the answers from 1 to 8
in the box and read.**

9) The sum of two numbers is 3527. If one number is 2685, find the other number.

10) 2456 passengers travelled in a train. Of them, 1387 passengers have reserved their tickets, how many passengers have not reserved?

11) A lungi merchant bought 6570 lungies. If he was left with 1898 lungies, then how many lungies were sold?

12) In a two wheeler shop 543 vehicles were there during the beginning of a month. Again 1475 vehicles arrived for the sale. If 1682 vehicles are sold, how many vehicles are left at the end of the month?
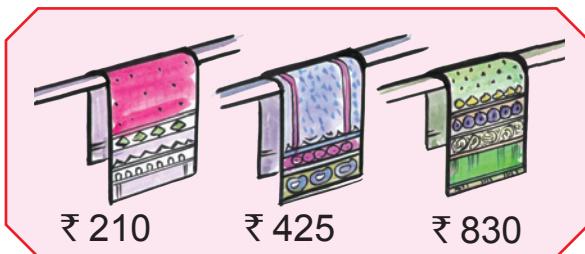
MATHEMATICS

- Enter the result in the given circles.
- Add the numbers in each side of the triangle.
- What do you observe?

1) In a street there are 40 houses in the left side and 30 houses in the right side. What is the total number of houses?

2) In a bus 60 passengers are sitting and 30 passengers are standing. How many passengers are there in the bus?

3) In an aeroplane there are 200 passengers and 20 workers. How many are there in that aeroplane?

4) There are 1000 roses in a flower shop. 300 roses are used to make garlands. How many roses are left?

5) 30 laddus are issued from 100 laddus. How many laddus are remaining?

6) 20 boys and 30 girls are studying in a class. What is the total number of students?

7) A jack fruit has 160 pods in it and another jack fruit has 100 pods. What is the total number of pods?

8) 700 lemons were bought to prepare pickle. Out of these 200 were used. How many lemons were left?

9) In a shop there were 500 shirts. 250 shirts were sold. How many shirts were left.

MATHEMATICS
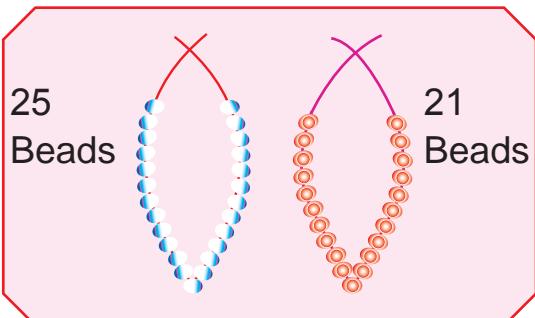
Observe the following pictures and frame the problems.

₹ 210   ₹ 425   ₹ 830
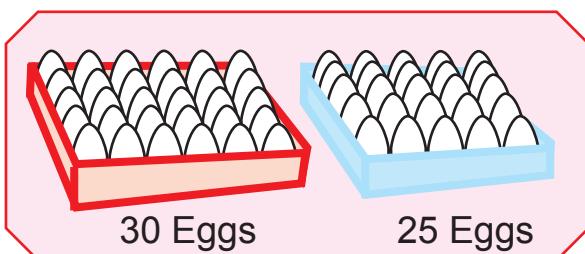
Problem

What is the total cost of 3 sarees?

Problem

25 Beads   21 Beads

Problem

30 Eggs   25 Eggs
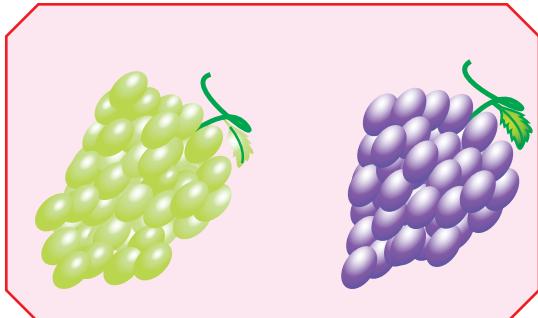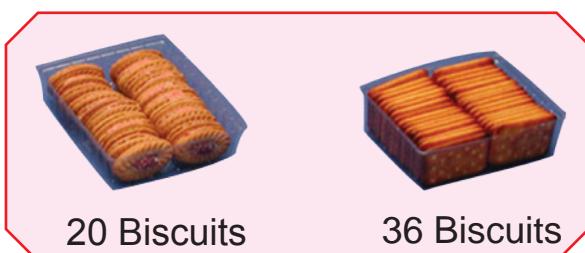
Problem

There are 70 green grapes and 60 black grapes. How many green grapes are more than black grapes?

Problem

20 Biscuits   36 Biscuits

Problem

5 Poories   35 Poories

Estimation in addition and subtraction
Estimation in addition

Balachandar has to travel 14 km by bus and 18 km by train to reach his office. Estimate the total distance he has to travel.

Mode of travel	Actual distance	Estimated distance
Bus	14 km	10 km
Train	18 km	20 km
Total distance	32 km	30 km

The difference between
actual distance and estimated distance = 32 km – 30 km

Difference   = 2 km

Practice

A basket contains 83 kg of tamarind and another basket contains 46 kg of tamarind. Estimate the total weight of tamarind. Find the difference between actual weight and estimated weight.

Estimation in subtraction

A goldsmith had 88 g of gold coins. He used 63 g of gold coins to make different patterns of ornaments. Estimate the weight of gold coins left with him.

Coins	Actual weight	Estimated weight
Total	88 g	90 g
Used	63 g	60 g
Left	25 g	30 g

The difference between actual weight and estimated weight

$$= 30 \text{ g} - 25 \text{ g}$$

$$\text{Difference} = 5 \text{ g}$$

Practice

There were 76 kg of cakes in a bakery shop. In two days 43 kg were sold. Estimate the weight of the cakes left.

Do the sums

1)   3462
   + 2524
   _____

2)   2835
   + 4124
   _____

3)   3654
   + 4303
   _____

4)   1347
   + 6532
   _____

5)   2289
   + 7642
   _____

6)   3009
   + 4006
   _____

7)   2010
   + 5297
   _____

8)   1800
   + 3589
   _____

9) A company produced 4152 dresses for boys and 2340 dresses for girls. Find the total number of dresses produced.

10) A factory manufactured 2436 mixies last week and 3527 mixies this week. How many mixies were manufactured altogether?

11)   8000
    − 3000
    _____

12)   5900
    − 4700
    _____

13)   6058
    − 2035
    _____

14)   7090
    − 5040
    _____

15)   6437
    − 2329
    _____

16)   8942
    − 3424
    _____

17)   7826
    − 3918
    _____

18)   6243
    − 2462
    _____

19) A farmer took 6475 bags of carrot to the market. He sold 5243 bags. How many bags of carrot are left?

20) In a school 2238 students went to various educational tours last year. If 1356 students went to some tours this year, how many more students went last year?

MATHEMATICS
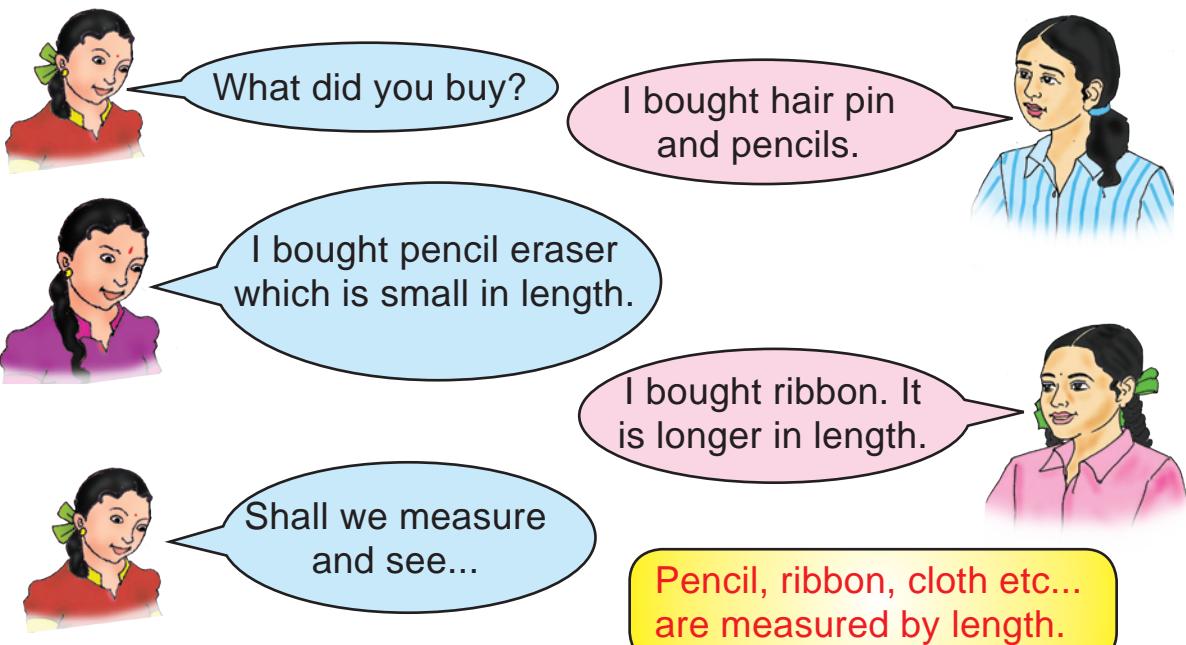
4 MEASURING LENGTH

FANCY STORE

Friends are talking about the stationary items which they have bought.

What did you buy?

I bought hair pin and pencils.

I bought pencil eraser which is small in length.

I bought ribbon. It is longer in length.

Shall we measure and see...

Pencil, ribbon, cloth etc... are measured by length.
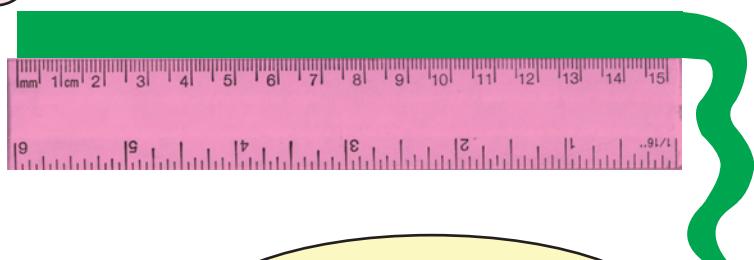
Measuring tools

Shall we measure with scale?

Pencil is 10 centimetre long.

Now can we measure ribbon by using tape?
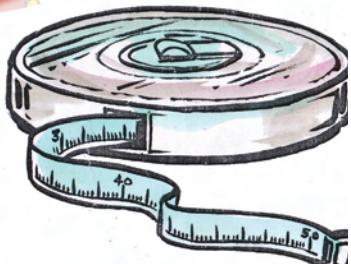
The length of the ribbon is more than the length of the scale.

Is there any other tools to measure?

We can also use the tape to measure.
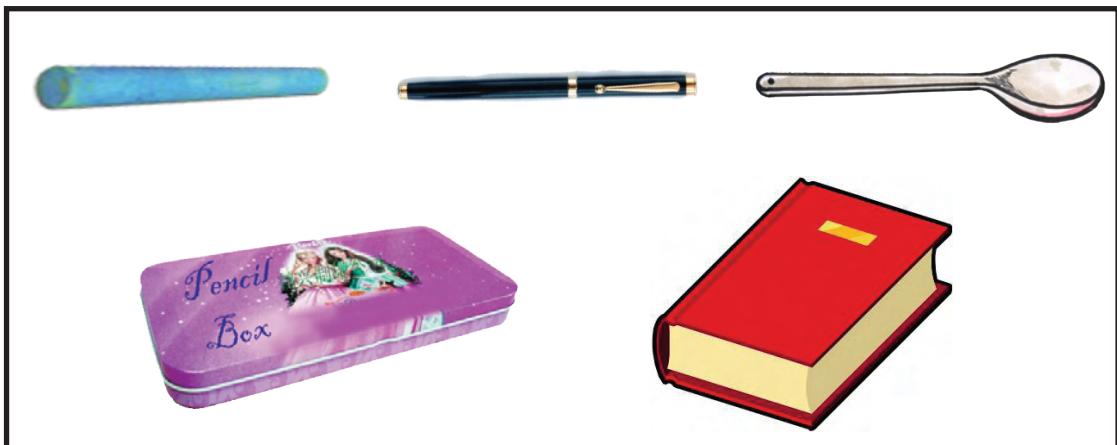
We measure the length of a playground with a measuring tape.

Length of smaller objects are measured in centimetre

Centimetre can be written as 'cm'.

Take the things given in pictures and write the approximate and actual length.

1) Length of a chalk = `8 cm`

2) Length of a pen =

3) Length of a spoon =

4) Length of a box =

5) Length of a book =
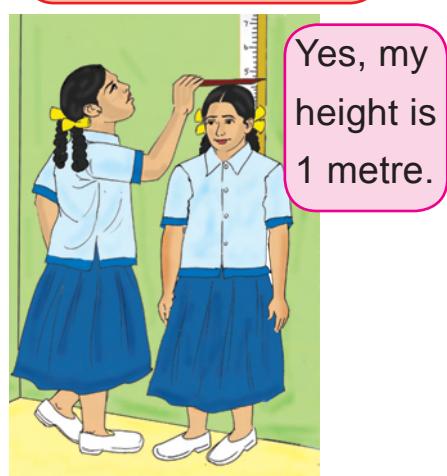
Relation between metre and centimetre

Archana is measuring her friend's height.

> Height is measured in metre.
>
> 1 metre = 100 centimetre
>
> Metre can be written as 'm'.

You are 100 cm tall

Yes, my height is 1 metre.

Conversion of metre into centimetre

Convert 3 m into cm.
1 m = 100 cm
3 m = 3 × 100 cm
3 m = **300 cm**

Convert 15 m into cm.
1 m = 100 cm
15 m = 15 × 100 cm
15 m = **1500 cm**

Convert 6m 20cm into cm
1 m = 100 cm

step 1
6 m = 6 × 100 cm
6 m = 600 cm

step 2
600 cm
+ 20 cm
_____
620 cm

6m 20cm = **620 cm**

To change m into cm, multiply by 100

Practice

1) 2 m = 200 cm

2) 5 m = _____ cm

3) 25 m = 2500 cm

4) 48 m = _____ cm

5) 3m 40cm = 340 cm

6) 7m 10cm = _____ cm

7) 8m 7cm = 807 cm

8) 6m 5cm = _____ cm

Conversion of centimetre into metre

Convert 500 cm into m

100cm = 1m
500 ÷ 100 = 5
500cm = **5m**

Convert 725 cm into m

100cm = 1m
725cm = 700 cm + 25 cm = **7 m + 25 cm**
725cm = **7m 25cm**

To change cm into m, divide by 100

1)	200 cm	=	2 m	
2)	500 cm	=	____m	
3)	5700 cm	=	____m	
4)	4800 cm	=	____m	
5)	485 cm	=	4 m 85 cm
6)	775 cm	=	___m ___cm
7)	970 cm	=	___m ___cm
8)	706 cm	=	7 m 6 cm

Addition

12m 75cm + 58m 56cm

```
    m    cm
   12    75
+  58    56
   _____
   71    31
   _____
```

12m 75cm + 58m 56cm = **71m 31cm**

Step 1

Add cm

```
   75
+  56
   ____
131cm = 1m 31cm
```

Step 2

Add m

```
   1
   12
+  58
   ____
   71 m
```

Addition

m	cm
92	19
+ 83	42

m	cm
22	65
+ 97	48

m	cm
25	60
+ 56	35

m	cm
43	08
+ 27	64

Life related problems

Reena bought 15m 85cm of red ribbon and 28m 50cm of green ribbon to decorate the hall. What is the total length of the ribbon.

	m	cm
Length of the red ribbon =	15	85
Length of the green ribbon =	+ 28	50
Total length of the ribbon =	44	35

Total length of the ribbon is 44m 35cm

Ashok sold 20m 95cm of cloth to one customer and 11m 35cm to another customer. Find the total length of the cloth.

Subtraction without conversion

95m 27cm − 46m 18cm

```
    m    cm
    95   27
−   46   18
    ─────────
    49   09
```

95m 27cm − 46m 18cm = **49m 9cm**

Step 1

subtract cm

```
   27
−  18
   ────
   9 cm
```

Step 2

subtract m

```
   95
−  46
   ────
   49 m
```

m	cm
94	84
− 44	12

m	cm
85	44
− 68	29

m	cm
95	75
− 57	36

m	cm
32	28
− 12	09

MATHEMATICS

Subtraction with conversion

84m 85cm − 68m 96cm

m	cm
84	85
− 68	96
15	89

96 cm cannot be subtracted from 85 cm. So take 1 m from 84 m.

Step 1

subtract cm

85		185
− 96		− 96
		89

Step 2

subtract m

83
− 68
15

84m 85cm − 68m 96cm = **15m 89cm**

Practice

Subraction

m	cm
93	29
− 32	65

m	cm
85	21
− 47	75

m	cm
98	46
− 78	89

m	cm
56	18
− 28	37

Life related problems

Dinesh bought 80m 50cm of wire to fence his garden. He used only 65m 75cm of wire. Find the remaining length of the wire.

		m	cm
Total length of the wire	=	80	50
Length of the wire used	= −	65	75
	=	14	75
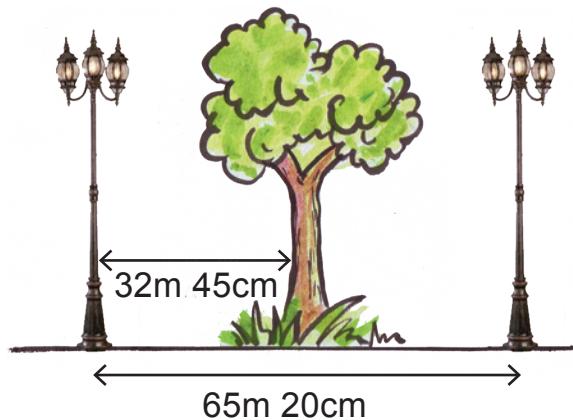
Remaining length of the wire is **14m 75cm**
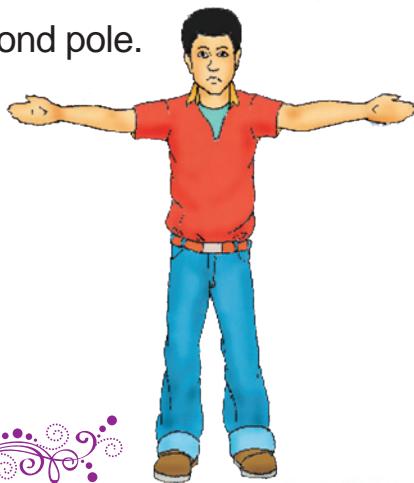
1) Kannan sold 48m 87cm of curtain cloth from the roll of 95m 75cm. How much is left over?

32m 45cm

65m 20cm

2) Distance between two poles is 65m 20cm. In between the poles there is a tree which is 32m 45cm away from the first pole. Find the distance between the tree and the second pole.

One metre is about the distance from one hand to other when your arms are stretched out

PROJECT
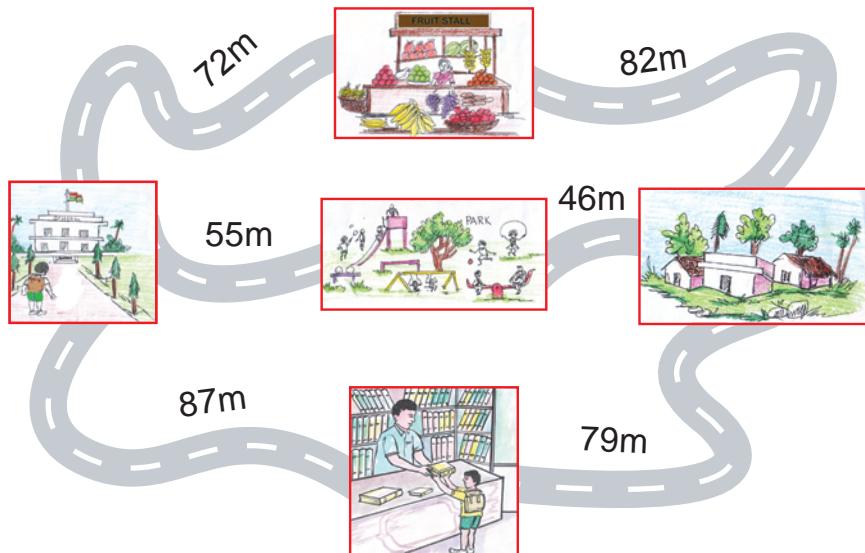
Estimate the following distances.

1) Distance between your classroom and the next classroom.

2) Distance between your classroom and playground.

3) Distance between the two poles in a kho - kho ground.

4) Distance between two neighbouring trees in your school.

MATHEMATICS

Look at the route map. The various distance are marked in the figure.

72m   82m

55m   46m

87m   79m

Vijay goes to school by walk. While going to school he buys notebooks from the bookstall.

1) Distance between Vijay's house and the bookstall is _____

2) From the bookstall he goes to the school. Distance between the bookstall and the school is _____

3) Total distance covered by him from his house to school is _____

4) After school he goes to the fruit stall and buys fruits, then he goes to his house. Distance covered from school to house is _____

5) After reaching home he goes to the park and comes back home. Total distance covered by him is _____

6) In case if he comes directly from school to his house through park, then the distance is _____

Fill in the blanks

1) 1300 cm = _____ m

2) 5800 cm = _____ m

3) 563 cm = _____ m _____ cm

4) 1865 cm = _____ m _____ cm

5) 809 cm = _____ m _____ cm

6) 7m 25cm = _____ cm

7) 4m 60cm = _____ cm

8) 8m 15cm = _____ cm

Do the sums

1)
m	cm
80	20
+ 35	65

2)
m	cm
77	77
+ 38	60

3)
m	cm
85	85
+ 76	42

4)
m	cm
62	80
− 35	65

5)
m	cm
97	07
− 38	52

6)
m	cm
35	55
− 22	68
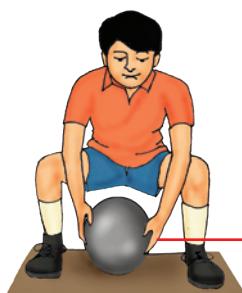
7) Ravi purchased 1m 35cm shirt bit for him and 1m 65cm shirt bit for his brother. Find the total length of the shirt bits.

8) An electrician had 63m 39cm of wire. He used 36m 48cm. How much length of wire was left with him?

MATHEMATICS

5 WEIGHING OBJECTS
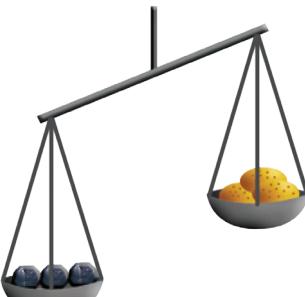
More weight   **Less weight**

Basket ball

Iron ball
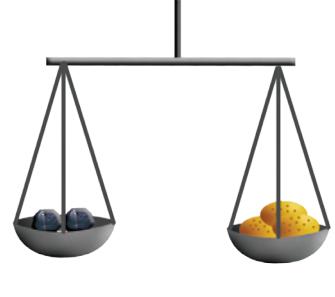
| Weight of potatoes are more | Weight of potatoes are less | Weight of potatoes are equal |

Kilogram can be written as 'kg'

Weighing stones and weight of objects in kilogram
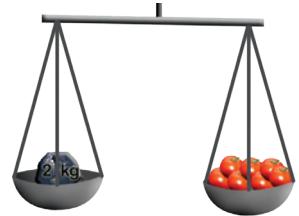
1kg   2kg   5kg   10kg

Various weighing machines

	Weight of tomatoes = 2 kg
	Weight of grapes = ___ kg
	My weight = ___ kg
	Weight of sugar = ___ kg
	Weight of firewood = ___ kg

Collect the pictures of different types of weighing machines and use it to prepare an album.

Addition in kilogram

Raghu   Kumar   Anandhan   Weight of

Raghu	= 32 kg
Kumar	= 30 kg
Anandhan	= + 31 kg
	93 kg

32 kg   30 kg   31 kg

Total weight of them is 93 kg

Practice

1) Find the total weight of vegtables

15 kg   10 kg   7 kg

Weight of		
tomatoes	=	15 kg
potatoes	=	10 kg
onions	= +	7 kg
Total weight of vegetables	=	

2) Find the total weight of cereals.

Green gram

Black gram

Wheat

10 kg   75kg   63kg

Weight of		
wheat	=	10 kg
green gram	=	75 kg
black gram	= +	63 kg
Total weight	=	

3) Weight of rice 68 kg, sugar 55 kg and ragi 48 kg.
   Find the total weight.

MATHEMATICS
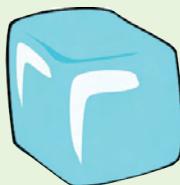
Subtraction in kilogram

Weight of mangoes in the shop = 25 kg

Weight of mangoes sold = − 17 kg

8 kg

Remaining weight of mangoes in the shop = 8 kg

Initial weight of Ice bar is 28 kg.   After 15 minutes weight of Ice bar is 16 kg.

28 kg

− 16 kg

12 kg

Weight of melted Ice = 12 kg

Practice

1) Weight of

Laddu =   28 kg

Sold = −16 kg

Remaining laddu = _____ kg

2) Weight of

Halwa =   43 kg

Sold = − 18 kg

Remaining halwa = _____ kg

3) Weight of
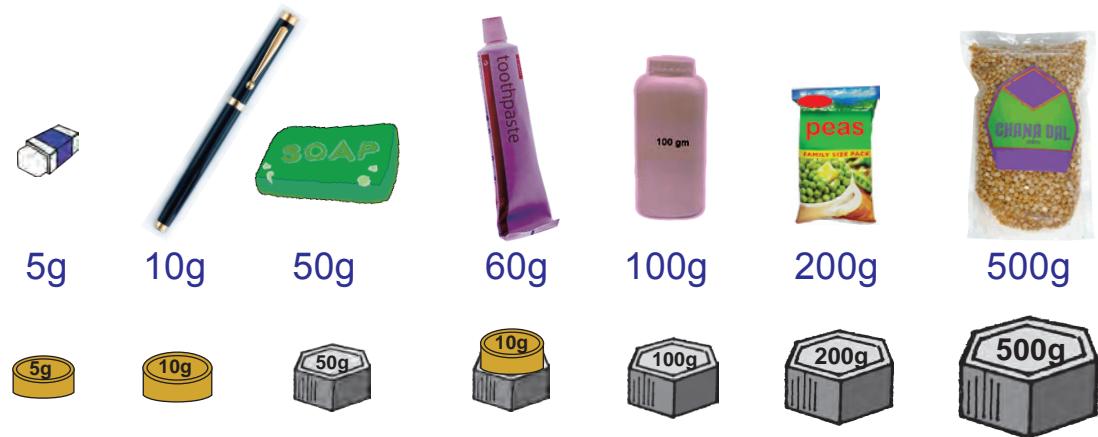
Clay   = 25 kg

Horses = −19 kg

Weight of unused clay = _____ kg

MATHEMATICS

Weighing stones and weight of objects in gram

5g	10g	50g	60g	100g	200g	500g

Tea powder, coffee powder, gold, pepper, etc., are measured by grams
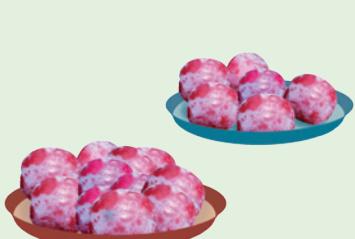
gram can be written as 'g'

1 Kilogram = 1000 gram

500g + 500g = 1000g

200g + 200g + 200g + 200g + 200g = 1000g

100g 100g 100g 100g 100g 100g 100g 100g 100g 100g = 1000g

Addition in gram

Let us find the total weight of the plums

200 g
500 g
+ 700 g
———
1400 g

1 kg = 1000g

1400 g = 1000 g + 400 g
= 1 kg + 400 g
= 1 kg 400 g

Total weight of plums = 1kg 400g

1) Find the total weight of grapes.

$$\begin{array}{r} 150\ g \\ 350\ g \\ +\ 850\ g \\ \hline \\ \hline \end{array}$$

Total weight of grapes = _____ g

| 2) $\begin{array}{r} 250\ g \\ 345\ g \\ +\ 657\ g \\ \hline \\ \hline \end{array}$ | 3) $\begin{array}{r} 247\ g \\ 199\ g \\ +\ 238\ g \\ \hline \\ \hline \end{array}$ | 4) $\begin{array}{r} 645\ g \\ 561\ g \\ +\ 359\ g \\ \hline \\ \hline \end{array}$ | 5) $\begin{array}{r} 894\ g \\ 467\ g \\ +\ 500\ g \\ \hline \\ \hline \end{array}$ |

Subtraction in gram

Let us calculate weight of mango.

1650g Apple Guava Mango

1350g Apple Guava

Weight of

$$\begin{array}{lcr} \text{yellow bag} & = & 1650\ g \\ \text{red bag} & = & -\ 1350\ g \\ \hline & & 300\ g \\ \hline \end{array}$$

Weight of mango is 300 g

| 1) $\begin{array}{r} 756\ g \\ -\ 435\ g \\ \hline \\ \hline \end{array}$ | 2) $\begin{array}{r} 539\ g \\ -\ 49\ g \\ \hline \\ \hline \end{array}$ | 3) $\begin{array}{r} 465\ g \\ -\ 309\ g \\ \hline \\ \hline \end{array}$ | 4) $\begin{array}{r} 647\ g \\ -\ 35\ g \\ \hline \\ \hline \end{array}$ |

Addition in kilogram and gram

Find the total weight of the following things.

Things	Weight	
	kg	g
Television	20	500
Chair	5	350
Bicycle	30	100
Total	55	950

Steps
- Add the grams
- Add the kilograms

Total weight of things = 55 kg 950 g

Practice

1) Find the total weight of papayas.

1kg 255g   2kg 350g   3kg 300g

$$
\begin{array}{r}
\text{kg} \quad \text{g} \\
1 \quad 255 \\
2 \quad 350 \\
+\ 3 \quad 300 \\
\hline
 \\
\end{array}
$$

Total weight of papaya is _____ kg _____ g

2) Find the total weight of vegetables

17kg 250g   13kg 500g   25kg 105g

$$
\begin{array}{r}
\text{kg} \quad \text{g} \\
17 \quad 250 \\
13 \quad 500 \\
+\ 25 \quad 105 \\
\hline
 \\
\end{array}
$$

Total weight of vegetables is _____ kg _____ g

3)
$$
\begin{array}{r}
\text{kg} \quad \text{g} \\
77 \quad 355 \\
89 \quad 090 \\
+\ 35 \quad 155 \\
\hline
 \\
\end{array}
$$

4)
$$
\begin{array}{r}
\text{kg} \quad \text{g} \\
44 \quad 363 \\
13 \quad 147 \\
+\ 15 \quad 289 \\
\hline
 \\
\end{array}
$$

5)
$$
\begin{array}{r}
\text{kg} \quad \text{g} \\
88 \quad 154 \\
16 \quad 246 \\
+\ 26 \quad 343 \\
\hline
 \\
\end{array}
$$

Subtraction in kilogram and gram

Let us find the weight of honey

4kg 895g

5kg 950g

		kg	g
Weight of bee hive	=	5	950
Weight of honey	= −	4	895
Weight of honey wax	=	1	055

Weight of honey wax is 1kg 55g

Practice

1)

13kg 750g   11kg 255g

		kg	g
Weight of purple paint	=	13	750
paint used	= −	11	255

Remaining paint is _____ kg _____ g

2) Find the difference between the weight of oranges and jack fruit.

45kg 258g   18kg 163g

		kg	g
Weight of oranges	=	45	258
jack fruit	= −	18	163

Difference in weight = _____ kg _____ g

3)	kg	g
	25	456
−	14	369

4)	kg	g
	37	576
−	25	455
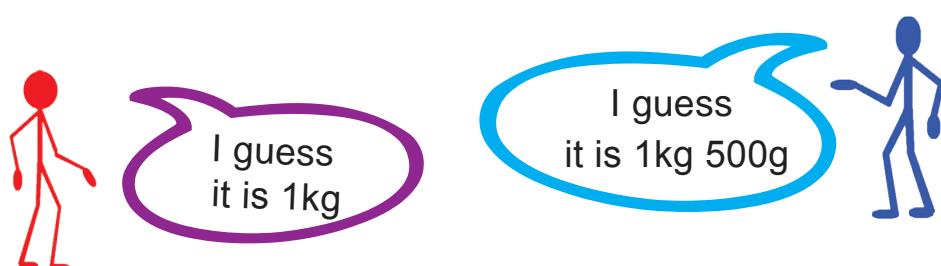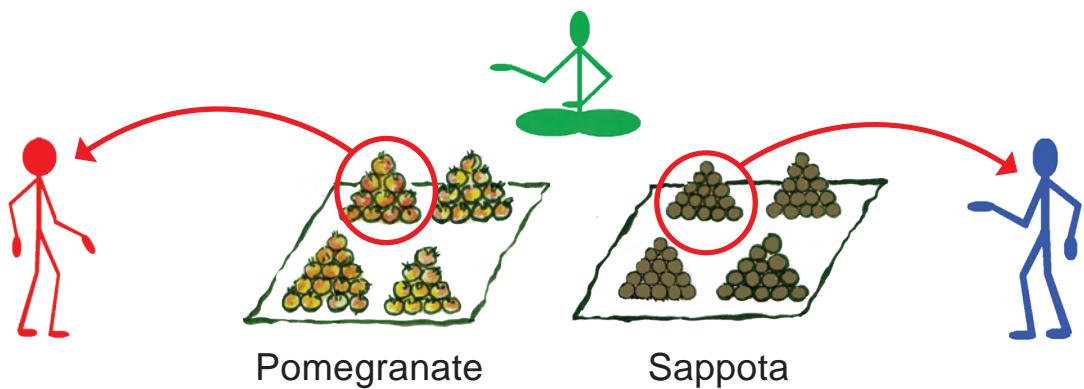
5)	kg	g
	54	342
−	37	523
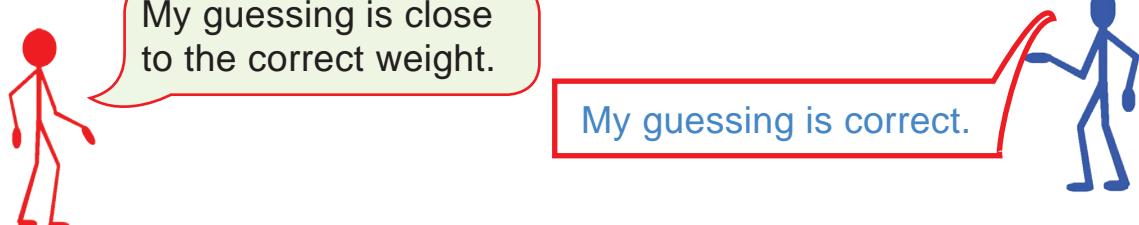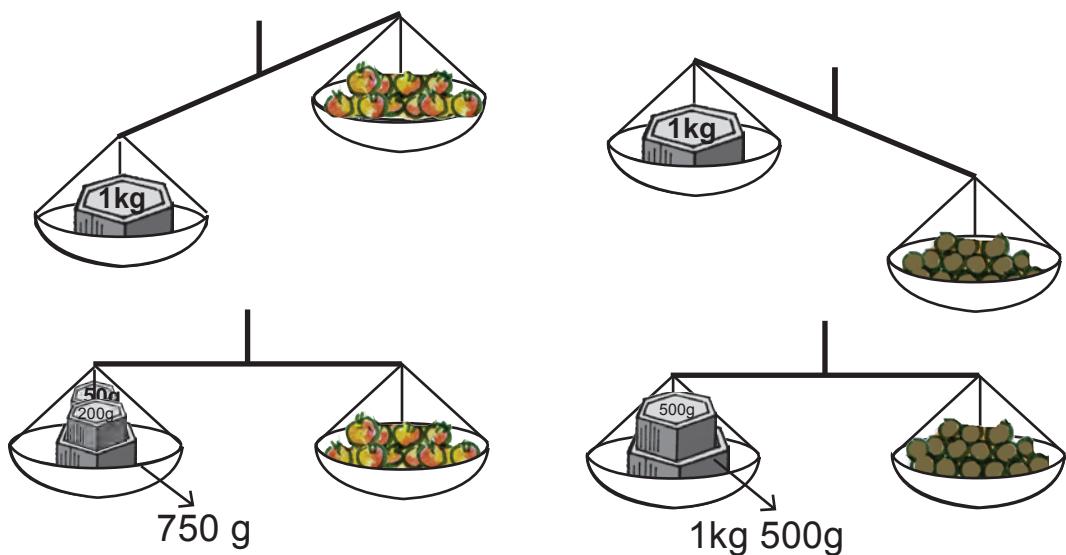
MATHEMATICS

Guessing weight

Shall we check our guessing, by weighing !

Pomegranate

Sappota

I guess it is 1kg

I guess it is 1kg 500g

Both are verifying their guessing.

1kg

1kg

1kg

500g 200g

500g

750 g

1kg 500g

My guessing is close to the correct weight.

My guessing is correct.

Estimate the weight of objects.

Your Book   _____ g
Pencil Eraser _____ g
Bucket   _____ g
Crayon   _____ g
School Bag   _____ g

Practice

In a grocery shop the following items are purchased.

Name of the customer	Red chilli		Coriander		Turmeric		Cumin		Pepper	
	kg	g	kg	g	kg	g	kg	g	kg	g
Meena	2	175	4	150		300		150		125
Radha		150	1	125		150		50		50
Kumaresan	2	000	3	200		200		250		300

Find the quantity of groceries bought by each customer.

Lab activity

Guess and verify the weights.

S. No.	Vegetables	Guessing weight	Correct weight
1.			
2.			
3.			
4.			
5.			

Fill in the blanks.

1) 8500g = _____ kg + _____ g

2) 7250g = _____ kg + _____ g

3) 6kg 550g = _____ kg + _____ g

4) 13kg 650g = _____ kg + _____ g

Do the sums.

1)

kg	g
10	080
+ 20	355

2)

kg	g
29	054
+ 31	453

3)

kg	g
31	423
47	315
+ 54	154

4)

kg	g
75	859
− 39	676

5)

kg	g
91	759
− 77	597

6)

kg	g
82	235
− 17	198

7) One package of sweet is 5kg 600g and another package of sweet is 2kg 350g. Find the total weight.

8) The quantity of red chillies in two baskets are 25kg 550g and 1 0 k g 350g respectively. Find the total weight of red chillies.

9) First bag contains 52kg 600g of wheat and second bag contains 35kg 250g of wheat. How much more weight of wheat contains in the first bag than second bag?

10) A sandalwood weighs 18kg 250g. A part of it weighing 12kg 100g is cut off from it. What is the weight of the remaining piece?

MATHEMATICS

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

Subject:

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

MATHEMATICS