

## CLASS-VI

### TOPIC- FRACTIONS

**P.K TESTING** : (i) Write the fractions representing the shaded portion.



Ans –  $\frac{1}{4}$

(ii) Write the numerator of fraction  $\frac{2}{9}$ .

Ans - 2

(iii) Which are like fractions etc.

**VOCABULARY USED** — Fractions , numerator, denominator, equivalent , mixed etc .

**IMPORTANT SPELLINGS**- Equivalent , numerator, denominator , proper , improper etc.

**RESOURCES** - Smart board , internet , board , book etc .

**Aids/Innovative ideas used to explain the topic** — Teacher will use smart class to make concept more clear.

### Fraction wheel or Rangoli

Teacher will encourage students to create a pattern with different coloured papers by cutting them in to  $\frac{1}{2}$  ,  $\frac{1}{4}$  ,  $\frac{1}{8}$  etc . of the original size of paper .

### PROCEDURE —

Fraction : Fraction is a part of a whole  $F = \frac{\text{Numerator}}{\text{denominator}}$

Different types of fractions : -

(i) Improper fractions – a fraction in which numerator is greater than denominator for eg.  $\frac{7}{2}$ .

(ii) Proper fraction - a fraction in denominator is greater than numerator for eg.  $\frac{2}{7}$ .

(iii) Mixed fractions – It is a combination of whole and proper fractions.

(iv) Like Fractions – two or more fractions having same denominator eg.  $\frac{2}{7}, \frac{3}{7}, \frac{4}{7}$ .

(v) Unlike Fractions – Two or more fractions having different denominator eg.  $\frac{2}{3}, \frac{3}{5}, \frac{3}{7}$ .

(vi) Equivalent Fractions – fractions that represent the same parts of the whole for eg.  $\frac{1}{2}, \frac{2}{4}$ .

(vii) Like fractions – to add or subtract two like fraction we add or subtract numerator ,denominators will remain the same . eg.  $\frac{1}{5} + \frac{2}{5} = \frac{3}{5}$ .

(viii) Unlike fractions – To add or subtract unlike fraction convert them into like then add or subtract.

Eg.  $\frac{9}{5} - \frac{3}{4}$  = L.C.M of 5 and 4 is 20 so make it 20 by multiplying denominator and numerator both by same number then do subtraction of the produced like fractions. Ans is  $\frac{21}{20}$ .

## CO-SCHOLASTIC ACTIVITY:-

**Participation of students – To check concept of fraction by giving them an activity . Read the shaded parts and fill the answers in the given table .**

R	O	O	Y						
R	O	O	Y						
R	O	O	Y						
R	O	O	Y						
R	O	O							
R	O	O							
R	O	Y							
R	O	Y							
R	O	Y							
R	O	Y							

**R – RED COLOUR    O – ORANGE    Y – YELLOW**

Teacher will encourage the students to solve this activity .

COLOUR	FRACTION	LOWEST TERM
RED	$\frac{10}{100}$	$\frac{1}{10}$
ORANGE	$\frac{16}{100}$	$\frac{4}{25}$
YELLOW	$\frac{8}{100}$	$\frac{2}{25}$
RED + ORANGE	$\frac{10}{100} + \frac{8}{100} = \frac{18}{100}$	$\frac{9}{50}$

**TEACHER** will encourage students to solve the sums given in exercise of NCERT books . She solve few questions in class also.

**RECAPITULATION** – Teacher will ask few questions :

1. Convert the improper fractions  $37/5$  ,  $77/8$  into mixed.
2. convert into improper fractions

**ASSIGNMENT** – Student will be asked to complete given assignments i.e work sheet book which contains M.C.Q ,fill ups , T/F , value based questions . Some questions from W.sheet book will be discussed in class also .

ASSESSMENT : Teacher will assess the students by giving a test including all topics .

Q.1

**M.C.Q**

- (a) The fraction which is not equal to  $4/5$  is :-
- (i)  $40/50$  (ii)  $12/15$  (iii)  $16/20$  (iv)  $9/15$
- (b) When  $\frac{1}{4}$  is written with denominator as 12 , its numerator is:-
- (i) 3 (ii) 8 (iii) 24 (iv) 12
- (c) Which of the following fraction is the greatest ?
- (i)  $5/7$  (ii)  $5/6$  (iii)  $5/9$  (iv)  $5/8$
- (d) Sum of  $4/17$  and  $15/17$  is ?
- (i)  $19/17$  (ii)  $11/17$  (iii)  $19/34$  (iv)  $2/17$
- (e) If  $5/8 = 20/p$  , then value of P is
- (i) 23 (ii) 2 (iii) 32 (iv) 16

Q.2

**FILL IN THE BLANKS**

- (a) A number representing a part of a \_\_\_\_\_ is called a fraction.
- (b) \_\_\_\_\_
- (c)  $18/5$  is an \_\_\_\_\_ fraction .
- (d) Fractions with same denominator are called \_\_\_\_\_ .

(e)  $\frac{5}{8} + \frac{2}{8}$  gives \_\_\_\_\_ fraction .

**Q.3 State True or False**

(a) Fraction  $\frac{18}{39}$  is in its lowest form .

(b) Fraction  $\frac{15}{39}$  and  $\frac{45}{117}$  are equivalent fraction .

(c) The sum of two fraction is always a fraction .

(d)  $\frac{25}{19} + \frac{6}{19} = \frac{31}{38}$  .

**LEARNING OUTCOME – At the end of chapter students will be able to**

(a) Find out exact value

(b) Identify a fraction by comparing the number of shaded parts to the number of equal parts .

(c) Explain what a fraction is ?

(d) Identify the number of shaded parts and number of equal parts in a shape (circle , rectangle ) .

## TOPIC – DECIMALS

**P.K TESTING -** (i) How can we write three eighths ?

(ii) How can we write tenths ?

(iii) write the decimal form of  $\frac{3}{100}$

(iv) write in words 35.9 .

**VOCABULARY USER –** Decimal , point , fraction , like , hundredths , thousands etc.

**IMPORTANT SPELLINGS -** Hundredths , thousandths , decimal , equivalent etc .

**RESOURCES -** Smart board , internet , charts etc .

**AIDS/INNOVATIVE METHODS USED TO EXPLAIN THE TOPIC -** Teacher will use smart class to make the concept more clear .

### INNOVATIVE PEDAGOGY

Teacher will explain a paper cutting activity to co-relate fractions and decimals for more clarity of decimals .Teacher will cut a circle of any radius on a drawing sheet and divide this into four equal parts by proper paper folding method and shade one part out of four with any colour . Now , she will tell them about concept of  $\frac{1}{2}$  ,  $\frac{1}{4}$  etc .

After this she will engage students in a discussion about any nicknames they may have and ask the students if calling someone by nickname changes the person and she will relate fractions to decimals by making a comparison to nicknames and explain them that fractions and decimals are different names for the same value . for eg.  $\frac{1}{10} = 0.1$  .

She will explain this concept by means of an activity . She will call two students and tell them to cut two circle of 10 cm radii each . students will divide these circles into 10 equal parts and instruct them to write  $\frac{1}{10}$  on each part of on the circle and 0.1 on each part of another circle when they interlock both circle , they will come to know about relationship of decimals and fractions .

### PROCEDURE-

#### DECIMAL PLACE VALUE TABLE

Place value	HUNDREDS	TENS	ONES	.	TENTH	HUNDREDS	THOUSANDTH

	6	1	3	.	2	4	7
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Q. Write the place value of 2 in 613.247 .

ANS - 2 Tenth =  $2/10$

Q. Write the expanded form of 7.256

ANS -  $7.256 = (7 \times 1) + (2 \times 1/10) + (5 \times 1/100) + (6 \times 1/1000) = 7 + 2/10 + 5/100 + 6/1000$  .

**MULTIPLICATION AND DIVISION OF DECIMAL NUMBERS** – While multiplying two decimal number first multiply them as whole number , count the number of digits of right of the decimal point in both the decimal number . E.G –  $1.8 \times 0.4 = 0.72$  .

To multiply a decimal number by 10,100 or 1000 we move the decimal number to right as many places as there are zeroes after 1.

For e.g  $0.69 \times 100 = 69$

Similarly division of decimals will be explained .

**PARTICIPATION OF STUDENTS** - To check the concept of fraction and decimals , teacher will give them an activity . Read the shaded parts and fill the answers in the given table .

R	O	O	Y						
R	O	O	Y						
R	O	O	Y						
R	O	O	Y						
R	O	O							
R	O	O							
R	O	Y							
R	O	Y							
R	O	Y							
R	O	Y							

**R – RED COLOUR    O – ORANGE    Y – YELLOW**

Teacher will encourage the students to solve this activity .

COLOUR	FRACTION	LOWEST TERM	DECIMAL
RED	$10/100$	$1/10$	0.1
ORANGE	$16/100$	$4/25$	0.16
YELLOW	$8/100$	$2/25$	0.08
RED + ORANGE	$10/100 + 8/100$ $= 18/100$	$9/50$	0.18

Teacher will encourage the students to solve the sumd given in exercise of NCERT book . She solve few questions in the class also .

### RECAPITULATION –

1. Convert the following into mixed fraction  $37/5$  ,  $77/8$  .
2. Arrange in ascending / descending order  $5/12$  ,  $\frac{3}{4}$  ,  $7/8$  ,  $17/24$
3. Add 19.8 , 7.26 , 0.074 , 2.34
4. Find product (a)  $4.26 \times 0.08$  (b)  $32.5 \times 1000$  .
5. Divide (a)  $0.068 / 0.04$  (b)  $32.5 / 100$  .

**ASSIGNMENTS –** Students will be asked to complete given assignments i. e worksheet book which contains M.C.Q Fill-ups , T/F , Value based questions . Some questions from W.sheet book will be discussed in the class also .

**LEARNING OUTCOMES: (1)** Students will able to use decimal points to write numbers less than one.

(2) Students can describe the relationship between place value and decimal

Point.

(3) Students can write and read numbers with decimal points.

## **Topic: Symmetry**

PK Testing:- Teacher will ask various types of the historical shapes like Gateway of India, Taj Mahal etc.

### **Learning objectives:-**

- a) To learn the concept of symmetry like vertical and horizontal symmetry.
- b) To understand the axis of symmetry in different figures.
- c) To make the idea clear that all figures do not have a line of symmetry.
- d) To understand about multiple lines of symmetry.
- e) To learn the concept of mirror line and reflection.

### **Vocabulary Used:-**

- a) Asymmetrical: not identical on either side of a central line.
- b) Axis of symmetry: a line going through the centre of a figure or solid
- c) Line of symmetry: the imaginary mirror in line symmetry
- d) Reflection symmetry: is easy to recognize, because one half is reflection of other half.
- e) Symmetry: a shape is symmetrical when one half of shape can fit exactly over the other half.
- f) Line of symmetry: a figure has line symmetry if one half is a mirror image of other half.

### **Important Spellings:**

Symmetry, Axis, Multiple, Lines, Reflection, Mirror

Explanation with Innovation Method

Material Used

One piece of bank paper per student magazines with several symmetrical items in them variety of writing and drawing utensils

### **Activity:**



Have your student look through magazines and cut out any objects that they think are symmetrical. Challenge them to find unusual ones have them tape the pictures up on white board when there are quite a few pictures on the board, talk about any that may not be obviously symmetrical and ask the student to explain why they chose them.

Have each student choose one picture from the board, fold it in half and tape it to their paper ask them to draw the missing half of the picture. Depending on their grasp of symmetry you can encourage them to be creative in their coloring or background designs showcase the completed picture in your classroom.

### Symmetry Poem

A butterfly  
a battle  
an apple  
and a pear  
a mandolin  
a fiddle  
a circle  
and a square  
A kite  
A star  
A planet

A perfect Christmas tree if you cut them down the middle you'll discover SYMMETRY!

**Link Used:** [http://bit.ly/Appy\\_store\\_Shape\\_Symmetry](http://bit.ly/Appy_store_Shape_Symmetry)

**Teaching Aids :** Blackboard, Smart Class.

**Procedure :** First teacher will display a line through centre Then she will ask students what do the three shapes have in common?

Now she will start the topic with following definitions and examples.

- i) Symmetry: A shape has symmetry if both halves match exactly when it is folded on the line of symmetry.
- ii) Axis of symmetry: The line of symmetry acts as a mirror. It is also called the axis of symmetry.
- iii) The line of symmetry can be real or imaginary.
- iv) There are three types of symmetry

#### a) **Horizontal Symmetry:**

If a horizontal line is drawn across the middle of an object such that the top portion is a mirror image of the bottom then that object is said to have horizontal symmetry.

B

C

b) **Vertical Symmetry:**

If a vertical line is drawn vertically down the middle of an object such that the two halves are mirror image of each other then the object is said to have vertical symmetry eg.

A

U

**Multiple lines of symmetry:**

If a figure has more than two lines of symmetry it is said to have multiple lines of symmetry eg.

O

A circle has infinite lines of symmetry

**Equilateral Triangle**

**Student's participation:** Teacher will give simple drawings like a flower, a birthday cap, a triangle, a square drawn on a squared paper to a child to be completed on other side. The designs so completed are symmetrical.

**Recapitulation :** Teacher will ask the following simple questions

- a) How many lines of symmetry does a circle have?
- b) How many lines of symmetry does an equilateral triangle have?
- c) What are symmetrical objects?

**Art integration:** Have the students create butterflies by folding a sheet of construction paper in half and cutting half of a butterfly shape so that when it opens it will be whole butterfly. Then have the students thickly spread or squirt paint on one of the inside and folding the paper back together so that image transfers to other half, making a symmetrical design.

**Home Assignment:-** Teacher will be asked students to complete the question given in Maths worksheet book.

**Learning Outcomes:** Students will be able to

- Realize that symmetry is seen in many real world objects.
- To define symmetry and identify and list examples of symmetrical objects, both man made and in nature.
- Identify shapes as either having or not having symmetry.
- Identify and draw lines of symmetry.

Resources Computer, printed worksheets

Co-Scholastic activities: Beyond drawing the symmetrical butterfly, however, I like to show my students exactly how symmetrical they are. In order to do this we create symmetrical self portraits an activity that uses precise measurement to get beautiful results. Below you will find the directions I had my students follow to create their "other half"

Materials Close up photo of each student

- 8.5 X 11 white paper for printing
- Paper cutter
- 9 x 12 white construction paper
- Glue Sticks
- Rulers
- Crayons and colored pencils for coloring.

Step by step directions

Step 1: First, I took a close up photo of each student It's best to take it straight an, making sure the head is not titled to left or right.

Step 2: Next, I downloaded the photo from my camera and resized them in Microsoft worked so that they took up most of a full page. Once they were resized, I printed them in color.

Step 3: Using scissors, I cut out each head. Having the head trimmed makes it easier to find the line of symmetry for next step.

Step 4: Using the paper trimmer, I cut each photo in half, straight down the middle. I used the middle of the student's nose to help me find the half way mark on each student face.

Step 5: Students glued their half heads onto a piece of 9%12 white construction paper.

Step 6: Using the rules, students pick a starting point and measure how far it is from exact same distance on the opposite side, marking the spot with a dot.

Step 7: Students continue to measure and mark dots all around the perimeter of their heads once they have generated a good amounts of dots, I tell the class that they have made themselves into a dot to dot drawing and it is time for them to

connect the dots once the dots are connected, they can really start to see their image emerge.

Step 8: Next, students began coloring their portraits.

**Assessment:** Teacher will conduct the simple class test.

- I) Draw the shape which has exactly one line of symmetry.
- II) A parallelogram has line of symmetry.
- III) Write two English alphabets have both vertical as well as horizontal line of symmetry?
- IV) 

Shapes	No. of lines of symmetry.
a) Rectangle	
b) Square	
c) Equilateral triangle	
d) Scalene triangle.	

## **Topic:                      Ratio and proportion**

**PK Testing:**     Teacher will ask simple question related to fractions

- a) What is proper fraction?
- b) What is improper fraction?
- c) What is mixed fraction?

**Learning Objectives:**

- a) To learn about ratio and its equivalent ratios concept
- b) To understand the concept of proportion
- c) To learn about unitary method and how it is used in solving questions

**Vocabulary Used:**     Ratio, Proportion, middle, proportion.

**Important Spellings:** Comparison, middle, proportion.

**Explanation with Innovative Method:**

Teacher will explain the concept of Ratio with the help of activity. In this activity students will create a survey sheet of random questions to ask their class mates. The answer to these questions should be dichotomous for ease of use.

**Innovative pedagogy:** <http://bit.ly/2MasL97>

**Teaching Aids:**             Blackboard, Smart class

**Procedure:**                 Teacher will explain the topic step by step.

In the step 1 she will explain the definition of Ratio, Proportion, Unitary Method.

In the step 2 she will explain the Ratio, proportion and unitary method with the help of examples.

**Student Participation:**             Students will solve cross word puzzles given by the teacher.

**Recapitulation:**                 Teacher will ask questions from the students.

- a) What is ratio?
- b) What do the two numbers in ratio represent?

**Art Integration:**

Conduct a class discussion about ratios For example; what is ratio why do we use ratios? Can you think of ratios in the real world? Give students a chance to talk to one another and then collect their ideas on chart paper do not correct or comment on their answer. Just keep them for later review and consideration once you have idea on the chart paper, explain to them that ratios are way to compare two quantities.

**Home Assignment:**

Teacher will be asked the students complete the questions given in maths worksheet book.

**Learning outcome:**

- a) Students will understand the concepts of ratio.
- b) Students will know how to determine ratio.
- c) Students will know how to calculate with rates.
- d) Students will understand the concepts of a cross product.

**Resources:** Computer, Printed Worksheets.

**Co scholastic activities:**

Teacher will conduct from test for the students In this test. she will ask multiple choice questions from the students.

- a) A ratio has .....Unit.
- b) A ratio of two numbers is generally expressed in its.....from.
- c) a, b, c, d are in proportion if  $a:b =$  :
- d) The first term of a ratio is called .....and the second term is .....
- e) When two ratios are equal, they are said to be in.....

**Assessment:**

Teacher will conduct the test

- a) Divide Rs 6500 in ratio 2:3 between Arti and Bharti.
- b) Cost of a dozen bananas is Rs 15 Find cost of 16 Bananas.

- c) Are 2, 3, 4, 6 are in proportion?
- d) The simplest form of a ratio 35:84 is .....
- e) Compare the ratio 2:9 and 5:12

## **Topic:      Understanding Elementary Shapes**

**PK Testing:**    Teacher will show the Geometrical figures and ask from the students name these geometrical figures.

**Learning Objective:**    Students will be able to

- a) Differentiate between 2-d and 3-d shapes.
- b) Able to identify the basic 2d shapes like square, Rectangle etc and 3-d shapes like cube, cuboids, cylinder etc.
- c) To understand the difference between circle and circular Region.
- d) Able to clearly identify the basic parts of a circle that includes chord, radius and diameter, sector and segment, as and semicircle, centre etc.
- e) Develop skills of working on Alice on 3-d Programming free ware.

**Vocabulary Used:**    Line, Line segments, Straight angle, Right angle, 3d shapes, 2d shapes, perpendicular lines, Intersecting lines, parallelogram, Triangle, Cylinder, Cube, Cuboids.

**Important Spellings:** Parallelogram, Cuboids, Cylinder, Revolution, Equilateral, Isosceles, Scalene

### **Explanation with Innovative Method:**

Create an item that includes all or part of your shape Draw and label your design.

Take three ice-cream sticks and fasten them to make a triangle. Try to push any of vertices of triangle. It will not be distorted. Now take 4 ice cream sticks and make a quadrilateral. Try to push any of vertices. it will be distorted easily. Add fastens another stick diagonally, now try to push any of the vertices of this quadrilateral. It will not be distorted why?

This specific property of triangle makes it a favorite geometrical shape for engineer in constructing bridges electric towers etc.

**Innovative Pedagogy:**                    <https://www.meritnation.com>

**Procedure:** Teacher will start the topic with the definition of angles, Types of angles Types of Triangles, Types of polygon, Two dimensional and three dimensional shapes.

**Student participation:** Students will make 3d shapes like cylinder, Cone, Cube, Cuboids, Triangular prism, Triangular pyramid, square pyramid.



**Recapitulation:** Teacher will ask question from students.

- a) What is right angle?
- b) What is acute angle?
- c) What is equilateral Triangle?
- d) What is scalene triangle?

**Art Integration:**

Students can work to create composite figures using geometric shapes in the style of medieval stained glass work using pencils and scrap paper. Create a triangle, square or rectangle using only smaller triangles, rectangles and squares. Using a black marker, draw a large geometric shape in the middle of your page. Then draw the smaller geometric shapes that comprise or make up, that large shape color in shapes using different colored maker.

**Home Assignment:**

Teacher will be asked the students to complete questions given in maths worksheet book.

**Learning Outcome:**

- Analyze the effectiveness of the strategies used during the lesson to develop mathematical understanding.
- After the shape sort, the students were able to identify more than one shape, the defining attributes of these shapes and names of it.
- Identify where the shape is found in classroom and school and it will confirm students have a better understanding of 2D and 3D figures.

**Resources:** Computer, Printed worksheets

**Co Scholastic Activities:** Divide the class into 4 groups Assign 4 different subtopics of lesson to prepare through Alice.

**Topics**

**Group 1:** **Identify the parts:**

Different parts of circles will be shown through Alice, with their names, by the group.

**Group 2:** **Fill in the blanks:**

The words like chord, semi circle, Cube, Cuboids, Square, rectangle etc can be used to fill in blanks Using Alice software, using text and makers prepare the assignment.

**Group 3:**      **Three dimensional shapes:**

Search for shapes in the gallery of Alice show all the shapes and their names as animation Give different color for each shape.

**Group 4:**      **Searching for shapes:**

Select from the Gallery some objects or part of objects and compare the shapes with the known shapes and name them.

**Assessment:** Teacher will conduct simple class test

- a) How many sides does an octagon have?
- b) How many sides does on hexagon have?
- c) How many faces, vertices and edges does that following shapes have
  - I)      Cube    II) Cuboids    III) Cylinder    IV) Cone

## **Topic : Mensuration**

### **1.      Learning Objective :-**

- (i)      To learn the concept of perimeter
- (ii)     To learn the concept of Area

### **2.      Previous Knowledge Testing :-**

Teacher will check the previous knowledge of students by show some geometrical figure and ask the question from students and identify the figure.

### 3. **Vocabulary used :-**

Radius, Diameter, Polygon, Pentagon

### 4. **Important Spellings :-**

Circumference, boundary, triangular, Region, String

### 5. **Explanation with Innovative Methods links used :-**

Smart Board, <http://In.Pinterest.com>

### 6. **Procedure :**

Teacher will introduce the topic with the help of definitions. Perimeter is the sum of length of all the sides of triangle is known as perimeter of rectangle.  $\text{Perimeter} = 2 (l + b)$

Perimeter of square =  $4 \times \text{side}$ .

Perimeter of Equilateral Triangle =  $3 \times \text{side}$

**Area :-** The amount of surface enclosed by closed curve is called area.

Area = Length  $\times$  Breadth

Area of square = side  $\times$  side

Area is measured in square units.

## **7. Student Participation :-**

Teacher will give Geometrical figures and ask the students and find the perimeter of these figures.

## **8. Recapitulation :-**

- (i) Find the perimeter of rectangle whose length is 8.5cm and breadth 6.5cm
- (ii) Find the perimeter of square whose side is 16cm
- (iii) Find the area of square whose side is 15m
- (iv) A carpet is 2.5m long and 1.5m breadth. Find the cost of carpet if cost per meter is Rs. 25.
- (v) What is area of square with perimeter 25cm.

## **9. Art Integration with other domain :-**

Teacher will do the poem on perimeter and area.

**Link :-** Teachers Pay Teachers.com.

## **10. Assignment :-**

- (i) A rectangular park whose length is 6.5cm and breadth is 3.8. Find the perimeter of rectangle.
- (ii) A square park is watered whose length is 3.2. Find the area of square park?
- (iii) Find the area of square whose perimeter is 256cm.
- (iv) Find the perimeter of rectangle whose length is 3.2cm and breadth is 2.4cm.
- (v) Find the area of tile ins square shape whose side is 15cm.

## **11. Learning Outcomes :-**

- (i) Students will able to understand the concept of perimeter of square and rectangle.
- (ii) Students will able to understand the concepts of Area of square and area of rectangle.

**Resources :**

Smart Board, Poem on perimeter and area, Chess Board to understand the concept of area of square. Geometrical figure for finding the area and perimeter.

## **12. Co-Scholastic Perimeter :-**

Teacher will explain them to do bamboo craft. Students will make a square and triangle using matchsticks and they will find perimeter.



## **Class VI**

### **Subject : Mathematics**

### **Topic : Practical Geometry**

#### **1. Learning Objective :-**

- (i) To learn how to construct geometrical figures using ruler and compass.
- (ii) To understand the concept of perpendicular lines.
- (iii) To construct the perpendicular bisector.
- (iv) To learn the concept of angle bisector.
- (v) To construct the angle.

#### **2. Previous Knowledge Testing :-**

Teacher will ask questions

- (i) What is the difference between line and a ray?
- (ii) What do you mean by line-segment?
- (iii)

#### **3. Vocabulary used :-**

Compasses, Angle bisector, Perpendicular bisector

#### **4. Explanation with Innovative Methods :-**

Geometry, Smart Board, Lab Activities

#### **5. Procedure :-**

Teacher will introduce the topic with the help of definitions line segment is the part of line. It has two end points. Teacher will explain the constructions of line-segment of length 6.5cm using ruler and compasses.

**Perpendicular lines** :- Two lines intersect each other at right angles are called perpendicular lines.

**Angle bisector** :- The bisector of an angle is a ray whose end point is the vertex of the angle and which divides the angle into two equal angle.

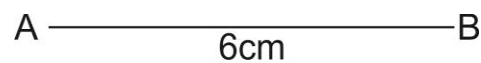
**Circle** :- A circle is closed curve drawn such a way that the curve stays at same distance from a fixed point called centre. Distance between the centre is called radius.

#### **6. Students Participation :-**

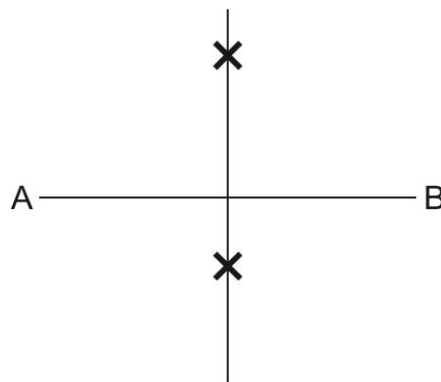


Teacher will explain the chapter Practical Geometry with student's participation. Teacher will make the perpendicular bisector with Big Geometry Box. One by one Teacher call the student and construct an activity for perpendicular bisector. Student will draw a line-segment of 6cm.

Name it as



After that open a compasses of more than half of line-segment 6cm from point A one tip of compasses at point A make an arc. Other from point B cut at centre. In this way construct an perpendicular bisector.



## 7. Recapitulations :-

- (i) Only one perpendicular can be drawn to a given line segment.

- (ii) Number of perpendicular bisector that can be drawn to a given line segment is one.
- (iii) With ruler and compasses, any angle can be bisected.
- (iv) Using the two set squares in a geometry box, we can draw an angle of  $105^\circ$ .
- (v) We can construct an angle of  $100^\circ$  using ruler and compasses.
- (vi) With a given centre and a given radius, only one circle can be drawn.
- (vii) Two bisectors can be drawn for a given angle.
- (viii) Two or more lines intersect each other at point is called intersecting lines.
- (ix) We can easily find the bisector of a line.
- (x) The angle bisector of  $65^\circ$  is  $30^\circ$ .

## **8. Art Integration with other domain :-**

Make a protector with different angles.

## **9. Assessment :-**

- (i) Construct an angle with compasses.
  - (a)  $75^\circ$                       (b)  $105^\circ$                       (c)  $135^\circ$
  - (d)  $120^\circ$                       (e)  $60^\circ$

- (ii) Draw a circle of radius 5cm. Draw any two of its chords. Construct the perpendicular bisector of these chords.
- (iii) Draw an angle of  $135^\circ$  and bisect it.
- (iv) Draw a line segment 6.4cm. Divide it into four parts.

## **10. Learning Outcomes :**

- (i) Students are able to understand the concept of perpendicular bisector, perpendicular lines.
- (ii) Students are able to understand the concept how to make angles with compasses.

## **11. Co-Scholastic Activities :-**

[www.uniexcellence.com](http://www.uniexcellence.com).

This helps different construction of angle.



# TERM – 2

## Class VI

### Subject : Mathematics

#### **(i)Topic:- DATA HANDLING**

(ii) **Objective**:- 1. To learn the concept of Tally marks frequency table

2. To learn the Concept of pictograph.

3. To learn the Concept of bar graph

3) **P.K. Testing** :- Teacher will check the previous knowledge of students

Q) What is data?

Q) Do you know the difference between raw data and organised data? Yes/ No

Q) What is pictograph?

4) **Vocabulary used**:- Data, Organising data, Frequency distribution, Pictograph, Bar graph.

5) **Important Spellings** :- Frequency, Organised, Tally marks, Bar graph.

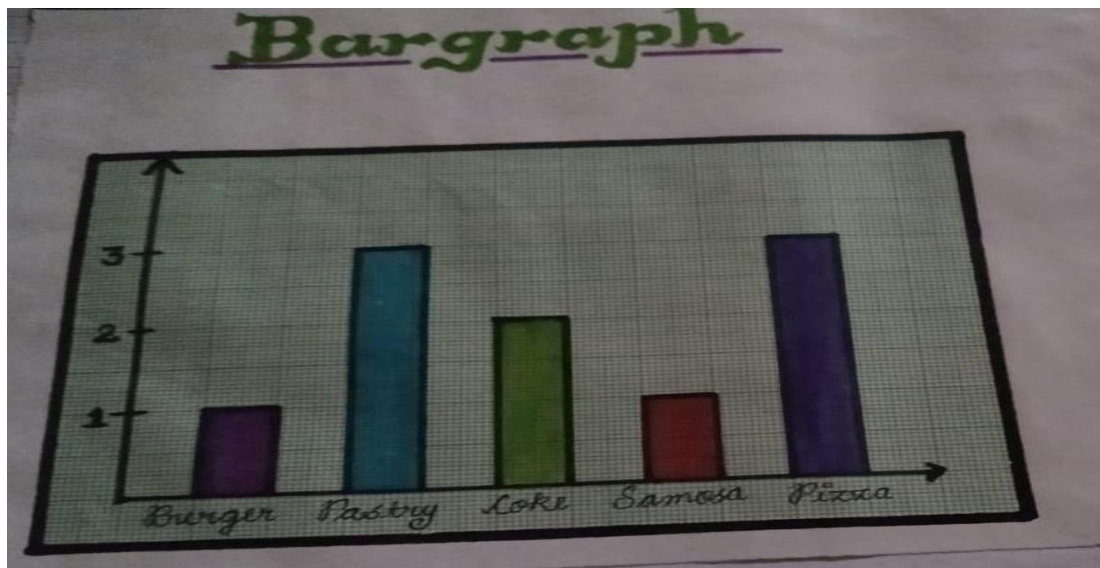
6) **Explanation with Innovative methods lenis used**

Model, Chart, Graphs on Smart board, Task of collecting the data on a particular topic.

7) **Procedure** :- Teacher will introduce the topic with help of definitions.

**Data** :- Data is the collection of facts and figures to give some information. Teacher will introduce the topic of tally moves by taking an example of blood groups. Different blood groups A, AB, O, B. Arrange in order then prepare the frequency table. Teacher will do the activity in the class. Arrange the students in height wise. Then teacher will told the students to stand together some height wise therefore same students tally marks is 2(II) collect the data of five families of salary of parents then prepare the bar graph on it.

8) **Students Partipation** :- Teacher will tell the students to collect data and show it on bar graph presentation.



9) **Art Integration with other domain** :- Teacher will do the poem on bar graph.

When we make a bar graph

A bar graph

A bar graph

When we make a bar graph

These things we will need on axis

A Scale

The choices AND LABELS

Don't forget a little your bars And a key !

10) **Co-Scholastic Activities**

**Activity II** :- The students have to conduct a survey of eating habits and food preferences of family.

**Survey for food preferences**

Read the questions carefully and tick only one questions.

(i) **Food I like the most is**

North Indian

Chinese

Italian

(ii) **My favourite meal is**

Breakfast      Lunch      Dinner

(iii) **The desert I like the most is**

Cake      Ice cream      Fruits      Sweets      Chocolates  
Others

11) **Recapitulation** :- Teacher will ask the following questions.

1. Define pictograph?
2. What is raw data?
3. Represents the frequency of number on \_\_\_\_\_
4. The weight of new born babies (in kg) 2.8, 3.0, 2.1, 2.5, 2.9, 2.3, 2.8, 2.9, 2.5, 2.7, 3.1, 3.7, 3.2, 3.5

Arrange the weight in ascending order.

- (i) How many babies weight 2.9 kg?
- (ii) How many babies more than 2.7 kg.

12) **Assessment** :- Q) Prepare a frequency table on different 4 types of sweets available in market and liking sweet of different people.

Q) Prepare a bar graph on watching on different sports on T.V.

13) **Resources** :- Smart Board, Graphs, Poem on bar graph, Collect data and Survey on different families.

14) **Learning outcomes** :-

- (i) Students will able to understand how to collect, sort, organise and classify data.
- (ii) Students will able to understand the concept of pictograph

Students will able to understand the concept of Bar graphs.

## **CH -KNOWING OUR NUMBERS**

**P.K Testing** - 1. What are numbers?

2. Difference between place value and face value.

3. Do you know roman numeral ?

4. What are natural numbers?

**Vocabulary Used** - Round off , Roman Numerals , Brackets .

**Important Spellings** - International , Estimation , Roman Numerals.

**Resources** - PPT , Book , Work Book .

**Aids/Innovative Methods used to explain the topic** - Smart board , Place value charts , puzzles , Games Etc .

## **INNOVATIVE PEDAGOGY – Puzzle**

Write a number using the digits 1,2,3 and 4 each only twice such that the 1's are separated by four digits , the 2's are separated by three digits , the 3's are separated by two digits and 4's are separated by one digit .

**PROCEDURE** – Teacher will introduce the topic with definition of natural numbers .

Numbers which starts from 1 are called natural numbers . In other words we can say that counting numbers are called natural numbers . Indian and International place value charts will be explained on board as well on smart class .

**ESTIMATION** – Estimation means approximate value .

**RULES** – Round off the number to nearest 10's .

If the digit at one 's Place is less than 5 , round down .

If it is more than or equal to 5 then round up . E.g 67

$7 > 5$  so round up to 70.

Similarly round off the number to nearest 100's 1000's and general rules will also be explained .

**ROMAN NUMERALS** – Will also be explained by writing rules and symbols on board .

Seven basic symbols are :

Hindu Arabic - 5    10    50    100    500    1000

Roman 's - V    X    L    C    D    M

**CO-SCHOLASTIC ACTIVITY** -

Complete the puzzle

a				b				c
			d					
e	f							
h								
i								

d - Predecessor of 9741

gg - CCLXVI + CXIX

i – Smallest 7 digit number

$$c - 600000 + 7000 + 800 + 70$$

f - Place value of 2 in 32075

## h - CXVI - LXXV

Teacher will encourage the students to solve this type of question from book (N.C.E.R.T ) and also from workbook.

**RECAPTULATION** – Solve the following

- (i) Write the number name of the given numeral - (a) 34,23,19,196      (b) 342,319,196
- (ii) Write successor of 9999
- (iii) Add smallest five digit number and greatest 4 digit number .



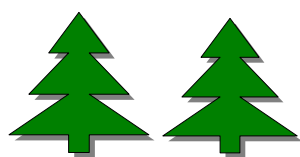
(iv) Write Roman numeral for (a) 179 (b) 64

(v) Estimate by general rules  $3965 \times 512$

**ASSIGNMENT** - Students will be asked to complete given assignments (W- sheet book ) which contains M.C.Q , True/False, Value Based Questions and some important sums .

### LAUGHTER TIME -

Q. 1 What quantity is represented by this



Ans . 9 ( t(h)ree + t(h)ree + t(h)ree )

Q.2 A dust storm blows through , now how much do you have ?

Ans . 99 ( Dirty tree (33) + Dirty tree + Dirty tree)

**LEARNING OUTCOME** - 1) For any given number students can tell place value of the digits , write in words , round off .

2) For a given set of number students can compare them , arrange in order .

## CH- WHOLE NUMBERS

**P.K TESTING** – 1. What are natural numbers ?

2. What is successor of -1?

3. What is the predecessor of smallest 5 digit number ?

4. Which are whole numbers , No response .

**VOCABULARY USED** – Closure , Associative , Commutative distributive .

**IMPORTANT SPELLINGS** – Associative , commutative , distributive , closure .

**AIDS/INNOVATIVE METHODS TO EXPLAIN THE TOPIC** – Smart board, Games , Charts , Puzzles etc .

**PUZZLE** - Using four 4's , mathematical operations  $+$  ,  $-$  ,  $/$  ,  $\times$  and brackets create the numbers 0, 1, 2 and 3 .

**PROCEDURE** – Teacher will introduce the topic with definition of whole numbers .

WHOLE NUMBERS – Numbers which starts from 0 are called whole numbers .

PROPERTIES OF WHOLE NUMBERS – (a) CLOSURE PROPERTY – For any whole numbers  $a$  and  $b$

We have  $a+b$  is also a whole number . Let  $a=5$   $b=8$   $a+b=5+8=13$  which is also a whole number.

(b) COMMUTATIVE PROPERTY- For any two whole numbers we have  $a+b = b+a$  . for e.g  $4+8=8+4=12$ .

(c) ASSOCIATIVE PROPERTY – For any three whole numbers  $a$ ,  $b$  and  $c$  we have  $a+(b+c) = (a+b)+c$

For e.g  $3+(6+2)=(3+6)+2=11$ .

(d) DISTRIBUTIVE PROPERTY of multiplication over addition and subtraction – For any three whole numbers  $a$ ,  $b$ , and  $c$  we have  $a \times (b-c) = a \times b - a \times c$

$$A \times (b-c) = a \times b - a \times c .$$

(e) ADDITIVE IDENTITY -  $a+0=0+a=a$  .

For example  $6+0=0+6=6$ .

**INNOVATIVE PEDAGOGY** - Participation of students – To check the concept of numbers teacher will give them a magic square to complete , in which the sum of the numbers in each row , column or diagonal being the same .

24		8	15	22
	12	14	21	
11	13	20	27	
17	19	26	28	
18			9	16

**RECAPTULATION** – Solve the following using properties

(i)  $4692 \times 97 + 4692 \times 3$

(ii)  $168 \times 109$

(iii) How many whole numbers are smaller than 9 ?

(iv) The whole number  $P$  such that  $P \div P = P$  IS ?

(v) All whole numbers are natural numbers yes / no ?

Teacher will encourage the students to solve this type of questions from book (N.C.E.R.T )

And also from workbook.

**ASSIGNMENT** – Students will be asked to complete given assignment i. e workbook , which contains M.C.Q , True/False , Value Based Question and some important facts .

#### **LEARNING OUTCOME –**

- 1 . The general outcome of whole number is to introduce 0 which is very important in number system .
2. The calculation speed will increase .
3. Students will understand the concept of rearrangement.

## **CH – PLAYING WITH NUMBERS**

**P.K TESTING** - 1 . What is 4 times 8 ?

2. What are even number ?

3. Is 19 an odd number ?

4. Do you know what are factors of 16 ?

**VOCABULARY USED** - Factors and multiples, prime and composite numbers, twin prime and co-prime , divisibility rules , prime factorization , least common multiple and highest common factor .

**IMPORTANT SPELLINGS** - Factorization , Divisibility , multiple , composite , prime etc.

**AID/INNOVATIVE METHODS USED** - Teacher will explain this topic by role play (with the help of some students teacher will explain this topic by depicting a story)

#### **ROLE PLAY – KINDS OF NUMBERS**

Narrator – Good morning to one and all present here . today , we the students of class VI are going to present a role play on different kinds of numbers. I am Student A , the narrator. Student B and student C are playing the role of numbers (0-9) and different kinds of numbers . Let 's begin. As you know that mathematics develops the ability to think and in this enactment we are going to learn about the most common topic of maths i.e Numbers .

STUDENT B – Oh ! my head is aching . Mathematics is so difficult . What are these numbers ? Icant understand them .

STUDENT C – Maths is not difficult . Don 't worry dear friend , I will take you to the world of numbers .

NARRATOR – Both enter the world of numbers

STUDENT C - Hello friends ,meet my friend STUDENT B . He wants to know about numbers . Please introduce yourself to him .

Then , the numbers 0-9 come forward and introduce themselves .

After this , one by one , Different kinds of numbers i.e Even ,Odd ,Prime, Composite ,Co-prime and Twin-prime come forward and explain their meanings with example.

STUDENT C –Hey friends , there is something more about numbers . 1 is neither a prime number nor a composite number . It is a natural number . And if we talk about 0 , all the whole numbers start with 0 .

STUDENT B- Thank you my dear friends . you helped me to understand different kinds of numbers and I will never forget them in future .

NARRATOR – I hope you all have understood the concept of numbers . Thank you and have a wonderful day .

**PROCEDURE-** After role play teacher will again explain the topic with the help of smart class .

**FACTORS** – A factor is exact division of that number . e.g. factors of 16 = 1,2,4,8,16.

**MULTIPLES** – A multiple of number is the product that obtained by multiplying that number by non-zero number.

e.g First five multiples of 6 - 6,12,18,24,30.

**PRIME NUMBERS** – Numbers which have exactly two factors 1 and number itself . e.g 2,3,7,11. 2 is the only even prime .

**COMPOSITE NUMBERS** – Numbers which have more than two factors are called composite numbers . e.g 4,6,12,18 .

**TWIN-PRIME NUMBERS** – Two prime numbers whose difference is 2 is called as twin prime numbers.

e.g 11 and 13 , 71 and 73 .

**CO-PRIME NUMBERS** – Two numbers which have no common factor except 1 are called co-prime numbers . e.g 19 and 21 .

**DIVISIBILITY RULES-** FOR 2 – A number is divisible by 2 if the digit at one's place is 0 , 2, 4, 6,8 .

e.g 678, 3590 etc.

**PRIME-FACTORISATION** – Prime factorization is the process expressing a number as a product of prime factors .

e.g  $24 = 2 \times 2 \times 2 \times 3$

### **HCF – HIGHEST COMMON FACTOR**

Find the HCF of 12 and 48 .

Factors of 12 - 1,2,3,4,6,12

Factors of 48 – 1,2,3,4,6,12,16,24,48

So the HCF comes out to be 12 .

### **L.C.M – LEAST COMMON MULTIPLE –**

Find the LCM of 12,48,60.

ANS -  $2 \times 2 \times 2 \times 2 \times 3 \times 5 = 240$  .

**RELATION BETWEEN HCF AND LCM** - Product of two numbers = HCF X LCM

HCF = Product of two numbers / LCM

LCM = Product of two numbers / HCF

**PARTICIPATION OF STUDENTS** – To check the concept of LCM/HCF . Teacher will give them an activity .

### **INNOVATIVE PEDAGOGY –**

**ACTIVITY** - Find LCM of three numbers of your choice say 6,9,12.

Step 1 – Draw a grid of 10 x 10 as below:

1	2	3	4	5	<b>6</b>	7	8	<b>9</b>	10
11	<b>12</b>	13	14	15	16	17	<b>18</b>	19	20
21	22	23	<b>24</b>	25	26	<b>27</b>	28	29	30
31	32	33	34	35	<b>36</b>	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

Step- 2 Take the first number 6 . Draw a circle around its multiples i.e 6,12,18 etc .

STEP 3- Take the 2<sup>nd</sup> number 9 . Draw a square around its multiples i.e 9,18,27, etc .

STEP 4 – Take the 3<sup>rd</sup> number 12 . Draw a triangle around its multiples i.e 12,24,36 etc .

STEP 5 – Now observe the grid and write down the numbers which have all three circles , squares and triangles .These are the common multiples of 6,9,12.

**RECAPTULATION** – Solve the following

1. Write the number which has exactly one factor .
2. Find HCF of 52 and 65 .
3. Which is greatest 2 digit prime number ?
4. Is 51 a composite number ?
5. The LCM of two co-prime numbers is 4875. If one of the number is 75 find the other number ?

**CO-SCHOLASTIC ACTIVITY**

ASSIGNMENT - Students will be asked to complete W.sheets from work sheet book , do all M.C.Q and value based question etc.

**LAUGHTER TIME**

TEACHER – Who can tell me what 7 times 6 is ?

STUDENT – Its 42.

TEACHER – Very good and who can tell me what 6 times 7 is ?

STUDENT – Its 24 !

**LEARNING OUTCOME** – 1. Give the general form of two digit number and its reverse .

2. Give the general form of three digit number and its reverse .

3. Solve puzzles in general forms of numbers .

4. Check the divisibility of a number by 2,3,5,9,10,6,11.

## TOPIC - INTEGERS

**Objectives:** Students will be able to understand

- (i) What is an integers and rules involving operation on integers
- (ii) Solve problem involving operation on integers
- (iii) Apply integers in real world applications.

**P.K Testing:**

- 1) Define whole numbers
- 2) How many whole numbers lie between 15 and 25.
- 3) Successor of 9999 is.

<b><u>Vocabulary Used:</u></b>	Positive Words	Negative Words
	Deposit	Withdrawal
	Increase	Decrease
	Forward	Backward
	Ascending	Descending

**Important Spellings:** Below, Temperature, Additive, Inverse

**Innovative Method Used to explain the topic:**

Teacher will tell them a song to learn the rules for addition and subtraction of integers

***Integers Song***

***Lyrics***

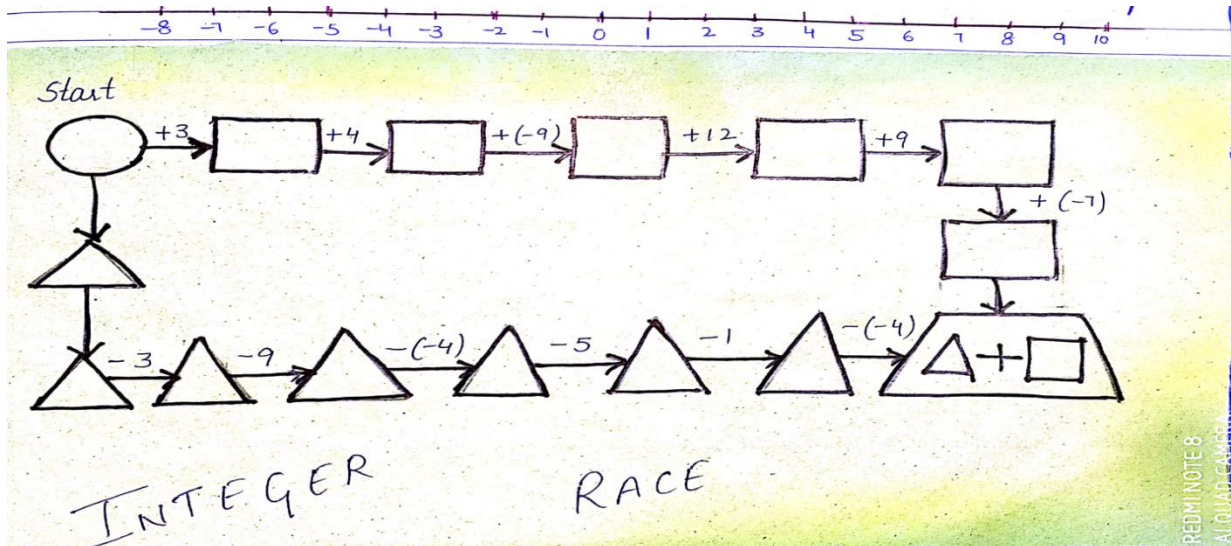
Same sign keep and Add  
Different signs subtract  
Keep the sign of bigger number  
Then answer will be exact

**Procedure:** Teacher will introduce the topic with definition of integers.

**Integers:** Positive and negative numbers along with zero are called integers. Positive numbers lie on the right hand side of zero on number line and negative integers lie on the left

side of number line. Teacher will explain same topic with the help of smart class. After this teacher will explain them game given at page 123, 124 in NCERT Book.

Teacher will explain the integers to the students on number line also



### Participation of Students:

- (iv) Write opposite of 100 meter above Sea level.
- (v) Which is greatest negative integers.
- (vi) Find  $(-1) + (-3)$

### Recapitulation: Solve the following

- 5.  $-7-6$
- 6.  $-8+15$
- 7.  $15-11$
- 8.  $+15-7$

**Art Integration with other domain:** Students will learn to integrate mathematics with different module of art such as painting drawing etc.

### Learning Out Come:

Students will be able

- (iii) Apply integers in real world.
- (iv) To solve problem involving operation on integers.



- (v) Learn the rules of integers.

**Resources:** Smart Board, Black Board, Chalk.

**Co – Scholastic Activity:** This topic will enhance the problems solving skill of the students

**Assessment:** Students will be asked to complete given assignments containing MCQ, Hot Questions, Value based and few important sums based upon daily life will be discussed.

## Topic: Algebra

### **Objective:**

- 1) The first aim of teaching algebra is to help in expression of abstract ideas, words and phrases as the instrument of ideas are replaced by symbols.
- 2) Teaching of algebra should enable the students to use in solution of some of stiff problems in arithmetic.
- 3) This inculcates in students the power of accurate analysis.

### **P.K Testing:**

- a) Take a number then add 5 to it what answer will you get.
- b) Take a number multiply it with 2 and add 5 to it.

**Vocabulary Used:** Variable, Constant, Algebraic expressions.

**Important Spellings:** Variable, Constant, algebraic expressions, trail, equation.

**Explanation with Innovating ideas:** Teacher will introduced the topic with the help of puzzle.

### ***PUZZLE***

What is missing number?

(iii)  $2 = 4$

Ok, the answer is 6, right? Because  $6 - 2 = 4$

Well in algebra, we don't used blank boxes we use a letter (usually an x or y, but any letter is fine), So we right  $x - 2 = 4$

The letter (in this case any) just means we don't know this yet and is often called unknown or variable.

And when we solve it we write

$$x = 6$$

**Procedures:** Teacher will explain following definition

- (i) Algebraic Expression: An algebraic expression is a mathematic expression that consists of variables, numbers and operations.
- (ii) Variable : A variable is a special type of amount or quantity with an unknown value.
- (iii) Constant: A constant is a number on its own or sometimes a letter such as a, b or c to stand for a fixed number example in " $x+5 = 9$ " where as 5 and 9 are constants.

**Students Participation:**

### **Activity**

**Quick group:** For this game, create a set of index cards with algebraic expressions on them. You should create latest one card for every person in your class. For each card, there should be three others that are expressions have same value. To play give the card randomly to the students in your class. Students are given certain amount of time to get into groups where everyone. Has a card of same value. When they are done check to see if students are correct and then cards can be collected, reshuffled and handed out randomly again.

**Recapitulation: Riddle**

Solve for 'x', write the corresponding letter in space below that matches your answer .

- |                 |   |                  |   |
|-----------------|---|------------------|---|
| 1. $8+x = 16$   | A | 5) $2x-8 = 6$    | N |
| 2. $x-10 = 0$   | B | 6) $4 + 3x = 7$  | P |
| 3. $2x + 5 = 9$ | C | 7) $4x - 4 = 16$ | R |
| 4. $9+2x = 17$  | E | 8) $6+2x = 24$   | S |

**Art integration with other domain:** Students will learn to integrate math with different module of art such as painting, drawing etc.

**Learning outcome:** After studying this course, you should be able to

- (i) Recognize technical terms and appreciate some of uses of algebra.
- (ii) Solve simple linear equations.
- (iii) Collect like terms and simplify expressions.

**Resources:** Smart board, colored paper, Blackboard.

**Co- Scholastic activity:** This topic will enhance the decision making skill of students

**Assessment:** Teacher will ask the students to solve the question given in worksheet book.

# Topic: Basic Geometrical Ideas:

**Objectives:** Students will be able to

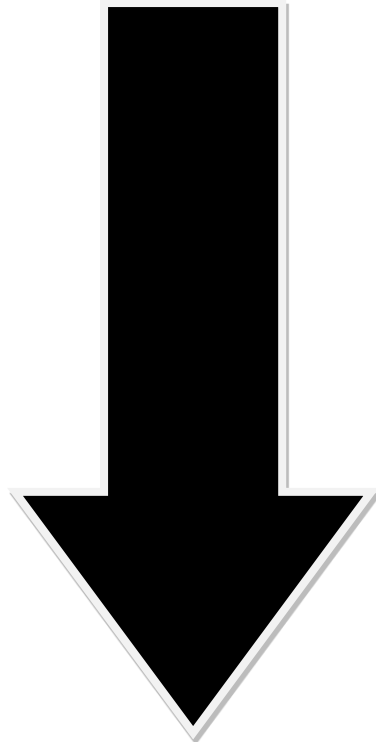
- (i) Understand the properties of quadrilaterals
- (ii) Distinguish between different types of quadrilateral.
- (iii) Grasp the concept of symmetry in different types of quadrilaterals.

**PK Testing:** Teacher will draw figure of line, line segment, Ray, Parallel lines, Circle on board and ask the students one by one about these figures.

**Vocabulary Used:** Quadrilateral, Diameter, Radius, Chord, Circumference, Curve, polygons.

**Important Spellings:** Point, Segment, Parallel, Intersecting, Curve, Quadrilateral.

**Explanation with innovative Ideas:** Teacher will explain the topic with the help of following activity.



6. Use scale and join the vertices with 19 and 7 as shown in Fig. 6.
7. Use scale and join the vertices with 23, 24 and 25 as shown in the Fig. 7

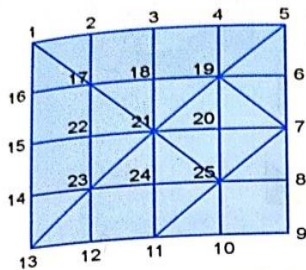


Fig. 6

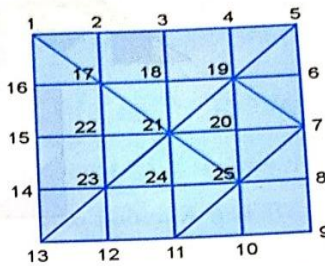


Fig. 7

8. Colour the figure as shown in Fig. 8

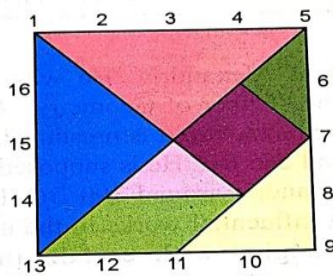


Fig. 8

9. Cut out the seven pieces as shown in Fig. 9

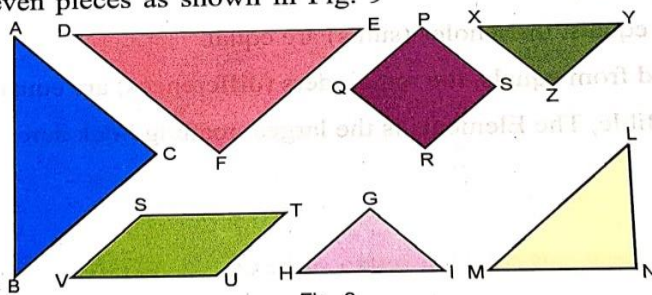









Fig. 9

#### Observations :

1. The shape  is a \_\_\_\_\_.
2. The shape  is a \_\_\_\_\_.
3. The two triangles  are \_\_\_\_\_.
4. The two triangles   are \_\_\_\_\_ triangles.
5. The two triangles   are \_\_\_\_\_ triangles.
6. These seven shapes are called \_\_\_\_\_

# **Maths Lab Activity-3**

- Objective :**
- To make a set of tangrams.
  - Using the tangram pieces to make the letters of English alphabet like A, B, C, D, ....., Z.

**Materials Required :** Coloured paper, sketch pens, pair of scissors, etc.

**Procedure :**

- Take a coloured paper and draw a square of  $4\text{ cm} \times 4\text{ cm}$ . Divide the square into 16 unit squares as shown in Fig. 1.

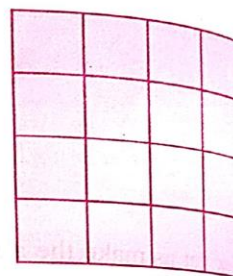


Fig. 1

- Write the numbers to each vertex of the unit square as shown in figure 2.
- Use scale and join the vertices with 1, 17, 21, and 25 as shown in figure 3.

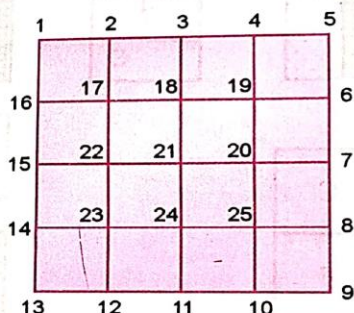


Fig. 2

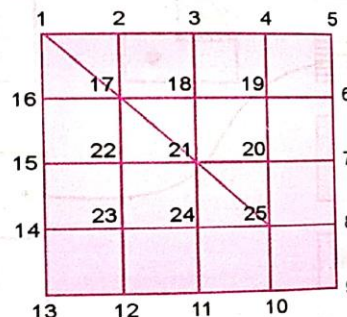


Fig. 3

- Use scale and join the vertices with 13, 23, 21, 19 and 5 as shown in Fig. 4.
- Use scale and join the vertices with 11, 25, and 7 as shown in Fig. 5.

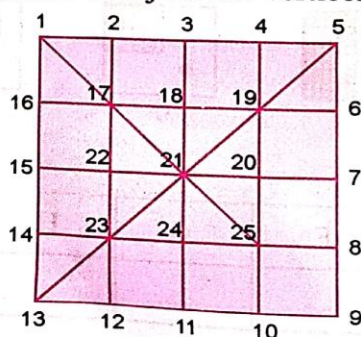


Fig. 4

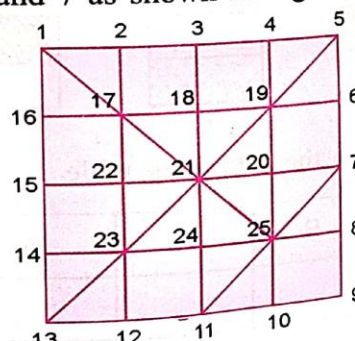


Fig. 5

**Procedure:** Teacher will explain the following definitions.

- (i) Line It is the figure having no end point.
- (ii) Line segment: Having two end points.
- (iii) Ray: A ray is a portion of line starting and going in one direction endlessly.
- (iv) Parallel lines: Two lines in a plane are said to be parallel if they do not meet.
- (v) Curve: It is a figure which we draw without lifting the pencil from the paper it is of two types a) closed curve b) open curve
- (vi) Polygon: A polygon is a simple closed curve made of line segment.
- (vii) Circle: A circle is the path of a point moving at same distance from a fixed point it has following parts a) Chord b) Diameter c) Sector d) Segment.
- (viii) Intersecting Lines: Two distinct lines meeting at a point are called intersecting lines.

**Student's Participation:** Students will make letters of English alphabet by using seven pieces of tangram which they have made earlier in the activity.

**Recapitulation:** Teacher will ask questions related to the different figures.

**Art Integration with other domain:** Students will learn to integrate mathematics with different module of art such as painting, drawing etc.

**Learning outcomes:** At the end of the chapter students will be able to

- (i) Understand the concept of point, line, line segment, ray, angle, triangle, quadrilateral and circle.
- (ii) Apply the knowledge in different situations

**Resources:** Smart Board, Black Board, Colored paper, Scissors.

**Co- Scholastic Activity:** This topic will enhance the decision making skill of the students.

**Assessment:** Students will be asked to complete the questions given in worksheet book and draw the different figure on colored paper and paste in the note book.



















































**Recapitulation:** Teacher will ask question from students.

- e) What is right angle?
- f) What is acute angle?
- g) What is equilateral Triangle?
- h) What is scalene triangle?

**Art Integration:**

Students can work to create composite figures using geometric shapes in the style of medieval stained glass work using pencils and scrap paper. Create a triangle, square or rectangle using only smaller triangles, rectangles and squares. Using a black marker, draw a large geometric shape in the middle of your page. Then draw the smaller geometric shapes that comprise or make up, that large shape color in shapes using different colored maker.

**Home Assignment:**

Teacher will be asked the students to complete questions given in maths worksheet book.

**Learning Outcome:**

- Analyze the effectiveness of the strategies used during the lesson to develop mathematical understanding.
- After the shape sort, the students were able to identify more than one shape, the defining attributes of these shapes and names of it.
- Identify where the shape is found in classroom and school and it will confirm students have a better understanding of 2D and 3D figures.

**Resources:** Computer, Printed worksheets

**Co Scholastic Activities:** Divide the class into 4 groups Assign 4 different subtopics of lesson to prepare through Alice.

**Topics**

**Group 1:** **Identify the parts:**

Different parts of circles will be shown through Alice, with their names, by the group.

**Group 2:** **Fill in the blanks:**

The words like chord, semi circle, Cube, Cuboids, Square, rectangle etc can be used to fill in blanks Using Alice software, using text and makers prepare the assignment.

**Group 3:**      **Three dimensional shapes:**

Search for shapes in the gallery of Alice show all the shapes and their names as animation Give different color for each shape.

**Group 4:**      **Searching for shapes:**

Select from the Gallery some objects or part of objects and compare the shapes with the known shapes and name them.

**Assessment:** Teacher will conduct simple class test

- d) How many sides does an octagon have?
- e) How many sides does on hexagon have?
- f) How many faces, vertices and edges does that following shapes have
  - II)      Cube    II) Cuboids      III) Cylinder      IV) Cone

**Recapitulation:** Teacher will ask question from students.

- i) What is right angle?
- j) What is acute angle?
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