VIDYA PRATISHTHAN'S

DR. CYRUS POONAWALLA SCHOOL(CBSE), BARAMATI

Subject:Mathematics

ANNUAL CURRICULUM PLANNING, 2024-25

Marks: 100

Sr. No.	Content/ Topic	Month & No. of Days	21st Century Skills	Learning Objectives	Expected Learning Outcome	Activ
1	Bridge Course	APRIL-07DAYS		To revise important identities, theorems and formulae from grade 8	Students would be able to use identities and formulae from previous grade.	
2	Number systems **Rules of Exponents or Laws of Exponents** Multiplication Rule $\quad a^x \times a^y = a^{x+y}$ Division Rule $\quad a^x \div a^y = a^{x-y}$ Power of a Power Rule $\quad \left(a^x\right)^y = a^{xy}$ Power of a Product Rule $\quad (ab)^x = a^x b^x$ Power of a Fraction Rule $\quad \left(\dfrac{a}{b}\right)^x = \dfrac{a^x}{b^x}$ Zero Exponent $\quad a^0 = 1$	APRIL– 08DAYS JUNE– 06DAYS	Critical Thinking and Problem Solving	Students will be able to 1. Understand Irrational numbers, Real numbers and their decimal expansion 2. Locate Irrational numbers, Real numbers on number line 3. Perform operations on real numbers and use laws of exponents of real numbers 4. Learn the concept of rationalizing the denominator	Students would be able to 1. Understand Irrational numbers, Real numbers and their decimal expansion 2. Locate Irrational numbers, Real numbers on number line 3. Perform operations on real numbers and use laws of exponents of real numbers 4. Learn the concept of rationalizing the denominator	To make a square ro numbers from √1 to

					5. Develop their imagination and accuracy with respect to the real numbers. 6. Appreciate the 'density property' of real numbers	
3	Polynomials	JUNE– 19 DAYS	Critical Thinking and Problem Solving	Students will be able to : 1. Understand the term polynomials, terms related to polynomials, zeroes of a polynomials. 2. Do factorization of polynomials. 3.Understand and apply algebraic identities.	Students would be able to : 1. Understand the term Polynomials, terms related to polynomials, zeroes of a polynomial. 2. Do factorization of polynomials. 3. Understand and apply algebraic identities. 4. Manipulation and strategies of problem solving.	To verify the Identity $(A + B + C)2 =$ A2 +2BC + 2 CA by cutt pasting method. Activity to support le Explanation of Cubic $(a + b)3 =$1. a3 + 3a2b

$(a + b)^2 = a^2 + 2ab + b^2$

IDENTITY - 1 $(a+b)^2 = a^2 + 2ab + b^2$

IDENTITY - 2 $(a-b)^2 = a^2 - 2ab + b^2$

IDENTITY - 3 $a^2 - b^2 = (a+b)(a-b)$

IDENTITY - 4 $(x+a)(x+b) = x^2 + (a+b)x + ab$

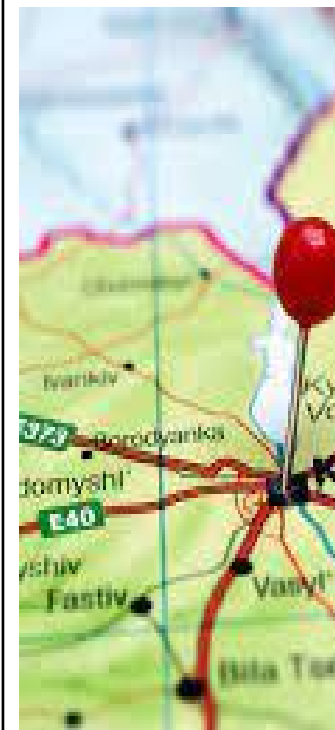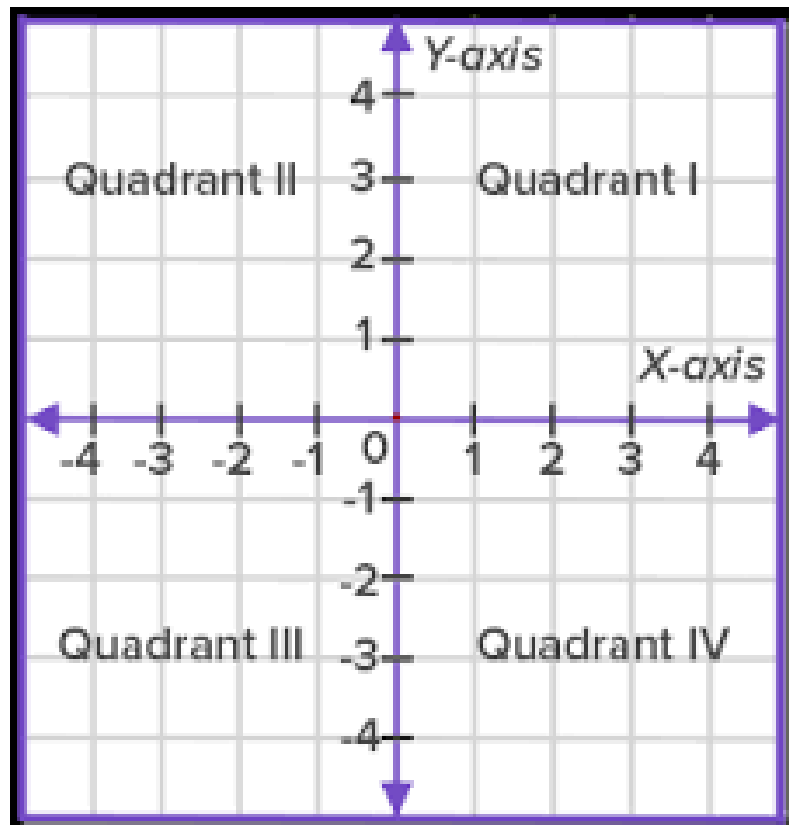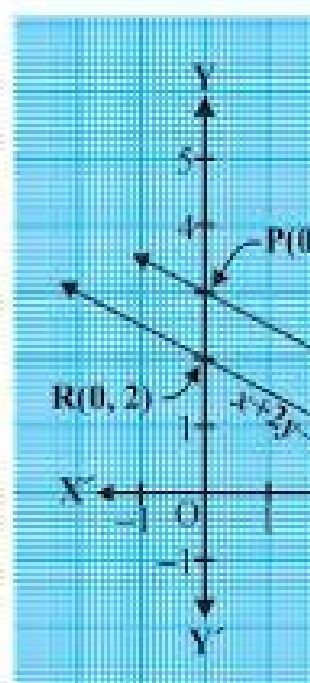| 4 | Coordinate Geometry | JULY– 6 DAYS | Collaboration | Students will be able to learn : 1. The coordinate axis divides the plane into four parts called quadrants. 2. The distance of a point from Y axis is called its X-coordinate, or abscissa and the distance of the point from X-axis is called its Y coordinate, or ordinate. 3. To locate the quadrant of a given point on the Cartesian plane. 4. To write the coordinates of the points marked on the Cartesian plane. | Students would be able to learn: 1. The coordinate axis divides the plane into four parts called quadrants. 2. The distance of a point from Y-axis is called its X-coordinate, or abscissa and the distance of the point from X-axis is called its Y-coordinate, or ordinate. 3. To locate the quadrant of a given point on the Cartesian plane. 4. To write the coordinates of the points marked on the Cartesian plane. 5. To plot a point on the Cartesian plane if its coordinates are given. 6. To appraise the use of Cartesian system in real life | Activity (to assess le 1.To obtain the mirr given geometrical fig respect to x-axis and Activity (to support l 2.To locate the posit with respect to given origin. (where class considered as Cartes |

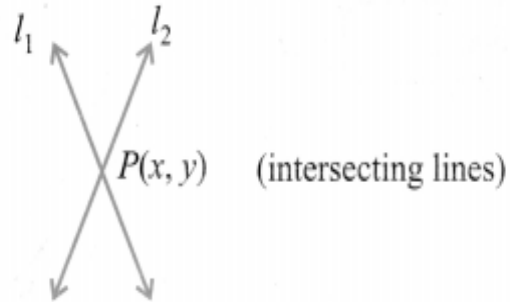|						
					scenarios like designing 2 – d blue prints of home, offices etc. 7. To develop the skills like precision and accuracy	
5	Linear Equations in Two Variables		JULY –11DAYS	Productivity And Accountability	Students will be able to : 1.Learn the concept of linear equation in two variables. 2.Identify the variables (dependent and independent), their coefficients and the constant terms in the equation. 3.Finding possible values of the variables that satisfy the equation. 5.Write equation of x axis and y axis.	Students would be able to : 1.Learn the concept of linear equation in two variables. 2.Identify the variables (dependent and independent), their coefficients and the constant terms in the equation. 3.Finding possible values of the variables that satisfy the equation. 4.Analyze the different aspects of life as any problem has n number of solution. 5.Concept of linear equation in dealing day to day activities like	To obtain a linear eq draw a graph which the linear equation.

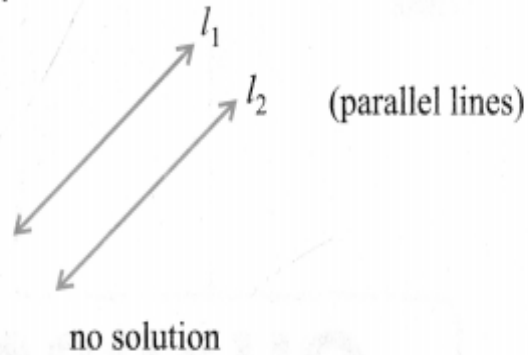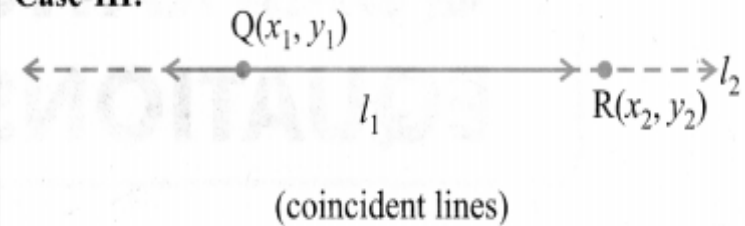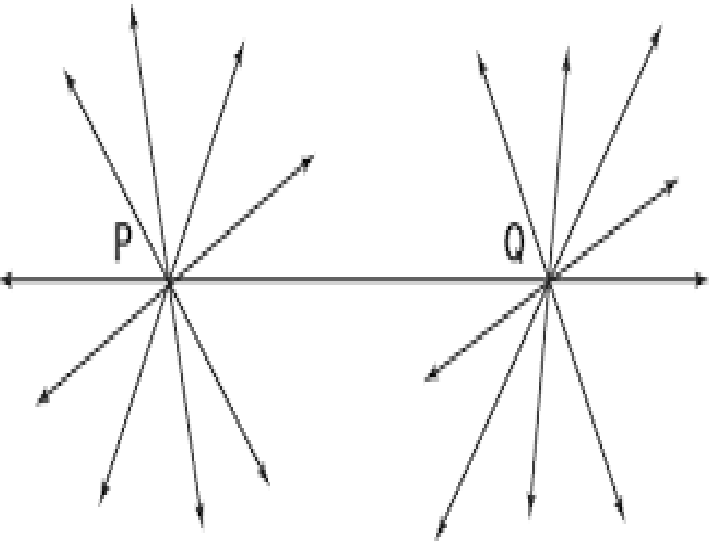|					
	Graphical Method of Solution In this method, two equations are plotted separately in a single graph (as discussed in box-3). **Case-I:** l_1 l_2 $P(x, y)$ (intersecting lines) Solution $= P(x, y)$. **Case-II:** l_1 l_2 (parallel lines) no solution **Case-III:** $Q(x_1, y_1)$ $R(x_2, y_2)$ l_1 l_2 (coincident lines) Infinite set of solution, some of which are : $Q(x_1, y_1)$ & $R(x_2, y_2)$				comparing the cost, budgeting a party (Making prediction for future and so on). 6.Develop problem solving ability.	

| 6	Introduction to Euclid's Geometry	AUGUST -08 DAYS		Students will be able to: 1.Understand Euclid's definitions. 2. Distinguish between axioms and postulates. 3.Understand Equivalent version of Euclid's fifth postulates	Students would be able to: 1.Understand Euclid's definitions. 2.Distinguish between axioms and postulates. 3.Understand Equivalent version of Euclid's fifth postulates 4.Define a term and design an algorithm to solve/ prove a problem from real life	
7	Lines and Angles	AUGUST –17 DAYS	Self -Direction	Students will be able to: 1. Explain the terms 'line', 'ray', 'line segment', 'collinear points', 'intersecting lines' and 'parallel lines' 2. Describe the different types of angles 3. Explain the terms 'adjacent angles', 'linear pair of angles', 'complementary angles',	Students would be able to:- 1. Explain the terms 'line', 'ray', 'line segment', 'collinear points', 'intersecting lines' and 'parallel lines' 2. Describe the different types of angles 3. Explain the terms 'adjacent angles', 'linear pair of angles', 'complementary angles',	Activity (to introduce Students will be ask pair of intersecting l measure both pair o angles. Activity (to support l If a transversal inter parallel lines, then v 1. The corresponding angles are equal. 2. The sum of two in angles or co-interior angles is 180$_0$. 3. The alternate inte angles are equal.
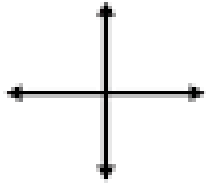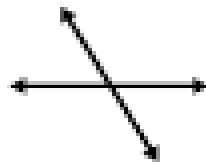
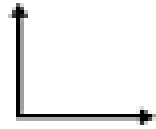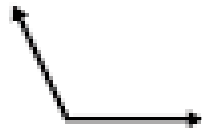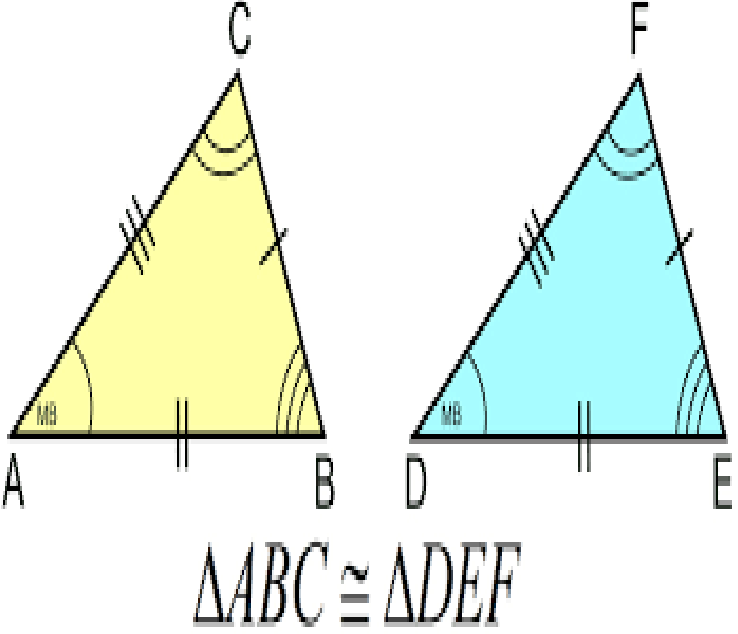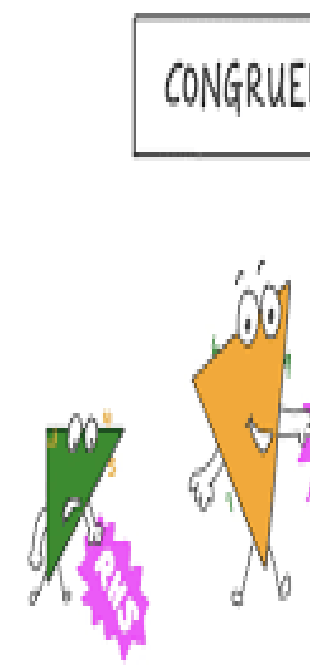|					
				supplementary angles' and 'vertically opposite angles' 4. Prove that vertically opposite angles are equal 5. Describe the angles formed by a transversal 6. Explain the corresponding angles axiom 7. Prove that if a transversal intersects two parallel lines, then each pair of alternate interior angles is equal 8. Prove that if a transversal intersects two parallel lines, then each pair of interior angles on the same side of the transversal is supplementary 9. Prove that the lines which	supplementary angles' and 'vertically opposite angles' 4. Prove that vertically opposite angles are equal 5. Describe the angles formed by a transversal 6. Explain the corresponding angles axiom 7. Prove that if a transversal intersects two parallel lines, then each pair of alternate interior angles is equal 8. Prove that if a transversal intersects two parallel lines, then each pair of interior angles on the same side of the transversal is supplementary	

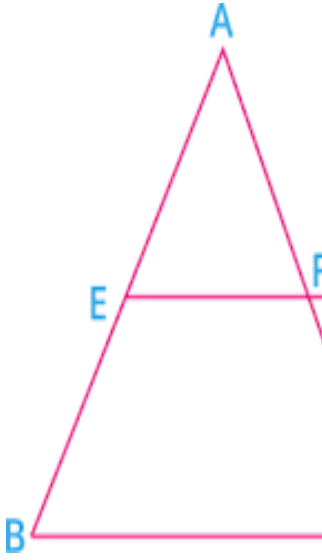|						
				are parallel to the same line are parallel to each other 10. Prove that the sum of three angles of a triangle is 180°.	9. Prove that the lines which are parallel to the same line are parallel to each other.	
8	Triangles $\triangle ABC \cong \triangle DEF$	SEPTEMBER-20 DAYS	Flexibility And Adaptability	Students will be able to: 1. Describe congruent triangles 2. List the four criteria for the congruence of triangles 3. Understand and apply the Side-Angle-Side (SAS) congruence rule 4. Understand and apply the Angle-Side-Angle (ASA) congruence rule 5. Understand and apply the Side-Side-Side (SSS) congruence rule 6. Understand and apply the Right Angle-Hypotenuse -	Students would be able to:- 1.Describe congruent triangles 2.List the four criteria for the congruence of triangles 3.Understand and apply the Side-Angle-Side (SAS) congruence rule 4.Understand and apply the Angle-Side-Angle (ASA) congruence rule 5.Understand and apply the Side-Side-Side (SSS) congruence rule 6.Understand and apply the Right Angle-Hypotenuse -Side	Activity (to introduce lesson) Activity will be based whose measurement will be given and stu identify the congruer between them. (NCERT TEXT BOOK Activity (to support l Draw two triangles A PQR such that AB = cm and ∠ABC = 45° a cm, QR = 4 cm and ∠ We will observe the A ∠A = ∠P and ∠C = ∠R

					Side (RHS) congruence rule 7. Understand corresponding parts of congruent triangles(CPCT). 8. Prove that the angles opposite to the equal sides of an isosceles triangle are equal 9. Prove that the sides opposite to the equal angles of a triangle are equal.	(RHS) congruence rule 7.Understand corresponding parts of congruent triangles(CPCT). 8.Prove that the angles opposite to the equal sides of an isosceles triangle are equal 9.Prove that the sides opposite to the equal angles of a triangle are equal.	CONGRUE
9	Quadrilaterals		SEPTEMBER 4 DAYS +OCTOBER 10 DAYS	Flexibility And Adaptability	Students will be able to: 1. Describe the types of parallelogram and their properties. 2. Prove that the diagonal of a parallelogram divides it into two congruent triangles. 3. Prove that if each pair of	Students would be able to: 1. Describe the types of parallelogram and their properties. 2. Prove that the diagonal of a parallelogram divides it into two congruent triangles. 3. Prove that if each pair of opposite sides of a	*Activity (to introduc lesson) Students will be ask shape which has bee joining the three sid triangle. *Activity (to support Now students will be about the shape forr joining the four sides quadrilateral. *Activity (to assess le Verification of midpo theorem by paper fol pasting method.
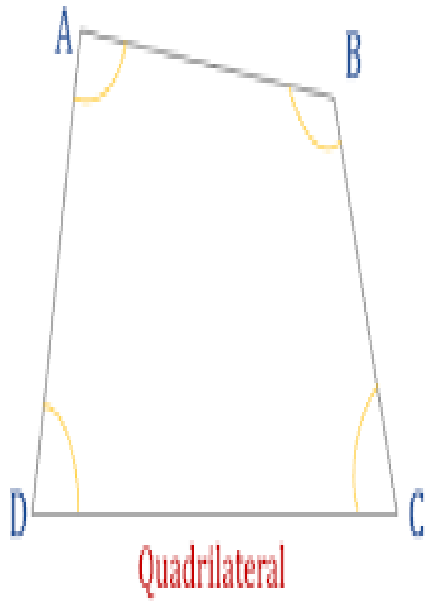
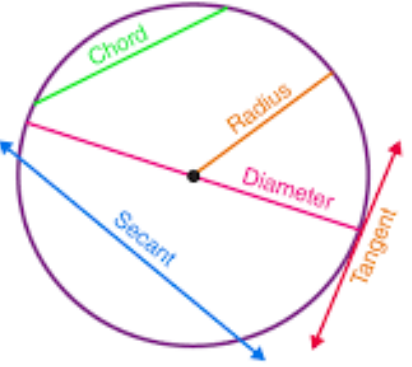|				
Angles • $\angle A + \angle B + \angle C + \angle D = 360^0$ Quadrilateral			opposite sides of a quadrilateral is equal then it is a parallelogram. 4. Prove that if each pair of opposite angle of a quadrilateral is equal then it is a parallelogram. 5. Prove that if each pair of opposite sides of a quadrilateral is equal and parallel in a quadrilateral, then it is a parallelogram. 6. Prove that if diagonals of a Quadrilateral bisect each other, then it is a parallelogram. 7. Prove the midpoint theorem and its converse.	quadrilateral is equal then it is a parallelogram. 4. Prove that if each pair of opposite angle of a quadrilateral is equal then it is a parallelogram. 5. Prove that if each pair of opposite sides of a quadrilateral is equal and parallel in a quadrilateral, then it is a parallelogram. 6. Prove that if diagonals of a Quadrilateral bisect each other,then it is a parallelogram. 7. Prove the midpoint theorem and its converse. 8. Analyze the application of the properties of quadrilaterals in day to day life, for example- 9.To create floor plans for new building.	

					10.In graphic arts,sculpture, logo. 11.Packaging, web designing. 12.Square-like shapes are often used for uniformity: they are easy to tessellate, or pattern with. 13.Shapes like trapeziums: with a wide base and a narrower top, are used for construction of buildings.	
10	Circles	OCTOMBER-14 DAYS +10 DAYS NOVEMBER	Flexibility And Adaptability	Students will be able to: 1.Understand the concept of Circles and its related terms. 2.Understand angle subtended by a chord, at any point on the circle. 3. Understand and apply the concept of cyclic quadrilateral. 4.Understand and apply the theorems based on circles.	Students would be able to: 1.Understand the concept of Circles and its related terms. 2. Understand angle subtended by a chord, at any point on the circle. 3. Understand and apply the concept of cyclic quadrilateral. 4.Understand and apply the theorems based on circles.	Activity(to assess lea 1.To verify that – "The angle subtende at the centre is doub subtended by it at p remaining part of the 2. To verify that – "Opposite angles of a quadrilateral are supplementary".

				5.Develop the ability to understand and apply the properties of circles and circular regions. 6.Apply the knowledge of circles in making drawings, model making, projects etc	
11	Heron's Formula	NOVEMBER-5 DAYS	Critical Thinking And Problem Solving	Students will be able to 1.Recall the term triangles and area of triangles. 2.Understand and apply the concept of Heron's formula 3.Calculate the area of a triangle using Heron's formula. 4.Calculate the area of a quadrilateral using Heron's formula.	Students would be able to: 1.Recall the term triangles and area of triangles. 2.Understand and apply the concept of Heron's formula 3.Calculate the area of a triangle using Heron's formula. 4.Calculate the area of a quadrilateral using Heron's formula. 5.Use Heron's formula in our daily life in the following ways:-	Activity (to introduce lesson) Students will be ask the formula for the a equilateral triangle v is "a" Activity (to support l Then students will b question. There is a slide in a its side walls has be in some color with a "KEEP THE PARK GI CLEAN". If the sides 15m, 11m and 6m, painted in color.
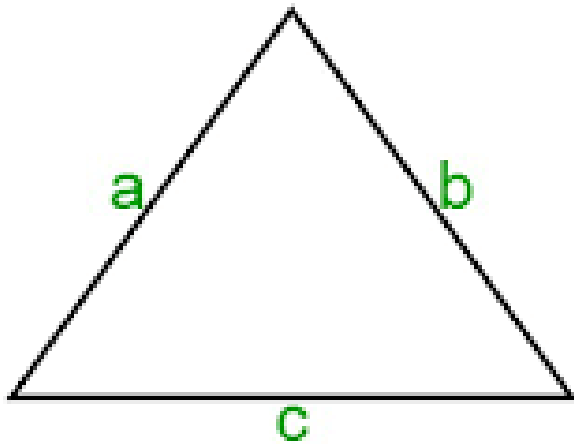
|						6.To find the area of triangular park 7.To find area of scalene triangle in which the height doesn't definitely exists. 8.To find area of flyover. 9.To find the area of quadrilateral shaped field using heron's formula. 10.It gives scope to student to think for alternative method. 11.It gives practical approach and motivational spirit to students that nothing is impossible in this world.	

HERONS FORMULA

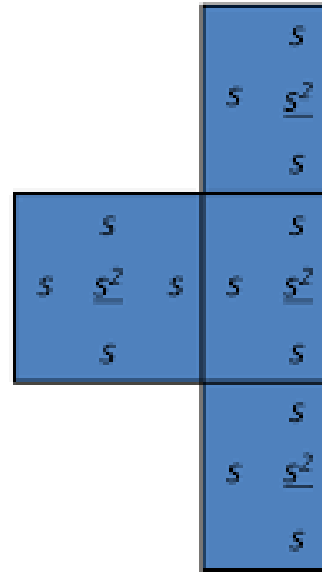$$A = \sqrt{s(s-a)(s-b)(s-c)}$$

$$s = (a+b+c)/2$$
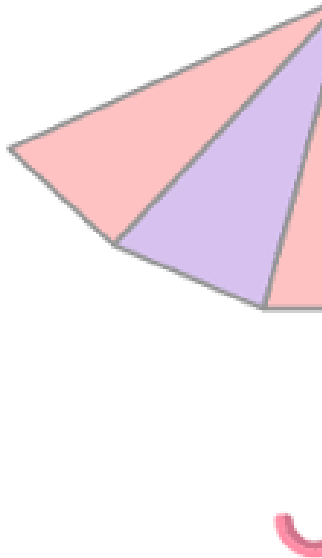
| 12 | Surface Area and Volume | | DECEMBER-20 DAYS JANUARY-05 DAYS | Creativity | Students will be able to:
1.Understand the concept of surface area and volume | Students would be able to:
1.Understand the concept of surface area and volume | Activity (to introduce lesson)
To generate formula TSA of cylinder. |
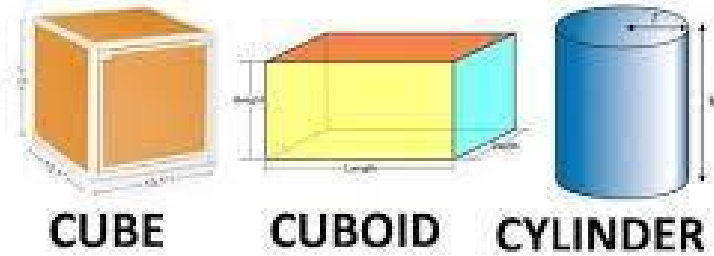
					2.Apply the concept of surface areas and volumes of a cone. 3.Apply the concept of surface areas and volumes of a spheres.	2.Apply the concept of surface areas and volumes of a cone. 3.Apply the concept of surface areas and volumes of a sphere. 4.Calculate and compare the surface areas and volumes of solid shapes like right circular cones, spheres.	 2. Area of one face (area fo... 3. Surface area = 6 faces · s... 4. Volume = $s \cdot s \cdot s = s^3$
13	Statistics 	JANUARY-15 DAYS	Collaboration	Students will be able to: 1.Draw a bar graph to represent the given data 2.Interpret data from the given bar graph 3.Draw a histogram to represent the given data 4.Interpret the data represented in a histogram. 5.Differentiate between bar graph, double bar graph and	Students would be able to: 1.Draw a bar graph to represent the given data 2.Interpret data from the given bar graph 3.Draw a histogram to represent the given data 4.Interpret the data represented in a histogram. 8.Differentiate between bar	Activity (to support l Teacher will give son from day to day life a Students will compa which representatior graph/double bar graph/histogram/fre polygon) will be bette data like 1)To compare the pe of two students in ea 2)Average run rate o 3)Height of 35 stude class 4) Production of auto last 10 years by a pa company.

			histogram 6.Draw a frequency polygon with the help of a histogram.	graph, double bar graph and histogram 9.Draw a frequency polygon with the help of a histogram	