BAL BHARATI PUBLIC SCHOOL NOIDA
SYLLABUS FOR THE SESSION 2020-21
CLASS VIII: MATHEMATICS

Month	Topic	SUB TOPICS	INNOVATIVE PEDAGOGIES	LEARNING OUTCOMES
April	Squares and Square Roots Cubes and Cube Roots	Square numbers and their properties. • Patterns. • Various methods of finding square root of whole numbers and decimal numbers. • Pythagorean Triplets. • Cubes and Cube roots of numbers • Estimating Cube roots.	**LAB ACTIVITY:** • To observe some given number patterns and write their next three terms. • Various methods of finding square roots, and cube roots. **AUDIO-VISUAL AIDS:** Smart class modules **EXTRA WORKSHEETS:** Khan Academy	**Students would be able to-** • Perform various operations on square roots • Comprehend and analyze the word problems involving square roots • Visualize operations between square roots by division method • Generalize shortcuts to perform various operations in square roots. • Comprehend and analyze the word problems involving cube roots and square roots.
May	• Powers and Exponents	Laws of Exponents • Powers with negative Exponents • Small numbers in standard form. • Number in generalized form	**LEARNING BY DOING METHOD:** • Paper folding activity to understand the concept of exponent and power. • Understand laws of exponents by using Wheel foldable.	**Students would be able to-** • Solve problems with integral exponent. • Finding powers and exponents using different data. • Understand the concept of standard form.

July	• Rational numbers	• Properties of rational numbers •Additive Identity and Additive Inverse • Multiplicative Identity and Multiplicative Inverse	**ART INTEGRATED ACTVITY/LAB ACTIVITY:** • To make Bamboo Bridge Model using sticks and connect your model with graph of **$f(x)=x^2$.**	**Students would be able to-** • Generalizes properties of addition, subtraction, multiplication and division of rational number through patterns • Plot rational numbers on number line. • Finds out as many rational numbers as possible between two given rational number
	•Algebraic Expressions and Identities	• Representation of rational numbers on a number line • Rational numbers between two rational numbers. • Basic operations on Algebraic Expressions • Identities and their Applications.	 • To verify the following algebraic identity by paper cutting and pasting method. $(a+b)^2 = a^2+b^2+2ab$ **AUDIO-VISUAL AIDS:** Smart class modules **EXTRA WORKSHEETS:** Khan Academy	**Students would be able to-** • Uses various algebraic identities in solving problem of daily life and multiplies algebraic expression.
August	• Comparing Quantities	• Percentage • Profit and Loss, Discount • Sale Tax, VAT • Compound Interest	**RELATING THE CONCEPT TO THE REAL LIFE:** Discussing the shopping experiences of students during festive sale. **ART INTEGRATED ACTVITY/LAB ACTIVITY:** Generalise the formula of compound interests through repeated use of simple interest. **AUDIO-VISUAL AIDS:**	**Students would be able to-** • Applies the concept of percent in profit and loss situation in finding discount, VAT and compound interest, finds profit or loss percent. • Applies the idea of percentage, profit loss

Month	Topic	Sub-topics	Methodology / Aids	Learning Outcomes
	Understanding Quadrilaterals	• Polygons • Properties of parallelogram	Smart class modules **EXTRA WORKSHEETS:** Khan Academy **DEDUCTIVE METHOD:** Through various examples generalize the laws of quadrilaterals and comparing quantities.	and simple interest in her/his daily life. • Finds formula of compound interest with the help of simple interest. **Students would be able to-** • Illustrate angle sum property, exterior angle property and properties of parallelogram and some other special quadrilateral.
September	Revision for Term 1 Examination			
October	Direct and Inverse variations	• Direct Variation and its application • Inverse Variation and its application .	**RELATING THE CONCEPT TO THE REAL LIFE:** Discussing the daily life problem based on the concept of Direct and Inverse Variation. **AUDIO-VISUAL AIDS:** Smart class modules **EXTRA WORKSHEETS:** Khan Academy	**Students would be able to-** State the definition of direct and inverse proportions Construct different quadrilateral using compasses and straight edge. **Students would be able to-** Construct rectangle, square using compasses and straight edge
November	• Linear Equations in one variable	• Solving Equations. • Simplifying word problems	**AUDIO-VISUAL AIDS:** Smart class modules **EXTRA WORKSHEETS:** Khan Academy	**Students would be able to-** Identify the identity in two polynomials.

| December | Factorisation | •Factorisation of polynomials by taking common factors.

• Factorisation using Identities. | **LAB ACTIVITY:** Collect any five pairs of factorization which are based on formulas and paste them in maths lab manual.

AUDIO-VISUAL AIDS: Smart class modules

EXTRA WORKSHEETS: Khan Academy | **Students would be able to**-Identify the identity in two polynomials.

Students would be able to-Finds factorisation between two quantities. Solve problems using unitary method, represents linear equation graphically |
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| January | • Mensuration

• Practical Geometry | • Perimeter and area of trapezium, General Quadrilateral, Special Quadrilaterals, Polygons.
• Total and lateral Area of cube, cuboids and cylinder.

• Volume of cube, cuboids and cylinder
• Construction of quadrilaterals | **LAB ACTIVITY:**
  • Create a poem to memorize formulas.
  • Create a Cardboard House for your Pet using cube, cuboid and cylinder.
  • To derive the formula of total surface area of cuboid.
AUDIO-VISUAL AIDS: Smart class modules
EXTRA WORKSHEETS: Khan Academy | **Students would be able to**-Calculate the area and Volume Calculate surface area and volume of cylinder and cuboid

Students would be able to-Producing formulas and rules using algebraic expressions, to find volume and area of cube, cuboids and cylinder.
Students would be able to-Construct quadrilateral using the given dimensions. |
| February | Revision for Final Examination | | | |