

BCM SCHOOL

A Sr. Sec School Affiliated to CBSE, New Delhi

Annual Academic Calendar

Subject : MATHEMATICS

Session :- 2020-2021

Class :- X

MONTH	TOPIC	LEARNING OUTCOMES	SOURCE/RESOURCES	SUGGESTED ACTIVITIES
MARCH	CH1: REAL NUMBER Fundamental Theorem of Arithmetic - statements after reviewing work done earlier and after illustrating and motivating through through examples, Proofs of $\sqrt{2}$, $\sqrt{3}$, $\sqrt{5}$ representation of rational numbers irrationality of Decimal in terms of terminating/non-terminating recurring decimals.	Learner will learn to apply logical reasoning to, proving and their different properties using them in different using them in different situations.	National Digital library of India (NDLI) LINK: http://ndl.iitkgp.ac.in Diksha App CBSE web site www.cbseacademic.nic.in	To find HCF of two numbers experimentally https://youtu.be/7mwXzQsqLXQ
	CH2: POLYNOMIALS Zeros of a polynomial. Relationship between zeros and coefficients of quadratic polynomials.	Find the zeros of a polynomial by means of graph, where it intersects the x-axis. Relate the zeroes of the quadratic polynomial $ax^2 + bx + c$ with the coefficients a, b, c		To obtain the graph of quadratic polynomial https://youtu.be/7mwXzQsqLXQ PPT based on polynomials
APRIL	CH3: PAIR OF LINEAR EQUATIONS IN Pair of linear equations in two variables and graphical method to find their solution, consistency/inconsistency. Algebraic conditions for number of solutions. Solution of a pair of linear equations in two variables algebraically - by substitution, by elimination. Simple situational problems. Simple problems on equations reducible to linear equations.	Students will learn to apply their critical thinking to express real life situations in linear equations in two variable and to plot the graph. Students will also learn to solve a system of linear equation by the method of substitution and elimination quadratic equation by using different methods like factorization and quadratic formula	National Digital library of India (NDLI) LINK: http://ndl.iitkgp.ac.in Diksha App CBSE web site www.cbseacademic.nic.in	To find the condition for consistency of linear pair of equations https://youtu.be/7mwXzQsqLXQ

	CH4: QUADRATIC EQUATIONS Standard form of a quadratic equation $ax^2 + bx + c = 0$, ($a \neq 0$). Solutions of quadratic equations (only real roots) by factorization, and by using quadratic formula. Relationship between discriminant and nature of roots.			PPT based on history and use Quadratic Equation
	CH5: ARITHMETIC PROGRESSIONS Motivation for studying Arithmetic Progression Derivation of the nth term and sum of the first n terms of A.P.			To verify that the sum of n natural numbers is given by $\frac{n(n+1)}{2}$ https://youtu.be/7mwXzQsqLXQ
MAY	CH 14: STATISTICS : Mean, median and mode of grouped data (bimodal situation and step deviation method for finding the mean to be avoided).	Calculate the average from grouped data using different methods i.e. direct, assumed mean and step deviation method. Determine the modal class in a group data and calculate mode using the formula	Digital library of India (NDLI) LINK: http://ndl.iitkgp.ac.in Diksha App CBSE web site www.cbseacademic.nic.in	<i>Cross Word Puzz</i> <i>To verify probability of an event through experiment</i> https://youtu.be/7mwXzQsqLX
	CH15: PROBABILITY Classical definition of probability. Simple problems on finding the probability of an event.	Student will learn how to judge and justify the value of decision		
	CH7: COORDINATE GEOMETRY	Locate points in 2-dimensional Cartesian coordinate system		<i>To verify distance formula by graphical method.</i>
	LINES (In two-dimensions) Periods Review: Concepts of coordinate geometry, graphs of linear equations. Distance formula. Section formula (internal division).	Apply the formula and calculate distance between two points on a plane Students will learn how a particular location can be identify .It will help us to learn town planning and seating arrangements are part of it.		https://youtu.be/7mwXzQsqLXQ

SUMMER VACATIONS				
JUNE				
	CH6:TRIANGLES Periods Definitions, examples, counter examples of similar triangles.	Students will learn the principle of similarity .Use of BPT and Pythagoras theorem in different situations. They will be able to know that how principle of similarity can be applied in surroundings	Digital library of India(NDLI)\ LINK:	To verify experimentally Basic Proportionality Theorem https://youtu.be/7mwXzQsqLX
JULY	1. (Prove) If a line is drawn parallel to one side of a triangle to intersect the other two sides in distinct points, the other two sides are divided in the same ratio. 2. (Motivate) If a line divides two sides of a triangle in the same ratio, the line is parallel to the third side. 3. (Motivate) If the corresponding sides of two triangles are proportional,their corresponding angles are equal and the two triangles are similar.		http://ndl.iitkgp.ac.in Diksha App And CBSE web site www.cbseacademic.nic.in	
	(Motivate) If one angle of a triangle is equal to one angle of another triangle and the sides including these angles are proportional, the two triangles are similar. 4.(Motivate) If a perpendicular is drawn from the vertex of the right angle of a right triangle to the hypotenuse, the triangles on each side of the perpendicular are similar to the whole triangle and to each other.			
	7. (Prove) In a right triangle, the square on the hypotenuse is equal to the sum of the squares on the other two sides.			

	CH8:TRIGONOMETRY:			
	INTRODUCTION TO TRIGONOMETRY Trigonometric ratios of an acute angle of a right-angled triangle. Proof of their existence (well defined). Values of the trigonometric ratios of 300 , 450 and 600 .Relationships between the ratios.	Develop understanding of trigonometric ratios of an acute angle of a right angled triangle		
AUG	CH8:TRIGONOMETRIC IDENTITIES Periods Proof and applications of the identity $\sin^2 A + \cos^2 A = 1$. Only simple identities to be given.	Tabulate and make use of trigonometric ratios of standard angles of , 30°, 45°, 60° to right angled triangle	Digital library of India(NDLI) LINK: http://ndl.iitkgp.ac.in Diksha App And CBSE web site www.cbseacademic.nic.in	
	CH9:HEIGHTS AND DISTANCES: Angle of elevation, Angle of Depression Simple problems on heights and distances. Problems should not involve more than two right triangles. Angles of elevation / depression should be only 30°, 45°, 60°.	Students will be able to learn the use of trigonometric ratios to find the heights and distance of distant objects.		
	CH10:CIRCLES Tangent to a circle at, point of contact 1.(Prove) The tangent at any point of a circle is perpendicular to the radius through the point of contact	Students will learn the concept of circle and different properties related to circle .		To verify length of tangents drawn from an external point to a circle are

	2.(Prove) The lengths of tangents drawn from an external point to a circle are equal.			equal. https://youtu.be/7mwXzQsqLXQ
	CH11:CONSTRUCTIONS 1. Division of a line segment in a given ratio (internally). 2. Tangents to a circle from a point outside it	Students will learn the use of different Geometrical instruments.		
SEP	REVISION & MID TERM EXAM.			
OCT	CH12:AREAS RELATED TO CIRCLES Motivate the area of a circle; area of sectors and segments of a circle. Problems based on areas and perimeter / circumference of the above said plane figures. (In calculating area of segment of a circle, problems should be restricted to central angle of 60° and 90° only. Plane figures involving triangles, simple quadrilaterals and circle should be taken.)	Students will learn the concept of area of combination of plane figures .They will learn how this concept is useful in designing parks and flower beds.	Digital library of India(NDLI) LINK: http://ndl.iitkgp.ac.in Diksha App And CBSE web site www.cbseacademic.nic.in	
NOV	CH13: SURFACE AREAS AND VOLUMES Surface areas and volumes of combinations of any two of the following: cubes, cuboids, spheres, hemispheres and right circular cylinders/cones.	Students will learn the concept to find area and volume of different combination of solids	Digital library of India(NDLI) LINK: http://ndl.iitkgp.ac.in Diksha App And CBSE web site www.cbseacademic.nic.in	To study the change in volume of cylinder with the use of folding a rectangular sheet of paper along length and its breadth. https://youtu.be/7mwXzQsqLXQ
	Problems involving converting one type of metallic solid into another and other mixed problems. (Problems with combination of not more than two different solids be taken).			
DEC.	REVISION AND PRE BOARD EXAM			

DELETED SYLLABUS MATHEMATICS

SR.NO	CHAPTER NAME	NAME OF THE CHAPTER/TOPICS
CH1	REAL NUMBERS	Euclid's division lemma
CH2	POLYNOMIALS	Statement and simple problems on division algorithm for polynomials with real coefficients.
CH3	PAIR OF LINEAR EQUATIONS IN TWO VARISBLES	cross multiplication method
CH4	QUADRATIC EQUATIONS	Situational problems based on equations reducible to quadratic equations
CH5	ARITHMETIC PROGRESSIONS	Application in solving daily life problems based on sum to n terms
CH6	TRIANGLES	Proof of the following theorems are deleted *The ratio of the areas of two similar triangles is equal to the ratio of the squares of their corresponding sides.
		* In a triangle, if the square on one side is equal to sum of the squares on the other two sides, the angle opposite to the first side is a right angle.
CH7	COORDINATE GEOMETRY	Area of a triangle.
CH8	INTRODUCTION TO TRIGONOMETRY	motivate the ratios whichever are defined at 0° and 90°
	TRIGONOMETRIC IDENTITIES	Trigonometric ratios of complementary angles
CH9	HEIGHTS AND DISTANCES	No deletion
CH10	CIRCLES	No deletion
CH11	CONSTRUCTIONS	Construction of a triangle similar to a given triangle.
CH12	AREAS RELATED TO CIRCLES	Problems on central angle of 120°
CH13	SURFACE AREAS AND VOLUMES	Frustum of a cone.
CH14	STATISTICS	Step deviation Method for finding the mean • Cumulative Frequency graph
CH15	PROBABILITY	No deletion