The Camford International School

ANNUAL LESSON PLAN 2023-2024

GRADE :10 **SUBJECT : MATHS(STANDARD-041&BASIC-241)**

MONTH	CHAPTER NO. AND NAME	DETAIL CONCEPTS TO BE COVERED	PRACTICALS	AIL/AIP
MARCH	**1.Real Numbers**	Fundamental Theorem of Arithmetic - statements after reviewing work done earlier and after illustrating and motivating through examples. Proofs of irrationality of 2, 3, 5. Decimal representation of rational numbers in terms of terminating/non-terminating recurring decimals.		
	2.Polynomials	Zeros of a polynomial. Relationship between zeros and coefficients of quadratic polynomials		
	3. Pair Of Linear Equations In Two Variables	Pair of linear equations in two variables and graphical method of their solution, checking consistency/inconsistency.		

APRIL	**3.Pair Of Linear Equations In Two Variable**	Algebraic conditions for number of solutions. Solution of a pair of linear equations in two variables algebraically - by substitution, by elimination method. Simple situational problems. Simple problems on equations reducible to linear equations	**ACTIVITY 1:** Verification of consistency of a system of linear equations in two variables by graphical representation	
	4.Quadratic Equations	Solving quadratic equations by Factorisation method, by using quadratic formula. Relationship between discriminant and nature of roots	**ACTIVITY 2:** To obtain the solution of a quadratic equation by completing the square geometrically.	
MAY	**5. Arithmetic Progression**	Motivation for studying Arithmetic Progression Derivation of the nth term and sum of the first n terms of A.P.	**ACTIVITY 3 :** Verification of given sequence is an arithmetic progression by paper cutting and pasting method	
JUNE	**6.Triangles**	Definitions, examples, counter examples of similar triangles. 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	**ACTIVITY 4:** To verify the Basic Proportionality theorem using parallel line board and triangle cut-outs	

		triangle in the same ratio, the line is parallel to the third side. 3. (Motivate) If in two triangles, the corresponding angles are equal, their corresponding sides are proportional and the triangles are similar. 4. (Motivate) If the corresponding sides of two triangles are proportional, their corresponding angles are equal and the two triangles are similar. 5. (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. 6. (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		
	7. Co-Ordinate Geometry	LINES (In two-dimensions) **Review:** Concepts of coordinate geometry, graphs of linear equations. Distance formula. Section formula (internal division		**AIL Activity code :** **4.1.2. :** **Three-Dimensional or Sculptural**

				Activities : **<u>4.1.2.1.1 :</u>** Study of various materials such as clay, plaster of paris, soft-stone, wood (blocks, twigs and branches, roots etc), scraps, plastic metal sheets, bamboo, wire thread, papers and cardboards, vegetables and other throw away available materials. **<u>Concept</u>** : • Fractal geometry – making of 3D shapes
	8.Trigonometry	INTRODUCTION TO TRIGONOMETRY Trigonometric ratios of an acute angle of a right-angled triangle. Proof of their existence (well defined); Values (with proofs) of the trigonometric ratios of 30°, 45° and 60°. Relationships between the ratios. TRIGONOMETRIC IDENTITIES		

		Proof and applications of the identity $sin^2A + cos^2A = 1$. Only simple identities to be given.		
JULY	**9. Applications Of Trigonometry**	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°.		
	10.Circles	Tangent to a circle at A point of contact; Number of tangents from a point on a circle; 1. (Prove) The tangent at any point of a circle is perpendicular to the radius through the point of contact. 2. (Prove) The lengths of tangents drawn from an external point to a circle are equal.		
AUGUST	**12. Areas Related To Circles**	Introduction, 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°, 90° only. Plane figures involving triangles, simple quadrilaterals and circle should be taken.)		**AIL Activity Code: 4.1.1. :** **Two dimensional or** space with two dimensional and three dimensional shapes and forms **Concept: Pictorial Activities** **4.1.1.1.1:** Study of lines, strokes, colours, shades,

				tones, textures, etc. While organizing two-dimensional and three dimensional shapes • **Sketch pahari painting of Jammu Kashmir using geometric shapes (circles,square, lines,triangles)**
	13.Surface Area And Volume	1. Surface areas and volumes of combinations of any two of the following: cubes, cuboids, spheres, hemispheres and right circular cylinders/cones 2. Problems involving converting one type of metallic solid into another and other mixed problems. (Problems with combination of not more than two different solids are taken).		
SEPTEMBER	**14.Statistics**	Mean (direct mean method, assumed mean method), median and mode of grouped data (bimodal situation to be avoided).	**ACTIVITY 6:** To draw a cumulative frequency curve (or an ogive) of more than type.	**Prepare a PPT depicting comparative study between Jammu Kasmir and Tamilnadu using**

				Statistics (Population/literacy rate/spread of corona etc.)
	15. Probability	Classical definition of probability. Simple problems on single events (not using set notation).		