SING YIN SECONDARY SCHOOL
SYLLABUS FOR MATHEMATICS (16-17)

FORM THREE

Textbook : New Progress in Junior Mathematics (2nd Edition) 3A & 3B
H.M. Chan, W.H. Chan, Angus Cheng, K.T. Hung, C.K. Kwun, W.S. Lo, H.Y. Pang
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Students are expected to develop the following attitudes:

- to love logical thinking
- to accept careful work as important
- to accept challenging work.

Chapter	Topics	Approx. No. of Period	Objectives
1	More about Factorization and Polynomials	14	• Factorize polynomials by taking out common factors and grouping terms • Factorize polynomials by the cross-method • Factorize polynomials by using the identities of the difference of two squares and perfect square • Discover the identities of the difference and sum of two cubes • Factorize polynomials by using the identities of the difference and sum of two cubes
2	Linear Inequalities in One Unknown	8	• Understand the meaning of inequality signs ≥, >, ≤ and < • Explore the basic properties and some laws of inequalities • Solve simple linear inequalities in one unknown and represent the solutions on the number line • Solve compound inequalities involving 'and'/ 'or'
3	More about Percentages	10	• Apply percentages to solve problems involving simple and compound interests, growth and depreciation • Apply percentages to solve further practical problems involving successive and component changes • Apply percentages to solve simple real-life problems involving taxation
4	More about 3-D Figures	14	• Explore the reflectional and rotational symmetries in cubes and regular tetrahedral • Explore and identify the net of a given solid • Imagine and sketch the solids from given 2-D representations from various views • Recognize the limitation of 2-D representations in identifying the solid • Explore the properties of simple solids, such as the projection of an edge on one plane, the angle between a line and a plane, the angle between two planes • Explore Euler's formula • Solve simple 3-D problems

5	Measures of Central Tendency	17	• Find mean, median and mode from a given set of ungrouped data • Find mean, median and modal class from a given set of grouped data • Discuss the relative merits of different measures of central tendency for a given situation • Discuss the misuse of averages in various daily life situations and recognize the dangers of misusing averages • Explore and make conjectures on the effect of the central tendency of the data when a modification is made • Understand weighted mean and be aware of its use in various real-life situations
6	Probability	10	• Explore the meaning of probability through various activities • Have an intuitive idea about the relation between probability and the relative frequency as found in statistics or simulation activities • Investigate probability in real-life activities, including geometric probability • Compare the experimental and theoretical probabilities • Calculate the theoretical probability by listing the sample space and counting • Recognize the meaning of expectation
7	Area and Volume (III)	14	• Understand and use the formulas for volumes or pyramids, circular cones and spheres • Understand and use the formulas for surface areas of right circular cones and spheres • Distinguish between formulas for length, area, volume by considering dimensions • Understand and use the relationships between sides, surface areas and volumes of similar figures
8	Quadrilaterals	15	• Deduce the properties of various types of quadrilaterals but with focus on parallelograms and special quadrilaterals • Extend the idea of deductive reasoning in handling geometric problems on parallelograms and special quadrilaterals • Perform simple proofs related with parallelograms and special quadrilaterals • Understand and use the mid-point and intercept theorems • Understand and use the equal ratio theorem
9	Lines and Centres of a Triangle	16	• Identify special lines in a triangle • Explore and recognize the relations between the lines of triangles such as the triangle inequality, concurrence of intersecting points of medians • Explore and justify the methods of constructing centres of a triangle such as in-centre, circumcenter, orthocenter and centroid • Explore the use of geometric construction to construct parallel lines, angle bisector, perpendicular bisector, etc..

10	Applications of Trigonometry	16	• Apply trigonometric ratios to find measures of 2-D figures • Introduce the ideas of bearing, gradient, angle of elevation, angle of depression and solve related 2-dimensional problems
			• Understand and use the formula (1/2)absin C to find the areas of triangles • Learn sine law and cosine law for acute-angled triangles • Apply sine law and cosine law to solve practical problems
11	Coordinate Geometry of Straight Lines	18	• Understand and use formulas of distance and slope • Understand the conditions for parallel lines and perpendicular lines • Use ratio to find the coordinates of the mid-point and the internal point of division • Appreciate the analytic approach to prove results relating to rectilinear figures besides deductive approach • Choose and use appropriate methods to prove results relating to rectilinear figures
			• Learn that an equation of the first degree represents a straight line. • Learn to write the equation of a straight line using point-slope form.

Note: Contents in the shaded boxes are not included in the textbook.

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Signature of Teacher In Charge : _____

Checked by : _____