

Wah Yan College Kowloon
F.5 Mathematics (Core) Scheme of Work (2017-2018)

Textbook	1. New Horizon Senior Mathematics 5A (Compulsory Part) (2nd Edition) 2. New Horizon Senior Mathematics 5B (Compulsory Part) (2nd Edition) 3. New Horizon Senior Mathematics 6 (Compulsory Part) (2nd Edition)
Other Resources	

◆ **Repertoire of Self-directed Learning Skills:**

1. reading to learn, 2. notes-taking, 3. looking up words in the dictionary, 4. pre-lesson preparation, 5. group discussion, 6. group presentation, 7. initiative to ask questions, 8. setting learning objectives and doing reflection, 9. eLearning platform with instant feedback, 10. flipped classroom, 11. peer assessment, 12. searching for information on the internet, 13. project learning, 14. training of higher-order thinking skills, etc.

SL: Scheduled number of lessons

AL: Actual number of lessons

School Term	Weeks	Topics/ Extended Parts*	Learning Objectives/ Teaching Focus	SL/AL	Teaching and Learning Activities	Consolidation and Assessment	Self-directed Learning Skills◆	Values#	Basic Law Education
First Term (3/9/2017- 30/12/2017, Weeks 1-17)	1-3	<div style="background-color: #cccccc; border-radius: 5px; padding: 2px; display: inline-block;">Non-foundation</div> Chapter 15 Tangents to Circles <ul style="list-style-type: none"> • To understand the properties of tangents to a circle • To understand the properties of angles in the alternate segments 	Concept Review (pp.15.4 – 15.7) <ul style="list-style-type: none"> • Teachers can ask students to review the basic properties of circles. 	0.5 hour		<ul style="list-style-type: none"> • Test Bank 15.0 			

			<p>15.1 Tangents to a Circle (pp.15.8 – 15.19)</p> <ul style="list-style-type: none"> Teachers can remind students the three cases of the intersection of a straight line and a parabola. Then compare it with the case of a circle and a straight line. 	2 hours	<ul style="list-style-type: none"> PowerPoint <u>Inspiring Activity 15.1</u> (p.15.9) e-Figure Gallery 	<ul style="list-style-type: none"> Worksheet 15.1 (Sets 1 & 2) Ongoing Assessment Package: Quiz 15.1 Test Bank 15.1 			
			<p>15.2 Tangents to a Circle from an External Point (pp.15.20 – 15.29)</p> <ul style="list-style-type: none"> Teachers can illustrate the properties of tangents to a circle from an external point by using geometric software. Teachers can ask students to prove the properties of 	3 hours	<ul style="list-style-type: none"> PowerPoint <u>Inspiring Activity 15.2</u> (pp.15.20 – 15.21) e-Figure Gallery 	<ul style="list-style-type: none"> Worksheet 15.2 (Sets 1 & 2) Ongoing Assessment Package: Quiz 15.2 Test Bank 15.2 			

			tangents to a circle from an external point.						
			<p>15.3 Angles in the Alternate Segments (pp.15.30 – 15.41)</p> <ul style="list-style-type: none"> Teachers can illustrate the properties of angles in alternate segments by using the geometric software. 	3 hours	<ul style="list-style-type: none"> PowerPoint 	<ul style="list-style-type: none"> Worksheet 15.3 (Sets 1 & 2) Ongoing Assessment Package: Quiz 15.3 Test Bank 15.3 			
			<p>Inquiry and Investigation – Drawing Tangents to Circle from an External Point (pp.15.56 – 15.57)</p> <ul style="list-style-type: none"> Teachers may remind students the use of compasses in geometric construction. 	0.5 hour	<ul style="list-style-type: none"> Intensive Practice Open-ended Questions Ongoing Assessment Package: Formative Assessment 15 Test Bank (Multiple-choice Questions) 				
4-7		Non-foundation							

	<p>Chapter 18 Permutation and Combination</p> <ul style="list-style-type: none"> • To understand the addition rule and multiplication rule in the counting principle • To understand the concept and notation of permutation • To solve problems on the permutation of distinct objects without repetition • To understand the concept and notation of combination • To solve problems on the combination of distinct objects without repetition 	<p>18.1 Counting Principle (pp.18.4 – 18.12)</p> <ul style="list-style-type: none"> • Teachers may remind students to draw a diagram to illustrate all the possible ways. 	4 hours	<ul style="list-style-type: none"> • PowerPoint 	<ul style="list-style-type: none"> • Worksheet 18.1 (Sets 1 & 2) • Ongoing Assessment Package: Quiz 18.1 • Test Bank 18.1 			
		18.2 Permutation	3.5 hours	<ul style="list-style-type: none"> • PowerPoint 	<ul style="list-style-type: none"> • Worksheet 			

			<p>(pp.18.13 – 18.24)</p> <ul style="list-style-type: none"> Teachers can introduce the definition of factorial. Teachers can introduce the concept of permutation. 		<ul style="list-style-type: none"> Enrichment Mathematics Web Exploring <u>Inspiring Activity 18.1</u> (p.18.14) 	<p>18.2 (Sets 1 & 2)</p> <ul style="list-style-type: none"> Ongoing Assessment Package: Quiz 18.2 Test Bank 18.2 			
			<p>18.3 Combination (pp.18.25 – 18.39)</p> <ul style="list-style-type: none"> Teachers can introduce the concept of combination by using the multiplication rule in the counting principle. 	3.5 hours	<ul style="list-style-type: none"> PowerPoint Daily Life Mathematics <u>Inspiring Activity 18.2</u> (p.18.26) 	<ul style="list-style-type: none"> Worksheet 18.3 (Sets 1 & 2) Ongoing Assessment Package: Quiz 18.3 Test Bank 18.3 			
			<p>Inquiry & Investigation – Permutation of Objects which are not All Distinct (pp. 18.52 – 18.53)</p> <ul style="list-style-type: none"> Teachers can point out that the permutation of n 	0.5 hours	<ul style="list-style-type: none"> Intensive Practice Open-ended Questions Ongoing Assessment Package: Formative 				

			distinct objects and n indistinct objects are different.		Assessment 18				
8-11	<p>Non-foundation</p> <p>Chapter 19 More about Probability</p> <ul style="list-style-type: none"> To recognize the notation of set language including union, intersection and complement To understand the addition law of probability and the concepts of mutually exclusive events and complementary events To recognize the concept and notation of conditional 	<p>Concept Review (pp.19.4 – 19.7)</p> <ul style="list-style-type: none"> Teachers can revise the concept and definition of probability with students. Teachers can point out the difference between theoretical probability and experimental probability. Teachers can review permutation and combination with students. 	0.5 hour	<ul style="list-style-type: none"> Bridging Materials 	<ul style="list-style-type: none"> Review Worksheet Test Bank 19.0 				

		<p>probability</p> <ul style="list-style-type: none"> • To understand the multiplication law of probability and the concept of independent events • To use permutation and combination to solve problems relating to probability 							
		<p>19.1 Set Language in Probability (pp.19.8 – 19.17)</p> <ul style="list-style-type: none"> • Teachers can use Venn diagrams to illustrate the concepts of sets, elements, union, intersection and complement. 	1.5 hours	<ul style="list-style-type: none"> • PowerPoint • Enrichment Mathematics 	<ul style="list-style-type: none"> • Worksheet 19.1 (Sets 1 & 2) • Ongoing Assessment Package: Quiz 19.1 • Test Bank 19.1 				
		<p>19.2 Addition Law of Probability (pp.19.17 – 19.31)</p>	2.5 hours	<ul style="list-style-type: none"> • PowerPoint • Web Exploring • <u>Inspiring Activity 19.1</u> 	<ul style="list-style-type: none"> • Worksheet 19.2 (Sets 1 & 2) • Ongoing 				

			<ul style="list-style-type: none"> Teachers can use a Venn diagram to illustrate the formulas taught in this section. 		<p>(p.19.18)</p> <ul style="list-style-type: none"> Teaching Videos (Addition Law of Probability) 	<p>Assessment Package: Quiz 19.2</p> <ul style="list-style-type: none"> Test Bank 19.2 			
			<p>19.3 Conditional Probability and Multiplication Law of Probability (pp.19.32 – 19.49)</p> <ul style="list-style-type: none"> Teachers may give some real-life examples of two dependent events. Teachers can explore with students about the property of independent events and explore the multiplication law of probability. Teachers can help students distinguish independent events from dependent 	3 hours	<ul style="list-style-type: none"> PowerPoint <u>Inspiring Activity 19.2</u> (p.19.35) Teaching Videos (Conditional Probability) 	<ul style="list-style-type: none"> Worksheet 19.3 (Sets 1 & 2) Ongoing Assessment Package: Quiz 19.3 Test Bank 19.3 			

			events.						
			<p>19.4 Solving Probability Problems by Permutations and Combinations (pp.19.49 – 19.57)</p> <ul style="list-style-type: none"> Teachers may point out that by using permutation and combination, the calculation in solving some probability problems may be simpler. 	2 hours	<ul style="list-style-type: none"> PowerPoint 	<ul style="list-style-type: none"> Worksheet 19.4 (Sets 1 & 2) Ongoing Assessment Package: Quiz 19.4 Test Bank 19.4 			
			<p>Inquiry & Investigation – Would they have the same chance to get a prize? (p.19.74 – 19.75)</p> <ul style="list-style-type: none"> Teachers can let students know that some probability problems may be contradicts to common sense, for 	0.5 hour	<ul style="list-style-type: none"> Intensive Practice Open-ended Questions Ongoing Assessment Package: Formative Assessment 19 Test Bank (Multiple-choice 				

			example, the birthday problem.		Questions)				
12-13	Chapter 16 Inequalities <ul style="list-style-type: none"> To solve compound linear inequalities in one unknown To solve quadratic inequalities in one unknown by the graphical method <p>Non-foundation</p> <ul style="list-style-type: none"> To solve quadratic inequalities in one unknown by the algebraic method 	Concept Review (pp.16.4 – 16.6) <ul style="list-style-type: none"> Teachers may review the method of solving a linear inequality in one unknown. Teachers may review the properties of inequalities. Teachers may review the method in solving quadratic equations and the properties of quadratic graph. 	0.5 hour	<ul style="list-style-type: none"> Bridging Materials 	<ul style="list-style-type: none"> Review Worksheet Test Bank 16.0 				
		16.1 Compound Linear Inequalities in One Unknown (pp.16.7 – 16.19) <ul style="list-style-type: none"> Teachers can introduce the methods of solving compound linear inequalities. 	2.5 hours	<ul style="list-style-type: none"> PowerPoint 	<ul style="list-style-type: none"> Worksheet 16.1 (Sets 1 & 2) Ongoing Assessment Package: Quiz 16.1 Test Bank 				

						16.1			
		<p>16.3 Applications in Three-dimensional Problems (pp.295 – 301)</p> <ul style="list-style-type: none"> Teachers can point out that we can solve a three-dimensional problem by find a suitable triangle in the figure. 	1 hour /1 hour	<ul style="list-style-type: none"> Additional Examples 16.10 – 16.11 Worksheet 16.3 (Sets 1 & 2) Ongoing Assessment Package: Quiz 16.3 Test Bank 16.3 	Demonstrating some examples and giving some classwork				
		<p>16.2 Quadratic Inequalities in One Unknown (pp.16.20 – 16.33)</p> <ul style="list-style-type: none"> Teachers can review solving linear inequalities graphically. <p>Non-foundation</p> <ul style="list-style-type: none"> Teachers may teach the skills of solving an inequality by the algebraic method. 	3.5 hours	<ul style="list-style-type: none"> PowerPoint 	<ul style="list-style-type: none"> Worksheet 16.2 (Sets 1 & 2) Ongoing Assessment Package: Quiz 16.2 Test Bank 16.2 				
		Inquiry and Investigation –	0.5 hour	<ul style="list-style-type: none"> Intensive Practice 					

			<p>Inequality in Relating Arithmetic Mean and Geometric Mean (pp.16.44 – 16.45)</p> <ul style="list-style-type: none"> Teacher may introduce the meanings of arithmetic mean and geometric mean. 		<ul style="list-style-type: none"> Open-ended Questions Ongoing Assessment Package: Formative Assessment 16 Test Bank (Multiple-choice Questions) 				
<p>Second Term (31/12/2017-18/7/2018, Weeks 18-46)</p>	18-20	<p>Chapter 17</p> <p>More about Graphs of Functions</p> <ul style="list-style-type: none"> To solve the equation $f(x) = k$ by using the graph of $y = f(x)$ To solve the inequalities $f(x) > k$, $f(x) < k$, $f(x) \geq k$ and $f(x) \leq k$ by using the graph of $y = f(x)$ <p>Non-foundation</p> <ul style="list-style-type: none"> To understand the transformation of a function 	<p>Concept Review (pp.17.4 – 17.8)</p> <ul style="list-style-type: none"> Teachers can help students review the transformations of the coordinates of points and different types of functions. 	0.5 hour	<ul style="list-style-type: none"> Bridging Materials 	<ul style="list-style-type: none"> Review Worksheet Test Bank 17.0 			
				<p>17.1 Solving Equations by</p>	2 hours	<ul style="list-style-type: none"> PowerPoint 	<ul style="list-style-type: none"> Worksheet 17.1 		

			<p>Graphical Method (pp.17.9 – 17.18)</p> <ul style="list-style-type: none"> Teachers can use the graphical method to solving quadratic equations as an analogy and explain how to solve equation $f(x) = k$ by adding a suitable straight line. 			<p>(Sets 1 & 2)</p> <ul style="list-style-type: none"> Ongoing Assessment Package: Quiz 17.1 Test Bank 17.1 			
			<p>17.2 Solving Inequalities by Graphical Method (pp.17.19 – 17.29)</p> <ul style="list-style-type: none"> When a horizontal line $y = k$ is added on a given graph, it cuts the graph into three parts: those above ($> k$), those below ($< k$) and those on ($= k$) the line. Teachers can ask students the solution 	3 hours	<ul style="list-style-type: none"> PowerPoint Simulation (Graphical method to solve quadratic inequalities) 	<ul style="list-style-type: none"> Worksheet 17.2 (Sets 1 & 2) Ongoing Assessment Package: Quiz 17.2 Test Bank 17.2 			

			if the line $y = k$ and the graph of $y = f(x)$ do not intersect.						
			<p>Non-foundation</p> <p>17.3 Transformations of Functions (pp.17.30 – 17.49)</p> <ul style="list-style-type: none"> Students can observe the change of the graphs after different transformations, that is, translation, reflection, enlargement and reduction. 	4.5 hours	<ul style="list-style-type: none"> PowerPoint <u>Inspiring Activity 17.1</u> (pp.17.31 – 17.32) <u>Inspiring Activity 17.2</u> (pp.17.35 – 17.36) <u>Inspiring Activity 17.3</u> (p.17.39) Simulation (Transformations of graph) 	<ul style="list-style-type: none"> Worksheet 17.3 (Sets 1 & 2) Ongoing Assessment Package: Quiz 17.3 Test Bank 17.3 			
			<p>Inquiry & Investigation – Simple Ideas on Inverse Functions (p.17.64 – 17.65)</p> <ul style="list-style-type: none"> Teachers can introduce the concept of inverse function and point out that logarithmic functions 	0.5 hours	<ul style="list-style-type: none"> Intensive Practice Open-ended Questions Ongoing Assessment Package: Formative Assessment 17 Test Bank (Multiple-choice 				

			and exponential functions are inverse functions of each other.		Questions)				
21-22	<p>Non-foundation</p> <p>Chapter 20 Arithmetic and Geometric Sequences</p> <ul style="list-style-type: none"> To understand the concepts and the properties of arithmetic sequences To understand the concepts and the properties of geometric sequences To solve real-life problems relating to sequences 	<p>Concept Review (pp.20.4 – 20.6)</p> <ul style="list-style-type: none"> Teachers can ask students to review the concepts of sequences. Teachers can ask students to revise the technique required in solving problems relating to sequences. 	0.5 hour	<ul style="list-style-type: none"> Bridging Materials 	<ul style="list-style-type: none"> Review Worksheet Test Bank 20.0 				
		<p>20.1 Arithmetic Sequences (pp.20.7 – 20.19)</p> <ul style="list-style-type: none"> Teachers can introduce the pattern 	2 hours	<ul style="list-style-type: none"> PowerPoint <u>Inspiring Activity 20.1</u> (p.20.13) 	<ul style="list-style-type: none"> Worksheet 20.1 (Sets 1 & 2) Ongoing Assessment 				

			<p>of arithmetic sequences.</p> <ul style="list-style-type: none"> Teachers can introduce the properties of arithmetic sequences. 			<p>Package: Quiz 20.1</p> <ul style="list-style-type: none"> Test Bank 20.1 			
			<p>20.2 Geometric Sequences (pp.20.20 – 20.31)</p> <ul style="list-style-type: none"> Teachers can introduce the pattern of geometric sequences. Teachers can introduce the properties of geometric sequences. 	2 hours	<ul style="list-style-type: none"> PowerPoint <u>Inspiring Activity 20.2</u> (p.20.25) 	<ul style="list-style-type: none"> Worksheet 20.2 (Sets 1 & 2) Ongoing Assessment Package: Quiz 20.2 Test Bank 20.2 			
			<p>20.3 Applications of Arithmetic and Geometric Sequences (pp.20.32 – 20.39)</p> <ul style="list-style-type: none"> Teachers can illustrate how to distinguish problems involving arithmetic and geometric 	1.5 hours	<ul style="list-style-type: none"> PowerPoint Web Exploring 	<ul style="list-style-type: none"> Worksheet 20.3 (Sets 1 & 2) Ongoing Assessment Package: Quiz 20.3 Test Bank 20.3 			

			<p>sequences.</p> <ul style="list-style-type: none"> The applications of the formulas of sequences in solving real-life problems should be discussed. 						
			<p>Inquiry & Investigation – Exploring the Recurrence Relation (pp.20.52 – 20.53)</p> <ul style="list-style-type: none"> Teachers may introduce the recurrence relation to students and ask them to write down the recurrence relation for arithmetic sequences and geometric sequences. 	0.5 hour	<ul style="list-style-type: none"> Intensive Practice Open-ended Questions Ongoing Assessment Package: Formative Assessment 20 Test Bank (Multiple-choice Questions) 				
23-27	<p>Non-foundation</p> <p>Chapter 21 Summation of Arithmetic and Geometric</p>	<p>Concept Review (pp.21.4 – 21.6)</p> <ul style="list-style-type: none"> Teachers may review 	0.5 hour		<ul style="list-style-type: none"> Review Worksheet Test Bank 				

		<p>Sequences</p> <ul style="list-style-type: none"> • To understand the formula of the sum of a finite number of terms of an arithmetic sequence and a geometric sequence • To find the sum to infinity for certain geometric sequences • To solve real-life problems relating to the summation formulas 	<p>the concepts and the properties of arithmetic and geometric sequences with students.</p>			21.0			
			<p>21.1 Summing an Arithmetic Sequence (pp.21.7 – 21.15)</p> <ul style="list-style-type: none"> • Teachers tell the story of Gauss to motivate students in finding the rules for the summation. 	3.5 hours	<ul style="list-style-type: none"> • PowerPoint • Enrichment Mathematics • <u>Inspiring Activity 21.1</u> (pp.21.7 – 21.8) 	<ul style="list-style-type: none"> • Worksheet 21.1 (Sets 1 & 2) • Ongoing Assessment Package: Quiz 21.1 • Test Bank 21.1 			

			<ul style="list-style-type: none"> Teachers can mention that $S(n)$ is a sequence of the partial sums of $T(n)$. Teachers can deduce the formula for summing an arithmetic sequence. 						
			<p>21.2 Summing a Geometric Sequence (pp.21.15 – 21.28)</p> <ul style="list-style-type: none"> Teachers can deduce the formula for summing a geometric sequence. Teachers may ask students to investigate the property of geometric series when $r = 1$. Teachers can ask students to investigate the formula for sum to 	4.5 hours	<ul style="list-style-type: none"> PowerPoint <u>Inspiring Activity 21.2</u> (p.21.20) <u>Inspiring Activity 21.3</u> (p.21.22) 	<ul style="list-style-type: none"> Worksheet 21.2 (Sets 1 & 2) Ongoing Assessment Package: Quiz 21.2 Test Bank 21.2 			

		infinity.						
		<p>21.3 Applications of Summation Formulas (pp.21.29 – 21.37)</p> <ul style="list-style-type: none"> Teachers may discuss various real-life problems relating to sequences with students. 	2.5 hours	<ul style="list-style-type: none"> PowerPoint 	<ul style="list-style-type: none"> Worksheet 21.3 (Sets 1 & 2) Ongoing Assessment Package: Quiz 21.3 Test Bank 21.3 			
		<p>Inquiry & Investigation – Introduction to Harmonic Sequences (pp.21.52 – 21.53)</p> <ul style="list-style-type: none"> Teachers may ask students to guess the sum a harmonic sequence for very large n. 	0.5 hour	<ul style="list-style-type: none"> Intensive Practice Open-ended Questions Ongoing Assessment Package: Formative Assessment 21 Test Bank (Multiple-choice Questions) 				
28-34	<p>Chapter 22 Measures of Dispersion</p> <ul style="list-style-type: none"> To understand the concepts of 	<p>Concept Review (pp.22.4 – 22.6)</p>	0.5 hour	<ul style="list-style-type: none"> Bridging Materials 	<ul style="list-style-type: none"> Review Worksheet 			

		<p>dispersion, range and inter-quartile range</p> <ul style="list-style-type: none"> • To construct and interpret box-and-whisker diagrams and use them to compare the distributions of different sets of data • To understand the concept of standard deviation for grouped and ungrouped data sets • To compare the dispersions of different sets of data using appropriate measures <p>Non-foundation</p> <ul style="list-style-type: none"> • To understand the applications of the standard deviation to real-life 	<ul style="list-style-type: none"> • Teachers may ask students to review different statistical graphs to represent frequency distribution and different measures of central tendency. 			<ul style="list-style-type: none"> • Test Bank 22.0 			
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	<p>problems</p> <p>Non-foundation</p> <ul style="list-style-type: none"> To explore the effects of the changes in data on dispersion 							
		<p>22.1 Range and Inter-quartile Range (pp.22.7 – 22.16)</p> <ul style="list-style-type: none"> Teachers can remind students the difference in calculating range and inter-quartile range of grouped and ungrouped data. 	2 hours	<ul style="list-style-type: none"> PowerPoint 	<ul style="list-style-type: none"> Worksheet 22.1 (Sets 1 & 2) Ongoing Assessment Package: Quiz 22.1 Test Bank 22.1 			
		<p>22.2 Box-and-whisker Diagrams (pp.22.17 – 22.25)</p> <ul style="list-style-type: none"> Teachers can illustrate the general configuration of a box-and-whisker diagram. Teachers can 	3 hours	<ul style="list-style-type: none"> PowerPoint Simulation (Box-and-whisker Diagram) Teaching Video (Box-and-whisker Diagram) Web Exploring 	<ul style="list-style-type: none"> Worksheet 22.2 (Sets 1 & 2) Ongoing Assessment Package: Quiz 22.2 Test Bank 22.2 			

			<p>demonstrate how to construct a box-and-whisker diagram.</p> <ul style="list-style-type: none"> Teachers can teach students how to use box-and-whisker diagrams to compare different sets of data. 						
			<p>22.3 Standard Deviation (pp.22.25 – 22.36)</p> <ul style="list-style-type: none"> Teachers can use two sets of data with the same mean, range and inter-quartile rang to point out the meaning of standard deviation of the data. Teachers can discuss students the use of variance. Teachers can discuss with students the reason to square the difference between each datum and the 	3 hours	<ul style="list-style-type: none"> PowerPoint Teaching Video (Standard Deviation) 	<ul style="list-style-type: none"> Worksheet 22.3 (Sets 1 & 2) Ongoing Assessment Package: Quiz 22.3 Test Bank 22.3 			

			mean, that is, $(x - \bar{x})^2$.						
			<p>Non-foundation</p> <p>22.4 Applications of Standard Deviation (pp.22.37 – 22.48)</p> <ul style="list-style-type: none"> Teachers can tell students to use the formula for standard score to find the standard deviation. Teachers can ask students what a standard score of 0 represents. 	2.5 hours	<ul style="list-style-type: none"> PowerPoint Daily Life Mathematics Enrichment Mathematics 	<ul style="list-style-type: none"> Worksheet 22.4 (Sets 1 & 2) Ongoing Assessment Package: Quiz 22.4 Test Bank 22.4 			
			<p>Non-foundation</p> <p>22.5 Effects on the Dispersion with Change in Data (pp.22.48 – 22.59)</p> <ul style="list-style-type: none"> Teachers can discuss with students about the changes on the dispersion of data after making 	3 hours	<ul style="list-style-type: none"> PowerPoint <u>Inspiring Activity 22.1</u> (p.22.51) 	<ul style="list-style-type: none"> Worksheet 22.5 (Sets 1 & 2) Ongoing Assessment Package: Quiz 22.5 Test Bank 22.5 			

			different changes to data values.						
			<p>Inquiry & Investigation – Risk and Standard Deviation (pp.22.78 – 22.79)</p> <ul style="list-style-type: none"> Teachers can introduce the concept of risk and the use of standard deviation to measure risk. Teachers can also mention that range and inter-quartile range can be used as rough estimates of risk. 	0.5 hour	<ul style="list-style-type: none"> Intensive Practice Open-ended Questions Ongoing Assessment Package: Formative Assessment 22 Test Bank (Multiple-choice Questions) 				
35-39	<p>Chapter 23</p> <p>Circles and Locus</p> <ul style="list-style-type: none"> To understand the equation of a circle <p>Non-foundation</p> <ul style="list-style-type: none"> To find the number and coordinates of the 	<p>Concept Review (pp.23.4 – 23.8)</p> <ul style="list-style-type: none"> Teachers may ask students to review the basic ideas of coordinate geometry of straight lines, equations of straight 	0.5 hour	<ul style="list-style-type: none"> Bridging Materials 	<ul style="list-style-type: none"> Review Worksheet Test Bank 23.0 				

	<p>points of intersection of a straight line and a circle</p> <p>Non-foundation</p> <ul style="list-style-type: none"> • To find the equations of tangents to a circle • To understand the concept of loci • To describe and sketch the locus of points under given conditions • To describe the locus of points with algebraic equations 	lines and quadratic equations.						
		<p>23.1 Equations of Circles (pp.23.9 – 22.26)</p> <ul style="list-style-type: none"> • Teachers can guide students to deduce the equation of circle and transform the equation in the form 	4.5 hours	<ul style="list-style-type: none"> • PowerPoint 	<ul style="list-style-type: none"> • Worksheet 23.1 (Sets 1 & 2) • Ongoing Assessment Package: Quiz 23.1 • Test Bank 			

			$x^2 + y^2 + Dx + Ey + F = 0$ or $(x - h)^2 + (y - k)^2 = r^2$. <ul style="list-style-type: none"> Teachers may remind students that the coefficients of x^2 and y^2 must be equal. 		23.1			
		Non-foundation 23.2 Intersection of a Straight Line and a Circle (pp.23.26 – 23.39) <ul style="list-style-type: none"> Teachers may point out the conditions of the intersection of a straight line and a circle. Teachers can ask students to review how to solve the simultaneous equations. 	5 hours	<ul style="list-style-type: none"> PowerPoint 	<ul style="list-style-type: none"> Worksheet 23.2 (Sets 1 & 2) Ongoing Assessment Package: Quiz 23.2 Test Bank 23.2 			
		23.3 Loci (pp.23.39 – 23.53) <ul style="list-style-type: none"> Teachers can help 	7 hours	<ul style="list-style-type: none"> PowerPoint <u>Inspiring Activity 23.1</u> (p.23.40) 	<ul style="list-style-type: none"> Worksheet 23.3 (Sets 1 & 2) 			

			<p>students investigate the locus of a moving point by geometric software ‘GeoGebra’.</p> <ul style="list-style-type: none"> Teachers can teach students how to use algebraic equations to describe the simple locus of a moving point. 		<ul style="list-style-type: none"> <u>Inspiring Activity 23.2</u> (pp.23.42 – 23.43) <u>Inspiring Activity 23.3</u> (pp.23.44 – 23.45) 	<ul style="list-style-type: none"> Ongoing Assessment Package: Quiz 23.3 Test Bank 23.3 			
			<p>Inquiry & Investigation – Ellipse (pp.23.74 – 23.75)</p> <ul style="list-style-type: none"> Teachers can introduce an ellipse as the locus of a moving point such that the sum of the distances of the point to two fixed points is a constant. Teachers can introduce another definition of an ellipse with respect to focus and 	0.5 hour	<ul style="list-style-type: none"> Intensive Practice Open-ended Questions Ongoing Assessment Package: Formative Assessment 23 Test Bank (Multiple-choice Questions) 				

			directrix. <ul style="list-style-type: none"> • Teachers can point out the properties of an ellipse. • Teachers can point out an ellipse is a generalization of a circle. 						
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* The extended parts should be marked with asterisks. These parts should be more challenging and can be covered when the students can master the knowledge and skills covered in the conventional topics.

Core Values of Wah Yan College, Kowloon

I. Love and care	1. Accept & feel positive about himself 2. Appreciation & Gratitude 3. Empathy & Compassion	4. Forgiveness & Reconciliation 5. Service 6. Family as a basic unit of society; marriage is the foundation of a family
II. Strive for excellence	7. Reflective 8. Commitment 9. Perseverance	10. Curiosity & willingness to learn 11. Value imagination and creativity
III. Respect and Justice	12. Life is valuable and respectable 13. Openness to good in all things 14. Respect for himself & others	15. Integrity 16. Faithfulness
IV. Responsibility	17. Freedom & Self-discipline 18. Care for the environment	19. Social Identities: citizen identity, national identity and global citizen identity
V. Faith	20. Experience of God 21. Explore & practise one's faith	22. Appreciate religious liturgies