Turramurra High School - 2024 - Year 10 5.3/5.2+ - Scope and Sequence

Term 1 2024

		Week 1	Week 2		Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9		Week 10	Week 11

| | | 29/1 | 30/1 | 5/2 | 12/2 | 19/2 | 26/2 | 4/3 | 11/3 | 18/3 | 25/3 | 29/3 | 3/4 | 10/4 |

<table>
<tr>
<td rowspan="2">SDD 2</td>
<td rowspan="2">Year 7, 11, 12 only</td>
<td colspan="2">Topic 1: Algebraic Techniques</td>
<td>Topic 2: Equati MA5.3 1WM</td>
<td rowspan="2">Swimming Carnival</td>
<td colspan="4">Topic 2: Equations and Polynomials</td>
<td colspan="3">Topic 3: Trigonometry</td>
<td colspan="2">Topic 4: Rational Indices, Surds and Logarithms</td>
<td rowspan="3">GOOD FRIDAY</td>
<td rowspan="3">EASTER MONDAY</td>
<td colspan="2">Topic 4: Rational Indices, Surds and Logarithms</td>
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<tr>
<td colspan="2">MA5.3 1WM, MA5.3 2WM, MA5.3 3WM, MA5.3 5NA</td>
<td>MA5.3 1WM...</td>
<td colspan="4">MA5.3 1WM, MA5.3 2WM, MA5.3 3WM, MA5.3 7NA, MA5.3 10NA</td>
<td colspan="3">1WM, MA5.3 2WM, MA5.3 3WM, MA5.3 15MG</td>
<td colspan="2">MA5.3 1WM, MA5.3 2WM, MA5.3 3WM, MA5.3 6NA</td>
<td colspan="2">MA5.3 1WM, MA5.3 2WM, MA5.3 3WM, MA5.3 6NA</td>
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Topic 1: Algebraic Techniques — MA5.3 1WM, MA5.3 2WM, MA5.3 3WM, MA5.3 5NA

● Uses algebraic techniques to simplify expressions, expand binomial products and factorise quadratic expressions.

Topic 2: Equati... — MA5.3 1WM...

● Solve complex linear, quadratic, and simple cubic and rearran...

Topic 2: Equations and Polynomials — MA5.3 1WM, MA5.3 2WM, MA5.3 3WM, MA5.3 7NA, MA5.3 10NA

● Solve complex linear, quadratic, and simple cubic and rearranges literal equations.

● Investigate the concept of a polynomial and apply the four operations to polynomials and simple graphing

Topic 3: Trigonometry — 1WM, MA5.3 2WM, MA5.3 3WM, MA5.3 15MG

● Review Trigonometry from Year 9; finding the length of sides and size of angles and solving angles of elevation/depression and bearings problems.
● Applies Pythagoras' theorem and right angles-trigonometric relationships to solve problems involving problems involving three dimensions.
● Solves problems in right-angled triangles using the exact sine, cosine and

Topic 4: Rational Indices, Surds and Logarithms — MA5.3 1WM, MA5.3 2WM, MA5.3 3WM, MA5.3 6NA

● Practice simplifying surds and rationalizing the denominator.
● Use integers and fractions for index notation.
● Convert between surd and index notation.
● Simplify and expand algebraic expressions involving integer and fractional indices
Logarithms
● Define logarithms as indices:

Topic 4: Rational Indices, Surds and Logarithms — MA5.3 1WM, MA5.3 2WM, MA5.3 3WM, MA5.3 6NA

● Practice simplifying surds and rationalizing the denominator.
● Use integers and fractions for index notation.
● Convert between surd and index notation.
● Simplify and expand algebraic expressions involving integer and fractional indices
Logarithms
● Define logarithms as indices: = is equivalent to = log , and explain

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Term 2 2024

	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6		Week 7	Week 8	Week 9	Week 10
29/4 30/4		6/5	13/5	20/5	27/5	3/6	10/6 11/6	17/6		24/6	1/7

S.D.D.	Topic 5: Non- Right Trigonometry				Topic 6: Linear Relationships		Queens Birthday	Topic 6: Linear Relationships	Topic 7: Non-Linear Relationships		
	MA5.3 1WM, MA5.3 2WM, MA5.3 3WM, MA5.3 15MG				MA5.3 1WM, MA5.3 2WM, MA5.3 3WM, MA5.3 8NA			MA5.3 1WM, MA5.3 2WM, MA5.3 3WM, MA5.3 8NA	MA5.1 7NA, MA5.2 10NA, MA5.3 1WM, MA5.3 2WM, MA5.3 3WM, MA5.3 9NA, MA5.3 10NA		
	● Use the unit circle to define trigonometric functions, and graph them, with and without the use of digital technologies. ● Determine the possible acute and/or obtuse angle(s), given a trigonometric ratio. Establish and use ASTC ● Establish the sine, cosine and area rules for any triangle and solve related problems.				● Uses formulas to find midpoint, gradient and distance on the Cartesian plane, and applies standard forms of the equation of a straight line. ● Determine the angle of inclination of a line on the cartesian plane by establishing and using the relationship m = tan θ.			● Solves a variety of problems by applying coordinate geometry formulas.	● Describe, interpret and sketch parabolas, hyperbolas, circles, cubics, exponential and logarithmic functions and their transformations. ● Understands and uses interval notation as a way of representing the domain and range.		

Term 3 2024

	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10
22/7	23/7	29/7	5/8	12/8	19/8	26/8	2/9	9/9	16/9	23/9
S. D. D.	Topic 8									

	Topic 8: Graphs of Physical Phenomena	**Topic 9: Simultaneous Eqns**	**Topic 10: Single Variable Data Analysis (A)**	**Topic 11: Data Analysis**		**Topic 12: Probability**
	MA5.3 1WM, MA5.3 2WM, MA5.3 3WM, MA5.3 4NA	MA5.3 1WM, MA5.3 2WM, MA5.3 3WM, MA5.3 7NA	MA5.2 15SP, MA5.3 18SP	MA5.2 1WM, MA5.2 3WM, MA5.2 15SP, MA5.2 16SP, MA5.3 1WM, MA5.3 2WM, MA5.3 19SP		MA5.2 1WM, MA5.2 2WM, MA5.2 3WM, MA5.1 13SP, MA5.2 17SP

| **S. D. D.** | ● Solves problems involving direct proportion; explore the relationship between graphs and equations corresponding to simple rate problems.
● Draws, interprets and analyses graphs of physical phenomena
(Note: This topic would suit being done alongside the Linear and non-linear relationships topics) | ● Review solving simultaneous equations, using algebraic and graphical techniques.
● Solves simultaneous equations, where one equation is non-linear, using algebraic and graphical techniques, including the use | ● Compare data displays using mean, median and range to describe and interpret numerical data sets in terms of location (centre) and spread.
● Determine quartiles and interquartile range,
● Construct and interpret box plots and use them to compare data sets.
● Compare shapes of box plots to corresponding histograms and dot plots. | ● Review constructing and interpreting box plots and using them to compare data sets.
● Investigate and describe bivariate numerical data where the independent variable is time.
● Use scatter plots to investigate and comment on relationships between two numerical variables.
● Use information technologies to investigate bivariate numerical data sets; where appropriate, students use a straight line to describe the relationship, allowing for variation.
● Investigate reports of studies in digital media and elsewhere for information on their planning and implementation. | ● Calculates relative frequencies from given or collected data to estimate probabilities of events involving "and" or "or"
● Interpret and use venn diagrams and two way tables.
● List all outcomes for two-step experiments, with and without replacement, using tree diagrams or arrays; assign probabilities to outcomes and determine probabilities for events.
● Describe the results of two- and three-step chance experiments, with and without replacement, assign probabilities to outcomes, and determines probabilities of events; investigate the concept of independence.
● Use the language of 'if .... then', 'given', 'of', 'knowing that' to investigate conditional statements and to identify common mistakes in interpreting such language |

Term 4 2024

Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10
14/10	21/10	28/10	4/11	11/11	18/11	25/11	2/12	9/12	16/12 ... 20/12

Topic 13: Financial Mathematics	Topic 14: Measurement	Topic 15: Functions	Work Experience	Topic 15: Functions continued	Topic 16: Geometry	S. D. D.
MA5.2 1WM, MA5.2 2WM, MA5.2 4NA, MA5.1 5NA	MA5.3 1WM, MA5.3 2WM, MA5.3 13MG, MA5.3 14MG	MA5.3-1WM, MA5.3-3WM, MA5.3 12NA		MA5.3-1WM, MA5.3-3WM, MA5.3 12NA	MA5.3 1WM, MA5.3 2WM, MA5.3 3WM, MA5.3 16MG	
● Investigates ways of paying for an item and solves simple interest problems that involve buying on terms ● Connects compound interest to repeated applications of simple interest.and establishes then uses the formula for compound interest. ● Solves problems involving compound interest and depreciation. ● Solves equations arising from substitution into financial maths formulae.	● Solves problems involving the surface area of right pyramids, right cones, spheres and related composite solids. ● Solves problems involving the volumes of right pyramids, right cones, spheres and related composite solids. ● Solve problems involving similarity ratios and areas and volumes.	Describe, interpret and sketch functions		● Extension: Apply an understanding of polynomials to sketch a range of curves and describe the features of these curves from their equation.	● Uses deductive reasoning in presenting arguments and formal proofs. ● Review properties of quadrilaterals and selected circle geometry properties (Facts only)	