

St Stephen's School, Carramar
Year 10 Mathematical Foundations
 Teachers: Ms Cecelia Raj, Mr Williams, Mrs Wendy Brown
 Term 1

Week	Chapter 1 Number	Text Ref / Resources	Assessments	Technology
1 -4	Revision: <ul style="list-style-type: none"> • Fractions and simplifying ratios • Ratios • Rates of change • Density • Prime factors • Operations on integers and fractions • Rounding and significant figures • Scientific notation • Set notation and Number lines 	Coursebook Exercise 1A To 1Q Puzzles p 40		Companion Website Drag and drop Interactives <ul style="list-style-type: none"> • Maths terms • Simplifying ratios • Rates • Converting Fractions to decimals • Significant figures
	Applications Of Number:	Coursebook Applications P 42 <ul style="list-style-type: none"> • Heart rates and health • Planet models • Paper sizes Extensions P 44 <ul style="list-style-type: none"> • Distance-time graphs • Factorials 	Investigation 1 (wk 2)	Companion Website Technology applications <ul style="list-style-type: none"> • World Records
	Revision	Coursebook Revision Questions P 46	TEST 1 (wk 4)	Companion Website Review Questions

Term 1

Week	Chapter 2 Business Maths	Text Ref / Resources	Assessment	Technology
5-10	Revision: <ul style="list-style-type: none"> • Calculations In Business • Percentages • Percentage Change • profit and Loss • Discount And Commission 	Coursebook Exercise 2A To 2E		
	Develop New Concepts: <ul style="list-style-type: none"> • Simple and Compound Interest • Reducible interest • Reducing balance loans 	Coursebook Exercise 2F To 2J Puzzles P 70		Companion Website Drag and drop Interactives <ul style="list-style-type: none"> • Going Shopping • Maths terms • Find the weekly wage
	Applications Of Business Maths:	Coursebook Applications P 72 <ul style="list-style-type: none"> • Renting a house • Buying a car Extensions P 74 <ul style="list-style-type: none"> • Effective rate of interest • Home loans 		Companion Website Technology Applications <ul style="list-style-type: none"> • Car Costs
	Revision/catch up	Coursebook Revision Questions P 76	TEST 2 (wk 10)	Companion Website Review Questions

Term 2

Week	Chapter 3 Measurement	Text Ref / Resources	Assessment	Technology
1-3	Revision: <ul style="list-style-type: none"> Perimeter and Area of Sectors 	Coursebook Exercise 3A To 3C		
	Develop New Concepts: <ul style="list-style-type: none"> Surface Area Of Prisms And Pyramids Surface Area of Cylinder, Cone and Sphere Volume Of Prisms, pyramids, Cones, Spheres Capacity Pythagoras' theorem in 3D 	Coursebook Exercise 3D To 3L Puzzles P 102		Companion Website Quicktime movie <ul style="list-style-type: none"> Maths on a building site An arched window Drag and drop Interactives <ul style="list-style-type: none"> Maths terms Perimeter 1,2 Area of sectors and composite figures Surface area of a prism Surface area of a cylinder The box animation
	Applications Of Measurement:	Coursebook Applications P 104 <ul style="list-style-type: none"> Pulleys Ellipse Bush fires A tethered lamb Extensions P 106 <ul style="list-style-type: none"> Heron's formula Approximating area under curves 		Companion Website Technology Applications <ul style="list-style-type: none"> Belt and pulley An arched window Animation The Box
	Revision	Coursebook Revision Questions P 108	TEST 3 (Wk 3)	Companion Website Review Questions

Term 2

Week	Chapter 5 Trigonometry	Text Ref / Resources	Assessment	Technology
4-6	Revision: <ul style="list-style-type: none"> • Labelling Right-Angle Triangles • Tangent ratio 	Coursebook Exercise 5A To 5B		
	Develop New Concepts: <ul style="list-style-type: none"> • Trig ratios • Special triangles and exact values • Angles Of Elevation And Depression • Bearings • Trigonometry in 3D 	Coursebook Exercise 5C To 5P Puzzles P 182	Investigation 2 (Wk 4)	Companion Website Drag and drop Interactives <ul style="list-style-type: none"> • Trigonometry puzzle
	Applications Of Trigonometry:	Coursebook Applications P 184 <ul style="list-style-type: none"> • Non-right Angle trig: Area, Sine and Cosine rules Extensions P 186 <ul style="list-style-type: none"> • Unit circle and tan • trig identities 		Companion Website Technology Applications <ul style="list-style-type: none"> • Investigating Sine curves Animation • Unit circle
	Revision/catch up	Coursebook Revision Questions P 188		Companion Website Review Questions

Term 2

Week	Chapter 6 Algebra Techniques	Text Ref / Resources	Assessment	Technology
7-9	Revision: <ul style="list-style-type: none"> Expanding single brackets Expanding double brackets Factorisation Simple quadratic trinomials Simple Linear Equations Transposing formula Index numbers 	Coursebook Exercise 6A - 6E Exercise 6L-6M		Companion Website Drag and drop Interactives <ul style="list-style-type: none"> Maths Terms 1 & 2 Addition and Subtraction Multiplication and Division Grouping Symbols Simplifying expressions Factorising
	Develop New Concepts: <ul style="list-style-type: none"> Other quadratic trinomials Algebraic fractions Linear Inequations 	Coursebook Exercise 6F- Q Puzzles P 228		Companion Website Drag and drop Interactives <ul style="list-style-type: none"> Addition and Subtraction of Algebraic Fractions Multiplication and Division of Algebraic Fractions Substitution and Formulae Fractional indices Index laws Negative Indices
	Applications Of Algebra Techniques:	Coursebook Applications P 230 <ul style="list-style-type: none"> Vegetable garden Farmyard enclosure Distance to the horizon Investigating Pythagoras Extensions P 232 <ul style="list-style-type: none"> Factorising by grouping Completing the square 	TEST 4 (Wk 9)	Companion Website Technology Applications <ul style="list-style-type: none"> Magic squares with algebraic fractions
	Revision	Coursebook Revision Questions P 234		Companion Website Review Questions
	EXAMS		EXAMS	

Term 3

Week	Chapter 7 Linear Functions	Text Ref / Resources	Assessment	Technology
Wk 1-5	Revision: <ul style="list-style-type: none"> Graphing Linear equations using x and y intercepts 	Coursebook Exercise 7A -7C		
	Develop New Concepts: <ul style="list-style-type: none"> Graphing Linear equations using m and c. Finding equations of lines Simultaneous linear equations Parallel and perpendicular lines Midpoints and distances between points 	Coursebook Exercise 7D – 7M Puzzles P 262	Investigation 3 (Wk 3)	Companion Website Drag and drop Interactives <ul style="list-style-type: none"> Solving Inequations Equations Equations with fractions Maths Terms 1 & 2 Number Plane review Graphing Lines X and y intercepts Horizontal and vertical lines Gradient and y-intercept of a straight line
	Applications Of Linear Functions	Coursebook Applications P 264 <ul style="list-style-type: none"> Break even analysis Internet costs Extensions P 266 <ul style="list-style-type: none"> Sketching inequalities Algebraic inequations 	TEST 5 (Wk 5)	Companion Website Technology Applications <ul style="list-style-type: none"> Literal equations

Term 3

Week	Chapter 8 Quadratic Functions	Text Ref / Resources	Assessment	Technology
6-10	Revision: <ul style="list-style-type: none"> • Classifying quadratics • Using the null factor law 	Coursebook Exercise 8A - 8B		
	Develop New Concepts: <ul style="list-style-type: none"> • Solving Quadratic Equations • The quadratic equation • Exploring Parabolas • Sketching parabolas • Solving worded problems • Solving quadratic inequations • Completing the square and turning point form 	Coursebook Exercise 8C – 8P Puzzles P 310		Companion Website Quick Time Movies <ul style="list-style-type: none"> • Parabolas In Headlights And Satellites Companion Website Drag and drop Interactives <ul style="list-style-type: none"> • Maths terms • parabola puzzle
	Applications Of Quadratic functions:	Coursebook Applications P 312 <ul style="list-style-type: none"> • The box problem • Fireworks • Simultaneous linear and quadratic equations Extensions P 314 <ul style="list-style-type: none"> • Algebraic Fractions • Solving quadratics using guess and check 	TEST 6 (Wk 10)	Companion Website Technology Applications <ul style="list-style-type: none"> • Completing the square • Parabolas in turning point and x-intercept form

Term 4

Week	Chapter 9 Probability	Text Ref / Resources	Assessment	Technology
Wk 1	Revision: <ul style="list-style-type: none"> theoretical probability Venn diagrams 	Coursebook Exercise 9A – 9B		
Wk 2-4	Revision: <ul style="list-style-type: none"> Histograms 	Coursebook Exercise 10A		
	Develop New Concepts: <ul style="list-style-type: none"> Mean And Standard deviation Cumulative frequency Boxplots and The Interquartile Range Outliers Estimating populations and Surveys 	Coursebook Exercise 10B – 10K Puzzles P 384	Investigation 4	Companion Website Drag and drop Interactives <ul style="list-style-type: none"> Maths terms
	Applications Of Statistics:	Coursebook Applications P 386 <ul style="list-style-type: none"> Mobile phone bills Predicting the mean from a sample Misuse of statistics Extensions P 388 <ul style="list-style-type: none"> Bell shaped curves 	TEST 7 (Wk 4)	Companion Website Technology Applications <ul style="list-style-type: none"> Bivariate project
	Exponential & Reciprocal <ul style="list-style-type: none"> Exploring exponential functions 	Exercise 11J-11L		
Wk 5-6	Revision/catch up		EXAM	