

St Stephen's School, Carramar
Year 10 Mathematical Foundations
Teachers: Mrs Catherine Stanley & Miss Jennifer Key
Term 1

Week	Chapter 1 Number	Text Ref / Resources	Assessments	Technology
1 -3	Revision: - Fractions and simplifying ratios - Ratios - Rates of change - Density - Prime factors - Operations on integers and fractions - Rounding and significant figures - Scientific notation	Coursebook Exercise 1A To 1N Puzzles p 40		Companion Website Drag and drop Interactives - Maths terms - Simplifying ratios - Rates - Converting Fractions to decimals - Significant figures
	Applications Of Number:	Coursebook Applications P 42 - Heart rates and health - Planet models - Paper sizes Extensions P 44 - Distance-time graphs - Factorials	Investigation 1 (Wk 2)	Companion Website Technology applications World Records
	Revision	Coursebook Revision Questions P 46	TEST 1 (wk 3)	Companion Website Review Questions

Term 1

Week	Chapter 2 Business Maths	Text Ref / Resources	Assessment	Technology
4-6	Revision: • Calculations In Business • Percentages • Percentage Change • profit and Loss • Discount And Commission	Coursebook Exercise 2A To 2E		
	Develop New Concepts: • Simple and Compound Interest • Reducible interest • Reducing balance loans	Coursebook Exercise 2F To 2I Puzzles P 70		Companion Website Drag and drop Interactives • Going Shopping • Maths terms • Find the weekly wage
	Applications Of Business Maths:	Coursebook Applications P 72 • Renting a house • Buying a car Extensions P 74 • Effective rate of interest • Home loans		Companion Website Technology Applications • Car Costs
	Revision/catch up	Coursebook Revision Questions P 76	TEST 2 (wk 6)	Companion Website Review Questions

Term 1

Week	Chapter 3 Measurement	Text Ref / Resources	Assessment	Technology
7-9	Revision: Perimeter and Area of Sectors	Coursebook Exercise 3A To 3C		
	Develop New Concepts: - 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 (Not G, I & K) Puzzles P 102		Companion Website Quicktime movie - Maths on a building site - An arched window Drag and drop Interactives - 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 - Pulleys - Ellipse - Bush fires - A tethered lamb Extensions P 106 - Heron's formula - Approximating area under curves		Companion Website Technology Applications - Belt and pulley - An arched window Animation - The Box
	Revision	Coursebook Revision Questions P 108	TEST 3 (Wk 9)	Companion Website Review Questions

Term 2

Week	Chapter 4 Space	Text Ref / Resources	Assessment	Technology
1-3	Revision: - Angles Review - Polygon facts - Transformations - Congruent and Similar Triangles - Networks	Coursebook Exercise 4A To 4I Not 4C		
	Revision	Coursebook Revision Questions P 148	TEST 4 (Wk 3)	

Term 2

Week	Chapter 6 Algebra Techniques	Text Ref / Resources	Assessment	Technology
4-6	Revision: - Expanding single brackets - Expanding double brackets - Factorisation - Simple quadratic trinomials - Simple Linear Equations - Transposing formula	Coursebook Exercise 6A - 6E Exercise 6L		Companion Website Drag and drop Interactives - Maths Terms 1 & 2 - Addition and Subtraction - Multiplication and Division - Grouping Symbols - Simplifying expressions - Factorising

	Develop New Concepts:	Coursebook Exercise 6G- Q Puzzles P 228		Companion Website Drag and drop Interactives • 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 • Vegetable garden • Farmyard enclosure • Distance to the horizon • Investigating Pythagoras Extensions P 232 • Factorising by grouping • Completing the square		Companion Website Technology Applications • Magic squares with algebraic fractions
	Revision	Coursebook Revision Questions P 234	TEST 5 (Wk 6)	Companion Website Review Questions
	Exam Revision	Past papers		
	EXAMS		EXAMS	
Week 7 Week 8				
Week 9	Revision: Indices	Coursework Exercise 6M - P		

Term 3

Week	Chapter 4 Trigonometry	Text Ref / Resources	Assessment	Technology
1-3	Revision: • Labelling Right-Angle Triangles • Tangent ratio	Coursebook Exercise 5A To 5B		
	Develop New Concepts: • Trig ratios • Special triangles and exact values • Angles Of Elevation And Depression • Bearings • Trigonometry in 3D	Coursebook Exercise 5D To 5N Not E & K Puzzles P 182		Companion Website Drag and drop Interactives • Trigonometry puzzle
	Applications Of Trigonometry:	Coursebook Applications P 184 • Non-right Angle trig: Area, Sine and Cosine rules Extensions P 186 • Unit circle and tan • trig identities		Companion Website Technology Applications • Investigating Sine curves Animation • Unit circle

Week	Chapter 7 Linear Functions	Text Ref / Resources	Assessment	Technology
Wk 4-7	Revision: Graphing Linear equations using x and y intercepts	Coursebook Exercise 7A -7C		
	Develop New Concepts: - 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 – 7K Puzzles P 262	Investigation 3 (Wk 3)	Companion Website Drag and drop Interactives - 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 - Break even analysis - Internet costs Extensions P 266 - Sketching inequalities - Algebraic inequations	TEST 7 (Wk 7)	Companion Website Technology Applications Literal equations

Term 3

Week	Chapter 8 Quadratic Functions	Text Ref / Resources	Assessment	Technology
8-10	Revision: - Classifying quadratics - Using the null factor law	Coursebook Exercise 8A - 8B		
	Develop New Concepts: - 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 – 8N Puzzles P 310	Investigation 4 (Wk 8)	Companion Website Quick Time Movies - Parabolas In Headlights And Satellites Companion Website Drag and drop Interactives - Maths terms - parabola puzzle
	Applications Of Quadratic functions:	Coursebook Applications P 312 - The box problem - Fireworks - Simultaneous linear and quadratic equations Extensions P 314 - Algebraic Fractions - Solving quadratics using guess and check	TEST 8 (Wk 10)	Companion Website Technology Applications - 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: - Theoretical probability - Venn diagrams	Coursebook Exercise 9A – 9B		
Wk 2-3	Revision: Histograms	Coursebook Exercise 10A		
	Develop New Concepts: - Mean And Standard deviation - Cumulative frequency - Boxplots and The Interquartile Range - Outliers - Estimating populations and Surveys	Coursebook Exercise 10B – 10K Puzzles P 384		Companion Website Drag and drop Interactives Maths terms
	Applications Of Statistics:	Coursebook Applications P 386 - Mobile phone bills - Predicting the mean from a sample - Misuse of statistics Extensions P 388 - Bell shaped curves	TEST 9 (Wk 3)	Companion Website Technology Applications Bivariate project
Wk 4-5	Exponential & Reciprocal Exploring exponential functions	Exercise 11K-11M	TEST 10 (Wk 5)	
	Cubic functions	Exercise 12G-12M		
	Revision/catch up		EXAM	