

St Stephen's School, Carramar
Year 10 Mathematics Development
Teachers: Mr Corcoran, Mrs Brown

Term 1

Lesson	Week	Chapter 1 Number	Text Ref / Resources	Working Math	Technology
1-4	1 – 2 (1 ½ weeks)	Revision: - 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	NN 1 - 2	Companion Website Drag and drop Interactives - Maths terms - Simplifying ratios - Rates - Converting Fractions to decimals - Significant figures
5		Applications Of Number:	Coursebook Applications P 42 - Heart rates and health - Planet models - Paper sizes Extensions P 44 - Distance-time graphs - Factorials		Companion Website Technology applications World Records
6		Revision	Coursebook Revision Questions P 46		Companion Website Review Questions
7		Assessment Task 1 (WB)	Teacher's Resource Chapter Test 1	NN 3 - 4	

Term 1

Lesson	Week	Chapter 2 Business Maths	Text Ref / Resources	Working Math	Technology
1-4	3 – 4 (2 weeks)	Revision: • Calculations In Business • Percentages • Percentage Change • profit and Loss • Discount And Commission	Coursebook Exercise 2A To 2E		
5-7		Develop New Concepts: • Simple and Compound Interest • Reducible interest • Reducing balance loans	Coursebook Exercise 2F To 2J Puzzles P 70		Companion Website Drag and drop Interactives • Going Shopping • Maths terms • Find the weekly wage
8		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
9		Revision	Coursebook Revision Questions P 76	NN 5 - 6	Companion Website Review Questions
10		Assessment Task 2 (SC)	Teacher's Resource Chapter Test 2		

Term 1

Lesson	Week	Chapter 3 Measurement	Text Ref / Resources	Working Math	Technology
1	5 – 7 (3 weeks)	Revision: Perimeter and Area of Sectors	Coursebook Exercise 3A To 3C		
2-7		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 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
8		Applications Of Measurement:	Coursebook Applications P 104 - Pulleys - Ellipse - Bush fires - A tethered lamb Extensions P 106 - Heron's formula - Approximating area under curves	NN 7 - 8	Companion Website Technology Applications - Belt and pulley - An arched window Animation - The Box
9		Revision	Coursebook Revision Questions P 108		Companion Website Review Questions
10		Assessment Task 3 (WB)	Teacher's Resource Chapter Test 3		

Term 1

Lesson	Week	Chapter 5 Trigonometry	Text Ref / Resources	Working Math	Technology
1	8 – 10 (3 weeks)	Revision: • Labelling Right-Angle Triangles • Tangent ratio	Coursebook Exercise 5A To 5B		
2-8		Develop New Concepts: • Trig ratios • Special triangles and exact values • Angles Of Elevation And Depression • Bearings • Trigonometry in 3D • Exploring the Unit Circle	Coursebook Exercise 5C To 5P Puzzles P 182		Companion Website Drag and drop Interactives • Trigonometry puzzle
9-10		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	NN 9 - 10	Companion Website Technology Applications • Investigating Sine curves • Unit circle
11		Revision	Coursebook Revision Questions P 188	NN test 1 (SC)	Companion Website Review Questions
12		Assessment Task 4 (SC)	Teacher's Resource Chapter Test 5		

Term 2

Lesson	Week	Chapter 6 Algebra Techniques	Text Ref / Resources	Working Math	Technology
1-3	1 – 4 (4 weeks)	Revision: - 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 - Maths Terms 1 & 2 - Addition and Subtraction - Multiplication and Division - Grouping Symbols - Simplifying expressions - Factorising
4-7		Develop New Concepts: - Other quadratic trinomials - Algebraic fractions - Linear Inequations - Index Laws including fractional and negative powers	Coursebook Exercise 6F- Q Puzzles P 228	NN 11 - 12	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
8		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
9		Revision	Coursebook Revision Questions P 234		Companion Website Review Questions
10		Assessment Task 5 (WB)	Teacher's Resource Chapter Test 6		

Term 2

Lesson	Week	Chapter 7 Linear Functions	Text Ref / Resources	Working Math	Technology
1-2	5 – 7 (3 weeks)	Revision: Graphing Linear equations using x and y intercepts	Coursebook Exercise 7A -7C		
3-7		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 - Absolute value graphs	Coursebook Exercise 7D – 7M Puzzles P 262	NN 13 - 14	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
8		Applications Of Linear Functions	Coursebook Applications P 264 - Break even analysis - Internet costs Extensions P 266 - Sketching inequalities - Algebraic inequations		Companion Website Technology Applications Literal equations
9		Revision	Coursebook Revision Questions P 268		Companion Website Review Questions
10		Assessment Task 6 (SC)	Teacher's Resource Chapter Test 7		
	8	Revision and consolidation			
	9	Revision and Exams			
	10	Work Experience			

Term 3

Lesson	Week	Chapter 8 Quadratic Functions	Text Ref / Resources	Working Math	Technology
1-2	1 - 3	Revision: - Classifying quadratics - Using the null factor law	Coursebook Exercise 8A - 8B	NN 15 - 16	
3-8		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 – 8P Puzzles P 310		Companion Website Quick Time Movies - Parabolas In Headlights And Satellites Companion Website Drag and drop Interactives - Maths terms - parabola puzzle
9		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	NN 17 - 18	Companion Website Technology Applications - Completing the square - Parabolas in turning point and x-intercept form
9		Revision	Coursebook Revision Questions P 316		Companion Website Review Questions
10		Assessment Task 7 (WB)	Teacher's Resource Chapter Test 8		

Term 3

Lesson	Week	Chapter 9 Probability	Text Ref / Resources	Working Math	Technology
1-2	4, 5 (1 ½ weeks)	Revision: - theoretical probability - Venn diagrams	Coursebook Exercise 9A – 9B		
2-5		Develop New Concepts: - mutually exclusive events - two way tables - Independent events - sampling without replacement - Conditional probability - Odds - Long run proportion - Probability from experience - Exploring simulations	Coursebook Exercise 9C – 9K Puzzles P 344		Companion Website Drag and drop Interactives - Maths Terms - Rolling two dice - Pack of cards
6		Applications Of Probability:	Coursebook Applications P 346 - Mendel's genetics - matchbox - Pascal's triangle Extensions P 348 - Percentage frequency tables		Companion Website Technology Applications Probability investigation
7		Revision	Coursebook Revision Questions P 350		Companion Website Review Questions
8		Assessment Task 8 (SC)	Teacher's Resource Chapter Test 9	NN 19 - 20	

Term 3

Lesson	Week	Chapter 10 Statistics	Text Ref / Resources	Working Math	Technology
1-2	5, 6 (1 ½ weeks)	Revision: Histograms	Coursebook Exercise 10A	NN Test 2 (WB)	
3-7		Develop New Concepts: - Mean And Standard deviation - Cumulative frequency - Boxplots and The Interquartile Range - Outliers - Bivariate data-scatterplots - Line of best fit - estimating populations and Surveys	Coursebook Exercise 10B – 10K Puzzles P 384		Companion Website Drag and drop Interactives Maths terms
8		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		Companion Website Technology Applications Bivariate project
9		Revision	Coursebook Revision Questions P 390	NN 21 - 22	Companion Website Review Questions
10		Assessment Task 9 (WB)	Teacher's Resource Chapter Test 10		

Term 3

Lesson	Week	Chapter 11 Variation, Exponential and Reciprocal functions	Text Ref / Resources	Working Math	Technology
3-7	7 - 9 (3 weeks)	Develop New Concepts: • Direct and spatial variation • Inverse variation and reciprocal relationships • Joint variation • Exponential relationships	Coursebook Exercise 11A -11M Puzzles P 422		Companion Website Drag and drop Interactives Direct variation puzzle
8		Applications Variation, Exponential and Reciprocal functions.	Coursebook Applications P 424 • Kepler's Law • Lunar attraction • Hooke's Law Extensions P 426 • the effects of operations on variation rules • Deflection of a beam	NN 23 - 24	Companion Website Technology Applications • Radio active decay • Modelling relationships
9		Revision	Coursebook Revision Questions P 428		Companion Website Review Questions
10		Assessment Task 10 (SC)	Teacher's Resource Chapter Test 11		
	10	Revision and consolidation			

Term 4

Lesson	Week	Chapter 12 Trigonometric and Cubic functions	Text Ref / Resources	Working Math	Technology
1-10	1 - 3	Develop new concepts: • Trigonometric graphs • Difference Tables • Cubic functions	Coursebook Exercise 12A – 12M Puzzles P 454	NN 25 - 26	Companion Website Animation • Unit circle Technology Application • Investigating Sine Curves
		Applications of Trigonometric and Cubic functions	Coursebook Applications P 456 • Gradients of tangents Extensions P 458 • hybrid functions		
11		Revision	Coursebook Revision Questions P 460	NN 27 - 28	Companion Website Review Questions
12		Assessment Task 11 (WB)	Teacher's Resource Chapter Test 12		

Term 4

Lesson	Week	Chapter 13 Circle Geometry	Text Ref / Resources	Working Math	Technology
1-6	4 - 5	Develop New Concepts: • Circle definitions • Angles in a circle • Tangents to circles • Geometric Constructions • Small and great circles	Coursebook Exercise 13A – 13L Puzzles p 482		Companion Website Drag and drop Interactives • Circle geometry puzzle
7		Applications Of Circle Geometry:	Coursebook Applications P 484 • Polar Co-ordinates • Cardioid • spiral of Archimedes Extensions P 486 • Equations of circles • Conics • Directrix of parabolas	NN 29 - 30	Companion Website Technology Applications • Circles Investigation • Spin graphs animation
8		Revision	Coursebook Revision Questions P 488	NN Test 3 (SC)	Companion Website Review Questions
9		Assessment Task 12 (SC)	Teacher's Resource Chapter Test 13		
	6	Revision			
	7	Revision and exams			

Term 4

Lesson	Week	Chapter 4 Space	Text Ref / Resources	Working Math	Technology
1-6	8	Revision: - Angles and Polygons - Drawing in 3D - Transformations - Congruent Shapes - Similar figures	Coursebook Exercise 4A To 4F Puzzles P 142	NN 31 - 32	Companion Website Drag and drop Interactives - Maths terms - Angles Review1, 2, 3 - - Triangles and quadrilaterals review - Angle sum of polygons review - Similar triangles puzzle
7		Applications Of Space: - Applying similar triangles - Networks - Project networks	Coursebook Exercise 4G-I Applications P 144 - The Sierpinski triangle - the Koch snowflake Extensions P 146 - Complex similar triangle problems - maximum flow networks		Companion Website Technology Applications The maths race
8		Revision	Coursebook Revision Questions P 148		Companion Website Review Questions
9		Assessment Task 13 (WB)	Teacher's Resource Chapter Test 4		
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