

Year 9 Maths: Draft topic plan for 2018:

The timing is approximately correct however we can modify that as we work through each term:

The set plan is an indication of the teaching and learning program for 2018.

There are a substantial number of investigative tasks available for you to use as part of the program however you are encouraged to use good quality investigations of your own.

Semester Two, Term Two
10. Quadratic functions
11. Statistics
Head start 2014
Extra topics

9 lessons
6 lessons

Year 9 2017:8DRAFT TOPIC PLAN

Head start

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| 1. Pythagoras Theorem | 6 lessons |
| Semester One, Term One: | |
| 2. Number skills | 6 lessons |
| 3. Indices | 5 lessons |
| 4. Algebra | 10 lessons |
| Semester One, Term Two | |
| 5. Linear equations | 6 lessons |
| 6. Linear graphs (including non-linear) | 11 lessons |
| Semester Two, Term One | |
| 7. Trigonometry & bearings | 10 lessons |
| 8. Quadratic algebra | 12 lessons |

YEAR 9 MATHEMATICS – Number & Algebra – Real numbers

YEAR 9 MATHEMATICS Number skills

Support materials & assessment are available at www.mymathsonline.com.au

	Lesson aim	Investigations	Fluency	Understanding	Reasoning
1	Real numbers P25				
2	Surds P29				
3	Surds (Continued)				
4	Indices P35				
5	Scientific notation and significant figures P39				
6	Chapter review & test				

YEAR 9 MATHEMATICS – Number & Algebra – Patterns & algebra

YEAR 9 MATHEMATICS Algebra

Support materials & assessment are available at www.mymathsonline.com.au

	Lesson aim	Investigations	Fluency	Understanding	Reasoning
1	Ex 2A Working with algebraic terms	Simplify and evaluate algebraic expressions			
2	Ex 2B Index laws	Simplify expressions using the index laws			
3	Ex 2C Negative indices	Simplify expressions using negative indices			
4	Ex 2D Scientific notation	Write a number in scientific notation to a given number of significant figures			
5	Ex 2E Expanding algebraic expressions	Expand simple brackets using distributive law and double brackets using Foil			
6	Ex 2F Factorising using common factors	Factorise expressions using the HCF or grouping			
7 & 8	Ex 2G Factorising quadratic expressions	Factorise quadratic expressions using various methods			
9	Chapter 2 review				
10	Test				

YEAR 9 MATHEMATICS Linear equations

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	Lesson aim	Investigations	Fluency	Understanding	Reasoning
1	Solving linear equations P103				
2	Solving linear equations with brackets P110				
3	Solving linear equations with pronumerals on both sides P113				
4	Solving problems with linear equations P115				
5	Chapter review P128				
6	Test				

YEAR 9 MATHEMATICS Congruence & similarity
Support materials & assessment are available at www.mymathsonline.com.au

	Lesson aim	Investigations	Fluency	Understanding	Reasoning
1	Ratio & scale P133				
2	Congruent figures P139				
3	Similar figures P145				
4	Area & volume of similar figures P155				
5	Chapter review & test				

YEAR 9 MATHEMATICS Trigonometry & Bearings
Support materials & assessment are available at www.mymathsonline.com.au

	Lesson Aim	Classroom Investigation	Consolidation	Enrichment	Extension
1	Right angled triangles P167				

2	Finding the lengths of sides P169				
3	Composite shapes P176				
4	Pythagorean triples P180				
5	What is trigonometry P184				
6	Calculating unknown side lengths P192				
7	Calculating unknown angles P199				
8	Extension: Angles of elevation & depression P204				
9	Chapter Review				
10	Test				

YEAR 9 MATHEMATICS Linear & non- linear graphs
Support materials & assessment are available at www.mymathsonline.com.au

	Lesson aim	Investigations	Fluency	Understanding	Reasoning
1	Plotting linear graphs P225				
2	General equations of a straight line P229				
3	Sketching linear graphs P236				
4	Graphing calculators & linear graphs P241				
5	Determining linear rules P243				
6	Applications of linear graphs to worded problems P249				
7	Mid point of a line segment and distance between two points P254				
8	Non linear relations P258				
9	Chapter Review				
10	Test				

YEAR 9 MATHEMATICS Proportion & rates
Support materials & assessment are available at www.mymathsonline.com.au

	Lesson aim	Investigations	Fluency	Understanding	Reasoning
1	Direct proportion P275				
2	Direct proportion & ratio P281				

3	Inverse proportion P284				
4	Introduction to rates P 288				
5	Constant & variable rates P 290				
6	Rates of change P 296				
7	Interpreting rate of change from graphs P300				
8	Chapter review & Test				

YEAR 9 MATHEMATICS Indices					
Support materials & assessment are available at www.mymathsonline.com.au					
	Lesson aim	Investigations	Fluency	Understanding	Reasoning
1	Review of index laws P329				
2	Raising a power to another power P334				
3	Negative indices P 337				
4	Square roots & cube roots P339				
5	Chapter review & test				

YEAR 9 MATHEMATICS Financial mathematics
Support materials & assessment are available at www.mymathsonline.com.au

	Lesson aim	Investigations	Fluency	Understanding	Reasoning
1	Spending wisely P349				
2	Discount, profit & loss P356				
3	Simple interest P364				
5	Chapter Review & Test				

YEAR 9 MATHEMATICS – Measurement & Geometry – Using units of measurement

YEAR 9 MATHEMATICS Measurement
Support materials & assessment are available at www.mymathsonline.com.au

	Lesson aim	Investigations	Fluency	Understanding	Reasoning
1	Measurement P377				
2	Area P385				
3	Area & perimeter of a sector P393				

4	Surface area of rectangular & triangular prisms P398				
5	Surface area of a cylinder P404				
6	Volume of Prisms P408				
7	Chapter review				
8	Test				

YEAR 9 MATHEMATICS – Statistics & Probability – Chance

YEAR 9 MATHEMATICS Probability

Support materials & assessment are available at www.mymathsonline.com.au

	Lesson aim	Investigations	Fluency	Understanding	Reasoning
1	Introduction to probability P427				
2	Estimating probability P 433				
3	Theoretical & experimental probability P437				
4	Venn diagrams P433				
5	Complementary, mutually exclusive and independent events P451				
6	Conditional probability P 460				
7	Chapter review P468				
8	Test				

YEAR 9 MATHEMATICS – Number & Algebra – Data representation & interpretation

YEAR 9 MATHEMATICS Statistics

Support materials & assessment are available at www.mymathsonline.com.au

	Lesson aim	Investigations	Fluency	Understanding	Reasoning
1	Sampling P475				

2	Collecting data P489				
3	Displaying data P496				
4	Measures of central tendency P508				
5	Measures of spread P520				
6	Chapter review & test				

YEAR 9 MATHEMATICS – Number & Algebra – Linear & non - linear relationships

YEAR 9 MATHEMATICS – Functions

Support materials & assessment are available at www.mymathsonline.com.au

	Lesson aim	Investigations	Fluency	Understanding	Reasoning
1	Introduction to functions P 567				
2	Function notation P571				
3	Fully defining a function P575				
4	Working with functions P581				
5	Chapter review P586				

6	Test				
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YEAR 9 MATHEMATICS – Number & Algebra – Linear & non - linear relationships

YEAR 9 MATHEMATICS Quadratic algebra

Support materials & assessment are available at www.mymathsonline.com.au

	Lesson aim	Investigations	Fluency	Understanding	Reasoning
1	Factorisation: Using DOTS & DOPS	To be able to factorise Perfect Squares and Difference of Perfect Squares			
2	Factorising of Monic Quadratic expressions	To be able to factorise trinomials using "Product and sum" concepts or otherwise			
3	Factorising of Non – Monic Quadratics	To be able to factorise trinomials using "Product and sum" concepts or otherwise			
4	Solving Quadratic equations	To be able to solve Quadratic equations			
5	The Null factor Law	To use the Null Factor Law to calculate the x-intercepts			
6	Solving Quadratic Equations in the form $ax^2 + bx + c$	To find x-intercepts using this form.			
7	Solving quadratic equations and applications	To apply Quadratic equations to Practical Applications			
8	Solving quadratic equations in turning point form P614	Revision (10m)			
9	Problems & applications using quadratic equations P616	Revision (10m)			

10	Simplifying algebraic fractions P619	Revision (10m)			
11	Chapter review P629	Revision (10m)			
12	Test				

YEAR 9 MATHEMATICS – Number & Algebra – Linear & non - linear relationships

YEAR 9 MATHEMATICS Quadratic functions

Support materials & assessment are available at www.mymathsonline.com.au

	Lesson aim	Investigations	Fluency	Understanding	Reasoning
1	Graphs of quadratic functions P635				

2	Plotting points to graph quadratic functions P640				
3	Sketching parabolas of the form $y=ax^2$ P645				
4	Sketching parabolas of the form $y=ax^2 + c$				
5	Sketching parabolas of the form $y=(x-h)^2+k$ P657				
6	Sketching parabolas of the form $y=(x+a)(x+b)$ P662				
7	Applications P665				
8	Chapter review P672				
9	Test				