Year 8 Maths: Topic plan for 2018

Please read the notes and use them to assist you with lesson planning
- The set plan is an indication of the teaching and learning program for 2018.
- The time allowed for each topic is shown on the topic plan.
- 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 as well.

   The set plans are based on the **OXFORD series**

Web based resources available for you to use in conjunction with the set plans

   MATHS 300:   This site contains many investigations that will help students to develop insight into mathematical principles.
- **MYMATHSONLINE:**   This is a site that will help students to learn topic details.

SUGGESTED PROGRAM MANAGEMENT:
- The program is designed around the number of lessons planned. This can be varied but should fit into the total time allocated for the topic.
- Student homework time should be used to keep up with the topic program as outlined by the teacher.
- This can be varied in negotiations between teacher and student to meet the students' needs to have a self-paced program.
- Any discussions in this area must involve parents.

Each lesson should include:
- **A lesson investigation that involves group discussions.**
- **A topic investigation**. This may be a learning task completed over a series of lessons.

Year 8   2018:   SUMMARY OF TOPIC PLANS

Year 8 Head Start:
1. Positive and negative numbers Integers) 9 lessons

Semester One, Term One:

2	Number Skills	12 Lessons
3	Algebra	10 Lessons

Semester One, Term Two

4.	Measurement	12 lessons
5	Linear relationships	12 Lessons

Semester Two, Term Three

6.	Probability	12 Lessons
7	Angles and locations	9 Lessons
8	Shapes and objects	9 Lessons

Semester Two, Term Four

9 R	Representing and interpreting data	12 Lessons
10	Percentages, Ratio & Rates	12 Lessons

Head start Year 9 refer to the Year 9 Progr

	Lesson Objectives/Outcomes	Progressing toward the Standard	Working at the Standard	Working above the Standard
			YEAR 8 MATHEMATICS Positive and Negative numbers- Integers	
4	Exercise 12.2 To place Integers on the number line			
5	Ex 12.3 To place integers on the number plane			
6	Ex 12.4 To successfully complete addition and subtraction of integers			
7	Ex 12.5 Multiplication and division of integers			
8	Combined operations. Ex 12.6			
9	Test			

		Lesson Objectives/Outcomes	Progressing toward the Standard	Working at the Standard
1, 2	Estimating and Rounding/Order of operations/Fractions/Decimals			
3	Ex 1G Terminating, non-terminating and recurring decimals			
4	Ex 1H Powers and roots			
5&6	Ex 1L index laws			
7	NUMBER SKILLS CAT			
8	Chapter review			
9	Test			

YEAR 8 MATHEMATICS Number skills/ Real Numbers

		Lesson Objectives/Outcomes	Progressing toward the Standard	Working at the Standard
	YEAR 8 MATHEMATICS Positive and negative numbers **Apply rules discussed with your teacher about work completion**			
1	Ex 3A Page 123 Understanding Negative numbers			
2	Ex 3B Adding Integers and Ex 3C Subtracting integers			
3	Ex 3D Simplifying Addition and subtraction of numbers			
4	Ex 3E Multiplying and dividing integers			
5	Ex 3F operations with directed numbers			
6	Ex 3G Powers with directed numbers			
7	The Cartesian Plane			
8	Test			

	YEAR 8 MATHEMATICS Algebra			
	Lesson Objectives/Outcomes	Progressing toward the Standard	Working at the Standard	Working above the Standard
1	EX 4A Using Pronumerals:			
2	Ex 4B Evaluating expressions			
3	Ex 4C Simplifying expressions containing like terms			

4	Multiplying algebraic terms			
5	Dividing algebraic terms			
6	working with brackets			
7	Factorising expressions			
8	Revision			
9	Test			

YEAR 8 MATHEMATICS Measurement (12 lessons)			
		Lesson Objectives/Outcomes	Progressing toward the Standard	Working at the Standard
1	Length & Perimeter			
2	Circumference of a Circle			
3	Area of Rectangles & Triangles			
4	Area of other Quadrilaterals			
5	Area of a Circle			

6	Surface area Ex			
7	Volume of Prisms			
8	Area and Volume conversions			
9	PRACTICE CAT			
10	Chapter review			
11	Test			

	Lesson Objectives/Outcomes	Progressing toward the Standard	Working at the Standard	Working above the Standard
	YEAR 8 MATHEMATICS Linear Relationships			
1	Flowcharting to solve linear equations			
2	Solving linear equations by the balance method			
3	Solving by the formal method			
4	Solving equations with unknowns on both sides Ex 5G			
5	Plotting graphs of Linear Relationships Ex 5H			
6	Solving Linear equations using graphs Ex 5I			
7	PRACTICE CAT			
8	Chapter review			
9	Test			

	Lesson Objectives/Outcomes	Progressing toward the Standard	Working at the Standard	Working above the Standard
			YEAR 8 MATHEMATICS Index laws	
1	Review of index form			
2	First index law (multiplying numbers)			
3	Second index law(dividing numbers)			
4	Third index law (power of zero)			
5	Fourth index law(power to a power			
6	Rich task			
7	Chapter review			
8	Test			

	Lesson Objectives/Outcomes	Progressing toward the Standard	Working at the Standard	Working above the Standard
	YEAR 8 MATHEMATICS Coordinates & linear			
1	The Cartesian plane			
2	Linear patterns			
3	Plotting linear graphs			
4	The y- intercept & gradient			
5	Sketching linear graphs			
6	Solving equations graphically			
7	Chapter review			
8	Test			

		Progressing toward the Standard	Working at the Standard	Working above the Standard
1	Ex 10A Probability			
2	Ex 10 B Theoretical Probability			
3	Ex 10C Tree Diagrams			
4	Ex 10D Two-way tables			
5	Ex 10E Venn diagrams Ex			
6	Ex 10F Experimental probabilty			
7	Ex 10 G Simulations and Long term trends			
8	Chapter review			
9	Test			

YEAR 8 MATHEMATICS

Year 8 Mathematics -Measurement & Geometry strand – Geometric reasoning

	YEAR 8 MATHEMATICS Geometry – Angles and locations			
	Lesson Aim	Year 8 foundation level (Basic)	Year 8 Level (Where you need to be)	Year 8 level extension (Moving on)
1	Ex 6A Understanding Angles			
2	Ex 6B Angles and lines			
3	Ex 6C Angles and parallel lines			
4	Ex 6D Constructions			
5	Ex 6E Bearings			
6	Ex 6F Angles and Time zones			
7	Ex 6G Working with time zones			
8	Chapter review			
9	Test			

	YEAR 8 MATHEMATICS Geometry – Shapes and objects			
	Lesson Aim	Year 8 foundation level (Basic)	Year 8 Level (Where you need to be)	Year 8 level extension (Moving on)

1	Ex 7A Triangle Properties			
2	Ex 7B Quadrilateral properties			
3	Ex 7C 2D and 3D objects			
4	Ex 7D Isometric drawings and plans			
5	Ex 7D Nets and perspective drawing			
6	Ex 7F Translations, reflections and rotations			
7	Ex 7G Understanding congruence			
8	Ex 7H Using congruence			
9	Ex 7I Dilations			
10	Chapter review			
11	Test			

Year 8 Mathematics – Number & Algebra strand – Real numbers

	Lesson Aim	Year 8 foundation level (Basic)	Year 8 Level (Where you need to be)	Year 8 level extension (Moving on)
1	Ex 2A Understanding percentages			
2	Ex 2B Percentages, fractions and decimals			
3	Ex 2C Percentage Calculations			
4	Ex 2D Financial calculations			
5	Ex 2E Understanding ratios			
6	Ex 2F Working with ratios			
7	Ex 2G Dividing a quantity in a given ratio			
8	Ex 2H understanding rates			
9	Chapter review			
10	test			

YEAR 8 MATHEMATICS Percentages, Ratio & Rates

YEAR 8 MATHEMATICS Representing and interpreting data

	Lesson Objectives/Outcomes	Progressing toward the Standard	Working at the Standard	Working above the Standard
1	Ex 9A Sampling data			
2	Ex 9B Collecting data			
3	Ex 9C Presenting data in graphs			
4	Ex 9D Stem and leaf plots and dot plots			
5	Ex 9E Presenting grouped data			
6	Ex 9F Summary data			
7	Ex 9G Analysing data			
8	Chapter review			
9	Test			

	Lesson Objectives/Outcomes	Progressing toward the Standard	Working at the Standard	Working above the Standard
	YEAR 8 MATHEMATICS Pythagoras' Theorem **(maximum of lessons)**			
1	Right angled triangles			
2	Finding the hypotenuse			
3	Finding a shorter side			
4	Working with different units			
5	Composite shapes			
6	Pythagorean triads			
7	Pythagoras in 3-D			
8	Chapter review			

9	Test			