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<th>Week</th>
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<td><strong>Term 1</strong></td>
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</table>
| 1-3 | Statistics  
Data representation and interpretation  
(ACMSP228)  
(ACMSP282)  
(ACMSP283)  
Chance  
(ACMSP227) | - Compare data displays using mean, median and range to describe and interpret numerical data sets in terms of location (centre) and spread  
- Construct back-to-back stem-and-leaf plots and histograms and describe data, using terms including ‘skewed’, ‘symmetric’ and ‘bi modal’  
- Investigate reports of surveys in digital media and elsewhere for information on how data were obtained to estimate population means and medians | Chapter 1  
Chapter 9  
Chapter 19 | INV 1 Wk3 |
| 4-6 | Number and Indices  
Real Numbers  
(ACMNA209)  
(ACMNA210)  
(ACMNA212) | - Use index rules to simplify expressions including positive and negative indices  
- Scientific notation  
- $a^m \times a^n = a^{m+n}$  
- $a^m \div a^n = a^{m-n}$  
- $a^0 = 1$  
- $a^{-m} = \frac{1}{a^m}$  
- $(a^m)^n = a^{mn}$  
- $\sqrt[n]{a^m} = a^{\frac{m}{n}}$  
- Apply the index laws to numbers and express numbers in scientific notation. | Chapter 2  
Chapter 1 p1-14  
Chapter 11 p143-151 | Test 1 Wk 5 |
| 7-9 | Measurement  
Using units of measurement  
(ACMMG216)  
(ACMMG217)  
(ACMMG218)  
(ACMMG219) | - Area of composite shapes: including rectangles, triangles, parallelograms, kites, trapeziums, circles  
- Find the volume of prisms and cylinders  
- Find the surface area of prisms and cylinders  
- Investigate very small and very large time scales and intervals | Chapter 3  
Chapter 3  
Chapter 13 | Test 2 Wk 8 |
<table>
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| 1-3 | **Algebra**  
Patterns and Algebra  
(ACMNA213) | - understanding that the distributive law can be applied to algebraic expressions as well as numbers  
- understanding the relationship between expansion and factorisation and identifying algebraic factors in algebraic expressions  
- expanding e.g. $5(p+4)$, $2m(4m-3n)$, $3(2-b)-(4-b)$  
- expanding binomials, perfect squares  
- factorising trinomials $x^2+5x+6$ |
| **Chapter 4** | Chapter 4  
Chapter 2 p20-24  
Chapter 18 p252-253 |
| 4-6 | **Ratio and Proportion**  
Real Number  
(ACMNA208) | - Solve problems involving direct proportion. Explore the relationship between graphs and equations corresponding to simple rate problems |
| **Chapter 5** | Chapter 2  
Chapter 6 |
| 7-9 | **Congruence and Similarity**  
Geometric Reasoning  
(ACMMM220)  
(ACMMM221) | - Use the enlargement transformation to explain similarity and develop the conditions for triangles to be similar  
- Establish the conditions for similarity AA, SSS, SAS, RHS (prove)  
- Establish the conditions for congruence SSS, AAS, SAS, RHS (prove)  
- Solve problems using ratio and scale factors of the similar triangles |
| **Chapter 6** | Chapter 6  
Chapter 8 |

**Text Book:** Nelson WA Maths 9   
**Text book:** TERRY DWYER MATHEMATICS 9
# YEAR 9 Extension

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<tr>
<td><strong>Term 3</strong></td>
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| 1-3 | Probability Chance (ACMSP225) (ACMSP226) | • Tree diagrams, venn diagrams and two-way tables  
• Two step experiments with and without replacement  
• Relative frequencies  
• Questions involving “and” & “or” | Chapter 7  
Chapter 14 | Inv 3 Wk 2  
Chapter 14 |
| 4-6 | Equations Linear and non-linear relationships (ACMNA215) | • determining linear rules from suitable diagrams, tables of values and graphs and describing them using both words and algebra  
• Solving linear equations with variables on both sides \[
2x + 4 = 3(x + 9)
\]  
\[
\frac{7k - 3}{4} = \frac{13 - 5k}{4}
\]  
\[
2x + 4 = 3(x + 9)
\]  
\[
\frac{7k - 3}{4} = \frac{13 - 5k}{4}
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2x + 4 = 3(x + 9)
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\[
\frac{7k - 3}{4} = \frac{13 - 5k}{4}
\] | Chapter 8  
Chapter 4 p51-53 | Test 4 Wk 5  
Chapter 4 p51-53 |
| 7-9 | Trigonometry Pythagoras and trigonometry (ACMMG222) (ACMMG223) (ACMMG224) | • Pythagoras’ theorem  
• Sine, cosine and tangent  
• Solve right angled triangles | Chapter 9  
Chapter 7  
Chapter 12  
Chapter 17 | Test 5 Wk 9  
Chapter 7  
Chapter 12  
Chapter 17 |
| **Term 4** | | | | |
| 1-3 | Coordinates and Graphs Linear and non-linear relationships (ACMNA214) (ACMNA215) (ACMNA294) (ACMNA296) | • determining linear rules from suitable diagrams, tables of values and graphs and describing them using both words and algebra  
• investigating graphical and algebraic techniques for finding distance between two points  
• using Pythagoras’ theorem to calculate distance between two points  
• Real life applications for finding the distance between two points  
• investigating graphical and algebraic techniques for finding midpoint and gradient | Chapter 10  
Chapter 16 p214-221 | Inv 4 Wk 2  
Chapter 16 p214-221  
Chapter 4 p49-56 |
recognising that the gradient of a line is the same as the gradient of any line segment on that line
• Graph \( y=mx + c \) gradient and \( y \)-intercept
• Find the equation given the gradient and point.
• Find the equation of line given two points
• graphing parabolas, and circles connecting \( x \)-intercepts of a graph to a related equation
• graphing quadratics in the form \( y=a(x-p)^2+q \) line of symmetry \( y=p \) turning point \((p,q)\)
• Sketching circles in the form \( x^2+y^2=r^2 \) and \( (x-h)^2+(y-k)^2=r^2 \)
• Top groups include exponentials and hyperbolas

| Shapes and Angles | Geometric reasoning (ACMGG220) | Angle properties of parallel lines
|                  |                              | Properties of triangles and quadrilaterals
|                  |                              | Proofs using congruent triangles
|                  |                              | using the enlargement transformation to establish similarity understanding that similarity and congruence help describe relationships between geometrical shapes and are important elements of reasoning and proof

4-6

| Money and Business | Money and financial mathematics (ACMNA211) | Simple interest

7-9


NB. The scheduled assessments above may alter due to unforeseen internal school events or circumstances.

<table>
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<tr>
<th>Assessment Weightings</th>
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<td>Tests</td>
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<td>Investigations</td>
<td>6</td>
<td>4</td>
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<tr>
<td>Exams</td>
<td>Sem 1 (12%) Sem 2 (16%)</td>
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