**[](http://www.calculate.org.au/)[](http://www.amsi.org.au)MATHEMATICS SCOPE AND SEQUENCE AUDIT: Year 10A**

|  |  |  |  |
| --- | --- | --- | --- |
| **School:** |  | **Date:** |  |

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **NUMBER AND ALGEBRA** | | **TIMES** | **SAM** | **Term 1** | **Term 2** | **Term 3** | **Term 4** |
| Real Numbers | [Define rational and irrational numbers and perform operations with surds and fractional indices (ACMNA264)](http://www.australiancurriculum.edu.au/mathematics/curriculum/f-10?y=10A&s=NA&layout=1) | [***TIMESNA27***](http://www.amsi.org.au/teacher_modules/Surds.html)[***TIMESNA28***](http://www.amsi.org.au/teacher_modules/Real_numbers.html)  [***TIMESNA31***](http://www.amsi.org.au/teacher_modules/Indices_and_logarithms.html) |  |  |  |  |  |
|  | [Use the definition of a logarithm to establish and apply the laws of logarithms(ACMNA265)](http://www.australiancurriculum.edu.au/mathematics/curriculum/f-10?y=10A&s=NA&layout=1) |  |  |  |  |  |  |
| Patterns & Algebra | [Investigate the concept of a polynomial and apply the factor and remainder theorems to solve problems (ACMNA266)](http://www.australiancurriculum.edu.au/mathematics/curriculum/f-10?y=10A&s=NA&layout=1) | [***TIMESNA39***](http://www.amsi.org.au/teacher_modules/polynomials.html) |  |  |  |  |  |
| Linear & non-linear relationships | [Solve simple exponential equations (ACMNA270)](http://www.australiancurriculum.edu.au/mathematics/curriculum/f-10?y=10A&s=NA&layout=1) |  |  |  |  |  |  |
|  | [Describe, interpret and sketch parabolas, hyperbolas, circles and exponential functions and their transformations (ACMNA267)](http://www.australiancurriculum.edu.au/mathematics/curriculum/f-10?y=10A&s=NA&layout=1) | [***TIMESNA35***](http://www.amsi.org.au/teacher_modules/Quadratic_Function.html) |  |  |  |  |  |
|  | [Apply understanding of polynomials to sketch a range of curves and describe the features of these curves from their equation (ACMNA268)](http://www.australiancurriculum.edu.au/mathematics/curriculum/f-10?y=10A&s=NA&layout=1) | [***TIMESNA39***](http://www.amsi.org.au/teacher_modules/polynomials.html) |  |  |  |  |  |
|  | [Factorise monic and non-monic quadratic expressions and solve a wide range of quadratic equations derived from a variety of contexts (ACMNA269)](http://www.australiancurriculum.edu.au/mathematics/curriculum/f-10?y=10A&s=NA&layout=1) | [***TIMESNA33***](http://www.amsi.org.au/teacher_modules/Factorisation.html)[***TIMESNA34***](http://www.amsi.org.au/teacher_modules/Quadratic_Equations.html)  [***TIMESNA35***](http://www.amsi.org.au/teacher_modules/Quadratic_Function.html) |  |  |  |  |  |
| **MEASUREMENT AND GEOMETRY** | |  |  |  |  |  |  |
| Measurement & Geometry | [Solve problems involving surface area and volume of right pyramids, right cones, spheres and related composite solids (ACMMG271)](http://www.australiancurriculum.edu.au/mathematics/curriculum/f-10?y=10A&s=MG&layout=1) | [***TIMESMG12***](http://www.amsi.org.au/teacher_modules/Cones_Pyramids_and_Spheres.html) |  |  |  |  |  |
| Geometric Reasoning | [Prove and apply angle and chord properties of circles (ACMMG272)](http://www.australiancurriculum.edu.au/mathematics/curriculum/f-10?y=10A&s=MG&layout=1) | [***TIMESMG26***](http://www.amsi.org.au/teacher_modules/Circle_Geometry.html) |  |  |  |  |  |
| Pythagoras & Trigonometry | [Establish the sine, cosine and area rules for any triangle and solve related problems(ACMMG273)](http://www.australiancurriculum.edu.au/mathematics/curriculum/f-10?y=10A&s=MG&layout=1) | [***TIMESMG24***](http://www.amsi.org.au/teacher_modules/further_trigonometry.html) |  |  |  |  |  |
|  | [Use the unit circle to define trigonometric functions, and graph them with and without the use of digital technologies (ACMMG274)](http://www.australiancurriculum.edu.au/mathematics/curriculum/f-10?y=10A&s=MG&layout=1) | [***TIMESMG25***](http://amsi.org.au/teacher_modules/The_trigonometry_functions.html) |  |  |  |  |  |
|  | [Solve simple trigonometric equations (ACMMG275)](http://www.australiancurriculum.edu.au/mathematics/curriculum/f-10?y=10A&s=MG&layout=1) | [***TIMESMG25***](http://amsi.org.au/teacher_modules/The_trigonometry_functions.html) |  |  |  |  |  |
|  | [Pythagoras' theorem and trigonometry to solving three-dimensional problems in right-angled triangles (ACMMG276)](http://www.australiancurriculum.edu.au/mathematics/curriculum/f-10?y=10A&s=MG&layout=1) | [***TIMESMG24***](http://www.amsi.org.au/teacher_modules/further_trigonometry.html) |  |  |  |  |  |
| **STATISTICS AND PROBABILITY** | |  |  |  |  |  |  |
| Chance | [Investigate reports of studies in digital media and elsewhere for information on their planning and implementation (ACMSP277)](http://www.australiancurriculum.edu.au/mathematics/curriculum/f-10?y=10A&s=SP&layout=1) |  |  |  |  |  |  |
| Data Representation & Interpretation | [Calculate and interpret the mean and standard deviation of data and use these to compare data sets (ACMSP278)](http://www.australiancurriculum.edu.au/mathematics/curriculum/f-10?y=10A&s=SP&layout=1) |  |  |  |  |  |  |
|  | [Use information technologies to investigate bivariate numerical data sets. Where appropriate use a straight line to describe the relationship allowing for variation (ACMSP279)](http://www.australiancurriculum.edu.au/mathematics/curriculum/f-10?y=10A&s=SP&layout=1) |  |  |  |  |  |  |
| **PROFICIENCIES (Embedded Throughout)** | | **Keywords** | | | | | |
| [**Understanding**](file:///D:\Users\mconnor\Documents\Resources\AMSI%20School%20Program%20Implementation\AMSI%20Teacher%20Journal%20Master\2015%20Audit%20Docs\Proficiency%20Summaries\Understanding%20Statements%20and%20Keywords.docx) | includes applying the four operations to algebraic fractions, finding unknowns in formulas after substitution, making the connection between equations of relations and their graphs, comparing simple and compound interest in financial contexts and determining probabilities of  two and three step experiments | Making connections, noticing properties, manipulating according to properties, identifying and describing relationships | | | | | |
| [**Fluency**](file:///D:\Users\mconnor\Documents\Resources\AMSI%20School%20Program%20Implementation\AMSI%20Teacher%20Journal%20Master\2015%20Audit%20Docs\Proficiency%20Summaries\Fluency%20Statements%20and%20Keywords.docx) | includes factorising and expanding algebraic expressions, using a range of strategies to solve equations and using calculations to investigate the shape of data sets | Calculating, solving, applying rules appropriately in algebraic/symbolic expressions | | | | | |
| [**Problem Solving**](file:///D:\Users\mconnor\Documents\Resources\AMSI%20School%20Program%20Implementation\AMSI%20Teacher%20Journal%20Master\2015%20Audit%20Docs\Proficiency%20Summaries\Problem%20Solving%20Statements%20and%20Keywords.docx) | includes calculating the surface area and volume of a diverse range of prisms to solve practical problems, finding unknown lengths and angles using applications of trigonometry, using algebraic and graphical techniques to find solutions to simultaneous equations and inequalities, and investigating independence of events | Apply, investigate, | | | | | |
| [**Reasoning**](file:///D:\Users\mconnor\Documents\Resources\AMSI%20School%20Program%20Implementation\AMSI%20Teacher%20Journal%20Master\2015%20Audit%20Docs\Proficiency%20Summaries\Reasoning%20Statements%20and%20Keywords.docx) | includes formulating geometric proofs involving congruence and similarity, interpreting and evaluating media statements and interpreting and comparing datasets | Formulating proofs, interpreting, evaluating, comparing | | | | | |