



CANBERRA HIGH SCHOOL - Learning overview for Term 1: Mathematics

During Term 1, students in Year 10 Advanced Elective Maths will understand the differences between rational and irrational numbers, operations with surds and fractional indices, laws of logarithms and exponential equations. They will also understand graphical representations of nonlinear graphs by investigating graphs of circles, hyperbolas and exponential functions. Students will complete inquiry and problem solving tasks. Work and communication will occur in class and within your child's Mathematics Google Classroom. Accompanying the Google Classroom is the resource Hub

<https://sites.google.com/ed.act.edu.au/chsmaths10elective/home>. This is a website that has all the resources available throughout the term and it will be a valuable aid for your child's learning including students requiring support and those requiring extension and enrichment.

| Week | Topic | Content/Activity/Tasks |
|-------------|---|--|
| 1- Jan 31 | Surds and Fractional Indices | Understand where surds sit within the real number system and how to differentiate between rational and irrational numbers. Simplify surds, addition and subtraction of surds |
| 2- Feb 7 | | Multiplication and division of surds, distributive law, binomial expansions and special products applied to surds, Conjugate surds, rationalising the denominator |
| 3- Feb 14 | | Topic Task 1 Index laws applied to fractional indices, revision and assessment. |
| 4- Feb 21 | Exponential Equations and Logarithms | Explore exponential and logarithmic relationships and apply simple logarithms laws |
| 5- Feb 28 | | Solve simple exponential equations. |
| 6- March 7 | | Topic Task 2 Revision and assessment |
| 7- March 14 | Sketching Nonlinear relationships | Use vertical line-test to distinguish between functions and relations. Investigate graphs of circles and their transformations. |
| 8- March 21 | | Sketch graphs of hyperbola and their transformations by identifying asymptotes and intercepts. |
| 9- March 28 | | Sketch exponential graphs and their transformations by identifying asymptotes and intercepts. |
| 10- April 4 | Term Test | Revision |



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