

$\sum_{x=0}^{\infty} a^n$ $\lim_{x \rightarrow 2} \frac{1}{x-2}$ $\lim_{x \rightarrow 5} \frac{\sqrt{2x} \cos x - \sqrt{2x-4}}{3 \cos 103 + \sqrt{4-x}}$ $\lim_{x \rightarrow 0} \frac{x^3(3+x)10^{x^2+3}}{\cos x - \pi + 0}$ $\lim_{x \rightarrow 0} \sqrt{2x}$

MATHEMATICS

$\log \frac{x}{y} = \log x - \log y$ $\log_2 x = \log_2 2^x$ $\log_2 3 = \frac{\log 3}{\log 2}$ $\log_2 4 = \frac{\log 4}{\log 2} = 2$ $\log_2 8 = \frac{\log 8}{\log 2} = 3$

$\int \cos x dx = \sin x + C$ $\int \sin x dx = -\cos x + C$ $\int \frac{1}{x} dx = \ln|x| + C$ $\int \frac{1}{x^2} dx = -\frac{1}{x} + C$

$\sum_{n=0}^{\infty} x^n = \frac{1}{1-x}$ $\sum_{n=0}^{\infty} nx^{n-1} = \frac{1}{(1-x)^2}$ $\sum_{n=0}^{\infty} n^2 x^{n-1} = \frac{1+x}{(1-x)^3}$

$\frac{d}{dx} \sin x = \cos x$ $\frac{d}{dx} \cos x = -\sin x$ $\frac{d}{dx} e^x = e^x$ $\frac{d}{dx} \ln x = \frac{1}{x}$

What courses do Dalkeith High School offer?



MATHEMATICS

Mathematics is the 'traditional' course we think of when discussing Maths.

Nat 5 Maths looks at algebra, geometry, some statistics, and trigonometry.

Colleges and Universities require a Mathematics qualification for a number of courses, and definitely if you are looking into a career in Science, Technology, Engineering, Maths (STEM) or Medicine.

Higher Mathematics focusses on similar skills to Nat 5 but extends them deeper and looks at new topic areas such as calculus and logarithms.

Higher Maths is a requirement when studying a STEM subject at University. It is a requirement for the following subjects: Science, Technology, Engineering, Mathematics, Physics, Medicine, Architecture.

Other subjects may also have a requirement for Higher Mathematics so we recommend that you check the specific course requirements on the University website.

Where Mathematics is specifically required for entry to a programme Applications of Maths **does not** meet this requirement.

If you wish to study both Higher Mathematics and Higher Applications of Mathematics, we recommend doing Mathematics in S5 and Applications of Maths in S6.



APPLICATIONS OF MATHS

Applications of Maths focusses on 'real life' maths, especially the maths you will need in the workplace.

Nat 5 Applications of Maths focusses on topics such as money, statistics, measurement, time management, scale drawing, areas and volumes. All the situations taught are set in real-life contexts relevant to jobs and careers.

Colleges and Universities now widely accept Nat 5 Applications of Maths for a number of Apprenticeships and degrees, including Nursing and Primary School Teaching.

Higher Applications of Maths focusses on Statistics (including industry-standard software), Mathematical Modelling, Planning and Decision Making and Finance (including the use of excel spreadsheets).

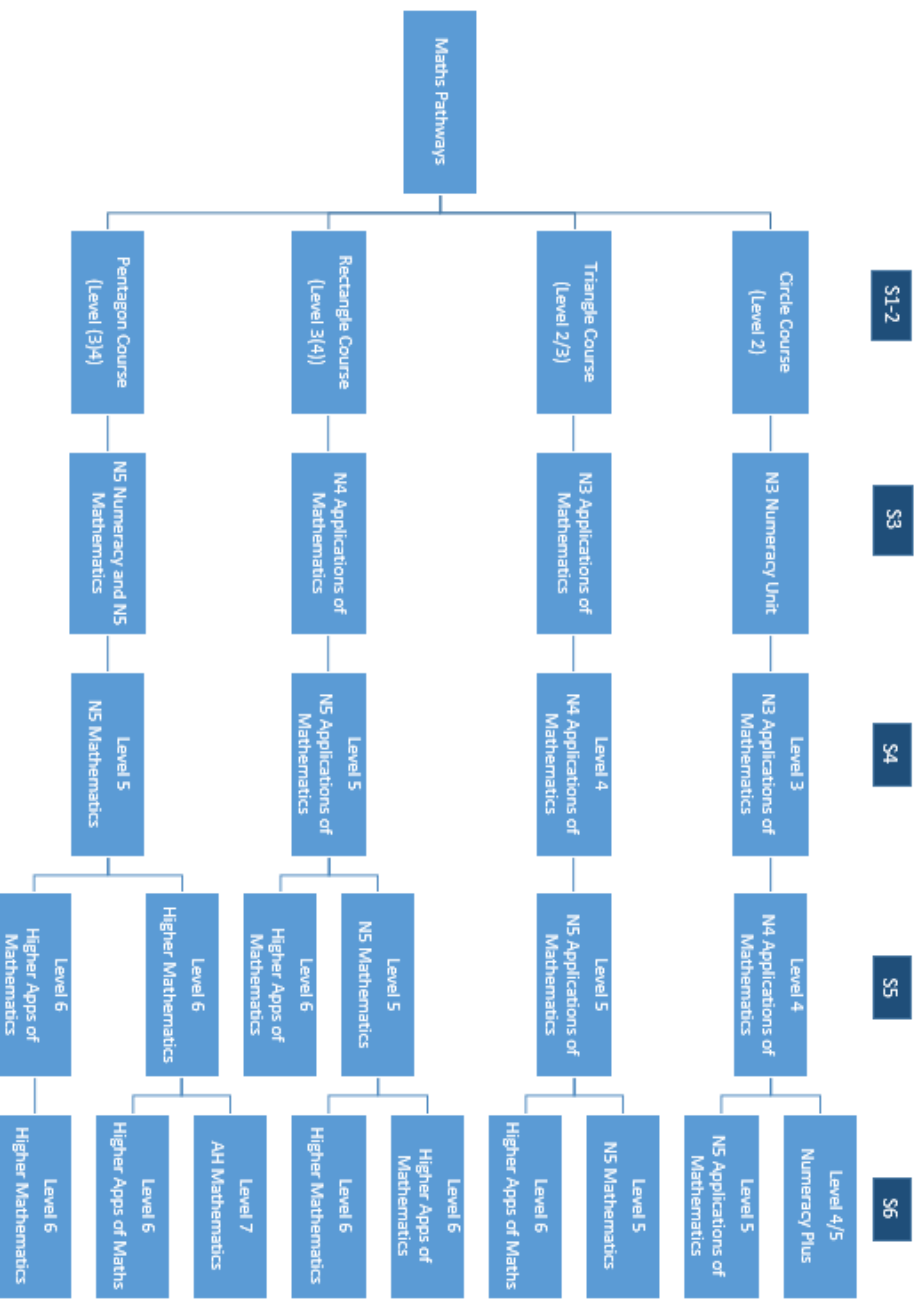
This is assessed via a computer based exam and project (30% of grade).

This subject has been specifically created at the request of Colleges and Universities. It offers the skills needed to excel in the following subjects: Psychology, Social Sciences, Humanities, Sports Sciences, Business Management, Accountancy, Applied Sciences, Health Sciences, Government Research, Biomedical and Health Services, Insurance.

It is also a good additional Higher for those looking to study a Stem Subject.



Standard Progression Routes



Progression Guide - the flowchart provides a guide for typical sets but individual year groups/sets may follow a slightly different progression route. Routes show best case scenario and dependent on success at previous level. Repeats of courses will also occur.