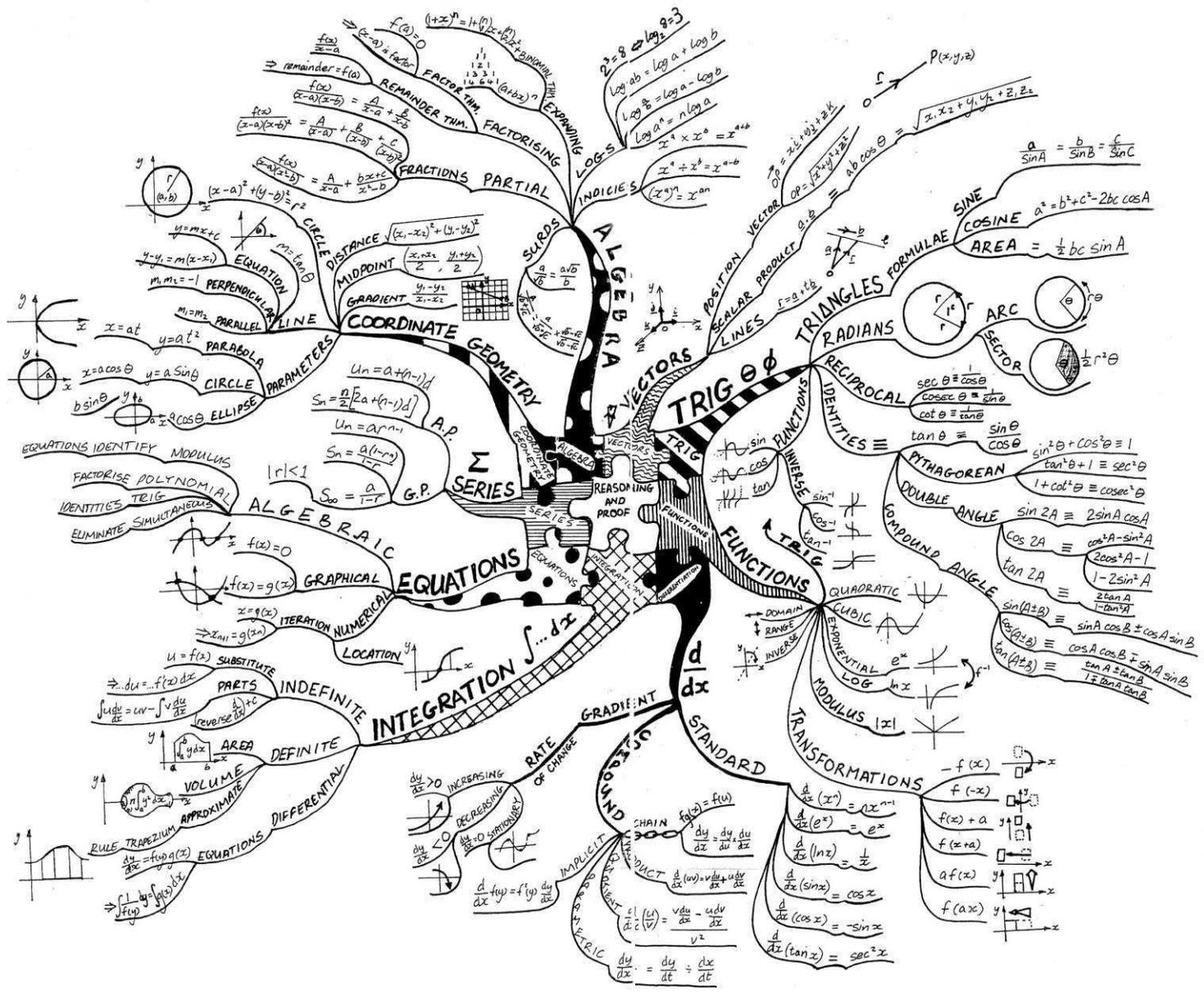


A Level Mathematics



Induction Information

Exam Board:- Edexcel

Mathematics at A Level is a course worth studying not only as a supporting subject for the physical and social sciences but in its own right. It is challenging but interesting. It builds on work you will have met at GCSE, but also involves new ideas produced by some of the greatest minds of the last millennium.

Areas of Study

Pure Mathematics	C1 - C4	FP1 - FP4
Mechanics	M1 - M5	
Statistics	S1 - S3	
Decision Mathematics	D1 - D2	

For both AS and A level the Edexcel specification stipulates compulsory modules from Pure Mathematics together with optional modules from the three areas of Applied Mathematics.

Course	Number of Modules Studied
AS Level	3
A2 Level	6
AS Further Maths	9
A2 Further Maths	12

Sample of a programme of study currently available at Plymstock

Year 12

AS	C1	C2	S1
Further Maths Students	M1	D1/D2	FP1

Year 13

A2	C3	C4	M1
A2 Further	FP2	S2/M2	Other

Modules will be taken in June.

Assessment

Each unit is tested by a one and a half hour written examination and the units are equally weighted.

Essential Skills required for AS Course

Prior to studying AS Mathematics you should have a good understanding of the GCSE Higher level syllabus. (Some GCSE topics are revised in the C1 Unit).

Number

- Integers, fractions, decimals, standard form
- Laws of indices
- Efficient use of scientific calculators
- Solving problems in ratios and proportion



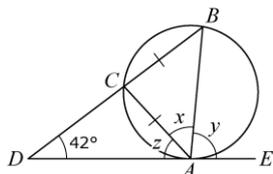
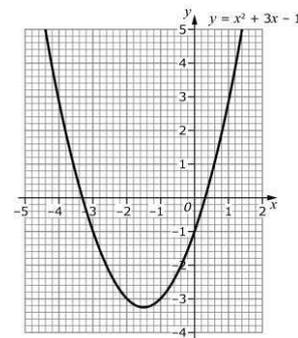
Basic Algebraic skills (ESSENTIAL)

$$(2x + 1)(x - 1) = x + 3$$

- Collecting like terms, brackets, factorising, substitution
- Solving Linear & Quadratic equations
- Changing the subject of a Formula
- Algebraic Fractions

Graphs

- Co-ordinates
- The distance between two points
- The gradient of a line joining two points
- Plotting graphs of linear and non linear functions
- Equation of a straight line ($y = mx + c$)

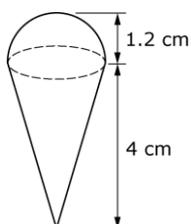
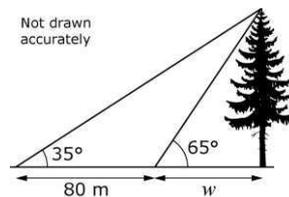


Geometry

- Similarity in plane figures and solids
- Simple geometrical properties of a circle

Trigonometry

- Sin, Cos and Tan in right angled triangles
- Use of Sine and Cosine Formulae



Mensuration

- Area of common shape
- Volume of solids (prisms, cone, sphere)

Timetable Allocation

- Yr 12/13
- AS/A2 = 10 lessons per fortnight
 - Further Mathematics = 10 additional lessons per fortnight

Attitude to Study

Few would argue that AS/A level Mathematics represents an 'easy option' in the process whereby students select subjects to study at post 16. However its usefulness relative to other disciplines is clearly evident and its prominent position in any hierarchical rating of A levels by those agencies who use them (Universities, Colleges, Employers) is widely accepted.

So what do you need to do in order to succeed?

- Have a sound knowledge and recall of topics studied at GCSE.
- Be prepared to tackle questions/problems prior to seeking assistance from staff. In this way the explanation is likely to make more sense.
- Ensure that each topic is understood as you go through the course, if need be ask for additional help. Some topics are hierarchical in nature and lack of understanding at one stage can easily lead to problems later on.
- Students need to be well prepared, bringing any equipment needed, including paper and textbooks to every lesson.
- A GOOD WORK ETHIC IS ESSENTIAL

In the past when students have not coped with the course in Year 12 the most common cause has been a poor work ethic. In deciding to study mathematics you must accept the need to work hard throughout the course. Mathematics does not lend itself to 'cramming' prior to examinations.

