

"If you know the enemy and know yourself you need not fear the result of a hundred battles."

-- Train hard, fight easy -- Sun Tzu -- The Art of War

- get a coach -- due to class size numbers it is unfortunately the case that individuals do not receive the 1-1 help that they sometimes need, this is where a tutor comes in!
- remember you are learning maths so it is okay not to know how to do something but you must find out -- the onus is on you!
- become diligent -- look this word up if you don't know it
 - work steadily
 - develop [grit](#) -- do not be put off by setbacks
- develop top notch 'C' grade skills -- basically things that can be improved by practice eg completing the square, rules for differentiation and integration
- maths cannot be learned passively you have to actively engage with it by doing problems
- put your effort into understanding rather than merely memorising maths facts
 - take the pressure off your memory
 - take a wider picture of what is going on in maths
 - develop a feel for the kind of thing to do in solving a problem, working through a question
- review your work at regular intervals -- I know this is a drag but it works, the more you look at something the easier it is to understand
- practise past paper questions regularly -- this should help you to feel more confident in identifying topics in questions (which is a problem that many students have)
- become someone who takes pride in being able to give a full and clear explanation for the solution to any given problem
- invest in and read [Leckie's Grade Booster](#) which will reinforce many of the points made in tutorials
- invest in and read a maths dictionary such as [Oxford Student's Mathematics Dictionary](#) which will help you to review earlier maths studies -- NB this is important!
- consider using an app(s) that will help you improve your basic maths -- this would make a big difference in helping you learn the new things in Higher
- try doing puzzles like sudoku, futoshiki, cryptic crosswords even -- anything to get you using your brain
- read! -- get interested in maths and science, literature, philosophy, art, technology, politics!
- consider the use of flashcards and [spaced repetition techniques](#) for helping you learn and remember vocabulary and maths facts -- [my brainscape flashcards on SQA Higher Maths](#) which help aid understanding
- invest in and read [Leckie's study skills guide for National 5 and Higher](#)
- consider to yourself: how can I ask better questions? Please note that I do not mean that you should self censor your questions -- ask away! But do consider, in a cool hour, what questions you want to ask and how you want to ask them. Pointing to a problem in a past paper and asking "How do you do this?", is not a good question, in my opinion.
 - learn to ask mathematical questions eg things like "why do we divide here?"
 - see also [Bill Shilito's question prompts](#)

- as the exam approaches work through exam papers in a methodical manner -- structure your revision in order to aid retention of material, approaches and methods
- as the exam approaches keep your focus on getting an 'A'
 - in a sympathetic way -- lots of rewards for hard work, take breaks, etc
- maths cannot be learned passively you need to actively engage with it by doing problems -- yeah I know I'm repeating myself but this is important!
- work on a gradient -- that is in any study session try easier problems first and work up to harder problems
- use the [HSN unit summary notes](#) -- these were produced for the pre CfE Higher Maths exam but the content remains virtually unchanged -- whilst working on problems and past paper questions. The idea is to transfer the information on the sheets to your brain -- eventually your need to refer to the notes reduces because you know the formula or result ie it is in your brain!
- use your textbook as a source of notes and worked examples -- use the method in the book to solve a problem you are stuck with
- similarly, and I would hope that this doesn't really need to be said, use your teacher's class notes and worked examples -- a lot of maths at this level consists of copying -- but copying with understanding hopefully!
- remember nothing is being hidden from you, everything is in front of you in black and white -- but if you cannot see it, ask!
- read your your notes with attention
- do problems with attention — switch off social media
- when revising, and a question or problem gives rise to a feeling of aversion or revulsion, this is a sign that this is a topic you need to revise! Find out how to answer it so that the negative emotion is dissipated! Doing this will boost your confidence.
- read the advice in the front of the [Official Past Papers](#) -- browse it in W H Smith's if you don't want to buy it (the papers are available online after all)
- be optimistic “Winners are people who expect to win.”
- you want to maximise marks gained through knowing stuff, and
- you want to minimise marks lost through
 - careless errors
 - not answering the question by not reading the question with sufficient care
 - not setting out working in a clear and logical manner