



Getting ready for A-level Maths

Brush up on your GCSE!

Over the summer we expect you to practice the top-end GCSE skills particularly in Algebra and Geometry. We will provide a PDF of a pack of questions we would like you to work through, and you should hand in the “test” from the last two pages. There are several published resources that can help with the transition to A-level such as “Head Start to A-level Maths” from CGP (ISBN 978-1782947929) should you wish to purchase it, and other on-line resources given in this leaflet.

There will be an “essential skills” test shortly after starting the course to help you identify any gaps that you still need to fill.

Equipment

We expect you to keep your work in a **ring binder** which will need to be organised into sections for notes, homework and assessments. We ask you to provide your own lined or squared paper for notes, classwork and homework. The Mathematics department will supply specialist papers such as graph paper when needed. You may occasionally need “GCSE” maths equipment such as compasses or a protractor but mainly you will just need standard writing equipment, including a ruler!

Technology in the Classroom

For A-level Mathematics and Further Mathematics you will need a more advanced calculator than for GCSE. The calculator must have:

- an iterative function (i.e. an “ANS” button)
- the ability to compute summary statistics and access probabilities from standard statistical distributions (this is the extra bit you need for A-level)
- the ability to perform calculations with matrices up to at least order 3 x 3 (Further Mathematics only)



fx-991EX

As a minimum you will need a Casio fx-991EX Classwiz or equivalent

(about £20).

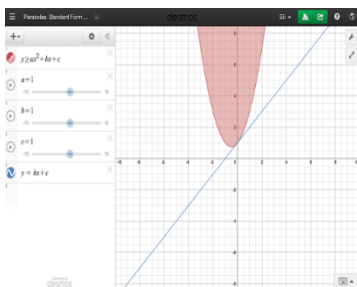
Graphical calculators are becoming more commonly used. We do not mandate them but some students find them beneficial, particularly in Further Mathematics. You need to be quite technically proficient to operate them efficiently so think carefully before spending the money on one as they are expensive.

The “popular” models are Casio FX-9860GII (£80) and Casio FX-CG50 (£100) (approx. prices).

Please ask if unsure or more advice is needed. You can manage with your GCSE calculator at least initially so do not have to make a decision before you start the course.



fx-CG50



Got a smartphone? Bring it to lessons. With apps such as Desmos and Geogebra we can explore functions and graphs (but you will not be allowed it in exams!).



Course Text Books



These text books are what we use for the course and we recommend you purchase. They are also available as Kindle versions, if you prefer this to hard-copy, and have a suitable phone/tablet to read them on (they don't seem work on actual kindles!)

A-level Maths (Year 1)

ISBN 978-1292183398 (Pure Maths Year 1)

ISBN 978-1292232539 (Statistics, Mechanics Yr 1)

A-level Maths (Year 2 – start in Y12 summer term)

ISBN 978-1292183404 (Pure Maths Year 2)

ISBN 978-1446944073 (Statistics, Mechanics Yr 2)

Further Mathematics students will need all the above as we go through Year 12, and will also need:

Year 12

ISBN 978-1292183336 (Core Pure Maths 1)

ISBN 978-1292183312 (Further Mechanics 1)

Year 13

ISBN 978-1292183343 (Core Pure Maths 2)

ISBN 978-1292183374 (Further Statistics 1)

Homework and Assessment

You should expect to do at least one hour's work in private study or at home for each hour of teaching. This is vitally important to practise newly-learned skills and identify any problems.

Work will be marked on a regular basis and feedback given.

Your teacher may give you mini-tests throughout the course and there will be formal assessments and PPE examinations at particular times.

The external examinations are all at the end of the course.

Extra Support

KS5 Maths Surgery is an opportunity to get extra help from Mathematics staff. Students come for a few minutes to sort out a problem, or come for an hour to work with peer and teacher support.

Surgery is held once a week after school. Timing and venue to be confirmed.





Some useful resources

Advanced Maths Support Programme:

<https://amsp.org.uk/resource/gcse-alevel-transition-resources>

Step-up to A-level Maths

Online activities to help you prepare for the course ahead

<http://www.cimt.org.uk/projects/mepres/step-up/index.htm>

N-rich

Have fun building your problem solving skills.

<http://nrich.maths.org/students>

Cut-The-Knot

A wealth of mathematical curiosities and puzzles to keep you occupied over the summer.

<http://www.cut-the-knot.org>

Apps for your phone:

These will keep your maths brain in gear over the holidays:

- Brilliant (brilliant.org)
- Euclidea (HORIS INTERNATIONAL LIMITED)

Casio calculator comparison

<https://education.casio.co.uk/comparison-chart>

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