Supporting your child through their Mathematics GCSE

Supporting with Maths revision

All content from any part of the specification may be assessed on each of the three papers. As such, some questions will draw together elements of maths from different topic areas. There will be a mixture of question styles, from short, single-mark questions to multi-step problems. The mathematical demand increases as a student progresses through the paper.

The most prepared students are those who are answering lots of questions as part of their revision and who are focusing on their areas of weakness as identified in the past practise exam papers they have done during lesson. Students should also use the revision resources that their class teacher has shared with them, in particular the materials that have been set on MathsWatch: https://www.vle.mathswatch.com/vle/

Students should be allocating a daily revision slot for completing the maths revision described above, and any problems they identify, they should be discussing with their teachers to help develop their understanding and confidence. Parents can support by encouraging your child to revise and monitoring that this is taking place. For example, ask them to show you their MathsWatch account so you can see the percentage of the revision packs that your child has completed.

The exams!

We will be doing practise mock examinations all year in the run up to the exams during lessons. The next ones will be **w/c 22nd November 2021.**

Preparation for the mock examinations is absolutely crucial!
The final exams are on the following dates;

Exam title: GCSE Mathematics AQA 8300

- Friday 19th May - morning exam – paper 1 1hr30mins
- Tuesday 6th June – morning exam – paper 2 1hr30mins
- Wednesday 14th June – morning exam – paper 3 1hr30mins

Exam title: Level 2 Further Mathematics AQA 8365

- Wednesday 7th June – afternoon exam – paper 1 1hr45mins
- Wednesday 21st June – afternoon exam – paper 2 1hr45mins
  (Paper 1 is non calculator, Paper 2 is calculator)

Course details:

GCSE Mathematics
Exam board: AQA
Specification: 8300
Website:www.aqa.org.uk/subjects/mathematics/gcse/mathematics-8300

Level 2 Further Mathematics
Exam board: AQA
Specification: 8365
Website:https://www.aqa.org.uk/subjects/mathematics/aqa-certificate/further-mathematics-

Useful revision websites

https://vle.mathswatch.co.uk/vle/
https://corbettmaths.com/
https://mmerevise.co.uk/

Paper Society

Maths revision session focusing on past papers to develop exam skills. Thursdays 2:45-3:45 in G11 and G12

What do I need to focus on to improve?

The topics to work on are highlighted on the assessment analysis sheets that are completed after each exam paper in lesson…this is why the internal mock examinations are so important and require thorough preparation! Please ask your child to show you their exercise book.

Formulae I must know…adaptation…

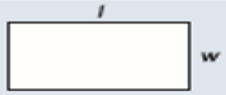
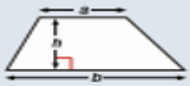
All formulae required for higher tier.
Foundation tier formulae marked with 'F'

Compound interest F

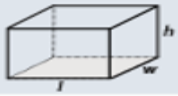
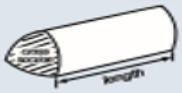
Where P is the principal amount, r is the interest rate over a given period and n is number of times that the interest is compounded:

Total accrued = $P\left(1+\frac{r}{100}\right)^n$

Areas

Rectangle = $l \times w$	F	
Parallelogram = $b \times h$	F	
Triangle = $\frac{1}{2} b \times h$	F	
Trapezium = $\frac{1}{2}(a+b)h$	F	

Volumes

Cuboid = $l \times w \times h$	F	
Prism = area of cross section × length	F	
Cylinder = $\pi r^2 h$	F	
Volume of pyramid = $\frac{1}{3}$ × area of base × h		

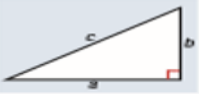
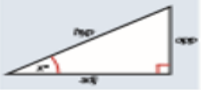
Circles

Circumference = π × diameter, $C = \pi d$	F	
Circumference = 2 × π × radius, $C = 2\pi r$	F	
Area of a circle = π x radius squared $A = \pi r^2$	F	

Compound measures

Speed speed = $\frac{\text{distance}}{\text{time}}$	F	
Density density = $\frac{\text{mass}}{\text{volume}}$	F	
Pressure pressure = $\frac{\text{force}}{\text{area}}$	F	

Pythagoras

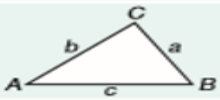
Pythagoras' Theorem For a right-angled triangle, $a^2 + b^2 = c^2$	F	
Trigonometric ratios (*new to F*) $\sin x° = \frac{\text{opp}}{\text{hyp}}$, $\cos x° = \frac{\text{adj}}{\text{hyp}}$, $\tan x° = \frac{\text{opp}}{\text{adj}}$	F	

Trigonometric formulae

Sine Rule $\frac{a}{\sin A} = \frac{b}{\sin B} = \frac{c}{\sin C}$

Cosine Rule $a^2 = b^2 + c^2 - 2bc \cos A$

Area of triangle = $\frac{1}{2} ab \sin C$



Quadratic equations

The Quadratic Equation

The solutions of $ax^2 + bx + c = 0$, where $a \neq 0$, are given by $x = \frac{-b \pm \sqrt{(b^2-4ac)}}{2a}$

10 Top Tips for Revising Maths

1) Before you start revising, get all your notes sorted and draw up a list of all the topics you need to cover.

This serves two purposes: you will definitely cover everything you need to, and a bit of tidying and sorting out is a nice relaxing way to ease yourself in to the revision process.

2) Don't just read through the revision guide!

The best way to revise Maths is to DO Maths. You will do much better spending 20 minutes doing Maths questions than spending 2 hours just reading a textbook. The more questions you do yourself, the more you will get right, the higher your confidence will be, the more you will enjoy your revision and the better you will do in the exam.

3) Use the internet.

The internet is like having your own personal teacher who is available for you whenever you like. There are websites that can set you questions and mark them for you, take you through step-by-step how to tackle certain topics, and use fancy illustrations and animations that might just make that really annoying topic finally make sense. There are free video and audio podcasts that you can watch on your computer (or even iPods) which is like having a Maths lesson in the comfort of your own bedroom, or in the park, or wherever you choose. They can be started, paused, and, watched as many times as you like until you've got it! There are Maths games which you can play to practise crucial skills in a more fun way. All this stuffs is out there for you, so use it!

4) Don't just practise the topics you can do.

If you are really good at fractions it is very tempting to keep doing lots of fractions questions and then smiling as you keep getting them right. But, unfortunately, the exam is probably not going to have more than one or two fractions questions. Although it can be painful, work your way through the topics that you struggle with. It is much better to struggle on them at home, when you have time on your side and the answers available, than it is to struggle in the exam.

5) Give yourself little treats and things to look forward to.

If you do a good day of revision, take the night off, watch some telly, go and see your friends, put all thoughts of Maths and school to the back of your mind. Buy yourself some chocolates, but only let yourself eat it once you have achieved what you need to do.

6) If it works for you, try revising with a friend for a bit of the time.

You will find that one of you understands one topic more, whilst the other is a bit of an expert on another. Just by explaining things to a friend, you will find that your understanding increases, and likewise, you might learn a different way of thinking about and understanding a topic.

7) Make sure you ask for help.

Once you are in the exam you are on your own, but during revision, you certainly are not. If you are stuck on a topic or question, then ask one of your classmates, someone at home, use the internet, or more importantly ASK a maths teacher, they will always be there to help you however small your question.

8) Practise doing questions under exam conditions.

Get someone to pick you a set of questions from a textbook or revision guide, or get some from a Maths website, and try doing them in silence, with no help, for a fixed amount of time. This will get you used to what it will be like in the exam, how fast you need to go and this is the best way of checking that you really understand a topic.

9) Practise using your calculator!

Many people seem to assume that any question that lets you use a calculator is easy, and all calculators work the same way. Those people are wrong! All calculators work differently, and unless you have used yours for lots of different types of questions (Trig, Pythagoras, negative, fractions, indices, standard form, etc.), you might come unstuck in the exam. Remember to bring your calculator to every maths lesson.

10) Key Notes

Reflect after each past paper. Be honest when BRAGing, this will allow you to have a record of your strengths and weaknesses. Also: Have you learnt a new skill? Condense these new techniques into easy to follow steps that you will be able to use next time a similar question comes up. Stick post-its around your house showing key things you need to remember.

Available Revision Materials

- ***Past exam papers***…these can be found on: https://www.aqa.org.uk/subjects/mathematics/gcse/mathematics-8300schemes

- ***MathsWatch*** https://www.mathswatchvle.com/

Assigned Work

This Year's Work | All Work | Showing All Types

Homework Average 25.3% | Test Average 0%

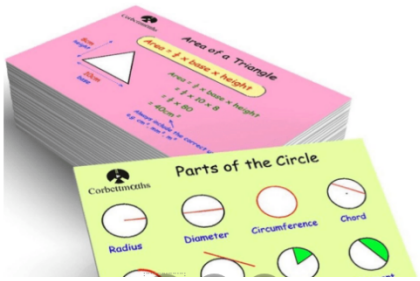
Title	Type	Assigned By	Assigned	Due	Marks	%
Grade 8/9 Revision Materials	HW	E Emery	04/03/2019	29/08/2020	19/565	3%
Grade 7 Revision Materials	HW	E Emery	04/03/2019	29/08/2020	87/538	16%

Your child's teacher has set packs of questions specific to your child. Ask your child to show you their home page so you can monitor what percentage of the pack has been completed.

- ***Cue cards***
  Your child can make their own, or these can be purchased from school for £7.50 each.

90 Engaging revision cards for the New GCSE

Available for Higher or Foundation Tier



- ***Revision Guides***
  There are a selection of other revision materials that can be purchased through squid or from the Maths Office at Higher or Foundation level.
  Guides and workbooks range from £3.15 - £4.40 with answers