

Mathematics (OCR A)

A Level Preparation Work

Welcome to A Level Maths! The tasks below are designed to support and prepare you to start the course.

Folder Preparation

So that you are ready for September, please get yourself two folders.

One ring binder will have your preparation work and the other will be the folder that you use every day for maths.

Please bring both these folders to the first lesson.

Preparation for A level Folder

10 sections below

1. Solving linear equations
2. Changing the subject of a formula
3. Quadratic expressions
4. Completing the square
5. Algebraic fractions
6. Simultaneous equations (non linear)
7. Indices
8. Surds
9. Straight line graphs
10. Shapes of curves

Year 1 Maths Folder

This needs to have 10 dividers. We will help you set this up in the first lesson.



Consolidation of GCSE and Problem Solving Tasks

Please print the table on the next page and place it at the front of your folder.

There are 10 sections to your work. We strongly advise you to spread your work out and choose one of the topic areas to work on each week.

For each of them you must complete the questions listed in the third column of the table writing your **working** and answers on file paper. They are from the linked document below.

[This is the link to just the exercises](#)

[This is the link to the exercises with explanation](#)

[This is the link to the answers](#)

If you are finding the questions difficult, first read the worked examples in the exercises with explanation (see the document above) and then, if this does not help, use any of the help links in the table.

When you have finished the questions for a section, mark them and use green pen for corrections.

Then:

- If you needed extra help or got more than one (or two) questions wrong then complete more questions on this topic from the extra practice section, making sure you mark all your work.
- If you find you can do the questions without any extra resources and get them correct try the extension activity suggested – some are related to the original topic and some are just to get you thinking.
- If you are still unsure of a topic after doing the extra practice come back to it a couple of weeks later AND make sure you have highlighted it as an area to ask for help on.

Make sure all of the original questions and follow up work is filed in your preparation for A level folder to be shown to your teacher on the first day.

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Consolidation of GCSE

Date completed	Topic area	Diagnostic questions	Total no. of questions	Total no. correct	help	Extra practice	extension	RAG rate after follow up work is completed
	Solving linear equations	Ex. 1.1 q. 2,5	6		Video 1 Video 2	Questions 1 solutions 1 Questions 2 solutions 2	Leonardo's Problem	
	Changing the subject of a formula	Ex. 1.1 q. 3 Ex. 1.2 q. 2 Ex. 1.4 q. 2	11		video 1	questions 1 solutions 1	Pair Products	
	Quadratic expressions	Ex. 1.3 q. 1,2,7	16		video 1	questions 1 solutions 1 questions 2 solutions 2	Difference of 2 squares	
	Completing the square	Ex. 1.3 q. 4	6		video 1	questions 1 solutions 1	Hollow Squares	
	Algebraic fractions	Ex. 1.1 q. 7 Ex. 1.2 q. 4 Ex. 1.4 q. 1	25		Video 1	Questions 1 solutions 1	There's a limit	
	Simultaneous equations (linear and quadratic)	Ex. 1.5 q. 1,3,5,7,9	5		Video 1	Questions 1 solutions 1	RISP 8 HINTS	
	Indices	Ex. 1.6 q. 1,2,3	16		Video 1	questions 1 solutions 1 questions 2 solutions 2	Negative Power	
	Surds	Ex. 1.6 q. 5,6	10		video 1 video 2	questions 1 solutions 1 questions 2 solutions 2	The root of the problem	
	Straight line graphs	Ex. 3.1 q. 1a,c,e, 2a,c,e,g 3a,c,e	10		Video 1	Explanation and interactive questions	RISP 34 HINTS	
	Shapes of Curves	Ex. 3.2 q. 1,3,5,7,9,11	6		Video 1	Questions 1 solutions 1	Shapes of curves	

Wider Thinking

The following give talks give some food for thought of how higher level mathematics is used:-

https://www.ted.com/talks/arthur_benjamin_the_magic_of_fibonacci_numbers

https://www.ted.com/talks/marcus_du_sautoy_symmetry_reality_s_riddle

<http://www.alexbellos.com/>