

MATHS +

See how many of the Maths Plus Challenges you can tick off over the course of the year.

These challenges are things you can do to increase your understanding and enjoyment of mathematics.

Completing challenges will push you to become more independent, resourceful and resilient, and make you a better problem solver. And maybe help you realize why some people (like your maths teacher) get so strangely excited by this subject...

Making Mistakes <i>Mistakes in mathematics are not obstacles - they are the stepping stones to understanding.</i>		
Make a "useful mistake" and share it with the group. <input type="checkbox"/> (give details here) <input type="checkbox"/> (give details here)	Date: Date:	Verified by: (teacher to sign) Verified by: (teacher to sign)
Point out a mistake your teacher makes in class. <input type="checkbox"/> (give details here) <input type="checkbox"/> (give details here)	Date: Date:	Verified by: (teacher to sign) Verified by: (teacher to sign)
Identify a calculation in a class problem your calculator can't do. <input type="checkbox"/> (give details here) <input type="checkbox"/> (give details here)	Date: Date:	Verified by: (teacher to sign) Verified by: (teacher to sign)
Ask your teacher a maths question they can't answer. <input type="checkbox"/> (give details here) <input type="checkbox"/> (give details here)	Date: Date:	Verified by: (teacher to sign) Verified by: (teacher to sign)
Find a mathematical error somewhere outside school. <input type="checkbox"/> (give details here) <input type="checkbox"/> (give details here)	Date: Date:	Verified by: (teacher to sign) Verified by: (teacher to sign)

Exploring Ideas <i>Push yourself to learn new things your teacher won't teach you, on your own, with the internet or with family.</i>		
Investigate further out of school something learned in class. <input type="checkbox"/> (give details here) <input type="checkbox"/> (give details here)	Date: Date:	Verified by: (teacher to sign) Verified by: (teacher to sign)
Investigate out of school something you haven't learned in class. <input type="checkbox"/> (give details here) <input type="checkbox"/> (give details here)	Date: Date:	Verified by: (teacher to sign) Verified by: (teacher to sign)
Find a maths video online and write a short summary of it. <input type="checkbox"/> (give details here) <input type="checkbox"/> (give details here)	Date: Date:	Verified by: (teacher to sign) Verified by: (teacher to sign)
Get a parent to teach you something you won't learn in school. <input type="checkbox"/> (give details here) <input type="checkbox"/> (give details here)	Date: Date:	Verified by: (teacher to sign) Verified by: (teacher to sign)
Find an interesting story about maths or a famous mathematician. <input type="checkbox"/> (give details here) <input type="checkbox"/> (give details here)	Date: Date:	Verified by: (teacher to sign) Verified by: (teacher to sign)

Using Maths <i>Find ways to make what you learn useful beyond the classroom. Look for places maths will help you or others.</i>		
Solve a challenging maths problem or logic puzzle. <input type="checkbox"/> (give details here) <input type="checkbox"/> (give details here)	Date: Date:	Verified by: (teacher to sign) Verified by: (teacher to sign)
Use maths to help you with something outside school. <input type="checkbox"/> (give details here) <input type="checkbox"/> (give details here)	Date: Date:	Verified by: (teacher to sign) Verified by: (teacher to sign)
Make something using maths (build / design / cook / paint / code ...) <input type="checkbox"/> (give details here) <input type="checkbox"/> (give details here)	Date: Date:	Verified by: (teacher to sign) Verified by: (teacher to sign)
Find an example of where maths is being used outside school. <input type="checkbox"/> (give details here) <input type="checkbox"/> (give details here)	Date: Date:	Verified by: (teacher to sign) Verified by: (teacher to sign)
Design a game of chance and investigate possible strategies. <input type="checkbox"/> (give details here) <input type="checkbox"/> (give details here)	Date: Date:	Verified by: (teacher to sign) Verified by: (teacher to sign)

If you are stuck for ideas or want some suggestions at any time, just ask your teacher. Here are few suggestions to get you started: [Numberphile.org](https://www.youtube.com/channel/UCk13112111111111111111) (YouTube channel), [ViHart.com](https://www.youtube.com/channel/UCk13112111111111111111) (YouTube channel), nrich.maths.org (problem solving), [Brilliant.org](http://brilliant.org) (maths & logic problems), what-if.xkcd.com (daft questions answered with science), codecademy.com (learning to code), UKMT-resources.org.uk (maths challenge problems), GeoGebra.org (interactive geometry and graphical calculator), WolframAlpha.com (mathematical search engine), "Things to make and do in the fourth dimension" (see also makeanddo4d.com) by Matt Parker.

MATHS +

See how many of the Maths Plus Challenges you can tick off during your A-level course.

These challenges are things you can do to increase your understanding and enjoyment of mathematics, at A-level and beyond.

Completing challenges will push you to become more independent, resourceful and resilient, and make you a better problem solver. And maybe help you realize why some people (like your maths teacher) get so strangely excited by this subject...

Making Mistakes <i>Mistakes in mathematics are not obstacles - they are the stepping stones to understanding.</i>		
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Point out a mistake your teacher makes in class. <input type="checkbox"/> (give details here) <input type="checkbox"/> (give details here)	Date: Date:	Verified by: (teacher to sign) Verified by: (teacher to sign)
Identify a calculation in a class problem your calculator can't do. <input type="checkbox"/> (give details here) <input type="checkbox"/> (give details here)	Date: Date:	Verified by: (teacher to sign) Verified by: (teacher to sign)
Ask your teacher a maths question they can't answer. <input type="checkbox"/> (give details here) <input type="checkbox"/> (give details here)	Date: Date:	Verified by: (teacher to sign) Verified by: (teacher to sign)
Find a mathematical error in your text book. <input type="checkbox"/> (give details here) <input type="checkbox"/> (give details here)	Date: Date:	Verified by: (teacher to sign) Verified by: (teacher to sign)

Exploring Ideas <i>Push yourself to learn new things your teacher won't teach you, on your own, with the internet or with family.</i>		
Investigate further out of school something learned in class. <input type="checkbox"/> (give details here) <input type="checkbox"/> (give details here)	Date: Date:	Verified by: (teacher to sign) Verified by: (teacher to sign)
Investigate out of school something you haven't learned in class. <input type="checkbox"/> (give details here) <input type="checkbox"/> (give details here)	Date: Date:	Verified by: (teacher to sign) Verified by: (teacher to sign)
Find a maths video online and write a short summary of it. <input type="checkbox"/> (give details here) <input type="checkbox"/> (give details here)	Date: Date:	Verified by: (teacher to sign) Verified by: (teacher to sign)
Use maths to investigate some aspect of another subject further. <input type="checkbox"/> (give details here) <input type="checkbox"/> (give details here)	Date: Date:	Verified by: (teacher to sign) Verified by: (teacher to sign)
Find out about an 'open' (unsolved) problem in mathematics. <input type="checkbox"/> (give details here) <input type="checkbox"/> (give details here)	Date: Date:	Verified by: (teacher to sign) Verified by: (teacher to sign)
Find an interesting story about maths or a famous mathematician. <input type="checkbox"/> (give details here) <input type="checkbox"/> (give details here)	Date: Date:	Verified by: (teacher to sign) Verified by: (teacher to sign)

Using Maths <i>Find ways to make what you learn useful beyond the classroom. Look for places maths will help you or others.</i>		
Solve a challenging maths problem or logic puzzle. <input type="checkbox"/> (give details here) <input type="checkbox"/> (give details here)	Date: Date:	Verified by: (teacher to sign) Verified by: (teacher to sign)
Use maths to help you with something outside school (build / code / ...) <input type="checkbox"/> (give details here) <input type="checkbox"/> (give details here)	Date: Date:	Verified by: (teacher to sign) Verified by: (teacher to sign)
Design a problem involving maths you have learnt in school. <input type="checkbox"/> (give details here) <input type="checkbox"/> (give details here)	Date: Date:	Verified by: (teacher to sign) Verified by: (teacher to sign)
Find an example of where maths is used in another subject. <input type="checkbox"/> (give details here) <input type="checkbox"/> (give details here)	Date: Date:	Verified by: (teacher to sign) Verified by: (teacher to sign)

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