Post 16 Induction - Mathematics.

Year 11 Preparing for A-level Maths: Helpful videos and resources for working from home and Summer work and Integral tasks to complete to check understanding.

We would highly recommend downloading / purchasing the CGP booklet 'Headstart to A Level Maths'. This is a great booklet to help support you recap and review of the key elements from GCSE to support your A Level studies in Year 12.

You have an **AS/A Level Mathematics Summer Work** sheet to fill in which you should have received at the Induction Day

In addition, we ask you to work through the Integral 'Transition to A-level Maths' course over the summer. Log in details will be emailed to you in the coming weeks. Speak to Miss Metters if you have not received yours.

Enjoy, and don't hesitate to contact Miss Metters or Mrs Pearce if you have any questions. We have set the Integral course for all those students we knew had opted for A Level maths next year. If they are not there and you would like to be added to this group, just drop us an email.

Extra support:
Underground Mathematics

This resource is FULL of lots of tasks and challenges. If you are feeling less confident with a topic then use the '*building block'.* If you want more of a challenge then carry out one of the '*fluency exercise'.*
https://undergroundmathematics.org/

	Topics to Prepare	Mymaths task to complete	Corbett Maths Videos and Resources (No subscription required)	Extending mathematical experience
1	**Algebra**	Identities	111 - Equations: involving fractions 112 - Equations: fractional advanced 112 - Equations: cross multiplication	The Wizard standoff riddle. https://ed.ted.com/lessons/can-you-solve-the-wizard-standoff-riddle-daniel-finkel
2	**Quadratics**	Factorising quadratics 1 Quadratic equations 1 Properties of quadratics Sketching quadratic graphs	119a - Factorisation: splitting the middle 120 - Factorisation: difference of 2 squares 10 - Algebra: completing the square 266 - Quadratics: solving (factorising) 267 - Quadratics: formula 267a - Quadratics: solving (completing the square) 265 - Quadratic graphs: sketching using key points 371 - Quadratic graphs (completing the square)	Choose one of the reading suggestions from the Summer reading list below, or the maths section of the Academic reading list sent by Mr Fonseca.
3	**Algebraic fractions 1**	Cancelling algebraic fractions Adding algebraic fractions	21 - Algebraic Fractions: addition 24 - Algebraic Fractions: Simplifying	**Read the notes on the page and carry out the algebraic investigation. Complete the worksheet included.** https://www.teachmathematics.net/page/7566/oxo

4	**Algebraic fractions 2**	Multiply algebraic fractions Solving equations with fractions	22 - Algebraic Fractions: division 23 - Algebraic Fractions: Multiplication 111 - Equations: involving fractions 112 - Equations: fractional advanced 112 - Equations: cross multiplication	**Create a PINTREST board with images of maths in nature. Investigate the maths behind some of the images you have found.**
5	**Simultaneous Equations**	Simultaneous equations 3 Simultaneous negative Solving simultaneous equations graphically	295 - Simultaneous equations (elimination) 296 - Simultaneous equations (substitution, both linear) 297 - Simultaneous equations (graphical) 298 - Simultaneous equations (advanced)	**Maths Magic.** Can you create your own version of the problem? Investigate other magic tricks which are based around maths. https://nrich.maths.org/1051
6	**Circles**	Equations of circles	12 - Algebra: equation of a circle	Choose one of the reading suggestions from the Summer reading list below, or the maths section of the Academic reading list sent by Mr Fonseca.
7	**Surds**	Surds 1 Surds 2	305 - Surds: intro, rules, simplifying 307 - Surds: rationalising denominators 308 - Surds: expanding brackets	Solve the false positive riddle. https://ed.ted.com/lessons/can-you-solve-the-false-positive-riddle-alex-gendler

Summer Reading list

- Fermat's Last Theorem (Singh)

- Does God Play Dice and Nature's Numbers (Stewart)

- Easy as Pi (Ivanov)•The Music of the Primes (du Sautoy)

- Just Six Numbers (Rees)

- In Code (Flannery)

- Numbers, Sets and Axioms (Hamilton)

- The Universe and the Teacup –the Maths of Truth and Beauty (K.C. Cole)

- Algebra and Geometry (Beardon)

- Hidden Connections, Double Meanings (Wells)

- Elastic Fishponds. The Maths that Governs our World (Elwes)

- The Norm Chronicles (Blastland and Spitgethaltes), Our Mathematical Universe (Max Tegmark)

- Updates for 2018 are Beyond Infinity (Cheng)

- Weapons of Math Destruction (O'Neill)

- Ian Stewart's 17 equations that Changed the World and Thinking in Numbers (Temmet)