Maths

Summer Work Booklet

PETERBOROUGH KEYS
ACADEMIES TRUST

Progression – Maths
Jack Hunt School
2023

Contents:

I. RAG

For each of the following topics RAG rate yourself based on what you know from GCSE. Then complete the booklet and redo at the end. Having a secure understanding of these topics will mean that you are in the best possible position to start your A Level course.

Topic	Red	Amber	Green
Solving quadratics			
Changing the subject			
Simultaneous equations			
Surds			
Indices			
Properties of lines			
Sketching curves			
Transformations of functions			
Pythagoras			
Sine/Cosine Rule			
Inequalities			
Proof			
Vectors			
Probability			

II. Practice

AMSP transition

Each section includes:

- skills check
- a chance to practise and explore
- some extra ideas that you may want to investigate further

https://amsp.org.uk/teachers/11-16-maths/transition-to-level-3-maths/essential-skills/

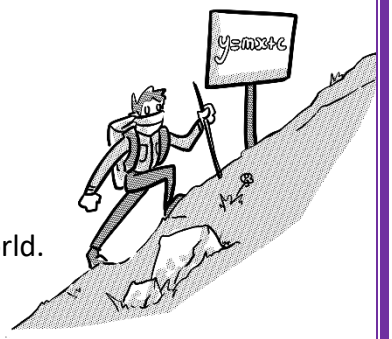
Complete these Gryphon Maths A Level transition questions.

https://gryphonmaths.wordpress.com/a-level/transition/task-1/

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/



III. Extra and Interesting Bits

Below are some articles and videos to view.
These are all going to extend your understanding of maths in the real world.

1. **Follow the 'WATCH, THINK, DIG DEEPER, DISCUSS'**
   The Wizard standoff riddle.
   https://ed.ted.com/lessons/can-you-solve-the-wizard-standoff-riddle-daniel-finkel

2. **Follow the 'WATCH, THINK, DIG DEEPER, DISCUSS'**
   Solve the false positive riddle.
   https://ed.ted.com/lessons/can-you-solve-the-false-positive-riddle-alex-gendler

3. **Read the notes on the page and carry out the algebraic investigation. Complete the worksheet included.**
   https://www.teachmathematics.net/page/7566/oxo

4. **Create a PINTREST board with images of maths in nature. Investigate the maths behind some of the images you have found.**

5. **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. **Golden Ratio (phi) Day**
   Golden ratio day is 31st October 2023. Investigate the golden ratio and its history.
   https://www.teachengineering.org/activities/view/nyu_phi_activity1
   https://www.quora.com/How-is-the-golden-ratio-useful-to-students
   Find more articles on this and create a poster all about the golden ratio.

7. **Complete module 1- Advanced Problem Solving**
   https://nrich.maths.org/10209

IV. RAG

Complete a second RAG rating for the key topics from this booklet. Remember if you are still unsure on any of these topics then you should try the PIXL MathsApp or Sparx Maths for further help and support.
GOOD LUCK!

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