

# GETTING AHEAD



ALTON

Start to develop skills that are relevant to your course before you join HSDC this September!

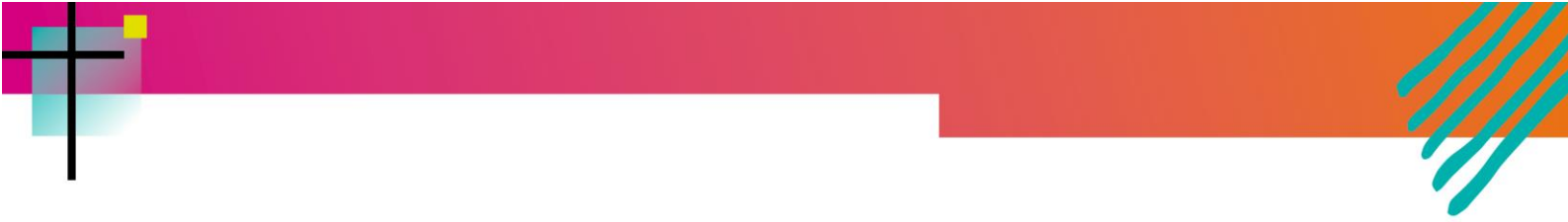
## Maths and Further Maths – A Level

These tasks are aimed towards helping you maintain your mathematical problem solving skills between now and when you join HSDC in September. It's always good to keep the brain ticking over; some of these you might find challenging but this will help you improve and better prepare yourself for A Level Maths.

### Activity

- Produce a poster to answer one of the following questions:
  - How many different ways can you solve  $x^2 + 3x - 4 = 0$ ? Can you sketch the graph?  
Can you generalise your methods to solve  $ax^2 + bx + c = 0$ ? Can you sketch it?
  - How many different ways can you solve  $3^x = 5$ ?  
Can you generalise your methods to solve  $a^x = b$ ?
  - What's the centre of the circle that passes through  $(6, 3)$ ,  $(-3, 6)$  and  $(-4, -2)$ ?  
Can you generalise the result, so the circle passes through  $(a, b)$ ,  $(c, d)$  and  $(e, f)$ ?
  - What's the best prediction for someone's Paper 2 exam result if you know they got 78 in Paper 1, and you have the following data of other students' scores:

Paper 1	76	91	73	98	93	98	91	82	91	64	67	89	73	91
Paper 2	66	73	47	96	80	79	90	74	93	71	50	74	76	90

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- Produce a poster to help someone revise one of the following GCSE Maths topics:
    - Quadratic Equations
    - Simultaneous Equations
    - Trigonometry
    - Surds & Indices
  - Go to [https://www.ukmt.org.uk/pdfs/archive/SMC2018\\_paper.pdf](https://www.ukmt.org.uk/pdfs/archive/SMC2018_paper.pdf) and try last year's Senior Maths Challenge.

**Please bring your completed posters to your first lesson in September as the best ones will be displayed in your classroom.**

**We look forward to seeing you all in September!**

For further information about your College and being a student at HSDC, please visit [hfdc.ac.uk/Alton](https://hfdc.ac.uk/Alton)