










# Curriculum Content Map

Subject: Mathematics

Year group: 11F

|   | TERM 1  |  | TERM 2  |  | TERM 3 |  |
|---|---|--|---|--|--------|--|
| Unit title & description  | Inequalities<br>Quadratic, Cubic and Reciprocal graphs<br>Factorise into double brackets and solving<br>Rearranging formulae<br>Simultaneous equations  | Limits of accuracy<br>Indices<br>Standard form<br>Ratio<br>Proportion<br>Transformations1  | Transformations2<br>Similarity and Congruence<br>Vectors<br>Volume and Surface area   | Compound measures<br>Construction and Loci   |        |  |
| Sequencing - Why is this taught and now?  | Focusing on algebra, here the teaching the topics which students find have more complexity are taught in yr11.  | Focusing on number; here the teaching the topics which students find have more complexity are taught in yr11.  | Focusing on shape, here the teaching the topics which students find have more complexity are taught in yr11.  |  |        |  |
| Knowledge  | <ul style="list-style-type: none"> <li>- To be able to know how to interpret inequality signs.</li> <li>- To be able to write integers from an inequality.</li> <li>- To be able to show inequalities on a number lines and vice versa.</li> <li>- To be able to solve linear inequalities up to three steps.</li> <li>- To be able to linear inequalities with an unknown on both sides.</li> <li>- To be able to find the y values from a quadratic equation.</li> <li>- To be able to plot a quadratic graph from an equation.</li> <li>- To be able to find the coordinates of a turning point using a quadratic graph.</li> <li>- To be able to estimate roots using a quadratic graph.</li> <li>- To be able to find the y values from a simple cubic graph.</li> <li>- To be able to plot simple cubic graphs.</li> <li>- To be able to plot reciprocal graphs.</li> </ul> | <ul style="list-style-type: none"> <li>- To be able to identify interval errors.</li> <li>- To be able to find the upper and lower bound.</li> <li>- To be able to square and cube root numbers.</li> <li>- To be able to use a calculator to work out calculations.</li> <li>- To know and apply the indices rule to simplify expressions.</li> <li>- To be able to write down numbers in the form of a stated base.</li> <li>- To be able to write numbers in standard form.</li> <li>- To be able to convert between standard form and ordinary values.</li> <li>- To be able to multiply and divide with standard form.</li> <li>- To be able to add and subtract with standard form.</li> <li>- To be able to write ratios from amounts including those in different units.</li> <li>- To be able to simplify ratios and find equivalent ratios.</li> <li>- To be able to write ratios in the form n:1 or 1:n.</li> </ul> | <ul style="list-style-type: none"> <li>- To be able to find a line of symmetry.</li> <li>- To be able to translate a shape using a vector.</li> <li>- To be able to write a vector to describe a translation.</li> <li>- To be able to rotate a shape.</li> <li>- To be able to describe a rotate and find the centre of rotation.</li> <li>- To be able to enlarge a shape using a centre of rotation.</li> <li>- To be able to find the scale factor of similar shapes.</li> <li>- To be able to find missing lengths of similar shapes.</li> <li>- To be able to understand that angles of similar shapes are the same.</li> <li>- To be able to recognise congruent shapes.</li> <li>- To be able to write vectors from diagrams.</li> <li>- To be able to multiply a vector by a scalar.</li> <li>- To be able to add and subtract vectors including with scalars.</li> <li>- To be able to work out the volume of cubes and cuboids.</li> </ul> | <ul style="list-style-type: none"> <li>- To be able to work out speed, distance and time.</li> <li>- To be able to problem solve with speed distance and time.</li> <li>- To be able to work out mass, density and volume.</li> <li>- To be able to problem solve with mass, density and volume.</li> <li>- To be able to work out force, area and pressure.</li> <li>- To be able to problem solve with force, area and pressure.</li> <li>- To be able to use a scale to work out the real distance.</li> <li>- To be able to construct points equidistant from a point/line.</li> <li>- To be able to construct perpendicular lines.</li> <li>- To be able to construct an angle bisector.</li> <li>- To be able to solve construction problems.</li> <li>- To be able to solve loci problems.</li> </ul> |        |  |

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|   | <ul style="list-style-type: none"><li>- To be able to factorise quadratic expressions with a coefficient equal to 1.</li><li>- To be able to solve a quadratic equation by factorising.</li><li>- To be able to factorise using the difference between two squares.</li><li>- To be able to solve simple quadratic equations using inverse operations.</li><li>- To be able to change the subject of an equation or formulae.</li><li>- To be able to solve simultaneous equations using elimination.</li><li>- To be able to form simultaneous equations to solve.</li></ul> | <ul style="list-style-type: none"><li>- To be able to write ratios as fractions and vice versa.</li><li>- To be able to share an amount using a ratio.</li><li>- To be able to solve problems involving ratios.</li><li>- To be able to solve recipe problems.</li><li>- To be able to use proportional graphs to work out amounts.</li><li>- To be able to solve problems involving exchange rates.</li><li>- To be able to reflect horizontally and vertically, a shape using a line of symmetry.</li><li>- To be able to reflect diagonally, a shape using a line of symmetry.</li></ul> | <ul style="list-style-type: none"><li>- To be able to work out the surface area of cubes and cuboids.</li><li>- To be able to work out the volume and surface area of pyramids.</li><li>- To be able to work out the volume and surface area of triangular prisms.</li><li>- To be able to work out the volume of cylinders.</li><li>- To be able to work out the surface area of cylinders.</li></ul> |                                      |  |  |
| Skills  |    | Use of numerical and conceptual knowledge.<br>Applying and combining knowledge from different areas of mathematics.<br>Use of mathematical equipment.<br>Problem solving and reasoning; and interpreting questions.   |  |                                      |  |  |
| Retrieval practice<br>Prior knowledge and skills that are revisited | Do nows are structured with questions, from last lesson, last week and last month.  |   | A retrieval lesson is taught on each topic taking into account any gaps identified by topic tests, 1 or 2 weeks after completing teaching of the topic.  |                                      |  |  |
| Literacy including<br>extended writing                              |    | Key words highlighted in lessons.<br>Interpret information from worded problems and be able to apply relevant techniques based on key words.<br>Guided reading task set for homework once a fortnight highlighting an interesting area of mathematics.  |  |                                      |  |  |
| Numeracy  |    | All lessons are mathematics based and therefore require numeracy.   |  |                                      |  |  |
| Enrichment<br>learning  |    | Students will be given opportunities in lesson to develop soft skills such as teamwork, independence, initiative and responsibility.  | Higher attainers to complete the parallel challenges.  | UKMT maths challenge to be completed |  |  |

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| British values             | British values are not taught in specific topics but in all lessons teacher expectations of students is that they show mutual respect, respect personal liberty, follow academy rules and therefore respect the rule of law and show respect towards each other and value each other's contributions.        |   |   |
| Character                 | Students challenged to justify their answers and explain their reasoning.<br>Students supported in developing the communication skills required.<br>Students to be encouraged to learn from their mistakes through follow-up tasks.<br>Students encouraged to take pride in their work.                      |   |   |
| Careers                   | Explicit reference will be made throughout the course to careers related to the combination of topics studied. Examples include: <ul style="list-style-type: none"> <li>• Medicine,</li> <li>• Social sciences</li> <li>• Pharmacy</li> <li>• Engineering</li> <li>• Logistics</li> <li>• Finance</li> </ul> |   |   |
| Assessment opportunities  | AFL strategies embedded into each and every lesson via use of multiple choice questions and/or mini whiteboard work.   | Unit tests to be completed at the end of teaching each individual topic highlighting depth of understanding and areas requiring further work. | Cumulative AP assessments completed and levelled for students to assess their progress. |
| <b>Personalised challenge for all: SEND, HPA</b>   | Tasks suitable for students of different levels or prior attainment including challenge for higher attainers   |   |   |