



Curriculum Update 2020-21
Mathematics Department

On returning to school in September 2020, we embarked on a full Gap Analysis for all year groups to ascertain the breadth and depth of gaps resulting from the National Lockdown in the previous academic year.

We spent the first three weeks of the academic year assessing checking knowledge, skills and understanding for our subject. These skills and knowledge would be essential for future learning.

The Mathematics curriculum has four major units: Number, Algebra, Geometry and Measures, Data handling and Probability. Below are the identified gaps in expected knowledge for the cohort as a whole:

Gap Analysis

	Gaps identified	Recovery plan from October 2020
Year 7	<ul style="list-style-type: none">-Number: Weak numeracy - particularly core numbers skills including addition, subtraction, multiplication and division. Weak grasp of how to apply these skills to worded and problem-solving type questions. Fractions, percentages-Geometry and measures: properties of shapes, area and perimeter.-Algebra: The vast majority of students have never studied this topic before-Data and Probability: The vast majority of students have studied this topic before	<p>Short term plan: Reorder scheme of learning to prioritise core number skills and place value – these skills are essential to accessing the rest of the curriculum. Following this fractions.</p> <p>Medium term – Algebra to be ordered after number. This is a new topic and utilises full number skills. Following this shape and space and data and probability – skills that require core number and can be used to apply algebra.</p> <p>Long term – the gaps will be filled over the course of the full academic year. Regular opportunities to revisit key learning will be embedded in lessons be it as a start activity or a revision lesson. Every 3 weeks an in class – assessment will be completed and the gaps that arise analysed.</p>
Year 8	<ul style="list-style-type: none">-Number: Types of numbers: factors, multiples and primes. Simple fractions and percentages.	<p>Short term plan: Reorder scheme of learning to prioritise core number skills and place value – these skills are essential to accessing the rest of the curriculum. Following this fractions.</p>

	<p>-Algebra: writing basic expressions, simplifying expressions and substitution into simple formulae</p> <p>-Geometry and measures: formulas for area of 2 dimensional shapes. Volume. Angle properties</p> <p>-Data and probability: averages and basic graphs (bar chart, pictogram)</p>	<p>Medium term – Algebra to be ordered after number. This is a new topic and utilises full number skills. Following this shape and space and data and probability – skills that require core number and can be used to apply algebra.</p> <p>Long term – the gaps will be filled over the course of the full academic year. Regular opportunities to revisit key learning will be embedded in lessons be it as a start activity or a revision lesson. Every 3 weeks an in class – assessment will be completed and the gaps that arise analysed.</p> <p>-Alongside classwork and homework, additional catch up tasks will be set on mymaths to help close any gaps. These tasks are still available and are updated after each in-class assessment.</p>
Year 9	<p>-Number: Operations with mixed numbers, percentage calculations, ratio</p> <p>-Algebra: expanding and factorising simple expressions, solving linear equations, drawing straight line graphs with equation $y = mx+c$</p> <p>-Geometry and measures: compound areas, area and circumference of a circle</p> <p>-Data and probability: Averages, different graphs (scatter graphs, cumulative frequency graphs)</p>	<p>Short term plan: Reorder scheme of learning to prioritise core number skills and place value – these skills are essential to accessing the rest of the curriculum. Following this fractions.</p> <p>Medium term – Algebra to be ordered after number. This is a new topic and utilises full number skills. Following this shape and space and data and probability – skills that require core number and can be used to apply algebra.</p> <p>Long term – the gaps will be filled over the course of the full academic year. Regular opportunities to revisit key learning will be embedded in lessons be it as a start activity or a revision lesson. Every 3 weeks an in class – assessment will be completed and the gaps that arise analysed.</p> <p>-Alongside classwork and homework, additional catch up tasks will be set on mymaths to help close any gaps. These tasks are still available and are updated after each in-class assessment.</p>
Year 10	<p>-Number: Operations with fractions and mixed numbers, ratio, standard form, HCF (highest</p>	<p>Short term plan: Reorder scheme of learning to prioritise core number skills and place value – these skills are essential to</p>

	<p>common factor) and LCM (lowest common multiple)</p> <p>-Algebra: expanding and factorising linear and quadratic expressions, solving linear and quadratic expressions, drawing linear and quadratic graphs</p> <p>-Geometry and measures: Recalling key formulas for area and volume, angles in polygons, Pythagoras' Theorem, Trigonometry</p> <p>-Data and probability: Averages from frequency tables, cumulative frequency and box plots, probability of two or more events (sample space and tree diagrams)</p>	<p>accessing the rest of the curriculum. Following this fractions.</p> <p>Medium term – Algebra to be ordered after number. This is a new topic and utilises full number skills. Following this shape and space and data and probability – skills that require core number and can be used to apply algebra.</p> <p>Long term – the gaps will be filled over the course of the full academic year. Regular opportunities to revisit key learning will be embedded in lessons be it as a start activity or a revision lesson. Every 3 weeks an in class – assessment will be completed and the gaps that arise analysed.</p> <p>-Alongside classwork and homework, additional catch up tasks will be set on mymaths to help close any gaps. These tasks are still available and are updated after each in-class assessment.</p>
Year 11	<p>-Number: Operations with fractions and mixed numbers, applied ratio and sharing amounts by ratio, reverse percentages, calculations involving standard form, surds</p> <p>-Algebra: expanding and factorising linear and quadratic expressions, solving linear and quadratic expressions, drawing linear and quadratic graphs, applying algebra to area and perimeter</p> <p>-Geometry and measures: converting simple units, recalling formulas for area and volume, angle properties, Pythagoras' theorem, trigonometry</p> <p>-Data and probability: averages, averages from frequency tables, problem solving with averages, single event probability, Venn Diagrams</p>	<p>Short term plan: Reorder scheme of learning to prioritise core number skills and place value – these skills are essential to accessing the rest of the curriculum. Following this fractions.</p> <p>Medium term – Algebra to be ordered after number. This is a new topic and utilises full number skills. Following this shape and space and data and probability – skills that require core number and can be used to apply algebra.</p> <p>Long term – the gaps will be filled over the course of the full academic year. Regular opportunities to revisit key learning will be embedded in lessons be it as a start activity or a revision lesson. Every 3 weeks an in class – assessment will be completed and the gaps that arise analysed.</p> <p>-Alongside classwork and homework, additional catch up tasks will be set on mymaths to help close any gaps. These tasks are still available and are updated after each in-class assessment.</p>

From October until December 2020, we taught an adapted curriculum so that we could fill the gaps identified in the full gap analysis. The recovery plans that were put in place for short-term, medium-term and long-term planning, starting with the most urgent gaps in short term planning. The plans put in place aimed to

January 2021

From January 2021, the school is again closed to most children as a result of another National Lockdown. Although we are delivering all lessons live to children at home via the remote learning systems, we have made the following adaptations to planned curriculum to ensure that the lessons are translatable for those at home.

	Adaptations to taught curriculum	Rationale
Year 7	Reordering of curriculum – Geometry and measures module moved to January (excluding the topics of measuring lengths and angles, and also transformations). Algebra was planned to be taught at this time, however Algebra has been delayed until after the Geometry and measures module is completed.	The algebra module was due to start in January. This is a more abstract topic that many students in Year 7 have never studied before. When the announcement came to work remotely, we made the decision to reorder our scheme of learning so that geometry and measures would come before algebra. This is because the topic of geometry is more familiar and therefore less intimidating to the students as they adapt to working at home. Moreover, due to the abstract nature of algebra it was felt that studying this in school with a professional on hand would be of more benefit and was therefore delayed until later in the year when this is more likely to happen.
Year 8	Reordering of curriculum – Geometry and measures module moved to January (excluding the topics of measuring lengths and angles, and also transformations). Algebra was planned to be taught at this time, however Algebra has been delayed until after the Geometry and measures module is completed.	The algebra module was due to start in January. This is a more challenging topic that the students in Year 8 have only seen once (which they would have seen whilst working remotely in the last academic year). When the announcement came to work remotely, we made the decision to reorder our scheme of learning so that geometry and measures would come before algebra. This is because the topic of geometry is more familiar and therefore less intimidating to the students as they

		<p>adapt to working at home. Moreover, due to the abstract nature of algebra it was felt that studying this in school with a professional on hand would be of more benefit and was therefore delayed until later in the year when this is more likely to happen.</p>
Year 9	<p>Reordering of curriculum – Geometry and measures module moved to January (excluding the topics of measuring lengths and angles, and also transformations). Algebra was planned to be taught at this time, however Algebra has been delayed until after the Geometry and measures module is completed.</p>	<p>The algebra module was due to start in January. This is a more challenging topic that the students in Year 9 struggled with across the cohort – flagging up a number of significant gaps. When the announcement came to work remotely, we made the decision to reorder our scheme of learning so that geometry and measures would come before algebra. This is because the topic of geometry is more familiar and therefore less intimidating to the students as they adapt to working at home. Moreover, due to the abstract nature of algebra it was felt that studying this in school with a professional on hand would be of more benefit and was therefore delayed until later in the year when this is more likely to happen.</p>
Year 10	<p>Reordering of curriculum – Geometry and measures module moved to January (excluding the topics of measuring lengths and angles, and also transformations). Algebra was planned to be taught at this time, however Algebra has been delayed until after the Geometry and measures module is completed.</p>	<p>The algebra module was due to start in January. This is a more challenging topic that the students in Year 10 struggled with across the cohort – flagging up a number of significant gaps. When the announcement came to work remotely, we made the decision to reorder our scheme of learning so that geometry and measures would come before algebra. Elements of geometry has been studied in the form of trigonometry and Pythagoras’ theorem, therefore the topics of area, perimeter and volume are a direct follow on for the higher tier scheme of learning. Moreover, geometry is more familiar and therefore less intimidating to the students as they adapt to working at home. Moreover,</p>

		<p>due to the abstract nature of algebra it was felt that studying this in school with a professional on hand would be of more benefit and was therefore delayed until later in the year when this is more likely to happen.</p>
Year 11	<p>Reordering of curriculum – Geometry and measures module moved to January (excluding the topics of measuring lengths and angles, and also transformations). Algebra was planned to be taught at this time, however Algebra has been delayed until after the Geometry and measures module is completed.</p>	<p>The algebra module was due to start in January. When the announcement came to work remotely, we made the decision to reorder our scheme of learning so that geometry and measures would come before the more difficult, abstract topic of algebra. Based on the mock exams and the initial gap analysis, it was clear that geometry and measures required additional work – particularly given that a large proportion of questions in the GCSE cover this topic.</p> <p>Moreover, geometry is more familiar and therefore less intimidating to the students as they adapt to working at home. Moreover, due to the abstract nature of algebra it was felt that studying this in school with a professional on hand would be of more benefit and was therefore delayed until later in the year when this is more likely to happen.</p>