

**Intent:**

The OCL Maths Curriculum is designed in conjunction with Mathematics Mastery. This means that pupils are given a “thorough understanding of mathematical concepts, rather than a set of techniques or routines to get to the right answer

**Knowledgeable students**

We want our students to be curious learners who can apply their knowledge to the real world. To do this we enable them with the fundamental knowledge that allows them to acquire fluency in crucial mathematical procedures. This means they can master and retain key concepts, which in turn will result in all students fulfilling their academic potential in maths.

**Knowledgeable teachers.**

We want to ensure that our teachers, at all stages of their career are confident in their subject knowledge. We want all teachers to feel empowered to deliver a carefully planned mastery curriculum with crystal clear explanations.

**Knowledgeable leaders**

We want to enable our curriculum leaders to be experts in curriculum delivery – able to develop the pedagogy of their teams through effective CPD observations and feedback. We also want to ensure that they are confident in tracking progress of their students, identifying gaps in knowledge and underachievement. This includes being able to compare the progress of students across a range of schools – and not simply at GCSE.

There are three active ingredients in the OCL Maths Curriculum:

- ✓ Use of “The Knowledge organiser” and regular knowledge quizzing (a one page document containing consistent definitions of all content needed for a half term to ensure pupils are fluent in key mathematical concepts)
- ✓ A “Fast Five” at the beginning of every lesson (five interleaved and questions that recall prior learning from the previous lesson, week and half term)
- ✓ A content driven assessment cycle (daily exit tickets and fortnightly low stakes reviews that are completed from memory, marked formatively and acted upon instantly)

**Sequencing:**

We have ensured that the core skills of number, algebra, geometry, ratio and proportions, probability and statistics are embedded throughout the year and the 5 years at OAA. We interleave topics throughout the year and there is a repeated focus on all of these five strands of mathematics all the way through to Year 11 in order that students are able to master and retain key mathematical concepts.

There is a clear sequencing of topics taught throughout the years, with the topics becoming more and more complex as the years unfold.

**Assessments:**

**Rationale**

1. Ensure retention of knowledge and skills in all pupils over time
2. Find out knowledge gaps and misconceptions and act on them through re-teaching (have purposeful data)
3. Know how pupils compare to their targets so all stakeholders can engage in the data (pupils, parents, staff, HODs, SLT)

At the end of every half term there is a formal assessment comprising of 70% current content and 30% prior content. These assessments are interleaved and written in the same format as the AQA GCSE papers. Assessments are based on exam questions from AQA GCSE papers.

<b><u>Term</u></b>	<b><u>Knowledge and skills covered</u></b>	<b><u>Skills students need to master:</u></b>	<b><u>Framed task</u></b>
<b>Autumn 1</b>	<b>Knowledge and skills covered:</b> Unit 1 – numbers and numerals Unit 2 – axioms and arrays Unit 3 – factors and multiples Unit 4 – order of operation	To know of the types number To know place value To apply the associative law, distributive law, multiplicative law, cumulative law, identity, inverse To know to represent multiplication and division using rows and columns. To know columns represent the number in each group or the size of each group. To understand the base 10 number system To understand the Mayan number system To multiply numbers To connect multiplication and division To understand that multiplication takes priority To To apply multiplication facts To represent numbers as letters	Fortnightly reviews  Autumn 1 Post assessment

		<p>To solve number problems</p> <p>To identify squares, primes and factors</p> <p>To investigate prime numbers</p> <p>To represent integers</p> <p>To complete factor polygons</p> <p>To find common multiples</p> <p>To express multiples using algebra</p> <p>To spot patters in prime numbers</p>	
<b>Autumn 2</b>	<p>Unit 5 – positive and negative numbers</p> <p>Unit 6 – introducing sequences, expressions and equations</p>	<p>To understand negative numbers</p> <p>To order positive and negative numbers</p> <p>To add positive numbers to negative numbers</p> <p>To add negative numbers to negative numbers</p> <p>To subtract positive numbers</p> <p>To subtract negative numbers</p> <p>To understand multiplication as scaling</p> <p>To use negative scale factors</p> <p>To multiply two negative numbers</p> <p>To write division as a reciprocal</p> <p>To divide two negative numbers</p> <p>To use all four number operations with negative numbers</p> <p>To substitute into an expression</p> <p>To simplify expressions by collecting like terms</p> <p>To expand a single bracket</p> <p>To factorise an expression</p> <p>To form an equation</p> <p>To form an equation by balancing</p> <p>To form an inequality</p> <p>To form an inequality related to an equation</p> <p>To form an expression for the perimeter</p> <p>To form an inequality to compare perimeters</p> <p>To use counting strategies for repeating patterns</p> <p>To generalise counting strategies algebraically</p>	<p>Fortnightly reviews</p> <p>Autumn 2 Post assessment</p>
<b>Spring 1</b>	<p>Unit 7 – angles</p> <p>Unit 8 – classifying 2D shapes</p> <p>Unit 9 – constructing triangles and quadrilaterals</p>	<p>To describe and compare angles</p> <p>To measure and draw angles accurately</p> <p>To partition angles</p> <p>To find unknown angles</p> <p>To describe parallel lines</p> <p>To identify angles formed by parallel lines</p> <p>To identify alternate angles</p> <p>To identify corresponding angles</p> <p>To define rotational symmetry</p> <p>To count lines of symmetry</p> <p>To classify triangles</p> <p>To find unknown angles involving triangles</p> <p>To compare quadrilaterals</p> <p>To use diagonals in quadrilaterals</p> <p>To find unknown angles in a quadrilateral</p> <p>To tessellate quadrilaterals</p> <p>To draw and explore the properties of circle</p> <p>To construct triangles</p> <p>To identify impossible triangles</p> <p>To draw similar triangles</p> <p>To construct SAS triangles</p> <p>To construct quadrilaterals using circles</p>	<p>Fortnightly reviews</p> <p>Spring 1 Post assessment</p>

		To construct rhombus and kites	
<b>Spring 2</b>	Unit 10 – co-ordinates Unit 11 – area of 2D shapes Unit 12 – transforming 2D figures	<p>To describe positions on grids</p> <p>To identify and compare line segments</p> <p>To find midpoints of line segments</p> <p>To solve geometric problems</p> <p>To create shapes from midpoints</p> <p>To create shapes from diagonals</p> <p>To draw horizontal and vertical lines</p> <p>To solve problems with horizontal and vertical lines</p> <p>To calculate the perimeter of polygons</p> <p>To calculate area by counting</p> <p>To analyse the effect of combining shapes on area and perimeter.</p> <p>To explore area and perimeter of different rectangles</p> <p>To calculate the area of rectilinear shapes</p> <p>To calculate the area of a parallelogram</p> <p>To calculate the area of triangles</p> <p>To solve problems with the area of triangles</p> <p>To translate shapes using column vectors</p> <p>To rotate shapes</p> <p>To reflect shapes in horizontal and vertical lines</p> <p>To describe different transformations</p> <p>To combine more than one reflection</p> <p>To combine translations and reflections.</p> <p>To identify and use scale factors for enlargements.</p> <p>To describe and draw enlargements</p>	<p>Fortnightly reviews</p> <p>Spring 2 Post assessment</p>
<b>Summer 1</b>	Unit 13 – prime factor decomposition Unit 13 – equivalent fractions Unit 14 – all operations acting on fractions	<p>To understand and use index notation</p> <p>To find factors of a number using primes</p> <p>To use prime factorisation to find HCF</p> <p>To use prime factorisation to find LCM.</p> <p>To use fractions as division</p> <p>To make equivalent fractions</p> <p>To find a common denominator of two fractions</p> <p>To convert fractions to decimals</p> <p>To order fractions</p> <p>To multiply any fraction by a whole number</p> <p>To multiply two fractions</p> <p>To divide a fraction by an integer</p> <p>To divide a fraction by a fraction</p>	<p>Fortnightly reviews</p> <p>Summer 1 Post assessment</p>
<b>Summer 2</b>	Unit 15 – ratio Unit 16 - percentages	<p>To write and simplify ratios</p> <p>To divide a quantity into a ratio</p> <p>To solve problems with ratio</p> <p>To convert between fractions and percentages</p> <p>To calculate a percentage of an amount</p> <p>To calculate percentage increase or decrease</p> <p>To convert fractions to percentages</p> <p>To find a % of an amount</p> <p>To find the whole given the %</p> <p>To calculate % increase</p>	<p>Fortnightly reviews</p> <p>Summer 2</p> <p>EOY Examination</p>