



## CHS Curriculum Intent

**SUCCESSFUL:** Learners who gain deep and powerful knowledge in preparation for life; combining academic rigour, curiosity and creative flair.

**CREATIVE:** Learners who are imaginative, optimistic and inventive; finding their voice to become effective communicators prepared for lifelong adaptability

**HAPPY:** Learners who are confident, resilient, well-rounded citizens; they understand the world's communities and are ready to discover their place in it.

## CHS Curriculum Area Framework for Learning – Year 8

<b>SUBJECT</b>	<b>Maths</b>
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<b>Year Group</b>	<b>8</b>					
<b>Rationale/ Narrative</b>	In Year 8, students develop their skills in multiplicative reasoning, working on topics such as percentages, ratio and proportion. Many real life situations encountered are connected by the idea of proportionality. Recognising how these areas of Maths are connected by proportionality and the same underlying mathematics of multiplicative reasoning can help deepen students' understanding of these topics. Knowledge of basic algebra skills are revisited and then deepened, encountering topics such as quadratics and rearranging formulae.					
	<b>Autumn 1</b>	<b>Autumn 2</b>	<b>Spring 1</b>	<b>Spring 2</b>	<b>Summer 1</b>	<b>Summer 2</b>
<b>KNOWLEDGE</b>	<u>Revision of key topics from Year 7</u> <ul style="list-style-type: none"> <li>Four operations</li> <li>Order of operations</li> <li>Negative numbers</li> <li>Fractions</li> </ul>	<u>Percentages</u> <ul style="list-style-type: none"> <li>Percentages of an amount</li> <li>Interpret percentages as fractions and decimals</li> </ul>	<u>Expressions and Formulae</u> <ul style="list-style-type: none"> <li>Substitution</li> <li>Expanding brackets</li> <li>Factorising expressions</li> </ul>	<u>Circles and Area</u> <ul style="list-style-type: none"> <li>Area of circles</li> <li>Area of compound shapes</li> <li>Area of trapeziums</li> </ul>	<u>Ratio, Proportion and Rates of Change</u> <ul style="list-style-type: none"> <li>Unit conversions</li> <li>Simplifying ratios</li> <li>Dividing a quantity into a ratio</li> </ul>	<u>Statistics</u> <ul style="list-style-type: none"> <li>Stem and leaf diagrams (including back to back stem diagrams)</li> </ul>



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	<ul style="list-style-type: none"> <li>Algebra</li> </ul> <p><u>Fractions 2</u></p> <ul style="list-style-type: none"> <li>Multiply and divide proper and improper fractions</li> <li>Fractions of an amount</li> <li>Fractional increases and decreases</li> </ul>	<ul style="list-style-type: none"> <li>Express a quantity as a percentage of another</li> <li>Calculate percentage increases and decreases</li> <li>Reverse percentage problems</li> </ul>	<ul style="list-style-type: none"> <li>Simplifying expressions</li> <li>Indices</li> <li>Solving equations</li> <li>Inequalities</li> <li>Rearranging formulae</li> </ul>	<ul style="list-style-type: none"> <li>Circumference and perimeter of compound shapes that involve arcs.</li> </ul>	<ul style="list-style-type: none"> <li>More complex ratio problems</li> <li>Compound measures; speed, density, unit pricing</li> <li>Direct and inverse proportion</li> <li>Pie charts</li> </ul>	<ul style="list-style-type: none"> <li>Finding averages from a frequency table</li> </ul> <p><u>3D Shapes</u></p> <ul style="list-style-type: none"> <li>Properties of 3D shapes</li> <li>Volume and surface area of prisms</li> <li>Plans and elevations</li> </ul>
<b>SKILLS</b>	<p><u>Fractions</u></p> <p>Use a variety of representations to multiply and divide fractions including proper and improper fractions. Understanding of the reciprocal and its uses. Making use of fractions and decimal conversions.</p>	<p><u>Percentages</u></p> <p>Define percentage as 'number of parts per hundred'. Interpret diagrams as percentages and vice versa. Find a percentage of an amount with or without a calculator. Interpret percentages as a fraction or decimal. Compare two quantities using percentages, and work with percentages greater than 100%. Percentage increase, decrease and original value problems and</p>	<p><u>Expressions and Formulae</u></p> <p>Substitute numerical values into formulae and expressions, including scientific formulae.</p> <p>Using a variety of representations to simplify and manipulate algebraic expressions to maintain equivalence by:</p> <ul style="list-style-type: none"> <li>- multiplying a single term over a bracket</li> <li>- taking out common factors</li> <li>- expanding products of two or more binomials.</li> </ul>	<p><u>Circle and Area</u></p> <p>Convert between <math>\text{cm}^2</math> and <math>\text{m}^2</math>. Derive and apply formulae to calculate and solve problems involving area.</p> <p>Efficient use of a calculator.</p>	<p><u>Ratio, proportion and rates of change</u></p> <p>Change freely between related standard units [for example time, length, area, volume/capacity, mass]</p> <p>Use ratio notation, including reduction to simplest form.</p> <p>Divide a given quantity into two or more parts.</p> <p>Understand that a relationship between two quantities can be expressed as a ratio or a fraction.</p>	<p><u>Statistics</u></p> <p>Construct and analyse stem and leaf diagrams, including back to back. For non-grouped data given in the form of a table, find the mean, median, mode and range.</p> <p><u>Geometry – 3D shapes</u></p> <p>Use the properties of faces, surfaces, edges and vertices of cubes, cuboids, prisms, cylinders, pyramids, cones and spheres to solve problems in 3-D.</p>



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		simple interest in financial mathematics.	<ul style="list-style-type: none"> <li>- simplifying expressions involving sums, products and powers, including the laws of indices.</li> <li>- Understand and use the vocabulary of inequalities.</li> </ul> <p>Use a variety of methods to solve linear equations in one variable (including all forms that require rearrangement), including those with brackets and fractions.</p>		<p>Use compound units such as speed, unit pricing and density to solve problems.</p> <p>Solve problems involving direct and inverse proportion, including graphical and algebraic representations. Examples may include:</p> <ul style="list-style-type: none"> <li>- Recipe problems</li> <li>- Best buy problems</li> <li>- Exchange rates</li> </ul>	<p>Convert between <math>\text{cm}^3</math> and <math>\text{m}^3</math>.</p> <p>Know and use the fact that 1 litre = <math>1000\text{cm}^3</math>.</p> <p>Derive and apply formulae to calculate and solve problems involving volume and surface area of cuboids (including cubes) and other prisms (including cylinders). Construct and interpret plans and elevations of 3-D shapes.</p>
<b>ASSESSMENTS</b>	<p>1 x Key Topics Assessment</p> <p>1 x Fractions Assessment</p> <p>1 x Maths Journal Assessment</p>	<p>1 x Percentages assessment</p> <p>1 x Autumn Progress Test</p>	<p>2 x Expressions/Formulae Assessment</p>	<p>1 x Circles and Area Assessment</p> <p>1 x Spring Progress Test</p>	<p>2 x Ratio and Proportion Assessments</p> <p>1 x Statistics Assessment</p>	<p>1 x Statistics Assessment</p> <p>1 x 3D Shapes Assessment</p> <p>1 x Summer Progress Test</p>