

Our Lady and St. Bede Catholic Academy  
Subject Curriculum – Year 8 Theta



<b>Big Ideas &amp; Purpose</b>	The aims of teaching and learning mathematics are to encourage and enable students to: recognize that mathematics permeates the world around us; appreciate the usefulness, power and beauty of mathematics; enjoy mathematics and develop patience and persistence when solving problems in school and real-life and appreciate the international dimension of mathematics and its multicultural and historical perspectives.					
<b>Programme of Study</b>	<p>HT1</p> <p><b>Number</b> Calculations Powers and roots Powers, roots and brackets Multiples and factors</p> <p><b>Area and volume</b> Area of a triangle Area of a parallelogram and trapezium Volume of cubes and cuboids 3D shapes Surface area of cubes and cuboids Problems and measures</p>	<p>HT2</p> <p><b>Statistics, graphs and charts</b> Pie charts Using tables Stem and leaf diagrams Comparing data Scatter graphs FINANCE: Misleading graphs</p> <p><b>Expressions and equations</b> Algebraic powers Expressions and brackets Factorising expressions One-step equations Two-step equations The balancing method</p>	<p>HT3</p> <p><b>Real-life graphs</b> Conversion graphs Distance-time graphs Line graphs Complex line graphs STEM: Graphs of functions More real-life graphs</p> <p><b>Decimals and ratio</b> Ordering decimals and rounding Place-value calculations Calculations with decimals Ratio and proportion with decimals STEM: Using ratios</p>	<p>HT4</p> <p><b>Lines and angles</b> Quadrilaterals Alternate angles and proof Geometrical problems Exterior and interior angles Solving geometric problems</p>	<p>HT5</p> <p><b>Calculating with fractions</b> Adding and subtracting fractions Multiplying fractions Fractions, decimals and reciprocals Dividing fractions Calculating with mixed numbers</p> <p><b>Straight-line graphs</b> Direct proportion on graphs Gradients Equations of straight lines STEM: Direct proportion problems</p>	<p>HT6</p> <p><b>Percentages, decimals and fractions</b> Fractions and decimals Equivalent proportions Writing percentages Percentages of amounts FINANCE: Solving problems</p>
<b>Key Assessments</b>	<ul style="list-style-type: none"> <li>Assessments take place after every unit.</li> <li>Usually 2 per half term.</li> </ul>		<ul style="list-style-type: none"> <li>Assessments take place after every unit.</li> <li>Usually 2 per half term.</li> </ul>		<ul style="list-style-type: none"> <li>Year 8 will also take an end of year examination in the summer term.</li> </ul>	

**Key Skills**

- To provide opportunities for learner to demonstrate their knowledge of mathematics across a whole range of topic areas.
- To allow learners to develop their problem-solving strategies and provide the confidence and skills required to tackle unfamiliar challenges.

**Links to Careers**

- Mathematics teaches accuracy and precision in work. The analytical and problem-solving skills you learn are valuable in many different careers, for example Accountancy, Teaching, Business, Medicine, Architecture and Computer Studies.



## Subject Curriculum – Year 8 Delta

### Big Ideas & Purpose

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### Programme of Study

HT1	HT2	HT3	HT4	HT5	HT6
<b>Factors and powers</b> Prime factor decomposition Laws of indices STEM: Powers of 10 Calculating and estimating <b>Working with powers</b> Simplifying expressions Expanding and simplifying Substituting and solving	<b>2D shapes and 3D solids</b> Plans and elevations Surface area of prisms Volume of prisms Circumference of a circle Area of a circle Cylinders Pythagoras' theorem <b>Real life graphs</b> Direct proportion FINANCE: Interpreting financial graphs Distance-time graphs Rates of change Misleading graphs	<b>Transformations</b> Reflection and translation Rotation Enlargement More enlargement STEM: Combining transformations 2D shapes and 3D solids <b>Fractions, decimals and percentages</b> Recurring decimals Using percentages Percentage change FINANCE: Repeated percentage change	<b>Constructions and Loci</b> Accurate drawings Constructing shapes Constructions 1 Constructions 2 Loci	<b>Probability</b> Comparing probabilities Mutually exclusive events Estimating probability Experimental probability Probability diagrams Tree diagrams <b>Scale drawings and measures</b> Maps and scales Bearings Scales and ratio Congruent and similar shapes Solving geometry problems	<b>Graphs</b> Plotting linear graphs The gradient $y = mx + c$ Parallel and perpendicular lines Inverse functions STEM: Non-linear graphs

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### Programme of Study

HT1

#### Number properties and calculations

Adding and subtracting with larger numbers  
More calculations  
Negative numbers  
STEM: Writing ratios  
Using ratios to solve problems  
Multiplicative reasoning  
**Shapes and measures in 3D**  
3D solids  
Nets of 3D solids  
Surface area  
Volume  
Working with measures

HT2

#### Statistics

Data collection sheets  
Interpreting bar charts  
Drawing bar charts  
STEM: Pie charts  
**Expressions and equations**  
Simplifying expressions  
Functions  
Solving equations  
Using brackets

HT3

#### Decimal calculations

Adding and subtracting decimals  
Multiplying decimals  
Ordering and rounding decimals  
STEM: Problem-solving with decimals  
**Angles**  
Measuring and drawing angles  
Vertically opposite angles  
Angles in triangles  
Drawing triangles accurately  
Designing nets

HT4

#### Number properties

Squares, cubes and roots  
Calculating with brackets and indices  
LCM and HCF  
Prime factor decomposition  
**Sequences**  
Generating sequences  
Extending sequences  
Special sequences  
Position-to-term rules  
Finding the nth term

HT5

#### Fractions and percentages

Comparing fractions  
Fractions of amounts  
Adding and subtracting fractions  
Fractions and percentages  
Calculating percentages  
STEM: Percentages and proportion

HT6

#### Probability

The language of probability  
Outcomes  
Probability calculations  
Experimental probability  
FINANCE:  
Comparing probabilities

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