

Subject: Maths

Rationale:

At Cardinal Wiseman, our overall aim in mathematics is to equip students at all levels with an enjoyment and confidence in using mathematics so that they can transfer the skills to many situations in both personal and professional contexts. We have sequenced the curriculum in a way that allows pupils time to master the knowledge and skills in their first 3 years that are needed to be successful in the GCSE course and for progression onto further study of maths at A-level or other level 3 courses. We believe that students who are successful at Key Stage 3 with number and algebra skills are much more confident mathematicians and this is reflected in the curriculum in Year 7 and 8 where, based on the National Curriculum for Key Stage 3, we aim to build a solid foundation in these areas of mathematics. Throughout the curriculum, students develop fluency in the application of number, algebra, geometry and handling data along with developing reasoning and problem solving skills.

	Autumn	Spring	Summer
Year 7	Exploring Sequences Understanding and using algebraic notation Equality and equivalence Place value and ordering integers and decimals Fraction decimal and percentage equivalence	Solving problems with addition and subtraction Solving problems with multiplication and division Fractions and percentages of amounts Operations and equations with directed number Addition and subtraction of fractions	Constructing, measuring and using geometric notation Developing geometric reasoning Developing number sense Sets and probability Prime numbers and proof
Year 8	Ratio and Scale Multiplicative change Multiplying and dividing fractions Working in the Cartesian plane Representing data Tables and probability	Brackets, equations and inequalities Sequences Indices Fractions and percentages Standard index form Number sense	Angles in parallel lines and polygons Area of trapezia and circles Line symmetry and reflection The data handling cycle Measures of location

Year 9	<p>Straight line graphs</p> <p>Forming and solving equations</p> <p>Testing conjectures</p> <p>Three-dimensional shapes</p> <p>Constructions and congruency</p>	<p>Numbers</p> <p>Using percentages</p> <p>Maths and money</p> <p>Deduction</p> <p>Rotation and translation</p> <p>Pythagoras' theorem</p>	<p>Enlargement and similarity</p> <p>Solving ratio and proportion problems</p> <p>Rates</p> <p>Probability</p> <p>Algebraic representation</p>
Year 10	<p>Congruency, similarity and enlargement</p> <p>Trigonometry</p> <p>Representing solutions of inequalities and equations</p> <p>Simultaneous equations</p>	<p>Angles and bearings</p> <p>Working with circles</p> <p>Vectors</p> <p>Ratios and fractions</p> <p>Percentages and interest</p> <p>Probability</p>	<p>Collecting representing and interpreting data</p> <p>Non-calculator methods</p> <p>Types of number and sequences</p> <p>Indices and roots</p> <p>Manipulating expressions</p>
Year 11	<p>Pythagoras' Theorem</p> <p>Trigonometry</p> <p>Vectors</p> <p>Sequences</p> <p>Units and proportionality</p>	<p>Targeted revision for GCSE exam</p>	<p>Targeted revision for GCSE exam</p>

<p>Year 12 A-Level</p>	<p>Algebraic expressions Quadratics Equations and Inequalities Graphs and transformations Straight line graphs Circles Algebraic methods The binomial expansion Trigonometric ratios Trigonometric equations and identities</p>	<p>Vectors Differentiation Integration Exponentials and logarithms  Data collection Measures of location and spread Representation of data Correlation Probability Statistical distributions Hypothesis testing</p>	<p>Modelling in mechanics Constant acceleration Forces and motion Variable acceleration  Revision for end of year exam  Algebraic methods Functions and graphs Sequences and series Binomial Expansion</p>
<p>Year 13 A-Level</p>	<p>Radians Trigonometric functions Trigonometry and modelling Parametric equations Differentiation Numerical methods Integration Vectors</p>	<p>Regression, Correlation and hypothesis testing Conditional probability The normal distribution  Moments Forces and Friction Projectiles Applications of forces Further Kinematics</p>	<p>Revision for A-Level Exam</p>
<p>Year 12 Core Maths</p>	<p>Analysis of data Maths for Personal Finance Estimation Critical analysis of given data and models</p>	<p>The normal distribution Probabilities and estimation Correlation and Regression</p>	<p>Revision for Core Maths Exam</p>