

"Our curriculum is designed to help students truly master mathematics, so they can apply their skills in unfamiliar situations whenever needed. Topics from the same content areas have been grouped together to form mastery half terms. More time is spent teaching fundamentals to avoid reteaching in later years."

Autumn 2: Graphs	
Skills	<ul style="list-style-type: none"> Identify the equations of horizontal and vertical lines (from year 7) Identify parallel lines from algebraic representations Plot coordinates from a rule to generate a straight line Find the equation of a line from its graph Rearrange an equation in two variables into different forms Round numbers to a required number of decimal places Round numbers to a required number of significant figures Identify rounding errors Estimate quantities in a variety of contexts including area and perimeter Identify and reason if an estimate is an over- or under-estimate
Knowledge	<ul style="list-style-type: none"> Understand how the coordinate system is an infinite set of points Know what it means for a value to satisfy a rule Recognise a graph as representation of points that satisfy a rule Develop a rule into an algebraic representation Develop concept of gradient using graphs of the form $y = ax$ before moving to equations of the form $y = ax + b$ Identify key features of a linear graph including the y-intercept and the gradient Make links between the graphical and the algebraic representation of a linear graph Recognise different algebraic representations of a linear graph Appreciate the uses of rounding in different contexts
Rationale	<p>This module is an important application of number and algebra, and give students the opportunity to appreciate the infinite nature of the decimal number system.</p> <p>Unit 4 is students' first formal introduction to straight line graphs. In year 7 graphical representation were used to describe horizontal and vertical lines. They have also seen linear and non-linear sequences represented graphically using coordinates in the previous term. This begins with the plotting of discrete points beginning with $n = 1$. The n-axis is replaced by the x-axis and discrete points are replaced with a continuous line to represent all coordinate pairs. Functions derived from real life contexts are used to help give meaning to the features of a linear graph. Students develop strategies for identifying and drawing graphs of linear functions. The concept of gradient is introduced as the rate of change of the y coordinates. Learners are also able to explore the contexts of parallel lines and similar triangles. Students work on coordinate geometry problems by finding the equation of a line through two points and finding the equation of a line through a point with a given gradient.</p> <p>Next, 'Accuracy and estimation' provides an opportunity to consolidate understanding of rounding to a given decimal place which most learners will have met at primary school. This unit will use contexts involving measures and quantities that have been meet earlier such as area and perimeter. Significant figures are introduced through measuring contexts. Rather than meeting significant figures as a set of rules to follow, students are required to work out why the zero in 45.0 is significant. Estimation is encountered in a variety of contexts and is an opportunity to practice rounding and unit conversions.</p>