

## Year 8 - Term 2 - Graphs and Equations

<b>Year group 8</b>	<b>Subject: Graphs and equations / Probability</b>
<b>Prior learning- linked to National curriculum</b>	Students will all have had prior learning for algebra and the link to sequences in year 7, and some basic notation understanding from KS2. This unit goes deeper into explaining linear equations and a more explicit link with linear sequences. The second sub unit expands on the basic algebraic notation and increases the difficulty bringing in the use of brackets and inequalities into such.
<b>Rationale</b>	Sub units 4 and 5 have been moved together to enable students to make more obvious the links between solving and manipulating equations, and the graphing of such. Students, in particular those younger with a lower ability struggle with the concept of algebra and its working and the unit/sub-units are a foundation for many parts of the Maths curriculum.
<b>Vocabulary:</b>	<b>Keywords</b> Linear, intersect, axes, co-ordinate, equation, expression, inequality, factorise.
<b>Cultural Capital:</b>	As highlighted, algebra and graphing form an integral part of the Maths curriculum, but students find it very difficult to link algebra with everyday life. Whilst the unit does focus on the a combination of aspects with the manipulation of equations and expressions, and how these are represented graphically, there is also the opportunity to link graphs with real life and explain the importance and relevance of such.
<b>Key assessments- name the assessments</b>	Mini Assessment for: <ul style="list-style-type: none"> <li>● Cartesian plane</li> <li>● Brackets, equations and inequalities</li> <li>● Probability</li> </ul> In addition for this a Unit wrapper for this Term.
<b>What do children know/ can do now (EDSM)</b>	<b>Emerging Students will:</b> Be able to plot co-ordinates, expand single brackets and write probabilities as fractions <b>Developing students will:</b> Be able to draw vertical and horizontal graphs, solve one step equations and draw sample spaced diagrams <b>Secure students will:</b> Plot and recognise diagonal lines, factorise into a single bracket and draw a venn diagrams <b>Mastered students will:</b> Interpret line graphs using gradients, solve 2 step equations and work out probabilities from venn diagrams

## TERM 2

<b>Unit 4 - Cartesian Plane</b>	<b>Unit 5 - Brackets, Equations, Inequalities</b>	<b>Unit 6 - Tables and Probability</b>
Work with coordinates in all four quadrants	Form algebraic expressions	Construct sample spaces for one or more events
Identify and draw lines that are parallel to the axes	Use directed number with algebra	Find probabilities from a sample space
Recognise and use the line $y=x$	Multiply out a single bracket	Find probabilities from two-way tables
Recognise and use lines of the form $y=kx$	Factorise into a single bracket	Find probabilities from Venn diagrams

Link $y=kx$ to direct proportion problems	Expand multiple single brackets and simplify	Use the product rule for finding the total number of possible outcomes
Explore the gradient of the line $y=kx$ (H)	Expand a pair of binomials (H)	
Recognise and use lines of the form $y=x+a$	Solve equations, including with brackets	
Explore graphs with negative gradient ( $y=-kx$ , $y=a-x$ , $x+y=a$ )	Form and solve equations with brackets	
Link graphs to linear sequences	Understand and solve simple inequalities	
Plot graphs of the form $y=mx+c$	Form and solve inequalities	
Explore non-linear graphs (H)	Solve equations and inequalities with unknowns on both sides (H)	
Find the midpoint of a line segment (H)	Form and solve equations and inequalities with unknowns on both sides (H)	
	Identify and use formulae, expressions, identities and equations	