Mathematics Faculty Overview

Year 9

HARROW HIGH SCHOOL

"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."

Summer 1: Linear simultaneous equations	

Skills	• Form and solve equations in one variable, including where the unknown is on both sides (review of Years 7 and 8)
	• Manipulate an equation to create a new equivalent equation
	• Substitute into equations with 1 or more variable, including substitution for values or other expressions
	• Solve linear simultaneous equations in context and in algebraic form
	  ○ Solve using the elimination method
	  ○ Solve using the substitution method
	  ○ FInd approximate solutions using a trial and improvement method
	• Plot linear graphs and identify points of intersection
	• Find the solution of a system of linear equations by representing them graphically

Knowledge	• Use the language of solutions; understand that equations may have 0, 1 or many solutions • Interpret expressions and equations with two variables • Develop fluency with algebra; understand that equivalent expressions may be substituted for each other without affecting the value of the expression • Recognise that a point of intersection on a graph represents a solution • Be able to explain whether a pair of linear relationships will have 0, 1 or an infinite number of solutions. • Understand how to form equations from contexts and use these to model how two linear relationships can relate to each other • Understand the benefits and drawbacks of the various methods used for solving systems of equations
Rationale	Linear simultaneous equations are an important part of mathematical reasoning. The skills and knowledge required to solve equations like these are invaluable for technical and everyday contexts. The module is split into two parts; the first unit focuses on the algebraic representation of linear equations and extends prior knowledge about equations into expressions and equations with two variables. Learners are introduced to both the elimination and substitution methods for solving equations. In the second part of the module, learners revise linear graphs and represent systems of linear equations graphically, linking the work earlier in the unit to their work on linear graphs in Year 8.