

Key Performance Indicators	Year 8 Milestones - Maths (Skills)
Develop Fluency	I can consolidate my numerical and mathematical capability from key stage 2 and extend my understanding of the number system and place value to include decimals, fractions, powers and roots.
	I can select and use appropriate calculation strategies to solve increasingly complex problems.
	I can use algebra to generalise the structure of arithmetic, including to formulate mathematical relationships.
	I can substitute values in expressions, rearrange and simplify expressions, and solve equations.
	I can move freely between different numerical, algebraic, graphical and diagrammatic representations (for example, equivalent fractions, fractions and decimals, and equations and graphs).
	I can develop algebraic and graphical fluency, including understanding linear and simple quadratic functions.
	I can use language and properties precisely to analyse numbers, algebraic expressions, 2D and 3D shapes, probability and statistics.
Reason Mathematically	I can extend my understanding of the number system; make connections between number relationships and my algebraic and graphical representations.
	I can extend and formalise my knowledge of ratio and proportion in working with measures and geometry, and in formulating proportional relations algebraically.
	I can identify variables and express relations between variables algebraically and graphically.
	I can make and test conjectures about patterns and relationships; look for proofs or counter-examples.
	I can begin to reason deductively in geometry, number and algebra, including using geometrical constructions.
	I can interpret when the structure of a numerical problem requires additive, multiplicative or proportional reasoning.
	I can explore what can and cannot be inferred in statistical and probabilistic settings, and begin to express their arguments formally.
Solve Problems	I can develop my mathematical knowledge, in part through solving problems and evaluating the outcomes, including multi-step problems.
	I can develop my use of formal mathematical knowledge to interpret and solve problems, including in financial mathematics.

SOLVE PROBLEMS

I can begin to model situations mathematically and express the results using a range of formal mathematical representations.

I can select appropriate concepts, methods and techniques to apply to unfamiliar and non-routine problems.