YEAR 7 MATHS PROGRESS LADDER

Pathway A	Pathway B	Pathway C	AO1 Fluency	AO2 Reason Mathematically	AO3 Problem solving
1. Exceeding expected progress	1. Exceeding expected progress	1. Exceeding expected progress	• Select and use appropriate calculation strategies to solve increasingly complex problems. • Further develop algebraic fluency.	• Make and test conjectures about patterns and relationships; look for proofs or counter-examples. • Identify variables and express relations between variables algebraically. • Confidently reason deductively in number, algebra and geometry including some geometric constructions. • Extend and formalise their knowledge of proportion including working with measures and geometry. • Extend their understanding of the number system; make connections between number relationships and their algebraic representations.	• Develop their mathematical knowledge, in part through solving complex multi-step problems and evaluate the outcome. • Develop their use of formal mathematical knowledge to interpret and solve complex problems. • Select appropriate concepts, methods and techniques to unfamiliar and non-routine complex problems.
2. Making expected progress	1. Exceeding expected progress	1. Exceeding expected progress	• Move freely between different numerical, algebraic and diagrammatic representations for example, equivalent fractions, fractions and decimals. • Use language and properties precisely to analyse numbers and 2-D shapes. • Select and use appropriate calculation strategies to solve problems. • Use algebra to generalise the structure of arithmetic, including to formalise mathematical relationships. • Substitute values in expressions, simplify expressions, and solve equations. • Develop algebraic fluency.	• Make and test conjectures about simple patterns and relationships; look for proofs or counter-examples. • Identify variables and express relations between variables algebraically. • Reason deductively in number, algebra and geometry including some geometric constructions. • Extend their knowledge of ratio and proportion including when working with geometry. • Extend their understanding of the number system.	• Develop their mathematical knowledge, in part through solving complex problems and evaluating the outcomes, including multi-step problems. • Develop their use of formal mathematical knowledge to interpret and solve complex problems. • Select appropriate concepts, methods and techniques to apply to unfamiliar and non-routine complex problems.
3.Below expected progress	2. Making expected progress	1. Exceeding expected progress	• Consolidate their numerical and mathematical capability from key stage 2 and extend their understanding of the number system and place value to include decimals, fractions and some powers. • Use diagrams to generalise the structure of arithmetic, including to formalise mathematical relationships. • Substitute values in expressions, simplify expressions, understand the equality and inequality symbols. • Select and use appropriate calculation strategies to solve simple problems. • Move freely between different numerical, algebraic and diagrammatic representations. • Develop algebraic fluency. • Use language and properties precisely to analyse numbers, algebraic expressions and 2-D shapes.	• Make and test conjectures about simple patterns and relationships. • Identify variables and express relations between variables algebraically. • Begin to reason deductively in number, algebra and geometry. • Interpret when the structure of a numerical problem requires additive, multiplicative or proportional reasoning. • Extend their knowledge of proportion including when working with geometry. • Extend their understanding of the number system.	• Develop their mathematical knowledge, in part through solving problems and evaluating the outcomes, including multi-step problems. • Develop their use of formal mathematical knowledge to interpret and solve problems. • Select appropriate concepts, methods and techniques to apply to unfamiliar and non-routine problems.
4.Cause for concern	3.Below expected progress	2. Making expected progress	• Consolidate their numerical and mathematical capability from key stage 2 and extend their understanding of the number system and place value to include decimals, fractions and some powers. • Use diagrams to generalise the structure of arithmetic, including to formalise mathematical relationships. • Substitute values in expressions. • Move between different numerical, algebraic and diagrammatic representations. • Develop some algebraic fluency. • Use language and properties to analyse numbers, algebraic expressions and 2D shapes.	• Make and test patterns and relationships. • Identify variables and express relations between them. • Begin to reason in number and geometry. • Begin to interpret when the structure of a numerical problem requires additive, multiplicative or proportional reasoning. • Develop their knowledge of proportion.	• Begin to solve multi step problems. • Select appropriate concepts, methods and techniques solve routine problems

4.Cause for concern	**4.Cause for concern**	**3.Below expected progress**	• Use diagrammatic representations for example, equivalent fractions, fractions and decimals. • Consolidate their numerical and mathematical capability from key stage 2 and extend their understanding of the number system and place value to include decimals and fractions. • Use diagrams to generalise the structure of arithmetic. • Begin to develop some algebraic fluency.	• Make and test patterns and relationships. • Identify variables. • Begin to interpret when the structure of a number problem requires additive, multiplicative or proportional reasoning. • Develop their knowledge of proportion.	• Solve single step problems. • Explain and reason single step problems.
4.Cause for concern	**4.Cause for concern**	**4.Cause for concern**	• Consolidate their numerical and mathematical capability from key stage 2 and extend their understanding of the number system and place value to include decimals and fractions.	• Make and test patterns and relationships. • Identify variables. • Begin to interpret when the structure of a number problem requires additive, multiplicative or proportional reasoning.	• Can use manipulatives to solve single step problems.