Year 7 Maths: Assessment and Progression Grid

	Number	Algebra	Geometry	Fluency and Problem Solving
Excelling	• Students solve problems that involve calculating with powers and roots. • They choose to use fractions or percentages to solve problems involving ordering values or the calculation of quantities given the result of a proportional change. • Students can find the Highest Common Factor and Lowest Common Multiple of up to three integers up to three digits in size	• Students are confident in rearranging the subject of algebraic equations. • In simplifying algebraic expressions, they freely use the rules of indices with both positive and negative integer values. • They evaluate algebraic formulae or calculate one variable, given the others, substituting in fractions, decimals, and negative numbers.	• Students are confident in using letter and labelling conventions. • They can draw and measure angles up to 360˚. • They can identify perpendicular and parallel lines. • They can identify polygons up to a decagon • They can construct triangles using SSS, SAS and ASA, and more complex polygons. • They can draw and interpret simple pie charts using a protractor. • They know and can apply the angle facts to solve complex problems. • They understand the angles in parallel lines rules. • They use known facts to obtain simple proofs.	• Students are fluent in their times tables up to 15 without using a written process. • They can mentally use the inverse relationship between multiplication and division up to 15 and the written processes for all other numbers including decimals, negatives, and fractions. • They show speed and accuracy in completing mental arithmetic and have well developed calculator skills allowing them to complete complex functions in line with the topics covered in the Year 7 curriculum. • They can extract all relevant numerical values from text-based information. • They can independently devise an approach and strategy with which to calculate solutions to problems presented to them. • They demonstrate confidence in being able to prove why an answer is correct. • They set calculations out clearly to show the process derived in their working out. • They communicate mathematical meaning to different audiences through precise and consistent use of symbols that is sustained throughout the work

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	Number	Algebra	Geometry	Fluency and Problem Solving
Secure	• Students use their understanding of place value to multiply and divide whole numbers and decimals. • They order, add, and subtract negative numbers in context. • They use all four operations with decimals to two places. • They evaluate one number as a fraction or percentage of another. • They understand and use the equivalences between fractions, decimals, and percentages in appropriate situations. • They add and subtract fractions by writing them with a common denominator. • They successfully round to a given number of decimal places and significant figures and can multiply and divide mentally. • They understand the effects of multiplying and dividing by numbers between 0 and 1. • They understand and use proportional changes, calculating the result of any proportional change using only multiplicative methods. • Students can find the Highest Common Factor and Lowest Common Multiple of a pair of integers up to three digits in size.	• They find and describe in words the rule for the next term where the rule is linear and non-linear. • They formulate and solve linear equations with whole-number coefficients and negative numbers. • They construct, express in symbolic form, and use simple formulae involving one or two operations with negative numbers. • They use brackets appropriately. • They can use algebraic formulae to calculate one missing variable, given the others, substituting in integers and negative numbers.	• Students are confident in using letter and labelling conventions. • They can draw and measure angles up to 360˚. • They can identify perpendicular and parallel lines. • They can identify polygons up to a decagon • They can construct triangles using SSS, SAS and ASA, and more complex polygons. • They can interpret simple pie charts using a protractor. • They know and can apply the angle facts to solve complex problems. • They understand the angles in parallel lines rules.	• Students are fluent in their times tables up to 12 without using a written process. They can mentally use the inverse relationship between multiplication and division up to 12 and the written processes for all other numbers including decimals, negatives, and fractions. • They apply the order of operations rules for all calculations. • They are proficient in the use of a scientific calculator when completing calculations in line with the Year 7 curriculum. • They can extract relevant numerical values from text-based information • They can carry out substantial tasks and solve quite complex problems by independently and systematically breaking them down into smaller, more manageable tasks. • Their written and spoken language explains and informs their use of diagrams. • They begin to give mathematical justifications, making connections between the current situation and situations they have encountered before.

Year 7 Maths: Assessment and Progression Grid

	Number	Algebra	Geometry	Fluency and Problem Solving
Developing	• Students use their understanding of place value to multiply and divide whole numbers by 10 or 100. • They begin to use decimal notation and to recognise negative numbers, in contexts such as money and temperature. • They order, add, and subtract negative numbers in context. • They use all four operations with decimals to two places and quick derivation of corresponding division facts. • They use efficient written methods of addition and subtraction and of short multiplication and division. • They calculate fractional or percentage parts of quantities and measurements, using a calculator where appropriate. • They use brackets appropriately. • They solve whole-number problems involving multiplication or division, including those that give rise to remainders. • They use simple fractions that are several parts of a whole and recognise when two simple fractions are equivalent. • They recognise approximate proportions of a whole and use simple fractions and percentages to describe these. • Students can find the Highest Common Factor and Lowest Common Multiple of a pair of integers up to 100.	• Students construct, express in symbolic form, and use simple formulae involving one or two operations. • They construct, express in symbolic form, and use simple formulae involving one operation. • They can also use brackets appropriately within the formulae. • They can use algebraic formulae to calculate one missing variable, given the others, substituting in integers.	• Students can use letter and labelling conventions. • They can draw and measure angles up to 180˚. • They can identify perpendicular and parallel lines. • They can recognise types of triangle and quadrilateral. •They can construct triangles using SSS. • They can interpret simple pie charts using proportion. • They know and can apply the angle facts to solve problems.	• Students demonstrate fluency in their times tables up to 12, although this may not be at speed and will require the written process at times and can use this knowledge to support problems involving division. • They use a written process for division calculations and multiplications above 12. • They adhere to the order of operations rules for the vast quantity of calculations. • They can use a scientific calculator when completing calculations in line with the Year 7 curriculum. • They can use a detailed modelled answer to supplement in their own variables to calculate their answer. • They can use a given approach to tackle a problem and draw upon their mathematical knowledge to apply a given process to solve a problem. • When solving problems, with or without a calculator, they check their results are reasonable by considering the context or the size of the numbers. • They look for patterns and relationships, presenting information and results in a clear and organised way.

Year 7 Maths: Assessment and Progression Grid

	Number	Algebra	Geometry	Fluency and Problem Solving
Emerging	• Students show understanding of place value in numbers up to 1000. • They can use decimal notation and recognise negative numbers, in contexts such as money or temperature. • They can add and subtract numbers with two digits mentally, and numbers with three digits using written methods. • They use mental recall of the 2, 3, 4, 5 and 10 multiplication tables and derive the associated division facts. • They solve whole-number problems involving multiplication or division, including those that give rise to remainders. • They use simple fractions that are several parts of a whole and recognise when two simple fractions are equivalent. • They are beginning to understand the place value of each digit in a number and use this to order numbers using a place value table. • They use the knowledge that subtraction is the inverse of addition. • They recognise sequences of numbers, including odd and even numbers. • They order decimals when solving numerical problems and equations. • Students can find the Highest Common Factor and Lowest Common Multiple of a pair of small numbers		• Students can use letter and labelling conventions. • They can draw and measure angles up to 180˚. • They can identify perpendicular and parallel lines. • They can recognise types of triangle and quadrilateral. • They can interpret simple pie charts using proportion. • They know and can apply the angle facts to solve problems.	• Students can multiply a single digit by a double-digit number up to 12 without using a written process but will resort to column multiplication when unsure. • They use a written process for division calculations. • They understand the rules of order of operations but do not always adhere to them. • Their mental arithmetic is limited to basic one step calculations involving addition or subtraction. • They can use a scientific calculator, with guidance, when completing calculations in line with the Year 7 curriculum. • They require considerable support in extracting information from questions and in formulating a strategy with which to conduct calculations. • They make extensive use of modelled answers as templates on which to construct their own answers but are unable to adapt these to calculations which do not follow the same information.