

YEAR 7 MATHS ASSESSMENT GRID

YEAR 7 TERM 1	Emerging	Developing	Secure	Mastery
1.Equipment	Use a ruler to draw number lines, compass to draw circles, protractor to measure angles and calculator use for the four operations.	Interpret axes in one quadrant. Use a calculator to calculate with decimals and fractions. Find square and cube numbers.	Use a protractor to draw and measure angles Use a calculator to convert between fractions and decimals and find square and cube roots.	Link fractions with division. Use a calculator to perform multi-step calculations involving powers and roots.
2.Number Properties	Recall square and cube numbers , up to 12 squared and some powers of 2,3,4,5	Recall squares, cubes and roots up to 12 squared and powers of 2,3,4,5 and use a calculator to evaluate these. Identify HCF from lists or Venn Diagrams. Convert between index and expanded form	Recall squares up to 15 squared, cubes and roots and powers of 2,3,4,5. Identify prime factors. Perform prime factor decomposition and use to find HCF.	Solve problems with powers and roots. Prime factor decomposition and solving problems with HCF.
3.Place Value 1	Understand basic place value and key vocabulary. Link place value to measures. Compare and order integers and some decimals.	Compare and order integers and decimals fluently. Convert between some metric units.	Interpret and order numbers written in standard form (large numbers only). Convert confidently between metric units.	Find the median of a list of numbers in standard form.
4.Place Value 2	Round whole numbers to nearest whole number, 10, 100, 1000	Identify significant digits in numbers greater than 1. Estimate the answer to a calculation.	Identify significant digits in numbers less than 1. Round to 1 significant figure. Identify whether rounding will lead to an over or underestimate.	Round to a given number of significant figures. Investigate error bounds with fix mode on calculator. Define an irrational number.
5.Conventions and Properties of Shapes	Name 2D and 3D shapes Identify when two shapes are congruent Understand that mathematical drawings may not be drawn accurately to scale.	Can match some quadrilaterals with their properties and group shapes based on a given property or set of properties. Recall and understand some relevant vocabulary: points, lines, vertices, edges, planes, parallel lines, perpendicular lines, right angles, polygons, regular polygons. Plot and read co-ordinates. Identify reflection and rotational symmetry.	Recall and understand all vocabulary from Developing strand. Solve geometric missing coordinate' problems requiring reasoning. Derive the properties of a simple 3D shape (cube, cuboid, pyramid) from its net.	Construct polygons Understand the relationship described by Eulers formula Interpret more complex nets (cylinder, cone, more complex prisms)

YEAR 7 TERM 2	Emerging	Developing	Secure	Mastery
5. Conventions and Properties of Shapes Continued	Refer to term 1	Refer to term 1	Refer to term 1	Refer to term 1
6. Addition and subtraction	<p>Use written methods for addition, and subtraction whilst calculating.</p> <p>Understand that addition is commutative but subtraction is not</p> <p>Calculate to solve simple problems involving perimeter, money and time.</p> <p>Single step function machines with numbers</p>	<p>Use written methods for addition and subtraction with decimals (same number of decimal places) whilst solving problems including two way tables and frequency trees money and time.</p> <p>Function machines with numbers, two functions.</p>	<p>Use written methods for addition and subtraction with negative integers.</p> <p>Use decimals and negative integers to continue arithmetic sequences and Fibonacci sequences.</p>	<p>Apply addition and subtraction to standard form.</p> <p>Solve more complex problems involving the application of addition and subtraction techniques.</p>
7. Multiplication, division and multiplicative reasoning	<p>Multiplication and division with positive integers (1 and 2 digit numbers).</p> <p>Calculate area and mean with integers.</p>	<p>Multiplication and division of positive and some negative integers.</p> <p>Written methods for multiplication and division with integer answers, including simple worded problems, area and mean.</p> <p>Can explain commutativity</p>	<p>Understand the mathematical structures that underpin multiplication and division.</p> <p>Work with related calculations.</p> <p>Mean and area with decimals.</p> <p>Understand and use the distributive law</p>	<p>Four operations with integer and non-integer answers.</p> <p>Can breakdown more complex problems and devise their own problems.</p> <p>Begin generalising with algebra.</p> <p>Explain the distributive law</p>
8. Generalising number (algebra intro)	<p>Know that an unknown number can be represented using a letter. Begin to understand the key vocabulary used in algebra: variable, constant, coefficient, term, expression.</p> <p>Collect like terms (no powers).</p>	<p>Collect like terms including negative terms.</p> <p>Function machines (working with priority of operations)</p>	<p>Substitution including negative numbers.</p> <p>Write simple expressions for a variety of unknown areas.</p> <p>Link the distributive law to expanding brackets and factorising expressions</p>	<p>Simplify expressions with brackets.</p> <p>Solve simple problems with algebraic perimeters and areas.</p>

YEAR 7 TERM 3	Emerging	Developing	Secure	Mastery
8.Generalising number (algebra intro) continued...	Refer to term 2	Refer to term 2	Refer to term 2	Refer to term 2
9.Linear Sequences	<p>Find the next term in a sequence</p> <p>Use a term to term rule to generate a sequence</p>	<p>Identify different types of sequence</p> <p>Generate a sequence from an nth term rule or growing pattern</p> <p>Plot sequences onto a graph</p>	<p>Find the nth term rule for a linear sequence</p> <p>Use the nth term to calculate any term of an arithmetic sequence.</p> <p>Connect linear sequences to straight line graphs.</p> <p>Link growing patterns to their nth term</p>	<p>Find the nth term rule for a picture sequence</p> <p>Generate a picture sequence that matches a given nth term rule</p> <p>Connect sequences to ratio tables</p>
10.Basic Solving Equations	<p>Understand the meaning of the equals sign</p> <p>Solve simple equations, using pictorial representations where appropriate</p>	<p>Solve two step equations</p> <p>Draw diagrams to represent equations</p> <p>Write an equation from a simple worded context</p>	<p>Solve double sided equations with integer coefficients</p> <p>Form equations in the context of area and perimeter</p>	<p>Solve equations including fractional, negative and decimal coefficients of x</p> <p>Form and solve equations</p>
11.Ordering and Equivalence	<p>Understand the relationship between division and fractions</p> <p>Represent fractions using diagrams or factor tiles</p>	<p>Convert improper fractions and mixed numbers.</p> <p>Recognise percentages as fractions. Compare and order simple fractions, decimals and percentages.</p> <p>Round numbers to a given number of decimal places.</p>	<p>Convert fractions to decimals and percentages to include writing terminating decimals as fractions.</p> <p>Compare and order fractions, decimals and percentages including negatives.</p> <p>Round numbers to a given number of decimal places and to 1 significant figure.</p>	<p>Compare and order standard form.</p> <p>Round numbers to a given number of significant figures and understand the impact of rounding prematurely.</p>