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| NAME | | TEACHER | | | | |
| My GCSE Target Grade is | | End of Cycle Teacher Assessment Please circle | | | | |
| | | SAE | AE | E | BE | SBE |
| End of unit assessment type | | Your end of topic assessment will be a written exam. | | | | |

YEAR 11 CROSSOVER CYCLE 1: NUMBER, RATIO & ALGEBRA

| | Knowledge | Prior knowledge | End of topic |
|----------------|--|-----------------|--------------|
| Number | Indices, powers and roots – I know and can use the laws of indices to simplify expressions | | |
| | Standard Form – I can write large numbers in standard form and convert into ordinary numbers and I can write small numbers in standard form and convert into ordinary numbers | | |
| | Standard Form Calculations – I can multiply and divide numbers in standard form and add and subtract numbers in standard form | | |
| | Prime Factors - I can use find the HCF of a pair of numbers and use prime factor decomposition to list the prime factors of a number | | |
| Ratio | Ratio Problems – I can solve problems involving ratios and fractions (including with measures and shapes) | | |
| | Sharing in a Ratio – I can divide a quantity into 2 and 3 parts in a given ratio and solve worded problems | | |
| | Compound Measures – I can solve problems involving Speed, Distance and Time and Density, Mass and Volume. | | |
| | Exchange Rates – I can calculate using exchange rates and decide which is better value | | |
| | Best Buy Problems – I can calculate using the unitary method which item is best value in a 'Best Buy' problem | | |
| Algebra | Expanding Brackets – I can expand single & double brackets and apply to problem solving questions involving shapes | | |
| | Factorising – I can factorise linear and quadratic expressions and use to simplify simple algebraic fractions | | |
| | Solving Quadratics - I can factorise to solve quadratic equations of the form $x^2 + bx + c = 0$ | | |
| | Solving Equations – I can solve equations involving brackets, unknowns on both sides and fractions and I am confident leaving my answer as a fraction | | |

LEARNING TOOLS

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|----------------------|---|-----------|----------|---------|--|
| MY KEY TOPICS | KEY TOPIC 1 | | | | |
| | KEY TOPIC 2 | | | | |
| KEY WORDS | Solve | Rearrange | Pressure | Density | |
| KEY EQUATIONS | Force = P _____ x A _____ Mass = D _____ x V _____ | | | | |

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| YEAR 11 CROSSOVER | | CYCLE 2: SHAPE & DATA | | |
|-------------------|--|-----------------------|--------------|--|
| | Knowledge | Prior knowledge | End of topic | |
| Shape | Circles 1 – I can find the area and circumference of a circle, semi-circle and quarter circle and solve real problems involving circles | | | |
| | Circles 2 - I can solve problems involving circles with and without a calculator (leaving my answer in terms of π if needed) | | | |
| | Volume – I can work out the volume of a cube, cuboids and prisms and apply to real problems | | | |
| | Volume of a Cylinder – I can work out the volume of a cylinder and apply to real problems | | | |
| | Cones & Spheres – I can work out the volume and surface area of a cone and sphere, given the formula | | | |
| | 3D Shapes – I can recognise 3D shapes and their properties and describe them using the correct mathematical language and understand the 2D shapes that make up the 3D objects | | | |
| | Plans & Elevations – I can identify and sketch planes of symmetry of 3D shapes and draw plans and elevations of 3D shapes | | | |
| | Vectors 1 – I can add and subtract vectors both in a column and on a grid (write and draw) | | | |
| | Vectors 2 - I can find the resultant of two vectors and find multiples of a vector and represent both in a column vector and drawn on a grid | | | |
| | Vector Problem Solving – I can solve geometric problems in 2D using vector methods and apply to simple geometric proofs | | | |
| Data | Frequency Polygons – I can construct and use frequency polygons | | | |
| | Scatter Graphs – I can plot and interpret scatter graphs and determine if there is a relationship between two variables AND use a line of best fit to estimate values | | | |
| | Cumulative Frequency – I can draw and interpret cumulative frequency tables and diagrams and work out the median , quartiles and interquartile range | | | |
| | Box Plots – I can draw and interpret box plots and make comparisons by commenting on the median and spread of data of two box plots | | | |

| LEARNING TOOLS | | | | |
|----------------|--|--|---|--|
| MY KEY TOPICS | KEY TOPIC | | | |
| | π (pi) | π (pi) is the relationship between the _____ and _____ of a circle | | |
| KEY QUESTIONS | What does h represent in the formula below? | | What does r represent in the formula below? | |
| KEY EQUATION | Volume of a Cylinder = $\pi r^2 h$ | | | |

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| YEAR 11 CROSSOVER | CYCLE 3: NUMBER & PROPORTION |
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| | Knowledge | Prior knowledge | End of topic |
|-------------------|--|-----------------|--------------|
| Number | Percentage Change – I can express a given number as a percentage of another in more complex situations | | |
| | Compound Interest – I can find an amount after a repeated percentage change (including depreciation) | | |
| | Reverse Percentages – I can find the original amount given the final amount after a percentage increase or decrease | | |
| Triangles | Pythagoras Theorem – I can use Pythagoras theorem in problem solving questions (applications of the rule in a different context) | | |
| | Trigonometry – I can use the sine, cosine and tangent ratios to calculate a missing sides and angles in right angled triangles and apply to problem solving questions | | |
| | Exact Trig Values – I know the exact values of sin, cos and tan of 0, 30, 45, 60 and 90 degrees and can solve problems involving trigonometry without a calculator | | |
| Proportion | Describing Enlargements – I can identify the scale factor of an enlargement and find the centre of enlargement to describe the transformation | | |
| | Combined Transformations – I can transform shapes using more than one transformation and describe on a co-ordinate axis | | |
| | Direct Proportion – I can write and use equations involving the constant of proportionality (k) to solve problems involving direct proportion | | |
| | Direct Proportion 2 – I can solve problems involving square and cubic proportionality and apply to problem solving questions involving compound measures | | |
| | Inverse Proportion - I can write and use equations involving the constant of proportionality (k) to solve problems involving inverse proportion | | |
| | Similar Shapes – I understand the properties of similar shapes and can find the scale factor of an enlargement between two shapes | | |
| | Similar Shapes 2 – I can use similarity to find unknown lengths and missing angles and calculate perimeters of similar shapes | | |

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| LEARNING TOOLS |
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| MY KEY TOPICS | KEY TOPIC 1 | | | | |
| | KEY TOPIC 2 | | | | |
| KEY WORDS | Inverse | Enlargement | Origin (0,0) | Similar | |
| KEY EQUATION | SOH CAH TOA | | | | |

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| YEAR 11 CROSSOVER | CYCLE 4: ALGEBRA & SHAPE |
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| Knowledge | | Prior knowledge | End of topic |
|------------------|---|-----------------|--------------|
| Algebra | Simultaneous Equations - I can solve simultaneous equations where one or both equations need changing and apply to worded problems | | |
| | Factorising – I can factorise linear expressions with multiple terms and apply to problems | | |
| | Algebraic Fractions – I can use factorisation to simplify simple algebraic fractions | | |
| | Forming & Solving Equations – I can form expressions and solve equations from a worded problem, angles problem and area / perimeter problem | | |
| | Inequalities – I can use the correct notation to show greater than, less than and equal to | | |
| | Inequalities 2 – I can identify whole numbers which satisfy an inequality and represent inequalities on a number line | | |
| | Solving Inequalities – I can solve linear inequalities and represent solutions on a number line | | |
| | Rearranging Formulae – I can change the subject of a formula with one step as well as unknowns on both sides. | | |
| | Iteration – I can solve quadratic and cubic equations using an iterative process and I am confident rearrange complex equations to reach a given form | | |
| Shape | Angles - I can find unknown angles in special triangles and give reasons for my calculations | | |
| | Angles in Polygons - I can calculate the interior and exterior angles of regular polygons | | |
| | Angles in Parallel Lines – I can understand and use the angles properties in parallel lines and find missing angles using corresponding, alternate and supplementary angle rules | | |
| | Bearings – I can find and use three figure bearings and use angles at parallel lines to work out bearings | | |
| | Bearings 2 – I can solve problems involving bearings and scale diagrams | | |
| | Constructions – I can use a compass to complete angle and perpendicular bisectors | | |
| | Loci – I can use a compass to draw the locus of a point and use to solve problems | | |

LEARNING TOOLS

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| MY KEY TOPICS | KEY TOPIC 1 | | | | |
| | Bearing | Used by planes and ships, must always include 3 digits, start from north and rotate clockwise | | | |
| KEY WORDS | Roots | Elimination | Locus | Intersection | |
| KEY EQUATIONS | | Interior $(n-2) \times 180$ | Exterior $360/n$ | where n is the number of sides | |

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| YEAR 11 CROSSOVER | POST MOCK |
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| | Knowledge | Prior knowledge | End of topic |
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| Post Mock | 21 Exam Papers – First 4 questions from each | | |
| | Averages from a Table – I can work out averages from data that is grouped in a frequency table, including the mean and median. | | |
| | Ratio – I can solve problems involving ratio (including with many parts and fractions) | | |
| | Transformations – I can solve problems involving Rotation, Reflection, Translation and Enlargement. | | |
| | Number – Ordering Integers / FDP, Ordering Fractions, Long Multiplication and Division | | |
| Coordinate Geometry | Equation of a Line – I understand and can use $y = mx + c$ and $ax + by = c$ to represent the equation of a straight line and can identify the x and y intercepts | | |
| | Gradient – I can find the gradient of a line between 2 points, with and without a graph | | |
| | Line Segments - I can find the co-ordinates of the midpoint of a line segment and find the gradient and length of a line segment (using Pythagoras) | | |
| | Parallel & Perpendicular Lines – I can find the equation of parallel and perpendicular lines, given the gradient and a point, 2 points and from a diagram | | |
| Grade 7 Topics | Upper & Lower Bounds – I can calculate using Upper and Lower Bounds and given your answers to a suitable degree of accuracy | | |
| | Quadratic Inequalities – I can solve quadratic inequalities and correctly identify the region(s) that is satisfied by the function | | |
| | Solving Algebraic Fractions – I can solve equations involving algebraic fractions (including those that need factorising) | | |
| | Completing the Square 1 – I can complete the square for a quadratic function of the form $x^2 + bx + c$ and find the roots of a quadratic equation by completing the square | | |
| | Functions - I can use function notation and write expressions using function machines | | |
| | Composite Functions – I can find the result of composite functions | | |
| | Inverse Functions – I can find the inverse of a function | | |

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| MY KEY TOPICS | KEY TOPIC 1 | | | | |
| | KEY TOPIC 2 | | | | |
| KEY WORDS | Parallel | Reflect | Segment | Median | |
| KEY EQUATION | $x^2 + bx + c$ | | | | |

