



# The Grey Coat Hospital

## Key Stage Four Curriculum Plan - *Subject: Mathematics (Foundation)*

### Year 9

Half Term (HT)	Topic Area / Focus
HT1	<p><b>Integers and place value</b> – ordering negative numbers, rounding numbers to decimal places and significant figures, BIDMAS, product rule for counting</p> <p><b>Algebra</b> – collecting like terms, simplifying expressions, index laws</p> <p><b>Decimals</b> – adding/subtracting/multiplying/dividing, rounding decimals to estimate answers to calculations</p> <p><b>Scatter Graphs</b></p>
HT2	<p><b>Perimeter and area</b> – finding area and perimeter of all quadrilaterals, triangles, compound shapes and circles, surface area of prisms</p> <p><b>Expressions and substitution</b> - substitution into formula and changing the subject of formula</p> <p><b>Solving equations</b> – functions machines, solving linear equations, equations with unknowns on both sides, forming and solving equations from words and shapes</p> <p><b>Tables</b> – timetables questions, two-way-tables, finding the mean median mode and range from frequency table</p>
HT3	<p><b>Fractions</b> – ordering fractions, convert between improper and mixed numbers, add/subtract/divide/multiply fractions, finding perimeter and area with fractions, convert recurring decimals to fractions</p> <p><b>Expanding and factorising</b> – expanding and factorising into single and double brackets</p> <p><b>Transformations</b> – rotation, translation, reflection and enlargement (including fractional scale factors)</p>
HT4	<p><b>Sequences</b> – sequences from diagrams and draw the next term in a pattern sequence, nth term of linear and geometric (basic)</p> <p><b>Charts and graphs</b> – pictograms, bar charts, stem and leaf, pie charts, interpreting pie charts</p> <p><b>Factors, multiples and primes</b> – expressing numbers as products of prime factors, finding the HCF and LCM using prime decomposition</p>
HT5	<p><b>Properties of shapes</b> – measure angles, properties of 2D shapes including lines of symmetry, name quadrilaterals and specify properties</p> <p><b>Angles in parallel lines</b> – angles around a point, angles on a straight line, alternate/corresponding/co-interior angles, vertically opposite angles</p> <p><b>Probability</b> – using probability scales, listing outcomes of events, finding missing probabilities, sample space diagrams, Venn diagrams</p>
HT6	<p><b>Similar shapes and congruency</b> - finding missing sides from 2D shapes using similar shapes, proving if shapes are congruent</p> <p><b>Trigonometry</b> – using sine cosine and tangent to find missing sides and angle from right-angled triangles</p>

### Year 10

Half Term (HT)	Topic Area / Focus
HT1	<p><b>Ratio</b> – writing ratio in simplest form, sharing in each ratio, use ratio to find one quantity when the other is known, write ratios in the form 1:m</p> <p><b>Fractions, decimals, percentages</b> – convert between all 3 fluently, express a given number as a fraction/percentage of another</p> <p><b>Straight line graphs</b> – plotting linear graphs from a table of values, identify and interpret gradients and intercepts from an equation in the form <math>y=mx+c</math>, find the equation of a straight line from the graph, find the equation of a line given two points</p>



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	<b>Angles in polygons</b>
<b>HT2</b>	<p><b>Indices, powers and roots</b> – recall square and cube numbers, add/subtract/multiply/ divide in index form, BIDMAS, negative indices</p> <p><b>Percentages</b> - percentages of amounts, profit and loss, multipliers, simple and compound interest, reverse percentage</p> <p><b>Standard form</b> - all 4 computations with and without a calculator, solving speed, distance and time questions in standard form</p> <p><b>Quadratic equations</b> – expand double brackets, solve via factorising</p>
<b>HT3</b>	<p><b>Pythagoras and trigonometry</b> - using sine cosine and tangent to find missing sides and angle from right-angled triangles</p> <p><b>Pie charts</b> – construct and interpret pie charts</p> <p><b>Fractions and reciprocals</b> – add/subtract/multiply/divide fractions, understand what reciprocal means and find reciprocals of integers, fractions and decimals</p> <p><b>Plans and elevations</b> – draw sketches of 3D solids, know the terms face/edge/vertex, make accurate drawings of 2D shapes, raw front and side elevations and plans of shapes made from simple solids</p>
<b>HT4</b>	<p><b>Proportion</b> – best buy questions, scale up recipes, converting between currencies, recognise proportion questions</p> <p><b>Probability</b> – finding missing probabilities from lists, using the “1-p! As the probability of an event not occurring, estimate the number of times an event will occur if given the probability and total frequency, sample space diagrams, Venn diagrams, tree diagrams</p> <p><b>Constructions, loci and bearings</b> - understand, from the experience of constructing them, that triangles satisfying SSS, SAS, ASA and RHS are unique, but SSA triangles are not, construct angles and bisectors, use and interpret maps and scale drawings, find and calculate bearings</p>
<b>HT5</b>	<p><b>Circles, cylinders, cones and spheres</b> - finding area and circumference of circles, finding surface area and volume of all shapes (except cones and spheres)</p> <p><b>Graphs of quadratic equations</b> – plot quadratic graph from table of values, find roots from a graph, find turning points from a graph</p>
<b>HT6</b>	<p><b>Similarity shapes</b> – using scale factors to find missing sides of similar shapes (calc and non calc, including fractional scale factors for non-calc), using similar shapes in compound shapes</p> <p><b>Real life graphs</b> - Draw straight line graphs for real-life situations mainly conversion graphs, distance time graphs (drawing and interpreting)</p>
<b>Year 11</b>	
<b>Half Term (HT)</b>	<b>Topic Area / Focus</b>
<b>HT1</b>	<p><b>Averages</b> – calculating the mean, median and mode of lists of data, data in frequency tables and continuous data, compare averages and make comments about advantages and disadvantages</p> <p><b>Inequalities</b> – representing linear inequalities on number lines, solving linear inequalities, using correct notation to show including and exclusive inequalities, round answer to a given degree of accuracy</p> <p><b>Transformations</b> – rotation, enlargement, reflection and translation (no negative scale factors for enlargement), combined transformation</p>



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	<b>3D forms and volumes</b> – naming 3D shapes, sketch nets of cuboids and prisms, finding the volume and surface area of prisms, convert between metric volumes of measure
<b>HT2</b>	<b>Rearranging equations</b> – knowing the difference between an equation/identity/formula/expression, rearranging equations with unknown on one side <b>Simultaneous equations</b> – forming and solving simultaneous equations <b>Factors, multiples and primes</b> – product of prime factors, HCF and LCM from Venn diagrams <b>Error intervals</b> - round to an appropriate degree of accuracy including decimals places and significant figures, apply and interpret limits of accuracy, use inequality notation to specify simple error intervals
<b>HT3</b>	<b>Graphs and charts</b> – drawing and interpreting: pictograms, bar charts, stem and leaf, pie charts <b>Vectors</b> - use column notation in relation to vectors, represent information graphically given column vectors, identify two column vectors which are parallel, calculate using column vectors, and represent graphically, the sum of two vectors, the difference of two vectors and a scalar multiple of a vector <b>Real life graphs</b> – $y=mx + c$ and draw straight line graphs for real-life situations mainly conversion graphs, distance time graphs (drawing and interpreting) <b>Probability</b> – tree diagrams and sample spaces
<b>HT4</b>	Circles, cylinders, cones and spheres – area, volume and surface area for all except cones and sphere's <b>Revision</b>
<b>HT5</b>	<b>Revision</b>
<b>HT6</b>	<b>There are no lessons in this half term</b>