HUNTINGTON SCHOOL
MATHEMATICS DEPARTMENT

Mathematics: Mid Term Plan for Year 9

Term 1 Assessment: w/c 30/11. The core topics from half term 1 and 2 will be included

Term 2 Assessment: w/c 8/3. The core topics from half term 3 and 4 will be included

Term 3 Assessment: Between 24/5 – 18/6. The core topics from half term 1 to 5 will be included

Homework: Weekly homework will be set on a Wednesday, due the following Wednesday via Sparx Maths.

Able and interested: Extension work, and problem-solving task will be provided in lessons where needed.

Support and Extension: Some topics in the table below may not be taught at this current point. This will depend on the attainment of the individuals, and these topics will then be taught at a later date when more appropriate.

Building on: These topics will have been seen before and are needed to progress to the core topics

Core: These topics will be on the assessments

Extension: These topics show where the core topics lead. They may be covered in class if the core topics are secure.

Why this? Why Now? The national curriculum sets out the key maths skills and knowledge that all children in England should learn, and at Huntington School we make sure your child experiences this fully throughout their time with us. Our maths curriculum is planned in a sensible, step-by-step order so that each new topic builds on what pupils already know, helping them grow in confidence and understanding. The table below shows how the learning is sequenced and explains why topics are taught in this order, making it easier for you to see how your child's maths knowledge develops over time.

Half Term	1	2	3	4	5	6
Knowledge and skills which will be covered during this half term.	**Number** Equivalent fractions, ordering fraction, multiplying fractions, standard form with positive and negative indices, index rules with positive and negative indices, using a calculator. Converting between fractions, decimals and percentages (FDP), ordering FDP, finding fractions of amounts	**Algebra** Solving equations with two or more steps, Solving equations with the variable on both sides, Solving equations with the variable in the denominator. Changing the subjects of formulae.	**Geometry** Calculating with roots and powers, Solving equations with two or more steps. Using Pythagoras' theorem in 2D. Using Pythagoras' theorem in 3D, Understanding sin, cos, tan, Finding unknown sides in right-angled triangles, Finding unknown angles in right-angled triangles.	**Algebra** Reading and plotting coordinates, Plotting horizontal, vertical and diagonal lines, Plotting straight line graphs, Calculating with speed Plotting straight line graphs, Finding equations of straight line graphs, Interpreting equations of straight line graphs, Plotting distance-time	**Algebra** Substituting into algebraic formulae, Plotting straight line graphs. Plotting graphs of quadratic functions, Interpreting graphs of quadratic functions, Solving quadratic equations graphically. Graphs of cubic functions, Graphs of reciprocal functions	**Statistics** Averages and range, Interpreting graphs and charts, Reading and plotting coordinates, Finding equations of straight line graphs, Interpreting frequency tables and two-way tables, Finding averages from frequency tables. Types of data, Presenting data and

	(with and without a calculator), finding percentages of amount (with and without a calculator), percentage change, simple interest, finding original values in percentage calculations, finding the percentage an amount has changed by, arithmetic with numbers in standard form. Converting fractions to recurring decimals, compound interest calculations. **Algebra** Reading and drawing inequalities on number lines, Solving single inequalities, Expanding double brackets, Factorising into one bracket. Solving inequalities with the unknown on both sides, Solving double inequalities, Constructing and solving inequalities, Factorising quadratic equations of the form x^2+bx+c, Factorising the difference of two squares, Factorising to	**Geometry** Using a ruler, Using a pair of compasses, Identifying parts of circles, Finding the circumference of circles, Finding the area of circles, Finding the surface area of prisms, Finding the volume of prisms, Using a calculator, Properties of 3D shapes. Constructing bisectors of angles, Constructing perpendicular bisectors and lines, Finding the arc length of sectors, Finding the area of sectors, Finding the surface area of cylinders, Finding the volume of cylinders, Plans and elevations. Constructing loci, Constructing triangles, Finding the surface area of cones, Finding the surface area of spheres, Finding the volume of cones, Finding the volume of spheres	**Ratio & Proportion** Finding the highest common factor, Using a calculator. Writing and simplifying ratios, Sharing amounts in a given ratio, Solving direct proportion word problems, Solving inverse proportion word problems, Currency conversion. Combining ratios, Calculating with ratios and algebra, Changing ratios, Interpreting direct proportion equations, Interpreting inverse proportion equations.	graphs, Interpreting distance-time graphs, Calculating speed from distance-time graphs, Plotting distance-time graphs using speeds. Finding the equation of a straight line from its gradient and a point. Finding the equation of a straight line from two points on the line, Plotting velocity-time graphs.	**Geometry** Angles on a line and about a point, Vertically opposite angles, Angles in triangles, Angles in quadrilaterals, Line and shape properties, Understanding, measuring and drawing angles, Combining angle facts, Angles on parallel lines, Translation, Reflection, Solving direct proportion word problems. Combining angle facts, Angles on parallel lines, Using quadrilateral properties to find angles, Angles in polygons, Measuring and drawing bearings, Calculating bearings, Translation, Reflection, Rotation, Enlargement by a positive scale factor, Mixed transformations, Understanding similarity, Finding unknown sides in similar shapes, Understanding congruence, Congruent triangles, Constructing triangles.	making conclusions, Comparing populations using diagrams, Choosing suitable averages and solving problems, Plotting scatter graphs, Interpreting scatter graphs, Using lines of best fit, Interpreting frequency tables with grouped data, Finding averages from grouped data, Drawing and interpreting frequency polygons **Geometry** Solving geometric problems using vectors. Understanding column vectors, Adding and subtracting column vectors, Multiplying column vectors by a scalar, Identifying parallel vectors **Number** Percentage change with a calculator, Finding original values in percentage calculations. Compound interest

	solve quadratic equations of the form x^2+bx+c=0. Graphs of linear inequalities, Completing the square, Factorising quadratic expressions of the form ax^2+bx+c, Factorising to solve quadratic equations of the form ax^2+bx+c=0	**Number** Rounding integers, Rounding decimals, Rounding integers using significant figures, Rounding decimals using significant figures. Finding error intervals, Truncating decimals, Finding error intervals for truncated numbers. Finding bounds for calculations			Enlargement by a positive or negative scale factor, Combining transformations, Finding the perimeter and area of similar shapes, Geometric proofs with congruence and similarity.	calculations, Growth and decay
Key vocabulary	**Number** Denominator Numerator Interest Increase/decrease Recurring Base number Indices **Algebra** Inequality Solve Factorise Quadratic	**Algebra** Variable Rearrange **Geometry** Bisector Constructions Perpendicular Arc Sector **Number** Round Truncate	**Geometry** Hypotenuse Adjacent Opposite **Ratio & Proportion** Share Ratio Direct Inverse	**Algebra** Coordinates Axis Gradient Intercept Speed Velocity	**Algebra** Quadratic **Geometry** Alternate Corresponding Co-interior Interior Exterior Polygon Bearings Degree Similarity Congruence	**Statistics** Correlation Plot Coordinate Mean Mode Median **Geometry** Vector Scalar Horizontal Vertical **Number** Percent Compound Interest Exponential Growth Decay