HUNTINGTON SCHOOL
MATHEMATICS DEPARTMENT

Mathematics: Mid Term Plan for Year 10 – All students

Term 1 Assessment: w/c 23/11. The core topics from half term 1 and 2 will be included

Term 2 Assessment: w/c 1/3. The core topics from half term 3 and 4 will be included

Term 3 Assessment: Between 21/6 – 2/7. This will be a set of mock papers and could include anything they have done previously.

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.

The Year 10 scheme of learning starts out the same for all students. Half terms 1 to 4 are in the table below. Half terms 5 and 6 are in a separate document as they branch into higher and foundations strands.

Half Term	1	2	3	4
Knowledge and skills which will be covered during this half term.	**Geometry** Finding the surface area of cubes and cuboids, Finding the surface area of prisms, Finding the surface area of cylinders, Finding the volume of cubes and cuboids, Finding the volume of prisms, Finding the volume of cylinders. Finding the surface area of pyramids, Finding the surface area of cones, Finding the surface area of spheres, Finding the surface area of	**Geometry** Calculating with roots and powers, Solving equations with two or more steps, Changing the subjects of formulae, Angles in triangles, Measuring and drawing bearings, Constructing bisectors of angles, Constructing perpendicular bisectors and lines. Understanding sin, cos, tan, Finding unknown sides in right-angled triangles, Finding unknown angles in	**Algebra** Plotting linear real-life graphs, Using and interpreting linear real-life graphs, Finding equations of linear real-life graphs, Sketch graphs of water flows **Probability** Multiplying fractions, Writing probabilities as fractions, decimals and percentages.	**Algebra** Plotting distance-time graphs, Interpreting distance-time graphs, Calculating with speed, Calculating speed from distance-time graphs, Plotting distance-time graphs using speeds, Plotting graphs of quadratic functions, Interpreting graphs of quadratic functions. Plotting velocity-time graphs, Calculating acceleration from velocity-time graphs, Graphs of cubic functions,

	frustums, Finding the surface area of composite shapes, Finding the volume of pyramids, Finding the volume of cones, Finding the volume of spheres, Finding the volume of frustums, Finding the volume of composite shapes. **Algebra:** Solving equations with two or more steps, Solving equations with the unknown on both sides, Constructing and solving equations, Solving equations with the unknown in the denominator, Expanding and factorising brackets. Solving simultaneous equations using elimination, Solving simultaneous equations using substitution, Solving simultaneous equations graphically, Constructing and solving simultaneous equations, Changing the subjects of formulae.	right-angled triangles, Using the exact values of trigonometric ratios, Angles of elevation and depression, *Calculating with trigonometry and bearings*, Constructing loci **Algebra** Finding the equations of straight line graphs, Interpreting equations of straight line graphs. 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, Equations of parallel lines, Equations of parallel and perpendicular lines **Probability** Venn diagrams, Writing probabilities as fractions, decimals and percentages. Venn diagrams with set notation, Using set notation. Conditional probabilities from tables, Conditional probabilities from Venn diagrams.	Tree diagrams for independent events, Tree diagrams for dependent events. Using the conditional probability formula, Conditional probabilities from tree diagrams. **Ratio & Proportion** Substituting, Converting units, Solving equations, Changing the subjects of formulae, Writing and simplifying ratios, Using equivalent ratios to find unknown amounts, Sharing amounts in a given ratio, Converting between ratios, fractions and percentages. Calculating with density, Calculating with pressure, Combining ratios, Calculating with ratios and algebra, Changing ratios.	Graphs of reciprocal functions, Graphs of exponential functions. Calculating distances from velocity-time graphs.
Key vocabulary	**Geometry -** pyramid, slant height, sphere, hemisphere, conical, frustum, cylinder, composite shape **Algebra –** Simultaneous, elimination, substitution, coefficient, subject, solution, rearrange,	**Geometry –** Trigonometric, hypotenuse, sine, cosine, tangent, adjacent, relative, angle of elevation, angle of depression, exact value, bearing **Algebra –** Gradient, coefficient, y-intercept, constant, parallel, perpendicular, **Probability –** Universal set, element, union, intersection, complement	**Algebra –** conversion, linear, real-life, interpret, context, extrapolate **Probability –** outcome, mutually exclusive, dependent, independent, conditional, tree diagram **Ratio & Proportion-** dimensions, volume, density, mass, units, pressure, force, area, substitute. Three-part, equivalent, simplest, total, combine, difference, linear equation,	**Algebra –** Speed, distance, time, duration, stationary, velocity, accelerating, decelerating, constant, linear, non-linear, rate, kinematic, projectile, initial velocity, displacement