

Subject: Maths		Year Group: 10	Term: 1, 2 and 3
Module/Theme: Algebra			
Topic Outline & Aims (Intent) <ul style="list-style-type: none">• Expressions: Expanding, simplifying, and factorising algebraic expressions.• Equations: Solving linear equations, quadratic equations (using factorization, completing the square, and using the quadratic formula).• Inequalities: Solving and representing linear inequalities.• Functions: Understanding and working with functions, including notation and transformations.• Graphs: Plotting and interpreting linear, quadratic, and other functions.• Sequences: Arithmetic and geometric sequences and solving related problems.• Simultaneous equations: Solving systems of linear equations using various methods (substitution, elimination).• Quadratics: Factoring and solving quadratic equations, understanding parabolas			
Key Skills and Knowledge taught through this topic: (Intent) <ul style="list-style-type: none">• Simplifying and manipulating expressions (expanding, factorising, simplifying, substitute and rearrange formulae)• Surds and indices (simplifying, calculations with and rationalising)• Solving equations and inequalities (linear equations with fractions and decimals, quadratic equations and inequalities, fractions)• Quadratic equations (graphing, factorising, completing the square, quadratic formula, sketching, transforming)• Understanding linear and non-linear graphs• Sequences – Arithmetic, geometric (linear and quadratic)• Simultaneous equations – graphically and algebraically (elimination and substitution) linear and non-linear			
Prior Learning: (Context) <ul style="list-style-type: none">• Basic arithmetic and number skills• Understanding of variables and expressions• Simplify expressions• Solve simple equations• Simple algebraic fractions basic rules of indices• Formed equations from worded scenarios.		Future Learning: (Context) <ul style="list-style-type: none">• Quadratic inequalities, functions and discriminants• Composite functions, graph transformations, polynomials and exponentials• Factor theorem and remainder theorem• Non-linear simultaneous equations• Complex algebraic fractions• Exponentials and logarithms	
National Curriculum Links: (Context) Edexcel Maths GCSE specification			
RRSA Links: Article 17 – Access information Article 28 – Access education Article 29 – Goals of education		Assessment of Learning: (Impact) Summative: formal assessments in December and April Formative: Unit assessments and homework tasks Informal: low-stakes quizzes, questioning, mini-whiteboard work	
British Values Links: Mutual respect – Working together with tolerance and mutual understanding, treating others with respect.			
Eco Schools Links: N/A			



Reading / Enrichment:

Useful websites:
Mathswatch clips
Corbettmaths.com
mathsgenie.com

In school enrichment:
Sum up the week
Maths challenge club
Numeracy in tutor

Books:
CGP: GCSE revision guide and
workbook

Key Vocabulary: (Literacy)

Expression, equation, term, variable,
coefficient, constant, simultaneous, root,
function, inverse, composite, difference of
two squares, complete the square,
reciprocal

Numeracy Opportunities:

Career Links:

Actuary, Accountant, Teacher,
Engineer, Data Scientist,
Architect, Financial Analyst,
Software Developer, Statistician,
Economist, Pilot, Pharmacist..



Number

Algebra

Geometry

Ratio and proportion

Probability and statistics

Subject: Maths		Year Group: 10	Term: 1, 2 and 3
Module/Theme: Geometry			
Topic Outline & Aims (Intent) <ul style="list-style-type: none">Angles: Measuring and calculating angles, using properties of angles (angles on a straight line, around a point, in parallel lines, etc.).2D shapes: Properties of polygons (triangles, quadrilaterals, etc.), area and perimeter formulas.3D shapes: Surface area and volume of common 3D shapes (cubes, cones, spheres, etc.).Symmetry: Rotational and reflective symmetry, line and point symmetry.Transformations: Understanding translation, rotation, reflection, and enlargement of shapes.Coordinate geometry: Plotting points on the Cartesian plane, equations of straight lines, and distance/ midpoint formula.Pythagoras’ Theorem and Trigonometry: Solving right-angled triangles, using sine, cosine, and tangent ratios in 2D and 3D.Constructions and loci: Solve geometric problems involving loci and constructions			
Key Skills and Knowledge taught through this topic: (Intent) <ul style="list-style-type: none">Geometrical properties (angles, circle geometry, triangles)Congruence and similarity (proof of congruence, proportional reasoning through similarity)Transformations (combinations of transformations)Area and perimeter (2d shapes, 3d shapes, surface area, volume)Vectors (notation and operations)Circle theorems and proofs			
Prior Learning: (Context) <ul style="list-style-type: none">Working competently with units of measureUnderstanding of 2d and 3d properties of shapesBasic angle rules (straight line, points, triangles and quadrilaterals)Plotting and reading coordinatesBasic areas and volumesBasic transformations		Future Learning: (Context) <ul style="list-style-type: none">Coordinate geometry, equation of a circle, tangents and normalVectors, addition, multiplication, dot productAdvanced trig, trig identities, circular trigonometryGeometrical proof3d geometry and planes	National Curriculum Links: (Context) Edexcel Maths GCSE specification
RRSA Links: Article 17 – Access information Article 28 – Access education Article 29 – Goals of education		Assessment of Learning: (Impact) Summative: formal assessments in December and April Formative: Unit assessments and homework tasks Informal: low-stakes quizzes, questioning, mini-whiteboard work	
British Values Links: Mutual respect – Working together with tolerance and mutual understanding, treating others with respect.			
Eco Schools Links: N/A			



Reading /

Enrichment:

Useful websites:
Mathswatch.com
Corbettmaths.com
Mathsgenie.com

In school enrichment:
Sum up the week
Maths challenge club
Numeracy in tutor

Books:
CGP: GCSE revision guide
and workbook

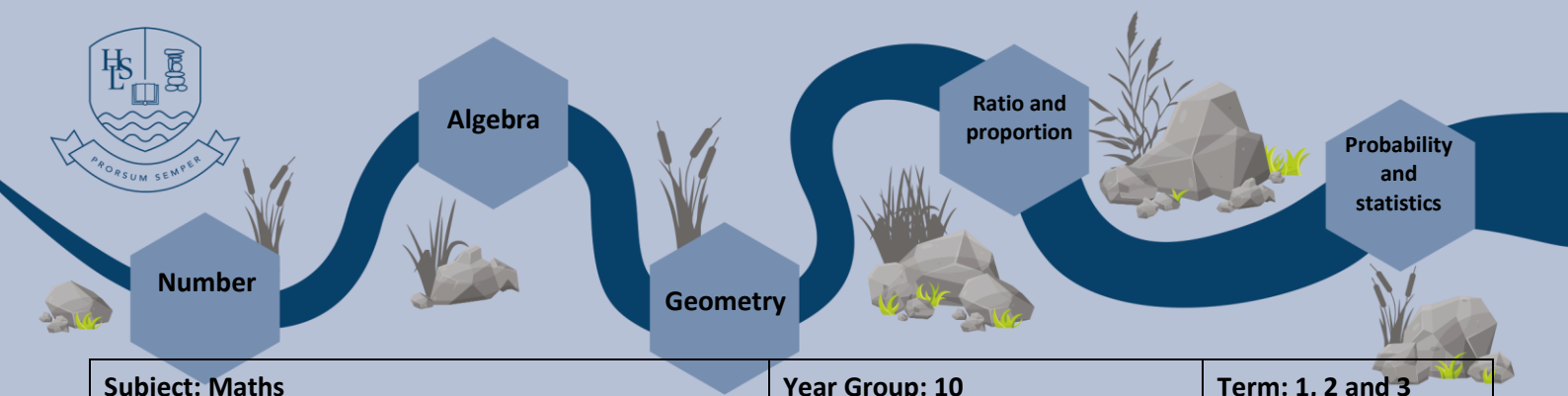
Key Vocabulary: (Literacy)

Arc, Circumference, Chord,
Diameter, Surface Area, Volume,
Adjacent, Complementary,
Supplementary, Vertical, Alternate,
Corresponding, Co-interior, Sum of
Interior Angles of a Polygon,
Radius, Centre, Tangent, Sector,
Segment, Arc Length, Angle at the
Centre, Cube, Cuboid, Prism,
Frustum, Rotational Symmetry,
Translation, Reflection, Rotation,
Enlargement, Euler's Formula,
Prism, Locus, Construction

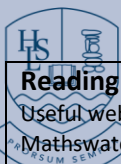
Numeracy Opportunities:

Career Links:

Actuary,
Accountant,
Teacher, Engineer,
Data Scientist,
Architect,
Financial Analyst,
Software
Developer,
Statistician,
Economist, Pilot,
Pharmacist.



Subject: Maths		Year Group: 10	Term: 1, 2 and 3
Module/Theme: Number			
Topic Outline & Aims (Intent) The main aims and intent of the Number topics of year 10 are to ensure students develop a solid foundation in fundamental mathematical concepts and operations that they can apply in real-life situations and more complex mathematical problems. Number topics will be integrated throughout Key Stage 4 to ensure students are recapping suitable prerequisite knowledge and interleaving their content.			
Key Skills and Knowledge taught through this topic: (Intent) <ul style="list-style-type: none">• Place value: Understanding the value of digits in large numbers, rounding, and approximating.• Operations with integers, fractions, decimals, and percentages: Addition, subtraction, multiplication, and division with different number types.• Factors, multiples, and primes: Prime factorisation, LCM, and HCF (Least Common Multiple, Highest Common Factor).• Fractions: Converting between fractions, decimals, and percentages, simplifying fractions, and operations with fractions.• Ratio and proportion: Simplifying ratios, solving ratio problems, and direct/indirect proportion.• Standard form: Writing and manipulating numbers in scientific notation.• Sequences: Understanding and solving problems involving sequences arithmetic and geometric sequences.			
Prior Learning: (Context) <ul style="list-style-type: none">• Basic arithmetic• Place value and number properties• Fractions decimals and percentages• Basic algebraic manipulation• Number sequences and pattern• Ratio and proportions• Multiples and divisibility rules• Understanding negative numbers• Estimation and rounding		Future Learning: (Context) KS5 – A level <ul style="list-style-type: none">• Logarithms and inequalities• Exponential growth and decay• Binomial expansion• Arithmetic and geometric series• Differentiation• Integration	National Curriculum Links: (Context) Edexcel Maths GCSE Specification https://qualifications.pearson.com/content/dam/pdf/GCSE/mathematics/2015/specification-and-sample-assesment/gcse-maths-2015-specification.pdf
RRSA Links: Article 17 – Access information Article 28 – Access education Article 29 – Goals of education		Assessment of Learning: (Impact) Summative: formal assessments in December and April Formative: Unit assessments and assessed homework tasks Informal: low-stakes quizzes, questioning, mini-whiteboard work	
British Values Links: Mutual respect – Working together with tolerance and mutual understanding, treating others with respect.			
Eco Schools Links: N/A			



Reading / Enrichment:

Useful websites:

Mathswatch.com
Corbettmaths.com
Mathsgenie.com

In school enrichment:

Sum up the week
Maths challenge club
Numeracy in tutor

Books:

CGP GCSE revision guide and
workbook.

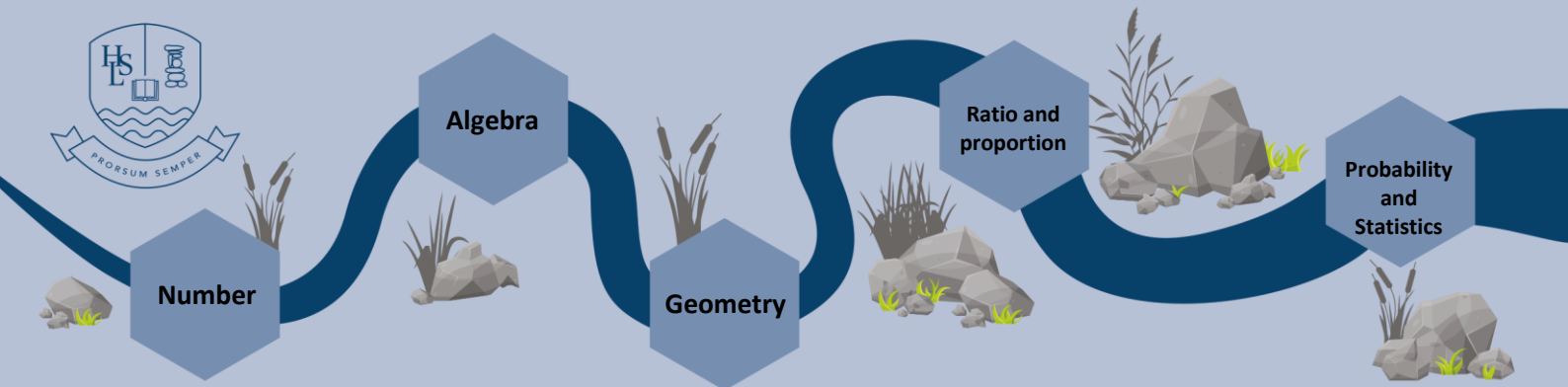
Key Vocabulary: (Literacy)

Place value, rounding, significant,
estimate, order of magnitude,
prime, factor, multiple, operation,
numerator, denominator,
recurring, equivalent, simplify,
divisor, dividend, quotient,
multiplicand, exponent, base,
arithmetic, geometric, term,
common difference,

Numeracy Opportunities:

Career Links:

Actuary, Accountant, Teacher,
Engineer, Data Scientist,
Architect, Financial Analyst,
Software Developer, Statistician,
Economist, Pilot, Pharmacist.



Subject: Maths		Year Group: 9		Term: 1, 2 and 3	
Module/Theme: Probability and Statistics					
Topic Outline & Aims (Intent) <ul style="list-style-type: none">• Understanding and representing data – Collecting and organising, displaying and summarising trends within data• Analysing data – interpreting data with scatter graphs, histograms and frequency polygons• Statistical probability models – understand and calculate probability for theoretical and experimental events• Statistical methods to make predictions – estimate, predict and use averages and range• Sampling techniques – understand a range of sampling techniques and the bias associated with them• Critical thinking and decision making – evaluating data and drawing conclusions					
Key Skills and Knowledge taught through this topic: (Intent) <ul style="list-style-type: none">• Data collection• Measures of central tendency• Measures of spread• Data interpretation – cumulative frequency• Sampling and bias• Probability of combined events – independent and dependent• Probability distribution• Conditional probability					
Prior Learning: (Context) <ul style="list-style-type: none">• Arithmetic and number skills• Familiarity with graphs, charts, averages and range• Understand basic probability• Understand basic algebra• Logical thinking and interpreting work problems		Future Learning: (Context) <ul style="list-style-type: none">• Advanced statistical measures – standard deviation, variance, confidence intervals, skewness• Probability theory – distributions• Permutations and combinations, binomial expansion• Hypothesis testing, correlation coefficients• Complex sampling methods		National Curriculum Links: (Context) Edexcel GCSE Maths specification	
RRSA Links: Article 17 – Access information Article 28 – Access education Article 29 – Goals of education			Assessment of Learning: (Impact) Summative: formal assessments in October and April Formative: Unit assessments and homework tasks Informal: low-stakes quizzes, questioning, mini-whiteboard work		
British Values Links: Mutual respect – Working together with tolerance and mutual understanding, treating others with respect.					
Eco Schools Links: N/A					
Reading / Enrichment: Useful websites: Mathswatch.com Corbettmaths.com Mathsgenie.com In school enrichment: Sum up the week Maths challenge club Numeracy in tutor Books: CGP: GCSE revision guide and workbook		Key Vocabulary: (Literacy) Mean, Median, Mode, Range, Interquartile Range (IQR), Standard Deviation, Outlier, Cumulative Frequency, Stem-and-Leaf Diagram, Box Plot, Histogram, Scatter graph, Correlation, Experiment, Event, Outcome, Sample Space, , Union of Events (OR), Intersection of Events (AND), Independent Events, Dependent Events, Mutually Exclusive Events, Conditional Probability, Probability Tree, Relative Frequency, Expected Frequency, Relative Frequency, Bias, Random Sampling, Stratified Sampling, Systematic Sampling,		Numeracy Opportunities:	
				Career Links: Actuary, Accountant, Teacher, Engineer, Data Scientist, Architect, Financial Analyst, Software Developer, Statistician, Economist, Pilot, Pharmacist.	



Number

Algebra

Geometry

Ratio and proportion

Probability and Statistics

Subject: Maths		Year Group: 9		Term: 1, 2 and 3	
Module/Theme: Ratio and Proportion					
Topic Outline & Aims (Intent) <ul style="list-style-type: none">• Understanding and applying ratios – interpret and use ratios, simplify and express ratios, scale drawing and models, dividing quantities into given ratios• Proportional relationships – recognising proportionality, solving problems using direct and inverse proportion• Using proportion in context – real life applications, percentage calculations, rate problems• Algebra and proportionality – solving equations involving ratio					
Key Skills and Knowledge taught through this topic: (Intent) <ul style="list-style-type: none">• Understanding proportional relationships – recognising direct and inverse proportion• Solving proportional problems• Working with ratios and proportions• Proportion in algebraic contexts• Percentage proportions• Scale factor and enlargements					
Prior Learning: (Context) <ul style="list-style-type: none">• Understanding basic ratios (simplifying, dividing amounts into)• Basic arithmetic skills• Fractional understanding• Percentages and percentage change• Units of measure and scales		Future Learning: (Context) <ul style="list-style-type: none">• Graphs and equations of proportion• Calculus – differentiation and integration• Statistics – Probability theory, sampling, data analysis• Mechanics – Kinematics, Newton’s Laws of Motion, circular motion• Trigonometry		National Curriculum Links: (Context) Edexcel GCSE Maths specification	
RRSA Links: Article 17 – Access information Article 28 – Access education Article 29 – Goals of education		Assessment of Learning: (Impact) Summative: formal assessments in December and April Formative: Unit assessments and homework tasks Informal: low-stakes quizzes, questioning, mini-whiteboard work			
British Values Links: Mutual respect – Working together with tolerance and mutual understanding, treating others with respect.					
Eco Schools Links: N/A					
Reading / Enrichment: <u>Useful websites:</u> Mathswatch.com Corbettmaths.com Matsh genie.com <u>In school enrichment:</u> Sum up the week Maths challenge club Numeracy in tutor <u>Books:</u> CGP: GCSE revision guide and workbook		Key Vocabulary: (Literacy) Direct Proportion, Inverse Proportion, Scaling, Constant of Proportionality, Unitary Method, Scale Factor, Proportional Relationship, Proportionality, Part-to-Part Ratio, Part-to-Whole Ratio, Unit Rate, Simple Interest, Compound Interest, Speed (Distance/Time), Ratio Table, Amount per Unit.		Numeracy Opportunities:	
				Career Links: Actuary, Accountant, Teacher, Engineer, Data Scientist, Architect, Financial Analyst, Software Developer, Statistician, Economist, Pilot, Pharmacist.	