



Number

Algebra

Geometry

Ratio and proportion

Probability and statistics

Subject: Maths		Year Group: 11	Term: 1, 2 and 3
Module/Theme: Algebra			
Topic Outline & Aims (Intent) <ul style="list-style-type: none"><li>Inequalities</li><li>Equation of a circle</li><li>Functions</li><li>Iteration</li><li>Graph transformations</li></ul>			
Key Skills and Knowledge taught through this topic: (Intent) Foundation course content <ul style="list-style-type: none"><li>Represent inequalities on a number line</li><li>Solve simple and compound inequalities</li><li>Rearrange and manipulate equations involving powers and roots</li><li>Form equations for consecutive numbers</li></ul>		Higher course content <ul style="list-style-type: none"><li>Understand and use the method of completing the square</li><li>Understand and use the quadratic formula</li><li>Understand and use the equation of a circle</li><li>Solve problems using composite and inverse functions</li><li>Graph and interpret inequalities</li><li>Solve simultaneous equations with one quadratic</li><li>Derive and use an iterative formula to find approximate solutions</li><li>Transform graphs around a set of axis</li></ul>	
Prior Learning: (Context) <ul style="list-style-type: none"><li>Understanding of variables and expressions</li><li>Simplify and manipulate expressions</li><li>Solve equations including those that are simultaneous</li><li>Simple algebraic fractions and basic rules of indices</li><li>Forming equations from worded scenarios.</li></ul>	Future Learning: (Context) <ul style="list-style-type: none"><li>Quadratic inequalities, functions and discriminants</li><li>Composite functions, further graph transformations, polynomials and exponentials</li><li>Factor theorem and remainder theorem</li><li>Exponentials and logarithms</li></ul>		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  
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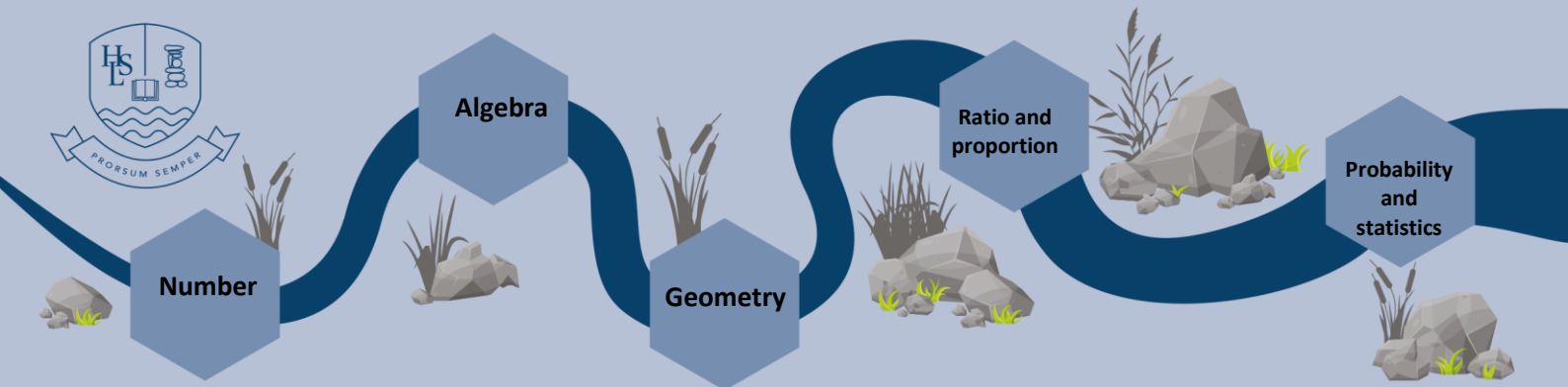
### Key Vocabulary: (Literacy)

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

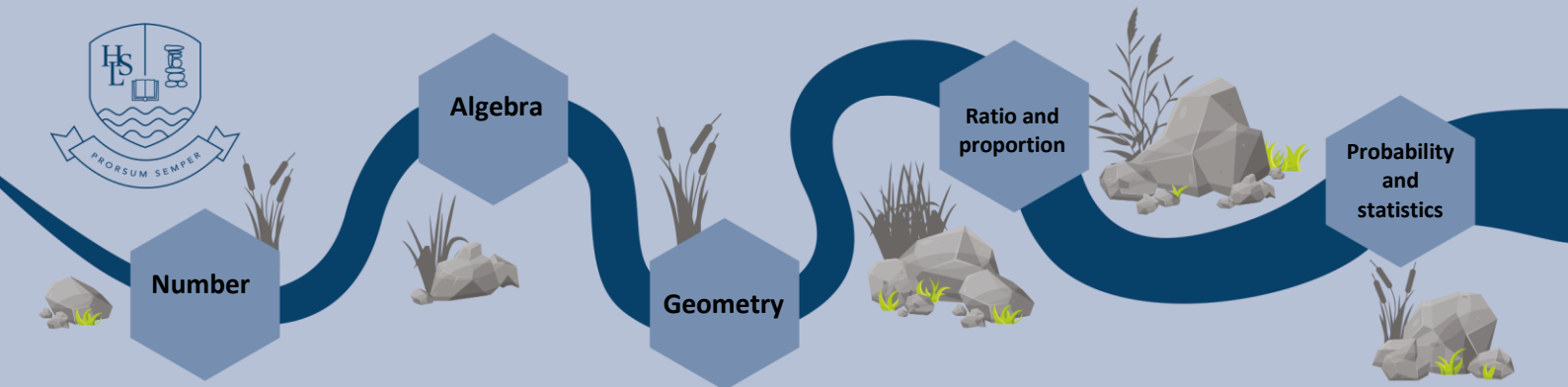
### Numeracy Opportunities:

### Career Links:

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



Subject: Maths		Year Group: 11		Term: 1, 2 and 3	
Module/Theme: Geometry					
Topic Outline & Aims (Intent) <ul style="list-style-type: none"><li>Further properties of 3D shapes</li><li>Further vectors</li><li>Further work with circles</li><li>Drawing perspectives</li></ul>					
Key Skills and Knowledge taught through this topic: (Intent) Core course content <ul style="list-style-type: none"><li>Working with faces, edges and vertices</li><li>Constructing and using elevations and plan views</li><li>Trigonometry and Pythagoras in 2D</li><li>Angles of elevation and depression</li><li>Exact values</li></ul>			Higher course content <ul style="list-style-type: none"><li>3D trigonometry and Pythagoras</li><li>Sine rule and cosine rule for non-right angled triangles</li><li>Area of a non-right angled triangle</li><li>Presenting a proof with vectors</li><li>Solving problems involving vectors and ratios</li><li>Parallel and collinear vectors</li><li>Equation of a circle</li></ul>		
Prior Learning: (Context) <ul style="list-style-type: none"><li>Working competently with units of measure</li><li>Understanding of 2d and 3d properties of shapes</li><li>Basic angle rules (straight line, points, triangles and quadrilaterals)</li><li>Plotting and reading coordinates</li><li>Basic areas and volumes</li><li>Basic transformations</li></ul>		Future Learning: (Context) <ul style="list-style-type: none"><li>Further Coordinate geometry, equation of a normal</li><li>Vectors - dot product</li><li>Advanced trig, trig identities, circular trigonometry</li><li>Geometrical proof</li><li>3d geometry and planes</li></ul>		National Curriculum Links: (Context) Edexcel Maths GCSE specification	
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British Values Links: Mutual respect – Working together with tolerance and mutual understanding, treating others with respect.					
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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:		
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Subject: Maths		Year Group: 11	Term: 1, 2 and 3
Module/Theme: Algebra			
Topic Outline & Aims (Intent) <ul style="list-style-type: none"><li>Develop fluent knowledge, skills and understanding of mathematical methods and concepts</li><li>Acquire, select and apply mathematical techniques to solve problems</li><li>Reason mathematically, make deductions and inferences, and draw conclusions</li><li>Comprehend, interpret and communicate mathematical information in a variety of forms appropriate to the information and context</li></ul>			
Key Skills and Knowledge taught through this topic: (Intent)			
Core content for higher and foundation: Extensions of the following <ul style="list-style-type: none"><li>Operations with integers, decimals, fractions (incl. negatives)</li><li>Place value &amp; rounding (decimal places, sig. figs)</li><li>Factors, multiples, primes, HCF, LCM</li><li>Order of operations (BIDMAS)</li><li>Converting between fractions, decimals, percentages</li><li>Estimation &amp; approximation</li><li>Standard form calculations, error intervals</li></ul>		Content specifically for higher students <ul style="list-style-type: none"><li>Product rule for counting (systematic listing)</li><li>indices: negative, fractional powers</li><li>Surds: simplifying, rationalising denominators</li><li>Recurring decimals ↔ fractions</li><li>Limits of accuracy (upper/lower bounds)</li><li>Exact calculations using surds and π</li></ul>	
Prior Learning: (Context) <ul style="list-style-type: none"><li>Basic arithmetic</li><li>Place value and number properties</li><li>Fractions decimals and percentages</li><li>Basic algebraic manipulation</li><li>Number sequences and pattern</li><li>Ratio and proportions</li><li>Multiples and divisibility rules</li><li>Understanding negative numbers</li><li>Estimation and rounding</li></ul>	Future Learning: (Context) KS5 – A level <ul style="list-style-type: none"><li>Logarithms and inequalities</li><li>Exponential growth and decay</li><li>Binomial expansion</li><li>Arithmetic and geometric series</li><li>Differentiation</li><li>Integration</li></ul>		National Curriculum Links: (Context) Edexcel Maths GCSE specification
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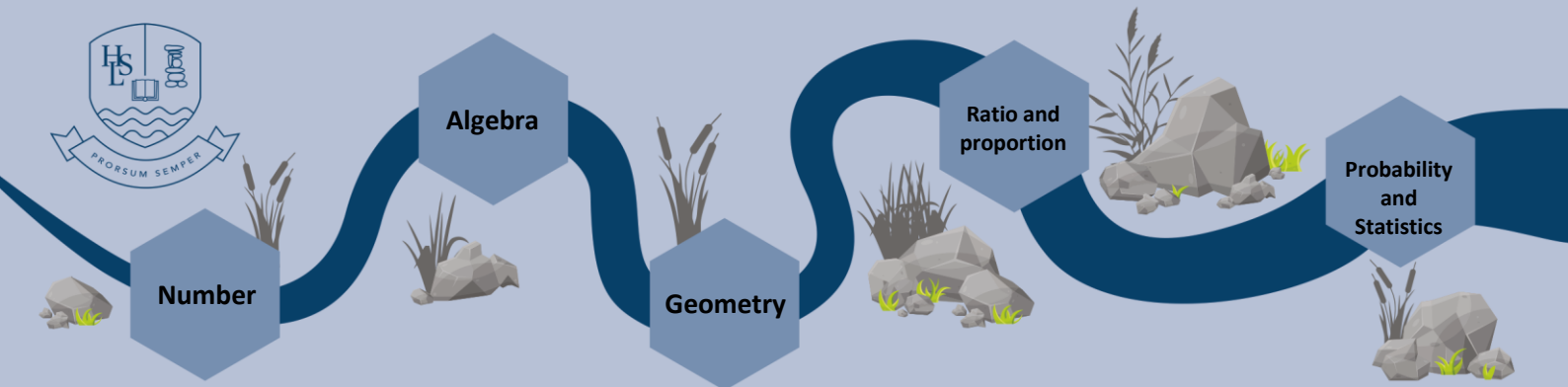
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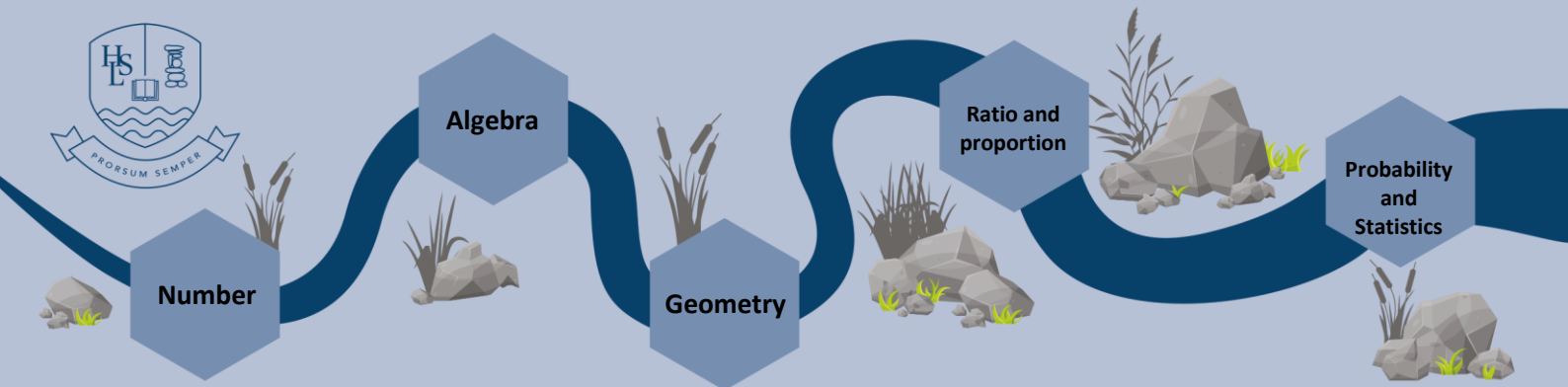
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Module/Theme: Probability and Statistics					
Topic Outline & Aims (Intent) <ul style="list-style-type: none"><li>Further probability</li><li>Representing data</li></ul>					
Key Skills and Knowledge taught through this topic: (Intent) Foundation course content <ul style="list-style-type: none"><li>Using and calculating relative frequency</li><li>Recording outcomes systematically</li><li>Comparing and using experimental and theoretical probabilities</li><li>Tree diagrams for independent and dependent events</li><li>Constructing and interpreting pictograms, bar charts, time series, histograms (even class widths), stem and leaf, pie charts, scatter graphs</li></ul>					
Prior Learning: (Context) <ul style="list-style-type: none"><li>Arithmetic and number skills</li><li>Familiarity with graphs, charts, averages and range</li><li>Understand basic probability</li><li>Understand basic algebra</li><li>Logical thinking and interpreting work problems</li></ul>		Future Learning: (Context) <ul style="list-style-type: none"><li>Advanced statistical measures – standard deviation, variance, confidence intervals, skewness</li><li>Probability theory – distributions</li><li>Permutations and combinations, binomial expansion</li><li>Hypothesis testing, correlation coefficients</li><li>Complex sampling methods</li></ul>		National Curriculum Links: (Context) Edexcel GCSE Maths specification	
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Subject: Maths		Year Group: 11		Term: 1, 2 and 3	
Module/Theme: Ratio and Proportion					
Topic Outline & Aims (Intent) <ul style="list-style-type: none"><li>• Rates of change</li><li>• Compound growth and decay</li><li>• Percentage changes</li><li>• Multiplicative reasoning</li></ul>					
Key Skills and Knowledge taught through this topic: (Intent)					
Foundation course content <ul style="list-style-type: none"><li>• Solve problems involving ratio</li><li>• Use of multipliers for percentages</li><li>• Percentage profit and loss</li><li>• Compound interest</li><li>• Compound measures</li><li>• Direct and inverse proportion problems</li></ul>			Higher course content <ul style="list-style-type: none"><li>• Average and instantaneous rates of change in numerical, algebraic and graphical contexts</li><li>• Compound interest, growth, decay and depreciation</li></ul> Converting between compound units		
Prior Learning: (Context) <ul style="list-style-type: none"><li>• Understanding basic ratios (simplifying, dividing amounts into)</li><li>• Basic arithmetic skills</li><li>• Fractional understanding</li><li>• Percentages and percentage change</li><li>• Units of measure and scales</li></ul>		Future Learning: (Context) <ul style="list-style-type: none"><li>• Graphs and equations of proportion</li><li>• Calculus – differentiation and integration</li><li>• Statistics – Probability theory, sampling, data analysis</li><li>• Mechanics – Kinematics, Newton’s Laws of Motion, circular motion</li><li>• Trigonometry</li></ul>		National Curriculum Links: (Context) Edexcel GCSE Maths specification	
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