Key Stage 3 Subject Timeline Year 7 to 8

Subject: Mathematics (Band 1)   **Exam Board: Pearson**

	Year 7					
	Autumn 1	**Autumn 2**	**Spring 1**	**Spring 2**	**Summer 1**	**Summer 2**
Topics	Square numbers Pythagoras Prime and negative numbers Factors and Multiples Highest common factor Lowest common multiple Powers	Simplifying algebra Expanding brackets Substitution Fractions – 4 operations	Angle rules Angles in polygons Decimal calculations Inequalities	Solving equations Rearranging expressions Equations with powers	Calculate with ratio Link fractions and ratio Calculate area and perimeter Find volume and surface area Conversion	Sequences Drawing graphs Equations
Key skills and Concepts	Recognising square numbers Using calculators correctly Understanding that square numbers can be decimals How to use Pythagoras Find factors and multiples Calculations	Simplifying and substitution. Expanding brackets Substitution of positive and negative numbers Fractions – 4 operations	Spotting and using angle rules Finding angles in polygons Calculating with decimals Using inequalities Inequality equations	Finding an unknown Powers Solving equations	Sharing into ratios Worded ratio questions Area and perimeter Finding volume and surface area Converting units	Finding nth term Linear and geometric sequences Solving equations Drawing graphs from equations
Threshold Concepts	Using equipment Basic understanding of calculator use Understanding of square numbers	An idea about negative numbers Concept of unknowns Substitution	Basic understanding of angles Multiplication Knowledge of inequality signs	Basic understanding of algebra Ability to find an unknown in a basic equations Knowledge of powers and indices	Understanding of ratio Knowledge of ratio Ability to find basic area and perimeter Conversion	Basic sequences Drawing simple graphs Solving equations
Endpoints	To understand how to find missing sides using Pythagoras. Find HCF and LCM.	Understanding of the concept of using algebra with simplifying, substitution How formulae can be used and how to substitute in Concept of factorising.	Understand and use angle rules. Finding interior and exterior angles. Decimal calculations. Using inequalities.	Solving equation with brackets/unknowns on both sides. Rearranging expressions. Solving harder equations.	Calculate with ratio. Find area/perimeter. Find volume and surface area. Conversion between units of length/mass.	To work with the nth term of sequences. Drawing graphs from an equation. Solving equations graphically.
Assessment	In class formative assessment	End of term test	In class formative assessment	In class formative assessment	In class formative assessment	End of year exam

Subject: Mathematics (Band 1)   **Exam Board: Pearson**

	Year 8					
	Autumn 1	**Autumn 2**	**Spring 1**	**Spring 2**	**Summer 1**	**Summer 2**
Topics	Powers of numbers Rounding Using brackets Simplifying algebra Solving equations Collect like terms	Volume of prisms Area/perimeter of a circle Pythagoras Rearranging harder formulae Real life graphs Compound units Proportion problems	Transformations Construct shapes Enlargement Use similarity and congruence of shapes Convert FDP Compare percentages	Draw and measure angles Construct bisectors Use properties of shapes to find missing angles Understand how to label angles and sides	Language of probability Probability scales Sample space diagrams Use sample space for conditional/single/combined events Use scale factors Congruent triangles	Inverse operations Use coordinates Linear graphs Use y = mx+ c Calculate gradients and y-intercepts Model situations using graphs
Key skills and Concepts	Powers and roots Rounding Algebra as a concept Simplifying and solving equations	What volume is and how to calculate it How to use pi Why we need to rearrange and how to do it Real life graphs Converting units Concept of proportion	4 types of transformations Constructions Using SAS/SSS for similarity Converting FDP Use percentages to compare amounts	Use a protractor Use a compass to bisect lines/angles Angles in polygons Concept of regular polygons Correct angle notation	How and why we use probability What sample space diagrams are used for Difference between combined/single events Congruency	Coordinates in 4 quadrants Linear graphs Substitution Finding and drawing gradient Concept of y = mx + c Real life situations modelled using graphs
Threshold Concepts	Concept of powers/roots The need to round numbers Basic understanding of algebra Understanding of negative numbers	3D shape definition Volume of cuboids How to read scales and draw graphs Understanding of different units Basic idea of proportion	Understanding of single transformations How to construct basic shapes The idea that a fraction has an equivalent decimal and percentage Concept of a percentage	Using a protractor/compass Basic angle facts Properties of 2D shapes Recognition of 2D shapes, including regular/irregular	Probability as a concept The idea that probabilities can be defined as a fraction Idea of scale factors	Basic coordinates Simple substitution Understanding of applying maths to real life situations Ability to read information from graphs
Endpoints	To use powers and roots effectively To expand with single and double brackets To solve one/two step equations to include brackets	Able to calculate volume and understand the different shapes Convert different units Understand how to use proportion	4 transformations Basic constructions Convert fractions, decimals and percentages Calculate percentage change	Construction Use basic angle rules Properties of shapes Calculating interior and exterior angles	Using probability Writing probability correctly Using sample space diagrams to show outcomes Calculate probabilities of events	Substitution with positive and negative numbers Drawing linear graphs Concept of gradient and y-intercept Using real life graphs
Assessment	In-class formative assessment	End of term assessment	In-class formative assessment	In-class formative assessment	In-class formative assessment	End of year assessment