RUSHCLIFFE
SPENCER ACADEMY

SUBJECT	MATHS	YEAR	11 Foundation

Why do we study maths?

The maths curriculum provides me with the knowledge I need to be mathematically fluent and develops my mathematical reasoning and problem-solving skills.

What will I learn about this year?	What have I learnt about before?
Number	
Strengthening my understanding of: Fractions, decimals and percentages Primes, factors and multiples Place value and rounding Powers, indices and standard form	Rounding to required accuracy, estimation and identifying bounds Fractions and decimals - equivalence, ordering and the 4 operations (including negatives) Calculations with numbers in standard form Rules of indices up to negative integer powers
Algebra	
Strengthening my understanding of algebraic manipulation, solving linear equations and sequences Interpreting simple expressions as functions with inputs and outputs Identifying expressions, equations, formulae and identities Using and rearranging formulae (variable on one side) Solving linear/linear simultaneous equations Solving linear inequalities and representing solutions on a number line Strengthening my understanding of straight-line graphs Plotting and identifying key features of quadratic graphs both graphically and algebraically (roots)	Forming and solving equations with unknowns on one side including with brackets and with unknowns on both sides Algebraic notation and manipulation Substituting into formulae Changing the subject of the formula (variable on one side) Types of sequences and finding the nth term of linear sequences Plotting linear graphs and understanding y=mx+c and equations of parallel Plotting basic quadratic graphs
Ratio and Proportion	
Strengthening my understanding of: Ratios – Equivalence, recipes, ratios as fractions, sharing in ratio Plotting and interpreting real life graphs Solving problems involving direct and inverse proportion including graphical and algebraic representations Setting up and solving growth and decay problems including compound interest	Ratios – Equivalence, recipes, ratios as fractions, sharing in ratio Percentages – find of amounts (including with multipliers), percentage increase and decrease, reverse percentages Sketching and drawing non-linear graphs to find approximate solutions to real life problems – distance time graphs and quadratic, piece-wise linear, exponential and reciprocal functions
Geometry	
Strengthening my understanding of: Angle facts - on a line, around a point, vertically opposite, in polygons and in parallel lines Area – rectangles, parallelograms, triangles, trapezia and compound shapes and of area and circumference of circle Trigonometry and Pythagoras (right angled triangles) Applying addition, subtraction and scalar multiplication of vectors Using diagrammatic and column vector representations of vectors	Angle facts - on a line, around a point, vertically opposite, in polygons and in parallel lines Area – rectangles, parallelograms, triangles, trapezia and compound shapes Area and circumference of circle Pythagoras and trigonometry (right angled triangles) Translation vectors
Statistics	
Strengthening my understanding of using averages and the range to compare data and presenting data	Calculating averages and range and presenting data: in tables and in graphs and charts
Where can I find out more?	

The Perfect Sausages (areas and volumes, ellipsoids and toruses, number formulas speed, acceleration, stopping time, distance, force, gravity, projectiles, Money: percentages;, permutations and combinations.)
The 5ecret L1fe of Code5 (patterns, logic, prime numbers, high powers, modular arithmetic.) Murderous Maths series: author Kjartan Poskitt