Mathematics

Year 7

Curriculum Overview

Intent: During year 7, students will develop what they learnt in key stage 2 and build upon their knowledge across a range of topics listed below. Students will learn how to apply the mathematics they are learning into a range of different contexts. Students will develop skills which they will practise and apply to problems and reasoning. This will enable learner to be successful within their subject and find the enjoyment in mathematics.

	Unit 1: Integer Number Structures	Unit 2: Introducing Algebra	Unit 3: Measurements	Unit 4: Formulae and Sequences	Unit 5: Area and Transformations	Unit6: Introducing Ratio
	12 Weeks	**5 Weeks**	**4 Weeks**	**4 Weeks**	**5 Weeks**	**3 Weeks**
Core Course Topic: These topics are taught through the identified terms. They are taught in small bitesize chunks and revisited regularly.	• Basic number and place value • Multiples, factors, roots, powers and primes • Types of numbers • Order of operations • Directed numbers • Rounding and estimation • Decimals • Fractions • FDP • Percentage • Powers and roots • Prime factor decomposition • HCF and LCM	Algebraic Notation Simplifying expressions Solving simple equations	• Properties of 2D and 3D shape (including symmetry) • Time • Metric conversions • Properties of angles • Construction of basic 2D shapes	• Substitution and formulae • Functions • Sequences	• Areas of 2D shapes • Transformations 2D of shapes including enlargement.	• Ratio notation • Relationship between fraction and ratio • Sharing in a ratio
Additional support links:	Sparx maths is a platform which students use to complete their mathematics homework. There is also independent practise on there for the students to complete. Students will be supported with revision lists for all assessments, through the module introduction sheet or revision guide for larger assessments. The mathematics team also assist with homework club as well as the whole school Homework Club.					
Knowledge: Included here is the specific knowledge your child will learn in detail	Students will learn to: • understand the structure of numbers, • add, subtract, multiply and divide numbers • work with negative numbers • will apply the order of operations (BIDMAS) • write a number as a product of prime factors • find the percentage of an amount • percentage increase & decrease • Calculate with fractions	Students will learn to: • write expressions with algebra • form and solve basic equations • collect like terms	Students will learn to: • describe types of polygons • identify rotational and line symmetry • find missing angles around a point, straight line, triangles and quadrilaterals • measure and draw angles	Students will learn to: • substitute into key formulae from science and mathematics • find the rules of sequences and missing terms find the nth term of a sequence	Students will learn to: • calculating the area of shapes • use formulae for finding area of shapes • reflect, rotate, translate and enlarge shapes by a scale factor	Students will learn to: • write in ratio notation • explain what a ratio is • simplify a ratio • write ratio as a fraction • share amounts into ratio

Mathematics

Year 7

Curriculum Overview

Common Lexicon: These are the key words and terms learnt. These can be found on knowledge organisers.	Significant figures, decimal places, base, indices. Increase, decrease, depreciate, numerator, denominator, prime numbers, product	Expressions, formulae, term, identify, equations, inequalities, solve, represent.	Names of polygon, types of angles, metric measures.	Substitution, formulae, simplify, express.	Area, shape names, rotate, reflect, translate and enlarge.	Area, shape names, tessellation, rotate, reflect, translate and enlarge.
Ambition Curriculum	**Real World** Link to finance, weather with negatives, and overdrafts. Historical and cultural links to number systems taught: History of negatives Use of fractions in Victorian times with money Link Other number systems from history link Origin of the number 1 Video link Fermi- estimation Video link	**Real World** Links to real application of formulae in shops and for calculating costs. **Aspirations: Careers** Link to formulae used in science	**Real World** Measurement of real-life, conversions in medicine careers, links to careers with area and angles. Introduction to Euler's theories and Four Colour Theorem Link History of measuring time and early calendars Link Link	Use of real-life formulae in context, patterns in Link to percentages in finance. Discussion around career pathways History of Fractions, where did they come from, use of hieroglyphics Link	**Real Life- British Values** Link to real –life patterns in religion and history. Tessellation in Islamic art link	Real life links between patterns and numbers. Proportion links to pay and wages. Tuning and ratio- link to music Link: To understand how the notes are tuned in modern pianos, and why this system of tuning has been adopted, you need to understand the relationship of the intervals between the notes to the mathematical concept of logarithms.