

Year 7

What are the aims and intentions of this curriculum?

Students are taught how to work with numbers, algebra, ratio, proportions and rates of change, geometry and measures, probabilities and statistics. The skills attained in KS2 are consolidated mainly through visual arithmetic and concrete applications. At the end of each topic, a closing-the-gap-questionnaire in the form of a review sheet is required to be completed by the students. Homework is given on a weekly basis and is expected to be completed online. To provide students with a holistic experience, prepare them for future success, help them aspire and value mathematics, Personal Social Health and Economic (PSHE) education and Careers Education (CE) are incorporated into the curriculum.

Term	Topics	Knowledge and key terms	Skills developed	Assessment
Autumn 1	Analysing and displaying data	Data, Frequency, axis, Vertical, hypothesis, sample, survey	Interpret and construct tables, charts and diagrams, including frequency tables, bar charts, pie charts and pictograms for categorical data, vertical line charts for ungrouped discrete numerical data, tables and line graphs for time series data and know their appropriate use.	End of topic review Homework Bookmarking Classroom feedback Half-term formal assessment
			CE: Research, business or annuities or market data analyst, data engineer, data quality analyst, statistician, fraud countering, insurance	
	Number skills	integer, factor, factorisation, divisor, simplify, cancelation, inverse, notation	Order positive and negative integers, decimals and fractions; apply the four operations, use the concepts and vocabulary of prime numbers, factors (divisors, multiples, common factors, common multiples, highest common factor, lowest common multiple, prime factorisation, use positive integer powers and associated real roots. CE: Auditor, data scientist, data analyst, economist, financial planner, accountant, market researcher, mathematician	
			PSHE: Analysing physical health and fitness data to promote regular exercise.	
Autumn 2	Expressions, functions and formulae.	Term, variable, coefficient, like term, expression, formulae, equation, function inequality, significant, interval, factor, expand scale	Use and interpret algebraic manipulation, substitute numerical values into formulae and expressions, understand and use the concepts and vocabulary of expressions, equations, formulae, terms and factors, simplify, collect like term and expanding products of two or more binomials CE: Jeweler, air traffic controller, dietitian, teacher, nutritionist, broadcast technician, carpenter	End of topic review Homework Bookmarking Classroom feedback Half-term formal assessment

	Decimals and measures	Compare, magnitude, round, estimate, convert, capacity, metric and imperial, scales, place value, area, perimeter	Use standard units of mass, length, use scale factors, scale diagrams and maps, apply formulae to calculate: area of triangles, parallelograms, round number to appropriate degree of accuracy. CE: Measurement technician, instrument supervisor, precision instrument technician/engineer PSHE: Using substitution into formulae to evaluate BMI and raise awareness of healthy eating.	
Spring 1	Fractions	Quantity, Amount, Numerator, Denominator,	Add and subtract decimal, multiply and divide decimals, interpret fractions and percentages as operators, express one quantity as a fraction interchangeably with terminating decimals, fraction, and percentage. CE: Costumer service, cashier, manufacturing, assembler, warehouse worker	End of topic review Homework Bookmarking Classroom feedback Half-term formal assessment
	ΡΓΟΦαΦΙΙΙΤΥ	and mutual, experimental, relative	Relate relative expected frequencies to theoretical probability, using appropriate language and the 0-1 probability scale. Apply the property that the probabilities of an exhaustive set of outcomes sum to one; apply the property that the probabilities of an exhaustive set of mutually exclusive events sum to one. CE: Actuary, biostatistician, brand optimisation analyst, business analyst, data analyst PSHE: Use probability to develop an understanding of the negative effects of gambling, especially in the online context.	
Spring 2	Ratio and proportion	Simplify, ratio, proportion, increase, decrease, fraction	 Express one quantity as a fraction of another, use ratio notation, divide a given quantity into two parts in a given part: part or part: whole ratio; apply ratio to real contexts and problems. CE: Housekeeper, cashier, food and beverages line server, production, packer, cook, costumer service, pack line operator 	End of topic review Homework Bookmarking Classroom feedback Half-term formal assessment
	Lines and angles	Vertices, edges, planes, parallel line, perpendicular lines, polygons, symmetries, vertically opposite, alternate, corresponding angles, coordinates, quadrants, sequence, arithmetic	Terms and notation: points, lines, vertices, edges, planes, parallel lines, perpendicular lines, right angles, polygons, and polygons with reflection and/or rotation symmetries; apply the properties of angles at a point, angles at a point on a straight line, vertically opposite angles; understand and use alternate and corresponding angles on parallel lines; derive and apply the properties and definitions of special types of quadrilaterals, including square, rectangle, parallelogram, trapezium, kite and rhombus; and triangles and other plane figures using appropriate language. CE: Construction, teacher, interior designer, CAD engineer, plumber PSHE: Use proportion to evaluate the trustworthiness of information.	

Summer 1	Sequences and graphs	Term, sequence, arithmetic, geometric, quadrant	Work with coordinates in all four quadrants; plot graphs of equations that correspond to straight-line graphs in the coordinate plane; generate terms of a sequence from either a term-to-term or a position-to-term rule; recognise and use sequences of triangular, square and cube numbers, simple arithmetic progressions.	End of topic review Homework Bookmarking Classroom feedback End of year formal assessment
			CE: Food services, barista, housekeeper, utilities worker, librarian, assembly, cook, machine operator	
	Transformations	Congruence, scale factor, center of rotation and	Use the basic congruence criteria for triangles (SSS, SAS, ASA, RHS) and construct them; rotation, reflection, translation and enlargement of shapes.	
		enlargement, image, object; clock and anti-	CE: Construction worker, teacher, interior designer, CAD engineer, plumber, animator	
		clock wise, mirror line	PSHE: During end of year examination preparation, maintaining good health by getting enough sleep is promoted to improve concentration and overall wellbeing during times of intense examinations.	