

Mathematics

We believe that all of our students can be mathematicians, who enjoy and excel in mathematics at all levels. All students, irrespective of ability, should be given the opportunity to achieve their full potential in mathematics.

We are aiming for all of our students to be:

- Fluent in the fundamentals of mathematics so they can master the subject
- Good communicators by clearly explaining their thoughts and giving reasons
- Resilient problem solvers who have the confidence to try and try again
- Committed to the 'why', not just the 'how'

At Cornwallis Academy, we teach the National Curriculum for mathematics, which aims to ensure that all pupils:

- become fluent in the fundamentals of mathematics, including through varied and frequent practice with increasingly complex problems over time, so that pupils have conceptual understanding and are able to recall and apply their knowledge rapidly and accurately to problems
- reason mathematically by following a line of enquiry, conjecturing relationships and generalisations, and developing an argument, justification or proof using mathematical language
- can solve problems by applying their mathematics to a variety of routine and non-routine problems with increasing sophistication, including breaking down problems into a series of simpler steps and persevering in seeking solutions

Year 7 Mathematics

Term One

Content of study	Unit 1: Analysing and displaying data Unit 2: Number Skills
What are the aims and objectives of this term?	Unit 1: • To find the mode, median and range for set of data • To find information from tables and diagrams • To display data using tally charts, tables, bar charts and bar line charts • Interpret simple charts for grouped data • Find the modal class for grouped data • Calculate the mean of a set of data • Compare sets of data using their ranges and averages • Understand and draw line graphs • Understand and draw dual and compound bar charts Unit 2: • Use the priority of operations, including brackets • Use multiplication facts up to 10×10 and the laws of arithmetic to do mental multiplication and division • Multiply by multiples of 10, 100 and 1000 • Make an estimate to check an answer • Use inverse operations to check an answer • Use a written method to add and subtract whole numbers of any size • Round whole numbers to the nearest 10 000, 100 000, 1 000 000. • Use an estimate to check an answer to a multiplication • Use a written method to multiply whole numbers

	• Use a written method to divide whole numbers • Use inverse operations to check an answer • Round money to the nearest pound or penny • Interpret the display on a calculator in different contexts • Use a calculator to solve problems involving money and time • Order positive and negative numbers • Add and subtract positive and negative numbers • Begin to multiply with negative numbers • Find all the factor pairs for any whole number • Identify common factors, the highest common factor and the lowest common multiple • Recognise prime numbers • Recognise square numbers • Use a calculator to find squares and square roots • Use the priority of operations, including powers • Use index form for powers • Do mental calculations with squares and square roots
What previous knowledge is required?	Unit 1: • Primary: ○ Read scales/number lines with labelled intervals divided into 2, 4, 5 and 10 equal parts Unit 2: • Primary: ○ Recognise the place value of each digit in numbers up to 10 million, including decimal fractions, and compose and decompose numbers up to 10 million using standard and non-standard partitioning ○ Reason about the location of any number up to 10 million, including decimal fractions, in the linear number system, and round numbers, as appropriate, including in contexts ○ Use a given additive or multiplicative calculation to derive or complete a related calculation, using arithmetic properties, inverse relationships, and place-value understanding
How will this term's content help with future learning?	Unit 1: • Year 7 Unit 4 Decimals and measures form: ○ Reading scales and using scale diagrams Year 7 Unit 6 Probability ○ Drawing and using tally charts and frequency tables in probability experiments • Year 8 Unit 1 Statistics, graphs and charts: ○ Using two-way tables ○ Calculating the mean from a frequency table ○ Using tables for grouped data ○ Comparing data using statistics ○ Choose the most appropriate average to use ○ Explaining why a graph or chart could be misleading

	Unit 2: • Year 7 Unit 4 Decimals and measures: ○ Reading scales ○ Rounding to 1 decimal place ○ Multiplying decimals by whole numbers ○ Checking answers to decimal calculations using estimates and inverse operations ○ Using written methods for multiplication and division involving decimals ○ Using squares and square roots in area calculations • Year 7 Unit 11 Number: ○ Using written methods to add and subtract more than two numbers (and decimals) ○ Using mental calculation for multiplication ○ Estimating answers to calculations ○ Using a written method to divide decimal numbers by integers ○ Calculating using squares, square roots, cubes and cube roots ○ Using prime factorisation for finding HCF and LCM • Year 8 Unit 4 Decimals and ratios: ○ Rounding decimals to 2 decimal places ○ Ordering negative and positive decimals • Year 8 Unit 8 Percentages, decimals and fractions: ○ Percentages, decimals and fractions ○ Calculating with time • Year 9 Unit 4 Multiplicative reasoning: ○ Finding an original amount using inverse operation
Links to the national curriculum/specification	https://www.gov.uk/government/publications/national-curriculum-in-england-mathematics-programmes-of-study/national-curriculum-in-england-mathematics-programmes-of-study#key-stage-3 Unit 1 – Analysing and Displaying Data: - • Describe, interpret and compare observed distributions of a single variable through appropriate graphical representation involving discrete, continuous and grouped data; and appropriate measures of central tendency (mean, mode, median) and spread (range, consideration of outliers) • Construct and interpret appropriate tables, charts, and diagrams, including frequency tables, bar charts, pie charts, and pictograms for categorical data, and vertical line (or bar) charts for ungrouped and grouped numerical data • Describe simple mathematical relationships between 2 variables (bivariate data) in observational and experimental contexts and illustrate using scatter graphs Unit 2 – Number Skills • Understand and use place value for decimals, measures and integers of any size

	- Order positive and negative integers, decimals and fractions; use the number line as a model for ordering of the real numbers; use the symbols $=, \neq, <, >, \leq, \geq$ - Use the concepts and vocabulary of prime numbers, factors (or divisors), multiples, common factors, common multiples, highest common factor, lowest common multiple, prime factorisation, including using product notation and the unique factorisation property - Use the 4 operations, including formal written methods, applied to integers, decimals, proper and improper fractions, and mixed numbers, all both positive and negative - Use conventional notation for the priority of operations, including brackets, powers, roots and reciprocals
Term Two	
Content of Study	Unit 3: Expressions, Functions and Formulae Unit 4: Decimal and Measures
What are the aims and objectives of this term?	Unit 3: - Find outputs of simple functions written in words and using symbols - Describe simple functions in words - Use letters to represent unknowns in algebraic expressions - Simplify linear algebraic expressions by collecting like terms - Multiply and divide algebraic terms - Use brackets with numbers and letters - Write expressions from word descriptions using addition, subtraction, multiplication and division - Write expressions to represent function machines - Substitute positive whole numbers into simple formulae written in words - Substitute positive whole numbers into formulae written with letters - Write simple formulae in words - Write simple formulae using letter symbols - Identify formulae and functions - Identify the unknowns in a formula and a function Unit 4: - Measure and draw lines to the nearest millimetre - Write decimals in order of size - Round decimals to the nearest whole number and to 1 decimal place - Round decimals to make estimates and approximations of calculations - Multiply and divide by 10, 100 and 1000 - Convert measurements into the same units to compare them - Solve simple problems involving units of measurement in the context of length, mass and capacity - Convert between metric units of length, mass and capacity - Use scale diagrams - Read scales - Write decimal measures as two related units of measure - Interpret metric measures displayed on a calculator - Multiply decimals by multiples of 10, 100 and 1000

	• Multiply decimals mentally • Check a result by considering whether it is of the right order of magnitude • Understand where to position the decimal point by considering equivalent calculations • Add and subtract decimals • Multiply and divide decimals by single-digit whole numbers • Divide numbers that give decimal answers • Work out the perimeters of composite shapes and polygons • Solve perimeter problems • Find areas of irregular shapes by counting squares • Calculate the areas of shapes made from rectangles • Solve problems involving area • Choose suitable units to measure length and area • Use units of measure to solve problems • Use metric and imperial units
What previous knowledge is required?	Unit 3: • Primary: ○ Use a given additive or multiplicative calculation to derive or complete a related calculation, using arithmetic properties, inverse relationships, and place-value understanding • Year 7 Unit 2 Number skills: ○ Using inverse operations to check an answer Unit 4: • Primary: ○ Recognise the place value of each digit in numbers up to 10 million, including decimal fractions, and compose and decompose numbers up to 10 million using standard and non-standard partitioning ○ Divide powers of 10, from 1 hundredth to 10 million, into 2, 4, 5 and 10 equal parts, and read scales/number lines with labelled intervals divided into 2, 4, 5 and 10 equal parts ○ Understand that 2 numbers can be related additively or multiplicatively, and quantify additive and multiplicative relationships (multiplicative relationships restricted to multiplication by a whole number) ○ Knowing whether to multiply or divide to solve a problem, scale diagrams • Year 7 Unit 2 Number skills: ○ Rounding money to the nearest pound or penny ○ Using partitioning to multiply ○ Multiplying whole numbers by multiples of 10, 100 and 1000 ○ Working with squares and square roots ○ Using a calculator, calculating results accurately and then interpreting them appropriately ○ Using inverse operations to check an answer ○ Making an estimate to check an answer

	○ Using written methods for whole number multiplication and division
How will this term's content help with future learning?	Unit 3: • Year 8 Unit 2 Expressions and equations: ○ Simplifying algebraic expressions with powers ○ Expanding brackets ○ Factorising expressions ○ Solving one-step and two-step equation ○ Checking answers to equations by substituting • Year 9 Unit 2 Expressions and formulae ○ Substituting into formulae and then solving equations to find unknown values Unit 4: • Year 8 Unit 4 Decimals and ratio: ○ Rounding decimals to 2 or 3 decimal places ○ Ordering decimals of any size, including positive and negative decimals ○ Multiplying and dividing by decimals ○ Multiplying decimals with up to and including 2 decimal places ○ Using ratios involving decimals • Year 7 Unit 12 Area and volume ○ Working with rough metric equivalents of imperial measure
Links to the national curriculum/specification	https://www.gov.uk/government/publications/national-curriculum-in-england-mathematics-programmes-of-study/national-curriculum-in-england-mathematics-programmes-of-study#key-stage-3 Unit 3 – Expressions, Functions and Formulae • Use and interpret algebraic notation, including: • ab in place of $a \times b$ • $3y$ in place of $y + y + y$ and $3 \times y$ • a^2 in place of $a \times a$, a^3 in place of $a \times a \times a$; a^2b in place of $a \times a \times b$ • $\frac{a}{b}$ in place of $a \div b$ • coefficients written as fractions rather than as decimals • brackets • Substitute numerical values into formulae and expressions, including scientific formulae • Understand and use the concepts and vocabulary of expressions, equations, inequalities, terms and factors • Simplify and manipulate algebraic expressions to maintain equivalence by: • collecting like terms

	Unit 4 – Decimals and Measures - Understand and use place value for decimals, measures and integers of any size - Order positive and negative integers, decimals and fractions; use the number line as a model for ordering of the real numbers; use the symbols $=$, $\neq$, $<$, $>$, $\leq$, $\geq$ - Use standard units of mass, length, time, money and other measures, including with decimal quantities - Round numbers and measures to an appropriate degree of accuracy [for example, to a number of decimal places or significant figures] - Derive and apply formulae to calculate and solve problems involving: perimeter and area of triangles
Term Three	
Content of Study	Unit 5: Fractions and Percentages Unit 6: Probability
What are the aims and objectives of this term?	Unit 5: - Use fraction notation to describe parts of a shape - Compare simple fractions - Use a diagram to compare two or more simple fractions - Order fractions - Identify equivalent fraction - Simplify fractions by dividing numerator and denominator by common factors - Change an improper fraction to a mixed number - Add and subtract simple fractions - Calculate simple fractions of quantities - Work with equivalent fractions and decimals - Write one quantity as a fraction of another - Understand percentage as 'the number of parts per 100' - Convert a percentage to a fraction or decimal - Work with equivalent percentages, fractions and decimals - Use different strategies to calculate with percentages - Express one quantity as a percentage of another Unit 6: - Use the language of probability - Use a probability scale with words - Understand the probability scale from 0 to 1 - Identify outcomes and equally likely outcomes - Calculate probabilities - Use a probability scale from 0 to 1 - Calculate more complex probabilities - Calculate the probability of an event not happening - Record data from a simple experiment - Estimate probability based on experimental data - Make conclusions based on the results of an experiment

	• Use probability to estimate the expected number of times an outcome will occur • Apply probabilities from experimental data in simple situations
What previous knowledge is required?	Unit 5: • Primary: ○ Recognise when fractions can be simplified, and use common factors to simplify fractions ○ Express fractions in a common denomination and use this to compare fractions that are similar in value ○ Compare fractions with different denominators, including fractions greater than 1, using reasoning, and choose between reasoning and common denomination as a comparison strategy • Year 7 Unit 2 Number skills: ○ Using factors and multiples • Year 7 Unit 4 Decimals and measures: ○ Working with tenths, hundredths and thousandths Unit 6: • Year 7 Unit 1 Analysing and displaying data: ○ Drawing and using tally charts and frequency tables • Year 7 Unit 3 Expressions, functions and formulae: ○ Substituting into formula • Year 7 Unit 4 Decimals and measures: ○ Understanding decimals between 0 and 1 ○ Subtracting decimals from 1 • Year 7 Unit 5 Fractions and percentages: ○ Understanding fractions from 0 to 1 (fractions) and percentages 0% to 100% ○ Simplifying fractions ○ Subtracting fractions from 1
How will this term's content help with future learning?	Unit 5: • Year 8 Unit 4 Decimals and ratio: ○ Rounding decimals to 2 or 3 decimal places ○ Ordering decimals of any size, including positive and negative decimals ○ Multiplying and dividing by decimals ○ Multiplying decimals with up to and including 2 decimal places ○ Using ratios involving decimals • Year 7 Unit 12 Area and volume: ○ Working with rough metric equivalents of imperial measures Unit 6: • Year 9 Unit 9 Probability: ○ Working out probabilities of mutually exclusive outcomes and events ○ Calculating estimates of probability from experiments ○ Working with sample space diagrams

	○ Calculating probabilities from two-way tables and Venn diagrams
Links to the national curriculum/specification	https://www.gov.uk/government/publications/national-curriculum-in-england-mathematics-programmes-of-study/national-curriculum-in-england-mathematics-programmes-of-study#key-stage-3 Unit 5 – Fractions and Percentages • Order positive and negative integers, decimals and fractions; use the number line as a model for ordering of the real numbers; use the symbols =, ≠, <, >, ≤, ≥ • Use the 4 operations, including formal written methods, applied to integers, decimals, proper and improper fractions, and mixed numbers, all both positive and negative • Interpret fractions and percentages as operators • Define percentage as ‘number of parts per hundred’, interpret percentages and percentage changes as a fraction or a decimal, interpret these multiplicatively, express 1 quantity as a percentage of another, compare 2 quantities using percentages, and work with percentages greater than 100% Unit 6 - Probability • Record, describe and analyse the frequency of outcomes of simple probability experiments involving randomness, fairness, equally and unequally likely outcomes, using appropriate language and the 0-1 probability scale • Understand that the probabilities of all possible outcomes sum to 1 • Enumerate sets and unions/intersections of sets systematically, using tables, grids and Venn diagrams • Generate theoretical sample spaces for single and combined events with equally likely, mutually exclusive outcomes and use these to calculate theoretical probabilities
Term Four	
Content of Study	Unit 7: Ratio and Proportion Unit 8: Lines and Angles
What are the aims and objectives of this term?	Unit 7: • Use direct proportion in simple contexts • Solve simple problems involving direct proportion • Use the unitary method to solve simple word problems involving direct proportion • Use ratio notation • Reduce a ratio to its simplest form • Reduce a three-part ratio to its simplest form by cancelling • Find equivalent ratios • Divide a quantity into two parts in a given ratio • Solve word problems involving ratio • Use ratios and measures

	• Use fractions to describe and compare proportions • Understand and use the relationship between fractions, ratio and proportion • Use percentages to describe proportions • Use percentages to compare simple proportions • Understand and use the relationship between percentages, ratio and proportion Unit 8: • Use a protractor to measure and draw angles • Recognise acute, obtuse and reflex angles • Estimate the size of angles • Describe and label lines, angles and triangles • Identify angle and side properties of triangles • Use a ruler and protractor to draw triangles accurately • Use the rules for angles on a straight line, angles around a point and vertically opposite angles • Solve problems involving angles • Use the rule for the sum of angles in a triangle • Calculate interior and exterior angles • Solve angle problems involving triangles • Identify and name types of quadrilaterals • Use the rule for the sum of angles in a quadrilateral • Solve angle problems involving quadrilaterals
What previous knowledge is required?	Unit 7: • Primary: ○ Understand that 2 numbers can be related additively or multiplicatively, and quantify additive and multiplicative relationships (multiplicative relationships restricted to multiplication by a whole number) ○ Solve problems involving ratio relationships • Year 7 Unit 2 Number skills: ○ Multiplying and dividing ○ Using factors and multiples • Year 7 Unit 5 Fractions and percentages ○ Writing one quantity as a fraction or percentage of another ○ Simplifying fractions ○ Converting between fractions and percentages Unit 8: • Primary: ○ Draw, compose, and decompose shapes according to given properties, including dimensions, angles and area, and solve related problems • Year 7 Unit 2 Number skills: ○ Using inverse operations • Year 7 Unit 3 Expressions, functions and formulae: ○ Writing expressions • Year 7 Unit 4 Decimals and measures: ○ Reading scales

How will this term's content help with future learning?	Unit 7: - Year 8 Unit 4 Decimals and ratio - Dividing a quantity into three or more parts in a given ratio - Working with unit ratios Year 8 Unit 9 Straight-line graphs - Working with direct proportion on graphs - Year 9 Unit 4 Multiplicative reasoning - Solving best buy problem Unit 8: - Year 8 Unit 5 Lines and angles: - Solving geometric problems using side and angle properties - Identifying angles in parallel lines - Understanding proofs of angle facts - Calculating interior and exterior angles - Year 9 Unit 5 Constructions - Construct and drawing accurate scale diagrams - Construct triangles
Links to the national curriculum/specification	https://www.gov.uk/government/publications/national-curriculum-in-england-mathematics-programmes-of-study/national-curriculum-in-england-mathematics-programmes-of-study#key-stage-3 Unit 7 – Ratio and Proportion - Use ratio notation, including reduction to simplest form - Divide a given quantity into 2 parts in a given part:part or part:whole ratio; express the division of a quantity into 2 parts as a ratio - Understand that a multiplicative relationship between 2 quantities can be expressed as a ratio or a fraction - Relate the language of ratios and the associated calculations to the arithmetic of fractions and to linear functions Unit 8 – Lines and Angles - Draw and measure line segments and angles in geometric figures, including interpreting scale drawings - Derive and use the standard ruler and compass constructions (perpendicular bisector of a line segment, constructing a perpendicular to a given line from/at a given point, bisecting a given angle); recognise and use the perpendicular distance from a point to a line as the shortest distance to the line - Describe, sketch and draw using conventional terms and notations: points, lines, parallel lines, perpendicular lines, right angles, regular polygons, and other polygons that are reflectively and rotationally symmetric - Derive and use the sum of angles in a triangle and use it to deduce the angle sum in any polygon, and to derive properties of regular polygons

Term Five	
Content of Study	Unit 9: Sequences and Graphs Unit 10: Transformations
What are the aims and objectives of this term?	Unit 9: • Recognise, describe and continue number sequences • Generate terms of a sequence using a one-step term-to-term rule • Find missing terms in a sequence • Find patterns and rules in sequences • Describe how a pattern sequence grows • Write and use number sequences to model real-life problems • Generate and plot coordinates from a rule • Solve problems and spot patterns in coordinates • Find the midpoint of a line segment • Describe and continue special sequences • Use the term-to-term rule to work out more terms in a sequence • Recognise an arithmetic sequence and a geometric sequence • Recognise, name and plot graphs parallel to the axes • Recognise, name and plot the graphs of $y = x$ and $y = -x$ • Plot straight-line graphs using a table of values • Draw graphs to represent relationships • Generate terms of a sequence using a position-to-term rule • Use linear expressions to describe the nth term of simple sequences Unit 10: • Identify congruent shapes • Use the language of enlargement • Enlarge shapes using given scale factors • Work out the scale factor given an object and its image • Recognise reflection and rotational symmetry in 2D shapes • Solve problems using line symmetry • Identify all the symmetries of 2D shapes • Identify reflection symmetry in 3D shapes • Recognise and carry out reflections in a mirror line • Reflect a shape on a coordinate grid • Describe a reflection on a coordinate grid • Describe and carry out rotations on a coordinate grid • Translate 2D shapes • Transform 2D shapes by combinations of rotations, reflections and translations
What previous knowledge is required?	Unit 9: • Primary: ○ Solve problems with 2 unknowns • Year 7 Unit 3 Expressions, functions and formulae ○ Writing expressions and formulae ○ Finding the missing inputs and functions in function machines ○ Substituting into expressions Unit 10: • Year 7 Unit 8 Lines and angles

	○ Identifying quarter, half, three-quarter and full turns, and knowing their size in degree • Year 7 Unit 9 Sequences and graphs ○ Drawing coordinate grids ○ Plotting points ○ Naming and drawing lines parallel to the axes on a coordinate grid, and the lines $y = x$ and $y = -x$
How will this term's content help with future learning?	Unit 9: • Year 8 Unit Straight-line graphs ○ Plotting straight line graphs and working out its gradient ○ Plotting graphs of linear equations • Year 9 Unit 6 Sequences, inequalities, equations and proportion ○ Finding and using the nth term of an arithmetic sequence ○ Recognising and continuing geometric and quadratic sequences ○ Solving equation, including fractions or powers Unit 10: • Year 9 Unit 4 Multiplicative reasoning ○ Enlarging 2D shapes using a positive or negative whole number, or fractional, scale factor • Year 9 Unit 10 Comparing shapes ○ Working out whether shapes are similar, congruent or neither ○ Using congruent shapes to solve problems about triangles and other polygons
Links to the national curriculum/specification	https://www.gov.uk/government/publications/national-curriculum-in-england-mathematics-programmes-of-study/national-curriculum-in-england-mathematics-programmes-of-study#key-stage-3 Unit 9 – Sequences and Graphs • Work with coordinates in all 4 quadrants • Recognise, sketch and produce graphs of linear and quadratic functions of 1 variable with appropriate scaling, using equations in x and y and the Cartesian plane • Interpret mathematical relationships both algebraically and graphically • Reduce a given linear equation in 2 variables to the standard form $y = mx + c$; calculate and interpret gradients and intercepts of graphs of such linear equations numerically, graphically and algebraically • Generate terms of a sequence from either a term-to-term or a position-to-term rule • Recognise arithmetic sequences and find the nth term • Recognise geometric sequences and appreciate other sequences that arise

	Unit 10 – Transformations - Identify properties of, and describe the results of, translations, rotations and reflections applied to given figures - Identify and construct congruent triangles, and construct similar shapes by enlargement, with and without coordinate grids - Pupils recognise and use reflection and translation in a variety of diagrams, including continuing to use a 2-D grid and coordinates in the first quadrant. Reflection should be in lines that are parallel to the axes.
Term Six	
Content of Study	Unit 11: Number Unit 12: Area and Volume
What are the aims and objectives of this term?	Unit 11: - Use written methods to add and subtract more than two numbers (including decimals) - Use mental calculation for multiplication - Estimate answers to calculations - Know and use divisibility rules - Use a written method to divide decimal numbers by integers - Add, subtract, multiply and divide positive and negative numbers, including larger numbers and decimals - Calculate using squares, square roots, cubes and cube roots - Say which integers a square root lies between - Calculate combinations of squares, square roots, cubes, cube roots and brackets - Use index form - Write a number as the product of its prime factors - Use prime factor decomposition to find the highest common factor (HCF) and lowest common multiple (LCM) Unit 12: - Derive and use the formula for the area of a triangle - Calculate the area of compound shapes made from rectangles and triangles - Derive and use the formula for the area of a parallelogram - Use the formula for the area of a trapezium - Calculate the volume of cubes and cuboids - Calculate the volume of 3D solids made from cuboids - Solve volume problems - Sketch nets of 3D solids - Draw 3D solids on isometric paper - Draw plans and elevations of 3D solids - Calculate the surface area of cubes and cuboids - Solve problems in everyday contexts involving measures - Convert between different measures for area, volume and capacity - Use tonnes and hectares

	• Know rough metric equivalents of imperial measures
What previous knowledge is required?	Unit 11: • Year 7 Unit 2 Number skills: ○ Rounding whole numbers ○ Estimating answers to check answers ○ Using written methods for calculations ○ Working with money ○ Using a number line to work with negative numbers ○ Finding factor pairs ○ Finding the highest common factor and the lowest common multiple ○ Recognising prime numbers ○ Working with squares and square roots ○ Using the priority of operations • Year 7 Unit 4 Decimals and measures ○ Working with decimals Unit 12: • Year 7 Unit 4 Decimals and measures ○ Working out perimeter and area of rectangles ○ Working with units of measure • Year 7 Unit 3 Expressions, functions and formulae ○ Substituting into formula • Year 7 Unit 8 Lines and angles ○ Identifying and naming quadrilaterals • Year 7 Unit 11 Number ○ Calculating ○ Using estimation to check answers
How will this term's content help with future learning?	Unit 11: • Year 9 Unit 8 Graphs ○ Drawing and interpreting real-life quadratic graphs ○ Drawing and interpreting non-linear graphs Unit 12: • Year 8 Unit 8 Percentages, decimals and fractions: ○ Using a multiplier to work out percentage change ○ Changing time to decimal hours • Year 9 Unit 5 Constructions: ○ Using ratio scales on maps and diagrams • Year 9 Unit 10 Ratios in triangles: ○ Solving problems involving similar triangles ○ Rounding answers to a required accuracy
Links to the national curriculum/specification	https://www.gov.uk/government/publications/national-curriculum-in-england-mathematics-programmes-of-study/national-curriculum-in-england-mathematics-programmes-of-study#key-stage-3

	Unit 11 – Number • Understand and use place value for decimals, measures and integers of any size • Order positive and negative integers, decimals and fractions; use the number line as a model for ordering of the real numbers; use the symbols $=$, $\neq$, $<$, $>$, $\leq$, $\geq$ • Use the concepts and vocabulary of prime numbers, factors (or divisors), multiples, common factors, common multiples, highest common factor, lowest common multiple, prime factorisation, including using product notation and the unique factorisation property • Use the 4 operations, including formal written methods, applied to integers, decimals, proper and improper fractions, and mixed numbers, all both positive and negative • Use conventional notation for the priority of operations, including brackets, powers, roots and reciprocals • Recognise and use relationships between operations including inverse operations • Use integer powers and associated real roots (square, cube and higher), recognise powers of 2, 3, 4, 5 and distinguish between exact representations of roots and their decimal approximations Unit 12 – Area and Volume • Derive and apply formulae to calculate and solve problems involving: perimeter and area of triangles, parallelograms, trapezia, volume of cuboids (including cubes) and other prisms (including cylinders) • Calculate and solve problems involving: perimeters of 2-D shapes (including circles), areas of circles and composite shapes
Resources	
• Tutorial videos for all topics and interactive questions available at www.sparxmaths.uk. All students are provided with an account. • Additional revision resources available at www.bbc.co.uk/bitesize • Key Stage 3 Revision Guides and Revision Workbooks are available on Parent Pay.	
Assessments	
At the end of each unit, there will be an end of unit assessment. At the end of Term 1, there will be an Autumn assessment based on everything taught so far in Term 1. At the end of Term 3, there will be a Spring assessment based on everything taught so far in Terms 1-3. At the end of Term 5, there will be an End of Year assessment based on everything taught so far in Year 7.	