

Subject	Maths
Term	Cycle 1
Duration (approx.)	2 weeks
Module	Whole numbers and Decimals

Factual knowledge to be taught and assessed (including subject specific vocabulary).

- Ordering whole numbers
- Place value and decimals
- Decimals and money
- Adding decimals
- Temperature
- Rounding and estimating
- Order of operations
- Multiply and divide by 10, 100 and 1000
- Negative numbers
- Mental and written methods of addition and subtraction
- Calculator methods

Skills and concepts to be developed and assessed (linking to identified AOs)

- 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.
- Consolidate their numerical and mathematical capability from key stage 2 and extend their understanding of the number system and place value to include decimals, fractions, powers and roots.
- Use the 4 operations, including formal written methods, applied to integers, decimals, proper and improper fractions, and mixed numbers, all both positive and negative.
- Round numbers and measures to an appropriate degree of accuracy [for example, to a number of decimal places or significant figures].
- Use conventional notation for the priority of operations, including

- brackets, powers, roots and reciprocals.
- Multiply and divide whole numbers and those involving decimals by 10, 100 and 1,000.

Formative Assessment/key piece of work prior to end of unit:

- Questioning in class.
- Paired work.
- Independent completion of exercises.
- Use of homework.
- Key marking task

Summative Assessment

1 hour written assessment based upon modules 1-5 during Autumn 2. All skills are tested again during the summer term with 2 written papers and a mental arithmetic test. The written papers each last for an hour. One paper is non calculator, one paper requires the use of calculator. The mental arithmetic tests takes approximately 20 minutes.

Building Retention: What prior learning must be built upon/revisited and how will it be assessed?

- Knowledge of the number line including negative numbers, fractions and decimals.
- Solving problems using addition, subtraction, multiplication and division.
- Knowledge of place value.

Spelling-Punctuation-Grammar How will you promote high standards within this module?

- Emphasis given to key words.
- Definitions provided.
- Spellings corrected where necessary when marking.
- Develop the ability to communicate mathematically.

Link forward: where next for the learning?

Number topics are built upon throughout the year. Each half term a different aspect of number is revisited and extended.

Subject	Maths
Term	Cycle 1
Duration (approx.)	2 weeks
Module	Measures, perimeter and area

Factual knowledge to be taught and assessed (including subject specific vocabulary).

- Measuring lines
- Reading scales
- Time
- Use and convert between metric units of measurement
- Area and perimeter of triangles and quadrilaterals.
- Surface area of a cuboid.
- Volume of a cuboid.

Skills and concepts to be developed and assessed (linking to identified AOs)

- Draw and measure line segments and angles in geometric figures, including interpreting scale drawings.
- Use standard units of mass, length, time, money and other measures, including with decimal quantities.
- Solve problems involving converting between units of time
- Derive and illustrate properties of triangles, quadrilaterals, circles, and other plane figures [for example, equal lengths and angles] using appropriate language and technologies.
- 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.
- Calculate and compare the area of rectangles (including squares), including using standard units, square centimetres (cm²) and square metres (m²), and estimate the area of irregular shapes
- Use standard units of mass, length, time, money and other measures, including with decimal quantities.

Formative Assessment/key piece of work prior to end of unit:

- Questioning in class.
- Paired work.
- Independent completion of exercises.
- Use of homework.
- Key marking task

Summative Assessment

1 hour written assessment based upon modules 1-5 during Autumn 2.

All skills are tested again during the summer term with 2 written papers and a mental arithmetic test. The written papers each last for an hour. One paper is non calculator, one paper requires the use of calculator. The mental arithmetic tests takes approximately 20 minutes.

Building Retention: What prior learning must be built upon/revisited and how will it be assessed?

- Use of mathematical equipment to draw and measure.
- Recognising units of measure used on a daily basis.
- Recognising common quadrilaterals and triangles.

Spelling-Punctuation-Grammar

How will you promote high standards within this module?

- Emphasis given to key words.
- Definitions provided.
- Spellings corrected where necessary when marking.
- Develop the ability to communicate mathematically.

Link forward: where next for the learning?

Geometry and measure topics are built upon throughout the year. Year 8 Module 2 revisits this topic in the Autumn term.

Subject	Maths
Term	Cycle 1
Duration (approx.)	2 weeks
Module	Expressions and formulae

Factual knowledge to be taught and assessed (including subject specific vocabulary).

- Using letters and symbols
- Substitution
- Creating a formula
- Algebraic symbols
- Expressions
- Collecting like terms
- Using a formula
- Writing a formula
- Expanding brackets
- Further substitution
- Further simplification
- Simplification and division

Skills and concepts to be developed and assessed (linking to identified AOs)

- Simplify and manipulate algebraic expressions to maintain equivalence by: collecting like terms, multiplying a single term over a bracket, taking out common factors or expanding products of 2 or more binomials.
- Substitute numerical values into formulae and expressions, including scientific formulae.
- Model situations or procedures by translating them into algebraic expressions or formulae and by using graphs.
- Understand and use standard mathematical formulae; rearrange formulae to change the subject.
- Model situations or procedures by translating them into algebraic expressions or formulae and by using graphs.
- Use algebra to generalise the structure of arithmetic, including to formulate mathematical relationships.
- Use the 4 operations, including formal written methods, applied to integers, decimals, proper and improper fractions, and mixed numbers, all both positive and negative.

Formative Assessment/key piece of work prior to end of unit:

- Questioning in class.
- Paired work.
- Independent completion of exercises.
- Use of homework.
- Key marking task.

Summative Assessment

1 hour written assessment based upon modules 1-5 during Autumn 2.

All skills are tested again during the summer term with 2 written papers and a mental arithmetic test. The written papers each last for an hour. One paper is non calculator, one paper requires the use of calculator. The mental arithmetic tests takes approximately 20 minutes.

Building Retention: What prior learning must be built upon/revisited and how will it be assessed?

This topic will be an introduction to algebra.

Spelling-Punctuation-Grammar

How will you promote high standards within this module?

- Emphasis given to key words.
- Definitions provided.
- Spellings corrected where necessary when marking.
- Develop the ability to communicate mathematically.

Link forward: where next for the learning?

Algebra topics are built upon throughout the year. Modules 6, 10 and 13 are all algebra based.

Subject	Maths
Term	Cycle 1
Duration (approx.)	3 weeks
Module	Fractions, decimals and percentages

Factual knowledge to be taught and assessed (including subject specific vocabulary).

- Fractions and decimals
- Adding and subtracting fractions
- Fraction of a quantity
- Percentages
- Percentages of amounts
- Adding and subtracting fractions
- Multiplying and dividing fractions
- Percentage change
- Percentage problems

Skills and concepts to be developed and assessed (linking to identified AOs)

- Express 1 quantity as a fraction of another, where the fraction is less than 1 and greater than 1.
- Work interchangeably with terminating decimals and their corresponding fractions (such as 3.5 and $\frac{7}{2}$ or 0.375 and $\frac{3}{8}$).
- 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 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%.

Formative Assessment/key piece of work prior to end of unit:

- Questioning in class.
- Paired work.
- Independent completion of exercises.
- Key marking task.

Summative Assessment

1 hour written assessment based upon modules 1-5 during Cycle 1.

All skills are tested again during the summer term with 2 written papers and a mental arithmetic test. The written papers each last for an hour. One paper is non calculator, one paper requires the use of calculator. The mental arithmetic tests takes approximately 20 minutes. 1 hour written assessment based

Building Retention: What prior learning must be built upon/revisited and how will it be assessed?

- Addition and subtraction skills
- Understanding of dividing an amount in to smaller, equal parts.

Spelling-Punctuation-Grammar

How will you promote high standards within this module?

- Emphasis given to key words.
- Definitions provided.
- Spellings corrected where necessary when marking.

Link forward: where next for the learning?

Number topics are built upon throughout the year. Each half term a different aspect of number is revisited and extended.

Subject	Maths
Term	Cycle 1
Duration (approx.)	2 weeks
Module	Angles and 2D Shapes

Factual knowledge to be taught and assessed (including subject specific vocabulary).

- Angles
- Opposite angles
- Properties of triangles
- Angles in a triangle
- Properties of quadrilaterals
- Angles in parallel lines
- Properties of a quadrilateral
- Properties of a polygon
- Congruent shapes

Skills and concepts to be developed and assessed (linking to identified AOs)

- Apply the properties of angles at a point, angles at a point on a straight line, vertically opposite angles.
- Understand and use the relationship between parallel lines and alternate and corresponding angles
- Derive and illustrate properties of triangles, quadrilaterals, circles, and other plane figures [for example, equal lengths and angles] using appropriate language and technologies.
- 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.
- Apply angle facts, triangle congruence, similarity and properties of quadrilaterals to derive results about angles and sides, including Pythagoras' Theorem, and use known results to obtain simple proofs.
- Identify and construct congruent triangles, and construct similar shapes by enlargement, with and without coordinate grids.

Formative Assessment/key piece of work prior to end of unit:

- Questioning in class.
- Paired work.
- Independent completion of exercises.
- Homework.

Summative Assessment

1 hour written assessment based upon modules 1-5 during Autumn 2

All skills are tested again during the summer term with 2 written papers and a mental arithmetic test. The written papers each last for an hour. One paper is non calculator, one paper requires the use of calculator. The mental arithmetic tests takes approximately 20 minutes.

Building Retention: What prior learning must be built upon/revisited and how will it be assessed?

- Use of mathematical equipment to draw and measure.
- Recognising common quadrilaterals and triangles.

Spelling-Punctuation-Grammar

How will you promote high standards within this module?

- Emphasis given to key words.
- Definitions provided.
- Spellings corrected where necessary when marking.

Link forward: where next for the learning?

Geometry and measure topics are built upon throughout the year. Each half term a different aspect of geometry and measure is revisited and extended.

Subject	Maths
Term	Cycle 2
Duration (approx.)	3 weeks
Module	Graphs

Factual knowledge to be taught and assessed (including subject specific vocabulary).

- Coordinates in four quadrants
- Coordinates and straight lines
- Horizontal and vertical graphs
- Real-life graphs
- Conversion graphs
- Graphs and formulae
- Drawing straight-line graphs
- Equation of a straight line
- Graphs of linear functions
- Equation of a straight line
- Curved graphs
- Midpoints of coordinate pairs
- Graphs of implicit functions
- Time series

Skills and concepts to be developed and assessed (linking to identified AOs)

- Recognise, sketch and produce graphs of linear and quadratic functions
- Develop algebraic and graphical fluency, including understanding linear and simple quadratic functions.
- Model situations or procedures by translating them into algebraic expressions or formulae and by using graphs.
- Find approximate solutions to contextual problems from given graphs of a variety of functions, including piece-wise linear, exponential and reciprocal graphs.
- Identify variables and express relations between variables algebraically and graphically.
- Develop algebraic and graphical fluency, including understanding linear and simple quadratic functions.

Formative Assessment/key piece of work prior to end of unit:

- Questioning in class.
- Paired work.
- Independent completion of exercises.
- Key marking task.

Summative Assessment

1 hour written assessment based upon modules 6-10 during Spring 2.

All skills are tested again during the summer term with 2 written papers and a mental arithmetic test. The written papers each last for an hour. One paper is non calculator, one paper requires the use of calculator. The mental arithmetic tests takes approximately 20 minutes.

Building Retention: What prior learning must be built upon/revisited and how will it be assessed?

- Basic algebra substitution skills.
- Plotting coordinates in the first quadrant.

Spelling-Punctuation-Grammar

How will you promote high standards within this module?

- Emphasis given to key words.
- Definitions provided.
- Spellings corrected where necessary when marking.

Link forward: where next for the learning?

Algebra topics are built upon throughout the year. Module 10 is the next algebra based topic.

Subject	Maths
Term	Cycle 2
Duration (approx.)	2 weeks
Module	Whole Number Calculations

Factual knowledge to be taught and assessed (including subject specific vocabulary).

- Order of operations
- Mental addition and subtraction
- Mental multiplication and division
- Addition and subtraction problems
- Multiplication and division problems
- Mental multiplication and division
- Mental addition and subtraction problems
- Arithmetic with negative integers

Skills and concepts to be developed and assessed (linking to identified AOs)

- Use conventional notation for the priority of operations, including brackets, powers, roots and reciprocals.
- Select and use appropriate calculation strategies to solve increasingly complex problems.
- Understand and use place value for decimals, measures and integers of any size.
- Use the 4 operations, including formal written methods, applied to integers, decimals, proper and improper fractions, and mixed numbers, all both positive and negative.
- Select and use appropriate calculation strategies to solve increasingly complex problems.
- Use approximation through rounding to estimate answers and calculate possible resulting errors expressed using inequality notation $a < x \leq b$.
- Begin to model situations mathematically and express the results using a range of formal mathematical representations.
- Select and use appropriate calculation strategies to solve increasingly complex problems.
- Use approximation through rounding to estimate answers and calculate possible resulting errors expressed using inequality notation $a < x \leq b$.

- Develop their mathematical knowledge, in part through solving problems and evaluating the outcomes, including multi-step problems.

Formative Assessment/key piece of work prior to end of unit:

- Questioning in class.
- Paired work.
- Independent completion of exercises.
- Homework.

Summative Assessment

1 hour written assessment based on modules 6-10 in Spring 2.

All skills are tested again during the summer term with 2 written papers and a mental arithmetic test. The written papers each last for an hour. One paper is non calculator, one paper requires the use of calculator. The mental arithmetic tests takes approximately 20 minutes.

Building Retention: What prior learning must be built upon/revisited and how will it be assessed?

This topic builds upon prior learning from module 1.

Spelling-Punctuation-Grammar How will you promote high standards within this module?

- Emphasis given to key words.
- Definitions provided.
- Spellings corrected where necessary when marking.

Link forward: where next for the learning?

Number topics are built upon throughout the year, module 11 is the next module based on number skills.

Subject	Maths
Term	Cycle 2
Duration (approx.)	2 weeks
Module	Statistics

Factual knowledge to be taught and assessed (including subject specific vocabulary).

- Planning and collecting data
- Organising data
- Reading lists and tables
- Reading and drawing pictograms
- Reading and drawing bar charts
- Reading and interpreting graphs, charts and pie charts
- Reading diagrams
- Averages - the mode, median and mean.
- Comparing data sets - range and average.
- Line graphs.
- Planning a statistical enquiry.
- Tally charts and frequency tables.
- Designing a questionnaire.

Skills and concepts to be developed and assessed (linking to identified AOs)

- Explore what can and cannot be inferred in statistical and probabilistic settings, and begin to express their arguments formally.
- 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, 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).

Formative Assessment/key piece of work prior to end of unit:

- Questioning in class.
- Paired work.
- Independent completion of exercises.
- Use of homework.

Summative Assessment

1 hour written assessment based upon modules 6-10 during Spring 2.

All skills are tested again during the summer term with 2 written papers and a mental arithmetic test. The written papers each last for an hour. One paper is non calculator, one paper requires the use of calculator. The mental arithmetic tests takes approximately 20 minutes.

Building Retention: What prior learning must be built upon/revisited and how will it be assessed?

This topic will be an introduction to statistics.

Spelling-Punctuation-Grammar How will you promote high standards within this module?

- Emphasis given to key words.
- Definitions provided.
- Spellings corrected where necessary when marking.

Link forward: where next for the learning?

Data topics are built upon throughout the year. Module 8, year 8 revisits and extends this topic.

Subject	Maths
Term	Cycle 2
Duration (approx.)	2 weeks
Module	Transformations and Symmetry

Factual knowledge to be taught and assessed (including subject specific vocabulary).

- Symmetry.
- Reflection.
- Translation.
- Rotation.
- Tessellation.
- Enlargement.

Skills and concepts to be developed and assessed (linking to identified AOs)

- Identify properties of, and describe the results of, translations, rotations and reflections applied to given figures.
- 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.
- Identify and construct congruent triangles, and construct similar shapes by enlargement, with and without coordinate grids.

Formative Assessment/key piece of work prior to end of unit:

- Questioning in class.
- Paired work.
- Independent completion of exercises.
- Use of homework.

Summative Assessment

1 hour written assessment based on modules 6-10 in Spring 2.

All skills are tested again during the summer term with 2 written papers and a mental arithmetic test. The written papers each last for an hour. One paper is non calculator, one paper requires the use of calculator. The mental arithmetic tests takes approximately 20 minutes.

Building Retention: What prior learning must be built upon/revisited and how will it be assessed?

This topic will be an introduction to transformations.

Spelling-Punctuation-Grammar How will you promote high standards within this module?

- Emphasis given to key words.
- Definitions provided.
- Spellings corrected where necessary when marking.

Link forward: where next for the learning?

Geometry and Measure topics are built upon throughout the year. Year 8 Module 9 revisits this topic in the Spring Term.

Subject	Maths
Term	Cycle 2
Duration (approx.)	2 weeks
Module	Equations

Building Retention: What prior learning must be built upon/revisited and how will it be assessed?

This topic builds upon module 3.

Spelling-Punctuation-Grammar How will you promote high standards within this module?

- Emphasis given to key words.
- Definitions provided.
- Spellings corrected where necessary when marking.

Link forward: where next for the learning?

This module is extended in Year 8 module 10.

Factual knowledge to be taught and assessed (including subject specific vocabulary).

- Operations.
- Inverse operations.
- Symbols and values.
- Solving simple Equations.
- Multiplying and dividing terms.
- Balancing calculations.
- Two step equations.
- Solving equations with unknowns on both sides.
- Constructing equations.

Skills and concepts to be developed and assessed (linking to identified AOs)

- Use algebraic methods to solve linear equations in 1 variable (including all forms that require rearrangement).
- Substitute values in expressions, rearrange and simplify expressions, and solve equations."
- Interpret mathematical relationships both algebraically and geometrically.

Formative Assessment/key piece of work prior to end of unit:

- Questioning in class.
- Paired work.
- Independent completion of exercises.
- Use of homework.
- Key marking task.

Summative Assessment

1 hour written assessment based upon modules 6-10 during Spring 2.

All skills are tested again during the summer term with 2 written papers and a mental arithmetic test. The written papers each last for an hour. One paper is non calculator, one paper requires the use of calculator. The mental arithmetic tests takes approximately 20 minutes.

Subject	Maths
Term	Cycle 3
Duration (approx.)	2 weeks
Module	Factors and multiples

Factual knowledge to be taught and assessed (including subject specific vocabulary).

- Written addition and subtraction
- Written multiplication
- Written division
- Written arithmetic problems
- Calculator skills
- Order of operations
- Addition and subtraction problems
- Multiplication and division problems
- Calculation methods

Skills and concepts to be developed and assessed (linking to identified AOs)

- Use the 4 operations, including formal written methods, applied to integers, decimals, proper and improper fractions, and mixed numbers, all both positive and negative.
- Select and use appropriate calculation strategies to solve increasingly complex problems.
- Use approximation through rounding to estimate answers and calculate possible resulting errors expressed using inequality notation $a < x \leq b$.
- Use a calculator and other technologies to calculate results accurately and then interpret them appropriately.
- Use conventional notation for the priority of operations, including brackets, powers, roots and reciprocals.

Formative Assessment/key piece of work prior to end of unit:

- Questioning in class.
- Paired work.
- Independent completion of exercises.
- Use of homework.

Summative Assessment

All skills are tested again during the summer term with 2 written papers and a mental arithmetic test. The written papers each last for an hour. One paper is non calculator, one paper requires the use of calculator. The mental arithmetic tests takes approximately 20 minutes.

Building Retention: What prior learning must be built upon/revisited and how will it be assessed?

This topic will be an introduction to factors and multiples.

Spelling-Punctuation-Grammar How will you promote high standards within this module?

- Emphasis given to key words.
- Definitions provided.
- Spellings corrected where necessary when marking.

Link forward: where next for the learning?

Number topics are built upon throughout the year. Year 8 Module 1 revisits this topic in the Autumn term.

Subject	Maths
Term	Cycle 3
Duration (approx.)	2 weeks
Module	Constructions and 3D shapes

Factual knowledge to be taught and assessed (including subject specific vocabulary).

- 3D shapes and their properties.
- Nets of cubes and 3D shapes
- 2D representations of 3D shapes.
- Measuring and drawing angles.
- Drawing a triangle.
- Introducing circles.
- Constructing triangles.
- Scale drawings
- Isometric drawings
- Nets of 3D shapes
- Volume
- Constructing bisectors
- Simple loci
- Plans and elevations

Skills and concepts to be developed and assessed (linking to identified AOs)

- Identify and construct congruent triangles, and construct similar shapes by enlargement, with and without coordinate grids.
- 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.
- Use scale factors, scale diagrams and maps.
- Draw and measure line segments and angles in geometric figures, including interpreting scale drawings.

Formative Assessment/key piece of work prior to end of unit:

- Questioning in class.
- Paired work.
- Independent completion of exercises.
- Use of homework.

Summative Assessment

All skills are tested again during the summer term with 2 written papers and a mental arithmetic test. The written papers each last for an hour. One paper is non calculator, one paper requires the use of calculator. The mental arithmetic tests takes approximately 20 minutes.

Building Retention: What prior learning must be built upon/revisited and how will it be assessed?

This topic will be an introduction to constructions and 3D shapes.

Spelling-Punctuation-Grammar How will you promote high standards within this module?

- Emphasis given to key words.
- Definitions provided.
- Spellings corrected where necessary when marking.

Link forward: where next for the learning?

Geometry and Measure topics are built upon throughout the 5 year scheme of work. This module is extended in Year 8 Module 14.

Subject	Maths
Term	Cycle 3
Duration (approx.)	2 weeks
Module	Sequences

Factual knowledge to be taught and assessed (including subject specific vocabulary).

- Term-to-term rules
- Position-to-term rules
- Geometric sequences
- General term of a sequence
- Sequences in context
- Recursive sequences

Skills and concepts to be developed and assessed (linking to identified AOs)

- Generate terms of a sequence from either a term-to-term or a position-to-term rule.
- Recognise arithmetic sequences and find the n th term.
- Recognise geometric sequences and appreciate other sequences that arise.
- Generate terms of a sequence from either a term-to-term or a position-to-term rule.
- Use algebra to generalise the structure of arithmetic, including to formulate mathematical relationships.
- Recognise geometric sequences and appreciate other sequences that arise.

Formative Assessment/key piece of work prior to end of unit:

- Questioning in class.
- Paired work.
- Independent completion of exercises.
- Use of homework.

Summative Assessment

All skills are tested again during the summer term with 2 written papers and a mental arithmetic test. The written papers each last for an hour. One paper is non calculator, one paper requires the use of calculator. The mental arithmetic tests takes approximately 20 minutes.

Building Retention: What prior learning must be built upon/revisited and how will it be assessed?

This topic will build upon Sequences work covered in key stage 2.

Spelling-Punctuation-Grammar How will you promote high standards within this module?

- Emphasis given to key words.
- Definitions provided.
- Spellings corrected where necessary when marking.

Link forward: where next for the learning?

Algebra topics are built upon throughout the 5 year scheme of work.

Subject	Maths
Term	Cycle 3
Duration (approx.)	2 weeks
Module	Multiplying and Dividing

Factual knowledge to be taught and assessed (including subject specific vocabulary).

- Multiplying by 10 and 100
- Mental and written methods of multiplication and division
- Division problems
- Calculator skills
- Mental methods with decimals
- Written methods of multiplying and dividing decimals
- Interpreting a calculator display
- Mental methods of multiplying and dividing decimals

Skills and concepts to be developed and assessed (linking to identified AOs)

- Multiply and divide numbers mentally, drawing upon known facts.
- Multiply and divide whole numbers and those involving decimals by 10, 100 and 1,000.
- Understand and use place value for decimals, measures and integers of any size.
- 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 approximation through rounding to estimate answers and calculate possible resulting errors expressed using inequality notation $a < x \leq b$.
- Divide numbers up to 4 digits by a one-digit number using the formal written method of short division and interpret remainders appropriately for the context.
- Use a calculator and other technologies to calculate results accurately and then interpret them appropriately.
- Develop their mathematical knowledge, in part through solving problems and evaluating the outcomes, including multi-step problems.

- Select and use appropriate calculation strategies to solve increasingly complex problems.
- Use a calculator and other technologies to calculate results accurately and then interpret them appropriately.

Formative Assessment/key piece of work prior to end of unit:

- Questioning in class.
- Paired work.
- Independent completion of exercises.
- Use of homework.

Summative Assessment

All skills are tested again during the summer term with 2 written papers and a mental arithmetic test. The written papers each last for an hour. One paper is non calculator, one paper requires the use of calculator. The mental arithmetic tests takes approximately 20 minutes.

Building Retention: What prior learning must be built upon/revisited and how will it be assessed?

Times tables knowledge.

Spelling-Punctuation-Grammar How will you promote high standards within this module?

- Emphasis given to key words.
- Definitions provided.
- Spellings corrected where necessary when marking.

Link forward: where next for the learning?

Mental and written methods with numbers is revisited many times throughout the 5year scheme of work.

Subject	Maths
Term	Cycle 3
Duration (approx.)	2 weeks
Module	Ratio and Proportion

Factual knowledge to be taught and assessed (including subject specific vocabulary).

- Simplifying ratios
- Dividing into ratios
- Proportion
- Proportion problems
- Comparing proportions
- Calculations involving money
- Percentage increase and decrease
- Algebra and proportion

Skills and concepts to be developed and assessed (linking to identified AOs)

- 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 two 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.
- Solve problems involving direct and inverse proportion, including graphical and algebraic representations.
- Interpret when the structure of a numerical problem requires additive, multiplicative or proportional reasoning.
- 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%.
- Extend and formalise their knowledge of ratio and proportion in working with measures and geometry, and in formulating proportional relations algebraically.

Formative Assessment/key piece of work prior to end of unit:

- Questioning in class.
- Paired work.
- Independent completion of exercises.
- Use of homework.

Summative Assessment

All skills are tested again during the summer term with 2 written papers and a mental arithmetic test. The written papers each last for an hour. One paper is non calculator, one paper requires the use of calculator. The mental arithmetic tests takes approximately 20 minutes.

Building Retention: What prior learning must be built upon/revisited and how will it be assessed?

This is an introduction to ratio and proportion.

**Spelling-Punctuation-Grammar
How will you promote high standards within this module?**

- Emphasis given to key words.
- Definitions provided.
- Spellings corrected where necessary when marking.

Link forward: where next for the learning?

The topic of Ratio and proportion is revisited in Year 8.

Subject	Maths
Term	Cycle 3
Duration (approx.)	2 weeks
Module	Probability

Factual knowledge to be taught and assessed (including subject specific vocabulary).

- Introducing probability.
- The probability scale.
- Sorting with Venn diagrams.
- Theoretical probability.
- Experimental probability.
- Sets.
- Equally likely outcomes.
- Mutually exclusive outcomes.
- Comparing probabilities.

Skills and concepts to be developed and assessed (linking to identified AOs)

- Generate theoretical sample spaces for single and combined events with equally likely, mutually exclusive outcomes and use these to calculate theoretical probabilities.
- Understand that the probabilities of all possible outcomes sum to 1.
- 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.
- Explore what can and cannot be inferred in statistical and probabilistic settings, and begin to express their arguments formally."
- Enumerate sets and unions/intersections of sets systematically, using tables, grids and Venn diagrams.

Formative Assessment/key piece of work prior to end of unit:

- Questioning in class.
- Paired work.
- Independent completion of exercises.
- Use of homework.

Summative Assessment

All skills are tested again during the summer term with 2 written papers and a mental arithmetic test. The written papers each last for an hour. One paper is non calculator, one paper requires the use of calculator. The mental arithmetic tests takes approximately 20 minutes.

Building Retention: What prior learning must be built upon/revisited and how will it be assessed?

This is an introduction to probability.

Spelling-Punctuation-Grammar How will you promote high standards within this module?

- Emphasis given to key words.
- Definitions provided.
- Spellings corrected where necessary when marking.

Link forward: where next for the learning?

Probability topics are built upon throughout the 5 year scheme of work. This module is extended in Year 8 module 16.

Subject	Maths
Term	Cycle 3
Duration (approx.)	2 weeks
Module	Everyday Mathematics

Factual knowledge to be taught and assessed (including subject specific vocabulary).

- Reasoning deductively in geometry, number and algebra.
- Select appropriate concepts, methods and techniques.
- Use of formal mathematical knowledge to interpret and solve problems.
- Model situations mathematically. Move freely between different representations.
- Make and test conjectures about patterns and relationships
- Consolidate numerical and mathematical capability.
- Use algebra to generalise the structure of arithmetic.
- Extend understanding of the number system.

Skills and concepts to be developed and assessed (linking to identified AOs)

- Extend and formalise their knowledge of ratio and proportion in working with measures and geometry, and in formulating proportional relations algebraically.
- Select and use appropriate calculation strategies to solve increasingly complex problems
- Extend their understanding of the number system; make connections between number relationships, and their algebraic and graphical representations.
- Develop their mathematical knowledge, in part through solving problems and evaluating the outcomes, including multi-step problems.
- Begin to reason deductively in geometry, number and algebra, including using geometrical constructions.

Formative Assessment/key piece of work prior to end of unit:

- Questioning in class.
- Paired work.
- Independent completion of exercises.
- Use of homework.

Summative Assessment

All skills are tested again during the summer term with 2 written papers and a mental arithmetic test. The written papers each last for an hour. One paper is non calculator, one paper requires the use of calculator. The mental arithmetic tests takes approximately 20 minutes.

Building Retention: What prior learning must be built upon/revisited and how will it be assessed?

This module draws upon all of the skills learned throughout Year 7.

Spelling-Punctuation-Grammar How will you promote high standards within this module?

- Emphasis given to key words.
- Definitions provided.
- Spellings corrected where necessary when marking.

Link forward: where next for the learning?

Everyday mathematical skills are built upon throughout the 5 year scheme of work. This module is extended in Year 8 module 17.