Subject	Maths
Term	Cycle 1
Duration (approx.)	3 weeks
Module	Whole numbers and Decimals

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

Negative numbers
Multiples and factors
Common factors
Prime numbers
Ordering decimal numbers
Rounding
Square numbers and square roots
Prime factor decomposition
LCM and HCF
Square roots and cube roots
Indices
Rounding and estimation

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

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 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.
Round numbers and measures to an appropriate degree of accuracy [for example, to a number of decimal places or significant figures].
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.
Use a calculator and other technologies to calculate results accurately and then interpret them appropriately.
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.

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?

Sound times table knowledge.
Knowledge of the number line. including negative numbers, fractions and decimals.
Knowledge of special numbers.
Identifying 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.
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).

Metric measure
Imperial measure
Perimeter and area of a rectangle
Area of a triangle, parallelogram and a trapezium.
Circumference and area of a circle

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

Use standard units of mass, length, time, money and other measures, including with decimal quantities.
Change freely between related standard units [for example time, length, area, volume/capacity, mass].
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.

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 conversions between common metric measures.
Knowledge of perimeter and area and knowing when to use them.
Finding perimeter and area of complex shapes.
Reading scales of varying complexity.

**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 5 contains the next geometric topics.

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 symbols
Substitution
Simplifying expressions
Expanding brackets
Simplifying harder expressions
Formulae
Writing a formula
Simplifying and substituting
Indices
Like terms
Expanding brackets
Substitution into formulae
Rearranging formulae
Writing expressions
Algebraic fractions

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 builds upon Year 7 algebra skills.

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.

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 7/2 or 0.375 and 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.
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?

Addition and subtraction skills
Understanding of dividing an amount into 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.)	2 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.
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?

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.
Develop the ability to communicate mathematically.

Link forward: where next for the learning?

Algebra topics are revisited and extended throughout the year.

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

Factual knowledge to be taught or extended 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.
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 in non calculator, one paper requires the use of calculator. The mental arithmetic test takes approximately 20 minutes.

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

Number bonds
4 operations with numbers.

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.

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

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

Planning a survey
Collecting data
Pie charts
Bar charts and frequency diagrams
Averages
Averages from frequency tables
Scatter graphs and correlation
Stem-and-leaf diagrams
Interpreting statistical diagrams
Comparing distributions.
Comparing data sets.
Statistical reports.

Skills and concepts:

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 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 in non calculator, one paper requires the use of calculator. The mental arithmetic test 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 the statistics module in 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.
Develop the ability to communicate mathematically.

Link forward: where next for the learning?

Data topics are built upon throughout the year. This topic is revisited and extended in the spring term of year 9.

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

Factual knowledge to be taught or extended and assessed (including subject specific vocabulary).
Reflection
Reflection symmetry
Rotation
Rotational symmetry
Translation
Tessellation
Combined transformations
Enlargements

Skills and concepts:

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.
Key marking task.

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 in non calculator, one paper requires the use of calculator. The mental arithmetic test takes approximately 20 minutes.

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

This topic will be revisit and extend transformations taught in 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.
Develop the ability to communicate mathematically.

Link forward: where next for the learning?

Geometry and Measure topics are built upon throughout the year.

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

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

- One-step equations
- Equation puzzles
- Two-step equations
- Making equations
- Real life equations
- Equations with fractions.

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.

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 in non calculator, one paper requires the use of calculator. The mental arithmetic test takes approximately 20 minutes.

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

This topic builds upon basic algebra skills.

**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.
Developing the ability to communicate mathematically.

Link forward: where next for the learning?

The next algebra topic is taught in the summer term.

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

Factual knowledge to be taught or extended 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 in non calculator, one paper requires the use of calculator. The mental arithmetic test takes approximately 20 minutes.

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

This topic will revisit and extend basic number skills.

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.

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

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

Lines and angles
Constructing a triangle
Scale drawing
Bisectors
Constructing perpendiculars and bisectors
Loci
Scale drawings
Bearings

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.
Key marking task.

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 in non calculator, one paper requires the use of calculator. The mental arithmetic test 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 construction techniques taught in 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.
Develop the ability to communicate mathematically.

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 9 Module 14.

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

Factual knowledge to be taught and assessed:

Sequences.
Describing sequences.
Using rules.
Sequences with negative numbers.
Term-to-term rules.
Position in a sequence.
Sequences and algebra.
Finding a rule from a sequence.
Sequences in context.

Skills and concepts to be developed and assessed:

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.
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

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

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 in non calculator, one paper requires the use of calculator. The mental arithmetic test takes approximately 20 minutes.

Building Retention

This topic will be an introduction to sequences.

Spelling, Punctuation and 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 5 year scheme of work. This module is extended in Year 9 Module 13.

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

Factual knowledge to be taught and assessed:

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

Skills and concepts to be developed and assessed:

Use the properties of faces, surfaces, edges and vertices of cubes, cuboids, prisms, cylinders, pyramids, cones and spheres to solve problems in 3-D.
Use language and properties precisely to analyse numbers, algebraic expressions, 2-D and 3-D shapes, probability and statistics.
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.
Use Pythagoras' Theorem and trigonometric ratios in similar triangles to solve problems involving right-angled triangles.
Draw and measure line segments and angles in geometric figures, including interpreting scale drawings.

Formative Assessment

- 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 in non calculator, one paper requires the use of calculator. The mental arithmetic test takes approximately 20 minutes.

Building Retention

This topic builds upon module 7.

Spelling, Punctuation and 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?:

This topic is extended in year 9 in module 7.
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Subject	Maths
Term	Cycle 3
Duration (approx.)	2 weeks
Module	Ratio and

Factual knowledge to be taught and assessed:

Ratio and proportion.
Ratio and proportion real life problems.
Solving problems.
Scale drawings.
Direct proportion.
Dividing in a given ratio.
Percentage problems.

Skills and concepts to be developed and assessed:

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.
Extend and formalise their knowledge of ratio and proportion in working with measures and geometry, and in formulating proportional relations algebraically.
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%
Describe simple mathematical relationships between 2 variables (bivariate data) in observational and experimental contexts and illustrate using scatter graphs.
Select appropriate concepts, methods and techniques to apply to unfamiliar and non-routine problems.
Solve problems involving direct and inverse proportion, including graphical and algebraic representations.
Use scale factors, scale diagrams and maps.
Express 1 quantity as a fraction of another, where the fraction is less than 1 and greater than 1.
Understand that a multiplicative relationship between 2 quantities can be expressed as a ratio or a fraction.
Solve problems involving percentage change, including: percentage increase, decrease and original value problems and simple interest in financial mathematics

Extend and formalise their knowledge of ratio and proportion in working with measures and geometry, and in formulating proportional relations algebraically.
Interpret when the structure of a numerical problem requires additive, multiplicative or proportional reasoning.
Develop their use of formal mathematical knowledge to interpret and solve problems, including in financial mathematics.
Relate the language of ratios and the associated calculations to the arithmetic of fractions and to linear functions.
Draw and measure line segments and angles in geometric figures, including interpreting scale drawings.
Relate the language of ratios and the associated calculations to the arithmetic of fractions and to linear functions.
Interpret when the structure of a numerical problem requires additive, multiplicative or proportional reasoning.

Formative Assessment

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

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 in non calculator, one paper requires the use of calculator. The mental arithmetic test takes approximately 20 minutes.

Building Retention

This is an introduction to ratio and proportion.

Spelling, Punctuation and Grammar: How will you promote high standards within this module?

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

Link forward: where next for the learning?:

This module is extended in Year 8 module 15.

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

Factual knowledge to be taught and assessed:

Likelihood and chance
The probability scale
Equally likely outcomes
Experimental and theoretical probability
Venn diagrams
Listing outcomes
Sets
Two or more events
Tree diagrams
Mutually exclusive outcomes
Comparing experimental and theoretical probability
Simulating experimental data
Venn diagrams and probability

Skills and concepts to be developed and assessed:

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

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 in non calculator, one paper requires the use of calculator. The mental arithmetic test takes approximately 20 minutes.

Building Retention

This is an extension of the probability taught in year 7.

Spelling, Punctuation and 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?:

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

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

Factual knowledge to be taught and assessed:

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. of the number system.

Skills and concepts to be developed and assessed:

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

- 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 in non calculator, one paper requires the use of calculator. The mental arithmetic test takes approximately 20 minutes.

Building Retention

This module draws upon all of the skills learned throughout Year 8.

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Link forward: where next for the learning?:

Everyday mathematical skills are built upon throughout the 5 year scheme of work.