

Subject	Maths
Term	Autumn 1
Duration (Approx)	3 Weeks
Module	Whole Number and Decimals

Factual knowledge to be taught and assessed, depending on progression made (including subject specific vocabulary)

- Negative numbers
- Multiples and factors
- Common factors
- Divisibility tests
- 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 =, \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
Round numbers and measures to an appropriate degree of accuracy

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:

One lesson written assessment at end of half term.

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	Autumn 1
Duration (Approx)	3 Weeks
Module	Measures, Perimeter, Area

Factual knowledge to be taught and assessed, depending on progression made (including subject specific vocabulary)

- Metric measure
- Imperial measure
- Reading scales
- Perimeter and area of a rectangle
- Area of a triangle, parallelogram and a trapezium
- Circumference and area of a circle.
- Rounding and estimation

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

Summative Assessment:

One lesson written assessment at end of half term.

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

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	Autumn 2
Duration (Approx)	2 Weeks
Module	Expressions and Formulae

Factual knowledge to be taught and assessed, depending on progression made (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

Summative Assessment:

One lesson written assessment at end of term

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	Autumn 2
Duration (Approx)	3 Weeks
Module	Fractions, Decimals and %

Factual knowledge to be taught and assessed, depending on progression made (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 one 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 one quantity as a percentage of another, compare two 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
- Use of homework

Summative Assessment:

One lesson written assessment at end of term

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
- 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	Autumn 2
Duration (Approx)	2 Weeks
Module	Angles and 2D Shapes

Factual knowledge to be taught and assessed, depending on progression made (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
- Use of homework

Summative Assessment:

One lesson written assessment at end of term

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
- Develop the ability to communicate mathematically

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