

Autumn 1

Number and Place Value

- Calculations— Operations positive and negative numbers
- Place Value —7 digit number.
- Factors and Multiples—Recognise 2 digit prime numbers, factors and multiples of a number, HCF and LCM.
- Square Numbers— Square numbers, cubed, roots and triangular numbers.
- Probability - Calculating simple probability, simple event outcomes, venn diagrams, tree diagrams and table probability.

AO2 Reason, interpret and communicate mathematically

Make deductions, inferences and draw conclusions from mathematical information

Construct chains of reasoning to achieve a given result

Interpret and communicate information accurately

Present arguments and proofs

Assess the validity of an argument and critically evaluate a given way of presenting information

AO1 Use and apply standard techniques

Accurately recall facts, terminology and definitions

Use and interpret notation correctly

Accurately carry out routine procedures or set tasks requiring multi-step solutions

Spring 1

Fractions, Decimals and Percentages

- Four operations—Addition, subtraction, multiply and divide.
- Numbers - Whole numbers, mixed numbers, proper and improper fractions.
- Converting —Fractions into percentages and decimals.
- Percentages— Percentage of a quantity.
- Bidmas—Order of operation.
- Standard Form— writing numbers in standard form and convert standard form.

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AO3 Solve problems within mathematics and in other contexts

Translate problems in mathematical or non-mathematical contexts into a process or a series of mathematical processes

Make and use connections between different parts of mathematics

Interpret results in the context of the given problem

Evaluate methods used and results obtained

Evaluate solutions to identify how they may have been affected by assumptions made

Summer 1

Ratio, Proportion, Circles and Pythagoras

- Writing ratios- Write a ratio in its simplest form.
- Using ratios 1- Solve simple problems using ratios.
- Using ratios 2- Divide a quantity into 2 parts in a given ratio.
- Using proportion- Use the unitary method to solve proportion problems.
- Best Buy- Work out which product is better value for money.
- Pythagoras' theorem- Calculate the length of the hypotenuse in a right-angled triangle.
- Circumference of a circle 1- Calculate the circumference of a circle.
- Circumference of a circle 2- Calculate the circumference and radius of a circle.
- Area of a circle- Work out the area of a circle.
- Semicircles and sectors- Work out areas of semicircles and quarter circle and perimeters

Autumn 2

Charts

- Bar Charts—read and draw a bar chart.
- Pie Chart— Read and plot a pie chart.
- Scatter Graph—Read and plot a scatter graph, draw the line of best fit, estimate and understand the relationship.
- Two Way Tables— Read and draw a two way table and understand the probability of an outcome.
- Distance Speed and Time— Read a DST graph.
- Real Life Graphs— Read and plot an RLG.
- Averages— Use mean, mode, median and range to interpret data.
- Coordinates- Find the midpoint of a line segment.

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Spring 2

Area, Angles and Transformation

- Properties of shapes- Solve geometric problems using side and angle properties of quadrilaterals.
- Angles in parallel lines- Understand and use the angle properties of parallel lines. Find missing angles using corresponding and alternate angles.
- Angles in triangles- Solve angle problems in triangles.
- Exterior and interior angles- Calculate the interior and exterior angles of regular polygons.
- Rectangles, parallelograms and triangles- Calculate the perimeter and area of rectangles, parallelograms and triangles.
- Area of compound shapes- Calculate the perimeter and area of shapes made from triangles and rectangles.
- Surface area of 3D solids- Calculate the surface area of a cuboid.
- Volume of prisms - Calculate the volume of a cuboid.
- Translation - Translate a shape on a coordinate grid.
- Reflection - Draw a reflection of a shape in a mirror line.
- Rotation- Rotate a shape on a coordinate grid.
- Enlargement- Enlarge a shape by a scale factor.
- Net Shapes— Recognise 2D and 3D shapes and understand their net plan. Draw shapes to accurate sizes.

Summer 2

Algebra and Equations

- Substitution— Substitute numbers into expressions.
- Brackets— Expand and simplify a bracket.
- Factorising— Factorise algebraic equations.
- Expressions and Formulae— Write expressions and use simple formulae to solve problems.
- Sequences— Recognise and generate sequences.
- Nth Term— Use Nth term to generate a sequence.

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