



Ratio

Students develop an understanding of ratio through representing multiplicative relationships and solving problems in context. This block builds on students' understanding of fractions, proportional reasoning and multiplicative relationships from Year 7, as students use ratio notation, simplify ratios and divide quantities into given ratios. Teaching focuses on using bar models and representations to support conceptual understanding, helping students connect ratios, fractions and proportional relationships. Students solve ratio problems where the whole, a part or the difference is given, and compare ratios and fractions to deepen understanding of parts and wholes. The extend step introduces expressing ratios in the form $1 : n$ and $n : 1$, building on students' understanding of proportional relationships.

National curriculum links

- Use ratio notation, including reduction to simplest form
- Understand that a multiplicative relationship between two quantities can be expressed as a ratio or a fraction
- Divide a given quantity into two parts in a given part : part or part : whole ratio; express the division of a quantity into two parts as a ratio

Small steps

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|--------|--|
| Step 1 | Understand ratio |
| Step 2 | Ratio problems (whole given) |
| Step 3 | Ratio problems (part given) |
| Step 4 | Ratio problems (difference given) |
| Step 5 | Simplify ratios |
| Step 6 | Express ratios in the form $1 : n$ and $n : 1$ (E) |
| Step 7 | Compare ratios and fractions |
| Step 8 | Solve problems with ratio |

Year 8 Autumn Term Block 2 Proportion and scale



Proportion and scale

Students develop an understanding of proportion and scale through multiplicative relationships, graphs and measures. Students apply proportional reasoning to conversion graphs, currencies, similar shapes, metric conversions and scale diagrams. The block develops fluency with scale factors, direct proportion and interpreting maps.

National curriculum links

- Understand that a multiplicative relationship between two quantities can be expressed as a ratio or a fraction
- Solve problems involving direct and inverse proportion, including graphical and algebraic representations
- Use scale factors, scale diagrams and maps
- Model situations or procedures by translating them into algebraic expressions or formulae and by using graphs
- Interpret mathematical relationships both algebraically and graphically
- 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
- Understand and use place value for decimals, measures and integers of any size
- 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]

Small steps

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|--------|---------------------------------------|
| Step 1 | Direct proportion |
| Step 2 | Conversion graphs |
| Step 3 | Convert between currencies |
| Step 4 | Direct proportion graphs |
| Step 5 | Similar shapes |
| Step 6 | Convert metric units |
| Step 7 | Scale diagrams |
| Step 8 | Interpret maps using scale and ratios |

Year 8 Autumn Term Block 3 Algebraic manipulation



Algebraic manipulation

Students develop an understanding of algebraic manipulation through forming, simplifying, expanding and factorising expressions. This block builds on students' Year 7 understanding of algebraic notation, substitution and solving equations, as students develop fluency with manipulating expressions and equivalence. Teaching focuses on forming expressions, distinguishing between expressions, equations, formulae and identities and simplifying expressions using directed number. Students apply their understanding when substituting into expressions, expanding and factorising single brackets, and simplifying expressions. Representations such as algebra tiles and area models support understanding and help students make connections between expanding and factorising. The extend steps introduce expanding double brackets and factorising quadratic expressions.

National curriculum links

- Understand and use the concepts and vocabulary of expressions, equations, inequalities, terms and factors
- Model situations or procedures by translating them into algebraic expressions or formulae and by using graphs
- Interpret mathematical relationships both algebraically and graphically
- Understand and use standard mathematical formulae; rearrange formulae to change the subject
- Simplify and manipulate algebraic expressions to maintain equivalence by: collecting like terms, multiplying a single term over a bracket, taking out common factors, expanding products of two or more binomials
- Substitute numerical values into formulae and expressions, including scientific formulae

Small steps

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| Step 1 | Form algebraic expressions |
| Step 2 | Identify and use formulae, expressions, identities and equations |
| Step 3 | Simplify expressions |
| Step 4 | Use directed number with algebra |
| Step 5 | Substitution with directed number |
| Step 6 | Expand a single bracket |
| Step 7 | Factorise into a single bracket |
| Step 8 | Expand single brackets and simplify |
| Step 9 | Expand double brackets (E) |
| Step 10 | Factorise quadratic expressions (E) |



Coordinates and graphs

Students develop understanding of coordinates and graphs through plotting, interpreting and connecting algebraic and graphical representations. This block builds on students' Year 7 understanding of coordinates, substitution and equations, as students generate tables of values, plot straight line graphs and explore lines of the form $y = mx$ and $y = mx + c$. Teaching focuses on recognising relationships between equations, coordinates and graphs, including gradient, intercepts and direct proportion. The extend steps introduce midpoint problems, solving problems with graphs and plotting quadratic graphs.

National curriculum links

- Work with coordinates in all four quadrants
- Recognise, sketch and produce graphs of linear and quadratic functions of one variable with appropriate scaling, using equations in x and y and the Cartesian plane
- Substitute numerical values into formulae and expressions, including scientific formulae
- Reduce a given linear equation in two variables to the standard form $y = mx + c$; calculate and interpret gradients and intercepts of graphs of such linear equations numerically, graphically and algebraically
- Solve problems involving direct and inverse proportion, including graphical and algebraic representations
- Interpret mathematical relationships both algebraically and graphically
- Model situations or procedures by translating them into algebraic expressions or formulae and by using graphs

Small steps

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| Step 1 | Coordinates in all four quadrants |
| Step 2 | Lines parallel to the axes |
| Step 3 | Table of values |
| Step 4 | Recognise and use the line $y = x$ |
| Step 5 | Lines of the form $y = mx$ |
| Step 6 | Link $y = mx$ to direct proportion (E) |
| Step 7 | Introduce gradient ($y = mx$) |
| Step 8 | Lines with a negative gradient |
| Step 9 | Lines of the form $y = x + c$ |
| Step 10 | Lines of the form $y = mx + c$ |
| Step 11 | Find the midpoint of a line segment (E) |
| Step 12 | Solve problems with coordinates and graphs (E) |
| Step 13 | Quadratic graphs (E) |

Year 8 Autumn Term Block 5 Multiply and divide fractions



Multiply and divide fractions

Students develop an understanding of multiplying and dividing fractions through representations, reasoning and efficient calculation strategies. This block builds on students' Year 7 understanding of adding and subtracting fractions, equivalence and simplifying fractions, as students extend their understanding to multiplying and dividing fractions, integers and mixed numbers. Teaching focuses on using bar models, number lines and area models to support conceptual understanding, helping students connect multiplication and division with fractions in meaningful ways. Students explore multiplying fractions by integers and fractions, dividing integers and fractions by unit and non-unit fractions, and understanding reciprocals as multiplicative inverses. Emphasis is placed on understanding the structure of calculations, recognising when answers will be greater or less than the starting value, and developing fluency with converting between mixed numbers and improper fractions. The extend step introduces multiplying and dividing algebraic fractions, building on students' understanding of algebraic notation and fraction operations.

National curriculum links

- Use the four 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

Small steps

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| Step 1 | Multiply a fraction by an integer |
| Step 2 | Multiply fractions |
| Step 3 | Understand reciprocals |
| Step 4 | Divide an integer by a fraction |
| Step 5 | Divide a fraction by an integer |
| Step 6 | Divide a fraction by a unit fraction |
| Step 7 | Divide fractions |
| Step 8 | Multiply and divide mixed numbers |
| Step 9 | Multiply and divide algebraic fractions (E) |



Symmetry and reflection

Students develop an understanding of symmetry and reflection through identifying symmetrical properties and performing reflections. This block builds on students' Year 7 understanding of shape properties, coordinates and equations of lines, as students explore line symmetry, rotational symmetry and reflections in horizontal, vertical and diagonal lines. Teaching focuses on using tracing paper and coordinate grids to support conceptual understanding and help students connect symmetry with transformations. Students reflect shapes in lines such as $x = a$, $y = a$, $y = x$ and $y = -x$. The extend steps introduce reflecting shapes given the equation of a line and describing reflections using mathematical language and equations of lines.

National curriculum links

- 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 properties of, and describe the results of, translations, rotations and reflections applied to given figures

Small steps

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|--------|--|
| Step 1 | Line symmetry |
| Step 2 | Rotational symmetry |
| Step 3 | Reflect a shape in a horizontal or vertical line |
| Step 4 | Reflect a shape in a diagonal line |
| Step 5 | Reflect a shape given the equation of a line (E) |
| Step 6 | Describe a reflection (E) |



Area, volume and density

Students develop an understanding of area, volume and density through calculating, measuring and applying compound measures. This block builds on students' Year 7 understanding of area, metric units and properties of shapes, as students calculate the area of compound shapes, volumes of cubes and cuboids, and explore the relationships between mass, volume and density. Teaching focuses on understanding density as mass per unit volume, using and rearranging the density formula, and selecting appropriate units for mass, volume and density calculations. Students solve problems involving density, mass and volume while developing fluency with compound measures and metric conversions.

National curriculum links

- Derive and illustrate properties of triangles, quadrilaterals, circles, and other plane figures [for example, equal lengths and angles] using appropriate language and technologies
- Use the properties of faces, surfaces, edges and vertices of cubes, cuboids, prisms, cylinders, pyramids, cones and spheres to solve problems in 3-D
- 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
- Change freely between related standard units [for example time, length, area, volume/capacity, mass]
- Use compound units such as speed, unit pricing and density to solve problems

Small steps

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| Step 1 | Name 2-D and 3-D shapes |
| Step 2 | Area of a 2-D shape |
| Step 3 | Area of a compound shape |
| Step 4 | Recognise prisms |
| Step 5 | Volume of cubes and cuboids |
| Step 6 | Convert metric units of mass and capacity |
| Step 7 | Understand the units of density, mass and volume |
| Step 8 | Solve problems with density, mass and volume |

Year 8 Spring Term Block 2 Equations and inequalities



Equations and inequalities

Students develop an understanding of equations and inequalities through forming, solving and interpreting algebraic relationships. This block builds on students' Year 7 understanding of algebraic notation, substitution and solving simple equations, as students solve equations with brackets, fractions and unknowns on both sides. Teaching focuses on using inverse operations, maintaining equality and interpreting inequalities as a range of possible solutions. Students represent inequalities on number lines, form and solve equations and inequalities in different contexts and develop fluency with algebraic reasoning and mathematical notation. The extend step introduces solving inequalities with unknowns on both sides.

National curriculum links

- Understand and use the concepts and vocabulary of expressions, equations, inequalities, terms and factors
- Recognise and use relationships between operations including inverse operations
- Use and interpret algebraic notation, including: ab in place of $a \times b$; $3y$ in place of $y + y + y$ and $3 \times y$; a^2 in place of $a \times a$; a^3 in place of $a \times a \times a$; a^2b in place of $a \times a \times b$; $\frac{a}{b}$ in place of $a \div b$ coefficients written as fractions rather than decimals; brackets
- Use algebraic methods to solve linear equations in one variable (including all forms that require rearrangement)
- Order positive and negative integers, decimals and fractions; use the number line as a model for ordering of the real numbers; use the symbols $=$, $\neq$, $<$, $>$, $\leq$, $\geq$

Small steps

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| Step 1 | Solve simple 1- and 2-step equations |
| Step 2 | Solve more complex equations |
| Step 3 | Solve fractional equations |
| Step 4 | Form and solve equations |
| Step 5 | Solve equations with unknowns on both sides |
| Step 6 | Understand and use inequalities |
| Step 7 | Inequalities on a number line |
| Step 8 | Solve simple inequalities |
| Step 9 | Form and solve inequalities |
| Step 10 | Solve inequalities with unknowns on both sides (E) |



Percentages

Students develop an understanding of percentages through calculating percentages of amounts, converting between percentages and decimals, and solving percentage problems in a range of contexts. This block builds on prior learning of fractions, decimals and percentages from Year 7. Teaching focuses on making connections between percentages, decimals and multipliers, and selecting efficient methods to solve problems. Students calculate percentages of amounts, express one number as a fraction or percentage of another, calculate percentage change, use multipliers for percentage increases and decreases, and find original values. They also solve increasingly complex percentage problems and justify their choice of method.

National curriculum links

- 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%
- Interpret fractions and percentages as operators
- Solve problems involving percentage change, including: percentage increase, decrease and original value problems and simple interest in financial mathematics
- Express one quantity as a fraction of another, where the fraction is less than 1 and greater than 1

Small steps

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|---------|--|
| Step 1 | Percentage of an amount |
| Step 2 | Convert between percentages and decimals |
| Step 3 | Use multipliers to calculate percentages |
| Step 4 | Convert between percentages and decimals greater than 1 |
| Step 5 | Percentage increase using a multiplier |
| Step 6 | Percentage decrease using a multiplier |
| Step 7 | Percentage increase and decrease using a multiplier |
| Step 8 | Express one number as a fraction or a percentage of another (non-calculator) |
| Step 9 | Express one number as a fraction or a percentage of another (calculator) |
| Step 10 | Percentage change |
| Step 11 | Find the original value given a percentage |
| Step 12 | Choose appropriate methods to solve percentage problems |



Indices

Students develop an understanding of indices through simplifying, multiplying and dividing expressions involving powers. This block builds on students' Year 7 understanding of algebraic notation, powers and simplifying expressions, as students collect like terms with indices and explore the laws of indices. Teaching focuses on recognising repeated multiplication, understanding the role of the base and index, and applying the addition and subtraction laws for indices when multiplying and dividing terms with the same base. Students develop fluency with simplifying algebraic expressions involving indices and reasoning about equivalent forms. The extend steps introduce powers of powers, negative indices and fractional indices.

National curriculum links

- Understand and use the concepts and vocabulary of expressions, equations, inequalities, terms and factors
- Use and interpret algebraic notation, including: ab in place of $a \times b$; $3y$ in place of $y + y + y$ and $3 \times y$; a^2 in place of $a \times a$; a^3 in place of $a \times a \times a$; a^2b in place of $a \times a \times b$; $\frac{a}{b}$ in place of $a \div b$ coefficients written as fractions rather than decimals; brackets
- Simplify and manipulate algebraic expressions to maintain equivalence by: collecting like terms; multiplying a single term over a bracket; taking out common factors; expanding products of two or more binomials

Small steps

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| Step 1 | Add and subtract expressions with indices |
| Step 2 | Multiply and divide expressions with indices |
| Step 3 | Addition law for indices |
| Step 4 | Subtraction law for indices |
| Step 5 | Addition and subtraction laws for indices |
| Step 6 | Powers of powers (E) |
| Step 7 | Negative indices (E) |
| Step 8 | Fractional indices (E) |



Standard form

Students develop an understanding of standard form through exploring positive and negative powers of 10 and representing very large and very small numbers efficiently. This block builds on students' Year 7 understanding of place value, powers and index notation, as students write numbers greater than 1 and between 0 and 1 in standard form. Teaching focuses on the relationship between ordinary numbers and powers of 10, interpreting positive and negative indices, and recognising the structure of numbers written in standard form. Students develop fluency with converting between ordinary numbers and standard form, interpreting numbers in context and using calculators to work with numbers in standard form.

National curriculum links

- Understand and use place value for decimals, measures and integers of any size
- Interpret and compare numbers in standard form $A \times 10^n$ $1 \leq A < 10$, where n is a positive or negative integer or zero
- Use the four operations, including formal written methods, applied to integers, decimals, proper and improper fractions, and mixed numbers, all both positive and negative
- Use a calculator and other technologies to calculate results accurately and then interpret them appropriately

Small steps

Step 1

Positive and negative powers of 10

Step 2

Numbers greater than 1 in standard form

Step 3

Numbers between 0 and 1 in standard form

Step 4

Standard form on a calculator



Interpret and represent data

Students develop an understanding of interpreting and representing data through calculating averages, analysing distributions and organising data in tables and grouped frequency tables. This block builds on students' Year 7 understanding of averages, as students work with discrete, continuous, qualitative and quantitative data. Teaching focuses on calculating and interpreting the mean, median, mode and range, identifying outliers and choosing the most appropriate average for a data set. Students compare distributions using averages and range, represent grouped data in frequency tables and interpret continuous data using class intervals and inequalities. The extend step introduces estimating the mean and identifying the modal class from grouped frequency tables.

National curriculum links

- Describe, interpret and compare observed distributions of a single variable through: appropriate graphical representation involving discrete, continuous and grouped data; and appropriate measures of central tendency (mean, mode, median) and spread (range, consideration of outliers)
- Construct and interpret appropriate tables, charts, and diagrams, including frequency tables, bar charts, pie charts, and pictograms for categorical data, and vertical line (or bar) charts for ungrouped and grouped numerical data

Small steps

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| Step 1 | Types of data |
| Step 2 | Averages and range |
| Step 3 | Outliers and errors |
| Step 4 | Choose the most appropriate average |
| Step 5 | Compare distributions using averages and the range |
| Step 6 | Averages from an ungrouped frequency table |
| Step 7 | Represent and interpret grouped discrete data |
| Step 8 | Represent and interpret continuous data grouped into equal classes |
| Step 9 | Mean and mode from a grouped frequency table (E) |

Year 8 Summer Term Block 1 Angles in parallel lines and polygons



Angles in parallel lines and polygons

Students develop an understanding of angles in parallel lines and polygons through reasoning and proof. This block builds on students' Year 7 understanding of basic angle facts, notation and properties of shapes, as students explore alternate, corresponding and co-interior angles formed by parallel lines and transversals. Teaching focuses on identifying angle relationships, using correct mathematical language and justifying reasoning using known angle facts. Students solve complex problems involving parallel lines, special quadrilaterals and polygons, while developing fluency with interior and exterior angle sums. The extend step introduces proving simple geometric facts using formal reasoning and angle relationships.

National curriculum links

- Use the standard conventions for labelling the sides and angles of triangle ABC, and know and use the criteria for congruence of triangles
- 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
- 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
- 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
- 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

Small steps

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| Step 1 | Basic angles rules and notation |
| Step 2 | Angles in parallel lines |
| Step 3 | Alternate and corresponding angles |
| Step 4 | Alternate, corresponding and co-interior angles |
| Step 5 | Solve problems with angles in parallel lines |
| Step 6 | Properties of special quadrilaterals and their diagonals |
| Step 7 | Find unknown lengths and angles in special quadrilaterals |
| Step 8 | Exterior angles of a polygon |
| Step 9 | Interior angles of a polygon |
| Step 10 | Interior angles of a regular polygon |
| Step 11 | Prove simple geometric facts (E) |

Year 8 Summer Term Block 2 Tables and probability



Tables and probability

Students develop an understanding of probability and statistical representation through exploring likelihood, organising outcomes and interpreting data. This block builds on students' Year 7 understanding of data handling, fractions, decimals and percentages, as students calculate probabilities, use probability notation and represent outcomes using sample spaces, two-way tables and frequency trees. Teaching focuses on interpreting probabilities on the 0–1 scale, understanding equally likely outcomes, and recognising that probabilities sum to 1. Students explore theoretical and experimental probability through experiments, comparing results and considering the reliability of outcomes from different sample sizes. Emphasis is placed on using systematic methods to organise information, interpret data accurately and select the correct totals when calculating probabilities from tables and diagrams.

National curriculum links

- Record, describe and analyse the frequency of outcomes of simple probability experiments involving randomness, fairness, equally and unequally likely outcomes, using appropriate language and the 0–1 probability scale
- Understand that the probabilities of all possible outcomes sum to 1
- Generate theoretical sample spaces for single and combined events with equally likely, mutually exclusive outcomes and use these to calculate theoretical probabilities
- 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

Small steps

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| Step 1 | Probability vocabulary |
| Step 2 | The probability scale |
| Step 3 | Probability of a single event |
| Step 4 | Use the property that probabilities sum to 1 |
| Step 5 | Probability experiments |
| Step 6 | Sample spaces for 1 or more events |
| Step 7 | Probabilities from sample space diagrams |
| Step 8 | Two-way tables |
| Step 9 | Probabilities from two-way tables |
| Step 10 | Frequency trees |
| Step 11 | Probabilities from frequency trees |



Circles

Students develop an understanding of circles through exploring circle vocabulary, calculating circumference and area, and solving problems involving sectors and compound shapes. This block builds on students' Year 7 understanding of perimeter, area, ratio and geometric properties, as students investigate the relationship between diameter, circumference and π . Teaching focuses on understanding and applying the formulae for circumference and area, recognising the relationships between radius and diameter, and solving problems involving parts of circles and compound shapes. Students develop fluency with calculating arc lengths, sector areas, perimeters and areas involving circles, while reasoning about the effect of changing dimensions on circumference and area.

National curriculum links

- Derive and illustrate properties of triangles, quadrilaterals, circles, and other plane figures [for example, equal lengths and angles] using appropriate language and technologies
- Calculate and solve problems involving: perimeters of 2-D shapes (including circles), areas of circles and composite shapes
- Understand that a multiplicative relationship between two quantities can be expressed as a ratio or a fraction
- 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)

Small steps

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| Step 1 | Circle vocabulary |
| Step 2 | Pi as a ratio |
| Step 3 | Circumference of a circle |
| Step 4 | Perimeter of parts of a circle |
| Step 5 | Area of a circle |
| Step 6 | Area of parts of a circle |
| Step 7 | Area and circumference of a circle |
| Step 8 | Perimeter of a compound shape with circles |
| Step 9 | Perimeter and area of compound shapes with circles |

Year 8 Summer Term Block 4 Charts and graphs



Charts and graphs

Students develop an understanding of graphs and charts through constructing, interpreting and comparing a range of statistical representations. This block builds on students' Year 7 understanding of pictograms, bar charts, pie charts and averages, as students extend their understanding to composite and dual bar charts, vertical line charts, line graphs and comparing distributions. Teaching focuses on selecting the most appropriate graph or chart for different types of data, interpreting scales, frequencies and proportions accurately, and understanding the strengths and limitations of different statistical representations. Students develop fluency with drawing and interpreting pie charts, line graphs and vertical line charts, while reasoning about trends, distributions and comparisons within data. Emphasis is placed on interpreting data critically, identifying misleading graphs and charts, and justifying conclusions using evidence from statistical representations.

National curriculum links

- 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
- Interpret mathematical relationships both algebraically and graphically
- 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)

Small steps

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| Step 1 | Pictograms and bar charts |
| Step 2 | Vertical line charts |
| Step 3 | Draw pie charts |
| Step 4 | Interpret pie charts |
| Step 5 | Line graphs |
| Step 6 | Choose the most appropriate graph or chart |
| Step 7 | Compare distributions using graphs |
| Step 8 | Misleading graphs and charts |



Sequences

Students develop an understanding of sequences through generating, describing and generalising numerical and algebraic patterns. This block builds on students' Year 7 understanding of patterns, substitution and algebraic notation, as students generate sequences from term-to-term and position-to-term rules and find the n th term of linear sequences. Teaching focuses on recognising common differences, connecting algebraic rules with sequence patterns and understanding how coefficients and constants affect the structure of a sequence. Students develop fluency with generating sequences from algebraic rules, describing patterns mathematically and using substitution to generate terms from n th term expressions. The extend step introduces generating sequences from more complex algebraic rules involving brackets, indices and fractions.

National curriculum links

- 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

Small steps

Step 1

Generate and describe a sequence given a rule in words

Step 2

Generate a sequence given a simple algebraic rule

Step 3

n th term of a linear sequence

Step 4

Generate a sequence given a complex algebraic rule (E)