

Maths 5 Year Curriculum Overview



Ecclesfield
SCHOOL

Broader concepts:

To begin to lay the fundamental building blocks of number, algebra, ratio, proportion and rates of change, statistics, probability, geometry and measures. Building upon and extending their knowledge gained at KS2.

Skills:

- To break down problems into a series of simpler steps.
- To develop a rich and accurate mathematical vocabulary.
- Present a mathematical justification, argument or proof, making their thinking clear to themselves and others.
- To develop connections between knowledge from different topics.
- Check their answers are sensible.
- Apply knowledge to both routine and non-routine problems.
- Fluent application of arithmetic.
- The ability to work alone or to collaborate with others.
- Written and oral communication skills.

Knowledge:

- Calculations
- Time
- Directed numbers
- Algebraic notation
- Frequency tables
- Venn diagrams
- Area and perimeter
- Formulae
- Fractions, decimals and percentages
- Angles
- Symmetry
- Sequences
- Coordinates
- Rounding and estimation
- Converting units
- Scale drawings
- Nets and volume

Recall:

- Weaknesses from their question level analysis
- Equivalent fractions, add and subtract fractions, basic area, place value, list factors and multiples, basic angle rules, fraction of an amount, rounding, four operations with integers, odd, even and prime numbers, collect like terms, order and compare integers, decimals and fractions, known FDP conversions, calculate a percentage of a quantity, collecting like terms, expanding simple brackets.

Broader concepts:

To lay the fundamental building blocks of number, algebra, ratio, proportion and rates of change, statistics, probability, geometry and measures.

Skills:

- To break down problems into a series of simpler steps.
- To develop a rich and accurate mathematical vocabulary.
- Present a mathematical justification, argument or proof, making their thinking clear to themselves and others.
- To develop connections between knowledge from different topics.
- Check their answers are sensible.
- Apply knowledge to both routine and non-routine problems.
- Fluent application of arithmetic.
- The ability to work alone or to collaborate with others.
- Written and oral communication skills.

Knowledge:

- HCF and LCM
- Product of Primes
- Algebraic expressions
- Transformations
- Fractions
- Probability
- Substitution
- Rearranging formulae
- Ratio
- Averages and range
- Equations
- Proportion
- Polygons
- Parallel lines
- Volume
- Surface Area

Recall:

- Weaknesses from their question level analysis.
- Basic probability, correct use of a calculator, percentage increase or decrease, substitution, proportion using the unitary method, problem solving with money, volume, converting between units of time, length and capacity, solving equations, BIDMAS, convert between FDP, factorise an algebraic expression, solve equations, interior and exterior angles, n^{th} term, estimation, is a number in a sequence.

Y7 Aims

Y8 Aims

Maths 5 Year Curriculum Overview



Ecclesfield
SCHOOL

Broader concepts:

Develop their understanding of number, algebra, ratio, proportion and rates of change, statistics, probability, geometry and measures.

Skills:

- To break down problems into a series of simpler steps.
- To develop a rich and accurate mathematical vocabulary.
- Present a mathematical justification, argument or proof, making their thinking clear to themselves and others.
- To develop connections between knowledge from different topics.
- Check their answers are sensible.
- Apply knowledge to both routine and non-routine problems.
- Fluent application of arithmetic.
- The ability to work alone or to collaborate with others.
- Written and oral communication skills.

Knowledge:

- Product of primes
- Rounding and estimation
- Two-way tables
- Scatter diagrams
- Expanding and factorising
- Fractions
- Substitution
- Conversions and exchange rates
- Standard form
- Pythagoras
- Linear graphs
- Solving equations
- Indices
- Angles
- Area and perimeter
- Percentages
- Volume and surface area

Recall:

- Weaknesses from their question level analysis.
- Use algebra to solve perimeter and area problems, write an algebraic expression for a given situation, transformations, write a ratio for a situation, solving equations, standard form, rounding, products of primes (including HCF and LCM), simplify algebraic expressions, transformations, four operations with fractions, sample space diagrams, rearrange formulae, divide an amount into a ratio, averages.

Y9 Aims

Broader concepts:

Further develop their understanding of number, algebra, ratio, proportion and rates of change, statistics, probability, geometry and measures.

Skills:

- To break down problems into a series of simpler steps.
- To develop a rich and accurate mathematical vocabulary.
- Present a mathematical justification, argument or proof, making their thinking clear to themselves and others.
- To develop connections between knowledge from different topics.
- Check their answers are sensible.
- Apply knowledge to both routine and non-routine problems.
- Fluent application of arithmetic.
- The ability to work alone or to collaborate with others.
- Written and oral communication skills.

Knowledge:

- Indices
- Standard form
- Trigonometry
- Sequences
- Surds
- Ratio and proportion
- Congruence
- Similarity
- Sampling
- Compound units
- Circle theorems
- Solving quadratics
- Probability
- Algebraic fractions
- Surface area and volume
- Angles and bearings
- Solving equations
- Pythagoras

Recall:

- Weaknesses from their question level analysis.
- Standard form, percentage change, repeated percentage change, HCF and LCM using products of primes, rounding, estimation, truncation, bounds, write a ratio as a fraction, best buy, frequency diagrams and polygons, pie charts, scatter diagrams, laws of indices, expanding brackets, factorising, four operations with fractions, substitution, conversions with exchange rates, rearranging formulae.

Y10 Aims

Maths 5 Year Curriculum Overview



Y11 Aims

Broader concepts:

Strengthen and fully embed their understanding of number, algebra, ratio, proportion and rates of change, statistics, probability, geometry and measures.

Skills:

- To break down problems into a series of simpler steps.
- To develop a rich and accurate mathematical vocabulary.
- Present a mathematical justification, argument or proof, making their thinking clear to themselves and others.
- To develop connections between knowledge from different topics.
- Check their answers are sensible.
- Apply knowledge to both routine and non-routine problems.
- Fluent application of arithmetic.
- The ability to work alone or to collaborate with others.
- Written and oral communication skills.

Knowledge:

- Accuracy and bounds
- Cumulative frequency
- Histograms
- Probability
- Standard form
- Solving Quadratics
- Percentages
- Exponential growth and decay
- Arcs and Sectors
- Solving quadratic inequalities
- Construction and loci
- Set theory
- Pythagoras
- Trigonometry
- Sine and cosine rule
- Ratio and proportion
- Functions
- Iteration
- Vectors
- Equation of a circle
- Transformation of graphs

Recall:

- Weaknesses from their question level analysis.
- Laws of indices, standard form, Pythagoras, trigonometry, sequences, simplifying surds, rationalising surds, convert between currencies, direct and inverse proportion, transformations, similarity, factorising, expanding brackets, compound units, area of a trapezium, $y = mx + c$, angles made by parallel lines, area and circumference of a circle, substitution, drawing linear, quadratic and cubic graphs, probability from a frequency tree, surface area and volume, collecting like terms, solving equations, rearranging formulae.