2023-2024

Maths curriculum map

Brownhills Ormiston Academy Mathematics Curriculum map

Year 7 Maths

Autumn Term 1	Autumn Term 2	Spring Term 1	Spring Term 2	Summer Term 1	Summer Term 2
Number 1 & 2 • Place value • Number lines • Rounding • Mean & median • Metric conversions • Different bases • Commutative law • Associative law • Zero pairs • Perimeter • Angle facts • Mean • Range • Number in context • Addition with unknowns	Number 3 • Divisibility rules • LCM • HCF • Multiplicative reasoning • Rectilinear area • Volume of cubes, cuboids & prisms • Multiplication in context	Number 4 & 5 • Calculating with powers • Index form • Roots as inverses • Primes • Prime factorisation • Order of operations	Number 6 & Algebra 1 • Negative numbers in context • Additive inverse • Directed number arithmetic • The language of algebra • Simplifying linear expressions • Substitution • Solving problems with unknowns	Number 7 & 8 • Fraction representation • Complement of a fraction • Arithmetic with fractions • Fractions in context • Fraction, decimal, percentage equivalence • Representations of percentages • Percentage increase & decrease • Pie charts • Simple interest	Number 9 & Algebra 2 • Single and double inequalities • Error intervals • Approximation • Timetables • Algebraic notation • Collecting like terms • Simplifying indices • Writing algebraic expressions

Brownhills Ormiston Academy Mathematics Curriculum map

Year 8 Maths

Autumn Term 1	Autumn Term 2	Spring Term 1	Spring Term 2	Summer Term 1	Summer Term 2
Geometry	**Number & Probability**	**Ratio**	**Algebra & Statistics**	**Algebra**	**Ratio & Number**
• **Key skills** • Formal geometric notation • Angles, drawing & measuring • Angle facts • Pie charts • Properties of shapes • Angles in polygons	• • **Key skills** • Fractions & decimal arithmetic • Use known facts to derive other facts with number • Use known facts to derive other facts with algebra • Identify sets • The intersection and union • The complement of a set • Vocabulary of probability • Probability of single events • The probability scale • Primes	• **Key skills** • Ratio notation • Simplify ratio • Divide into a ratio • Compare ratios • Direct proportion • Conversion graphs • Currency exchange • Similar shapes • Scale diagrams • Fraction arithmetic (2) • Fractions with algebra	• **Key skills** • Coordinates in all 4 quadrants • Graphs of straight lines • Non-linear graphs • Midpoints • Scatter graphs • Frequency tables • Two way tables • Sample space • Probability from diagrams • Product rule for counting	• **Key skills** • Forming expressions • Expanding brackets • Solve two-step equations • Form and solve inequalities • Equations and inequalities with unknowns on both sides • Using the nth term of a sequence • Finding the nth term of a sequence • Rules of indices	• **Key skills** • Percentage increase and decrease • Percentage change • Reverse percentages • Writing numbers in standard form • Arithmetic with standard form • Rules of indices (2) • Error intervals • Metric conversions • Working with time

	• HCF & LCM				

Brownhills Ormiston Academy Mathematics Curriculum map

Year 9 Maths

Autumn Term 1	Autumn Term 2	Spring Term 1	Spring Term 2	Summer Term 1	Summer Term 2
Geometry • Angles in polygons • Angles in parallel lines • Area of trapezia • Area of a circle • Reflection	**Statistics & Algebra** • Represent grouped data • Compare distributions • Misleading graphs • Measures of location • Outliers • Compare gradients • Compare intercepts • Find the equation of a line • Real life graphs	**Algebra & Geometry** • Inequalities with negatives • Equations with unknowns on both sides • Equations and inequalities in context • Rearranging formulae • Expanding a pair of binomials • Surface area • Volume	**Number & Ratio** • Percentage increase and decrease • Percentage change • Reverse percentages • Repeated percentage change • Maths and money	**Geometry & Ratio** • Rotation • Translation • Pythagoras • Inverse proportion • Best buys	**Ratio, Statistics & Algebra** • Compound measures • Rates of change • Tree diagrams • Quadratic graphs • Represent inequalities

Brownhills Ormiston Academy Mathematics Curriculum map

Year 10 Maths

Autumn Term 1	Autumn Term 2	Spring Term 1	Spring Term 2	Summer Term 1	Summer Term 2
Similarity ➢ Congruence & Similarity ➢ Identify congruent and similar shapes ➢ Use similarity to find missing sides & angles ➢ Use similarity to investigate area and volume ➢ Trigonometry ➢ Use trigonometric ratios with right-angled triangles ➢ Use the sine rule, cosine rule and other rules to find area, missing sides and missing angles in non-right-angled triangles	**Developing Algebra** ➢ Equations & inequalities ➢ Form and solve inequalities in a range of contexts ➢ Represent solutions graphically ➢ Simultaneous Equations ➢ Form and solve simultaneous equations ➢ Solve simultaneous graphically ➢ Solve linear and quadratic simultaneous equations	**Geometry** ➢ Angles & Bearings ➢ Understand and use bearings to solve problems ➢ Use bearings with the trigonometric formulae ➢ Working with circles ➢ Find area, surface area and volume of cylinders, cones and spheres ➢ Use the circle theorems ➢ Use the equation of a circle ➢ Vectors ➢ Use vector notation ➢ Solve vector arithmetic problems ➢ Construct geometric proofs with vectors	**Proportions with proportional change** ➢ Ratios & Fractions ➢ Combine ratios ➢ Solve complex ratio problems in a variety of contexts ➢ Percentages & Interest ➢ Solve percentage change problems including reverse percentages ➢ Solve compound interest and depreciation problems ➢ Evaluate exponential change ➢ Use iterative methods ➢ Probability ➢ Construct and interpret tree diagrams ➢ Find probabilities from a range of charts and tables	**Delving into data** ➢ Collecting, representing and interpreting data ➢ Understand sampling ➢ Understand, represent and interpret data in a range of charts and tables ➢ Compare distributions	**Using number** ➢ Non calculator methods ➢ Work with exact answers ➢ Evaluate calculations ➢ Calculate with surds ➢ Types of number & sequences ➢ Recognise and use arithmetic, geometric and other sequences ➢ Find the nth term of a quadratic sequence ➢ Indices & roots ➢ Work with powers, roots and the rules of indices ➢ Work with rational and irrational numbers ➢ Work with limits of accuracy ➢ Calculate with algebraic fractions ➢ Algebraic proof

Brownhills Ormiston Academy Mathematics Curriculum map

Brownhills Ormiston Academy Mathematics Curriculum map

Year 11 Maths

Autumn Term 1	Autumn Term 2	Spring Term 1	Spring Term 2	Summer Term 1	Summer Term 2
Core: • Two-way tables • Frequency trees • Error intervals • Estimation • Prime factorisation • HCF and LCM • Fraction arithmetic • Ratio • Proportion • Percentages • Linear sequences • Index laws • Linear equations • Linear inequalities • Factorising quadratics • Changing the subject **Extension:** • Recurring decimals • Surds	**PPE 1** • **Core:** • Standard form • Angles • Bearings • **Extension:** • Similar shapes • Compound measures • Proportion equations • Non-linear graphs	**Core:** • Pythagoras • Trigonometry • Circles • Arcs and sectors • Surface area • Volume • Measures of location • Drawing graphs and charts • $y = mx + c$ **Extension:** • Factorising harder quadratics • Complete the square • Quadratic formula • Interpret gradient of curves • Interpret area under curves	**PPE 2** • **Core:** • Non-linear graphs • Real life graphs • Compound measures **Extension:** • Harder change the subject • Iteration • Functions • Quadratic inequalities	**Core:** • Congruence • Transformations • Vectors • Probability • Simultaneous equations **Extension:** • Circle theorems • Algebraic proof • Transformations of functions	**External examinations**

• Fractional and negative indices • Calculating with bounds • Quadratic sequences • Geometric sequences • y = mx + c				

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