KS4 Mathematics Curriculum Coverage: 2025-26

Year 10F Autumn Term

Sequenced	Algebraic Manipulation	Equations, inequalities and formulae	Quadratic expressions and equations	Percentages	Ratio and scale	Work with fractions
Key Knowledge	To know: • what is a like and unlike term. • the difference between an expression and equation. • the symbols for identities and inequalities. • the difference between equality and equivalence. • the meaning of equivalent fractions. • inverse operations. • Know how to represent types of numbers algebraically. • the difference between an equation and an equality. • the definition of an integer • how to use indices • how to expand a bracket • how to factorise into a single bracket	To know: • how to find the solution to an equation • inverse operations • the difference between a solution and a solution set • the meaning of a solution • the difference between an equation, an inequality and a formula • that inequalities can be represented on number lines • the difference between an equation and an expression • how to identify the subject of a formula • that the inverse operations are used to solve equations and to change the subject of a formula	To know: • how to find the factors of a number and recognise factor pairs • how to simplify simple algebraic expressions and write them using the correct notation • how to calculate with negative numbers • the square numbers and how they are formed • that if the product of two numbers is zero then at least one of the numbers must be zero • that equations can have more than one solution • that solutions can be checked by substitution • that equation can be represented graphically • how to plot coordinates	To know: • equivalent values with fractions, decimals and percentages • what a multiplier is • the terms simple and compound interest	To know: • that a multiplicative relationship between two quantities can be expressed as a ratio or a fraction • that ratios compare one part to another part and fractions compare one part to a whole • the graphical representation of direct proportion • know that when expressing in the form of 1 : n or n : 1 non-integer values may be involved • that bar models or other diagrams can be used to represent ratios • what the lowest common multiple of two numbers is • map scales and scale models can be represented by ratios	To know: • the meaning of the reciprocal • how to find equivalent fractions • that fractions can be simplified • that fractions can be represented by diagrams • what the lowest common multiple of two numbers • recognise the term unit fraction • mixed numbers and be converted to improper fractions and vice versa
Key Skills	To be able to: • simplify expressions • use identities • add and subtract simple algebraic fractions • multiply and divides simple algebraic fractions • solve equations and inequalities with fractions • substitute numbers into algebraic expressions and formulae • apply the addition and subtraction laws of indices • expand a single bracket • factorise into a single bracket	To be able to: • form and solve 1 step and 2 step equations and inequalities • solve fractional equations • represent inequalities using the appropriate symbols and represent them on number lines • show solutions to inequalities on a number line • form and solve equations and inequalities with unknowns on both sides • change the subject of a simple or a known formula • change the subject of a complex formula	To be able to: • expand double brackets to form a quadratic expression • factorise quadratic expressions into two brackets • factorise a quadratic expression using the difference of two squares • solve quadratic equations equal to 0 • solve quadratic equations by factorising • check their solutions by substituting into the original equation • complete a table of values • plot a quadratic graph and join the points with a smooth curve	To be able to: • convert fractions, decimals and percentages • work out percentage of an amount (with and without a calculator) • Increase and decrease by a given percentage • calculate an amount after repeated percentage change • express one number as a fraction or percentage of another • express a change as a percentage • calculate simple and compound interest • find the original value after percentage change • choose the appropriate method to solve a problem involving percentages	To be able to: • simplify ratios and recognise equivalent ratios • share an amount in a given ratio using multipliers or bar models • share in a ratio when one part or the difference is given • link ratios and fractions and express a ratio as a fraction and vice versa • combine ratios • share in a given ratio algebraically • use ratios to solve problems involving scales (map scales, scale models)	To be able to: • calculate the fraction of an amount – using unit fractions or any fraction • increase or decrease an amount by any fraction • use a given fraction to calculate the whole • convert mixed numbers to improper fractions and improper fractions to mixed numbers • find equivalent fractions • add and subtract fractions using common denominators • multiply fractions and multiply a fraction by an integer • divide fractions using reciprocals • apply their knowledge to solve problems involving fractions in a variety of contexts
Subject specific vocabulary	expression, variable; formula, substitute, like terms, unlike terms, coefficient, simplify, power, base, index, indices, expand, factorise, highest common factor	equation, inverse, expression, unknown, solution, coefficient, integer, inequality, satisfy, compound inequality, solve, formula, subject, rearrange, variable	quadratic, expand, term, sum, product, factorise, variable, expression, solve, solution, product, roots, parabola, table of values	percentage, decimal, multiplier, whole, increase, decrease, repeated percentage change, depreciate, index, express, fraction, equivalent fraction, percentage change, profit, loss, original, change, simple interest, compound interest, investment, per annum, interest rate, commutative	ratio, simplest form, convert, unit, equivalent, share, part, whole, proportion, compare, gradient, equation, origin, variable, enlarge, scale, scale factor, multiplier	numerator, denominator, product, sum, commutative, simplify, equivalent, improper fraction, mixed number, reciprocal, lowest common multiple