| Topic Name | Term | Skills Developed | Link to NC Subject Content | Next link in curriculum | Other Notes |
| --- | --- | --- | --- | --- | --- |
| SEQUENCES | Autumn | * Begin to reason deductively in geometry, number and algebra, including using geometrical constructions * Use algebra to generalise the structure of arithmetic, including to formulate mathematical relationships | * Move freely between different numerical, algebraic, graphical and diagrammatic representations * Make and test conjectures about patterns and relationships * Generate sequences from a term-to-term rule * Recognise arithmetic and geometric sequences | * Year 7 Autumn - Understand algebraic notation | KEY\*   | Number | | --- | | Geometry | | Ratio and Proportion | | Algebra | | Statistics | |
| UNDERSTAND AND USE ALGEBRAIC NOTATION | Autumn | * Use algebra to generalise the structure of arithmetic, including to formulate mathematical relationships | * Recognise and use relationships between operations including inverse operations * Substitute values in expressions, rearrange and simplify expressions * Use and interpret algebraic notation | * Year 7 Autumn – Equality and equivalence |  |
| EQUALITY AND EQUIVALENCE | Autumn | * Develop their mathematical knowledge, in part through solving problems and evaluating the outcomes, including multi-step problems | * Simplify and manipulate algebraic expressions to maintain equivalence by collecting like terms * Use algebraic methods to solve linear equations in one variable | * Year 7 Spring - Directed Number |  |
| PLACE VALUE AND ORDERING INTEGERS AND DECIMALS | Autumn | * Extend understanding of the number system and place value to include decimals, fractions, powers and roots | * Understand and use place value for decimals, measures and integers of any size * Round numbers to an appropriate degree of accuracy * Interpret and compare numbers in standard form | * Year 7 Autumn - Fraction, Decimal and Percentage Equivalence |  |
| FRACTION, DECIMAL AND PERCENTAGE EQUIVALENCE | Autumn | * Extend their understanding of the number system; make connections between number relationships, and their algebraic and graphical representations | * Move freely between different numerical representations * Express one quantity as a fraction of another, where the fraction is less than one and greater than one * Compare two quantities using percentages * Work with percentages greater than 100% | * Year 7 Spring - Fractions and Percentages of Amounts |  |
| SOLVING PROBLEMS WITH ADDITION AND SUBTRACTION | Spring | * Develop their mathematical knowledge, in part through solving problems and evaluating the outcomes, including multi-step problems | * Derive and apply formulae to calculate and solve problems involving perimeter * Construct and interpret appropriate tables, charts and diagrams for ungrouped numerical data | * Year 7 Spring - Solving problems with multiplication and division |  |
| SOLVING PROBLEMS WITH MULTIPLICATION AND DIVISION | Spring | * Select and use appropriate calculation strategies to solve increasingly complex problems | * Derive and apply formulae to calculate and solve problems involving: perimeter and area of triangles, parallelograms and trapezia * Substitute numerical values into formulae and expressions, including scientific formulae | * Year 7 Summer - Developing Geometric Reasoning |  |
| FRACTIONS AND PERCENTAGES OF AMOUNTS | Spring | * Select and use appropriate calculation strategies to solve increasingly complex problems | * Use the four operations, including formal written methods, applied to integers, decimals, proper and improper fractions * Interpret integers and fractions as operators | * Year 8 Spring - Fractions and Percentages |  |
| DIRECTED NUMBER | Spring | * Extend their understanding of the number system; make connections between number relationships, and their algebraic and graphical representations | * Use four operations, including formal written methods, applied to integers both positive and negative * Understand and use the concepts of vocabulary of expressions, equations, inequalities, terms and factors * Forming and solving linear equations, including two-step equations | * Year 8 Spring - Brackets, equations and inequalities |  |
| FRACTIONAL THINKING | Spring | * Move freely between different numerical, algebraic, graphical and diagrammatic representations [for example, equivalent fractions, fractions and decimals, and equations and graphs] | * Order positive and negative integers, decimals and fractions; use the number line as a model for ordering of the real numbers; use the symbols =, ≠, , ≤, ≥ * Use the four operations, including formal written methods, applied to integers, decimals, proper and improper fractions, and mixed numbers, all both positive and negative | * Year 8 Spring - Fractions and Percentages |  |
| CONSTRUCTING, MEASURING AND USING GEOMETRIC NOTATION | Summer | * Use language and properties precisely to analyse numbers, algebraic expressions, 2-D and 3-D shapes, probability and statistics. | * Begin to reason deductively in geometry including using geometrical constructions * Use the standard conventions for labelling sides and angles * Identify and construct triangles | * Year 7 Summer - Geometric Reasoning |  |
| GEOMETRIC REASONING | Summer | * Begin to reason deductively in geometry, number and algebra, including using geometrical constructions | * Apply the properties of angles at a point, angles at a point on a straight line and vertically opposite angles * Understand and use the relationship between parallel lines and alternate and corresponding angles | * Year 8 Summer - Angles in parallel lines and polygons |  |
| DEVELOPING NUMBER SENSE | Summer | * Select and use appropriate calculation strategies to solve increasingly complex problems | * Begin to reason deductively in number and algebra | * Year 8 Spring - Number Sense |  |
| SETS AND PROBABILITY | Summer | * Develop their mathematical knowledge, in part through solving problems and evaluating the outcomes, including multi-step problems | * Understand that the probabilities of all possible outcomes sum to 1 * Enumerate sets and unions/intersections of sets systematically, using tables, grids and Venn diagrams | * Year 8 Autumn - Tables and Probability |  |
| PRIME NUMBERS AND PROOF | Summer | * Begin to reason deductively in geometry, number and algebra, including using geometrical constructions | * Use integer powers and associated real roots (square, cube and higher), recognise powers of 2, 3, 4 and 5 * Make and test conjectures about patterns and relationships; look for proofs or counterexamples | * Year 8 Spring - Number Sense |  |

\* Throughout the entire curriculum, content and skills are revisited and reused continuously. The colour code refers to the main strand each topic falls under.