# Year 9 Maths Curriculum

## What will you learn?

| Topic(s) | | | |
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| | **Delta groups** | **Theta Groups** | **Pi Groups** |
| **Autumn 1** | **FDP Review:**<br>Converting between fractions, decimals and percentages, four operations with fractions and decimals, ordering FDP<br>**Probability:**<br>Language of probability, likelihood of events, theoretical probability, comparing probabilities, complementary events, sample space diagrams, combined events, probability tree diagrams, frequency tree diagrams, two-way tables, relative frequency, expectations and bias<br>**Venn Diagrams:**<br>Intersection, union, universal set, probability, expected outcomes | **FDP Review:**<br>Simplifying fractions, equivalent fractions, four operations with fractions, converting between fractions, decimals and percentages, ordering FDP, four operations with decimals<br>**Probability:**<br>Language of probability, likelihood of events, theoretical probability, comparing probabilities, complementary events, sample space diagrams, combined events,, frequency tree diagrams, two-way tables, relative frequency, expectations and bias<br>**Venn Diagrams:**<br>Intersection, union, universal set, probability, | **FDP Review:**<br>Simplifying fractions, equivalent fractions, four operations with fractions, four operations with decimals<br>**Probability**<br>Language of probability, likelihood of events, theoretical probability, comparing probabilities, complementary events, sample space diagrams, combined events, frequency tree diagrams, two-way tables, relative frequency, expectations and bias<br>**Venn Diagrams:**<br>Intersection, union, universal set, probability, |
| **Autumn 2** | **Solving linear simultaneous equations:**<br>Solving equations (two-step, fractions and brackets), equivalent equations, system of equations, solving simultaneous equations, forming and solving, solving using substitution<br>**Solving linear simultaneous equations graphically:**<br>Plotting linear graphs, solving graphically, parallel lines<br>**Angle Review:**<br>Types of angles, drawing and measuring angles, vertically opposite angles, angles at a point, angles on a straight line, alternate angles, corresponding angles, co-interior angles, angles in triangles, angles in | **Solving linear simultaneous equations:**<br>Solving equations (two-step and brackets), equivalent equations, system of equations, solving simultaneous equations<br>**Solving linear simultaneous equations graphically:**<br>Gradient and y-intercept, finding the gradient of a line and between two points, equation of simple lines, equation of a line (drawn), plotting linear graphs (table of values and using gradient/y-intercept), solving graphically<br>**Angle Review:**<br>Types of angles, drawing and measuring angles, vertically opposite angles, angles at a point, angles on a straight line, alternate | **Expression and Equations:**<br>Using fraction as division, substitution, using a calculation, equality, inverse operation, solving equations (one-step and two-step)<br>**Linear Graphs:**<br>Gradient and y-intercept, finding the gradient of a line and between two points, equation of simple lines, equation of a line (drawn), plotting linear graphs (table of values and using gradient/y-intercept)<br>**Angles:**<br>Types of angles, measuring and drawing angles, vertically opposite angles, angles at a point, angles on a straight line, |

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| | quadrilaterals, interior angle sum, exterior angles | angles, corresponding angles, co-interior angles, angles in triangles, angles in quadrilaterals, interior angle sum, exterior angles | alternate angles, corresponding angles, angles in triangles, angles in quadrilaterals, interior angle sum |
| **Spring 1** | **Constructions, Congruence and Loci**<br>Drawing circles, anatomy of circles, locus of a point, locus of a line, equidistant points, perpendicular bisector, angle bisector, congruence, constructing triangles<br>**Pythagoras' Theorem**<br>Length of the hypotenuse, length of a shorter side, hidden pythagoras, pythagoras in the cartesian plane, pythagoras in 3D<br>**Ratio Review:**<br>Parts and wholes, ratios and fractions, scale factors, constant of proportionality, unit ratios | **Constructions, Congruence and Loci**<br>Drawing circles, anatomy of circles, locus of a point, locus of a line, equidistant points, perpendicular bisector, angle bisector, congruence, constructing triangles<br>**Pythagoras' Theorem**<br>Length of the hypotenuse, length of a shorter side, hidden pythagoras, pythagoras in the cartesian plane<br>**Ratio Review:**<br>Parts and wholes, ratios and fractions, scale factors, constant of proportionality, unit ratios | **Constructions**<br>Drawing circles, anatomy of circles, constructing triangles<br>**Pythagoras' Theorem**<br>Length of the hypotenuse, length of a shorter side<br>**Ratio Review:**<br>Forming ratios, simplifying ratios, equivalent ratios, parts and wholes, ratios and fractions, unit ratios |
| **Spring 2** | **Similarity and Congruence:**<br>Identifying congruent shapes, scale factors to find lengths, constant of proportionality, centre of enlargement, enlargement on a coordinate grid<br>**Algebra Review:**<br>Simplifying expressions (multiplication), collecting like terms, expanding brackets, factorising, substitution, function machines, solving equations with unknowns on both sides, forming and solving, rearranging equations | **Similarity and Congruence:**<br>Identifying congruent shapes, scale factors to find lengths, constant of proportionality, enlargement on a coordinate grid<br>**Algebra Review:**<br>Simplifying expressions (multiplication), collecting like terms, expanding brackets, factorising, substitution, function machines, solving equations with unknowns on both sides, forming and solving, rearranging equations | **Similarity and Congruence:**<br>Identifying congruent shapes, scale factors to find lengths<br>**Algebra Review:**<br>Multiplying and dividing terms and expressions, collecting like terms, expanding brackets, factorising, function machines, solving equations with brackets<br>**Factors and Multiples:**<br>Listing factors, listing multiples, common factors, common multiples, HCF, LCM, prime numbers, product of primes |

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| **Summer 1** | **Quadratic Expressions and Equations:**<br>Identifying parts of quadratic expressions, substitution, plotting quadratic graphs, interpreting quadratic graphs, factorising quadratics, expanding double brackets, expand triple brackets<br>**Surds:**<br>Rational numbers, irrational numbers, approximating answers, simplifying surds, four operations with surds<br>**Indices:**<br>Evaluate expressions involving indices, finding roots, power of 0, negative indices, unit fraction indices, multiplication and division law of indices, power to a power | **Quadratic Expressions and Equations:**<br>Identifying parts of quadratic expressions, substitution, plotting quadratic graphs, factorising quadratics, expanding double brackets, expand triple brackets<br>**Surds:**<br>Rational numbers, irrational numbers, approximating answers, simplifying surds, four operations with surds<br>**Indices:**<br>Evaluate expressions involving indices, finding roots, power of 0, negative indices, multiplication and division law of indices, power to a power | **Accuracy and Estimation:**<br>Rounding to nearest 10, 100, 1000, whole number, decimal place, estimating answers<br>**Number:**<br>Four operations (skills and context), calculating with money, order of operations<br>**Indices:**<br>Calculating with powers, squares and cubes, laws of indices (multiplication, division, power to a power), power of 0 |
| **Summer 2** | **Standard Form:**<br>Powers of ten, writing standard form, writing in correct standard form, four operations with standard form<br>**Growth and Decay:**<br>Decimal multipliers, increasing/decreasing by a percentage, repeated percentage change, compound interest, reverse percentage change | **Standard Form:**<br>Powers of ten, writing standard form, four operations with standard form<br>**Growth and Decay:**<br>Decimal multipliers, increasing/decreasing by a percentage, repeated percentage change, compound interest, reverse percentage change | **Percentages:**<br>Introduction to percentages, converting between fractions, decimals and percentages, write a number as a percentage of another, percentage of amounts (non-calc and calc methods) |

## How will you be assessed?

| **Overall assessment** | |
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| **Autumn 1** | End of unit assessments |
| **Autumn 2** | End of term assessments |
| **Spring 1** | Mid-year assessment |
| **Spring 2** | End of term assessments |

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| **Summer 1** | End of unit assessments |
| **Summer 2** | End of year assessment |

**End of Year assessment**

Students are given one hour of calculator and one hour of non-calculator assessment comprising all the topics covered in year 9.

These assessments cover the skills that students have learnt, students should apply their knowledge and solve problems in context.

## Which resources should you use?

**Books, websites, online resources, trips and visits**

Students will be given overviews at the beginning of every term outlining the topics which will be covered.

Two pieces of home learning tasks will be set by the teacher. This could be a range of activities from online or worksheets.

- Sparx Maths (school subscription)
- KS3 quizzes - KS3 Maths – Revision Quizzes – Years 7, 8 and 9
- Oak National Academy

## What independent work can you do?

**Books, websites, online resources**

Use the VIP Zone, there you will find:

- An 'Independent Learning' folder full of resources and ideas to support your learning
- PLCs [Personal Learning Checks] - use these to rate your understanding of each topic and to recap and stretch your knowledge and skills.

Start revising. Try some of these to improve your understanding of each lesson and to help you prepare for assessments.

- **Summarise your notes:** Identify the key ideas and essential details. This technique improves understanding and retention by making information clearer and more manageable.
- **Flashcards**: Write key information on cards, don't forget to include an example
- **Mind maps**: Visually organize information by creating diagrams that connect ideas. This helps you see the relationships between topics.

- **Mnemonics**: Use songs, rhymes, or acronyms to help remember facts and figures.
- **Recording and replaying**: Record yourself reading notes and listen back to them.
- **Sticky notes:** Write / draw a key point on each note and place them around your house to help with memorisation.

Watch this: BBC Bitesize The Best Memory Hacks to Help Your Revision