MATHS

YEAR 9 LEARNING JOURNEY INFORMATION

WCHS
Ad Vitam Paramus

Properties of number
Percentages
### Area and Volume

Autumn Term 1

Students begin by revisiting properties of numbers, including factors, multiples, primes, and using prime factorisation to calculate HCF and LCM, supported by Venn diagrams. They also explore integers, rational numbers, and an introduction to surds for extension. Percentage work includes increase and decrease, finding original values, repeated change, and simple and compound interest. The term concludes with area and volume, covering 2D shapes, circles, surface area of prisms and cylinders, and volume of cubes, cuboids, and other solids, alongside density problems.

Equations
inequalities and formulae
Fractions Rates
Standard form

Autumn Term 2
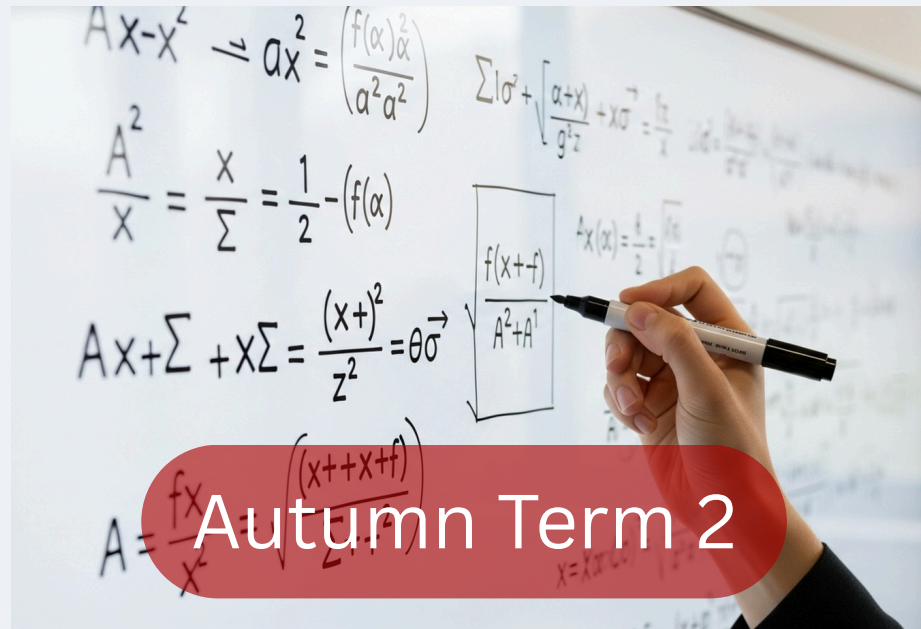
This half term focuses on solving equations and inequalities, including those with brackets and unknowns on both sides. Students learn to substitute into formulae and change the subject of simple and complex formulae. Fractions are revisited through addition, subtraction, multiplication, and division, and applied to real-life contexts. The block also includes speed, distance, and time problems, interpreting and drawing distance-time graphs, and introduces standard form for large and small numbers.

Maths and money
Straight line graphs
### Ratio and proportion

Spring Term 1
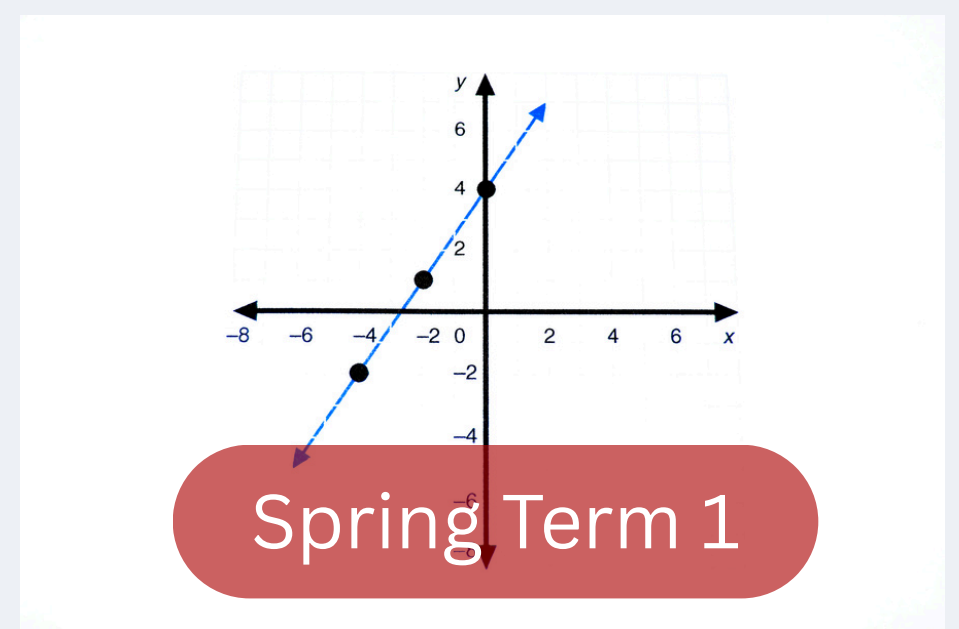
Students explore financial literacy topics such as budgeting, saving, borrowing, and investing, linking maths to real-world applications. They then develop skills in straight-line graphs, including gradients, intercepts, and rearranging equations into $y = mx + c$ form, as well as interpreting real-life graphs and graphing inequalities. Ratio and proportion are revisited, covering direct and inverse proportion and related graphs, alongside solving ratio problems involving algebra.

Constructions and congruence
Similarity
### Algebraic manipulation

Spring Term 2

This term introduces constructions, including drawing and measuring angles, bisectors, and polygons, and interpreting scale drawings. Students learn congruence and similarity, applying enlargement and ratio in right-angled triangles. Algebraic manipulation is extended to expanding and factorising brackets, using identities, and solving quadratic equations for
Oracy explain their thinking higher-tier learners. These skills prepare students for more complex problem-solving tasks.

Pythagoras' theorem
Non-linear graphs
Sets and probability

Summer Term 1
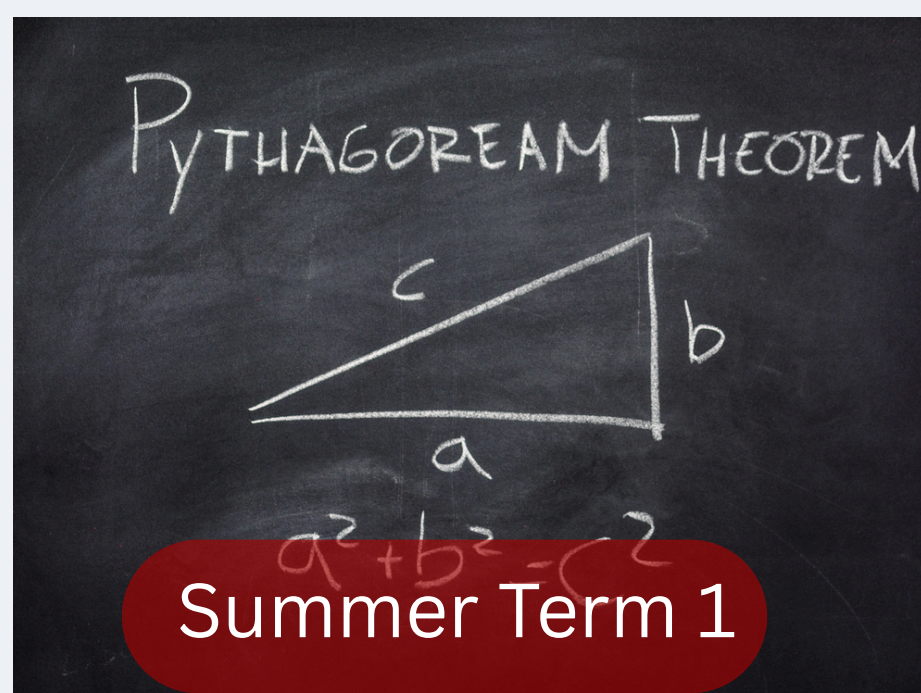
Students apply Pythagoras' theorem to find missing sides, identify hypotenuses, and solve problems in 2D and 3D contexts, including proofs for extension. Non-linear graphs are introduced, covering quadratic, reciprocal, exponential, and cubic graphs, with interpretation of roots, intercepts, and turning points. Probability work includes set notation, Venn diagrams, relative frequency, expected outcomes, and independent events, building a strong foundation for GCSE.

Transformations
Simultaneous equations
Trigonometry

Summer Term 2
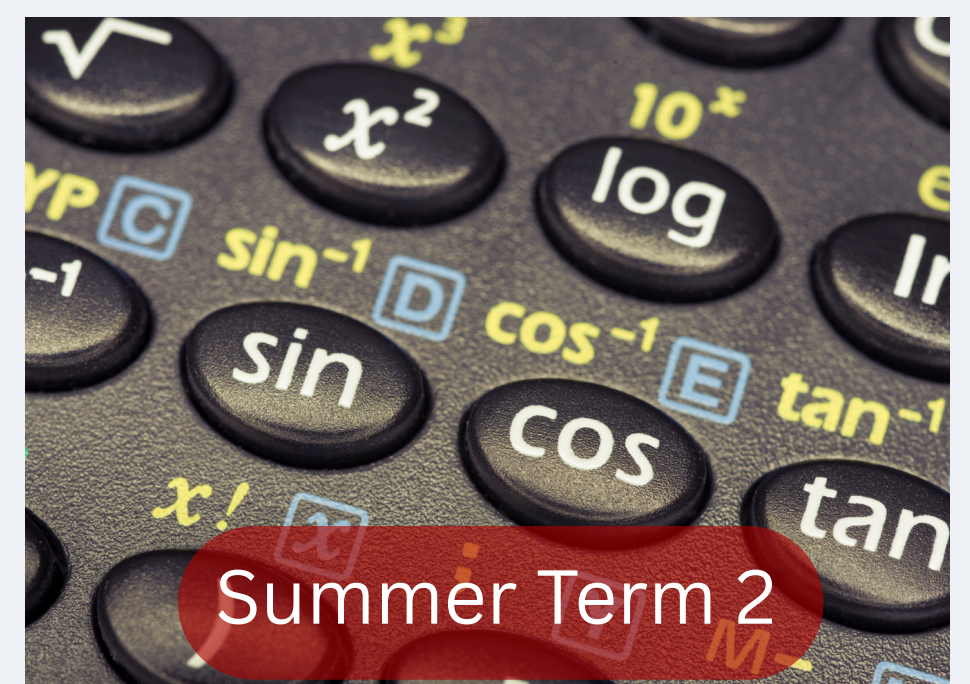
The final term focuses on transformations, including enlargements with positive, fractional, and negative scale factors, rotations, translations, and reflections, as well as describing combined transformations. Trigonometry is introduced for finding unknown sides and angles using sine, cosine, and tangent, extending to 3D problems for higher-tier students. Optional work on simultaneous equations includes graphical and algebraic methods, preparing students for advanced topics in Year 10.