

Year 9

Mathematics

(Sets 1-3)

GUNNERSBURY
CATHOLIC SCHOOL



Basic number

- ✓ Solving real-life problems
- ✓ Multiplication and division with decimals
- ✓ Approximation of calculations
- ✓ Multiples, factors, prime numbers, powers and roots
- ✓ Prime factors, LCM, HCF
- ✓ Negative numbers

Statistical diagrams and averages

- ✓ Statistical representation
- ✓ Statistical measures
- ✓ Scatter diagrams

Algebraic manipulation

- ✓ Basic algebra
- ✓ Factorisation
- ✓ Quadratic expansion
- ✓ Expanding squares
- ✓ More than two binomials
- ✓ Quadratic factorisation
- ✓ Factorising $ax^2 + bx + c$
- ✓ Changing the subject of a formula

Ratio and proportion

- ✓ Ratio
- ✓ Direct proportion problems
- ✓ Best buys
- ✓ Compound measures
- ✓ Compound interest and repeated percentage change
- ✓ Reverse percentage (working out the original amount)

Transformations, constructions and loci

- ✓ Congruent triangles
- ✓ Rotational symmetry
- ✓ Transformations
- ✓ Combinations of transformations
- ✓ Bisectors
- ✓ Defining a locus
- ✓ Loci problems
- ✓ Plans and elevations

Number and sequences

- ✓ Number sequences
- ✓ Finding the n th term of a linear sequence
- ✓ Special sequences
- ✓ General rules from given patterns
- ✓ The n th term of a quadratic sequence
- ✓ Finding the n th term for quadratic sequences

Fractions, ratio and proportion

- ✓ One quantity as a fraction of another
- ✓ Adding, subtracting and calculating with fractions
- ✓ Multiplying and dividing fractions
- ✓ Fractions on a calculator
- ✓ Increasing and decreasing quantities by a percentage
- ✓ Expressing one quantity as a percentage of another

Angles

- ✓ Angle facts
- ✓ Triangles
- ✓ Angles in a polygon
- ✓ Regular polygons
- ✓ Angles in parallel lines
- ✓ Special quadrilaterals
- ✓ Scale drawings and bearings

Linear graphs

- ✓ Drawing linear graphs from points
- ✓ Gradient of a line
- ✓ Drawing graphs by gradient-intercept and cover-up methods
- ✓ Finding the equation of a line from its graph
- ✓ Real-life uses for graphs
- ✓ Solving simultaneous equations using graphs
- ✓ Parallel and perpendicular lines

Length, area and volume

- ✓ Circumference and area of a circle
- ✓ Area of a parallelogram
- ✓ Area of a trapezium
- ✓ Sectors
- ✓ Volume of a prism
- ✓ Cylinders
- ✓ Volume of a pyramid
- ✓ Cones
- ✓ Spheres

Right-angled triangles

- ✓ Pythagoras' theorem
- ✓ Finding the length of the shorter side
- ✓ Applying Pythagoras' theorem in real-life situations
- ✓ Pythagoras' theorem and isosceles triangles
- ✓ Pythagoras' theorem in three dimensions
- ✓ Trigonometric ratios
- ✓ Calculating angles
- ✓ Using the sine and cosine functions
- ✓ Using the tangent function
- ✓ Which ratio to use
- ✓ Solving problems using trigonometry
- ✓ Trigonometry and bearings
- ✓ Trigonometry and isosceles triangles

Year 10