EMMAUS CATHOLIC MAC
Our journey with Christ

THE MATHS LEARNING JOURNEY

HAGLEY CATHOLIC HIGH SCHOOL
SEMPER FIDELIS

Learners who are rich in mathematical knowledge and who have the skills to comprehend and solve complex mathematical problems

YEAR 11

Vector proofs
Translations and reflections of graphs
Sketching polynomials
Congruency proofs
Repeated transformations
Equation of a circle
Trigonometric graph sketching
Rates of change using graph gradients
Fibonacci and geometric sequences
Quadratic sequences
Venn diagrams and set theory
Geometry proofs
Circle geometry
Cosine rule
Sine rule
Area of a triangle using trigonometry
3D Trigonometry & Pythagoras
Compound units
Inequality shading for 2 variables
Solving quadratic inequalities
Manipulation of surds
Standard form problems
Equation of a line, parallels & perpendiculars
Fractional indices
Scatter graphs, correlation, and outliers
Algebraic fractions
Estimating including roots
Constructing loci
Probability sample spaces
Probability tree diagrams
Area under a graph

YEAR 10

Vectors
Inverse and composite functions
Enlargement
Similar shapes
Simultaneous equations linear & quadratic
Percentage change, compound, and reverse
Ratio & direct proportion
Geometry problems
Histograms
Rearranging formulae and substitution
Area and surface area of 3d solids
Algebra proof
Factorising quadratics with coefficients greater than 1
Expanding binomials
Product of prime factors, HCF, LCM problems
Completing the square
Bounds, checking calculation
Pythagoras and trigonometry problems
Statistics sampling
Cumulative frequency and box plots comparison
Angles in polygons
Inverse proportion
Simultaneous equations graphical
Quadratic formula
Algebraic fractions
Significant figures (different number of sig figs)
Compare and contrast distributions
Multiples of difference of two squares
Factorising special quadratics
Algebraic lengths and areas
Use and generate complex formulae
Solve complex linear equations
Cumulative frequency diagrams and box plots
Transformations
Solve linear simultaneous equations and create simultaneous equations from worded problems
Linear inequalities & graphing inequalities
Solve proportion problems and use a constant of proportionality
Plot and recognise quadratic and cubic graphs
Simplify surds
Equation of a straight line; finding the gradient and y intercept
Similar triangles & similar shapes
Trigonometry in right angled triangles
Simplify algebraic fractions
Indices laws: complex positive & negative indices
Calculate standard form problems
Calculate repeated percentage change
Expand, factorise, and solve quadratics
Comparing and contrasting area, perimeter, and volume

YEAR 9

Linear inequalities and solution set
Change the subject of a formula
Linear and quadratic equations
Formulae
Checking solutions to calculations using significant figures
Algebraic fractions
Area of quadrilaterals and compound shapes
Construction of angle bisectors
Standard form
Index laws
Prime factors, HCF and LCM
Linear sequences and geometric sequences
Speed, distance, time
Upper and lower bounds
Pythagoras
Surface area and volume of prisms
Mean from grouped data
Percentage increase and decrease
Ratio problems
Direct proportion
Density, and population density
Angles on parallel lines, in polygons and tangents
Area and circumference of circles
Scale drawing
Mutually exclusive events
Gradient
Decimal search (trial and improvement)
Expanding brackets
Fractions
Factorising and difference of two squares
Order of operations
Area of quadrilaterals and triangles
Reciprocal
Ratio simplifying
Pie charts and other data charts
Circle circumference
Proportion recipes
Speed
Data collection and questionnaires
Mode, median, mean, range
Probability
Rotation
Reflection
Construct triangles
Linear graphs
Decimal calculations
Volume of cuboids
Construct perpendicular lines
2-D representation of 3-D shapes

YEAR 8

Problem solving using bar lines and negatives
Significant figures
Order of operations
Expanding single brackets
Substitution
Time problems
Angles
Fractions and percentages
Simplifying expressions
Equations
Sequences
Using the calculator
Cubes and index notation

YEAR 7

WELCOME

Hebrews 13:8 ‘Jesus Christ is the same yesterday, today and forever’