

BLESSED TRINITY LEARNING PROGRAMME

SUBJECT: Maths - Stage 3

YEAR: 8

Half Term: 1

Title	Learning Objectives	Classroom Activity	Recommended Homework	Marking & Assessment
Geometrical reasoning: lines, angles and shapes	<p>To identify corresponding and alternate angle and understand their application in simple geometrical proofs</p> <p>To classify types of triangle and quadrilateral and know how to use their properties to solve geometrical problems</p>	<p>Learn correct mathematical vocabulary</p> <p>Learn how to find and identify situations where angles are corresponding/ alternate.</p> <p>Solve problems involving: the sum of the interior angles in a triangle and quadrilateral and by using other geometrical properties.</p> <p>Explaining answers with both diagrams and text</p>	<p>Research: angle facts</p> <p>L5SSM2</p>	<p>Peer, self and teacher assessment</p>
Construction and Loci	<p>To find simple Loci and understand how to complete constructions using a compass and straight edge</p>	<p>Use Loci to create shapes and paths around simple shapes</p> <p>Use a ruler and compass to create bisectors of straight lines and angles and to create perpendiculars on and to a point on a line</p>	<p>L5SSM4</p> <p>My maths: Constructing Shapes</p>	<p>Peer, self and teacher assessment</p>
Equations, formulae, identities and expressions	<p>To solve a range of problems involving algebra</p>	<p>Use letter symbols in formula, , equations and functions. Understand that algebraic operations involving brackets follow the rules of arithmetic</p> <p>Simplify expressions by collecting like terms</p> <p>Substitute positive and negative values into expressions</p> <p>Expand a single bracket with non integer term.</p>	<p>L5ALG1</p> <p>Revision</p>	<p>Peer, self and teacher assessment</p>

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SUBJECT: Maths - Stage 3

YEAR: 8

Half Term: 2

Title	Learning Objectives	Classroom Activity	Recommended Homework	Marking & Assessment
Fractions, decimals and percentages	<p>To recognise that a recurring decimal is a fraction</p> <p>To add and subtract fractions by writing them with a common denominator</p> <p>To Interpret percentages</p>	<p>Use division to convert a fraction to a decimal; order fractions by writing them with a common denominator or by converting them to decimals</p> <p>calculate fractions of quantities (fraction answers); multiply and divide an integer by a fraction</p> <p>Interpret percentage as the operator ‘so many hundredths of’ and express one given number as a percentage of another; calculate percentages and find the outcome of a given percentage increase or decrease</p>	<p>L5CALC2</p> <p>L6NNS1</p>	Peer, self and teacher assessment
Processing and representing data; Interpreting and discussing results	<p>To Calculate statistics for sets of discrete and continuous data</p> <p>To recognise when it is appropriate to use the range, mean, median and mode and, for grouped data, the modal class</p>	<p>Construct graphical representations and identify which are most useful in the context of the problem. Include pie charts for categorical data, bar charts and frequency diagrams for discrete and continuous data, simple line graphs for time series, simple scatter graphs, stem-and-leaf diagrams</p>	<p>L5HD4</p> <p>L5HD6</p>	Peer, self and teacher assessment
Statistical enquiry	<p>To discuss a problem that can be addressed by statistical methods and identify related questions to explore</p>	<p>Compare two distributions using the range and one or more of the mode, median and mean.</p> <p>Write about and discuss the results of a statistical enquiry using ICT and justify the methods used</p>	L5HD1	Peer, self and teacher assessment Class Test

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SUBJECT: Maths - Stage 3

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Half Term: 3

Title	Learning Objectives	Classroom Activity	Recommended Homework	Marking & Assessment
Sequences, functions and graphs	To Express simple functions algebraically and represent them in mappings or on a spreadsheet	Generate points in all four quadrants and plot the graphs of linear functions, where y is given explicitly in terms of x , on paper and using ICT; recognise that equations of the form $y = mx + c$ correspond to straight-line graphs	My maths: $y=mx+c$	Peer, self and teacher assessment
Transformations and coordinates	To Identify all the symmetries of 2-D shapes To know that if two 2-D shapes are congruent, corresponding sides and angles are equal	Transform 2-D shapes by rotation, reflection and translation, on paper and using ICT Try out mathematical representations of simple combinations of these transformations Understand enlargement; enlarge 2-D shapes, given a centre of enlargement and a positive integer scale factor; explore enlargement using ICT	L5ALG2 L5SSM3	Peer, self and teacher assessment
Written calculation and checking	To order decimals To round positive numbers to any given power of 10; round decimals to the nearest whole number or to one or two decimal places To be able to Multiply and divide with decimals	Make and justify estimates and approximations of calculations Use efficient written methods for multiplication and division of integers and decimals Select from a range of checking methods, including estimating in context and using inverse operations	L5CALC3 L5CALC6 L5NNS2	Peer, self and teacher assessment Class test



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SUBJECT: Maths - Stage 3

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Half Term: 4

Title	Learning Objectives	Classroom Activity	Recommended Homework	Marking & Assessment
Integers, powers and roots	<p>To understand multiples, factors and primes</p> <p>To understand how to add, subtract, multiply and divide integers</p> <p>To understand squares, square roots, cubes and cube roots</p>	<p>Learn how to find Lowest Common Multiples and Highest Common Factors.</p> <p>Find the prime factors any integer using powers where appropriate</p> <p>Learn how to apply these skills using negative numbers.</p> <p>Learn by heart the square numbers and corresponding square roots from 1-15 and cube numbers from 1-5 and 10</p> <p>Discover what happens when numbers are raised to fractional or negative powers.</p>	<p>My maths:</p> <p>HCF</p> <p>LCM</p> <p>Learn square numbers and cube numbers</p>	<p>Peer, self and teacher assessment</p> <p>Test on square and cube numbers and corresponding square roots</p>
Probability	<p>To interpret the results of an experiment using the language of probability.</p> <p>Use diagrams in a systematic way to display all outcomes for a given event.</p> <p>Compare experimental probabilities with theoretical probabilities.</p>	<p>Learn that the probability of an event occurring is the same as 1 minus the probability of the event not occurring.</p> <p>Draw up sample spaces and use these to answer probability questions</p> <p>Understand that an experiment is very unlikely to match perfectly with theory and that a result is unlikely to be repeated</p> <p>Understand that in experiments that more trials will indicate a better estimate of probability</p>	<p>L5HD2</p> <p>L5HD3</p> <p>L5HD5</p>	<p>Peer, self and teacher assessment</p>

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YEAR: 8

Half Term: 4

Title	Learning Objectives	Classroom Activity	Recommended Homework	Marking & Assessment
Mental calculations and checking	To strengthen and extend mental methods of calculation, working with decimals, fractions, percentages, squares and square roots, cubes and cube roots; solve problems mentally	Use Order of operations effectively Understand how to divide a number by ten and the use of this in mental calculations Make and justify estimates and approximations of calculations. Be able to justify a result using inverse operations	L5CALC1 L5NNS4	Peer, self and teacher assessment
Written calculation and checking	To use written methods effectively with non integer numbers	Use written methods to add, subtract and multiply decimals of any size effectively. Use a calculator effectively for more difficult calculations	L5CALC3 L5CALC6	Peer, self and teacher assessment Class Test

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SUBJECT: Maths - Stage 3

YEAR: 8

Half Term: 5

Title	Learning Objectives	Classroom Activity	Recommended Homework	Marking & Assessment
Sequences, functions and graphs	<p>To use and generate conversion graphs</p> <p>To be able to understand how to read and draw graphs arising from real life situations</p>	<p>Learn how to draw and use conversion graphs and understand their application</p> <p>Learn how to interpret distance time graphs, speed time graphs, be able to discuss graphs arising from real life situations</p>	<p>My maths: Real Life Graphs</p>	<p>Peer, self and teacher assessment</p>
Equations, formulae, identities and expressions	<p>To simplify linear expression</p>	<p>Collect like terms to simplify and expression. Understand why x, x^2, x^3 are not like terms</p>	<p>L5ALG1</p>	<p>Peer, self and teacher assessment</p>
Equations, formulae, identities and expressions	<p>To substitute into formulae</p>	<p>Be able to multiply a single terms over a bracket where terms are negative and fractional</p> <p>Substitute positive, negative, fractional and decimal numbers into formulae</p>	<p>Mymaths: Substitution</p>	<p>Peer, self and teacher assessment</p>



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Half Term: 5

Title	Learning Objectives	Classroom Activity	Recommended Homework	Marking & Assessment
Equations, formulae, identities and expressions	To use formulae from mathematics and other subjects	Substitute into these formulae and be able to derive your own simple formulae. Be able to manipulate formulae to be able to use it to find any missing part of the formula		Peer, self and teacher assessment
Equations, formulae, identities and expressions	To construct and solve linear equations	Solve equations with linear coefficients including when the unknown appear on both sides. Use appropriate methods including cover up, inverse and doing the same to both sides.	Mymaths: Solving equations	Peer, self and teacher assessment Class Test

BLESSED TRINITY LEARNING PROGRAMME

SUBJECT: Maths - Stage 3

YEAR: 8

Half Term: 6

Title	Learning Objectives	Classroom Activity	Recommended Homework	Marking & Assessment
Geometrical reasoning: coordinates and construction	Visualise 3-D shapes from their nets; use geometric properties of cuboids and shapes made from cuboids Make scale drawings Find the midpoint of the line segment AB, given the coordinates of points A and B	Learn correct mathematical vocabulary Label various shapes, lines and angles correctly with their mathematical properties Solve problems involving simple plans and elevations and using co-ordinates in all four quadrants to calculate midpoints of lines in shapes :	L5SSM1	Peer, self and teacher assessment
Measures and mensuration	Choose and use units of measurement to measure and estimate. Know rough metric equivalents of imperial measures in common use, such as miles, pounds (lb) and pints	Calculate and solve problems in a range of contexts, also involving measurements in a variety of contexts; Convert between area measures (e.g. mm ² to cm ² , cm ² to m ² , and vice versa) and between volume measures (e.g. mm ³ to cm ³ , cm ³ to m ³ , and vice versa)	L5SSM5 L5SSM6	Peer, self and teacher assessment
Measures and mensuration; volume	Calculate accurately, selecting mental methods or calculating devices as appropriate Know and use the formula for the volume and surface area of a cuboid;	Calculate volumes and surface areas of cuboids and shapes made from cuboids Practical work – using volume and surface area in the design of packaging	L5SSM7	Peer, self and teacher assessment Class Test