

Our Lady Queen of Peace

Catholic High School

Curriculum Overview

YEAR 8 Mathematics

Careers

Local Market Information	Skills	Jobs
Logistics and distribution, manufacturing, engineering, construction, retail, health and social care, business and administration, digital technology, public services.	Problem solving, logical reasoning, critical thinking, accuracy, resilience, communication, teamwork, numeracy, financial awareness, data interpretation, decision making, working systematically, estimation, measuring accurately.	Warehouse Operative, Logistics Coordinator, HGV Driver, Delivery Driver, Warehouse Supervisor, Production Operative, Machine Operator, Maintenance Technician, Quality Inspector, Manufacturing Engineer, Bricklayer, Joiner, Electrician, Plumber, Site Manager, Quantity Surveyor, Healthcare Assistant, Nurse, Pharmacy Technician, Care Worker, Paramedic, Retail Assistant, Store Manager, Business Administrator, Customer Service Adviser, Finance Assistant, Mechanical Engineer, Electrical Engineer, Civil Engineer, CAD Technician, Engineering, Architect, Surveyor, , Computer Programmer, Data Analyst, Sports Analyst, Marketing Officer, Graphic Designer, Product Designer, Accountant, Financial Adviser, Chef, Baker, Food Scientist, Hairdresser, Pharmacist, Economist,.

Knowledge & Understanding

Subject Specific Literacy Development

Cultural Capital / Enrichment Opportunities

	Topics (Bigger Picture)	Knowledge (Key Concepts)	Recall & Retrieval Practice Focus	Key Vocabulary	
Half Term 1	Multiples, Factors and Prime Factorisation	Identify multiples, factors, prime numbers and square numbers. Calculate the LCM and HCF. Prime Factorisation.	Key skills from Y7 HT6 Class specific based on Y7 content.	Prime Factorisation Multiples Factors	Cybersecurity and prime numbers: how prime numbers underpin modern encryptions (RSA).
	Approximation and rounding	Round to the nearest integer, 10, 100 and 1000. Round to decimal places and significant figures. Use a calculator to answer complex calculations.	Areas of improvement identified from Year	Estimation Significant Figures	

	Knowledge & Understanding			Subject Specific Literacy Development	Cultural Capital / Enrichment Opportunities
	Topics (Bigger Picture)	Knowledge (Key Concepts)	Recall & Retrieval Practice Focus	Key Vocabulary	
		Use estimation to answer calculations. Calculate bounds and error intervals.	7 alongside key content to be revisited		
Half Term 2	Percentages	Percentages of Shapes Convert between FDP Percentages of Amounts One quantity as a percentage of another Percentage Increase and Decrease Percentage Change as a fraction or decimal Simple and Compound Interest Expressing one quantity as a fraction of another	Key skills from HT1 alongside key content from Year 7 to be revisited	Interest	Consumer maths: compare supermarket prices using ratios (£/100g).
	Ratio	Simplifying Ratio Calculating missing parts in a ratio when one part is given Converting currencies Combining two ratios		Convert	
	Recipes Direct/Inverse Proportion	Scale up and down recipes using scale factors Solve direct and inverse proportion problems using the unitary method Solve work rate problems		Proportion Unitary	
Half Term 3	Representing Data	Be able to plot points on scatter graphs, describe correlation and interpolate using a line of best fit. Be able to draw and interpret bar charts. Be able to draw and interpret stem and leaf diagrams, including calculating averages. Be able to draw and interpret pie charts. Be able to draw and interpret cumulative frequency curves, including calculating the IQR. Be able to draw and interpret boxplots, including calculating the IQR.	Class specific based on Key skills from HT1 & 2 Areas identified from Mid-Year Assessment feedback	Correlation Quartiles Interpolate	Algebra in ancient cultures: solving equations geometrically like the Babylonians.
	Algebraic	Use function machines to calculate missing		Equation	

	Knowledge & Understanding			Subject Specific Literacy Development	Cultural Capital / Enrichment Opportunities
	Topics (Bigger Picture)	Knowledge (Key Concepts)	Recall & Retrieval Practice Focus	Key Vocabulary	
	Equations & Rearranging Formula	inputs and outputs. Introduce the term 'Equation' Solve linear equations; one step, two step, inclusion of brackets and when the variable appears on both sides. Be able to form and solve linear equations. Be able to change the subject of basic mathematical formula.		Solve Rearrange	
Half Term 4	Algebraic Inequalities	Use inequality notation. Represent an inequality on a number line. Solve linear inequalities, including the use of a negative variable. Solve linear inequalities with both one and two inequality signs. Form and solve linear inequalities.	Class specific based on Key skills from HT1 to 3	Inequality	Sequences in music: explore how arithmetic and geometric sequences appear in music scales and rhythmic patterns.
	Sequences	Identify special number sequences such as square numbers, triangular numbers, Fibonacci sequence. Describe the position-to-term rule for an arithmetic sequence. Generate a sequence using the position-to-term rule. Evaluate if a number is in a sequence using the position-to-term rule. Introduce quadratic sequences.		Quadratic Term	

	Knowledge & Understanding			Subject Specific Literacy Development	Cultural Capital / Enrichment Opportunities
	Topics (Bigger Picture)	Knowledge (Key Concepts)	Recall & Retrieval Practice Focus	Key Vocabulary	
Half Term 5	Plotting and Sketching Graphs	Plot co-ordinates in all four quadrants. Plot and identify horizontal and vertical lines. Recognise $y=mx+c$ for straight lines and identify the gradient and the y-intercept including changing from $ax + by = c$ Draw a straight line graph in the form $y=mx+c$ by using a table of values. Work out the equation of a straight line by calculating the gradient and y-intercept. Plotting quadratic graphs and use graphs to estimate solutions	Class specific based on Key skills from HT1 to 4	Gradient Y-Intercept	Using a map and scaled diagrams to find the shortest distance between two points (DoE link).
	Similarity	Define and identify congruent and similar shapes. Calculate missing sides in similar shapes by using a scale factor. Investigate the link between area and volume scale factors and use this on basic examples.		Congruent Similar	
	Pythagoras	Recall Pythagoras' theorem. Apply Pythagoras' theorem to calculate the length of any missing side. Apply Pythagoras' theorem to worded problems.		Hypotenuse Theorem	
Half Term 6	Introduction to Circles	Construct circles with pairs of compasses Identify and label parts of circles Understand that Pi is the ratio of circumference to diameter Calculate area given either radius or diameter Calculate circumference given either radius or diameter	Class specific based on Key skills from HT1 to 5 including areas identified from Summer Assessment series	Radius Diameter Circumference	Explore Islamic tiling patterns and recreate traditional geometric patterns using compass constructions and transformations
	Transformations	Identify lines of symmetry and the order of rotational symmetry for 2D shapes. Describe and transform reflections. Describe and transform rotations. Describe and transform translations, including		Scale Factor Vector Translation Rotation	

	Knowledge & Understanding			Subject Specific Literacy Development	Cultural Capital / Enrichment Opportunities
	Topics (Bigger Picture)	Knowledge (Key Concepts)	Recall & Retrieval Practice Focus	Key Vocabulary	
		the use of vectors. Describe and transform enlargements, using a positive integer or fractional scale factor, including from a given point.		Reflection Enlargement	

Key Assessments

When	What will be assessed?	Why is this being assessed?	How will results be stored & students receive feedback?
HT1	Mathematical Reasoning Multiples, Factors and Primes Approximation	To assess the students understanding of, and their retention of the topics taught. This information will be used to inform the topics that make up the Remember More part of the Recall and Retrieval starter activity	Scores will be stored on SIMS and student feedback will be through class teacher reviewing the assessment via the visualiser
HT2	Mid Year Assessment (Summative Assessment)	Check how well students can remember and apply what they know to a wide range of questions – can they identify the skills needed to answer questions from topics taught in yr 7 and the first part of yr 8	Scores will be stored on SIMS and student feedback will be through class teacher reviewing the assessment via the visualiser
HT3	Scatter Graphs Pie Charts Stem and Leaf Diagrams Box plots and Cumulative frequency Proportion	To assess the students understanding of, and their retention of the topics taught. This information will be used to inform the topics that make up the Remember More part of the Recall and Retrieval starter activity	Scores will be stored on SIMS and student feedback will be through class teacher reviewing the assessment via the visualiser
HT4	Equations Inequalities Changing the subject	To assess the students understanding of, and their retention of the topics taught. This information will be used to inform the topics that make up the Remember More part of the Recall and Retrieval starter activity	Scores will be stored on SIMS and student feedback will be through class teacher reviewing the assessment via the visualiser
HT5	Summer Assessment (Summative Assessment)	Check how well students can remember and apply what they know to a wide range of questions – can they identify the skills needed to answer questions from topics taught in yr 7 and the yr 8	Scores will be stored on SIMS and student feedback will be through class teacher reviewing the assessment via the visualiser
HT5	Pythagoras Circles	To assess the students understanding of, and their retention of the topics taught. This information will be used to inform the topics that make up the Remember More part of the Recall and Retrieval starter activity	Scores will be stored on SIMS and student feedback will be through class teacher reviewing the assessment via the visualiser