

Our Lady Queen of Peace

Catholic High School

Curriculum Overview

Year 7 Maths

Careers

Local Market Information

Logistics and distribution, manufacturing, engineering, construction, retail, health and social care, business and administration, digital technology, public services.

Skills

Problem solving, logical reasoning, communication, teamwork, resilience, numeracy, estimation, accuracy, measuring, data interpretation, decision making, financial awareness, organisation, critical thinking, working systematically.

Jobs

Engineer, Architect, Surveyor, Electrician, Plumber, Bricklayer, Quantity Surveyor, Warehouse Operative, Logistics Coordinator, Retail Manager, Accountant, Data Analyst, Computer Programmer, Healthcare Professional, Chef.

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

Foundations of Mathematics

Understanding number
Partitioning
Doubling and halving
Division
Rounding and estimating
Common number relationships

KS2 number and algebraic skills.

Place value
Partition
Multiple
Factor
Estimate
Integer

Urban planning project: students use area and perimeter to design a town shopping centre and park on grid paper.

Algebraic Notation & Substitution

Understand algebraic notation
Form expressions – coefficients as fractions included
Substitute positive integers into expressions & formulae
Substitute negative integers, positive fractions & decimals into expression & formula
Use formulae to find unknown variables
Making links to BIDMAS

Expression
Variable
Substitution

Area, Perimeter and Volume

Using formula for area and perimeter of squares, rectangles, triangles, parallelograms and trapeziums
Extending knowledge of area and perimeter to composite shapes
Finding the volume of cubes, cuboids and other prisms

Perpendicular
Trapezium
Parallelogram
Cuboid
Cube
Prism
Composite

	Knowledge & Understanding			Subject Specific Literacy Development	Cultural Capital / Enrichment Opportunities
	Topics (Bigger Picture)	Knowledge (Key Concepts)	Recall & Retrieval Practice Focus	Key Vocabulary	
Half Term 2	Working with Ratio	Understand what ratios are and be able to write quantities in a ratio Simplification of ratios Knowledge of equivalence between ratios, fractions and decimals Conversion between ratios and fractions Share a quantity into a given ratio Calculate the total or a part of a ratio when only given a ratio and one part	Foundational Mathematics Algebraic Notation Area and perimeter	Equivalent Simplify	Ratio in recipes: explore recipes from different cultures (e.g. jollof rice, carbonara, etc.). Scale the recipes up or down using ratios and calculate the average nutritional values per dish.
	Averages & spread	Calculate mean, median, mode from a list Calculate the range from a list Generate lists of numbers given constraints including range, median, mean Use an appropriate average and range to compare data sets Calculate averages from bar charts Calculate the mean from a frequency table Calculate mean & modal class from grouped frequency tables		Mean – A calculated average of a set of numbers Mode – The most frequent appearing value Median – The middle of a sorted list of numbers Range – The difference between the lowest and highest value.	
Half Term 3	Working with Directed Numbers & Decimals	Understand and use place value for decimals and integers of any size Use the knowledge of place value to order integers and decimals Add & Subtract decimals Divide decimals by integers Understand the idea of a “negative number” Be able to order positive and negative numbers Multiply & divide negative numbers Multiply decimals together Divide decimals by other decimal numbers	Class specific key skills from HT1 & 2 Areas identified from Mid-Year Assessment feedback	Integer – A whole number Inequality – Compares two values that may or may not be equal	Temperatures around the world and elevation above/below sea level (travel and geography links).
	Algebraic Manipulation	Understand key terminology, expression, equation, inequality, term Simplification by adding & subtracting like terms Expand & simplify single brackets Factorise an expression with a term as the HCF Expand & simplify double brackets Factorise quadratics using the product & sum method		Expand – To remove brackets using multiplication Factorise – To find a common factor of an algebraic expression	

	Knowledge & Understanding			Subject Specific Literacy Development	Cultural Capital / Enrichment Opportunities
	Topics (Bigger Picture)	Knowledge (Key Concepts)	Recall & Retrieval Practice Focus	Key Vocabulary	
Half Term 4	Units of Measurement	Identify the correct unit of measurement for mass, length, area, capacity, time and money Convert between standard units of mass, length, capacity and time Use of compound units (speed distance density) Convert between units of area & volume	Class specific key skills from HT1-3	Units – A quantity used in measurement. Capacity – The amount that something can hold.	Egyptian structures and pyramid building
	Properties of Shapes & Angles	Derive and illustrate properties of 2D shapes State and draw lines of symmetry and rotations for regular and irregular polygons Know and be able to determine the amount of faces, edges and vertices for 3D shapes Apply properties of angles at a point, on a straight line and vertically opposite angles to find missing values Draw lines and angles accurately Use properties of parallel lines including corresponding, alternative and co-interior angles		Faces – The sides of a 3D shape Vertices – A corner of a shape Edges – A line joining two vertices	
Half Term 5	Working with Fractions	Identify fractions of shapes and recognise fractions that are less than or greater than 1 Be able to find equivalent fractions and use this to order them by size Be able to simplify fractions Conversion between improper fractions and mixed numbers Calculate fractions of quantities Apply the four operations to fractions less than 1 Express one quantity as a fraction of another	Class specific key skills from HT1-4	Numerator – The top number in a fraction Denominator – The bottom number in a fraction Improper – Where the numerator is larger than the denominator	Probability in films: Doctor Strange “1 in 14 million” chance.
	Working with Probability	Use the language of probability to describe events and place them on a probability scale Record and analyse the outcomes of a probability experiment Calculate the probability of an event happening Create sample space diagrams and lists to find all outcomes of an experiment and use this to calculate the probability of an event happening including two-way tables Understand that all probabilities must add to 1 and use this to find missing probabilities or the probability of an event not happening		Outcome – A possible result of an experiment Sample – A small part taken from a large group Events – One or more outcomes of an experiment.	

	Knowledge & Understanding			Subject Specific Literacy Development	Cultural Capital / Enrichment Opportunities
	Topics (Bigger Picture)	Knowledge (Key Concepts)	Recall & Retrieval Practice Focus	Key Vocabulary	
Half Term 6	Working with Sequences	Recognise special sequences including square numbers, cube numbers, triangular numbers and the Fibonacci sequence Recognise sets of infinite numbers including real, integers and rational numbers Describe the sequence in terms of the term-to-term rule Use the term-to-term rule to generate a sequence or continue a sequence Understand the purpose of a position to term rule and use this to generate terms of a sequence Calculate the position to term rule (nth term) for linear sequences	Class specific based on Key skills from HT1 to 5 including areas identified from Summer Assessment series	Term – The values that make up a sequence Linear – A sequence that changes by a common difference	Statistics in the news and media: how can they be misleading and how can we tell?
	Representing Data visually	Be able to draw and interpret stem and leaf diagrams. Be able to draw and interpret bar charts, including dual bar charts. Be able to draw and interpret frequency tables. Be able to draw and interpret pictograms. Be able to draw pie charts		Stem and Leaf – Diagram to represent numerical data. Pictogram – Represents data using pictures Frequency – How often something happens (total of the tally's)	

Key Assessments

When	What will be assessed?	Why is this being assessed?	How will results be stored & students receive feedback?
HT1	Foundational Mathematics Algebraic notation	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	Scores will be stored on SIMS and student feedback will be through class teacher reviewing the assessment via the visualiser
HT3	Directed numbers Four rules including decimals Averages	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	Simplification Expanding brackets Rules of indices Unit conversions	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	Scores will be stored on SIMS and student feedback will be through class teacher reviewing the assessment via the visualiser
HT6	Probability Fractions	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