The Ellesmere Port C of E College

Maths

Part of the Frank Field Education Trust

KS3 Curriculum Plan 2024-2025

Year 7

	LP1	LP2	LP3	LP4	LP5
TOPIC	***Algebraic Thinking***	***Place Value & Proportion***	***Application of Number & Geometrical Thinking***	***Further Algebraic & Lines and Angles***	***The Data Handling Cycle and Reasoning with Number***
	Algebraic Thinking – sequences, understanding and using algebraic notation, equality and equivalence	Fundamentals of Number – place value ordering integers a decimals, problem solving with addition, subtraction, multiplication and division, introduction to fractions.	Application of Number –, Arithmetic with fractions, factors, multiples and primes. Geometrical Thinking –area and perimeter.	Lines and Angles – constructing, measuring and using geometric notation, developing geometric reasoning Data Handling - averages, range, charts, comparing data.	Reasoning with Number – developing number sense, proportional reasoning, sets and probability
Skills	Use substitution to generate sequences and evaluate algebraic terms. Use knowledge of fractions, decimals and percentages to solve problems in a real-life context. Use knowledge of the four operations to solve problems involving perimeter, money, frequency tables and frequency trees. Use knowledge of the four operations to work with directed number including solving equations. Pupils will also be able to use knowledge of multiples to add and subtract fractions. Use knowledge of classifying angles to estimate and check answers when calculating with angles.				
Key Vocab	Linear, expression, terms, equivalence, equality, integer, negative	Significant figure, integer, multiple, divisor, metric, numerator, denominator	Improper fraction, mixed number, prime, prime factors, perimeter, area, mid-point.	Obtuse, reflex, vertically opposite, complementary, Frequency, average, range,	Proportion, percentage, multiplier, independent, mutually exclusive.

Year 8

	LP1	LP2	LP3	LP4	LP5
TOPIC	***Proportional Reasoning***	***Algebraic & Numerical Techniques***	***Developing Number***	***Reasoning in Number and Geometry***	***Reasoning with Data & Algebraic Reasoning***
Knowledge	Proportional Reasoning – ratio and scale, multiplicative change, multiplying and dividing with fractions	Algebraic Techniques – brackets, equations and identities, sequences and indices	Representations – working in the cartesian plane Developing Geometry - area of trapezia and circles, volume and surface area, units of measure	Resoning in Number - Venn diagrams, LCM and HCF from prime decomposition. Reasoning in Geometry – angles in parallel lines and polygons, linear graphs, transformations.	Representations – representing data, tables and probability Reasoning with Data – the data handling cycle and measures of spread Algebraic Reasoning - inequalities, brackets and algebraic fractions
Skills	Use proportional reasoning to solve numerical and geometrical problems Calculate with fractions, decimals and percentages to solve problems in a real-life context. Use standard form to write, compare and calculate with very large numbers Plot and interpret straight lines graphs and make connections with direct proportion problems. Use algebraic techniques to manipulate terms, expressions, equations and generate terms of a sequence. Use geometrical reasoning to calculate missing angles in polygons. Combine knowledge of area to determine the area of compound shapes. Identify and complete transformations involving reflections Analyse and compare data sets.				
Key Vocab	Ratio, simplify, proportion, denominator, reciprocal, multiplier, interest.	Expand, equation, arithmetic, indices, common factors, standard form, compare, estimate.	Coordinates, metric, trapezium, compound, circumference, volume, surface area.	Corresponding, co-interior, exterior, linear, gradient, symmetrical, translation.	Primary source, correlation, discrete, continuous, inequality, factorise, denominator.

Year 9

	LP1	LP2	LP3	LP4	LP5
TOPIC	***Numerical and Algebraic Reasoning***	***Constructing in 2 and 3 Dimensions***	***Proportional Reasoning***	***Garphs and Reasoning with Geometry***	***Representationd for Data and Further Geometry***
Knowledge	Numerical Reasoning - fractions, percentages, percentage change, compound interest Reasoning with Algebra – forming and solving equations, expanding and factorising and factorising quadratic expressions	Constructing in 2 and 3 Dimensions – Three dimensional shapes, constructions, volume and surface area and congruency	Proportional reasoning - ratio, proportion, compound measures and Pythagoras' Theorem	Graphs - straight line graphs, quadratic graphs Reasoning with Geometry - reflection, rotation, translation, enlargement, similarity	Geometry - similarity and vectors Representations for data – scatter graphs, frequency polygons, averages
Skills	Identify and find the equation of straight-line graphs and make connections to linear sequences Solve equations and inequalities and identify points of intersection on a graph Plot and interpret quadratic graphs State the properties of 2-D and 3-D shapes, using them to solve problems involving volume and surface area Use construction and scale drawings to represent 3-D shapes as nets Use knowledge of types of numbers, fraction arithmetic and percentages to solve financial problems in a real-life context Use chains of reasoning to find unknown angles and solve geometrical problems involving polygons Complete and describe a series of transformations Identify and apply Pythagoras' theorem Use the knowledge of enlargements and scale factors to identify missing sides on similar shapes Represent proportion graphically Solve compound measure problems involving speed and density				
Key Vocab	Numerator, denominator, percent, linear, formulae, quadratic, expand, factorise	Vertices, prism, volume, perpendicular, bisector, elevations, error.	Ratio, proportional, speed, density, pressure, hypotenuse, Pythagoras, linear.	Angles, translate, vector, variance, invariance, transformation, hypotenuse.	Data, correlation, scatter graph, relationship, average, mid-point, vectors.