

KS3 Mathematics Curriculum Coverage



Year 7 Summer Term

Sequenced	Speed distance and time	Properties of number	Add and subtract fractions	Angles and polygons
Key Knowledge	To know: - The conversions for metric and imperial units for speed distance and time - The meaning of different sections of a timetable - The formulae: $\text{distance} = \text{speed} \times \text{time}$ $\text{speed} = \frac{\text{distance}}{\text{time}}$ $\text{time} = \frac{\text{distance}}{\text{speed}}$ - A diagonal line on a distance-time graph represents travelling at a constant speed and a horizontal line represents a stationary part of a journey - The gradient of on a distance time graph represents speed	To know: - What a multiple of a number is - What a factor of a number is - What the first 12 prime numbers are - Any number can be written as a collection of prime numbers multiplied together - What square, cube and triangular numbers are - The square roots of the square numbers up to 225 - The cube roots of 1, 8, 27, 64, 125, 216 and 1000 - The definition of highest common factor and lowest common multiple	To know: - The meaning of equivalent fractions - That fractions cannot be added or subtracted unless they have a common denominator - A common denominator can be found by finding the lowest common multiple - The meaning of proper and improper fractions as well as mixed numbers - Decimals between 0 and 1 and their fraction equivalents	To know: - Angles are a measure of turn - The angle ABC is the angle created by line AB and BC, labelled at B - Angles around a point sum to 360° - Angles on a straight line sum to 180° - Vertically opposite angles are equal - A polygon is a 2d closed shape with straight edges - The names of polygons up to 10 sides - The difference between regular and irregular polygons - Angles in a triangle sum to 180 - Angles in a quadrilateral sum to 360 - The meaning of parallel and perpendicular - That corresponding angles on parallel lines are equal - That alternate angles on parallel lines are equal - That co-interior angles on parallel lines sum to 180 - The sum of interior angles in a polygon can be found using $180 \times (n-2)$ where n is the number of sides
Key Skills	To be able to: - Convert between milliseconds, seconds, minutes and hours, days and years - Calculate fractions of time - Solve problems with tables, timetables, time and calendars - Calculate speed - Calculate time and distance - Calculate speed - Solve problems with speed, distance and time - Interpret and draw distance-time graphs Calculate speed from a distance-time graph (E)	To be able to: - Identify factors and multiples of numbers - Identify prime numbers - Write a number as a product of its prime factors - Work with square, cube and triangular numbers - Square and cube roots Explore higher powers and roots (E) - Find the HCF of 2 or 3 numbers - Find the LCM of 2 or 3 numbers Use a Venn diagram to find the HCF and LCM (E) Use factors to simplify calculations (E)	To be able to: - Simplify a fraction - Convert between mixed numbers and improper fractions - Add and subtract fractions with the same denominator - Add and subtract fractions with integers - Add and subtract fractions with any denominator - Add and subtract improper fractions and mixed numbers Use equivalence to add and subtract fractions and decimals (E) Add and subtract simple algebraic fractions (E) Substitution and solving equations with fractions (E)	To be able to: - Draw and measure lines and angles using the correct geometric notation - Calculate angles around a point, on a straight line use angles that are vertically opposite using the relevant angle rules - Recognise and name polygons - Calculate angles in a triangle and quadrilateral - Solve problems with multiple angle rules - Identify and work with parallel and perpendicular lines Calculate angles in parallel lines (E) Calculate angles in a polygon (E) Simple geometric proofs (E)
Subject specific vocabulary	millisecond, second, minute, hour, days, weeks, months, years, metric, imperial, metre, kilometre, mile, m/s, mph, km/h, timetable, calendar, distance, speed, time, units, formulae, bar model, diagonal, horizontal, distance-time graph, axes, plot, read, calculate, gradient, stationary, constant speed, outward journey, return journey	factor, multiple, prime number, composite number, product of prime factors, factor tree, square, cube, triangular, square root, cube root, positive, negative, highest common factor, lowest common multiple, product, Venn diagram, intersection, union	fraction, equivalent, numerator, denominator, simplify, equivalent, common denominator, lowest common multiple, proper, improper, mixed number, addition, subtraction, fraction wall, decimal, show that	Angle, measure, turn, draw, notation, around a point, straight line, vertically opposite, equal, sum to 180, degrees, polygon, 2 dimensional, regular, irregular, interior angle, exterior angle, sum of interior angles Names of polygons: triangle, quadrilateral, pentagon, hexagon, heptagon, octagon, nonagon, decagon Types of triangle: isosceles, equilateral, scalene, right angled Types of quadrilateral: square, rectangle, rhombus, parallelogram, kite, arrowhead, trapezium