Maths KS3

Cowes ENTERPRISE ACADEMY — Educate for life

KEY — Number, Measure, Geometry, Algebra, Probability, Statistics, Ratio and Proportion

YR7

Y7 UNIT 1 — Place value
How does the base 10 system work?
What is an integer?
When does multiplication make a number smaller and division make it bigger?
How do I multiply and divide by powers of 10?
How do I round to decimal places and significant figures?

Y7 UNIT 2 — Median and Midpoints
How do I find the midpoint between two numbers?
How do I find the median of a set of numbers?

Y7 UNIT 3 — Metric Units
What different metric units are there?
How do I convert between metric units of the same type?

Y7 UNIT 4 — Addition and Subtraction
Can I do column addition and subtraction of integers?
How can I select the best strategies to addition and subtraction?
What is a complement?
What is a zero pair?
How do I apply addition and subtraction to finding perimeters and missing lengths?

Y7 UNIT 5 — Angles
How do I find a missing angle on a straight line or around a point?

Y7 UNIT 6 — Mean and Range
How do I calculate the mean of a set of numbers?
What does the range for a set of numbers mean about the data?

Y7 UNIT 7 — Multiplication and Division
How do I do column multiplication?
What different methods can I use successfully for long multiplication (both integers and decimals)?
How do I calculate a short division?
How do I find the HCF or LCM of two numbers?
How do I find the area of a rectangle, the volume of a cuboid or missing lengths in these shapes?

Y7 UNIT 8 — Powers and Roots
How do I know if a number is a square number?
What is the link between cube numbers and volume?
What function is inverse to squaring?
What Indices Laws do I know?
How can I find the prime factors of a number?

Y7 UNIT 9 — Order of Operations
What does BIDMAS represent and how do I apply it?

Y7 UNIT 10 — Directed Numbers
What happens when you add a negative number?
What happens when you subtract a negative number?
What rules have we found for multiplying and dividing directed numbers?

Y7 UNIT 11 — Thinking Algebraically
How do I generalise number calculations?
How do I simplify an expression?
Do I understand what an expression, variable and constant are?
How do I substitute into a formula?

YR8

Y8 UNIT 1 — Fractions
How do I find fraction of amounts?
What is a sneaky one?
How do I add and subtract fractions?
How do I multiply fractions?
What is the reciprocal and how does it relate to dividing by a fraction?

Y8 UNIT 2 — FDP equivalence
Can I find a percentage using a decimal multiplier?
How can I convert a fraction to a decimal?
What does the word percentage mean?
What is a terminating decimal?

Y8 UNIT 3 — Estimation and use of a scientific calculator
Can I convert between units of time using a calculator?
Can I calculate an upper or lower bound given a degree of accuracy?

Y8 UNIT 4 — Manipulating and simplifying expressions
Can I set up an algebraic expression?
Can I simplify indices and coefficients when multiplying and dividing terms?
Can I tell the difference between an expression and an equation?

Y8 UNIT 5 — Drawing and measuring angle
How can I label lines and angles?
Which scale do I use on a protractor?

Y8 UNIT 6 — Construction
Can I construct a perpendicular bisector?
Can I construct simple 'Loci' based on specific rules?

Y8 UNIT 7 — Expanding and Factorising
Can I expand single and double brackets?
Describe why factorise is the opposite of expand?

Y8 UNIT 8 — Linear Equations
How does the 'balancing method' solve equations?

Y8 UNIT 9 — Proportional reasoning
What is the difference between direct and inverse proportion?
How can I use a decimal multiplier to calculate a percentage change?

Y8 UNIT 10 — Polygons and Angles
How many line angle facts are there?
How can I find the exterior and interior angles of polygons?
Can I find a bearing using angle rules?

Y8 UNIT 11 — Discrete Data and Continuous Data
Can I describe the difference between discrete and continuous?
How can I distinguish between mean, median, mode and range?

YR9

Y9 UNIT 1 — Substitution
Can I interpret algebraic notation?

Y9 UNIT 2 — Sequences
Can I recognise arithmetic, Fibonacci, quadratic and geometric sequences?

Y9 UNIT 3 — Linear Graphs
What do the variables in y=mx+c represent?

Y9 UNIT 4 — Transformations
Can I describe the four transformations?

Y9 UNIT 5 — Direct and Inverse
Can I identify direct and inverse proportion?

Y9 UNIT 6 — Indices
How do I do calculate $2^3 \times 3^4$?

Y9 UNIT 7 — Linear equations
How do I solve linear equations with unknown on both sides?

Y9 UNIT 8 — Inequalities
How do I solve an inequality with a negative variable?
How do I solve an inequality with variables on both sides?

Y9 UNIT 9 — Quadratic Manipulation
How do I factorise a quadratic expression?
How do I expand double brackets?

Y9 UNIT 10 — Quadratic Functions
How do I find the roots of an equation from a graph?
Can I plot a quadratic graph when given an equation?

Y9 UNIT 11 — Constructions
What is a perpendicular bisector and how do I construct one?
What does the locus of points mean?

Y9 UNIT 12 — Angles and shape Geometry
What are the rules of congruency?
How do I use corresponding; alternate and co interior facts to calculate angles?

Y9 UNIT 13 — Angles and Shape Geometry
Can I use a scale drawing to find real life measurements?
How can I use parallel lines rules to solve bearings problems?

Y9 UNIT 14 — Area
How do I calculate the surface area of prisms and cylinders?

Y9 UNIT 15 — Simultaneous Equations
How do I solve simultaneous equations using a graph?

Y9 UNIT 16 — Bounds
How do I find the upper and lower bounds involving calculations?

Y9 UNIT 17 — Probability
Can I complete a frequency tree?
Can I list outcomes systematically?

Y9 UNIT 18 — Probability
Can I use and calculate relative frequency?
Can I use Theoretical Probability and compare it to relative frequency?

Y9 UNIT 19 — Data
Can I use a Venn Diagram?

Y9 UNIT 20 — Scatter Graphs
What are the dangers of extrapolating data from a scatter graph?
How do I draw a line of best fit?

KS4