

YR7

Y7 UNIT 1

NP1 - 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?

Y7 UNIT 2

NP1 - Directed number

How do vectors show positive and negative numbers on a number line?

Eco Futures: How have global temperatures changed in the last 100 years?

Y7 UNIT 3

NP1 - Rounding

How do I round to decimal places and significant figures?

Y7 UNIT 6

NP2 - Addition and subtraction

How can I select the best strategies to addition and subtraction? What is a complement? What is a zero pair?

Y7 UNIT 5

NP1 - Metric Conversion

How do I convert between different metric units?

Y7 UNIT 4

NP1 - Statistics

How do I find the median of a set of numbers?

Eco Futures: How can I use the median towards analysing fuel usage and deforestation?

Y7 UNIT 7

NP2 - Geometry (Addition and subtraction)

How do I find the perimeter of a shape? How do I find a missing angle on a straight line or around a point?

Y7 UNIT 8

NP2 - Statistics (Mean)

How do I calculate the mean of a set of numbers?

Eco Futures: How can I use the mean to analyse data for cars of different power sources?

Y7 UNIT 9

NP3 - Multiplication and division

How can I select the best strategies to multiply and divide? What is a highest common factor? What is a lowest common multiple? What is meant by equality? Can I use the application of multiplication and division in area and volume problems?

Y7 UNIT 12

NP6 - Directed Number

How do I add and subtract with directed numbers? How do I multiply and divide with directed numbers? Where do we use negative numbers outside the classroom?

Y7 UNIT 11

NP5 - Order of operations

How do I correctly do the order of operations with the four operators? How do I correctly do the order of operations that include brackets and exponents?

Y7 UNIT 10

NP4 - Powers and roots

How do I write an integer as a product of its prime factors? What are exponents and roots? What are prime and composite numbers? Why is index notation useful?

Y7 UNIT 13

A1 - Introduction to algebra

How do I simplify an expression? How do I substitute numbers into an expression? What is a variable? What is an expression?

Y7 UNIT 14

NP7 - 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?

Eco Futures: What proportion of land is used for farming? What proportion of food becomes waste in supermarkets and restaurants?

Y7 UNIT 15

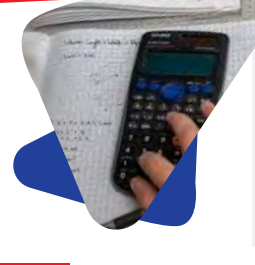
NP8 - FDP equivalence

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?

Y7 UNIT 17

A2 - 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?



Y7 UNIT 16

NP9 - 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?

Eco Futures: Can I round to significant figures?

YR8

Y8 UNIT 1

NP7 - 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

NP8 - 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?

Eco Futures: Can I use percentages to find the percentage of new cars that are petrol, diesel, hybrid or electric?



Y8 UNIT 3

NP9 - 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 5

GM1 - Drawing and measuring angles; construction

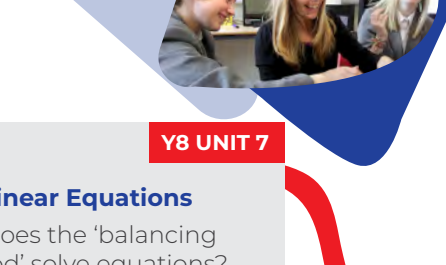
How can I label lines and angles? Which scale do I use on a protractor? Can I construct a perpendicular bisector? Can I construct simple 'Loc' based on specific rules?

Eco Futures: Can I apply loci to identify regions of the world that are threatened by multiple environmental factors?

Y8 UNIT 4

A2 - 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 6

A3 - Expanding and Factorising

Can I expand single and double brackets? Describe why factorise is the opposite of expand?

Y8 UNIT 7

A4 - Linear Equations

How does the 'balancing method' solve equations? How do I solve one and two-step equations?

Y8 UNIT 10

SP1 - Discrete Data and Continuous Data

Can I describe the difference between discrete and continuous? How can I distinguish between mean, median, mode and range?

Eco Futures: Which foods have the highest carbon and lowest footprint?

Y8 UNIT 9

GM2 - 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 8

NP10 - 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 11

GM3 - Area

Can I define area? Can I find the area of triangles? Can I find the area of quadrilaterals including kite, parallelogram and trapezium? Can I find the area of a circle?

Y8 UNIT 12

NP11 - Ratio

Can I express relationships as ratios? Can I simplify ratios including those that include fractions and scaling upto fractions? Can I use unit ratio in context such as maps and scale drawing? Can I convert between fractions and ratios and between ratios and fractions? Can I find the value of parts of a ratio given other parts or the whole?

YR9

Y9 UNIT 1

GM2 - 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?



Y9 UNIT 2

SP1 - Discrete Data and Continuous Data

Can I describe the difference between discrete and continuous? How can I distinguish between mean, median, mode and range?

Y9 UNIT 4

NP11 - Ratio

Can I express relationships as ratios? Can I simplify ratios including those that include fractions and scaling upto fractions? Can I use unit ratio in context such as maps and scale drawing? Can I convert between fractions and ratios and between ratios and fractions? Can I find the value of parts of a ratio given other parts or the whole?



Y9 UNIT 3

GM3 - Area

Can I define area? Can I find the area of triangles? Can I find the area of quadrilaterals including kite, parallelogram and trapezium? Can I find the area of a circle?

Y9 UNIT 6

SP2 - Bivariate data & Time Series

Can I write the data handling cycle, using data to address a hypothesis, overview of the types of data and ask good questions? Do I know the difference between categorical (qualitative) data and frequency tables? Can I draw graphical representations of discrete numerical data - vertical line, bar charts, pie charts, pictograms? Can I use measures of central tendency of ungrouped data - mean, mode and median, from lists and from a frequency table? Can I use the measures of spread - range, interquartile range and identify outliers? Can I compare data sets through graphs, central tendency and spread?



Y9 UNIT 5

A6 - Cartesian Grid

Can I draw an accurate Cartesian grid and plot 2D coordinates in four quadrants? Can I express number relationships graphically, as a means of picturing the relationship? Can I plot quadratic number relationships on a Cartesian grid given the algebraic form of the relationship? Can I read values of variables from a graph (including quadratic, piecewise linear, exponential and reciprocal graphs)? Can I draw and recognise graphs of $y=n$ and $x=n$? Can I use the gradient and y-intercept of a line to write the equation in the form $y = mx+c$? Can I identify parallel lines from their equations?

Y9 UNIT 7

A7 - Introduction to Sequences

Can I generate terms of a sequence from term-to-term and position to term rules; find missing terms in a sequence? Can I find and use the nth term of an arithmetic (linear) sequence? Can I recognise common sequences (triangular numbers, square numbers, cube numbers, Fibonacci-style sequences)? Can I work with visual and algebraic representations of arithmetic sequences?

Y9 UNIT 8

A8 - Linear Inequalities

Can I represent single (e.g. $x>3$) and double (e.g. $3<x<5$) linear inequalities on a number line? Can I solve single linear inequalities in one variable, represent the solution(s) on a number line and algebraically using set notation? Can I solve compound linear inequalities in one variable, representing the solution(s) on a number line? Can I set up inequalities from contexts? Can I represent inequalities involving only x or y by shading on a graph?

Y9 UNIT 10

A9 - Contextual graphs

Can I interpret important features of general "real-life" graphs, interpreting y-intercepts as a fixed value/charge, etc., and gradient as a rate of change in context? Can I draw and read from and extrapolating from conversion graphs? Can I use distance-time graphs, including finding the average speed, and the speed of a section as the gradient of the line? Can I use Velocity-time graphs, including finding the acceleration as the gradient and displacement as the area under the graph?



Y9 UNIT 11

A10 - Advanced Linear Graphs and Equations

Can I find the gradient of a line using change in y/change in x? Can I use the form $y=mx+c$ to draw lines (without plotting points) and factorising to find the root? Can I solve equations in two variables graphically? Can I find the solution to a pair of simultaneous equations by elimination and by substitution, and check the solution? Can I write and solve simultaneous equations from contexts?

Y9 UNIT 12

SP3 - Introduction to Probability

Can I systematically list and use the product rule for counting? Can I record, describe and analyse the frequency of outcomes of simple probability experiments? Can I formalise language and notation, calculating theoretical probability? Can I generate theoretical sample spaces, including systematic listing of combinations and outcomes, and use these to calculate probabilities? Can I record outcomes and possibilities using frequency trees, two-way tables and simple Venn diagrams?

KS4