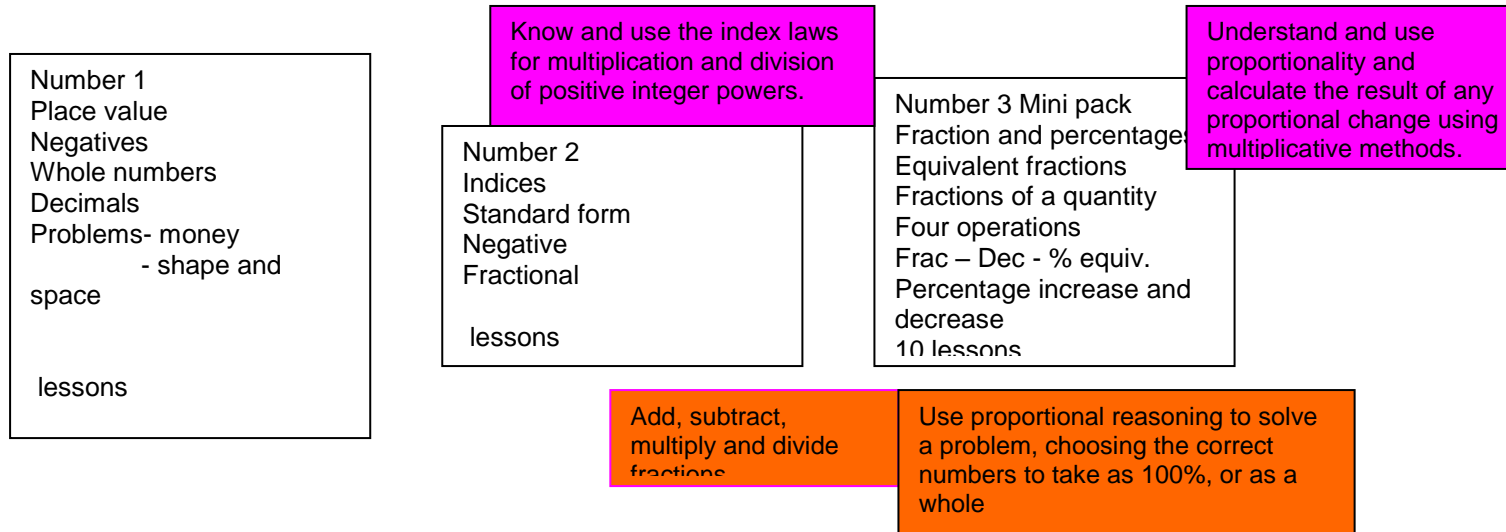
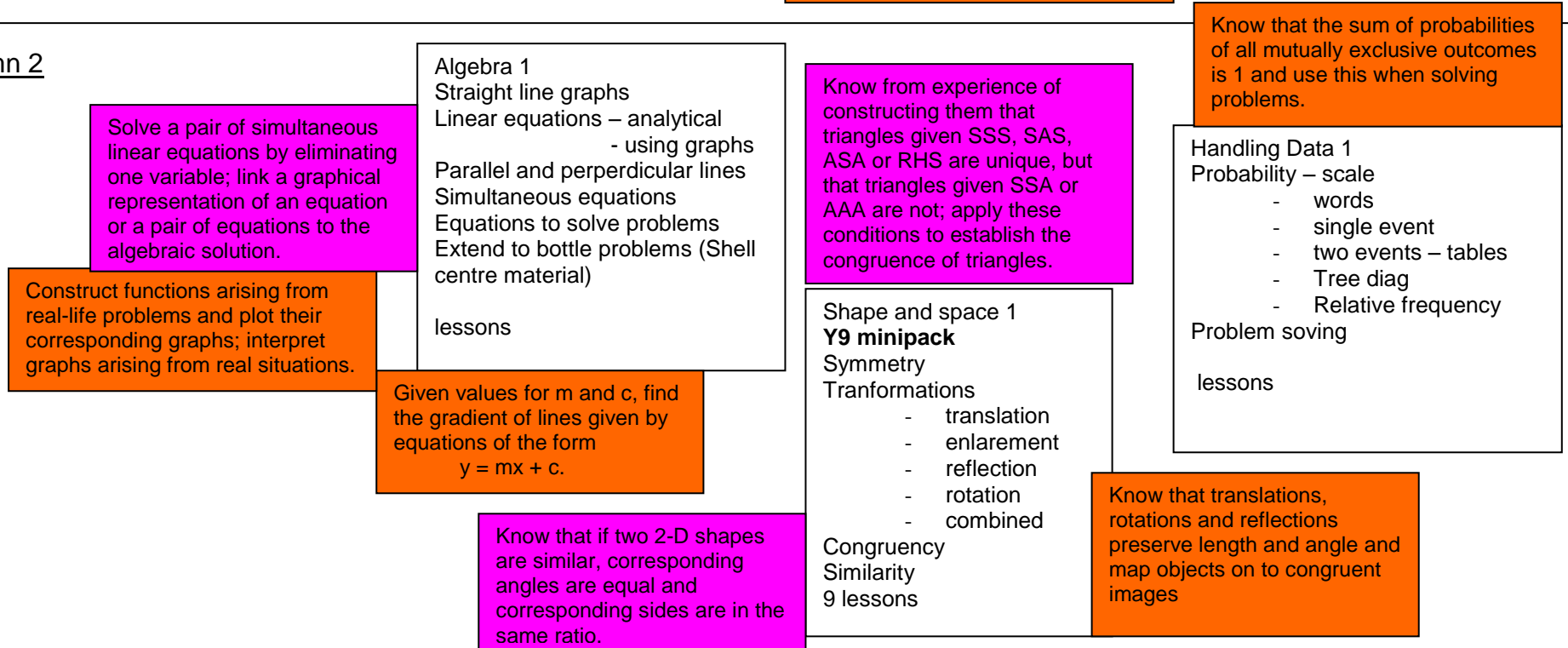


Year 9 Overview

Autumn 1



Autumn 2



Spring 1

Generate terms of a sequence using term-to-term and position-to-term definitions of the sequence, on paper and using ICT; write an expression to describe the nth term of an arithmetic sequence.

Algebra 2
Sequences
Nth term
Linear sequences
Quadratic sequences
Odds, evens, squares, cubes, triangular numbers
Graphs linked to sequences
Excel

lessons

Shape and space 2
Properties of quad. and triangles
Area
Perimeter
Volume
Surface area
Extend to area of sector

Solve geometrical problems using properties of angles, of parallel and intersecting lines, and of triangles and other polygons.

Handling data 2
Statistics
The data handling cycle
Extend skills to line of best fit lessons

Examine critically the results of a statistical enquiry and justify choice of statistical representation in written presentations.

Know and use the formulae for the circumference and area of a circle.

Communicate interpretations and results of a statistical enquiry using selected tables, graphs and diagrams in support.

Spring 2

Number 4
Rounding 10, 100, 1000
Dec pl
Sig fig
Estimation in calculations
Calculators () Sq STO RCL
Error bounds followed through

6 lessons

Make and justify estimates and approximations of calculations.

Algebra 3
Substitution
Solving equations
Forming expressions
Simplifying expressions
Expanding brackets
Factorisation
Problem solving
Extend to inverse of a function

lessons

Square a linear expression and expand the product of two linear expressions of the form $(x \pm n)$; establish identities.

Construct and solve linear equations with integer coefficients, using an appropriate method.

Shape and space 3
Recap angle facts
Constructions
Loci

lessons

Summer 1

Algebra 4
Linear inequalities
Graphs – quadratic
- cubic
- reciprocal
Trial and improvement
Using graphs to solve equations
Quadratic inequalities
Equations of perpendicular lines
Extend to regions on graphs

lessons

Handling Data 3
Statistics
Data handling cycle
Mean of grouped data
Cumulative frequency graphs

6 lessons

Solve substantial problems by breaking them into simpler tasks, using a range of efficient techniques, methods and resources, including ICT; give solutions to an appropriate degree of accuracy.

Summer 2

Recognise limitations on the accuracy of data and measurements

Shape and space 4
Pythagoras
Trigonometry
Problems

lessons

Understand and apply Pythagoras' theorem.

Handling data 4
Sampling
- random
- systematic
-

Design a survey or experiment to capture the necessary data from one or more sources; determine the sample size and degree of accuracy needed; design, trial and if necessary refine data collection sheets.

Algebra 5
Quadratics – by factoring
- by completing the square

Present a concise, reasoned argument, using symbols, diagrams, graphs and related explanatory text.

Change the subject of a formula

Identify possible sources of bias in a statistical enquiry and plan how to minimise it.

In general

Generate fuller solutions to mathematical problems.

Check covered at end of Y8

8B Ch 18

Use measures of speed and other compound measures to solve problems.