Act Fast NL Year 9 KS3 Maths

Autumn 01

Straight Line Graphs
Interpret straight line graphs
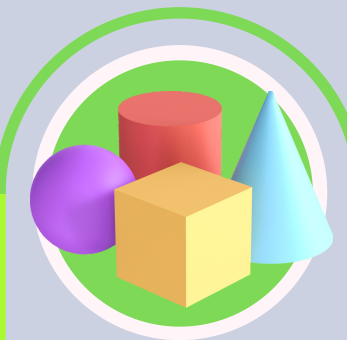Find and use the equation of a straight line
Reduce equations to the form of $y = mx + c$
Comparing to linear sequences and finding the rule of the nth term

Forming and Solving Equations & Inequalities
Revisit and extend to equations and inequalities with unknown on both sides using all previous contexts; angles, probability, etc.
Change the subject of formula

Autumn 02

Three Dimensional Shapes
Understand the language of faces, edges and vertices
Know the names of common prisms and non-prisms
Identify 2D shapes within 3D shapes
Work out the volume & surface area of cuboids and cylinders
Work out the volume of any prism
Work out missing lengths given area and/or volume
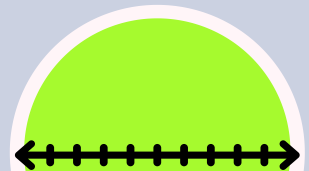
Constructions & Congruency
Construct 3D shapes from nets & construct the net of a given 3D shape
Construct and use scale drawings
Construct perpendiculars and bisectors
Understand congruency
Exploring congruency via construction

Spring 01

Numbers
Revisit types of number - Extend to include rational and real numbers
Revisit fraction arithmetic
Extend knowledge of HCF and LCM
Revisit standard form

Using Percentages
Revisit percentage increase and decrease
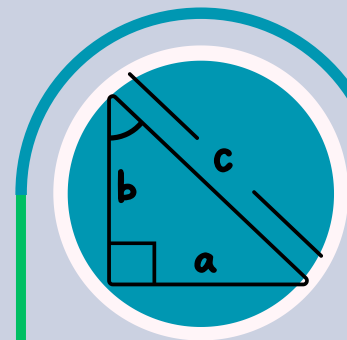Use percentages over 100%
Find percentage changes
Use multipliers in a variety of contexts
Solve 'reverse percentage' problems

Mathematics & Money
Explore financial mathematics including bills and bank statements, interest and unit pricing (best buys)

Spring 02

Deduction
Revisit angles rules, including within special quadrilaterals
Find angles using algebraic methods
Use chains of reasoning to evaluate angles

Rotation & Translation
Identify the order of rotational symmetry of a shape
Find the result of rotating a shape
Translate points and shapes by a given vector
Understand variance and invariance in the context of transformations

Pythagoras Theorum
Identify the hypotenuse of a right-angles triangle
Determine whether a triangle is right angled
Calculate missing sides in right angled triangles

Summer 01

Enlargement & Similarity
Enlarge shapes by a positive scale factor, including from given point
Calculate the lengths of missing sides in similar shapes

Solving Ratio & Proportion Problems
Direct proportion problems and graphs
Conversion graphs
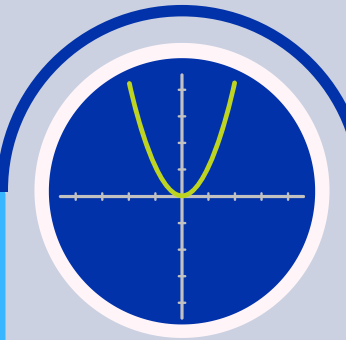*Solve ratio problems given the whole or part*
Simple inverse proportion
Unit pricing problems (best buys)

Rates
Work with speed, distance and time
Solve problems involving density
Work with compound units

Summer 02

Probability
Relative frequency
Expected number of outcomes
Independent events

Algebraic Representation
Drawing and reading from quadratics
Interpreting other graphs e.g.: reciprocal, piece wise
Representing inequalities