

# LEVEL 8 MATHS



## NUMBER



### Fractions:

I can....

- \* Multiply two fractions together
- \* Divide one fraction by another
- \* Add two fractions together
- \* Subtract one fraction from another
- \* Solve problems involving fractions

### Percentages:

I can....

- \* Calculate percentage profit and loss
- \* Find out what something was originally after a percentage has been added or subtracted
- \* Understand that if I add 20% to a number and then take 20% off the answer, I have a different amount than that with which I first started
- \* Calculate compound interest

### Calculations:

I can....

- \* Make a sensible estimate for a calculation using an appropriate degree of accuracy within the workings
- \* Use my calculator confidently within complex calculations involving a combination of squares and square roots

### Indices and Standard Index form: I can....

- \* Use the rules for indices to simplify expressions
- \* Calculate the value of a number raised to any power
- \* Write any number in standard index form
- \* Multiply two numbers together written in standard index form
- \* Divide numbers written in stand index form



## ALGEBRA



### Formulae:

I can....

- \* Expand a pair of double brackets into a quadratic expression
- \* Factorise an expression (put the brackets back in)
- \* Factorise a quadratic equation involving positive numbers
- \* Factorise a quadratic equation including negative numbers
- \* Solve a quadratic equation involving both positives and negatives
- \* Rearrange a formula to make it equal to another subject

### Straight Line Graphs: $y = mx + c$ I can....

- \* Calculate the gradient of a straight line graph
- \* Rearrange equations into the form:  $y = mx + c$
- \* Find the equation of a horizontal or vertical line
- \* Recognise that where the line across the y axis is the value of c
- \* Recognise the gradient is the value of m

### Graphs of Special Functions

#### and Real-Life Situations: I can....

- \* Recognise graphs as a linear quadratic cubic or reciprocal
- \* Sketch a graph given an equation
- \* Interpret a real life graph
- \* Construct a quadratic graph accurately given an equation



## DATA HANDLING



### Cumulative Frequency: I can....

- \* Construct a cumulative frequency table
- \* Use a cumulative frequency table to construct a cumulative frequency graph
- \* Analyse a cumulative frequency graph finding the median upper and lower quartiles
- \* Find the inter-quartile range from a cumulative frequency graph
- \* Compare two cumulative frequency graphs making sensible conclusions

### Box Plots: I can....

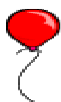
- \* Construct a box plot from a cumulative frequency graph
- \* Understand what box plots show me about the spread of a set of data
- \* Compare two Box plots and make it sensible conclusions from them

### Probability: I can....

- \* Understand the difference between probability experiments and outcomes
- \* Use the **AND** rule of probability to combine two events
- \* Use the **OR** rule of probability when calculating the probability of combined events
- \* Understand what is shown on a tree diagram
- \* Draw a tree diagram given two probability experiments and their outcomes



## SHAPE & SPACE



### Dimensions:

I can....

- \* Recognise a formula as either a length, area, volume, or nonsense

### Similarity: I can....

- \* Calculate the ratio between two shapes which are similarly drawn
- \* Use a ratio to find an unknown side from two shapes which have been similarly drawn
- \* Understand the situations where similarity can be present

### Trigonometry: I can....

- \* Name the sides of a right-angled triangle as opposite adjacent and hypotenuse
- \* Use the three Trigonometric ratios Sin Cos and Tan
- \* Find an unknown angle in a right-angled triangle
- \* Find the length of an unknown side in a right-angled triangle
- \* Solve problems involving angles of elevation and depression