Knowledge Organiser Maths Term 1 Year 9 Higher

Section 1: Basic Number   10 Hours

* Solving Real life Problems involving addition/subtraction/multiplication and division

*Multiplying and Dividing using decimals

* Rounding to a given accuracy, using estimation to check accuracy of answers

* Know and use different types of numbers

* Write numbers in Prime Factor Form

* Work with negative numbers

Key Words / Vocabulary

Decimal Place – the number of digits required in the answer after the decimal point

Significant Figure- The important digits in a number, the rest are changed to a zero

Factor – a number that goes into another number without a remainder

Multiple – a number which appears in a certain times table

Square Number - the answer when a number is multiplied by itself

Prime number – a number that has only 2 factors, 1 and itself

Prime Factor Form - A method for writing numbers using only prime numbers that divide into the original number

Section 2 : Fractions and Percentages   11 hours

* Find fractions of amounts

* Add/subtract/multiply and Divide using Fractions

* Be confident using top heavy and mixed fractions

* Use of Calculator to solve fraction problems

* Increase and decrease quantities by a percentage

* Understand and find percentage profit and loss

Key Words / Vocabulary

Fraction - a number that is split into a top number and a bottom number. Top number is called numerator, bottom number is called denominator

Equivalent Fractions – Two fractions that have the same value but have different numbers eg ¼ and $^2/_8$

Top Heavy Fraction – A fraction where the numerator is bigger than the denominator

Mixed Fraction – Is a number that is made up of a whole number and a fraction eg 4 ½

Percentage Profit – is the profit made over the original amount spent turned into a percentage

Section 3 : Algebraic Manipulation   11 Hours

* Be able to simplify algebraic expressions and substitute values into formula's

* Factorise linear expressions

* Expand and simplify with one and two brackets

* Expand when there are three brackets

* Be able to plot linear straight lines

* Factorise a quadratic (two brackets)

* Know and use the concept of changing the subject in Algebra

Key Words / Vocabulary

Term – is a 'thing' in algebra. Part of an algebraic question eg 3a or x^2

Expression – Is a sentence in algebra, made up of different terms

Factorise – Take out common factor terms (divide) answer will have brackets in it

Expand and simplify – multiply all the terms inside the bracket, this gets rid of the bracket, then add/subtract to make it easier to work with

Quadratics - an expression that (usually) is in the form $ax^2 + bx + c$

Change the subject – Rearrange formula's to get a different letter to be next to the equals sign

Section 4 :   Statistical Diagrams and Averages   7 Hours

* Be able to draw and take information from pie charts

* Work out averages of sets of numbers and be able to compare these results

* Find the mean from grouped and ungrouped frequency tables

* Be able to draw, use and comment on results from scatter diagrams

Key Words / Vocabulary

Pie Charts - A diagram in the shape of a circle, all the data adds up to 360 0

Mean – An average, add all data then divide how many pieces of data there were

Median – The middle piece of data (need to be in order first)

Mode – The most common piece of data

Range – the difference between the largest and small piece of data

Correlation – a pattern between the two variables in a scatter diagram

Line of best fit – A straight line that goes through the middle of the data