

Knowledge Organiser Maths Term 1 Year 9

Foundation

Section 1: Basic Number 9 Hours

- * Solving Real life Problems involving addition/subtraction/multiplication and division
- * Ordering numbers based on size, including negative and decimal numbers
- * Add/subtract/multiply and Divide using negative numbers
- * Use inequalities to make statements true
- * Understand and use the rules of BODMAS(BIDMAS)

Key Words / Vocabulary

Negative Number - a number that is smaller than zero

Decimal Number – a number which is part of a whole

Addition – Add, total, sum

Subtract – take away, difference

Multiply – times, product

Inequalities : $<$ less than, $>$ greater than, \geq or \leq greater than or less than

BODMAS – Brackets, OF (power), Divide, Multiply, Add, Subtract

Section 2 : Number Approximations 6 hours

- * Understand when to round a number up and 'round down'
- * Round to the given accuracy including decimal places and significant figures
- * Understand the value of each digit in a number
- * Use estimating to check that an answer is reasonable

Key Words / Vocabulary

Round – Cut down the number of digits in a number to make it easier to use

Decimal Places – The number of digits required after the decimal point

Significant Figures – The important digits in a number. The rest of the digits are written as zeros

Value of 6.234 - 6 units(ones), 2 tenths, 3 hundredths, 4 thousandths

Section 3 : Measures and Scale Drawings 8 Hours

- * Be able to change between metric measurements
- * Be able to change between some metric and imperial measures
- * Be able to use scale drawings to find real life distances
- * To be able to name 3D shapes and their characteristics
- * To be able to draw the nets of some 3D shapes
- * To be able to draw the 2D representations of 3D shapes

Key Words / Vocabulary

Metric – Newer types of measurements, all have something to do with powers of 10

Kilo (eg kg) – means 1000 and big

Milli (eg mg) means 1000 and small

Centi (eg cm) means 100 and small

Prism – a 3D shape that has same cross section all the way through

Pyramid – a 3D shape that comes to a point

Net – is the 3D shape folded flat (2D)

Vertice – A corner, Edge – A line of the 3D shape, Face - A whole side of the 3D shape

Plan – Looking at a 3D shape from above (birds eye view)

Section 4 : Charts, Tables and Averages 6 Hours

- * Be able to draw and take information from frequency tables
- * Be able to draw and take information from Pictograms and Bar graphs
- * Work out the mean, median and mode and decide which average is the best to use
- * To work out the range of values

Key Words / Vocabulary

- Frequency Tables- Table that has tally marks and a frequency column
- Pictogram – Shows the information must pictures, must have a key
- 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

Section 5 : Angles 12 Hours

- * To know and use the angle rules associated with around a point, straight lines and vertically opposite
- * To know and use the angle rules with all types of triangles
- * Be able to work out exterior and interior angles in polygons
- * To know and use the rules that are involved in angles and parallel lines
- * To know the different types of quadrilaterals and their angle facts
- * To understand what a bearing is and be able to draw and measure them

Key Words / Vocabulary

- Straight Line – angles on a straight line add to 180°
- Around a Point – Angles around a point total 360°
- Angles in a triangle add up to 180°
- Scalene triangle all sides and angles are different
- Isosceles triangle two sides and angles are the same size
- Equilateral triangle three sides and angles are the same size
- Polygons – Shapes made up of straight lines only
- Interior angle – an angle inside a polygon
- Exterior Angle – an angle outside of a polygon
- Polygon Rules, All exterior angles for any shape add to 360°
- An Interior and Exterior angle always equal 180°
- Bearing – Starts from North, goes clockwise and must be written as 3 figures. Apart from that it is just an angle