

## Unit 1: Number and calculations - Recap for sets 1 and 2 T1 WK 1 to 4

| Topic                 | Success Criteria  | MATHS WATCH CLIP   |
|-----------------------|---|--|
| Time                  | <ul style="list-style-type: none"> <li>Convert hours and minutes into decimal format</li> </ul>   | Clip N7b   |
| The Four Operations   | <ul style="list-style-type: none"> <li>Add and subtract positive and negative numbers mentally and using written methods</li> <li>Multiply and divide positive and negative numbers mentally and using written methods and use written division methods in cases where the answer has up to two decimal places</li> <li>Solve multi-step problems involving addition, subtraction and/or multiplication and division</li> <li>Understand and use negative numbers when working with temperature and other contexts</li> </ul> | Clip 17<br>Clip 18<br>Clip 68a<br>Clip 19<br>Clip 20<br>Clip 68b<br>Clip 21<br><br>Clip 23 |
| BIDMAS                | <ul style="list-style-type: none"> <li>Know that addition and subtraction have equal priority</li> <li>Know that multiplication and division have equal priority</li> <li>Know that multiplication and division take priority over addition and subtraction</li> <li><u>Use order of operations including brackets and indices</u></li> </ul>   | Clip 75  |
| Prime Numbers/HCF/LCM | <ul style="list-style-type: none"> <li>Recall prime numbers up to 30 <u>or 50</u></li> <li>Know the meaning of a common multiple (factor) of two numbers</li> <li>Identify common multiples (factors) of two numbers</li> <li>Know the meaning of 'highest common factor' and 'lowest common multiple' and use these to solve problems, <u>using prime factor decomposition</u></li> </ul>  | Clip 28<br><br>Clip 79<br>Clip 80<br><br>Clip 78   |
| Powers and Roots      | <ul style="list-style-type: none"> <li>Know the first 12 or <u>15</u> square numbers</li> <li>Know the first 5 cube numbers and <math>10^3</math></li> <li>Recognise real roots (square, cube and <u>higher</u>)</li> <li>Estimate powers and roots of any given positive number</li> </ul>   | Clip 81<br>Clip 82   |
| Key words             | Calculate, Celsius, cube, Fahrenheit, real, truncate  |  |

## Unit 2: Algebraic simplifying, manipulation and sequences T1 WK 5 to 7

| Topic                   | Success Criteria   | MATHS WATCH CLIP                                       |
|-------------------------|--|--|
| Concepts and vocabulary | <ul style="list-style-type: none"> <li>Know the meaning of expression, term, formula, equation, function</li> <li>Know the basic algebraic notation (rules of algebra)</li> <li><b>Identify expressions, equations, formulae and identities</b></li> </ul>   |  |
| Simplifying terms       | <ul style="list-style-type: none"> <li>Simplify an expression by collecting like terms</li> <li>Simplify an expression involving multiplication and division</li> </ul>  | Clip 33<br>Clip 34<br>Clip 35                          |
| Indices                 | <ul style="list-style-type: none"> <li>Know and use the laws of indices</li> <li><b>Calculate with negative indices</b></li> </ul>   | Clip 29<br>Clip 131<br>Clip 82<br>Clip 188<br>Clip 154 |
| Manipulating Algebra    | <ul style="list-style-type: none"> <li>Expand an expression involving a single bracket</li> <li>Factorise an expression into a single bracket</li> <li><u>Expand an expression involving double brackets</u></li> <li><b>Factorise an expression into double brackets</b></li> </ul>                 | Clip 134a<br>Clip 94<br>Clip 134b<br>Clip 93           |
| Substitution            | <ul style="list-style-type: none"> <li>Substitute positive numbers into expressions and formulae</li> <li>Substitute negative numbers into expressions and formulae</li> <li><u>Use science and maths formulae for substitution - including distance, speed and time and rates of pay</u></li> </ul> | Clip 95  |
| Generating Sequences    | <ul style="list-style-type: none"> <li>Drawing patterns for sequences</li> <li>Continue sequences and find missing terms</li> <li>Continue special sequences (inc. triangular, square and cube numbers, Fibonacci and quadratic)</li> <li>Generate a sequence from the term-to-term rule</li> </ul>  | Clip 37  |
| Nth Term                | <ul style="list-style-type: none"> <li>Generate a sequence from the nth term</li> <li>Find the nth term of a linear sequence</li> <li><u>Generate a quadratic sequence</u></li> </ul>  | Clip 102<br>Clip 103                                   |
| Key words               | Even, Identify, notation, odd, prove, sequence   |  |

## Unit 3: Calculating with fractions and decimals and rounding T2 WK 1 to 4

| Topic   | Success Criteria   | MATHS WATCH CLIP                                      |
|---|--|---|
| <b>Fractions</b>                                    | <ul style="list-style-type: none"> <li>• Change between mixed numbers and top heavy fractions</li> <li>• Add and subtract fractions when the denominator is the same and/or different <u>and mixed numbers</u></li> <li>• Multiply and divide fractions <u>and mixed numbers</u></li> <li>• Find fractions of amounts</li> </ul> | Clip 71a<br>Clip 71b<br>Clip 73<br>Clip 74<br>Clip 72 |
| <b>Decimals</b>                                     | <ul style="list-style-type: none"> <li>• Add and subtract decimal numbers</li> <li>• Multiply numbers by 10, 100, 1000</li> <li>• Multiply and <u>divide decimals</u></li> </ul>   | Clip<br>30,66,67                                      |
| <b>Rounding</b>                                     | <ul style="list-style-type: none"> <li>• Round to the n. whole number, 10, 100 and 1000</li> <li>• Round numbers to a specified number of dp</li> <li>• <u>Round numbers to a specified number of significant figures for no. larger than 1 and smaller than 1.</u></li> <li>• <b>Error intervals and truncating</b></li> </ul>  | Clip 155  |
| <b>Estimation</b>                                   | <ul style="list-style-type: none"> <li>• Estimate answers to calculations <u>by rounding to 1 significant figure.</u></li> <li>• Check calculations using approximation and estimation</li> </ul>  | Clip 90<br><br>Clip 91                                |
| <b>Standard form</b>                                | <ul style="list-style-type: none"> <li>• <u>Write big and small numbers in SF</u></li> <li>• <u>Multiply and divide numbers in standard form.</u></li> <li>• <u>Add and subtract numbers in standard form.</u></li> </ul>  | Clip 83   |
| <b>Ordering fractions, decimals and Percentages</b> | <ul style="list-style-type: none"> <li>• Convert between fractions, decimals and percentages</li> <li>• Use conversions to order fractions, decimals and percentages</li> <li>• <b>Change recurring decimals into fractions</b></li> </ul>   | Clip 84<br><br>Clip 85<br><br>Clip 177                |
| <b>Key words</b>                                    | Standard Form, Truncate, Estimate, Recurring   |   |

## Unit 4: Calculating with Percentages

## T2 WK 5 to 6

| Topic  | Success Criteria  | MATHS WATCH CLIP  |
|--|---|---|
| <b>Calculating Percentages/Reverse/Increase/Decrease</b> | <ul style="list-style-type: none"> <li>• Find a percentage of an amount without a calculator</li> <li>• Use calculators to find a percentage of an amount</li> <li>• Increase/decrease an amount by a percentage</li> <li>• <u>Introduce multipliers</u></li> <li>• <u>Increase/decrease and amount using multipliers</u></li> <li>• <u>Calculate the percentage change in a given situation, including percentage increase / decrease and reverse percentages</u></li> </ul> | Clip 40<br>Clip 86<br>Clip 87<br>Clip 108<br>Clip 109<br>Clip 110 |
| <b>Compound interest/depreciation</b>                    | <ul style="list-style-type: none"> <li>• <b>Be able to calculate compound interest and depreciation</b></li> <li>• <b>Be able to answer real world problems involving compound interest and depreciation.</b></li> </ul>  | Clip 164  |
| <b>Key words</b>   | Multipliers, Percentage Increase, Percentage Decrease, Compound interest, original, recurring, simple interest  |   |

## Unit 5: 2D and 3D Shapes

## T3 WK 1 to 4

| Topic                          | Success Criteria  | MATHS WATCH CLIP   |
|--------------------------------|---|--|
| <b>Names of Shapes</b>         | <ul style="list-style-type: none"> <li>Know the names of 2D shapes and be able to identify them from their properties; rotational symmetry; lines of symmetry.</li> </ul>   | Clip 43  |
| <b>Properties of 3D Solids</b> | <ul style="list-style-type: none"> <li>Know the notation used for angles, equal lengths and parallel lines</li> <li>Know the number of faces, edges and vertices for solids</li> <li>Know the names and properties of solids (cubes, cuboids, prisms, cylinders, pyramids, cones and spheres)</li> </ul>                                | Clip 43  |
| <b>Plans and Elevations</b>    | <ul style="list-style-type: none"> <li>Draw plans and elevations of solids</li> <li>Draw nets of 3D shapes</li> </ul>   | Clip 51  |
| <b>Area and Perimeter</b>      | <ul style="list-style-type: none"> <li>Calculate the area and perimeter of rectangles, triangles, parallelograms and trapezia</li> <li>Calculate the area and perimeter of compound shapes made from rectangles and triangles</li> </ul>  | Clip 52 - 56<br>Clip 114-115<br>Clip 119<br>Clip 169-170 |
| <b>Circles</b>                 | <ul style="list-style-type: none"> <li>Be able to name and label parts of a circle</li> <li>Know the formulae for calculating the circumference and area of a circle</li> <li>Calculate the circumference and area of a circle when given diameter or radius</li> <li><u>Find the area and perimeter of parts of circles</u></li> </ul> | Clip 116<br>Clip 117<br>Clip 118<br><br>Clip 167         |
| <b>Volume and Surface area</b> | <ul style="list-style-type: none"> <li>Calculate the volume of cuboids and prisms</li> <li>Calculate surface area of cuboids <u>and other prisms</u></li> <li><b>Volume and Surface area of cylinders, spheres, pyramids and cones</b></li> </ul>   |  |
| <b>Key words</b>               | chord, cone, cuboid, cylinder, elevation, kite, parallelogram, properties, pyramid, rhombus, sector, segment, sphere, tangent, trapezia, trapezium  |  |

## Unit 6: Ratio and Proportion

T3 WK 5 to 6

| Topic                         | Success Criteria  | MATHS WATCH CLIP |
|-------------------------------|---|------------------|
| Simplifying ratios            | <ul style="list-style-type: none"> <li>Use ratio notation</li> <li>Simplify 2 and <u>3 part</u> ratios by cancelling common factors</li> <li>Simplify ratios when units are different and convert between units</li> <li><u>Find ratios in the form of 1:n and n:1</u></li> </ul> | Clip 38          |
| Combining Ratios              | <ul style="list-style-type: none"> <li><b>Problems involving A:B and B:C</b></li> </ul>   | Clip 38          |
| Sharing using a ratio         | <ul style="list-style-type: none"> <li>Divide a quantity into a ratio</li> </ul>  | Clip 106         |
| Proportion problems           | <ul style="list-style-type: none"> <li>Use ratio to solve real life problems (e.g. recipes and best buy problems)</li> </ul>  | Clip 42          |
| Exchanging Money              | <ul style="list-style-type: none"> <li><u>Use an exchange rate to calculate currencies</u></li> </ul>   | Clip 105         |
| Direct and Inverse Proportion | <ul style="list-style-type: none"> <li><u>Understand the idea of direct and inverse proportion</u></li> <li><u>Solving simple direct proportion problems</u></li> </ul>   | Clip 199         |
| Key words                     | Currency, Exchange, proportion  |                  |

## Unit 7: Angles

## T4 WK 1 to 4

| Topic                      | Success Criteria   | MATHS WATCH CLIP |
|----------------------------|--|------------------|
| Measuring and construction | <ul style="list-style-type: none"> <li>Be able to use a protractor</li> <li>Draw acute, right-angled, obtuse and reflex angles</li> <li>Use compass to construct clean arcs</li> <li>Be able to construct a triangle from a written description</li> <li>Be able to construct triangles using SSS, SAS, ASA rules</li> </ul>   | Clip 46          |
| Angles in triangles        | <ul style="list-style-type: none"> <li>Know that angles in a triangles total <math>180^\circ</math></li> <li>Find missing angles in triangles</li> <li>Find missing angles in equilateral and isosceles triangles</li> </ul>   | Clip 121         |
| Angles in quadrilaterals   | <ul style="list-style-type: none"> <li>Know that angles in quadrilaterals total to <math>360^\circ</math></li> <li>Know properties of quadrilaterals (inc. square, rectangle, parallelogram, trapezium, kite and rhombus)</li> <li>Find missing angles in quadrilaterals</li> </ul>  | Clip 10          |
| Angle facts                | <ul style="list-style-type: none"> <li>Identify angles at a point, angles at a point on a line and vertically opposite angles</li> <li>Use knowledge of angles to calculate missing angles in geometrical diagrams</li> </ul>  | Clip 45          |
| Angles in Parallel Lines   | <ul style="list-style-type: none"> <li><u>Identify alternate angles and know that they are equal</u></li> <li><u>Identify corresponding angles and know that they are equal</u></li> <li><u>Use knowledge of alternate and corresponding angles to calculate missing angles in geometrical diagrams</u></li> </ul>   | Clip 120         |
| Angles in Polygons         | <ul style="list-style-type: none"> <li><u>Use the fact that angles in a triangle total <math>180^\circ</math> to work out the total of the angles in any polygon</u></li> <li><u>Establish the size of an interior angle in a regular polygon</u></li> <li><u>Know the total of the exterior angles in any polygon</u></li> <li><u>Establish the size of an exterior angle in a regular polygon</u></li> </ul> | Clip 123         |
| Angle reasoning            | <ul style="list-style-type: none"> <li><u>Solve angle problems using equations</u></li> <li>Solve geometric problems showing reasoning</li> </ul>  |                  |
| Key words                  | Geometry, Co-interior , Exterior, Interior   |                  |

## Unit 8: Statistics

## T4 WK 5 to 6 and T5 WK 1 to 2

| Topic                 | Success Criteria  | MATHS WATCH CLIP       |
|-----------------------|---|------------------------|
| Averages              | <ul style="list-style-type: none"> <li>Calculate the mean, median, mode and range of a set of numbers</li> </ul>  | Clip 62                |
| Averages from Tables  | <ul style="list-style-type: none"> <li>Find the mean, mode and <u>median</u> from frequency tables</li> <li><u>Find the mean, mode and median from grouped frequency tables</u></li> </ul>          | Clip 130a<br>Clip 130b |
| Cumulative Frequency  | <ul style="list-style-type: none"> <li><b>Be able to draw a cumulative frequency diagram</b></li> <li><b>Use a cumulative frequency diagram to find the median and quartiles of data</b></li> </ul> | Clip 186               |
| Calculating Quartiles | <ul style="list-style-type: none"> <li><b>Be able to calculate the median, lower quartile, upper quartile and interquartile range of a set of data</b></li> </ul>                                   | Clip 186               |
| Box Plots             | <ul style="list-style-type: none"> <li><b>Be able to plot a box plot from a set of data</b></li> <li><b>Be able to make comparisons between box plots</b></li> </ul>                                | Clip 187               |
| Scatter Graphs        | <ul style="list-style-type: none"> <li><u>Be able to plot a scatter graph</u></li> <li><u>Be able to plot a line of best fit and use it to make estimations</u></li> </ul>                          | Clip 129               |
| Pie Charts            | <ul style="list-style-type: none"> <li>Be able to draw a pie chart</li> <li>Be able to compare pie charts</li> </ul>  | Clip 128a              |
| Stem/Leaf Diagrams    | <ul style="list-style-type: none"> <li>Be able to draw a stem and leaf diagram</li> <li>Find averages from a stem and leaf diagram</li> </ul>   | Clip 128b              |
| Frequency Polygons    | <ul style="list-style-type: none"> <li><u>Be able to draw a frequency polygon</u></li> </ul>  | Clip 65b               |
| Time Series           | <ul style="list-style-type: none"> <li><u>Draw and interpret time series</u></li> <li><u>Use trends to make predictions about the future</u></li> </ul>   | Clip 153               |
| Key words             | Box plot, comparison, cumulative, cumulative frequency, frequency polygon, interpret, interquartile, quartile, stem and leaf, time series   |                        |

## Unit 9: Equations and Inequalities

T5 WK 3 to 6

| Topic                     | Success Criteria  | MATHS WATCH CLIP       |
|---------------------------|---|------------------------|
| Function machines         | <ul style="list-style-type: none"> <li>Find the output on a single and multi-step function machine</li> <li>Use inverse operations to find the input on a function machine</li> </ul>   | Clip 36                |
| Solving equations         | <ul style="list-style-type: none"> <li>Solve one step equations using inverse operations or the balancing method</li> <li>Solve multi step equations using inverse operations or the balancing method</li> <li><u>Solve equations with unknowns on both sides</u></li> <li><u>Form and solve equations</u></li> </ul> | Clip 135a<br>Clip 135b |
|                           | <ul style="list-style-type: none"> <li><u>Rearrange simple formulae <math>w + 6 = y</math> (<math>w</math>)</u></li> </ul>  | Clip 136               |
| Representing Inequalities | <ul style="list-style-type: none"> <li>Represent an inequality on a number line</li> <li>Write a solution set for an inequality</li> </ul>  | Clip 138               |
| Solving Inequalities      | <ul style="list-style-type: none"> <li>Solve a linear inequality with only positive variables</li> <li><u>Solve a linear inequality with negative variables</u></li> <li><u>Solve an inequality with two variables</u></li> <li><b>Solve inequalities with three parts</b></li> </ul>                                 | Clip 139               |
| Key words                 | Inequality, unknown, variable,<br>Linear  |                        |

## Unit 10: Probability and Venn Diagrams

T6 WK 1 to 3

| Topic                   | Success Criteria  | MATHS WATCH CLIP                           |
|-------------------------|---|--|
| Introduction            | <ul style="list-style-type: none"> <li>• Understand what probability is</li> <li>• Be able to describe the probability</li> <li>• Plot probability on a number line</li> </ul>  | Clip 14                                    |
| Theoretical Probability | <ul style="list-style-type: none"> <li>• List all the outcomes for an event or experiment</li> <li>• Recognise when it is not possible to work out a theoretical probability for an event</li> <li>• Work out theoretical probabilities for events with equally likely outcomes</li> </ul>  | Clip 59                                    |
| Probability Space       | <ul style="list-style-type: none"> <li>• Construct theoretical probability spaces for combined experiments with equally likely outcomes</li> <li>• Calculate probabilities using a probability space</li> </ul>   | Clip 126                                   |
| Combined Probability    | <ul style="list-style-type: none"> <li>• Use frequency trees</li> <li>• <u>List outcomes of combined events using a tree diagram</u></li> <li>• <u>Use a tree diagram to calculate probabilities of independent combined events</u></li> <li>• <b>Use a tree diagram to calculate probabilities of dependent combined events</b></li> </ul> | Clip 57<br>Clip 65<br>Clip 151<br>Clip 175 |
| Venn Diagrams           | <ul style="list-style-type: none"> <li>• <u>Use Venn diagrams to work out probability</u></li> <li>• <u>Understand the language of sets and Venn diagrams</u></li> </ul>  | Clip 185<br>Clip 127a<br>Clip 127b         |
| Key words               | combined, frequency tree, outcome, prediction, probability, probability space, probability tree, set, theoretical tree diagram, Venn diagram,   |  |

## Unit 11: Graphs

T6 WK 4 to 6

| Topic                | Success Criteria   | MATHS WATCH CLIP |
|----------------------|--|------------------|
| Coordinates          | <ul style="list-style-type: none"> <li>• Plot and write coordinates in positive or <u>negative</u> quadrants</li> <li>• Identify and plot points on a grid</li> <li>• Find the midpoint of a line</li> </ul>                       | Clip 8           |
| Straight Line Graphs | <ul style="list-style-type: none"> <li>• Complete a table of values</li> <li>• Draw horizontal and vertical lines</li> <li>• <math>Y=x</math></li> <li>• <math>Y = -x</math></li> <li>• Plot a straight line on a graph</li> </ul> | Clip 96          |
| Transformations      | <ul style="list-style-type: none"> <li>• Reflect in a given line on a grid</li> <li>• Translation of a shape on a grid</li> </ul>  |                  |
| Key words            | gradient   |                  |