**Maths - Number Based Mathematics**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Key Stage** | **Pathway** | **Topics** | **Description**  | **Key Stage End Point (KSEP)** |
| KS1&2 | 1 | - Number- Colour | I can join in with well-known number rhymes and songs. I can anticipate key moments in familiar number rhymes and songs. I can join in with novel number rhymes and songs that contain repetitive counting. I can join in with rote counting to 10. I can recognise numerals up to 5. I can use one to one correspondence when pairing objects. I can make sets of up to 3 objects. I can relate numerals 1-3 to the number of objects. I can demonstrate an awareness of contrasting quantities when there is a marked difference. I can show an understanding of the concept of more. I can show an understanding of the concept of less. I can name the primary colours. I can sort by colour. I can demonstrate an awareness of cause and effect and apply this to a range of activities. I can solve simple problems by matching objects to pictures. I can exchange a coin for an item in pretend scenarios. I can copy a simple pattern. I can demonstrate object permanence. I can find well-known objects kept in familiar places. I can identify a single odd one out. | Age 11 |
| KS1&2 | 2 | - Place Value- Calculation- Data- Fluency to 20 - Money - Halving, Doubling and Sorting - Addition and Subtraction- Sequencing - Problem Solving- Information Gathering  | I can 1:1 count a range of objects/manipulatives in any order (to 20). With support I am beginning to order numbers to 20 (when presented using concrete resources/using a number line). I can recognise written numbers up to 20. I can subitise up to 5. I can complete simple sequences, including missing numbers. I can represent 2-digit numbers using concrete resources. I am experimenting with addition and subtraction up to 20. I am beginning to say how many tens or ones are in a number. I can usually recall my number bonds to 10 and can double numbers 1-5 with concrete resources. I have a basic understanding of ordinal numbers: first, second etc. I can respond to and use the vocabulary and symbols + - =. I am beginning to develop an understanding of half of objects, shapes and quantities. I can skip count in 2s and 10s with concrete resources, a number line or 1-100 square. I can solve a simple problem with objects, or a verbal explanation. I am beginning to share quantities into equal groups. I can represent data in a block diagram. I can sort objects by one criteria in various ways e.g., hoops, Carroll diagrams. I can sort coins based on size, colour and shape. I am beginning to name and recognise coins up to £2. I can look for and find numbers in a real-life context and sometimes know what they mean or are for e.g., in a lift, aisles in a supermarket etc.   | Age 11 |
| KS1&2 | 3 | - Place value- Calculation Strategies - Money - Problem Solving- Data Handling - Multiplication and Division - Addition and Subtraction- Analysing Information - Number Application  | I count reliably to 50 and have knowledge of many numbers up to and including 100. I have an understanding of place value which I use to order numbers to 100. I can recognise how many hundreds, tens and ones are in a number, perhaps with concrete resources. I can add and subtract numbers up to 20 with confidence. I know that addition and subtraction are inverses and I can work backwards to solve a practical problem. I can recognise and complete number sequences. I can halve and double to solve practical problems. I understand that halving and doubling are inverse operations. I am beginning to count in 2's 5's and 10's without concrete resources. I can use my knowledge of number facts to 10 to calculate using multiples of 10. I use a greater selection of simple mathematical symbols to communicate my working including x and ÷. I am beginning to record my calculations in simple number sentences. I can solve simple problems using money and work out change up to 20p. I know that £1 = 100p and I can use this knowledge in context e.g interpreting prices written in £ or in pence. I can estimate what I can buy with a small budget, up to £1, from a selection indicated to me. I can choose a set of data to collect, design an appropriate table with support. I can then represent this data in a bar chart, pictogram or block diagram. I can answer simple questions about data and statistical diagrams.  I can sort and interpret data using a Carroll diagram and a Venn diagram. I can label the axis of a bar chart, pictogram or block diagram. | Age 11 |
| KS3 | 1 | - Number Sense- Measurement - Working Mathematically- Sharing and Grouping- Recognising and Using Number - More or Less - Working Mathematically - Comparing Amounts- Recognising and Using Money  | I can rote count beyond 10. I can recognise numerals up to 9 when presented in order and randomly. I can sequence numerals to 10. I can make sets of up to 5 objects. I can rearrange objects in a set and understand the total is unchanged. I can relate numerals 1-5 to the number of objects. I can compare two quantities and identify them as the same. I can compare two quantities and identify which is more and which is less. I can add one more to a number of objects up to 9 and indicate how many. I can take one away from a number of objects up to 9 and indicate how many. I can use ordinal numbers 1st/2nd/3rd to describe the position of people or objects. I can name the primary and secondary colours. I can sort a group of objects into categories given a named criterion. I can share objects to create up to 4 equal groups. I can begin to use the fraction one half. I can exchange money for goods in pretend and real-life scenarios. I can sort money. I can continue a repeating pattern. I can use a simple chart to find out information. I can describe why a single object is different. | Age 14 |
| KS3 | 2 | - Representing Number- Addition and Subtraction - Doubling and Halving - Data Collection- Ordering Numbers and Place Value- Reasoning Skills - Number Fluency - Using Number Sentences - Problem Solving  | I can order numbers in context up to 50. I can represent numbers in writing when supported. I can subitise up to 6. I can display how many tens or ones are in a number using concrete resources (etc. base 10). I can identify what digit in a number is in tens/ones with support. I can describe temperatures using positive and negative numbers. I can recall all my number bonds to 10. I can add 3 one-digit numbers using concrete or pictorial resources. I can subtract from numbers up to 20 using concrete or pictorial resources. I can double numbers up to 10 with concrete resources. I can recognise odd or even numbers. I can half numbers to 10 (independently) and 20 (with support) using concrete resources. I can count in 2, 5 and 10 up to the 10th multiple. I can recognise halves and quarters and use these terms in the context of shapes/objects. I can use +, - and = signs appropriately and can use associated vocabulary. I can work out missing numbers in simple equations. With support I can use calculation strategies to solve simple word problems. I can sort (up to 2 criteria) and interpret data using Carroll diagrams and Venn diagrams. I can agree appropriate options to answer a question can and collect data using a tally chart. I can represent and interpret data in a block diagram, a bar chart and a simple pictogram.  | Age 14 |
| KS3 | 3 | - Place Value- Addition and Subtraction - Fractions and Percentages - Continuing Sequences - Number Fluency- Reasoning Skills- Mental Maths Strategies- Inverse Operations - Problem Solving  | I can order numbers to 1000 and identify place value. I can use numbers with up to 2 decimal places in the context of money and measurement. I can order positive and negative integers. I know my multiplication tables for 2, 5 and 10. I can continue sequences including odd, even, multiples and squares. I can mentally add numbers that do not involve crossing a tens boundary up to 100. I can mentally use the count on method to subtract when there is a difference of less than 10. I can subtract two 2-digit numbers less than 100 using a number line, if needed. I can use a written method of addition. I know that multiplication is repeated addition and am learning my times tables. I know division is sharing and can use this knowledge to solve problems using a calculator (although I may need support interpreting the display). I can use inverse operations to solve 1 step problems. I can understand fraction notation and can identify fractions of shapes. I can find simple fractions and simple percentages of quantities.  I understand the equivalence of simple fractions, decimals and percentages like ½, ¼ and ¾. I can round numbers to 1 significant figure. I can estimate answers using rounding. I can interpret and complete a simple 2-way table. I can describe the likelihood of events using appropriate language and understand a 0-1 probability scale. I can use fractions to describe the probability of equally likely outcomes. | Age 14 |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 14-19 | 1 | - Number Skills - Understanding Money  | I can recognise single-digit numbers in real-world contexts. I can follow a sequence of written numbers e.g., a telephone number. I can complete tasks or chores in a particular order. I can follow a sequence of numbered written or illustrated instructions. I can use a simple chart to record information or data. I can retrieve and apply information from a simple chart. I can count out a given small quantity. I will express a need for more or less of something. I can pair items. I can sort real-world objects according to given criteria. I can identify and resolve anomalies in sequences or sets. I can create a purposeful repeating pattern e.g., tiling or planting. I can make appropriate colour choices e.g., paint colours for a purpose. I am able to sort laundry into coloured piles. I can identify different forms of money. I am able to use different forms of money appropriately with supervision. I can be involved in the exchange of money for goods as both a customer and a seller. I can make a sustained effort to earn a monetary reward or equivalent. I can share something between a small number of people or groups. I can share something equally e.g., food portions. | Age 18 |
| 14-19 | 2 | - Data Handling - Collecting and Presenting Numerical Information- Money and Financial Maths- Using Coins and Notes- Working with Money- Working with Whole Numbers - Fractions and Proportions  | I can order numbers up to 100. I can round to the nearest 10. I can identify the place value of digits in numbers up to 100. I recognise odd and even number and can sequence in 2s using visual support if necessary. I can sequence multiples of 5 and 10 up to 100 using visual support if necessary. I can add two 2-digit whole numbers in practical situations. I can subtract from a 2-digit number without crossing the 10s boundary. I can work out when I need to + or -. I can add and subtract on a calculator and interpret the answer. I understand multiplication using arrays. I know when I need to multiply or use repeated addition in a practical situation and can do so on a calculator. I can use fraction notation and identify simple fractions of shapes. I can use a calculator to divide and find simple fractions (halves or quarters) of quantities and interpret the answer. I can interpret place value in the context of money and can count out an exact amount of money less than £1.00. I can work out change from £1.00 for an item costing less than a pound using a calculator. I can write money correctly either in pence or pounds, can input money in a calculator correctly and interpret the display. I know if I have enough money to buy an item i.e., £1 is enough for 30p item, I need £5 for a £3.20 item. I can choose a topic to investigate, agree data categories to collect and collect information for each category. I can present numerical information in a simple diagram or chart and can transfer between formats i.e., from a list to a bar chart or a bar chart to a pictogram. I can make an observation by reviewing information in the diagram, chart, table or list.   | Age 18 |
| 14-19 | 3 | - Data Handling- Exam Preparation- Number- Financial Awareness - Money- Understanding and Calculating with Number - Introduction to Whole Numbers and Working with Whole Numbers- Fractions | I can work with numbers ranging between hundredths (in the context of money and measurement) and thousands in context. I can round whole numbers up to 1000 to 1 significant figure. I can add whole numbers with up to 2 significant figures. I can subtract whole numbers with up to 2 significant figures. I know when to + or - and can use a calculator to do so. I can add and subtract numbers to 1 significant figure to estimate or check an answer (especially in the context of money). I know when to x or ÷ and can use a calculator to do so. I can interpret a calculator display, truncating the answer if need be. I can multiply whole numbers by 10 and 100. I can use fraction notation, recognise simple fractions of shapes and recognise fractions equivalent to 1 whole and 1 half. I can describe proportion using simple fractions and percentages e.g., 1/2, 1/4 50%. I can find fractions of quantities in practical situations using a calculator. I can find percentages of quantities in practical situations using a calculator. I can recognise and use ratio notation. I can generate terms of a sequence from a term-to-term rule. I can use simple formula. I can solve simple one step equations. I can graph a simple function. Working with quantities of up to £10 I can count quantities of money and work out the total cost of more than one item (without a calculator). Without a calculator I can calculate change from £1.   | Age 16-18 |