|  |  |  |
| --- | --- | --- |
|  | Spring 1 | Spring 2 |
| Nursery  (Birth to Five) | **Comparison**  • Begin to compare and recognise changes in numbers of things, using words like more, lots or ‘same’.  **Counting**  • Begin to say numbers in order, some of which are in the right order (ordinality).  **Cardinality (How many?)**  • In everyday situations, take or give two or three objects from a group.  • Begin to notice numerals (number symbols).  • Begin to count on their fingers.  **Spatial Awareness**  • Move their bodies and toys around objects and explore fitting into spaces.  • Begin to remember their way around familiar environments.  • Respond to some spatial and positional language.  • Explore how things look from different viewpoints including things that are near or far away.  **Shape**  • Choose puzzle pieces and try to fit them in.  • Recognise that two objects have the same shape.  • Make simple constructions.  **Pattern**  • Join in and anticipates repeated sound and action patterns.  • Is interested in what happens next using the pattern of everyday routines.  **Measures**  • Explore differences in size, length, weight and capacity.  • Begin to understand some talk about immediate past and future.  • Begin to anticipate times of the day such as mealtimes or home time. | |
| Reception  (Birth to Five) | * Begin to recognise numerals 0 to 10. * Compare two small groups of up to five objects, saying when there are the same number of objects in each group, e.g. You’ve got two, I’ve got two. Same! * Through play and exploration, begin to learn that numbers are made up (composed) of smaller numbers. * Separate a group of three or four objects in different ways, beginning to recognise that the total is still the same. * Begin to use understanding of number to solve practical problems in play and meaningful activities. * Begin to recognise that each counting number is one more than the one before. * In meaningful contexts, find the longer or shorter, heavier or lighter and more/less full of two items. * Recall a sequence of events in everyday life and stories.   White Rose Maths  Week 1,2,3 - Alive in 5!  **WWK: the number name zero and the numeral 0.**  **WWK: one quantity can be more than, the same as or fewer than another quantity (up to 5).**  **WWK: the numbers 4 and 5 are made up off smaller numbers.**  **WWK: that heavy, heavier than and heaviest, light, lighter than and lightest can be used when comparing masses.**  **WWK: that capacities can be compared.**  Week 4, 5, 6 - Growing 6, 7, 8    **WWK: 6, 7 & 8.**  **WWK: different representations for numbers in pairs.**  **WWK: strategies for combining two amounts to find how many altogether.**  **WWK language that can be used to describe length and height.**  **WWK: language that helps to sequence times in the school day.** | * Begin to recognise numerals 0 to 10. * Through play and exploration, begin to learn that numbers are made up (composed) of smaller numbers. * Begin to recognise that each counting number is one more than the one before. * Respond to both informal language and common shape names. * Show awareness of shape similarities and differences between objects. * Enjoys partitioning and combining shapes to make new shapes with 2D and 3D shapes. * Attempt to create arches and enclosures when building, using trial and improvement to select blocks. * Respond to and uses language of position and direction. * Predict, move and rotate objects to fit the space or create the shape they would like. * Create their own spatial patterns showing some organisation or regularity. * Explore and add to simple linear patterns of two or three repeating items, e.g. stick, leaf (AB) or stick, leaf, stone (ABC). * Join in with simple patterns in sounds, objects, games and stories dance and movement. * Predict what comes next.   White Rose Maths  Week 7, 8, 9 – Building 9 and 10  Week 10, 11, 12 – Consolidation  **WWK: how to count to 9 or ten, forwards and backwards.**  **WWK: that 9 and 10 can be represented in different ways.**  **WWK: strategies for comparing numbers to 10.**  **WWK: number bonds to 10.**  **WWK: the names of common 3D shapes.**  WWK: that common 3D shapes can be compared.  **WWK: that patterns can be described out loud verbally.** |
| Year 1  (National Curriculum) | **Place Value (Within 20)**   * Read and write numbers to 20 in numbers or words. * Count to and across 100, forwards and backwards, beginning with 0 or 1, or from anygiven number. * Given a number, identify one more and one less.   **WWK: how to count within 20.**  **WWK: different ways that 10 can be represented.**  WWK: that 11, 12 and 13 are ‘ten and some ones’ or ‘ten and a bit’, representing these in different ways.  WWK: that 14, 15 and 16 are ‘ten and some ones’, representing these in different ways.  WWK: that 17, 18 and 19 are ‘ten and some ones’, representing these in different ways.  **WWK: different ways that 20 can be represented.**  **WWK: that counting skills can be used to find one more or one less that any number within 20.**  WWK: that a number line to twenty can be divided into steps of 1.  WWK: strategies to help us use a number line to 20.  **WWK: the term ’estimate’ and how to use this with a number line to 20.**  WWK: strategies to compare numbers to 20.  WWK: strategies to order numbers to 20.  **Addition and Subtraction (Within 20)**   * Represent and use number bonds and related subtraction facts within 20. * Add and subtract one-digit and two-digit numbers to 20, including zero. * Solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as 7 =? – 9.   WWK: that we can add by counting on (within 20).  WWK: that we can add ones using number bonds and related facts (within 20).  **WWK: the number bonds to 20.**  **WWK: doubles by adding two equal quantities together.**  WWK: that a double fact can be adjusted by one to find the answer to a near double fact.  **WWK: that knowledge of numbers bonds can be used when subtracting within 20.**  WWK: that subtraction can be completed by counting back.  WWK: that subtraction ca be calculation by finding the difference.  **WWK: the addition and subtraction fact families for numbers within 20.**  **WWK: strategies for calculating missing number problems.** | **Place Value (Within 50)**   * Count, read and write numbers to (50) 100 in numerals; count in multiples of 2s, 5s and **10s**. * Count to and across (50) 100, forwards and backwards, beginning with 0 or 1, or from any given number.   **WWK: how to count from 20 to 50.**  WWK: the multiples of ten up to 50: 20, 30, 40 and 50.  WWK: strategies for counting larger groups of objects (using tens and ones).  **WWK: that a number can be described as a number of groups of tens and ones.**  **WWK: that numbers can be partitioned into tens and ones.**  WWK: that number lines can represent numbers up to 50.  **WWK: the term ‘estimate’ and how to use this with a number line to 50.**  **WWK: that counting skills can be used to find one more or one less that any number to 50.**  **Measurement (Length and Height)**   * Compare, describe and solve practical problems for: lengths and heights [for example, long/short, longer/shorter, tall/short, double/half]. * Measure and begin to record the following: lengths and heights.   **WWK: that lengths and heights can be compared using language such as ‘longer than’, ‘shorter than’ and ‘taller than’.**  **WWK: that objects (non-standard units) can be used to measure lengths and heights.**  **WWK: that centimetres (standard units) can be used to measure lengths and heights.**  **Measurement (Mass and Volume)**   * Compare, describe and solve practical problems for: mass/weight [for example, heavy/light, heavier than, lighter than] and capacity and volume. * Measure and begin to record the following: mass/weight and capacity and volume.   WWK: that the heavier item is lower on the balance scale.  **WWK: that the mass of an object can be measured using objects (non-standard units).**  **WWK: strategies to compare the mass of objects (non-standard units).**  **WWK: that capacity is the maximum amount that something can hold.**  WWK: that the language ‘more than’ and ‘less than’ can be used to compare volumes.  **WWK: that the capacity of a container can be measured using non-standard units.**  **WWK: that the capacity of container can be compared using non-standard units.** |
| Year 2  (National Curriculum) | **Measurement (Money)**   * Recognise and use symbols for pounds (£) and pence (p); combine amounts to make a particular value. * Find different combinations of coins that equal the same amounts of money. * Solve simple problems in a practical context involving addition and subtraction of money of the same unit, including giving change.   **WWK: strategies to find a total amount of money less than £1.**  WWK: strategies to count money in pounds.  WWK: strategies to count money in pounds and pence.  **WWK: that notes and coins can be combined to create given amounts.**  WWK: strategies to make the same amount of money in different ways.  WWK: the vocabulary ‘greater than’, ‘less than’, ‘most’ and ‘least’ along with the symbols for comparing amounts of money.  **WWK: strategies when calculating with money.**  **WWK: that 100p is the same as £1 and that £1 can be made in different ways.**  WWK: strategies for calculating the amount of change needed.  **WWK: how to identify the steps needed when solving a two-step problem.**  **Multiplication and Division**   * Recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers. * Calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication (×), division (÷) and equals (=) signs. * Show that multiplication of two numbers can be done in any order (commutative) and division of one number by another cannot. * Solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods, and multiplication and division facts, including problems in contexts.   **WWK: there is a link between repeated addition and multiplication.**  **WWK: that a number of objects can be split into equal groups.**  WWK: that the total can be found using repeated addition (of equal groups).  WWK: the symbol for multiplication (x).  WWK: that ‘lots of’ and ‘multiplies by’ associate with the multiplication symbol.  **WWK: that an array can be represented by two multiplication sentences (commutative).**  WWK: one method for division is grouping.  WWK: another method for division is sharing.  **WWK: the facts in the two times table.**  WWK: strategies for dividing by two (sharing and grouping).  WWK: that when we double a number we multiply is by two and when we halve a number we divide it by two.  WWK: strategies to identify if a whole number is odd or even.  **WWK: the facts in the ten times table.**  WWK: strategies to divide by ten.  **WWK: the facts in the five times table.**  WWK: strategies to use when dividing by five.  WWK: the relationship between the five- and ten-time tables. | **Measurement (Length and Height)**   * Choose and use appropriate standard units to estimate and measure length/height in any direction (m/cm); mass (kg/g); temperature (°C); capacity (litres/ml) to the nearest appropriate unit, using rulers, scales, thermometers and measuring vessels. * Compare and order lengths, mass, volume/capacity and record the results using >, < and =.   **WWK: that a ruler shows centimetres and this can be used to measure lengths and heights.**  **WWK: that metres are longer than centimetres and can be used to measure larger distances.**  **WWK: that lengths and heights can be compared using ‘longer than’, ‘shorter than’ and ‘taller than’.**  **WWK: strategies and language when ordering lengths and heights.**  **WWK: strategies to use when calculating with lengths and heights.**  **Measurement (Mass, Capacity and Temperature)**   * Choose and use appropriate standard units to estimate and measure length/height in any direction (m/cm); mass (kg/g); temperature (°C); capacity (litres/ml) to the nearest appropriate unit, using rulers, scales, thermometers and measuring vessels. * Compare and order lengths, mass, volume/capacity and record the results using >, < and =.   WWK: that the mass of two or more objects can be compared.  **WWK: the standard units of measure for mass and how these can be used.**  WWK: examples of objects that would have a mass in kilograms.  WWK: strategies to use when calculating with mass.  **WWK: the meaning of the terms capacity and volume.**  **WWK: that volume can be measured using millimetres.**  **WWK: that larger volumes are measured using litres.**  WWK: strategies to use when calculating with volumes.  **WWK: that thermometers measure temperature using degrees Celsius.** |
| Year 3  (National Curriculum) | **Multiplication and Division**   * Write and calculate mathematical statements for multiplication and division using the multiplication tables that they know, including for two-digit numbers times one-digit numbers, using mental and progressing to formal written methods. * Solve problems, including missing number problems, involving multiplication and division, including positive integer scaling problems and correspondence problems in which n objects are connected to m objects.   WWK: the term multiples of ten and examples of these which are greater numbers.  **WWK: strategies for calculating related facts.**  WWK: the ways we can structure multiplication.  **WWK: strategies to multiply a 2-digit number by a 1-digit number** – no exchange.  WWK: strategies to multiply a 2-digit number by a 1-digit number – with exchange.  **WWK: that multiplication and division facts can be linked.**  **WWK: strategies to divide a 2-digit number by a 1-digit number** – no exchange.  WWK: strategies to divide a 2-digit number by a 1-digit number – flexible partitioning.  WWK: strategies to divide a 2-digit number by a 1-digit number – with remainders.  **WWK: that scaling is multiplication.**  WWK: strategies for solving correspondence problems.  **Measurement (Length and Perimeter)**   * Measure, compare, add and subtract: lengths (m/cm/mm); mass (kg/g); volume/capacity (l/ml). * Measure the perimeter of simple 2-D shapes.   WWK: **that rulers can be used to measure objects** using centimetres and metres.  WWK: that millimetres can be used to measure objects that are not an exact number of centimetres.  WWK: that centimetres and millimetres can be used together when measuring objects.  WWK: when to choose metres, centimetres or millimetres to measure an object.  WWK: that 100cm is equivalent to 1m and this can be used to convert lengths.  WWK: that 10mm is equivalent to 1cm and this can be used to convert lengths.  **WWK: that the lengths need to be converted to the same unit of measure before comparing.**  **WWK: strategies for adding lengths.**  **WWK: strategies for subtracting lengths.**  WWK: that perimeter is the distance around the outside of a closed shape.  **WWK: that the sides need to be measured systematically then the lengths added to calculate the perimeter.** | **Fractions**   * Recognise and use fractions as numbers: unit fractions and non-unit fractions with small denominators. * Recognise and show, using diagrams, equivalent fractions with small denominators.   **WWK: that the denominator shows how many equal parts the whole has been divided into.**  WWK: that when the numerators are the same, the greater the denominator, the smaller the fraction.  **WWK: the role of the numerators of non-unit fractions.**  WWK: that when the numerator is equal to the denominator, the fraction will be a whole one.  **WWK: strategies for comparing and ordering non-unit fractions.**  WWK: that fractions can be shown using scales.  WWK: that fractions can be shown on number lines.  WWK: strategies for counting in fractions on a number line.  **WWK: strategies for finding equivalent fractions on a number line.**  **WWK: that a bar model can be used to show equivalent fractions.**  **Measurement (Mass and Capacity)**   * Measure, compare, add and subtract: lengths (m/cm/mm); mass (kg/g);   volume/capacity (l/ml).  WWK: strategies to use when using scales.  WWK: that mass can be measured in grams.  **WWK: that mass can be measured in kilograms and grams.**  WWK: that 1000g is equivalent to 1kg and masses can be converted.  **WWK: strategies to use when comparing masses.**  **WWK: strategies to use adding and subtracting masses.**  WWK: that capacity and volume can be measured using millilitres.  **WWK: that capacity and volume can be measured using litres and millilitres.**  WWK: strategies for making amounts of millilitres up to 1l.  **WWK: strategies for comparing capacity and volume.**  **WWK: strategies for adding and subtracting capacity and volume.** |
| Year 4  (National Curriculum) | **Multiplication and Division**   * Recall multiplication and division facts for multiplication tables up to 12 × 12. * Use place value, known and derived facts to multiply and divide mentally, including: multiplying by 0 and 1; dividing by 1; multiplying together three numbers. * Recognise and use factor pairs and commutativity in mental calculations. * Multiply two-digit and three-digit numbers by a one-digit number using formal written layout. * Solve problems involving multiplying and adding, including using the distributive law to multiply two digit numbers by one digit, integer scaling problems and harder correspondence problems such as n objects are connected to m objects.   **WWK: that two numbers multiplied together to make a product are factors of that product.**  **WWK: that factor pairs can be used to give equivalent calculations.**  WWK: that the digits move one place value column to the left and a zero place holder may be needed to fill the empty column when multiplying by ten.  WWK: that the digits move two place value columns to the left and two zero place holders may be needed to fill the empty columns when multiplying by one hundred.  WWK: that multiplying by one hundred is the same as multiplying by ten then by ten again.  WWK: that the digits move one place value column to the right when dividing by ten.  WWK: that the digits move two place value columns to the right when dividing by one hundred.  WWK: that dividing by one hundred is the same as dividing by ten then dividing by ten again.  WWK: strategies to solve calculations related to known facts.  WWK: strategies to use informal methods when multiplying a two-digit number by a one-digit number.  **WWK: the formal written method for multiplying a two-digit number by a one-digit number.**  **WWK: the formal written methods for multiplying a three-digit number by a one-digit number.**  **WWK: that informal strategies can be used to divide a 2-digit number by a 1-digit number (no remainders).**  WWK: that informal strategies can be used to divide a 2-digit number by a 1-digit number (remainders).  WWK: that informal strategies can be used to divide a three-digit number by a one-digit number.  WWK: strategies to support us when solving correspondence problems.  WWK: strategies to complete multiplication calculations in an efficient manner.  **Measurement (Length and Perimeter)**   * Convert between different units of measure [for example, kilometre to metre; hour to minute]. * Measure and calculate the perimeter of a rectilinear figure (including squares) in centimetres and metres.   WWK: that kilometres are larger than metres and measure greater distances.  **WWK: that 1000m is equivalent to 1km.**  WWK: strategies to calculate the perimeter of a rectangle on a grid (counting squares).  **WWK: strategies to calculate the perimeter of a rectangle on a grid (side lengths).**  **WWK: strategies to calculate the perimeter of a rectilinear shape (side lengths).**  **WWK: strategies for finding missing lengths in rectilinear shapes.**  **WWK: strategies to calculate the perimeter of rectilinear shapes.**  WWK: that regular polygons have all sides of an equal length and that this can be used to calculate the perimeter.  WWK: that irregular polygons may have some sides of an equal length and that this can be used to calculate the perimeter. | **Fractions**   * Recognise and show, using diagrams, families of common equivalent fractions. * Count up and down in hundredths; recognise that hundredths arise when dividing an object by one hundred and dividing tenths by ten. * Add and subtract fractions with the same denominator. * Solve simple measure and money problems involving fractions and decimals to two decimal places.   WWK: what is meant by ‘the whole’.  **WWK: that fraction steps can be used when counting forward and backward and beyond a whole one.**  WWK: that mixed numbers can be partitioned in different ways.  WWK: that mixed numbers can be represented using a number line and ways of doing this.  WWK: strategies to use when comparing and ordering mixed numbers.  **WWK: that an improper fraction has a numerator equal to or greater than the denominator.**  WWK: strategies when converting mixed numbers to improper fractions.  WWK: strategies when converting improper fractions to mixed numbers.  WWK: that fractions in line with each other on a number line are equivalent.  **WWK; that as long as each of the existing parts are split equally into the same number**  **of smaller parts, then the fractions will be equivalent.**  **WWK: strategies for adding two or more fractions.**  WWK: strategies for adding fractions and mixed numbers.  **WWK: strategies for subtracting two fractions.**  WWK: strategies for subtracting from whole amounts.  WWK: strategies for subtracting from mixed numbers.  **Decimals**   * Recognise and write decimal equivalents of any number of tenths or hundredths. * Recognise and write decimal equivalents to ¼, ½ ¾ . * Find the effect of dividing a one- or two-digit number by 10 and 100, identifying the value of the digits in the answer as ones, tenths and hundredths.   WWK; that a tenth is a fraction.  **WWK: that tenths can be represented as decimals.**  WWK: that the decimal point separates whole numbers from decimals.  WWK: that 10 tenths are equivalent to 1 whole, and therefore 1 whole is equivalent to 10 tenths.  WWK: that tenths and whole numbers can be represented using a number line.  **WWK: that when using a place value chart, we move all of the digits one place to the right when dividing by 10 (one-digit/two-digit number divided by ten).**  **WWK: that when using a place value chart, we move all of the digits two places to the right when dividing by 100 (one-digit/two-digit number divided by one hundred).**  **WWK: that a hundredth is 1 whole split into 100 equal parts.**  **WWK: that hundredths can be represented as decimals.** |
| Year 5  (National Curriculum) | **Multiplication and Division**   * Multiply numbers up to 4 digits by a one- or two-digit number using a formal written method, including long multiplication for two-digit numbers. * Multiply and divide numbers mentally drawing upon known facts. * Divide numbers up to 4 digits by a one-digit number using the formal written method of short division and interpret remainders appropriately for the context.   **WWK: the formal written method for multiplying up to a 4-digit number by a 1-digit number.**  WWK: strategies to multiply a 2-digit number by a 2-digit number (area model).  WWK: the formal written method for multiplying a 2-digit number by a 2-digit number.  WWK: the formal written method for multiplying a 3-digit number by a 2-digit number.  **WWK: the formal written method for multiplying a 4-digit number by a 2-digit number.**  WWK: strategies to support when solving problems with multiplication.  WWK: the formal written methods for short division.  **WWK: the formal written method for dividing a 4-digit number by a 1-digit number.**  **WWK: the formal written method for dividing with remainders.**  WWK: strategies to use to solve division calculations in an efficient manner.  **WWK: strategies to solve problems with multiplication and division.**  **Fractions**   * Multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams.   WWK: that multiplication is repeated addition and can be applied when multiplying a unit fraction by an integer.  **WWK: that the numerator is multiplied by the integer and the denominator is left the same when multiplying a non-unit fraction by an integer.**  **WWK: strategies to multiply a mixed number by an integer.**  WWK: informal strategies to calculate a fraction of a quantity.  **WWK: more formal (abstract) ways to calculate a fraction of an amount.**  WWK: strategies to find the whole.  **WWK: the connection between finding a fraction of an amount and multiplying a fraction by an integer.**  **Decimals and Percentages**   * Read and write decimal numbers as fractions [for example, 0.71 = 71/00 ]. * Recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents.   WWK: the value of digits in numbers with two decimal places.  **WWK: equivalent fractions and decimals (tenths).**  **WWK: equivalent fractions and decimals (hundredths).**  **WWK: equivalent fractions and decimals for halves, quarters, fifths and tenths.**  **WWK: that a thousandth is 1 whole split into 1,000 equal parts.**  **WWK: that thousandths can be represented as decimals.**  WWK: that thousandths can be represented on a place value chart. | **Decimals and Percentages**   * Round decimals with two decimal places to the nearest whole number and to one decimal place. * Read, write, order and compare numbers with up to three decimal places. * Solve problems involving number up to three decimal places. * Recognise the per cent symbol (%) and understand that per cent relates to ‘number of parts per hundred’, and write percentages as a fraction with denominator 100, and as a decimal. * Solve problems which require knowing percentage and decimal equivalents of ½, ¼, 1/5, 1/5, 4/5 and those fractions with a denominator of a multiple of 10 or 25.   WWK: strategies to order and compare decimals (same number of decimal places).  **WWK: strategies to order and compare any decimals with up to 3 decimal places.**  **WWK: that strategies for rounding can be applied when rounding to the nearest whole number.**  **WWK: that strategies for rounding can be applied when rounding to 1 decimal place**  **WWK: that “per cent” relates to “number of parts per 100.**  WWK: that a percentage is a fraction with a denominator of one hundred.  WWK: strategies for showing percentages as decimals.  **WWK: examples of equivalent fractions, decimals and percentages.**  **Measurement (Perimeter and Area)**   * Measure and calculate the perimeter of composite rectilinear shapes in centimetres and metres. * Calculate and compare the area of rectangles (including squares), and including using standard units, square centimetres (cm2) and square metres (m2) and estimate the area of irregular shapes.   WWK: that the perimeter of a rectangle can be found by measuring the sides and by calculation.  **WWK: strategies to calculate the perimeter of rectilinear shapes.**  WWK: strategies to find the perimeter of polygons.  **WWK: that area was the space inside a two-dimensional shape (rectangles in particular).**  **WWK: strategies to calculate the area of compound shapes.**  **WWK: that estimation can be used to calculate the (approximate) area of non-rectilinear shapes.**  **Statistics**   * Solve comparison, sum and difference problems using information presented in a line graph. * Complete, read and interpret information in tables, including timetables.   WWK: that line graphs can be drawn to support with conversions.  **WWK: strategies for reading and interpreting line graphs.**  **WWK: strategies for reading and interpreting tables.**  **WWK: strategies for reading and interpreting two-way tables**  **WWK: strategies for reading and interpreting timetables** |
| Year 6  (National Curriculum) | **Ratio**   * Solve problems involving the relative sizes of two quantities where missing values can be found by using integer multiplication and division facts. * Solve problems involving the calculation of percentages [for example, of measures, and such as 15% of 360] and the use of percentages for comparison. * Solve problems involving similar shapes where the scale factor is known or can be found. * Solve problems involving unequal sharing and grouping using knowledge of fractions and multiples.   WWK: that the relationship between two numbers can be expressed additively or multiplicatively.  **WWK: that ratio represents a multiplicative relationship between two amounts.**  WWK: that ratios are written using the ratio symbol, a colon.  WWK: the differences and similarities between ratios and fractions.  WWK: that ratio and multiplicative relationships can be shown through scale diagrams.  **WWK: that one shape is an enlargement of another if all the matching sides are in the same ratio.**  WWK: that similar shapes are defined as shapes where corresponding sides are in the same proportion and the corresponding angles are equal.  **WWK: strategies to solve ratio problems.**  **WWK: strategies for solving proportion problems.**  **WWK: strategies for solving problems involving recipes.**  **Algebra**   * Use simple formulae. * Generate and describe linear number sequences. * Express missing number problems algebraically. * Find pairs of numbers that satisfy an equation with two unknowns. * Enumerate possibilities of combinations of two variables.   WWK: that function machines can be used to represent an operation (one-step).  WWK: that function machines can be used to represent operations (two-step).  **WWK: that algebraic expressions can be formed using letters to represent numbers.**  **WWK: that the same expression can have different values depending on what number is substituted into it.**  **WWK: the difference between a formula and an expression, noticing that an expression does not have the equals sign, but a formula does.**  WWK: strategies to support when forming equations.  WWK: that using inverse operations helps to solve the equations (one-step equations).  **WWK: that using the inverse operation helps to solve equations (two-step equations).**  **WWK: strategies to solve equations with two unknown values.**  WWK: strategies to solve problems with two unknown values.  **Decimals**   * Identify the value of each digit in numbers given to three decimal places and multiply and divide numbers by 10, 100 and 1000 giving answers up to three decimal places. * Multiply one-digit numbers with up to two decimal places by whole numbers. * Use written division methods in cases where the answer has up to two decimal places. * Solve problems which require answers to be rounded to specified degrees of accuracy.   **WWK: the relationship between the different place value columns, for example hundredths are 10 times the size of thousandths and one-tenth the size of tenths.**  WWK: that a number can have integer and decimal parts.  **WWK: that when asked to round to a given degree of accuracy, they look at the place value column to the right.**  WWK: strategies for adding and subtracting decimals.  **WWK: strategies for multiplying decimal numbers (up to three decimal places) by 10, 100 and 1,000.**  **WWK: strategies for dividing decimal numbers (up to three decimal places) by 10, 100 and 1,000.**  **WWK: strategies for multiplying decimals by integers.**  **WWK: strategies for dividing decimals by integers.**  WWK: strategies for multiplying and dividing decimals in context. | **Fractions, Decimals and Percentages**   * Recall and use equivalences between simple fractions, decimals and percentages, including in different contexts.   WWK: strategies for finding more complex decimal and fraction equivalents.  WWK: that fractions as division can be used to support when converting between fractions and decimals.  WWK: that “per cent” relates to “the number of parts per 100” and that if the whole is split into 10 equal parts, then each part is worth 10%.  WWK: that finding an equivalent fraction with a denominator of 100 can easily mean the percentage equivalence can be found.  WWK: strategies for finding equivalent fractions, decimals and percentages.  WWK: strategies to order fractions, decimals and percentages.  WWK: strategies for finding a percentage of an amount – one step.  WWK: strategies for finding a percentage of an amount – multi-step.  WWK: strategies for calculating percentages – missing values.  **Measurement (Area, Perimeter and Volume)**   * Recognise that shapes with the same areas can have different perimeters and vice versa. * Recognise when it is possible to use formulae for area and volume of shapes. * Calculate the area of parallelograms and triangles. * Calculate, estimate and compare volume of cubes and cuboids using standard units, including cubic centimetres (cm3) and cubic metres (m3), and extending to other units [for example, mm3 and km3].   **WWK: that shapes can look different but still have the same area.**  **WWK: strategies for calculating area and perimeter.**  WWK: that the area of a triangle can be found by counting squares.  WWK: that a right-angled triangle with the same length and perpendicular height as a rectangle has an area that is half the area of the rectangle.  **WWK: that the perpendicular height is not always the length of one of the sides when finding the area of any triangle.**  **WWK: how the parts of the parallelogram can be rearranged to make a rectangle in which the length and width correspond to the base and perpendicular height of the parallelogram.**  WWK: that the volume can be found by multiplying the volume of a single layer by the number of equal layers.  **WWK: the formula: volume of cuboid = length × width × height.**  **Statistics**   * Interpret and construct pie charts and line graphs and use these to solve problems. * Calculate and interpret the mean as an average.   **WWK: that we can only read off approximate values for data that lies between two**  **marked points, which is why a dashed line is used.**  WWK: the importance of a key to ensure that the bar charts can be interpreted when using dual bar charts.  **WWK: that a pie chart quickly and easily shows information as part of the whole.**  **WWK: strategies to interpret pie charts with percentages.**  **WWK: strategies to support us when drawing pie charts.**  **WWK: strategies to calculate and interpret the mean as an average.** |

Nursery/EYFS – Birth to Five

National Curriculum Outcomes

Knowledge Statements

**Five Key Areas of Knowledge**