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**Year 3 Objectives**

**Place Value**

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| COUNTING   * Count from 0 in multiples of 4, 8, 50 and 100; * Find 10 or 100 more or less than a given number. * Count on/back in 10s, 100s from any two and three-digit number. * Recognise two-digit and three-digit multiples of 2, 5, and 10 and three-digit. multiples of 50 and 100. |
| COMPARING NUMBERS   * Compare and order numbers up to 1 000 and position them on a number line. * Order a set of three-digit numbers, saying which one is more or less, and give a number which lies between them. * Recognise odd/even numbers to 100. |
| * IDENTIFYING, REPRESENTING & ESTIMATING NUMBERS * Identify, represent and estimate numbers using different representations. * Read and begin to write the vocabulary of estimation and approximation. |
| READING & WRITING NUMBERS   * Read and write numbers up to 1 000 in numerals and in words. |
| UNDERSTANDING PLACE VALUE   * Recognise the place value of each digit in a three-digit number (hundreds, tens, ones). |
| ROUNDING   * Round any two – digit number to the nearest 10 or 100. * Round any three-digit number to the nearest 100. |
| PROBLEM SOLVING   * Solve number problems and practical problems involving these ideas. * Solve number puzzles. Explain methods and reasoning orally and in writing. * Investigate general statements about familiar numbers, and give examples that match them. |

**Addition and Subtraction**

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| NUMBER BONDS   * Recall addition, subtraction facts for each number up to at least 20. * Recall pairs that make 20. * Recall pairs of multiples of 100 that make 1000. |
| MENTAL CALCULATION   * Add and subtract numbers mentally, including: a three-digit number and ones, a three-digit number and tens, a three-digit number and hundreds. * Add three two-digit numbers. * Partition into tens and units and recombine. * Round up or down and adjust: 127 + 49 (127 + 50 – 1) Or 139 + 45 (140 + 45 – 1). * Add/subtract 1, 10, 100 to any whole number. * Add/subtract 9, 19, 29… and 11, 21, 31… * Recognise that addition can be done in any order. * Put larger number first in order to count on. * Identify near doubles. * Bridge through a multiple of 10 and adjust. * Add three then four single–digit numbers mentally. * Add three or four small numbers by putting the largest number first and/or finding pairs that total 10. * Understand that subtraction is the inverse of addition. * Say a subtraction statement equivalent to an addition statement and vice versa. * Find a small difference by counting up from the smaller number. |
| WRITTEN METHODS   * Add and subtract numbers with up to three digits, using formal written methods of columnar addition and subtraction. * Use partitioning and number line as backups. * Use informal pencil and paper methods to support, record or explain: TU + TU, HTU + TU and HTU + HTU. * Use informal pencil and paper methods to support, record or explain: TU – TU and HTU – TU. |
| INVERSE OPERATIONS, ESTIMATING & CHECKING ANSWERS   * Estimate the answer to a calculation and use inverse operations to check answers. * Check sums by adding in different order. * Check subtraction with addition. |
| PROBLEM SOLVING   * Solve problems, including missing number problems, using number facts, place value, and more complex addition and subtraction. * Choose appropriate number operations and calculation methods to solve word problems with one or more steps. * Explain and record methods informally. |

**Multiplication and Division**

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| MULTIPLICATION & DIVISION FACTS   * Recall multiplication facts in x10 table and derive division facts. * Recall multiplication facts in x2 table and derive division facts. * Recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables. * Derive doubles of whole numbers to 15, corresponding halves. * Derive doubles of whole numbers to 20, corresponding halves. * Understand multiplication as repeated addition and as an array. * Read and begin to write related vocabulary. * Recognise that multiplication can be done in any order. * To multiply by 10/100, shift the digits one / two places to the left. * Begin to find remainders after division. * Round up or down after division. |
| MENTAL CALCULATION   * 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. * Understand division as grouping or sharing. Read and begin to write the related vocabulary. * Recognise division is inverse of multiplication. |
| WRITTEN CALCULATION   * 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. * Say or write division statement corresponding to multiplication statement. |
| PROBLEM SOLVING   * 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. |
| INVERSE OPERATIONS, ESTIMATING & CHECKING ANSWERS   * Check multiplication in a different order. |

**Algebra**

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| EQUATIONS   * Solve problems, including missing number problems, using number facts, place value, and more complex addition and subtraction. * Solve problems, including missing number problems, involving multiplication and division, including integer scaling*.* |
| FORMULAE   * Use formulae to find perimeter. |
| SEQUENCES   * Completing number and shape patterns. * Create and describe simple number sequences. * Finding all the possible sequences. e.g: RTR, TRR... |

**Fractions**

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| COUNTING IN FRACTIONAL STEPS   * Count up and down in tenths. |
| RECOGNISING FRACTIONS   * Recognise, find and write fractions of a discrete set of objects: unit fractions and non-unit fractions with small denominators. * Recognise that tenths arise from dividing an object into 10 equal parts and in dividing one – digit numbers or quantities by 10. * Recognise and use fractions as numbers: unit fractions and non-unit fractions with small denominators. * Recognise unit fractions 1/2, 1/3, 1/4, 1/5, 1/10, and use them to find fractions of shapes and numbers. Begin to recognise fractions that are several parts of a whole 2/3, 3/4, 3/10. Know that 1/2 lies between 1/4 and 3/4. * Estimate a simple fraction (proportion) of a shape. |
| * COMPARING FRACTIONS * Compare and order unit fractions, and fractions with the same denominators * Compare two familiar fractions. |
| COMPARING DECIMALS   * Order decimals. |
| ROUNDING INCLUDING DECIMALS   * Round whole numbers to the nearest 10, 100, 1000. * Round decimals to the nearest 1 decimal place. |
| EQUIVALENCE   * Recognise and show, using diagrams, equivalent fractions with small denominators. * Begin to recognise simple equivalent fractions, e.g. 5/10 is equivalent to 1/2, 5/5 to 1 whole. |
| ADDITION & SUBTRACTION OF FRACTIONS   * Add and subtract fractions with the same denominator within one whole (e.g. 5/7 + 1/7 = 6/7). |
| PROBLEM SOLVING   * Solve problems that involve all of the above. |

**Shape**

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| IDENTIFYING SHAPES & THEIR PROPERTIES   * Classify and describe 3-D and 2-D shapes, referring to reflective symmetry, faces, sides/edges, vertices, angles. * Identify and sketch lines of symmetry, recognise shapes with no line of symmetry. * Sketch reflection of simple shape in a mirror. |
| DRAWING & CONSTRUCTING   * Draw 2-D shapes and make 3-D shapes using modelling materials; recognise 3-D shapes in different orientations and describe them. |
| COMPARING & CLASSIFYING   * Compare and sort common 2-D and 3-D shapes and everyday objects. * Use data handling to compare and sort shapes (a Venn diagram or Carroll Diagram). * Investigate general statements about shapes, and suggest examples to match them. |
| ANGLES   * Recognise angles as a property of shape or a description of a turn. * Identify right angles in 2-D shapes and in the environment. * Identify right angles, recognise that two right angles make a half-turn, three make three quarters of a turn and four a complete turn; identify whether angles are greater than or less than a right angle. * Compare angles with a right angle, saying whether they are more or less. * Identify horizontal and vertical lines and pairs of perpendicular and parallel lines. |

**Measurement**

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| COMPARING & ESTIMATING   * Compare durations of events, for example to calculate the time taken by particular events or tasks. |
| MEASURING & CALCULATING  measure, compare, add and subtract: **lengths** (m/cm/mm);   * Use ruler to draw and measure lines to nearest half cm. * Choose an appropriate number operation and calculation method to solve word problems. * Measure and compare using m, cm. Know relationship m, cm; km, m. * Use decimal notation for m and cm. * Suggest suitable units and equipment to estimate or measure lengths, including km. * Read scales and dials. * Identify unlabelled divisions on a number line or measuring scale. * Record to nearest whole / half unit, or as mixed units (e.g. 3 m 20 cm).   **mass** (kg/g);   * Measure and compare using kilograms and grams, and know the relationship between them. * Suggest suitable units and equipment to estimate or measure mass. * Read scales. * Record measurements using mixed units, or to the nearest whole/half unit (e.g. 3.5 kg).   **volume/capacity** (l/ml)   * Read scales to the nearest division. * Measure and compare using litres and millilitres, and know the relationship between them. * Suggest suitable units and equipment to estimate or measure capacity. * Read scales. Record measurements using mixed units, or to the nearest whole/half unit (e.g. 3.5 litres). * Choose appropriate number operations and calculation methods to solve measurement word problems with one or more steps. * Explain and record method.   Measure the **perimeter** of simple 2-D shapes.  Add and subtract amounts of **money** to give change, using both £ and p in practical contexts   * Recognise all coins and notes. * Find totals, give change and work out how to pay. * Solve problems involving money. |
| TELLING THE TIME   * Tell and write the time from an analogue clock, including 12-hour and 24-hour clocks. * Estimate and read time with increasing accuracy to the nearest minute; record and compare time in terms of seconds, minutes, hours and o’clock; use vocabulary such as a.m./p.m., morning, afternoon, noon and midnight. * Read time to 5 minutes on analogue and 12-hour digital clocks (e.g. 9:40). * Use a calendar. Choose appropriate number operations and calculation methods to solve time word problems with one or two steps. * Explain and record method. Check results. |
| CONVERTING   * Know the number of seconds in a minute and the number of days in each month, year and leap year. * Use units of time and relationship between them. |

**Statistics**

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| INTERPRETING, CONSTRUCTING & PRESENTING DATA   * Interpret and present data using bar charts, pictograms and tables. * Solve a given problem by organising and interpreting data in bar charts – intervals labelled in ones then twos. |
| SOLVING PROBLEMS   * Solve one-step and two-step questions [e.g. ‘How many more?’ and ‘How many fewer?’] using information presented in scaled bar charts and pictograms and tables. * Solve a given problem by organising and interpreting data in frequency tables, and in pictograms with the symbol representing two units. * Solve a given problem by organising and interpreting data in Venn and Carroll diagrams – one criterion. |