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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.
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| 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.
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| * IDENTIFYING, REPRESENTING & ESTIMATING NUMBERS
* Identify, represent and estimate numbers using different representations.
* Read and begin to write the vocabulary of estimation and approximation.
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| READING & WRITING NUMBERS * Read and write numbers up to 1 000 in numerals and in words.
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| UNDERSTANDING PLACE VALUE* Recognise the place value of each digit in a three-digit number (hundreds, tens, ones).
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| ROUNDING * Round any two – digit number to the nearest 10 or 100.
* Round any three-digit number to the nearest 100.
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| 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.
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**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.
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| 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.
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| 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.
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| 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.
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| 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.
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**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.
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| 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.
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| 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.
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| 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.
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| INVERSE OPERATIONS, ESTIMATING & CHECKING ANSWERS * Check multiplication in a different order.
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**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*.*
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| FORMULAE * Use formulae to find perimeter.
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| SEQUENCES * Completing number and shape patterns.
* Create and describe simple number sequences.
* Finding all the possible sequences. e.g: RTR, TRR...
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**Fractions**

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| COUNTING IN FRACTIONAL STEPS * Count up and down in tenths.
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| 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.
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| * COMPARING FRACTIONS
* Compare and order unit fractions, and fractions with the same denominators
* Compare two familiar fractions.
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| COMPARING DECIMALS * Order decimals.
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| ROUNDING INCLUDING DECIMALS * Round whole numbers to the nearest 10, 100, 1000.
* Round decimals to the nearest 1 decimal place.
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| 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.
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| ADDITION & SUBTRACTION OF FRACTIONS * Add and subtract fractions with the same denominator within one whole (e.g. 5/7 + 1/7 = 6/7).
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| PROBLEM SOLVING * Solve problems that involve all of the above.
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**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.
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| DRAWING & CONSTRUCTING * Draw 2-D shapes and make 3-D shapes using modelling materials; recognise 3-D shapes in different orientations and describe them.
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| 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.
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| 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.
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**Measurement**

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| COMPARING & ESTIMATING * Compare durations of events, for example to calculate the time taken by particular events or tasks.
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| 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.
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| 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.
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| 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.
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**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.
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| 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.
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