**Mathematics Overview Year 3/4**

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| **Ongoing Learning Objectives**  - there is no reason why if Y3 children are secure with these objectives they can’t practice the year 4 ones. |
| Year 3* Count from 0 in multiples of 4, 8, 50 & 100;
* Find 10 or 100 more or less than a given number;
* Recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables;
* Add and subtract numbers mentally, including:
* A three-digit number and 1s
* A three-digit number and 10s
* A three-digit number and 100s
 | Year 4* Count in multiples of 6, 7, 9, 25 & 1000;
* Count backwards through zero to include negative numbers;
* Find 1000 more or less than a given number;
* Recall multiplication and division facts for multiplication tables up to 12 x 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;
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| **Term** | **Weeks** |
|  | **1** | **2** | **3** | **4** | **5** | **6** | **7** | **8** | **9** | **10** | **11** | **12** |
| **1** | Place Value | Calculation | FractionsDecimals (Y4) | Measures |
| **2** | Place Value | Calculation | Geometry(angles) | FractionsDecimals (Y4) | Measures(time) | Stats. |
| **3** | Place Value | Calculation | Geometry | FractionsDecimals (Y4) | Stats. | GeomY4 | *Catch Up!* |

**Do NOT extend the Year 3 children by giving them the Y4 work or objectives. Use support from NCETM to ‘drill down’ into the objectives and give the children lots of opportunities for reasoning and to apply fluency.**

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| **Term** | **Area** | **Learning Objective** |
| **1** | **Place Value** | **Year 3*** Identify, represent and estimate numbers using different representations;
* Read and write numbers up to 1000 in numerals and in words
* Recognise the place value of each digit in a 3-digit number (100s, 10s, 1s);
* Compare and order numbers up to 1,000;
* Solve number problems and practical problems involving these ideas (number and place value).
 | **Year 4*** Identify, represent and estimate numbers using different representations;
* Find 1000 more or less than a given number;
* Recognise the place value of each digit in a four-digit number (thousands, hundreds, tens and ones);
* Order and compare numbers beyond 1000;
* Round any number to the nearest 10, 100 or 1000
* solve number problems and practical problems that involve all of the above and with increasingly large positive numbers;
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| **Calculation** | **Year 3*** Add and subtract numbers with up to 3 digits using formal written methods – ***numberline recording in the Autumn term;***
* Solve problems, including missing number problems, using number facts, place value and more complex addition and subtraction;
* 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.
 | **Year 4*** Add and subtract numbers with up to 4 digits using the formal written methods of columnar addition and subtraction where appropriate;
* Solve addition and subtraction two-step problems in contexts, deciding which operations and methods to use and why;
* Multiply two-digit and three-digit numbers by a one-digit number using formal written layout ***when ready***.
* solve problems involving multiplying and adding, including using the distributive law to multiply two-digit numbers by 1 digit, integer scaling problems and harder correspondence problems such as n objects are connected to m objects
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| **Fractions** | **Year 3*** Count up and down in tenths;
* Recognise that tenths arise from dividing an object into 10 equal parts and in dividing one-digit numbers or quantities by 10;
* Recognise, find and write fractions of a discrete set of objects: unit fractions and non-unit fractions with small denominators;
* Recognise and use fractions as numbers: unit fractions and non-unit fractions with small denominators.
 | **Year 4*** Count up and down in hundredths;
* recognise that hundredths arise when dividing an object by 100 and dividing tenths by ten;
* Find the effect of dividing a one- or two-digit number by 10 and 100 and identifying the value of the digits in the answer as ones, tenths and hundredths;
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| **Measures** | **Year 3*** Measure the perimeter of simple 2D shapes;
* Measure, compare, **add and subtract** lengths (m/cm/mm); mass (kg/g); volume/capacity (l/ml);
 | **Year 4*** Measure and calculate the perimeter of a rectilinear figure (including squares) in centimetres and metres;
* Find the area of rectilinear shapes by counting squares.
* Convert between different units of measurement [e.g: kilometre to metre; hour to minute].
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| **2** | **Place Value** | **Year 3*** Solve number problems and practical problems involving these ideas (number and place value). ***Linked to the PV areas you think need revisiting.***
 | **Year 4*** solve number problems and practical problems that involve all of the above *(term 1 place value)* and with increasingly large positive numbers;
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| **Calculation** | * Add and subtract numbers with up to 3 digits using formal written methods.
* Solve problems, including missing number problems, using number facts, place value and more complex addition and subtraction;
* Estimate the answer to a calculation and use inverse operations to check answers
* 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.
 | * Add and subtract numbers with up to 4 digits using the formal written methods of columnar addition and subtraction where appropriate;
* Solve addition and subtraction two-step problems in contexts, deciding which operations and methods to use and why;
* Estimate and use inverse operations to check answers to a calculation
* Multiply two-digit and three-digit numbers by a one-digit number using formal written layout ***when ready***.
* solve problems involving multiplying and adding, including using the distributive law to multiply two-digit numbers by 1 digit, integer scaling problems and harder correspondence problems such as n objects are connected to m objects
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| **Geometry** | **Year 3*** Recognise angles as a property of a shape, or description of a turn
* Identify right angles, recognise that two right angles make a half-turn, 3 make three-quarters of a turn and 4 a complete turn; identify whether angles are greater or less than a right angle.
* Identify horizontal and vertical lines and pairs of perpendicular and parallel lines.
 | **Year 4*** Identify acute and obtuse angles and compare and order angles up to two right angles by size.
* Identify lines of symmetry in 2-D shapes presented in different orientations;
* Complete a simple symmetric figure, with respect to a specific line of symmetry;
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| **Fractions** | **Year 3*** Recognise and show, using diagrams, equivalent fractions with small denominators;
* Compare and order unit fractions and fractions with the same denominators;
* Add and subtract fractions with the same denominator within one whole e.g. $\frac{5}{7}$+$\frac{1}{7}$=$\frac{6}{7}$;
 | **Year 4*** Recognise and show, using diagrams, families of common equivalent fractions;
* Add and subtract fractions with the same denominator.
* Solve problems involving increasingly harder fractions to calculate quantities and fractions to divide quantities, including non-unit fractions where the answer is a whole number.
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| **Measures****(and linked Place value Y4)** | **Year 3*** Tell and write the time from an analogue clock, including using roman numerals from I to XII, and 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 and hours; use vocabulary such as o’clock, am/pm, morning, afternoon, noon and midnight;
* Know the number of seconds in a minute and the number of days in each month, year and leap year;
* Compare durations of events eg, to calculate the time taken by particular events/tasks.
 | **Year 4*** Read Roman numerals to 100 (I to C) and know that over time, the numeral system changed to include the concept of zero and place value;
* Read, write and convert time between analogue and digital 12- and 24-hour clocks;
* Solve problems involving converting from hours to minutes; minutes to seconds; years to months; weeks to days.
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| **Statistics** | **Year 3*** Interpret and present data using bar charts, pictograms and tables;
 | **Year 4*** Interpret and present discrete and continuous data using appropriate graphical methods, including bar charts and time graphs;
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| **3** | **Place value** | **Year 3*** Solve number problems and practical problems involving these ideas (number and place value).
 | **Year 4*** solve number problems and practical problems that involve all of the above and with increasingly large positive numbers;
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| **Calculation/ Measures** | **Year 3*** Add and subtract amounts of money to give change, using both £ and p in practical contexts.
* Add and subtract numbers with up to 3 digits using formal written methods.
* 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.
 | **Year 4*** Estimate, compare and calculate different measures, including money in pounds and pence.
* Solve simple measure and money problems involving fractions and decimals to 2 decimal places;
* Multiply two-digit and three-digit numbers by a one-digit number using formal written layout ***when ready***.
* solve problems involving multiplying and adding, including using the distributive law to multiply two-digit numbers by 1 digit, integer scaling problems and harder correspondence problems such as n objects are connected to m objects
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| **Geometry** | **Year 3*** Draw 2D shapes
* make 3D shapes using modelling materials; Recognise 3D shapes in different orientations and describe them;
 | **Year 4*** Compare and classify geometric shapes, including quadrilaterals and triangles, based on their properties and sizes;
* Identify lines of symmetry in 2-D shapes presented in different orientations;
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| **Fractions****Decimals Y4** | **Year 3*** Recognise and show, using diagrams, equivalent fractions with small denominators;
* Compare and order unit fractions and fractions with the same denominators;
* Add and subtract fractions with the same denominator within one whole e.g. $\frac{5}{7}$+$\frac{1}{7}$=$\frac{6}{7}$;
* Solve problems that involve all of the above (any of the term 1, 2 & 3 fractions work)
 | **Year 4*** Recognise and write decimal equivalents to ¼, ½, ¾;
* Recognise and write decimal equivalents of any number of tenths or hundredths;
* Round decimals with one decimal place to the nearest whole number.
* Compare numbers with the same number of decimal places up to 2-decimal places
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| **Statistics** | **Year 3*** Solve one-step and two-step questions [for example ‘How many more?’ and ‘How many fewer?’] using information presented in scaled bar charts and pictograms and tables.
 | **Year 4*** Solve comparison, sum and difference problems using information presented in bar charts, pictograms, tables and other graphs.
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| **Measures Y3****Geometry Y4** | **Year 3*** Measure, compare, **add and subtract** lengths (m/cm/mm); mass (kg/g); volume/capacity (l/ml);
 | **Year 4*** Describe positions on a 2-D grid as co-ordinates in the first quadrant;
* Describe movements between positions as translations of a given unit to the left/right and up/down;
* Plot specified points and draw sides to complete a given polygon.
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