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| **Year 3: addition and subtraction** | | | | |
| End of year expectations  End of year 3 prior knowledge addition and subtraction:  Pupils should be taught to:   * 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 and subtract numbers with up to three digits, using formal written methods of columnar addition and subtraction * estimate the answer to a calculation and use inverse operations to check answers * solve problems, including missing number problems, using number facts, place value, and more complex addition and subtraction | | | | Develop links with:   * Multiplication and division * Measurement * Statistics * Geometry |
| End of year 2 addition and subtraction  Pupils should be taught to:   * solve problems with addition and subtraction: * using concrete objects and pictorial representations, including those involving numbers, quantities and measures * applying their increasing knowledge of mental and written methods * recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100 * add and subtract numbers using concrete objects, pictorial representations, and mentally, including: * a two-digit number and ones * a two-digit number and tens * two two-digit numbers * adding three one-digit numbers * show that addition of two numbers can be done in any order (commutative) and subtraction of one number from another cannot * recognise and use the inverse relationship between addition and subtraction and use this to check calculations and missing number problems. | | | End of year 2 Number and place value  Pupils should be taught to:   * count in steps of 2, 3, and 5 from 0, and in tens from any number, forward or backward * recognise the place value of each digit in a two-digit number (tens, ones) * identify, represent and estimate numbers using different representations, including the number line * compare and order numbers from 0 up to 100; use <, > and = signs * read and write numbers to at least 100 in numerals and in words * use place value and number facts to solve problems. | |
| **Autumn** | **Spring** | **Summer** | | |
|  |  | Pupils should be taught to:   * 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 and subtract numbers with up to three digits, using formal written methods of columnar addition and subtraction * estimate the answer to a calculation and use inverse operations to check answers   solve problems, including missing number problems, using number facts, place value, and more complex addition and subtraction | | |

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| **Year 3: multiplication and division** | | | | |
| End of year expectations  Pupils should be taught to:   * recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables * 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 integer scaling problems and correspondence problems in which n objects are connected to m objects. | | | | Develop links with   * Addition and subtraction * Measurement * Fractions |
| End of year 2 knowledge: multiplication and division  Pupils should be taught to:   * 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 | | End of year 2 Number and place value  Pupils should be taught to:   * count in steps of 2, 3, and 5 from 0, and in tens from any number, forward or backward * recognise the place value of each digit in a two-digit number (tens, ones) * identify, represent and estimate numbers using different representations, including the number line * compare and order numbers from 0 up to 100; use <, > and = signs * read and write numbers to at least 100 in numerals and in words * use place value and number facts to solve problems. | | |
| Autumn | Spring | | Summer | |
|  |  | | Pupils should be taught to:   * recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables * 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 integer scaling problems and correspondence problems in which n objects are connected to m objects. | |

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| **Year 3 Fractions** | | | |
| End of year expectations in year 3  Pupils should be taught to:   * 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 * recognise and show, using diagrams, equivalent fractions with small denominators * add and subtract fractions with the same denominator within one whole (e.g. 5/7 + 1/7 = 6/7) * compare and order unit fractions, and fractions with the same denominators * solve problems that involve all of the above. | | | Develop links with:   * Number and place value * Multiplication and division * Measurement * Geometry |
| End of year 2 knowledge: fractions  Pupils should be taught to:   * recognise, find, name and write fractions 1/3, 1/4, 2/4 and 3/4 of a length, shape, set of objects or quantity * write simple fractions e.g. 1/2 of 6 = 3 and recognise the equivalence of 2/4 and 1/2. | | | |
| Autumn | Spring | Summer | |
|  |  | * 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 * recognise and show, using diagrams, equivalent fractions with small denominators * add and subtract fractions with the same denominator within one whole (e.g. 5/7 + 1/7 = 6/7) * compare and order unit fractions, and fractions with the same denominators * solve problems that involve all of the above. | |

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| **Year 3 Measurement** | | | |
| End of year expectations in year 3  Pupils should be taught to:   * measure, compare, add and subtract: lengths (m/cm/mm); mass (kg/g); volume/capacity (l/ml) * measure the perimeter of simple 2-D shapes * add and subtract amounts of money to give change, using both £ and p in practical contexts * 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, hours and o’clock; use vocabulary such as a.m./p.m., 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, for example to calculate the time taken by particular events or tasks. | | | Develop links with:   * Multiplication and division * Fractions * Geometry |
| End of year 2 knowledge | | | |
| Autumn | Spring | Summer | |
|  |  | Pupils should be taught to:   * measure, compare, add and subtract: lengths (m/cm/mm); mass (kg/g); volume/capacity (l/ml) * measure the perimeter of simple 2-D shapes * add and subtract amounts of money to give change, using both £ and p in practical contexts * 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, hours and o’clock; use vocabulary such as a.m./p.m., 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, for example to calculate the time taken by particular events or tasks. | |

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| **Year 3 Geometry** | | | |
| End of year expectations in year 3  Geometry: properties of shapes  Pupils should be taught to:   * draw 2-D shapes and make 3-D shapes using modelling materials; recognise 3-D shapes in different orientations and describe them * recognise angles as a property of shape or a description of a turn * 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 * identify horizontal and vertical lines and pairs of perpendicular and parallel lines.   Geometry: position and direction (build on year 2 expectations) | | | Develop links with:   * Number and place value * Multiplication and division * Fractions * Geometry |
| End of year 2 knowledge: Geometry properties of shapes  Pupils should be taught to:   * identify and describe the properties of 2-D shapes, including the number of sides and symmetry in a vertical line * identify and describe the properties of 3-D shapes, including the number of edges, vertices and faces * identify 2-D shapes on the surface of 3-D shapes, for example a circle on a cylinder and a triangle on a pyramid * compare and sort common 2-D and 3-D shapes and everyday objects.   End of year 2 knowledge: Geometry position and direction  Pupils should be taught to:   * order and arrange combinations of mathematical objects in patterns * use mathematical vocabulary to describe position, direction and movement, including movement in a straight line and distinguishing between rotation as a turn and in terms of right angles for quarter, half and three-quarter turns (clockwise and anti-clockwise). | | | |
| Autumn | Spring | Summer | |
|  |  | Pupils should be taught to:   * draw 2-D shapes and make 3-D shapes using modelling materials; recognise 3-D shapes in different orientations and describe them * recognise angles as a property of shape or a description of a turn * 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 * identify horizontal and vertical lines and pairs of perpendicular and parallel lines. | |