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| **Year 2: addition and subtraction** |
| End of year expectations 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.
 | Develop links with:* Multiplication and division
* Measurement
* Statistics
* Geometry
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| End of year 1 addition and subtractionPupils should be taught to: read, write and interpret mathematical statements involving addition (+), subtraction (-) and equals (=) signs  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. | End of year 1 Number and place valuePupils should be taught to: count to and across 100, forwards and backwards, beginning with 0 or 1, or from any given number count, read and write numbers to 100 in numerals; count in multiples of twos, fives and tens given a number, identify one more and one less identify and represent numbers using objects and pictorial representations including the number line, and use the language of: equal to, more than, less than (fewer), most, least read and write numbers from 1 to 20 in numerals and words..  |
| **Autumn** | **Spring** | **Summer** |
|  |  | 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.
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| **Year 2: multiplication and division** |
| End of year expectationsPupils 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
 | Develop links with* Addition and subtraction
* Measurement
* Fractions
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| End of year 1 knowledge: multiplication and divisionPupils should be taught to: solve one-step problems involving multiplication and division, by calculating the answer using concrete objects, pictorial representations and arrays with the support of the teacher.  | End of year 1 Number and place valuePupils should be taught to: count to and across 100, forwards and backwards, beginning with 0 or 1, or from any given number count, read and write numbers to 100 in numerals; count in multiples of twos, fives and tens given a number, identify one more and one less identify and represent numbers using objects and pictorial representations including the number line, and use the language of: equal to, more than, less than (fewer), most, least * read and write numbers from 1 to 20 in numerals and words..
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| Autumn | Spring | Summer |
|  |  | 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
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| **Year 2 Fractions** |
| End of year expectations 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.
 | Develop links with:* Number and place value
* Multiplication and division
* Measurement
* Geometry
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| End of year 1 knowledge: fractionsPupils should be taught to: recognise, find and name a half as one of two equal parts of an object, shape or quantity recognise, find and name a quarter as one of four equal parts of an object, shape or quantity.  |
| Autumn | Spring | Summer |
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 | 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.
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| **Year 2 Measurement** |
| End of year expectations Pupils should be taught to: 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 = 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 compare and sequence intervals of time tell and write the time to five minutes, including quarter past/to the hour and draw the hands on a clock face to show these times. * Know the number of minutes in an hour and the number of hours in a day
 | Develop links with:* Multiplication and division
* Fractions
* Geometry
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| End of year 1 knowledge Pupils should be taught to: compare, describe and solve practical problems for: lengths and heights (e.g. long/short, longer/shorter, tall/short, double/half) mass or weight (e.g. heavy/light, heavier than, lighter than) capacity/volume (full/empty, more than, less than, quarter) time (quicker, slower, earlier, later) measure and begin to record the following: lengths and heights mass/weight capacity and volume time (hours, minutes, seconds) recognise and know the value of different denominations of coins and notes sequence events in chronological order using language such as: before and after, next, first, today, yesterday, tomorrow, morning, afternoon and evening  recognise and use language relating to dates, including days of the week, weeks, months and years  tell the time to the hour and half past the hour and draw the hands on a clock face to show these times |
| Autumn | Spring | Summer |
|  |  |  Pupils should be taught to: 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 = 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 compare and sequence intervals of time tell and write the time to five minutes, including quarter past/to the hour and draw the hands on a clock face to show these times. * Know the number of minutes in an hour and the number of hours in a day
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| **Year 2 Geometry** |
| End of year expectations End of year 2 knowledge: Geometry properties of shapesPupils 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 directionPupils 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).
 | Develop links with:* Number and place value
* Multiplication and division
* Fractions
* Geometry
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| End of year 1 knowledge: Geometry properties of shapesPupils should be taught to: recognise and name common 2-D and 3-D shapes, including: 2-D shapes (e.g. rectangles (including squares), circles and triangles) 3-D shapes (e.g. cuboids (including cubes), pyramids and spheres). .  End of year 1 knowledge: Geometry position and directionPupils should be taught to: describe position, directions and movements, including half, quarter and three-quarter turns.  |
| Autumn | Spring | Summer |
|  |  | End of year 2 knowledge: Geometry properties of shapesPupils 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.

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