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| **Year 4: addition and subtraction** |
| End of year expectations Pupils should be taught to: add and subtract numbers with up to 4 digits using the formal written methods of columnar addition and subtraction where appropriate estimate and use inverse operations to check answers to a calculation solve addition and subtraction two-step problems in contexts, deciding which operations and methods to use and why.  | Develop links with:* Multiplication and division
* Measurement
* Statistics
* Geometry
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| 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
 | End of year 3 Number and place valuePupils should be taught to: * count from 0 in multiples of 4, 8, 50 and 100; find 10 or 100 more or less than a given number
* recognise the place value of each digit in a three-digit number (hundreds, tens, ones)
* compare and order numbers up to 1000
* identify, represent and estimate numbers using different representations
* read and write numbers up to 1000 in numerals and in words
* solve number problems and practical problems involving these ideas
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| **Autumn** | **Spring** | **Summer** |
|  |  | * add and subtract numbers with up to 4 digits using the formal written methods of columnar addition and subtraction where appropriate
* estimate and use inverse operations to check answers to a calculation
* solve addition and subtraction two-step problems in contexts, deciding which operations and methods to use and why

Continue to discuss whether mental strategies would be more appropriate than formal methods for particular calculations |

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| **Year 4: multiplication and division** |
| End of year expectationsPupils should be taught to: recall multiplication and division facts for multiplication tables up to 12 × 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 multiply two-digit and three-digit numbers by a one-digit number using formal written layout solve problems involving multiplying and adding, including using the distributive law to multiply two digit numbers by one digit, integer scaling problems and harder correspondence problems such as n objects are connected to m objects.  | Develop links with* Addition and subtraction
* Measurement
* Fractions
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| End of year 3 knowledge: multiplication and divisionPupils 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
 | End of year 3 Number and place valuePupils should be taught to: * count from 0 in multiples of 4, 8, 50 and 100; find 10 or 100 more or less than a given number
* recognise the place value of each digit in a three-digit number (hundreds, tens, ones)
* compare and order numbers up to 1000
* identify, represent and estimate numbers using different representations
* read and write numbers up to 1000 in numerals and in words
* solve number problems and practical problems involving these ideas
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| Autumn | Spring | Summer |
|  |  | * recall multiplication and division facts for multiplication tables up to 12 × 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
* multiply two-digit and three-digit numbers by a one-digit number using formal written layout
* solve problems involving multiplying and adding, including using the distributive law to multiply two digit numbers by one digit, integer scaling problems and harder correspondence problems such as n objects are connected to m objects
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| **Year 4 Fractions** |
| End of year expectations in year 4Pupils should be taught to: * recognise and show, using diagrams, families of common equivalent fractions
* count up and down in hundredths; recognise that hundredths arise when dividing an object by a hundred and dividing tenths by ten.
* 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
* add and subtract fractions with the same denominator #
* recognise and write decimal equivalents of any number of tenths or hundredths
* recognise and write decimal equivalents to 1/4; 1/2; ¾
* find the effect of dividing a one- or two-digit number by 10 and 100, identifying the value of the digits in the answer as ones, tenths and hundredths
* round decimals with one decimal place to the nearest whole number
* compare numbers with the same number of decimal places up to two decimal places
* solve simple measure and money problems involving fractions and decimals to two decimal places.
 | Develop links with:* Number and place value
* Multiplication and division
* Measurement
* Geometry
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| End of year 3 knowledge: fractionsPupils 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.
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| Autumn | Spring | Summer |
|  | *
 | * recognise and show, using diagrams, families of common equivalent fractions
* count up and down in hundredths; recognise that hundredths arise when dividing an object by a hundred and dividing tenths by ten.
* 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
* 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 two decimal places
* solve simple measure and money problems involving fractions and decimals to two decimal places.
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| **Year 4 Measurement** |
| End of year expectations in year 4Pupils should be taught to: Convert between different units of measure (e.g. kilometre to metre; hour to minute) measure and calculate the perimeter of a rectilinear figure (including squares) in centimetres and metres find the area of rectilinear shapes by counting squares estimate, compare and calculate different measures, including money in pounds and pence 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.  | Develop links with:* Multiplication and division
* Fractions
* Geometry
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| End of year 3 knowledge 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.  |
| Autumn | Spring | Summer |
|  |  | * Convert between different units of measure (e.g. kilometre to metre; hour to minute)

measure and calculate the perimeter of a rectilinear figure (including squares) in centimetres and metres find the area of rectilinear shapes by counting squares estimate, compare and calculate different measures, including money in pounds and pence 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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| **Year 4 Geometry** |
| End of year expectations in year 4Geometry: properties of shapesPupils should be taught to: compare and classify geometric shapes, including quadrilaterals and triangles**,** based on their properties and sizes 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. Geometry: position and directionPupils should be taught to: describe positions on a 2-D grid as coordinates 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.  | Develop links with:* Number and place value
* Multiplication and division
* Fractions
* Geometry
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| End of year 3 knowledge: Geometry properties of shapesPupils 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.  |
| Autumn | Spring | Summer |
|  |  | * compare and classify geometric shapes, including quadrilaterals and triangles**,** based on their properties and sizes
* 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.
* describe positions on a 2-D grid as coordinates 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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