

## Mathematics Objective Reception Overview

## Reception

| Numbers and The Number System |  |  |  |
| :---: | :---: | :---: | :---: |
|  | Autumn | Spring | Summer |
| Counting |  |  |  |
| Count beyond ten. | $\checkmark$ | $\checkmark$ | $\checkmark$ |
| Count objects, actions and sounds | $\checkmark$ | $\checkmark$ | $\checkmark$ |
| Verbally count beyond 20 , recognising the pattern of the counting system. (ELG) |  |  | $\checkmark$ |
| Identifying, Representing and Estimating Numbers |  |  |  |
| Subitise. | $\checkmark$ | $\checkmark$ | $\checkmark$ |
| Link the number symbol (numeral) with its cardinal number value. | $\checkmark$ | $\checkmark$ | $\checkmark$ |
| Subitise (recognising quantities without counting) up to 5 . (ELG) |  |  | $\checkmark$ |
| Reading and Writing Numbers |  |  |  |
| Link the number symbol (numeral) with its cardinal number value. | $\checkmark$ | $\checkmark$ | $\checkmark$ |
| Compare and Order Numbers |  |  |  |
| Compare numbers. | $\checkmark$ | $\checkmark$ | $\checkmark$ |
| Compare quantities up to 10 in different contexts, recognising when one quantity is greater than, less than or the same as the other quantity. (ELG) |  | $\checkmark$ | $\checkmark$ |
| Understanding Place Value |  |  |  |
| Understand the 'one more than/one less than' relationship between consecutive numbers. |  | $\checkmark$ | $\checkmark$ |
| Explore the composition of numbers to 10. |  | $\checkmark$ | $\checkmark$ |
| Have a deep understanding of numbers to 10 , including the composition of each number. (ELG) |  |  | $\checkmark$ |


| Addition and Subtraction |  |  |  |
| :--- | :---: | :---: | :---: |
|  | Autumn | Spring | Summer |
| Automatically recall number bonds for numbers 0-5 and <br> some to 10. |  | $\checkmark$ | $\checkmark$ |


| Addition and Subtraction |  |  |  |
| :--- | :---: | :---: | :---: |
|  | Autumn | Spring | Summer |
| Automatically recall (without reference to rhymes, counting <br> or other aids) number bonds up to 5 (including subtraction <br> facts) and some number bonds to 10, including double <br> facts. (ELG) |  | $\checkmark$ | $\checkmark$ |
| Explore and represent patterns within numbers up to 10, <br> including evens and odds, double facts and how quantities <br> can be distributed evenly. (ELG) |  |  |  |


| Geometry |  |  |  |
| :--- | :---: | :---: | :---: |
|  | Autumn | Spring | Summer |
| Select, rotate and manipulate shapes in order to develop <br> spatial reasoning skills. |  | $\checkmark$ | $\checkmark$ |
| Compose and decompose shapes so that children can <br> recognise a shape can have other shapes within it, just as <br> numbers can. |  | $\checkmark$ | $\checkmark$ |
| Draw information from a simple map. |  | $\checkmark$ | $\checkmark$ |
| Continue, copy and create repeating patterns. |  | $\checkmark$ | $\checkmark$ |


| Measurement |  |  |  |
| :--- | :---: | :---: | :---: |
|  | Autumn | Spring | Summer |
| Compare length, weight and capacity. |  | $\checkmark$ | $\checkmark$ |

## Mathematics Objective Year 1 Overview

| Year 1 |  |  |  |
| :---: | :---: | :---: | :---: |
| Numbers and The Number System |  |  |  |
|  | Autumn | Spring | Summer |
| Count to and across 100, forwards and backwards, beginning with 0 or 1 , or from any given number | $\begin{gathered} \checkmark \\ \text { Within } 20 \end{gathered}$ | Within 50 | $\begin{gathered} \checkmark \\ \text { Within } 100 \end{gathered}$ |
| 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 | $\text { Within } 20$ | $\text { Within } 50$ | Within 100 |
| Count, read and write numbers to 100 in numerals; count in multiples of twos, fives and tens | Within 20 | Within 50 | Within 100 |
| Given a number, identify one more and one less | Within 20 | Within 50 | $\begin{gathered} \checkmark \\ \text { Within } 100 \end{gathered}$ |
| Read and write numbers from 1 to 20 in numerals and words. | $\checkmark$ |  |  |


| Addition and Subtraction |  |  |  |
| :--- | :---: | :---: | :---: |
|  | Autumn | Spring | Summer |
| Read, write and interpret mathematical statements <br> involving addition (+), subtraction ( - ) and equals (=) signs | $\checkmark$ | $\checkmark$ |  |
| Represent and use number bonds and related subtraction <br> facts within 20 | $\checkmark$ <br> Within 10 | $\checkmark$ <br> Within 20 |  |
| Add and subtract one-digit and two-digit numbers to 20, <br> including zero |  | $\checkmark$ |  |
| Solve one-step problems that involve addition and <br> subtraction, using concrete objects and pictorial <br> representations, and missing number problems such as <br> $7=?-9$. | Within 10 |  |  |


| Multiplication and Division |  |  |  |
| :--- | :---: | :---: | :---: |
|  | Autumn | Spring | Summer |
| Solve one-step problems involving multiplication and <br> division, by calculating the answer using concrete objects, <br> pictorial representations and arrays with the support of the <br> teacher. |  |  |  |


| Fractions and Decimals |  |  |  |
| :--- | :---: | :---: | :---: |
|  | Autumn | Spring | Summer |
| Recognise, find and name a half as one of two equal parts <br> of an object, shape or quantity |  |  | $\boldsymbol{V}$ |
| Recognise, find and name a quarter as one of four equal <br> parts of an object, shape or quantity. |  |  | $\sqrt{ }$ |


| Geometry |  |  | Summer |
| :--- | :---: | :---: | :---: |
|  | Autumn | Spring | Summ |
| Recognise and name common 2-D and 3-D shapes, <br> including: 2-D shapes [for example, rectangles (including <br> squares), circles and triangles] 3-D shapes [for example, <br> cuboids (including cubes), pyramids and spheres]. | $\checkmark$ |  |  |
| Describe position, direction and movement, including <br> whole, half, quarter and three-quarter turns. |  |  |  |


| Measurement |  |  |  |
| :---: | :---: | :---: | :---: |
|  | Autumn | Spring | Summer |
| Compare, describe and solve practical problems for: lengths and heights [for example, long/short, longer/shorter, tall/short, double/half] mass/weight [for example, heavy/light, heavier than, lighter than] capacity and volume [for example, full/empty, more than, less than, half, half full, quarter] time [for example, quicker, slower, earlier, later] |  |  | $\stackrel{\checkmark}{\text { Money, Time }}$ |
| Measure and begin to record the following: <br> - lengths and heights <br> - mass/weight <br> - capacity and volume <br> - time (hours, minutes, seconds) |  |  | $\stackrel{\checkmark}{\text { Money, Time }}$ |
| Recognise and know the value of different denominations of coins and notes |  |  | $\checkmark$ |
| Sequence events in chronological order using language [for example, before and after, next, first, today, yesterday, tomorrow, morning, afternoon and evening] |  |  | $\checkmark$ |
| Recognise and use language relating to dates, including days of the week, weeks, months and years |  |  | $\checkmark$ |
| Tell the time to the hour and half past the hour and draw the hands on a clock face to show these times. |  |  | $\checkmark$ |

## Mathematics Objective Year 2 Overview

## Year 2

| Numbers and The Number System |  |  |  |
| :--- | :---: | :---: | :---: |
|  | Autumn | Spring | Summer |
| Count in steps of 2, 3, and 5 from 0, and in tens from any <br> number, forward and backward <br> recognise the place value of each digit in a two-digit <br> number (tens, ones) | $\checkmark$ |  |  |
| Recognise the place value of each digit in a two-digit <br> number (tens, ones) | $\checkmark$ |  |  |
| Identify, represent and estimate numbers using different <br> representations, including the number line; compare and <br> order numbers from 0 up to 100; use <, > and = signs | $\checkmark$ |  |  |
| Read and write numbers to at least 100 in numerals and in |  |  |  |
| words |  |  |  |


| Addition and Subtraction |  |  |  |
| :--- | :---: | :---: | :---: |
|  | Autumn | Spring | Summer |
| solve problems with addition and subtraction: <br> - using concrete objects and pictorial <br> representations, including those involving numbers, <br> quantities and measures <br> applying their increasing knowledge of mental and <br> written methods | $\checkmark$ |  |  |
| Recall and use addition and subtraction facts to 20 fluently, <br> and derive and use related facts up to 100 | $\checkmark$ |  |  |
| Add and subtract numbers using concrete objects, pictorial <br> representations, and mentally, including: <br> a two-digit number and ones <br> a two-digit number and tens <br> two two-digit numbers <br> adding three one-digit numbers |  |  |  |
| Show that addition of two numbers can be done in any <br> order (commutative) and subtraction of one number from <br> another cannot | $\checkmark$ |  |  |
| Recognise and use the inverse relationship between <br> addition and subtraction and use this to check calculations <br> and solve missing number problems. | $\checkmark$ |  |  |


| Multiplication and Division |  |  |  |
| :--- | :---: | :---: | :---: |
|  | Autumn | Spring | Summer |
| recall and use multiplication and division facts for the 2, 5 <br> and 10 multiplication tables, including recognising odd and <br> even numbers |  |  |  |
| calculate mathematical statements for multiplication and <br> division within the multiplication tables and write them <br> using the multiplication (x), division ( $\div$ ) and equals (=) <br> signs |  | $\checkmark$ |  |
| show that multiplication of two numbers can be done in any <br> order (commutative) and division of one number by <br> another cannot |  | $\checkmark$ |  |
| solve problems involving multiplication and division, using <br> materials, arrays, repeated addition, mental methods, and <br> multiplication and division facts, including problems in <br> contexts. |  | $\checkmark$ |  |


| Fractions and Decimals |  |  |  |
| :--- | :---: | :---: | :---: |
|  | Autumn | Spring | Summer |
| Recognise, find, name and write fractions $1 / 3,1 / 4,2 / 4$, and $3 / 4$ <br> of a length, shape, set of objects or quantity |  | $\checkmark$ |  |
| Write simple fractions for example, $1 / 2$ of $6=3$ and <br> recognise the equivalence of $2 / 4$ and $1 / 2$ |  | $\checkmark$ |  |


| Geometry |  |  |  |
| :--- | :---: | :---: | :---: |
|  | Autumn | Spring | Summer |
| Identify and describe the properties of 2-D shapes, <br> including the number of sides and line symmetry in a <br> vertical line |  |  |  |
| Identify and describe the properties of 3-D shapes, <br> including the number of edges, vertices and faces; identify <br> 2-D shapes on the surface of 3-D shapes, [for example, a <br> circle on a cylinder and a triangle on a pyramid] |  | $\checkmark$ |  |
| Compare and sort common 2-D and 3-D shapes and <br> everyday objects. |  | $\checkmark$ |  |
| Order and arrange combinations of mathematical objects <br> in patterns and sequences |  |  |  |


| Geometry |  |  | Summer |
| :--- | :---: | :---: | :---: |
|  | Autumn | Spring | Summer |
| Use mathematical vocabulary to describe position, <br> direction and movement, including movement in a straight <br> line and distinguishing between rotation as a turn and in <br> terms of right angles for quarter, half and three-quarter <br> turns (clockwise and anti-clockwise). |  |  |  |


| Measurement |  |  | Summer |
| :--- | :---: | :---: | :---: |
| Choose and use appropriate standard units to estimate <br> and measure length/height in any direction (m/cm); mass <br> (kg/g); temperature ( ${ }^{\circ}$ C); capacity (litres/ml) to the nearest <br> appropriate unit, using rulers, scales, thermometers and <br> measuring vessels |  |  |  |
| Compare and order lengths, mass, volume/capacity and <br> 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 <br> amounts of money |  |  |  |
| Solve simple problems in a practical context involving <br> addition and subtraction of money of the same unit, <br> including giving change |  |  |  |
| Compare and sequence intervals of time <br> tell and write the time to five minutes, including quarter <br> past/to the hour and draw the hands on a clock face to <br> show these times <br> Know the number of minutes in an hour and the number of <br> hours in a day. |  |  |  |

## Mathematics Objective Year 3 Overview

| Year 3 |  |  |  |  |  |  |
| :--- | :---: | :---: | :---: | :---: | :---: | :---: |
| Numbers and The Number System |  |  |  |  |  |  |
|  | Autumn | Spring | Summer |  |  |  |
| Count from 0 in multiples of 4, 8, 50 and 100 <br> find 10 or 100 more or less than a given number | $\checkmark$ |  |  |  |  |  |
| Recognise the place value of each digit in a three-digit <br> number (hundreds, tens, ones) | $\checkmark$ |  |  |  |  |  |
| Compare and order numbers up to 1000 | $\checkmark$ |  |  |  |  |  |
| Identify, represent and estimate numbers using different <br> representations | $\checkmark$ |  |  |  |  |  |
| Read and write numbers up to 1000 in numerals and in <br> words | $\checkmark$ |  |  |  |  |  |
| Solve number problems and practical problems involving <br> these ideas. | $\checkmark$ |  |  |  |  |  |


| Addition and Subtraction |  |  |  |
| :--- | :---: | :---: | :---: |
|  | Autumn | Spring | Summer |
| Add and subtract numbers mentally, including <br> - a three-digit number and ones <br> a three-digit number and tens <br> - a three-digit number and hundreds |  |  |  |
| Add and subtract numbers with up to three digits, using <br> formal written methods of columnar addition and <br> subtraction | $\checkmark$ |  |  |
| Estimate the answer to a calculation and use inverse <br> operations to check answers | $\checkmark$ |  |  |
| Solve problems, including missing number problems, using <br> number facts, place value, and more complex addition and <br> subtraction. | $\checkmark$ |  |  |


| Multiplication and Division |  |  |  |
| :--- | :---: | :---: | :---: |
|  | Autumn | Spring | Summer |
| Recall and use multiplication and division facts for the 3, 4 <br> and 8 multiplication tables | $\checkmark$ |  |  |


| Multiplication and Division |  |  |  |
| :--- | :---: | :---: | :---: |
|  | Autumn | Spring | Summer |
| Write and calculate mathematical statements for <br> multiplication and division using the multiplication tables <br> that they know, including for two-digit numbers times one- <br> digit numbers, using mental and progressing to formal <br> written methods |  |  |  |
| Solve problems, including missing number problems, <br> involving multiplication and division, including positive <br> integer scaling problems and correspondence problems in <br> which n objects are connected to m objects. |  | $\checkmark$ |  |

## Fractions and Decimals

|  | Autumn | Spring | Summer |
| :--- | :--- | :---: | :---: |
| Count up and down in tenths; recognise that tenths arise <br> from dividing an object into 10 equal parts and in dividing <br> one-digit numbers or quantities by 10 |  |  |  |
| Recognise, find and write fractions of a discrete set of <br> objects: unit fractions and non-unit fractions with small <br> denominators |  | $\checkmark$ |  |
| Recognise and use fractions as numbers: unit fractions and <br> non-unit fractions with small denominators |  | $\checkmark$ |  |
| Recognise and show, using diagrams, equivalent fractions <br> with small denominators |  | $\checkmark$ |  |
| Add and subtract fractions with the same denominator <br> within one whole |  | $\checkmark$ |  |
| Compare and order unit fractions, and fractions with the <br> same denominators |  | $\checkmark$ |  |
| Solve problems that involve all of the above. |  | $\checkmark$ |  |


| Geometry |  |  | Summer |
| :--- | :---: | :---: | :---: |
|  | Autumn | Spring | Summ |
| Draw 2-D shapes and make 3-D shapes using modelling <br> materials; recognise 3-D shapes in different orientations <br> and describe them |  |  |  |
| Recognise angles as a property of shape or a description <br> of a turn |  | $\checkmark$ |  |
| Identify right angles, recognise that two right angles make <br> a half-turn, three make three quarters of a turn and four a <br> complete turn; identify whether angles are greater than or <br> less than a right angle |  | $\checkmark$ |  |


| Geometry |  |  |  |
| :--- | :---: | :---: | :---: |
|  | Autumn | Spring | Summer |
| Identify horizontal and vertical lines and pairs of <br> perpendicular and parallel lines. |  |  | $\checkmark$ |


| Measurement |  |  |  |
| :---: | :---: | :---: | :---: |
|  | Autumn | Spring | Summer |
| Measure, compare, add and subtract: lengths ( $\mathrm{m} / \mathrm{cm} / \mathrm{mm}$ ); mass (kg/g); volume/capacity (l/ml) |  | $\begin{aligned} & \text { Length and Perimeter } \\ & \text { Money } \end{aligned}$ | $\begin{gathered} \boldsymbol{\downarrow} \\ \text { Mass And Capacity } \\ \text { Time } \end{gathered}$ |
| Measure the perimeter of simple 2-D shapes |  | $\checkmark$ |  |
| Add and subtract amounts of money to give change, using both $£$ and p in practical contexts |  | $\checkmark$ |  |
| Tell and write the time from an analogue clock, including using Roman numerals from I to XII, and 12-hour and 24hour clocks |  |  | $\checkmark$ |
| 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, a.m./p.m., morning, afternoon, noon and midnight |  |  | $\checkmark$ |
| Know the number of seconds in a minute and the number of days in each month, year and leap year |  |  | $\checkmark$ |
| Compare durations of events |  |  | $\checkmark$ |


| Statistics |  |  |  |
| :--- | :---: | :---: | :---: |
|  | Autumn | Spring | Summer |
| Interpret and present data using bar charts, pictograms <br> and tables |  | $\checkmark$ |  |
| Solve one-step and two-step questions [for example, 'How <br> many more?' and 'How many fewer?'] using information <br> presented in scaled bar charts and pictograms and tables. |  | $\checkmark$ |  |

## Mathematics Objective Year 4 Overview

| Year 4 |  |  |  |
| :--- | :---: | :---: | :---: |
| Numbers and The Number System |  |  |  |
|  | Autumn | Spring | Summer |
| Count in multiples of 6, 7, 9, 25 and 1000 | $\checkmark$ |  |  |
| Find 1000 more or less than a given number | $\checkmark$ |  |  |
| Count backwards through zero to include negative <br> numbers | $\checkmark$ |  |  |
| Recognise the place value of each digit in a four-digit <br> number (thousands, hundreds, tens, and ones) | $\checkmark$ |  |  |
| Order and compare numbers beyond 1000; identify, <br> represent and estimate numbers using different <br> representations | $\checkmark$ |  |  |
| Round any number to the nearest 10, 100 or 1000 | $\checkmark$ |  |  |
| Solve number and practical problems that involve all of the <br> above and with increasingly large positive numbers | $\checkmark$ |  |  |
| Read Roman numerals to 100 (I to C) and know that over <br> time, the numeral system changed to include the concept <br> of zero and place value. | $\checkmark$ |  |  |


| Addition and Subtraction |  |  |  |
| :--- | :---: | :---: | :---: |
|  | Autumn | Spring | Summer |
| Add and subtract numbers with up to 4 digits using the <br> formal written methods of columnar addition and <br> subtraction where appropriate | $\checkmark$ |  |  |
| Estimate and use inverse operations to check answers <br> to a calculation | $\checkmark$ |  |  |
| Solve addition and subtraction two-step problems in <br> contexts, deciding which operations and methods to <br> use and why. | $\checkmark$ |  |  |


| Multiplication and Division |  |  |  |
| :--- | :---: | :---: | :---: |
|  | Autumn | Spring | Summer |
| Recall multiplication and division facts for multiplication <br> tables up to $12 \times 12$ |  | $\checkmark$ |  |
| Multiply two-digit and three-digit numbers by a one-digit <br> number using formal written layout |  | $\checkmark$ |  |
| Solve problems involving multiplying and adding, including <br> using the distributive law to multiply two digit numbers by <br> one digit, integer scaling problems and harder <br> correspondence problems such as n objects are connected <br> to m objects. |  | $\checkmark$ |  |


| Fractions and Decimals |  |  |  |
| :--- | :--- | :--- | :--- |
| Recognise and show, using diagrams, families of common <br> equivalent fractions |  | Autumn | Spring |
| Count up and down in hundredths; recognise that <br> hundredths arise when dividing an object by one hundred <br> and dividing tenths by ten. |  | $\checkmark$ |  |
| Solve problems involving increasingly harder fractions to <br> calculate quantities, and fractions to divide quantities, <br> including non-unit fractions where the answer is a whole <br> number |  | $\checkmark$ |  |
| Add and subtract fractions with the same denominator |  | $\checkmark$ |  |
| Recognise and write decimal equivalents of any number of <br> tenths or hundredths |  | $\checkmark$ |  |
| Recognise and write decimal equivalents |  | $\checkmark$ |  |
| Find the effect of dividing a one- or two-digit number by 10 <br> and 100, identifying the value of the digits in the answer as <br> ones, tenths and hundredths |  | $\checkmark$ |  |
| Round decimals with one decimal place to the nearest <br> whole number |  | $\checkmark$ |  |
| Compare numbers with the same number of decimal places <br> up to two decimal places <br> Solve simple measure and money problems involving <br> fractions and decimals to two decimal places. |  | $\checkmark$ |  |


| Geometry |  |  |  |
| :--- | :---: | :---: | :---: |
|  | Autumn | Spring | Summer |
| Compare and classify geometric shapes, including <br> quadrilaterals and triangles, based on their properties and <br> sizes |  |  |  |


| Geometry |  |  |  |
| :--- | :---: | :---: | :---: |
|  | Autumn | Spring | Summer |
| Identify acute and obtuse angles and compare and order <br> angles up to two right angles by size |  |  | $\checkmark$ |
| Identify lines of symmetry in 2-D shapes presented in <br> different orientations |  | $\checkmark$ |  |
| Complete a simple symmetric figure with respect to a <br> specific line of symmetry. |  | $\checkmark$ |  |
| Position and Direction <br> Describe positions on a 2-D grid as coordinates in the first <br> quadrant |  | $\checkmark$ |  |
| Describe movements between positions as translations of <br> a given unit to the left/right and up/down |  | $\checkmark$ |  |
| Plot specified points and draw sides to complete a given |  |  |  |
| polygon. |  |  | $\checkmark$ |


| Measurement |  |  |  |
| :---: | :---: | :---: | :---: |
|  | Autumn | Spring | Summer |
| Convert between different units of measure [for example, kilometre to metre; hour to minute] | Length and Perimeter | $\underset{\text { Area }}{\checkmark}$ | $\begin{gathered} \boldsymbol{V} \\ \text { Money } \\ \text { Time } \end{gathered}$ |
| Measure and calculate the perimeter of a rectilinear figure (including squares) in centimetres and metres | $\checkmark$ |  |  |
| Find the area of rectilinear shapes by counting squares |  | $\checkmark$ |  |
| Estimate, compare and calculate different measures, including money in pounds and pence | Length and Perimeter | $\underset{\text { Area }}{\checkmark}$ |  |
| Read, write and convert time between analogue and digital 12 - and 24 -hour clocks |  |  | $\checkmark$ |
| Solve problems involving converting from hours to minutes; minutes to seconds; years to months; weeks to days. |  |  | $\checkmark$ |

## Mathematics Objective Year 5 Overview

## Year 5

| Numbers and The Number System |  |  |  |
| :--- | :---: | :---: | :---: |
|  | Autumn | Spring | Summer |
| Read, write, order and compare numbers to at least <br> 1000000 and determine the value of each digit | $\checkmark$ |  |  |
| Count forwards or backwards in steps of powers of 10 for <br> any given number up to 1000000 | $\checkmark$ |  |  |
| Interpret negative numbers in context, count forwards and <br> backwards with positive and negative whole numbers, <br> including through zero | $\checkmark$ |  |  |
| Round any number up to 1000000 to the nearest 10, 100, <br> 1000,10000 and 100 000 | $\checkmark$ |  |  |
| Solve number problems and practical problems that <br> involve all of the above | $\checkmark$ |  |  |
| Read Roman numerals to 1000 <br> written in Roman numerals. and recognise years | $\checkmark$ |  |  |


| Addition and Subtraction |  |  |  |
| :--- | :---: | :---: | :---: |
|  | Autumn | Spring | Summer |
| Add and subtract whole numbers with more than 4 digits, <br> including using formal written methods (columnar addition <br> and subtraction) | $\checkmark$ |  |  |
| Add and subtract numbers mentally with increasingly large <br> numbers | $\checkmark$ |  |  |
| Use rounding to check answers to calculations and <br> determine, in the context of a problem, levels of accuracy | $\checkmark$ |  |  |
| Solve addition and subtraction multi-step problems in <br> contexts, deciding which operations and methods to use <br> and why. | $\checkmark$ |  |  |


| Multiplication and Division |  |  |  |
| :--- | :---: | :---: | :---: |
|  | Autumn | Spring | Summer |
| identify multiples and factors, including finding all factor <br> pairs of a number, and common factors of two numbers | $\checkmark$ |  |  |


| Multiplication and Division |  |  |  |
| :---: | :---: | :---: | :---: |
|  | Autumn | Spring | Summer |
| Know and use the vocabulary of prime numbers, prime factors and composite (non-prime) numbers | $\checkmark$ |  |  |
| Establish whether a number up to 100 is prime and recall prime numbers up to 19 | $\checkmark$ |  |  |
| Multiply numbers up to 4 digits by a one- or two-digit number using a formal written method, including long multiplication for two-digit numbers |  | $\checkmark$ |  |
| Multiply and divide numbers mentally drawing upon known facts |  | $\checkmark$ |  |
| Divide numbers up to 4 digits by a one-digit number using the formal written method of short division and interpret remainders appropriately for the context |  | $\checkmark$ |  |
| Multiply and divide whole numbers and those involving decimals by 10, 100 and 1000 | $\checkmark$ |  |  |
| Recognise and use square numbers and cube numbers, and the notation for squared (2) and cubed (3) | $\checkmark$ |  |  |
| Solve problems involving multiplication and division including using their knowledge of factors and multiples, squares and cubes | $\checkmark$ | $\checkmark$ |  |
| Solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign |  | $\checkmark$ |  |
| Solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates |  | $\checkmark$ |  |


| Fractions and Decimals |  |  |  |
| :--- | :---: | :---: | :---: |
|  | Autumn | Spring | Summer |
| Compare and order fractions whose denominators are all <br> multiples of the same number |  | $\checkmark$ |  |
| Identify, name and write equivalent fractions of a given <br> fraction, represented visually, including tenths and <br> hundredths |  | $\checkmark$ |  |
| Recognise mixed numbers and improper fractions and <br> convert from one form to the other and write mathematical <br> statements > 1 as a mixed number |  | $\checkmark$ |  |
| Add and subtract fractions with the same denominator and <br> denominators that are multiples of the same number |  | $\checkmark$ |  |
| Multiply proper fractions and mixed numbers by whole <br> numbers, supported by materials and diagrams |  | $\checkmark$ | $\checkmark$ |


| Fractions and Decimals |  |  |  |
| :--- | :---: | :---: | :---: |
|  | Autumn | Spring | Summer |
| Read and write decimal numbers as fractions |  | $\checkmark$ |  |
| Recognise and use thousandths and relate them to tenths, <br> hundredths and decimal equivalents |  | $\checkmark$ |  |
| Round decimals with two decimal places to the nearest <br> whole number and to one decimal place |  | $\checkmark$ |  |
| Read, write, order and compare numbers with up to three <br> decimal places |  | $\checkmark$ |  |
| Solve problems involving number up to three decimal <br> places |  | $\checkmark$ |  |
| Recognise the per cent symbol (\%) and understand that per <br> cent relates to 'number of parts per hundred', and write <br> percentages as a fraction with denominator 100, and as a <br> decimal |  | $\checkmark$ |  |
| Solve problems which require knowing percentage and <br> decimal equivalents of and those fractions with a <br> denominator of a multiple of 10 or 25 |  | $\checkmark$ |  |


| Geometry |  |  | Suring |
| :--- | :--- | :--- | :--- |
|  | Summer |  |  |
| Identify 3-D shapes, including cubes and other cuboids, <br> from 2-D representations |  |  |  |
| Know angles are measured in degrees: estimate and <br> compare acute, obtuse and reflex angles |  |  |  |
| Draw given angles, and measure them in degrees <br> identify angles at a point and one whole turn (total 360); <br> angles at a point on a straight line and a turn (total <br> $180)$ and other multiples of 90o |  | $\checkmark$ |  |
| Use the properties of rectangles to deduce related facts <br> and find missing lengths and angles |  | $\checkmark$ |  |
| Distinguish between regular and irregular polygons based <br> on reasoning about equal sides and angles. |  | $\checkmark$ |  |
| Identify, describe and represent the position of a shape <br> following a reflection or translation, using the appropriate <br> language, and know that the shape has not changed. |  |  |  |


| Measurement |  |  |  |
| :---: | :---: | :---: | :---: |
|  | Autumn | Spring | Summer |
| Convert between different units of metric measure (for example, kilometre and metre; centimetre and metre; centi metre and millimetre; gram and kilogram; litre and millilitre) | $\underset{\substack{\text { Perimeter } \\ \text { Area }}}{\checkmark}$ |  | Converting Units Volume |
| Understand and use approximate equivalences between metric units and common imperial units such as inches, pounds and pints |  |  | Converting Units Volume |
| Measure and calculate the perimeter of composite rectilinear shapes in centimetres and metres | $\checkmark$ |  |  |
| Calculate and compare the area of rectangles (including squares), and including using standard units, square centimetres (cm2) and square metres (m2) and estimate the area of irregular shapes | $\checkmark$ |  |  |
| Estimate volume [for example, using 1 cm 3 blocks to build cuboids (including cubes)] and capacity [for example, using water] |  |  | $\checkmark$ |
| Solve problems involving converting between units of time |  |  | $\checkmark$ |
| Use all four operations to solve problems involving measure [for example, length, mass, volume, money] using decimal notation, including scaling. | $\checkmark$ |  | $\checkmark$ |


| Statistics |  |  |  |
| :--- | :---: | :---: | :---: |
|  | Autumn | Spring | Summer |
| Solve comparison, sum and difference problems using <br> information presented in a line graph | $\checkmark$ |  |  |
| Complete, read and interpret information in tables, <br> including timetables. | $\checkmark$ |  |  |

## Mathematics Objective Year 6 Overview

## Year 6

| Numbers and The Number System |  |  |  |
| :--- | :---: | :---: | :---: |
|  | Autumn | Spring | Summer |
| Read, write, order and compare numbers up to <br> 10000000 and determine the value of each digit | $\checkmark$ |  |  |
| Round any whole number to a required degree of <br> accuracy | $\checkmark$ |  |  |
| Round any whole number to a required degree of <br> accuracy | $\checkmark$ |  |  |
| Use negative numbers in context, and calculate intervals <br> across zero | $\checkmark$ |  |  |
| Solve number and practical problems that involve all of the <br> above. | $\checkmark$ |  |  |

Multiplication, Division, Addition and Subtraction (The Four Operations)

|  | Autumn | Spring | Summer |
| :--- | :---: | :---: | :---: |
| Multiply multi-digit numbers up to 4 digits by a two-digit <br> whole number using the formal written method of long <br> multiplication | $\checkmark$ |  |  |
| Divide numbers up to 4 digits by a two-digit whole number <br> using the formal written method of long division, and <br> interpret remainders as whole number remainders, <br> fractions, or by rounding, as appropriate for the context | $\checkmark$ |  |  |
| Divide numbers up to 4 digits by a two-digit number using <br> the formal written method of short division where <br> appropriate, interpreting remainders according to the <br> context |  | $\checkmark$ |  |
| Perform mental calculations, including with mixed <br> operations and large numbers | $\checkmark$ |  |  |
| Identify common factors, common multiples and prime <br> numbers | $\checkmark$ |  |  |
| Use their knowledge of the order of operations to carry out <br> calculations involving the four operations | $\checkmark$ |  |  |
| Solve addition and subtraction multi-step problems in <br> contexts, deciding which operations and methods to use <br> and why | $\checkmark$ |  |  |


| Multiplication, Division, Addition and Subtraction (The Four Operations) |  |  |  |
| :--- | :---: | :---: | :---: |
|  | Autumn | Spring | Summer |
| Solve problems involving addition, subtraction, <br> multiplication and division | $\checkmark$ |  |  |
| Use estimation to check answers to calculations and <br> determine, in the context of a problem, an appropriate <br> degree of accuracy. | $\checkmark$ |  |  |


| Algebra |  |  | Autumn |
| :--- | :---: | :---: | :---: |
|  | Spring | Summer |  |
| Use simple formulae |  | $\checkmark$ |  |
| Generate and describe linear number sequences |  | $\checkmark$ |  |
| Express missing number problems algebraically |  | $\checkmark$ |  |
| Find pairs of numbers that satisfy an equation with two <br> unknowns |  | $\checkmark$ |  |
| Enumerate possibilities of combinations of two variables. |  | $\checkmark$ |  |


| Fractions and Decimals |  |  |  |
| :--- | :---: | :---: | :---: |
|  | Autumn | Spring | Summer |
| Use common factors to simplify fractions; use common <br> multiples to express fractions in the same denomination | $\checkmark$ |  |  |
| Compare and order fractions, including fractions >1 |  |  |  |$\quad$ V


| Ratio and Proportion |  |  |  |
| :--- | :---: | :---: | :---: |
|  | Autumn | Spring | Summer |
| Solve problems involving the relative sizes of two <br> quantities where missing values can be found by using <br> integer multiplication and division facts |  | $\checkmark$ |  |
| Solve problems involving the calculation of percentages <br> [for example, of measures, and such as 15\% of 360] and <br> the use of percentages for comparison |  | $\checkmark$ |  |
| Solve problems involving similar shapes where the scale <br> factor is known or can be found |  | $\checkmark$ |  |
| Solve problems involving unequal sharing and grouping <br> using knowledge of fractions and multiples. |  | $\checkmark$ |  |


| Geometry |  |  | Sutumn |
| :--- | :---: | :---: | :---: |
|  | Spring | Summer |  |
| Draw 2-D shapes using given dimensions and angles <br> recognise, describe and build simple 3-D shapes, including <br> making nets |  |  |  |
| Compare and classify geometric shapes based on their <br> properties and sizes and find unknown angles in any <br> triangles, quadrilaterals, and regular polygons |  |  |  |
| Illustrate and name parts of circles, including radius, <br> diameter and circumference and know that the diameter is <br> twice the radius |  |  |  |
| Recognise angles where they meet at a point, are on a <br> straight line, or are vertically opposite, and find missing <br> angles. |  |  |  |
| Describe positions on the full coordinate grid (all four <br> quadrants) |  |  |  |
| Draw and translate simple shapes on the coordinate plane, |  |  |  |
| and reflect them in the axes. |  |  |  |


| Measurement |  |  |  |
| :--- | :---: | :---: | :---: |
|  | Autumn | Spring | Summer |
| Solve problems involving the calculation and conversion of <br> units of measure, using decimal notation up to three <br> decimal places where appropriate |  |  |  |


| Measurement |  |  |  |
| :--- | :---: | :---: | :---: |
|  | Autumn | Spring | Summer |
| Use, read, write and convert between standard units, <br> converting measurements of length, mass, volume and <br> time from a smaller unit of measure to a larger unit, and <br> vice versa, using decimal notation to up to three decimal <br> places |  |  |  |
| Convert between miles and kilometres | $\checkmark$ |  |  |
| Recognise that shapes with the same areas can have <br> different perimeters and vice versa |  | $\checkmark$ |  |
| Recognise when it is possible to use formulae for area and <br> volume of shapes |  | $\checkmark$ |  |
| Calculate the area of parallelograms and triangles |  | $\checkmark$ |  |
| Calculate, estimate and compare volume of cubes and <br> cuboids using standard units, including <br> cubic centimetres (cm3) and cubic metres (m3), and <br> extending to other units [for example, mm3 and km3]. |  | $\checkmark$ |  |


| Statistics |  |  |  |
| :--- | :---: | :---: | :---: |
|  | Autumn | Spring | Summer |
| Interpret and construct pie charts and line graphs and use <br> these to solve problems |  |  | $\checkmark$ |
| Calculate and interpret the mean as an average. |  |  | $\checkmark$ |

