# The Ashdene Maths Learning Sequence in Reception

Counting

Mental Fluency

Retrieval Practice

Discover, share and think together

Practice

Overlearning through provision

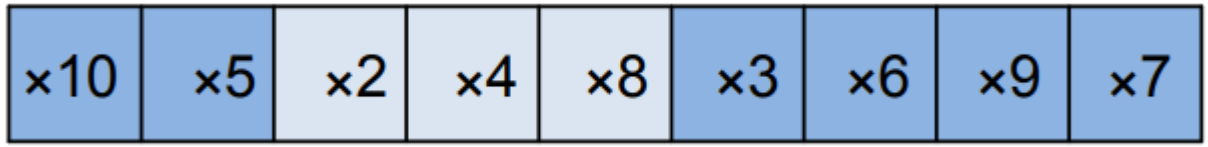
Every day the children will complete a short counting session. This is not meaningless rote learning; rather, this is an important step to developing conceptual understanding through identifying patterns and relationships between numbers. The children will also practice their mental fluency skills. The children look at a different strategy each week in order to support their fluency. Both the counting and mental fluency sessions happen outside the maths lesson x5 times a week.

Every maths lesson (1/2 an hour) starts with some retrieval practice in order to consolidate prior learning and to prepare the children for the upcoming learning. The next part of the lesson is where the children 'discover, share and think together.' During this part of the lesson, the teacher models the maths teaching for the day. The children are then given time to independently practice their maths work. This work is differentiated, ensuring children are both supported and challenged where appropriate.

The maths learning is then further consolidated through both overlearning sessions and interventions.

**Some further information on how we develop children's fluency with basic number facts**

Fluent computational skills are dependent on accurate and rapid recall of basic number bonds to 20 and times-tables facts. At Ashdene we spend a short time every day on these basic facts quickly leads to improved fluency. This can be done using simple whole class chorus chanting. This is not meaningless rote learning; rather, this is an important step to developing conceptual understanding through identifying patterns and relationships between the tables (for example, that the products in the 6× table are double the products in the 3× table). We learn our multiplication tables in this order to provide opportunities to make connections:




Year 2 ×10 ×5 ×2

Year 3 ×10 ×5 ×2 ×4 ×8 ×3

Year 4 ×10 ×5 ×2 ×4 ×8 ×3 ×6 ×9 ×7 (including 11x and 12x)

**Develop children's fluency in mental calculation**

Efficiency in calculation requires having a variety of mental strategies. In particular, we recognise the importance of 10 and partitioning numbers to bridge through 10. For example: 9 + 6 = 9 + 1 + 5 = 10 + 5 = 15. It is helpful to make a 10 as this makes the calculation easier.

**Develop fluency in the use of formal written methods**

Teaching column methods for calculation provides the opportunity to develop both procedural and conceptual fluency. At Ashdene we ensure that children understand the structure of the mathematics presented in the algorithms, with a particular emphasis on place value. We use concrete resources to support the development of fluency and understanding. Informal methods of recording calculations are an important stage to help children develop fluency with formal methods of recording. However, it is important that these are only used for a short period to help children understand the internal logic of formal methods of recording calculations. These are the stepping stones to formal written methods.

Ashdene Primary School

Excellence: everyone, everywhere, every day

# Ashdene Primary School – Maths Curriculum Progression Document

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| **Purpose of study** | Mathematics is a creative and highly inter-connected discipline that has been developed over centuries, providing the solution to some of history's most intriguing problems. It is essential to everyday life, critical to science, technology and engineering, and necessary for financial literacy and most forms of employment. A high-quality mathematics education therefore provides a foundation for understanding the world, the ability to reason mathematically, an appreciation of the beauty and power of mathematics, and a sense of enjoyment and curiosity about the subject. |
| **Aims** | • become fluent in the fundamentals of mathematics, including through varied and frequent practice with increasingly complex problems over time, so that pupils develop conceptual understanding and the ability to recall and apply knowledge rapidly and accurately<br>• reason mathematically by following a line of enquiry, conjecturing relationships and generalisations, and developing an argument, justification or proof using mathematical language<br>• can solve problems by applying their mathematics to a variety of routine and non-routine problems with increasing sophistication, including breaking down problems into a series of simpler steps and persevering in seeking solutions. |
| **Maths at Ashdene** | At Ashdene in every maths lesson we aim to develop children's reasoning and problem solving. Furthermore, children develop their mathematical understanding through the use of concrete, pictorial and abstract resourcing which are made available to all children in every lesson. We aim to revisit and review mathematical concepts, make links between them and use them in real life contexts, in order to ensure that children have a deeper understanding of the maths curriculum. |

| EYFS | Maths Objective | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Year 6 |
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| <u>Numerical Patterns</u><br><br>**Verbally count beyond 20, recognizing the pattern of the counting system**<br><br>**Compare quantities up to 10 in different contexts, recognizing when one quantity is greater than, less than, or the same as the other quantity**<br><br><u>Number</u><br><br>**Subitise (recognize quantities without counting) up to 5** | **Number – Number and Place Value** | Count to and across 100, forwards and backwards, beginning with 0 or 1, or from any given number<br><br>Count, read and write numbers to 100 in numerals; count in multiples of twos, fives and tens<br><br>Given a number, identify one more and one less<br><br>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 | Count in steps of 2, 3, and 5 from 0, and in tens from any number, forward and backward<br><br>Recognise the place value of each digit in a two-digit number (tens, ones)<br><br>Identify, represent and estimate numbers using different representations, including the number line<br><br>Compare and order numbers from 0 up to 100; use <, > and = signs<br><br>Read and write numbers to at least 100 in numerals and in words | Count from 0 in multiples of 4, 8, 50 and 100; find 10 or 100 more or less than a given number<br><br>Recognise the place value of each digit in a three-digit number (hundreds, tens, ones)<br><br>Compare and order numbers up to 1000<br><br>Identify, represent and estimate numbers using different representations<br><br>Read and write numbers up to 1000 in numerals and in words | Count in multiples of 6, 7, 9, 25 and 1000<br><br>Find 1000 more or less than a given number<br><br>Count backwards through zero to include negative numbers<br><br>Recognise the place value of each digit in a four-digit number (thousands, hundreds, tens, and ones)<br><br>Order and compare numbers beyond 1000<br><br>Identify, represent and estimate numbers using different representations | Read, write, order and compare numbers to at least 1 000 000 and determine the value of each digit<br><br>Count forwards or backwards in steps of powers of 10 for any given number up to 1 000 000<br><br>Interpret negative numbers in context, count forwards and backwards with positive and negative whole numbers, including through zero<br><br>Round any number up to 1 000 000 to the nearest 10, 100, 1000, 10 000 and 100 000 | Read, write, order and compare numbers up to 10 000 000 and determine the value of each digit<br><br>Round any whole number to a required degree of accuracy<br><br>Use negative numbers in context, and calculate intervals across zero<br><br>Solve number and practical problems that involve all of the above. |

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| | | Read and write numbers from 1 to 20 in numerals and words. | Use place value and number facts to solve problems. | Solve number problems and practical problems involving these ideas. | Round any number to the nearest 10, 100 or 1000<br><br>Solve number and practical problems that involve all of the above and with increasingly large positive numbers<br><br>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. | Solve number problems and practical problems that involve all of the above<br><br>Read Roman numerals to 1000 (M) and recognise years written in Roman numerals. | |
| Numerical patterns<br><br>**Have a deep understanding of numbers to 10, including the composition of each number**<br><br>Number<br><br>**Automatically recall (without reference to rhymes, counting or other aids) number bonds up to 5 (including subtraction facts) and some number bonds to 10, including double facts** | **Number – Addition and Subtraction** | Read, write and interpret mathematical statements involving addition (+), subtraction (–) and equals (=) signs<br><br>Represent and use number bonds and related subtraction facts within 20<br><br>Add and subtract one-digit and two-digit numbers to 20, including zero<br><br>Solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as 7 = ☐ – 9. | Solve problems with addition and subtraction: using concrete objects and pictorial representations, including those involving numbers, quantities and measures<br><br>Applying their increasing knowledge of mental and written methods<br><br>Recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100<br><br>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<br><br>Show that addition of two numbers can be done in any order (commutative) and subtraction of one number from another cannot | Add and subtract numbers mentally, including:<br><br>- A three-digit number and ones<br>- A three-digit number and tens<br>- A three-digit number and hundreds<br><br>Add and subtract numbers with up to three digits, using formal written methods of columnar addition and subtraction<br><br>Estimate the answer to a calculation and use inverse operations to check answers<br><br>Solve problems, including missing number problems, using number facts, place value, and more complex addition and subtraction. | Add and subtract numbers with up to 4 digits using the formal written methods of columnar addition and subtraction where appropriate<br><br>Estimate and use inverse operations to check answers to a calculation<br><br>Solve addition and subtraction two-step problems in contexts, deciding which operations and methods to use and why. | Add and subtract whole numbers with more than 4 digits, including using formal written methods (columnar addition and subtraction)<br><br>Add and subtract numbers mentally with increasingly large numbers<br><br>Use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy<br><br>Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why. | Multiply multi-digit numbers up to 4 digits by a two-digit whole number using the formal written method of long multiplication<br><br>Divide numbers up to 4 digits by a two-digit whole number using the formal written method of long division, and interpret remainders as whole number remainders, fractions, or by rounding, as appropriate for the context<br><br>Divide numbers up to 4 digits by a two-digit number using the formal written method of short division where appropriate, interpreting remainders according to the context<br><br>Perform mental calculations, including with mixed operations and large numbers<br><br>Identify common factors, common multiples and prime numbers<br><br>Use their knowledge of the order of operations to carry out calculations involving the four operations |

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| | | | Recognise and use the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems. | | | | Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why |
| Numerical patterns<br><br>**Explore and represent patterns within numbers up to 10, including evens and odds, double facts and how quantities can be distributed equally** | **Number – Multiplication and Division** | 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. | Recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers<br><br>Calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication (×), division (÷) and equals (=) signs<br><br>Show that multiplication of two numbers can be done in any order (commutative) and division of one number by another cannot<br><br>Solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods, and multiplication and division facts, including problems in contexts. | Recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables<br><br>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<br><br>Solve problems, including missing number problems, involving multiplication and division, including positive integer scaling problems and correspondence problems in which n objects are connected to m objects. | Recall multiplication and division facts for multiplication tables up to 12 × 12<br><br>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<br><br>Recognise and use factor pairs and commutativity in mental calculations<br><br>Multiply two-digit and three-digit numbers by a one-digit number using formal written layout<br><br>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. | Identify multiples and factors, including finding all factor pairs of a number, and common factors of two numbers<br><br>Know and use the vocabulary of prime numbers, prime factors and composite (non-prime) numbers<br><br>Establish whether a number up to 100 is prime and recall prime numbers up to 19<br><br>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<br><br>Multiply and divide numbers mentally drawing upon known facts<br><br>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<br><br>Multiply and divide whole numbers and those involving decimals by 10, 100 and 1000 | |
| Numerical patterns<br><br>**Explore and represent patterns within numbers up to 10 … and how quantities can be distributed equally** | **Number - Fractions** | Recognise, find and name a half as one of two equal parts of an object, shape or quantity | Recognise, find, name and write fractions $\frac{1}{3}$, $\frac{1}{4}$, $\frac{2}{4}$ and $\frac{3}{4}$ of a length, shape, set | Count up and down in tenths; recognise that tenths arise from dividing an object into 10 equal parts and in dividing | Recognise and show, using diagrams, families of common equivalent fractions<br><br>Count up and down in hundredths; recognise that | Compare and order fractions whose denominators are all multiples of the same number | Use common factors to simplify fractions; use common multiples to express fractions in the same denomination |

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| | | Recognise, find and name a quarter as one of four equal parts of an object, shape or quantity. | of objects or quantity<br><br>Write simple fractions for example, $\frac{1}{2}$ of 6 = 3 and recognise the equivalence of $\frac{2}{4}$ and $\frac{1}{2}$. | one-digit numbers or quantities by 10<br><br>Recognise, find and write fractions of a discrete set of objects: unit fractions and non- unit fractions with small denominators<br><br>Recognise and use fractions as numbers: unit fractions and non-unit fractions with small denominators<br><br>Recognise and show, using diagrams, equivalent fractions with small denominators<br><br>Add and subtract fractions with the same denominator within one whole [for example, $\frac{5}{7}+\frac{1}{7}=\frac{6}{7}$]<br><br>Compare and order unit fractions, and fractions with the same denominators<br><br>Solve problems that involve all of the above. | hundredths arise when dividing an object by one hundred and dividing tenths by ten.<br><br>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<br><br>Add and subtract fractions with the same denominator<br><br>Recognise and write decimal equivalents of any number of tenths or hundredths<br><br>Recognise and write decimal equivalents to $\frac{1}{4}$, $\frac{1}{2}$, $\frac{3}{4}$<br><br>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<br><br>Round decimals with one decimal place to the nearest whole number<br><br>Compare numbers with the same number of decimal places up to two decimal places<br><br>Solve simple measure and money problems involving fractions and decimals to two decimal places. | Identify, name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths<br><br>Recognise mixed numbers and improper fractions and convert from one form to the other and write mathematical statements > 1 as a mixed number [for example, $\frac{2}{5}+\frac{4}{5}=\frac{6}{5}=1\frac{1}{5}$]<br><br>Add and subtract fractions with the same denominator and denominators that are multiples of the same number<br><br>Multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams<br><br>Read and write decimal numbers as fractions [for example, 0.71 = $\frac{71}{100}$]<br><br>Recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents<br><br>Round decimals with two decimal places to the nearest whole number and to one decimal place<br><br>Read, write, order and compare numbers with up to three decimal places | Compare and order fractions, including fractions > 1<br><br>Add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fractions<br><br>Multiply simple pairs of proper fractions, writing the answer in its simplest form [for example, $\frac{1}{4}\times\frac{1}{2}=\frac{1}{8}$]<br><br>Divide proper fractions by whole numbers [for example, $\frac{1}{3}\div 2=\frac{1}{6}$]<br><br>Associate a fraction with division and calculate decimal fraction equivalents [for example, 0.375] for a simple fraction [for example, $\frac{3}{8}$]<br><br>Identify the value of each digit in numbers given to three decimal places and multiply and divide numbers by 10, 100 and 1000 giving answers up to three decimal places<br><br>Multiply one-digit numbers with up to two decimal places by whole numbers<br><br>Use written division methods in cases where the answer has up to two decimal places<br><br>Solve problems which require answers to be rounded to specified degrees of accuracy<br><br>Recall and use equivalences between simple fractions, decimals and |

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| | | | | | | Solve problems involving number up to three decimal places<br><br>Recognise the per cent symbol (%) and understand that per cent relates to 'number of parts per hundred', and write percentages as a fraction with denominator 100, and as a decimal<br><br>Solve problems which require knowing percentage and decimal equivalents of $\frac{1}{2}$ ' $\frac{1}{4}$ ' $\frac{1}{5}$ ' $\frac{2}{5}$ ' $\frac{4}{5}$ and those fractions with a denominator of a multiple of 10 or 25. | percentages, including in different contexts |
| 2019 ELG<br><br>**Children use everyday language to talk about size, weight, capacity, position, distance, time and money to compare quantities and objects and to solve problems**<br><br>***There are currently no measurement ELG statements on the new adopter curriculum** | **Measurement** | Compare, describe and solve practical problems for:<br><br>- Lengths and heights [for example, long/short, longer/shorter, tall/short, double/half]<br>- Mass/weight [for example, heavy/light, heavier than, lighter than]<br>- Capacity and volume [for example, full/empty, more than, less than, half, half full, quarter]<br>- Time [for example, quicker, slower, earlier, later]<br><br>Measure and begin to record the following:<br><br>- Lengths and heights<br>- Mass/weight<br>- Capacity and volume | 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<br><br>Compare and order lengths, mass, volume/capacity and record the results using >, < and =<br><br>Recognise and use symbols for pounds (£) and pence (p); combine amounts to make a particular value<br><br>Find different combinations of coins that equal the same amounts of money<br><br>Solve simple problems in a practical context involving | Measure, compare, add and subtract: lengths (m/cm/mm); mass (kg/g); volume/capacity (l/ml)<br><br>Measure the perimeter of simple 2-D shapes<br><br>Add and subtract amounts of money to give change, using both £ and p in practical contexts<br><br>Tell and write the time from an analogue clock, including using Roman numerals from I to XII, and 12-hour and 24-hour clocks<br><br>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, | Convert between different units of measure [for example, kilometre to metre; hour to minute]<br><br>Measure and calculate the perimeter of a rectilinear figure (including squares) in centimetres and metres<br><br>Find the area of rectilinear shapes by counting squares<br><br>Estimate, compare and calculate different measures, including money in pounds and pence | Convert between different units of metric measure (for example, kilometre and metre; centimetre and metre; centimetre and millimetre; gram and kilogram; litre and millilitre)<br><br>Understand and use approximate equivalences between metric units and common imperial units such as inches, pounds and pints<br><br>Measure and calculate the perimeter of composite rectilinear shapes in centimetres and metres<br><br>Calculate and compare the area of rectangles (including squares), and including using standard units, square centimetres ($cm^2$) and square metres ($m^2$) and | Solve problems involving the calculation and conversion of units of measure, using decimal notation up to three decimal places where appropriate<br><br>Use, read, write and convert between standard units, converting measurements of length, mass, volume and time from a smaller unit of measure to a larger unit, and vice versa, using decimal notation to up to three decimal places<br><br>Convert between miles and kilometres<br><br>Recognise that shapes with the same areas can have different perimeters and vice versa<br><br>Recognise when it is possible to use formulae for area and volume of shapes |

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| | | - Time (hours, minutes, seconds)<br><br>Recognise and know the value of different denominations of coins and notes<br><br>Sequence events in chronological order using language [for example, before and after, next, first, today, yesterday, tomorrow, morning, afternoon and evening]<br><br>Recognise and use language relating to dates, including days of the week, weeks, months and years<br><br>Tell the time to the hour and half past the hour and draw the hands on a clock face to show these times. | addition and subtraction of money of the same unit, including giving change<br><br>Compare and sequence intervals of time<br><br>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<br><br>Know the number of minutes in an hour and the number of hours in a day. | afternoon, noon and midnight<br><br>Know the number of seconds in a minute and the number of days in each month, year and leap year<br><br>Compare durations of events [for example to calculate the time taken by particular events or tasks]. | | estimate the area of irregular shapes<br><br>Estimate volume [for example, using 1 $cm^3$ blocks to build cuboids (including cubes)] and capacity [for example, using water]<br><br>Solve problems involving converting between units of time<br><br>Use all four operations to solve problems involving measure [for example, length, mass, volume, money] using decimal notation, including scaling. | Calculate the area of parallelograms and triangles<br><br>Calculate, estimate and compare volume of cubes and cuboids using standard units, including cubic centimetres ($cm^3$) and cubic metres ($m^3$), and extending to other units [for example, $mm^3$ and $km^3$]. |
| 2019 ELG<br><br>**They recognise, create and describe patterns. They explore characteristics of everyday objects and shapes and use mathematical language to describe them.**<br><br>***There are currently no Geometry ELG statements on the new adopter curriculum** | **Geometry – Properties of Shape** | Recognise and name common 2-D and 3-D shapes, including: - 2-D shapes [for example, rectangles (including squares), circles and triangles] - 3-D shapes [for example, cuboids (including cubes), pyramids and spheres]. | Identify and describe the properties of 2-D shapes, including the number of sides and line symmetry in a vertical line<br><br>Identify and describe the properties of 3-D shapes, including the number of edges, vertices and faces<br><br>Identify 2-D shapes on the surface of 3-D shapes, [for example, a circle on a cylinder and a triangle on a pyramid]<br><br>Compare and sort common 2-D and 3-D shapes and everyday objects. | Draw 2-D shapes and make 3-D shapes using modelling materials; recognise 3-D shapes in different orientations and describe them<br><br>Recognise angles as a property of shape or a description of a turn<br><br>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<br><br>Identify horizontal and vertical lines and pairs of | Compare and classify geometric shapes, including quadrilaterals and triangles, based on their properties and sizes<br><br>Identify acute and obtuse angles and compare and order angles up to two right angles by size<br><br>Identify lines of symmetry in 2-D shapes presented in different orientations<br><br>Complete a simple symmetric figure with respect to a specific line of symmetry. | Identify 3-D shapes, including cubes and other cuboids, from 2-D representations<br><br>Know angles are measured in degrees: estimate and compare acute, obtuse and reflex angles<br><br>Draw given angles, and measure them in degrees ($^o$)<br><br>Identify:<br><br>- Angles at a point and one whole turn (total $360^o$) | Draw 2-D shapes using given dimensions and angles<br><br>Recognise, describe and build simple 3-D shapes, including making nets<br><br>Compare and classify geometric shapes based on their properties and sizes and find unknown angles in any triangles, quadrilaterals, and regular polygons<br><br>Illustrate and name parts of circles, including radius, diameter and circumference and know that the diameter is twice the radius<br><br>Recognise angles where they meet at a point, are on a straight line, or are vertically opposite, and find missing angles. |

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| | | | | perpendicular and parallel lines. | | - Angles at a point on a straight line and $\frac{1}{2}$ a turn (total $180^{o}$)<br>- Other multiples of $90^{o}$<br><br>Use the properties of rectangles to deduce related facts and find missing lengths and angles<br><br>Distinguish between regular and irregular polygons based on reasoning about equal sides and angles. | |
| 2019 ELG<br><br>**Children use everyday language to talk about position to compare quantities of objects and to solves problems**<br><br>***There are currently no Geometry ELG statements on the new adopter curriculum** | **Geometry – Position, Direction and Movement** | Describe position, direction and movement, including whole, half, quarter and three- quarter turns. | Order and arrange combinations of mathematical objects in patterns and sequences<br><br>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). | | Describe positions on a 2-D grid as coordinates in the first quadrant<br><br>Describe movements between positions as translations of a given unit to the left/right and up/down<br><br>▪ plot specified points and draw sides to complete a given polygon. | Identify, describe and represent the position of a shape following a reflection or translation, using the appropriate language, and know that the shape has not changed. | Describe positions on the full coordinate grid (all four quadrants)<br><br>Draw and translate simple shapes on the coordinate plane, and reflect them in the axes. |
| | **Statistics** | | Interpret and construct simple pictograms, tally charts, block diagrams and simple tables<br><br>Ask and answer simple questions by counting the number of objects in each category and sorting the categories by quantity<br><br>Ask and answer questions about totalling and comparing categorical data | Interpret and present data using bar charts, pictograms and tables<br><br>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. | Interpret and present discrete and continuous data using appropriate graphical methods, including bar charts and time graphs.<br><br>Solve comparison, sum and difference problems using information presented in bar charts, pictograms, tables and other graphs. | Solve comparison, sum and difference problems using information presented in a line graph<br><br>Complete, read and interpret information in tables, including timetables. | Interpret and construct pie charts and line graphs and use these to solve problems<br><br>Calculate and interpret the mean as an average. |

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| | **Ration and Proportion** | | | | | | Solve problems involving the relative sizes of two quantities where missing values can be found by using integer multiplication and division facts<br><br>Solve problems involving the calculation of percentages [for example, of measures, and such as 15% of 360] and the use of percentages for comparison<br><br>Solve problems involving similar shapes where the scale factor is known or can be found<br><br>Solve problems involving unequal sharing and grouping using knowledge of fractions and multiples. |
| | **Algebra** | | | | | | Use simple formulae<br><br>Generate and describe linear number sequences<br><br>Express missing number problems algebraically<br><br>Find pairs of numbers that satisfy an equation with two unknowns<br><br>Numerate possibilities of combinations of two variables. |

# Ashdene Primary School – Maths Curriculum

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| Purpose of study | Mathematics is a creative and highly inter-connected discipline that has been developed over centuries, providing the solution to some of history's most intriguing problems. It is essential to everyday life, critical to science, technology and engineering, and necessary for financial literacy and most forms of employment. A high-quality mathematics education therefore provides a foundation for understanding the world, the ability to reason mathematically, an appreciation of the beauty and power of mathematics, and a sense of enjoyment and curiosity about the subject. |
| Aims | • become fluent in the fundamentals of mathematics, including through varied and frequent practice with increasingly complex problems over time, so that pupils develop conceptual understanding and the ability to recall and apply knowledge rapidly and accurately<br>• reason mathematically by following a line of enquiry, conjecturing relationships and generalisations, and developing an argument, justification or proof using mathematical language<br>• can solve problems by applying their mathematics to a variety of routine and non-routine problems with increasing sophistication, including breaking down problems into a series of simpler steps and persevering in seeking solutions. |
| Maths at Ashdene | At Ashdene in every maths lesson we aim to develop children's reasoning and problem solving. Furthermore, children develop their mathematical understanding through the use of concrete, pictorial and abstract resourcing which are made available to all children in every lesson. We aim to revisit and review mathematical concepts and make links between them in order to ensure children have a deeper understanding of the maths curriculum. |

## Year Reception

| | Week | Mental Maths | Suggested Long Term Retrieval | Maths Curriculum |
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| HT1 | 1 (4 days) | | | |
| | 2 | Number recognition Counting to 10/20 | | **Numbers to 5**<br>Count up to 5 with correct 1:1 correspondance.<br>Recognise numerals from 1-5<br>Order numerals from 1-5<br>Begin to write numerals from 1-5<br>Subitise within 5<br>**Textbook A Unit 1** |
| | 3 | Subitising to 5 | | |

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| | 4 | Subitising to 5 | | **Comparing within 5**<br>Know the meaning of the words more and less<br>Recognise a group that has more object<br>Recognise a group that has less objects<br>Idenitify one more than a number up to 5<br>Identify one less than a number up to 5 |
| | 5 | One more and one less | | |
| | 6 | Counting objects that can't be moved | | |
| | 7 | | | **2D shape**<br>Recognise shape within the environement<br>Name 2D shapes square, triangle,rectangle, hexagon, pentagon, circle |
| **HT2** | **Week** | **Mental Maths** | **Suggested Long Term Retrieval** | **Maths Curriculum** |
| | 1 (4 days) | Number bonds to 6 | | **Composition of numbers within 5**<br>Know that numbers up to 5 can be made using 2 other numbers. |
| | 2 | Identifying more/fewer | | **Addition within 5**<br>Know that + means to add amounts together<br>Know that = means equals<br>Know that when we add amounts together a number gets bigger<br>Read number sentence and use resources to find the answer |

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| | 3 | Counting on from a given number | | **Number bonds within 5**<br>Number bonds are 2 numbers that total 5<br>There is more than one way to make the number 5<br>Name more than one way to make the number 5 |
| | 4 | Counting back from a given number | | **Subtraction within 5**<br>Know that – means to take away (subtract)<br>Know that = means equals<br>Know that when we subtract amounts the number gets smaller<br>Read a number sentence and use resources to find out the answer. |
| | 5 | | | **Numbers to 10**<br>Recognise numerals from 6-10<br>Name numerals from 6-7<br>Counting using 1:1 correspondence and amount up to 10<br>Count out 10 from a bigger group<br>Order numbers from 1-10<br>Begin to write numerals from 6-10<br>Subitise amounts within 10 |
| | 6 | Finding one more or one less than a given number<br><br>Number recognition | | |
| | 7 | | | |

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| | **8** | Number bonds within 5 | | **Retrieval Practice**<br>**Numbers to 5, Shape, Number bonds within 5, Space** |
| **HT3** | **Week** | **Mental Maths** | **Suggested Long Term Retrieval** | **Maths Curriculum** |
| | **1**<br>**(4 days)** | Counting to 10 | Number recognition 1-5<br><br>Number ordering 1-5 | **Composition of numbers to 10**<br>Know that numbers up to 10 can be made using 2 other numbers. |
| | **2** | Finding one more or one less from numbers to 20 | Forming numerals 1-10 | **Comparing numbers within 10**<br>Use a number line to find one more than a number to 10<br>Use a number line to find one less than number to 10<br>Use resources to add 1 more and 1 less than any number to 10 |
| | **3** | Counting on and counting back | Counting with 1:1 correspondence 1-10<br>**Challenge**: Spot a mistake | **Addition within 10**<br>Know that + means to add amounts together<br>Know that= means the total amount<br>Know that when we add 2 amounts together the number gets bigger<br>Rad a number sentence and use resources to work out the answer. |
| | **4** | Subitising 10 | Identifying more and less with amounts up to 10<br>**Challenge:** true or false statements. | **Number bonds**<br>Know that number bonds are 2 umbers that make 10<br>There are more than one way to make 10<br>Name more than one way to make the number 10. |
| | **5** | Finding one more and one less | Reading addition sentences and finding the total amount<br>**Challenge:** writing number sentences | |
| | **6** | Counting on Counting back | Number bonds to 10<br>**Challenge:** writing number sentences to represent | **Subtracting numbers within 10**<br>Know that – means to take away<br>Know that = means equals<br>Know that when we subtract the number gets smaller<br>Read subtraction sentences and use resources to find out the answer |

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| | | | number bonds to 10 | |
| HT4 | Week | Mental Maths | Suggested Long Term Retrieval | Maths Curriculum |
| | 1 | Number bonds within 5 | | **Retrieval Practice**<br>**Numbers to 10, Number bonds within 10** |
| | | | Measuring objects using practical resources.<br>**Challenge:** writing the length or height | **Numbers Bonds to 10 – National Curriculum Links**<br>Have a deep understanding of number to 10, including the composition of each number.<br><br>Automatically recall (without reference to rhymes, counting or other aids) number bonds up to 5 (including subtraction facts) and some number bonds to 10, including double facts.<br><br>Potential Provision activities |
| | 2 | Counting on<br>Counting back | | |
| | 3 | | | **Number bonds within 10** |
| | 4 | One more/one less | | |

| ACTIVITY | AREA | DESCRIPTION | RESOURCES |
|---|---|---|---|
| Spots on the ladybird | Classroom | Provide large laminated ladybirds and counters in two colours. Ask children to use the counters to put 10 spots on the ladybirds. How many ways can they find to do this? | Laminated ladybird template (photocopiable 16), counters in two colours |
| Skittles | Outside | Arrange the 10 bottles like skittles. Children take turns to roll a ball to knock them down. They should choose how to record the number of skittles standing and fallen using pictures, numerals or other representations. | 10 plastic bottles or skittles, soft ball |
| How many am I hiding? | Classroom | Show children a bead string with 10 beads. Establish that there are exactly 10 beads. Cover some with your hand and show children the remaining beads. Children use various strategies to find the hidden number. They could then play independently in pairs or small groups. | 10 bead string |
| Birthday cupcakes | Art area | Children work in small groups to decorate a playdough cake with 10 candles to represent a number bond to 10. Each group has 20 candles, 10 in one colour, 10 in a different colour. Ask: *How many different ways can you show 10?* | Playdough, candles (sets of 10 in at least two colours) |

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| | **5** (4 days) | Retrieval practice across HT4 | | **Measure (Length, height and weight) – National Curriculum Links**<br>Compare quantities up to 10 in different contexts, recognising when one quantity is greater than, less than or the same as the other quantity.<br><br>Demonstrate strength, balance and coordination when playing.<br><br>Potential Provision activities |

| ACTIVITY | AREA | DESCRIPTION | RESOURCES |
|---|---|---|---|
| Is it long enough? | Dining area | Provide a selection of jars of different heights and spoons of different lengths. Ask: *Could you scoop out something from the bottom of this jar with this spoon? If not, why not?* | Selection of jars or pots of varying heights and spoons of varying lengths |
| Same length | Classroom | Ask children to search for items that are the same length or height as a tower of 2–10 multilink cubes. | Multilink cubes |
| Can you measure? | Classroom | Ask children to measure strips of paper of varying lengths using a piece of string. Can they determine which strip is longer or shorter than the string? | Lengths of string, strips of paper in varying lengths (some shorter, some longer than the string) |

| | Week | Mental Maths | Suggested Long Term Retrieval | Maths Curriculum |
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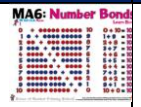
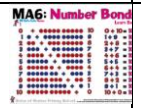
| HT5 | **1** |  within 10 | Written subtraction sentences **Challenge:** true or false | **Counting on and Counting back – National Curriculum Links**<br>Potential Provision activities<br><br>Have a deep understanding of number to 10, including the composition of each number.<br><br>Verbally count beyond 20, recognising the pattern of the counting system. |
| | **2** |  Within 10 | Counting forwards and backwards using game boards. | |

| ACTIVITY | AREA | DESCRIPTION | RESOURCES |
|---|---|---|---|
| Getting on the bus | Classroom | Provide play people to place on a bus or other mode of transport. Encourage children to use the first, then, now story structure to describe the number of people on board. Model the scenarios on a number track with counters to reinforce the skill of counting on to find the answer. Support children by giving them specific numbers to use or a certain number of people. | Play people, toy vehicles, number track, counters |
| Lining up | Classroom | When lining up, at various points in the day, orally rehearse first, then, now stories to count how many children are in the line. | |
| How many children can play here? | Classroom | Ensure the different areas of the classroom have signs to indicate how many children can play there. Ask 1–4 children to play in different classroom areas. Ask: *Who else would like to play here?* Choose some more children to join them and ask children to tell the first, then, now story about what has happened. Help children to make the decision on whether there is room for them to play. | Classroom signs |

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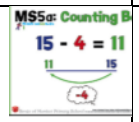
| | **3** | Counting up to 20 | Recognising numerals to 10 | **Numbers to 20 – National Curriculum Links**<br>Verbally count beyond 20, recognising the pattern of the counting system.<br><br>Compare quantities up to 10 in different contexts, recognising when one quantity is greater than, less than or the same as the other quantity. |
| | **4**<br>**(4 days)** |  | Mark making numerals to 20<br>**Challenge:** matching quantity to an amount | Potential Provision activities<br><br>**ACTIVITY** / **AREA** / **DESCRIPTION** / **RESOURCES**<br>20 passes / Outside / In pairs, children pass the ball to each other 20 times. They count as they pass and step further back after 20 successful catches in a row. / Ball<br>Hide and seek / Outside / Children work in pairs or small groups. Encourage one child to count to 20 while the others hide. Repeat counting backwards from 20. /<br>Two groups / Classroom / Decide on a way to split children into two groups (4-year-olds or 5-year-olds, long hair or short hair). The first group places their name cards on two enlarged ten frames. The second group places their name cards on another two ten frames. As a class, work out how many there are in each group. Ask: *Does one group have more children?* / Name cards, enlarged ten frames<br>Sticker chart / Classroom / Create a class sticker chart like the one in **Discover**, with two blank ten frames. Explain to the class that they will get a sticker on the chart for good effort. When the chart is full they will get a reward (for example, playing a favourite game). Start each day by asking: *How many stickers have you got? How many do you still need?* / Ten frames (copied onto card), stickers |
| | **5** | Recognizing numerals to 20 | Courting amounts up to 20 using 1:1 correspondence<br>**Challenge:** One more/one less | **Shape (Composing and Decomposing Shapes) – National Curriculum Links**<br>Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function.<br><br>Potential Provision activities<br><br>**ACTIVITY** / **AREA** / **DESCRIPTION** / **RESOURCES**<br>Pattern block puzzles / Maths area / Provide simple pattern block puzzle sheets that are colour coded for children to build/ compose recognisable images / Pattern blocks or paper versions of these (photocopiable 38), simple pattern block puzzles (you can use photocopiables 39 and 40 and easily download others on the internet)<br>Colouring pages / Art area / Ask children to 'find' shapes inside the square. They can locate small, medium and large triangles, small and medium squares, rectangles, and even a trapezium! / Coloured pencils, square pattern block template (photocopiable 41)<br>Hexagon building / Maths area / Provide pattern blocks and challenge children to build the hexagon using combinations of other pattern blocks (green triangles, red trapeziums, blue rhombi). / Pattern blocks or paper versions of these (photocopiable 38)<br>Finding 2D shapes / Sand area – inside and/ or outdoors / Ask children to predict what 2D shape the 3D block will make if pressed into the sand or playdough. Can they choose which ones will make a square, a triangle or a circle? / 3D blocks, wet sand or playdough that allow children to press the 3D shape and see the imprint of a 2D shape |
| | **6** | One more and one less to 20 | Use shapes to create patterns and images | **Measure (Volume and Capacity) – National Curriculum Links**<br>Compare quantities up to 10 in different contexts, recognising when one quantity is greater than, less than or the same as the other quantity.<br><br>Demonstrate strength, balance and coordination when playing.<br><br>Potential Provision activities |

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| ACTIVITY | AREA | DESCRIPTION | RESOURCES |
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| Fill up the jugs | Sand/water area | Set up some challenges for small groups of children to explore. Ask: *How many cups will fill up this jug? Which of these containers holds the most sand? How many spoonfuls of sand fill this cup?* | Containers, cups, spoons, ladles, sand |
| Pouring drinks | Water area | Ask children to 'pour drinks' for other children. Can they make the cups nearly full? Can they put the same amount of water in each cup? | Cups, jug, water |
| Fill the containers | Home corner or baking area | Provide bags of various dry ingredients for children to put into containers. Encourage children to choose from a selection of utensils to use to fill the containers. Ask: *Which utensil is best for moving the rice/pasta/lentils? How many of each utensil do you think you will need to fill this container with rice/pasta/lentils?* | Selection of dry kitchen ingredients (rice, pasta, lentils), containers, selection of utensils (cups, spoons, ladles) |

| | Week | Mental Maths | Suggested Long Term Retrieval | Maths Curriculum |
|---|---|---|---|---|
| HT6 | 1 (4 days) | Counting up to 20 | Using language to describe capacity | **Retrieval**<br>**Counting on and counting back, numbers to 20** |
| | 2 | Number bonds within 10 | AB/ABB/ patterns **Challenge:** ABC pattern making and spotting mistakes. | **Numerical Patterns – National Curriculum Links**<br>Explore and represent patterns within numbers up to 10, including evens and odds, double facts and how quantities can be distributed equally.<br>Potential Provision activities |
| | 3 | Doubles within 10 | Mark making to show doubles within 10 **Challenge:** number sentences to show a double | |
| | 4 | Halves within 10 | Halving objects | |
| | 5 | Retrieval practice across HT6 | Sharing amounts | **Sorting – National Curriculum Links**<br>Compare quantities up to 10 in different contexts, recognising when one quantity is greater than, less than or the same as the other quantity.<br>Potential Provision activities |

| ACTIVITY | AREA | DESCRIPTION | RESOURCES |
|---|---|---|---|
| Matching groups | Classroom | Children take turns to group a small number of objects (up to 5), for example, a line of counters, a tower of blocks or a group of objects from the small world play. Their partner then replicates the objects to double them. | Counters, blocks, small world play resources |
| Double butterflies/ ladybirds | Art area | Encourage children to paint butterflies. Once the background is dry, they can add the same number of spots to each wing to create a double. A similar activity can be done using paper plates to make ladybirds with the same number of spots on each wing. | Paper, paint, paper plates, round stickers for spots |
| Dominoes | Classroom | Provide some classic dominoes for children to explore. They can play dominoes by matching them end to end, or sort into doubles and non-doubles. | Dominoes |
| Dice doubles | Classroom | Children play a simple dice game. They throw two dice and collect a counter if they roll a double. | Dice, counters |

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| ACTIVITY | AREA | DESCRIPTION | RESOURCES |
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| Button collection | Discovery table | Children sort buttons into groups and give rules to their groups (colour; number of holes; large or small). | Selection of buttons |
| Let's tidy up! | Classroom | Children sort resources around the classroom into clearly labelled baskets, boxes, trays or pots. | Containers, labels |
| Washing up | Art area | Children sort painting utensils into groups ready for washing up: brushes (large and small), glue spatulas, glue or paint pots. | Washing up bowl, painting utensils |

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| **6** | Retrieval practice across HT6 | Grouping and sorting objects | **Time – National Curriculum Links**<br>Express their ideas and feelings about their experiences using full sentences, including use of past, present and future tenses and making use of conjunctions, with modelling and support from their teacher.<br>Know some similarities and differences between things in the past and now, drawing on their experiences and what has been read in class.<br>Potential Provision activities |

| ACTIVITY | AREA | DESCRIPTION | RESOURCES |
|---|---|---|---|
| Clock faces | Classroom or hall | Draw attention to clocks at different times of the day, for example: *Look, it's 12 o'clock, it is time for lunch.* | Analogue clocks around school |
| Visual timetable display board | Classroom | Make a display board of o'clock times relating to the school day, including clock faces showing the times. Ask children to match the photos to the correct time of day by discussing and sequencing the day's events. | Laminated photos of children at different times of the day, for example, registration, playtime, lunchtime, home time. Laminated labels and related clock faces |
| Nocturnal animals | Classroom | Read books and create pictures of nocturnal animals. Use these as a prompt for discussion about day and night and the difference between them. | Books and pictures of nocturnal animals |

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| **7** | Retrieval practice across HT6 | Use clocks to show a time. | **Retrieval** |

Ashdene Primary School

Excellence: everyone, everywhere, every day

# Ashdene Primary School – Maths Curriculum

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| Purpose of study | Mathematics is a creative and highly inter-connected discipline that has been developed over centuries, providing the solution to some of history's most intriguing problems. It is essential to everyday life, critical to science, technology and engineering, and necessary for financial literacy and most forms of employment. A high-quality mathematics education therefore provides a foundation for understanding the world, the ability to reason mathematically, an appreciation of the beauty and power of mathematics, and a sense of enjoyment and curiosity about the subject. |
| Aims | • become fluent in the fundamentals of mathematics, including through varied and frequent practice with increasingly complex problems over time, so that pupils develop conceptual understanding and the ability to recall and apply knowledge rapidly and accurately<br>• reason mathematically by following a line of enquiry, conjecturing relationships and generalisations, and developing an argument, justification or proof using mathematical language<br>• can solve problems by applying their mathematics to a variety of routine and non-routine problems with increasing sophistication, including breaking down problems into a series of simpler steps and persevering in seeking solutions. |
| Maths at Ashdene | At Ashdene in every maths lesson we aim to develop children's reasoning and problem solving. Furthermore, children develop their mathematical understanding through the use of concrete, pictorial and abstract resourcing which are made available to all children in every lesson. We aim to revisit and review mathematical concepts and make links between them in order to ensure children have a deeper understanding of the maths curriculum. |
| Personal Development Links | RESPECT · SMSC · RIGHTS RESPECTING · BRITISH VALUES · JIGSAW · TRIPS AND VISITS |

## Year 1

| | Week | Mental Maths | Suggested Long Term Retrieval | Maths Curriculum |
|---|---|---|---|---|
| HT1 | 1 (4 days) | | | **Numbers to 10 – National Curriculum Links**<br>count to and across 100, forwards and backwards, beginning with 0 or 1, or from any given number<br>given a number, identify one more and one less<br>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<br>count, read and write numbers to 100 in numerals; count in multiples of twos, fives and tens<br>read and write numbers from 1 to 20 in numerals and words |
| | 2 | Counting in 2's | Length | |
| | 3 | Counting in 2's | Weight | |

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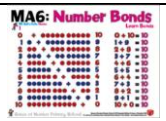
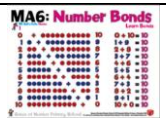
| | | | | **KEY LANGUAGE**<br>There is some key language that children will need to know as a part of the learning in this unit.<br>• sort, groups, pattern<br>• digits, number<br>• count on, count back, one more, one more than, one less, one less than<br>• matched, equal to, =<br>• fewer, less than, <, least, fewest<br>• more, greater than, >, most, greatest<br>• number line, number track, ten frame |
| | **4** | Number bonds to 5 | Subtraction | **Part-whole within 10 – National Curriculum Links**<br>represent and use number bonds and related subtraction facts within 20<br><br>read, write and interpret mathematical statements involving addition (+), subtraction (–) and equals (=) signs<br><br>**KEY LANGUAGE**<br>There is some key language that children will need to know as part of the learning in this unit.<br>→ part-whole model, part, whole, groups<br>→ number sentence, number bonds<br>→ plus<br>→ equal to<br>→ more than, less than |
| | **5** | Number bonds to 5 | Exploring patterns | **Addition and Subtraction within 10 (1) – National Curriculum Links**<br>represent and use number bonds and related subtraction facts within 20<br><br>solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as 7 = □ – 9<br><br>read, write and interpret mathematical statements involving addition (+), subtraction (–) and equals (=) signs<br><br>**KEY LANGUAGE**<br>There is some key language that children will need to know as part of the learning in this unit.<br>→ part, whole and part-whole<br>→ altogether, in total, total, sum<br>→ add, added, plus, or +<br>→ count, count on<br>→ missing, missing part<br>→ number bonds, number pairs<br>→ number stories<br><br>**Addition and Subtraction within 10 (2) – National Curriculum Links**<br>represent and use number bonds and related subtraction facts within 20<br><br>solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as 7 = □ – 9<br><br>read, write and interpret mathematical statements involving addition (+), subtraction (–) and equals (=) signs |
| | **6** |  to 10 | Combining two groups to make the whole | |
| | **7** |  to 10 | Halving | |

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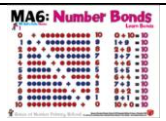
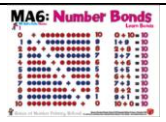
| | | | | **KEY LANGUAGE**<br>There is some key language that children will need to know as part of the learning in this unit.<br>→ How many are left?<br>→ take away, taken away, subtract<br>→ subtraction, addition<br>→ count back, count backwards<br>→ difference<br>→ How many more? How many fewer?<br>→ more than, >, less than, <<br>→ missing part<br>→ number stories |
| HT2 | **Week** | **Mental Maths** | **Suggested Long Term Retrieval** | **Maths Curriculum** |
| | **1**<br>**(4 days)** | Counting in 5's | Doubling | **Retrieval Practice**<br>**Numbers to 10, addition and subtraction within 10** |
| | **2** | Counting in 5's | Addition | **Numbers to 20 – National Curriculum Links**<br>count to and across 100, forwards and backwards, beginning with 0 or 1, or from any given number<br>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<br>recognise the place value of each digit in a two-digit number (tens, ones)<br>given a number, identify one more and one less<br>compare and order numbers from 0 up to 100; use <, > and = signs<br>**KEY LANGUAGE**<br>There is some key language that children will need to know as part of the learning in this unit.<br>→ numbers 11–20<br>→ count, backwards, forwards<br>→ tens, ones<br>→ more, less<br>→ greatest, smallest, fewer, fewest, most, least<br>→ order, compare<br>→ equal to, more than, less than |
| | **3** |  <br>to 10 | Odds and Evens | |
| | **4** |  <br>to 10 | Capacity | **Addition within 20 – National Curriculum Links (may continue into next week)**<br>represent and use number bonds and related subtraction facts within 20<br>add and subtract one-digit and two-digit numbers to 20, including zero<br>solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as 7 = □ – 9 |

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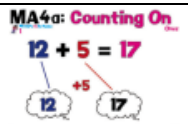
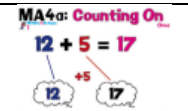
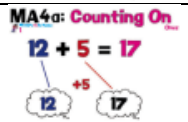
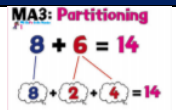
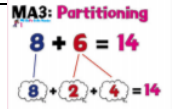
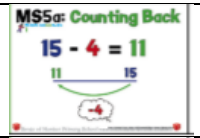
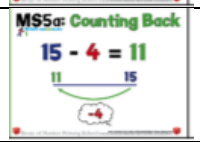
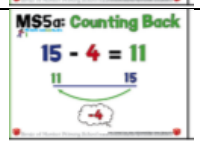
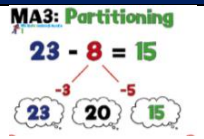
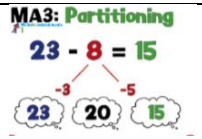
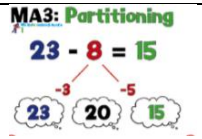
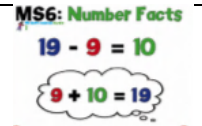
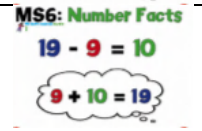
| | | | | **KEY LANGUAGE**<br>There is some key language that children will need to know as part of the learning in this unit:<br>→ count, count on<br>→ add, addition, additions, plus or +<br>→ altogether, in total<br>→ number bond<br>→ tens, ones<br>→ number stories, represent<br>→ part, whole, part-whole<br>→ greater, less, how many more?<br>→ predict |
| | **5** |  | Sorting into 2 groups | **Subtraction within 20 – National Curriculum Links (may continue into next week)**<br>read, write and interpret mathematical statements involving addition (+), subtraction (–) and equals (=) signs<br><br>represent and use number bonds and related subtraction facts within 20<br><br>add and subtract one-digit and two-digit numbers to 20, including zero<br><br>solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as 7 = □ – 9<br><br>**KEY LANGUAGE**<br>There is some key language that children will need to know as part of the learning in this unit:<br>→ subtract (–)<br>→ find the difference<br>→ how many are left?<br>→ take away<br>→ tens, ones<br>→ number bonds<br>→ part-whole<br>→ addition (+)<br>→ count back<br>→ fact family |
| | **6** |  | Numbers to 20 | **2D and 3D Shapes – National Curriculum Links(will continue into week 7)**<br>3-D shapes [for example, cuboids (including cubes), pyramids and spheres]<br><br>2-D shapes [for example, rectangles (including squares), circles and triangles]<br>**KEY LANGUAGE**<br>It is important that children describe shapes using the correct mathematical terminology.<br>→ 2D, 3D<br>→ cube, cuboid, sphere, cylinder, pyramid, cone<br>→ circle, triangle, square, rectangle<br>→ side, edge, face, corner<br>→ pattern, repeat |
| | **7** |  | Addition within 20<br>Numbers to 20 | |
| | **8** | **Retrieval of strategies covered this half term** | | **Responsive week**<br>**Money Sense Enterprise Lesson 1 to be completed** |

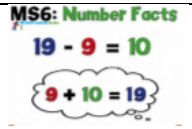
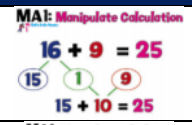
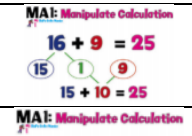
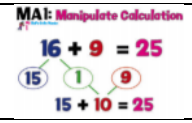
# Ashdene Primary School

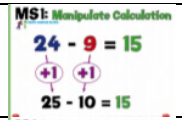
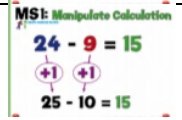
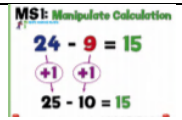
*Excellence: everyone, everywhere, every day*

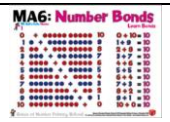
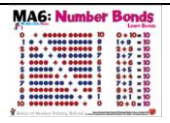
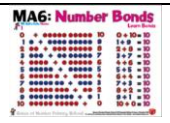
| | Week | Mental Maths | Suggested Long Term Retrieval | Maths Curriculum |
|---|---|---|---|---|
| HT3 | 1 |  | Subtraction within 20 | **Numbers to 50 – National Curriculum Links (may go into week 3)**<br>count to and across 100, forwards and backwards, beginning with 0 or 1, or from any given number<br>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<br>given a number, identify one more and one less<br>count, read and write numbers to 100 in numerals; count in multiples of twos, fives and tens<br>solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as 7 = □ – 9<br>recognise the place value of each digit in a two-digit number (tens, ones)<br>compare and order numbers from 0 up to 100; use <, > and = signs<br>**KEY LANGUAGE**<br>There is some key language that children will need to know as part of the learning in this unit:<br>→ tens, ones<br>→ compare, order<br>→ less than (<), greater than (>)<br>→ number names and numerals to 50 |
| | 2 |  | 2-D shapes | |
| | 3 |  | Numbers to 50 | **Introducing Length and Height – National Curriculum Links**<br>lengths and heights [for example, long/short, longer/shorter, tall/short, double/half]<br>lengths and heights<br>solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as 7 = □ – 9<br>**KEY LANGUAGE**<br>There is some key language that children will need to know as part of the learning in this unit:<br>→ long, longer, longest<br>→ short, shorter, shortest<br>→ tall, taller, tallest<br>→ length, height<br>→ compare, comparison<br>→ measure<br>→ distance<br>→ unit, non-standard units<br>→ ruler<br>→ centimetre (cm)<br>→ total<br>→ difference<br>**Introducing Weight and Volume – National Curriculum Links** |
| | 4 |  | Addition and Subtraction within 20 | |
| | 5 |  | 3D Shapes | |

| | | | | |
|---|---|---|---|---|
| | | | | mass/weight [for example, heavy/light, heavier than, lighter than]<br><br>mass/weight<br><br>capacity and volume [for example, full/empty, more than, less than, half, half full, quarter]<br><br>solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as 7 = □ – 9<br><br>**KEY LANGUAGE**<br>There is some key language that children will need to know as part of the learning in this unit:<br>→ weight, weigh<br>→ capacity, volume, contains, container<br>→ heavier, heaviest, lighter, lightest<br>→ more, most, fewer, less, least<br>→ >, <, =<br>→ addition, subtraction<br>→ balance scales, balanced<br>→ compare, measure, estimate<br>→ empty, full, amount, half |
| | **6** | Retrieval – Counting on Counting back Paritioning Number bonds to 10 | Weight | **Responsive week** |
| **HT4** | **Week** | **Mental Maths** | **Suggested Long Term Retrieval** | **Maths Curriculum** |
| | **1** |  | Numbers to 50 | **Multiplication – National Curriculum Links (may continue into week 2)**<br>**KEY LANGUAGE**<br>There is some key language that children will need to know as part of the learning in this unit:<br>→ equal groups<br>→ array<br>→ row, column<br>→ double, twice<br>→ add, addition, adding, altogether, total<br><br>count, read and write numbers to 100 in numerals; count in multiples of twos, fives and tens<br><br>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 |

| | | | | |
|---|---|---|---|---|
| | 2 |  | Addition within 20 | **Division - National Curriculum Links (may continue into week 3)**<br>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<br><br>KEY LANGUAGE<br>There is some key language that children will need to know as part of the learning in this unit:<br>→ equal groups, same, different<br>→ share, sharing equally<br>→ fairly<br>→ total, altogether, each<br>→ division |
| | 3 |  | Subtraction within 20 | **Halves and Quarters – National Curriculum Links (may continue into week 4)**<br><br>KEY LANGUAGE<br>There is some key language that children will need to know as a part of the learning in this unit.<br>→ half, halves, quarter<br>→ equal<br>→ share, split<br>→ part, whole<br><br>recognise, find and name a half as one of two equal parts of an object, shape or quantity<br><br>recognise, find and name a quarter as one of four equal parts of an object, shape or quantity |
| | 4 |  | Volume | **Time – National Curriculum Links (continue week 5)**<br>sequence events in chronological order using language [for example, before and after, next, first, today, yesterday, tomorrow, morning, afternoon and evening]<br>recognise and use language relating to dates, including days of the week, weeks, months and years<br><br>tell the time to the hour and half past the hour and draw the hands on a clock face to show these times |
| | 5<br>(4 days |  | 2D and 3D shapes | time (hours, minutes, seconds)<br><br>time [for example, quicker, slower, earlier, later]<br><br>solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as 7 = □ – 9 |

| | | | | |
|---|---|---|---|---|
| | | | | **KEY LANGUAGE**<br>There is some key language that children will need to know as part of the learning in this unit:<br>→ before, after<br>→ faster, slower, shorter, longer, earlier, later<br>→ yesterday, today, tomorrow<br>→ day, week, month, year<br>→ Monday, Tuesday, Wednesday, Thursday, Friday, Saturday, Sunday<br>→ calendar, date<br>→ minute hand, hour hand, second hand<br>→ o'clock, half past<br>→ second, minute, hour |
| | **6** |  | 2D and 3D shapes | **Responsive week**<br>**Money Sense Enterprise Lesson 2 to be completed** |
| **HT5** | **Week** | **Mental Maths** | **Suggested Long Term Retrieval** | **Maths Curriculum** |
| | **1** |  | Numbers to 50 | **Numbers to 100 – National Curriculum Links**<br>count, read and write numbers to 100 in numerals; count in multiples of twos, fives and tens<br><br>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<br>represent and use number bonds and related subtraction facts within 20<br><br>given a number, identify one more and one less<br><br>recognise the place value of each digit in a two-digit number (tens, ones)<br><br>recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100<br><br>count to and across 100, forwards and backwards, beginning with 0 or 1, or from any given number |
| | **2** |  | Length and Height | |
| | **3**<br>**(4 days)** |  | Weight and Volume | |

| | | | | |
|---|---|---|---|---|
| | | | | **KEY LANGUAGE**<br>There is some key language that children will need to know as part of the learning in this unit:<br>→ 100 square, number square<br>→ place value grid<br>→ pattern, same, different<br>→ less than, fewer, smaller, less, (<)<br>→ greater than, larger, bigger, more, (>)<br>→ equal to, (=)<br>→ greatest, biggest<br>→ fewest, smallest<br>→ tens, ones, place value, partition<br>→ how many?, count<br>→ number bonds |
| | **4**<br>**(4 days** |  | Multiplication | Responsive week |
| | **5** |  | Division | |
| | **6** |  | Time | **Retrieval**<br>**Division, Halves and Quarters** |
| **HT6** | **Week** | **Mental Maths** | **Suggested Long Term Retrieval** | **Maths Curriculum** |

| | | | | |
|---|---|---|---|---|
| | **1** (4 days) |  to 20 | Halves and Quarters | **Position and Direction – National Curriculum Links**<br><br>KEY LANGUAGE<br>There is some key language that children will need to know as part of the learning in this unit:<br>→ turn, position, direction<br>→ half turn, quarter turn, three-quarter turn, whole turn<br>→ left, right, in between<br>→ forwards, backwards<br>→ above, below<br>→ top, middle, bottom<br>→ up, down<br><br>describe position, direction and movement, including whole, half, quarter and three-quarter turns |
| | **2** |  to 20 | Numbers to 100 | **Money – National Curriculum Links**<br>recognise and know the value of different denominations of coins and notes<br><br>count, read and write numbers to 100 in numerals; count in multiples of twos, fives and tens<br><br>KEY LANGUAGE<br>There is some key language that children will need to know as part of the learning in this unit.<br>→ pound, penny, pennies, pence<br>→ coins, notes, banknotes<br>→ £, p<br>→ greater than, less than, equal, total, altogether<br>→ <, >, and =, greater than, less than<br>→ value, worth |
| | **3** |  to 20 | Position and Direction | **Responsive weeks**<br>**Money Sense Enterprise Lesson 3 to be completed** |
| | **4** | Retrieval –<br>-Manipulate calculation<br>-Number facts<br>-Partitioning | Teachers to use assessments to determine areas for need | |
| | **5** | Retrieval –<br>-Manipulate calculation<br>-Number facts<br>-Partitioning | | |

| | | | | |
|---|---|---|---|---|
| | 6 | Retrieval –<br>-Manipulate calculation<br>-Number facts<br>-Partitioning | | |
| | 7 | Retrieval –<br>-Manipulate calculation<br>-Number facts<br>-Partitioning | | |

# Ashdene Primary School

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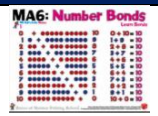
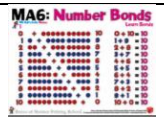
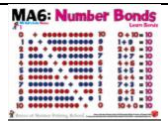
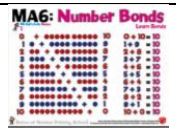
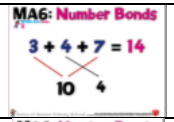
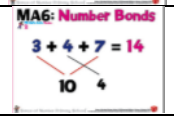
# Ashdene Primary School – Maths Curriculum

| | |
|---|---|
| Purpose of study | Mathematics is a creative and highly inter-connected discipline that has been developed over centuries, providing the solution to some of history's most intriguing problems. It is essential to everyday life, critical to science, technology and engineering, and necessary for financial literacy and most forms of employment. A high-quality mathematics education therefore provides a foundation for understanding the world, the ability to reason mathematically, an appreciation of the beauty and power of mathematics, and a sense of enjoyment and curiosity about the subject. |
| Aims | • become fluent in the fundamentals of mathematics, including through varied and frequent practice with increasingly complex problems over time, so that pupils develop conceptual understanding and the ability to recall and apply knowledge rapidly and accurately<br>• reason mathematically by following a line of enquiry, conjecturing relationships and generalisations, and developing an argument, justification or proof using mathematical language<br>• can solve problems by applying their mathematics to a variety of routine and non-routine problems with increasing sophistication, including breaking down problems into a series of simpler steps and persevering in seeking solutions. |
| Maths at Ashdene | At Ashdene in every maths lesson we aim to develop children's reasoning and problem solving. Furthermore, children develop their mathematical understanding through the use of concrete, pictorial and abstract resourcing which are made available to all children in every lesson. We aim to revisit and review mathematical concepts and make links between them in order to ensure children have a deeper understanding of the maths curriculum. |
| Personal Development Links | RESPECT \| SMSC \| RIGHTS RESPECTING \| BRITISH VALUES \| JIGSAW \| TRIPS AND VISITS |

## Year 2

| | Week | Mental Maths | Suggested Long Term Retrieval | Maths Curriculum |
|---|---|---|---|---|
| HT1 | 1 (3 days) |   to 10 | Add and subtract one and two-digit numbers | **Numbers to 100 – National Curriculum Links (10 lessons. Start addition and subtraction unit upon completion before week 4)**<br>count, read and write numbers to 100 in numerals; count in multiples of twos, fives and tens<br>identify, represent and estimate numbers using different representations, including the number line<br>recognise the place value of each digit in a two-digit number (tens, ones)<br>compare and order numbers from 0 up to 100; use <, > and = signs<br>count in steps of 2, 3, and 5 from 0, and in tens from any number, forward and backward |
| | 2 |   to 10 | Problems involving addition and subtraction | |

| | | | | |
|---|---|---|---|---|
| | 3 |  to 20 | Recognise a half as one of two equal parts | **KEY LANGUAGE**<br>There is some key language that children will need to know as part of the learning in this unit:<br>→ less than, fewer, smaller, less, (<)<br>→ greater than, larger, bigger, more, (>)<br>→ equal to, (=)<br>→ greatest, biggest<br>→ fewest, smallest<br>→ tens, ones<br>→ how many?, count, partition<br>→ place value grid, part-whole model |
| | 4 |  to 20 | Recognise a quarter as one of four equal parts | **Addition and Straction (1) – National Curriculum Links**<br>recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100<br>using concrete objects and pictorial representations, including those involving numbers, quantities and measures<br>a two-digit number and ones<br>count in steps of 2, 3, and 5 from 0, and in tens from any number, forward and backward<br>a two-digit number and tens<br>recognise and use the inverse relationship between addition and subtraction and use this to check calculations and missing number problems<br>applying their increasing knowledge of mental and written methods<br>show that addition of two numbers can be done in any order (commutative) and subtraction of one number from another cannot<br>**KEY LANGUAGE**<br>There is some key language that children will need to know as a part of the learning in this unit:<br>→ part, whole and part-whole<br>→ add, added, plus, total, altogether, sum, calculation, (+)<br>→ count, count on, count back, left<br>→ subtract, take away, minus, (–)<br>→ exchange, compare, greater than, less than, more, less, (>), (<)<br>→ ones, tens, 10 more, 10 less, place value, column, 1-digit number, 2-digit number<br>→ number sentence, number bonds, known fact, fact family<br>**Addition and Straction (2) – National Curriculum Links**<br>two two-digit numbers<br>adding three one-digit numbers<br>using concrete objects and pictorial representations, including those involving numbers, quantities and measures<br>applying their increasing knowledge of mental and written methods |
| | 5 |  | Practical problems for lengths/ weights | |
| | 6 |  | Practical problems for volume | |
| | 7 | Retrieval of methods from HT1 | Recognise value of coins and notes | |

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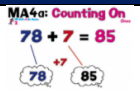
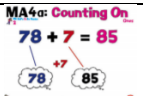
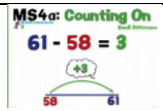
| | | | | **KEY LANGUAGE**<br>There is some key language that children will need to know as a part of the learning in this unit:<br>→ part, whole and part-whole, partition<br>→ add, added, plus, total, altogether, sum, calculation, (+)<br>→ count, count on, count back, left, difference<br>→ subtract, take away, minus, (–)<br>→ exchange, compare, greater than, less than, more, less, (>), (<), regroup, represent<br>→ ones, tens, 10 more, 10 less, place value, column, 1-digit number, 2-digit number, bar model<br>→ number sentence, number bonds, known fact, fact family |
| | 8 | Retrieval of methods from HT1 | | **Responsive teaching week/ retrieval week**<br>**Place value, addition and subtraction** |
| HT2 | Week | **Mental Maths** | **Suggested Long Term Retrieval** | **Maths Curriculum** |
| | 1 (3 days) |  | Language of days of the week, weeks, months years | **Money – National Curriculum Links**<br>recognise and use symbols for pounds (£) and pence (p); combine amounts to make a particular value<br><br>find different combinations of coins that equal the same amounts of money<br><br>solve simple problems in a practical context involving addition and subtraction of money of the same unit, including giving change<br><br>recognise and know the value of different denominations of coins and notes<br><br>**KEY LANGUAGE**<br>There is some key language that children will need to know as a part of the learning in this unit:<br>→ money, coins, notes<br>→ pounds (£), pence (p)<br>→ change, left, right, money, buy(s), spend, step<br>→ how much?, value, amount, total, altogether, parts, between, difference<br>→ count on, sort, match, compare, add, addition, calculate, subtraction<br>→ great(er/est), smallest, exact(ly), higher, lower, most, least<br>→ more than (>), less than (<), equal (=)<br>→ part-whole model, number line, bar model |
| | 2 |  | Time to hour and half past | |
| | 3 |  | 2D shapes – rectangles, circles and triangles | |

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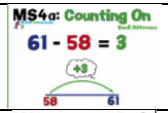
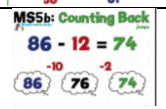
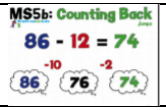
|---|---|---|---|---|
| | 4 |  | 3D shapes – cuboids, pyramids and spheres | **Multiplication and Division (1) – National Curculum Links**<br>solve one-step problems involving multiplication and division, by calculating the answer using concrete objects, pictorial representations and arrays with the support of the teacher<br>calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication (×), division (÷) and equals (=) signs<br>solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods, and multiplication and division facts, including problems in contexts<br>recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers<br>**KEY LANGUAGE**<br>There is some key language that children will need to know as part of the learning in this unit:<br>→ equal groups<br>→ repeated addition<br>→ skip counting<br>→ number in a group<br>→ number of groups<br>→ times<br>→ times-table<br>→ multiply/multiplication (×)<br>→ more than, less than (< and >)<br>→ array<br>→ rows/columns<br>→ bar model<br>→ equal parts<br>→ number of equal parts<br>→ times bigger/times taller/ times greater<br>→ twice as big |
| | 5 |  | Describe half, quarter and three quarter turns | |
| | 6 |  | Money - Finding change | **Length and Height – National Curriculum Links**<br>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<br>compare and order lengths, mass, volume/capacity and record the results using >, < and =<br>using concrete objects and pictorial representations, including those involving numbers, quantities and measures<br>**KEY LANGUAGE**<br>There is some key language that children will need to know as part of the learning in this unit:<br>→ length, height<br>→ width, distance<br>→ long, longer, short, shorter<br>→ tall<br>→ metres (m), centimetres (cm)<br>→ order, compare<br>→ ruler, metre stick<br>→ measure<br>→ zero<br>→ greater than (>)<br>→ less than (<)<br>→ equal to (=) |
| | 7 | Retrieval of methods from HT2 | Place value in a two-digit number | |
| | 8 | Retrieval of methods from HT2 | Place value in a two-digit number | **Responsive week/Retrieval Practice**<br>**Place Value, Addition and Subtraction, Money, Multiplication and Division**<br>**Money Sense Enterprise Lesson 1 to be completed** |

# Ashdene Primary School

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| | Week | Mental Maths | Suggested Long Term Retrieval | Maths Curriculum |
|---|---|---|---|---|
| HT3 | 1 | Times Tables 10's | Add a 2 digit and a 1 digit number | **Mulitplication and Division (2) – National Curriculum Links**<br>solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods, and multiplication and division facts, including problems in contexts<br>recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers<br>calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication (×), division (÷) and equals (=) signs<br>**KEY LANGUAGE**<br>There is some key language that children will need to know as part of the learning in this unit:<br>→ divide, division, the division sign (÷)<br>→ share<br>→ group<br>→ odd, even<br>→ times-tables<br>→ equal groups, number of equal groups |
| | 2 | Times Tables 10's | Subtract a 1 digit number from a 2 digit | |
| | 3 | Times Tables 5's | Solving multiplication word problems | **Statistics – National Curriculum Links (may continue into week 5)**<br>interpret and construct simple pictograms, tally charts, block diagrams and simple tables<br>ask and answer simple questions by counting the number of objects in each category and sorting the categories by quantity<br>ask and answer questions about totalling and comparing categorical data<br>**KEY LANGUAGE**<br>There is some key language that children will need to know as part of the learning in this unit:<br>→ tally chart, tally<br>→ pictogram<br>→ block diagram<br>→ table<br>→ more, less, most, least<br>→ favourite, popular<br>→ equal<br>→ represent, symbol, key, information<br>→ total, altogether<br>→ compare |
| | 4 | Times Tables 2's | Odd and even numbers | **Properties of Shapes– National Curriculum Links**<br>compare and sort common 2-D and 3-D shapes and everyday objects<br>identify and describe the properties of 2-D shapes, including the number of sides and line symmetry in a vertical line<br>order and arrange combinations of mathematical objects in patterns and sequences<br>identify and describe the properties of 3-D shapes, including the number of edges, vertices and faces |
| | 5 | Times Tables 2's | Interpreting pictograms | |
| | 6 | Retrieval of methods from HT3 | Measuring in cm | |

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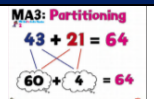
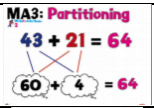
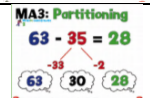
|---|---|---|---|---|
| | | | | **KEY LANGUAGE**<br>There is some key language that children will need to know as part of the learning in this unit:<br>→ circle, semicircle<br>→ oval, triangle, square, rectangle, quadrilateral<br>→ polygon, pentagon, hexagon, octagon<br>→ sphere, hemisphere<br>→ cone, ovoid, cylinder<br>→ triangle-based pyramid, square-based pyramid, pentagon-based pyramid, hexagon-based pyramid<br>→ cube, cuboid<br>→ triangular prism, pentagonal prism, hexagonal prism<br>→ 2D, 3D<br>→ properties<br>→ side, vertex, vertices, edge, face<br>→ pattern<br>→ symmetry, symmetrical, line of symmetry<br>→ curved surface |
| HT4 | **Week** | **Mental Maths** | **Suggested Long Term Retrieval** | **Maths Curriculum** |
| | **1** |  | Add 3 1-digit numbers | **Fractions – National Curriculum Links**<br>recognise, find and name a half as one of two equal parts of an object, shape or quantity<br><br>recognise, find and name a quarter as one of four equal parts of an object, shape or quantity<br><br>recognise, find, name and write fractions 1/3, 1/4, 2/4 and 3/4 of a length, shape, set of objects or quantity<br><br>write simple fractions for example, 1/2 of 6 = 3 and recognise the equivalence of 2/4 and 1/2<br><br>**KEY LANGUAGE**<br>There is some key language that children will need to know as part of the learning in this unit:<br>→ fraction<br>→ half ($\frac{1}{2}$), quarter ($\frac{1}{4}$), third ($\frac{1}{3}$)<br>→ whole<br>→ part, equal part<br>→ numerator, denominator<br>→ fraction bar<br>→ unit fraction, non-unit fraction<br>→ equivalent<br>→ three-quarters ($\frac{3}{4}$)<br>→ equal<br>→ divided by (÷)<br>→ odd, even<br>→ share<br>→ pattern |
| | **2** |  | Division - Making equal groups | |
| | **3** |  | Describe the properties of 3d shapes | |

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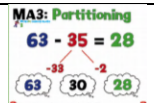
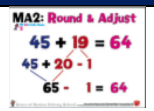
| | 4 |  | Answer questions about comparing data | **Measures (Time) – National Curriculum Links**<br>tell the time to the hour and half past the hour and draw the hands on a clock face to show these times<br><br>compare and sequence intervals of time<br><br>tell and write the time to five minutes, including quarter past/to the hour and draw the hands on a clock face to show these times<br><br>know the number of minutes in an hour and the number of hours in a day<br><br>**KEY LANGUAGE**<br>There is some key language that children will need to know as part of the learning in this unit:<br>→ hands, face, hour, minute, analogue<br>→ o'clock, past, to, half past, quarter past, quarter to, quarter of an hour<br>→ almost, same, units, last, convert, how long, left, passed, shorter, longer, fastest, slowest<br>→ five, ten, fifteen, twenty, twenty-five, thirty, thirty-five, forty, forty-five, fifty, fifty-five, sixty<br>→ 5, 10, 15, 20, 25, 30, 35, 40, 45, 50, 55, 60<br>→ time, start time, end time, duration, time taken, finish, forwards, backwards, twice<br>→ 24 hours, day, daytime, night time, around the clock, am, pm<br>→ midday, midnight, morning, afternoon |
| | 5 | Retrieval of methods from HT4 | Subtracting a 2-digit number from a 2-digit number | |
| | 6 | Retrieval of methods from HT4 | Subtracting a 2-digit number from a 2-digit number | **Responsive week** |
| **HT5** | **Week** | **Mental Maths** | **Suggested Long Term Retrieval** | **Maths Curriculum** |
| | **1 (4 days)** |  | Recognising a quarter | **Position and Direction – National Curriculum Links**<br>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)<br><br>order and arrange combinations of mathematical objects in patterns and sequences |

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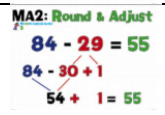
|---|---|---|---|---|
| | | | | **KEY LANGUAGE**<br>There is some key language that children will need to know as part of the learning in this unit:<br>→ quarter turn, half turn, three-quarter turn, whole turn<br>→ clockwise, anticlockwise<br>→ forwards, backwards<br>→ left, right<br>→ up, down<br>→ turn<br>→ middle<br>→ position<br>→ pattern<br>→ above, below<br>→ top, bottom<br>→ between<br>→ cube, cylinder<br>→ circle, semicircle<br>→ triangle, rectangle, square |
| **2** | | Finding ¾<br><br>Find combinations of coins that make the same value | **Weight, Volume and Temperature – National Curriculum Links**<br>compare and order lengths, mass, volume/capacity and record the results using >, < and =<br><br>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<br><br>**KEY LANGUAGE**<br>There is some key language that children will need to know as part of the learning in this unit:<br>→ balance, comparing, estimating, reasoning, accurately, total, scale, interval<br>→ 100s, 100, 200, 300, 400, 500, 600, 700, 800, 900, 1,000<br>→ mass, weight, grams (g), kilograms (kg), kilos<br>→ volume, capacity, millilitres (ml), litres (l)<br>→ temperature, thermometer, degrees Celsius (°C)<br>→ more than, (>), less than (<), identical (=), divide (÷)<br>→ heavier, heaviest, lighter, lightest<br>→ greater, greatest, least, smaller, smallest, full, half, three-quarters, quarter, nearest to, X times as much<br>→ hotter, hottest, warmer, warmest, colder, coldest, cooler, coolest |
| **3**<br>**(4 days)** | Times Tables<br>10x, 5x 2x | Retrieval in preparation for SATs week | | |
| **4** | | Order lengths using > < | **SATS WEEK/ across 2 weeks?** | |
| **5**<br>**(3 days)** |  | Find combinations of coins that make the same value | **Responsive/Retrieval**<br>**Teachers to look at gaps identified from SATs papers**<br><br>**Money Sense Enterprise Lesson 2 to be completed** | |

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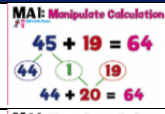
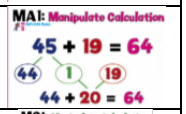
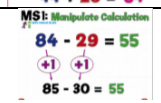
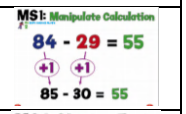
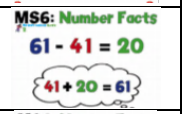
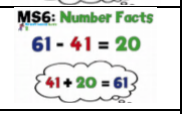
| | Week | Mental Maths | Suggested Long Term Retrieval | Maths Curriculum |
|---|---|---|---|---|
| HT6 | 1 (4 days) |  | Teachers to use KS1 SATs assessments to determine long term retrieval tasks | **Problem Solving and Efficient Methods – National Curriculum Links**<br>use place value and number facts to solve problems<br>recognise and use the inverse relationship between addition and subtraction and use this to check calculations and missing number problems<br>using concrete objects and pictorial representations, including those involving numbers, quantities and measures<br>solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods, and multiplication and division facts, including problems in contexts<br>show that multiplication of two numbers can be done in any order (commutative) and division of one number by another cannot<br>**KEY LANGUAGE**<br>There is some key language that children will need to know as part of the learning in this unit:<br>→ part, whole, part-whole<br>→ add, addition, more than, +<br>→ subtract, subtraction, difference, change, take away, less than, –<br>→ divide, division, share, ÷<br>→ multiply, multiplication, lots of, ×<br>→ altogether, groups of, total, sum, total cost<br>→ representation, bar model, efficient |
| | 2 |  | | |
| | 3 |  | | |
| | 4 |  | | **Responsive/Retrieval**<br>**Numbers to 100, Addition and Subtraction, Multiplication and Division, Money, Statistics, Length and Height, Properties of Shapes, Fractions, Position and Direction, Time, Weight/ Volume/ Temperature**<br>**Money Sense Enterprise Lesson 3 to be completed** |
| | 5 |  | | |
| | 6 |  | | |
| | 7 | Retrieval - Times Tables 10x, 5x 2x Number Bonds to 10/20 | | |

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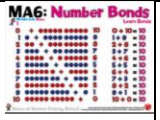
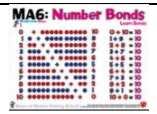
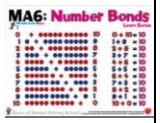
# Ashdene Primary School – Maths Curriculum

| | |
|---|---|
| Purpose of study | Mathematics is a creative and highly inter-connected discipline that has been developed over centuries, providing the solution to some of history's most intriguing problems. It is essential to everyday life, critical to science, technology and engineering, and necessary for financial literacy and most forms of employment. A high-quality mathematics education therefore provides a foundation for understanding the world, the ability to reason mathematically, an appreciation of the beauty and power of mathematics, and a sense of enjoyment and curiosity about the subject. |
| Aims | • become fluent in the fundamentals of mathematics, including through varied and frequent practice with increasingly complex problems over time, so that pupils develop conceptual understanding and the ability to recall and apply knowledge rapidly and accurately<br>• reason mathematically by following a line of enquiry, conjecturing relationships and generalisations, and developing an argument, justification or proof using mathematical language<br>• can solve problems by applying their mathematics to a variety of routine and non-routine problems with increasing sophistication, including breaking down problems into a series of simpler steps and persevering in seeking solutions. |
| Maths at Ashdene | At Ashdene in every maths lesson we aim to develop children's reasoning and problem solving. Furthermore, children develop their mathematical understanding through the use of concrete, pictorial and abstract resourcing which are made available to all children in every lesson. We aim to revisit and review mathematical concepts and make links between them in order to ensure children have a deeper understanding of the maths curriculum. |
| Personal Development Links | RESPECT \| SMSC \| RIGHTS RESPECTING \| BRITISH VALUES \| JIGSAW \| TRIPS AND VISITS |

## Year 3

| | Week | Mental Maths | Suggested Long Term Retrieval | Maths Curriculum | |
|---|---|---|---|---|---|
| HT1 | 1 (4 days) | | | **Place Value within 1,000 – National Curriculum Links**<br>recognise the place value of each digit in a three-digit number (hundreds, tens, ones)<br>identify, represent and estimate numbers using different representations<br>compare and order numbers up to 1000<br>count from 0 in multiples of 4, 8, 50 and 100; find 10 or 100 more or less than a given number<br>read and write numbers up to 1000 in numerals and in words<br>solve number problems and practical problems involving these ideas | |
| | 2 |  to 10 | Mentally add 2 digit by 1 digit<br><br>Calculate problems involving x and ÷ up to 12 | | |

| | | | | | |
|---|---|---|---|---|---|
| | 3 |  to 20 | Mentally add three one-digit numbers<br><br>Commutative Law | **KEY LANGUAGE**<br>There is some key language that children will need to know as part of the learning in this unit.<br>→ hundreds (100s), tens (10s), ones (1s)<br>→ place value<br>→ more, less<br>→ greater than (>), less than (<), equal to (=)<br>→ order, compare<br>→ digit, one thousand<br>→ part-whole model, place value grid, number line<br>→ estimate, halfway, exchange<br>→ taller, tallest, longest, shortest, greatest, smallest, most, least, fewest | |
| | 4 | Times Tables 10x, 5x, 2x | Mentally add 2 digit and tens | **Addition and Subtraction (1) – National Curriculum Links**<br>a three-digit number and hundreds<br>a three-digit number and ones<br>a three-digit number and tens<br>add and subtract numbers with up to three digits, using formal written methods of columnar addition and subtraction<br>solve problems, including missing number problems, using number facts, place value, and more complex addition and subtraction<br>**KEY LANGUAGE**<br>There is some key language that children will need to know as part of the learning in this unit.<br>→ add, addition<br>→ subtract, subtraction, take away, difference<br>→ exchange, pattern, variation, column method, mental method, part-whole model, number line<br>→ total, altogether, calculations, regroup, partition, solutions<br>→ place value, number bonds, fact family, related facts, number statements, method, order<br>→ hundreds (100s), tens (10s), ones (1s), digits, zero (0)<br>→ multiple of 10, multiples of 100, 3-digit number, 2-digit number, 10 ones, 10 tens<br>→ left, greater than (>), less than (<), fewer, more, metres (m), miles, centimetres (cm), symbol | |
| | 5 | Times Tables 4x | Find 1/3, ¼, 2/4, and ¾ of a length<br><br>Compare/ order lengths using > < = | | |
| | 6 | Times Tables 4x | Simple fractions of amounts<br><br>Combine amounts of money to make a particular value | | |
| | 7 | Retrieval<br>  to 20<br><br>Times Tables 10x, 5x, 2x, 4x | Recognise equivalence of 2/4<br><br>Tell the time to 5 minutes | **Addition and Subtraction (2) – National Curriculum Links**<br>add and subtract numbers with up to three digits, using formal written methods of columnar addition and subtraction<br>estimate the answer to a calculation and use inverse operations to check answers<br>solve problems, including missing number problems, using number facts, place value, and more complex addition and subtraction<br>a three-digit number and hundreds | |

# Ashdene Primary School

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| | | | | | |
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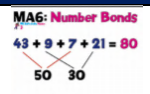
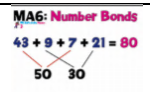
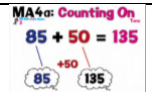
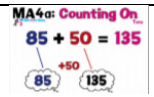
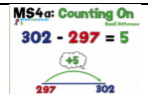
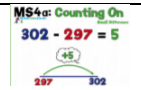
| | | | | **KEY LANGUAGE**<br>There is some key language that children will need to know as part of the learning in this unit.<br>→ add, addition<br>→ subtract, subtraction<br>→ total, altogether<br>→ exchange<br>→ part-whole, whole, part<br>→ place value<br>→ hundreds (100s), tens (10s), ones (1s)<br>→ column method<br>→ mental method, mentally<br>→ estimate, estimation<br>→ approximate, approx., approximation, approximately, about<br>→ fact family<br>→ bar model<br>→ digits<br>→ multiple<br>→ logically<br>→ function machine | |
| **HT2** | **Week** | **Mental Maths** | **Suggested Long Term Retrieval** | **Maths Curriculum** | |
| | **1**<br>**(4 days)** |  | Properties of 2D shapes<br><br>Describe rotation (quarter, half and three quarter turns) | **Retrieval Practice**<br>**Place Value, Addition and Subtraction** | |
| | **2** |  | Properties of 3D shapes (edges, vertices, faces)<br><br>Interpret pictograms | **Multiplication and Division (1) – National Curriculum Links**<br>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 written methods<br>recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables<br>solve problems, including missing number problems, involving multiplication and division, including positive integer scaling problems and correspondence problems in which n objects are connected to m objects<br><br>**KEY LANGUAGE**<br>There is some key language that children will need to know as part of the learning in this unit.<br>→ equal groups, unequal groups, shared equally<br>→ multiply (×), multiplication statement, multiplication fact, multiplication sentence, divide (÷), division statement, division fact<br>→ times-table<br>→ group, share<br>→ whole, left over, remainder<br>→ one-step, two-step, multi-step<br>→ array, bar model, number line<br>→ pattern<br>→ count up, total, double, method<br>→ repeated addition | |
| | **3** |  | Recognise place value up to 100<br><br>Mentally add 3 digit and ones | | |
| | **4** |  | Read/ write numbers up to 1000 | | |

| | | | | |
|---|---|---|---|---|
| | | | Mentally subtract 3 digit and ones | |
| | **5** |  | Compare/ order numbers to 1000<br><br>Formal written methods for addition | **KEY LANGUAGE**<br>There is some key language that children will need to know as part of the learning in this unit:<br>→ multiplication<br>→ division<br>→ greater than<br>→ less than<br>→ equal<br>→ remainder<br>→ share<br>→ partition<br>→ tens (10s)<br>→ ones (1s)<br>→ exchange |
| | **6** |  | Formal written methods for subtraction<br><br>Adding money | **<u>Continue on from week 5</u>** |
| | **7** | Times Tables 10x, 5x, 2x, 4x | Related facts – multiplication / division<br><br>Describe rotation (quarter, half and three quarter turns) | |

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| | | | | |
| | **8** | Times Tables 10x, 5x, 2x, 4x | Related facts – multiplication / division<br><br>Describe rotation (quarter, half and three quarter turns) | **Responsive week**<br><br>**Money Sense Enterprise Lesson 1 to be completed** |
| **HT3** | **Week** | **Mental Maths** | **Suggested Long Term Retrieval** | **Maths Curriculum** |
| | **1**<br>**(4 days)** | Times Tables 8x | Addition and subtraction – inverse to check answers<br><br>Interpret tally charts | **Money – National Curriculum Links**<br>add and subtract amounts of money to give change, using both £ and p in practical contexts<br><br>**KEY LANGUAGE**<br>There is some key language that children will need to know as part of the learning in this unit.<br>→ pounds (£) and pence (p)<br>→ convert<br>→ total<br>→ difference<br>→ change |
| | **2** | Times Tables 8x | Order numbers to 1000<br><br>Properties of 2D shapes | **Statistics – National Curriculum Links**<br>interpret and present data using bar charts, pictograms and tables<br><br>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<br><br>**KEY LANGUAGE**<br>There is some key language that children will need to know as part of the learning in this unit.<br>→ pictogram<br>→ key<br>→ symbol<br>→ compare<br>→ least, most<br>→ altogether<br>→ bar chart<br>→ horizontal axis, vertical axis<br>→ scale<br>→ half-way between<br>→ table<br>→ row, column<br>→ order<br>→ smallest, largest<br>→ total |

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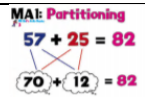
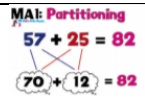
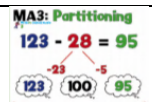
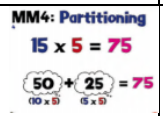
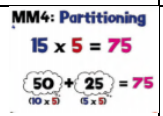
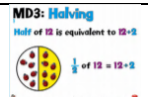
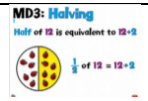
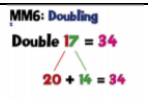
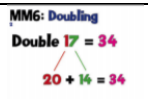
| | 3 |   | Properties of 3D shapes (edges, vertices, faces<br><br>Problem solving - money | |
| | 4 |   | Dividing 2-digit by 1-digit<br><br>Multiplication and Division – Mixed problems | **Length – National Curriculum Links**<br>measure, compare, add and subtract: lengths (m/cm/mm); mass (kg/g); volume/capacity (l/ml)<br><br>measure the perimeter of simple 2-D shapes<br><br>**KEY LANGUAGE**<br>There is some key language that children will need to know as part of the learning in this unit.<br>→ millimetres (mm), centimetres (cm), metres (m)<br>→ measure, measurement<br>→ length, height, width, distance, diagonal<br>→ how long? how wide? how tall? how high?<br>→ ruler, metre stick, metre ruler<br>→ longer, shorter, longest, shortest, furthest<br>→ perimeter<br>→ addition, subtraction, find the difference, repeated addition, multiplication<br>→ greater than (>), less than (<)<br>→ polygon, quadrilateral, triangle, rectangle<br>→ compare, convert, equal, equivalent, ascending, predict, calculate, expression, method |
| | 5 |   | Interpreting bar charts<br><br>Converting pounds and pence | |
| | 6 | Retrieval of methods from HT3 | Formal written methods for subtraction<br><br>Equivalent metres and centimetres | **Responsive week**<br>**Money Sense Enterprise Lesson 2 to be completed** |
| **HT4** | **Week** | **Mental Maths** | **Suggested Long Term Retrieval** | **Maths Curriculum** |
| | 1 | Times Tables 10x, 5x, 2x, 4x, 8x | Interpreting pictograms<br><br>Formal written | **Fractions 1 – National Curriculum Links (continue into weeks 2 and 3)** |

| | | | | |
|---|---|---|---|---|
| | | | methods for addition | 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<br>recognise, find and write fractions of a discrete set of objects: unit fractions and non-unit fractions with small denominators<br>recognise and use fractions as numbers: unit fractions and non-unit fractions with small denominators |
| | **2** | Times Tables 3x | Compare lengths<br><br>Dividing 2-digit by 1-digit | compare and order unit fractions, and fractions with the same denominators<br>solve problems that involve all of the above<br>**KEY LANGUAGE**<br>There is some key language that children will need to know as part of the learning in this unit.<br>→ part, whole, equal parts, fraction, unit fraction, non-unit fraction, denominator, numerator<br>→ partition, split, share, group, interval, combine, count on, count back, represent<br>→ halves, thirds, quarters, fifths, sixths, sevenths, eighths, ninths, tenths, elevenths, twelfths<br>→ mixed number, whole number, fractional part, integer, set of objects |
| | **3** | Times Tables 3x | Money problems<br><br>Measuring lengths | **Fractions 2 – National Curriculum Links (continue into week 4)**<br>recognise, find and write fractions of a discrete set of objects: unit fractions and non-unit fractions with small denominators<br>recognise and show, using diagrams, equivalent fractions with small denominators<br>add and subtract fractions with the same denominator within one whole (for example, 5/7 + 1/7 = 6/7)<br>compare and order unit fractions, and fractions with the same denominators<br>solve problems that involve all of the above<br>**KEY LANGUAGE**<br>There is some key language that children will need to know as part of the learning in this unit.<br>→ part, whole, equal parts, unit fraction, non-unit fraction, denominator, numerator, equivalent fraction<br>→ partition, split, share, count on, count back, compare, measure, calculate, method<br>→ whole number, add, subtract, difference, multiply, divide, equal to, greater than (>), less than (<) |
| | **4** |  | Interpreting tables<br><br>Multiplying a 2-digit by 1-digit number | |
| | **5**<br>**(4 days)** |  | Measuring perimeters<br><br>Related multiplication / division calculations | **Responsive week** |
| **HT5** | **Week** | **Mental Maths** | **Suggested Long Term Retrieval** | **Maths Curriculum** |

| | | | | |
|---|---|---|---|---|
| | 1 |  | Adding/ Subtracting money<br><br>Interpret Pictograms/ Tally charts | **Time – National Curriculum Links ( Continue into week 2)**<br>know the number of seconds in a minute and the number of days in each month, year and leap year<br><br>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<br><br>tell and write the time from an analogue clock, including using Roman numerals from I to XII, and 12-hour and 24-hour clocks<br><br>compare durations of events [for example to calculate the time taken by particular events or tasks]<br><br>**KEY LANGUAGE**<br>There is some key language that children will need to know as part of the learning in this unit.<br>→ month, year, leap year<br>→ January, February, March, April, May, June, July, August, September, October, November, December<br>→ day, hour, minute, second<br>→ midnight, midday/noon<br>→ hour hand, minute hand, past, to, half past, o'clock, quarter past, quarter to, Roman numerals<br>→ longer, shorter, the same, units, last, convert, how long, left, passed, fastest, slowest<br>→ 12-hour clock, 24-hour clock<br>→ start time, end time, duration, time taken, finish, forwards, backwards, twice<br>→ daytime, night time, around the clock, am, pm<br>→ morning, afternoon, evening, night. |
| | 2 |  | Greater than and less than < ><br><br>Count up and down in tenths | |
| | 3 |  | Find fractions of a set of objects<br><br>Multiples of 8, 50 and 100 | **Angles and Properties of Shape – National Curriculum Links (Continue into week 4)**<br><br>**KEY LANGUAGE**<br>There is some key language that children will need to know as part of the learning in this unit:<br>→ right angle, quarter turn, half turn, acute angle, obtuse angle<br>→ vertical, horizontal, parallel, perpendicular<br>→ triangle, quadrilateral, square, rectangle, trapezium, rhombus, kite, pentagon, hexagon<br>→ cube, cuboid, sphere, pyramid, prism, cylinder, cone, triangular prism, square-based pyramid, tetrahedron<br>→ describe, property, 2D, 3D, draw accurately, construct<br>measure, compare, add and subtract: lengths (m/cm/mm); mass (kg/g); volume/capacity (l/ml)<br><br>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<br><br>draw 2-D shapes and make 3-D shapes using modelling materials; recognise 3-D shapes in different orientations; and describe them<br><br>identify horizontal and vertical lines and pairs of perpendicular and parallel lines |
| | 4<br>(4 days) |  | Recognise fractions as numbers<br><br>Formal addition/ subtraction | |
| | 5 | Times Tables 10x, 5x, 2x, 4x, 8x, 3x | Equivalent fractions using diagrams<br><br>Recognise 3D shapes | **Responsive week** |
| | 6 | Times Tables 10x, 5x, 2x, 4x, 8x, 3x | Add fractions<br><br>Identify right angles | |

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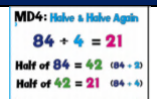
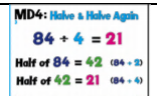
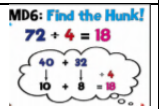
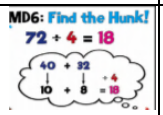
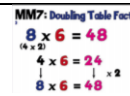
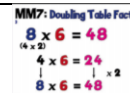
**HT6**

| Week | Mental Maths | Suggested Long Term Retrieval | Maths Curriculum |
|---|---|---|---|
| **1** (4 days) |  | Subtract fractions<br><br>Dividing 2-digit by 1-digit | **Mass – National Curriculum Links (may Continue into week 2)**<br>KEY LANGUAGE<br>There is some key language that children will need to know as part of the learning in this unit:<br>→ mass, weigh, measure, grams (g), kilograms (kg)<br>→ interval, scale<br>measure, compare, add and subtract: lengths (m/cm/mm); mass (kg/g); volume/capacity (l/ml) |
| **2** |  | Compare and order unit fractions with same denominator<br><br>Months and Years | |
| **3** |  | Telling the time to 5 minutes<br><br>Times table and related division facts | **Capacity – National Curriculum Links (Continue into week 4)**<br>measure, compare, add and subtract: lengths (m/cm/mm); mass (kg/g); volume/capacity (l/ml)<br>KEY LANGUAGE<br>There is some key language that children will need to know as part of the learning in this unit:<br>→ capacity, amount, measurement<br>→ litres (l), millilitres (ml)<br>→ scale, number line, interval<br>→ compare, convert, order |
| **4** |  | Comparing Mass<br><br>Add and subtract fractions | **Responsive/Retrieval**<br>**Place Value, Addition and Subtraction, Multiplication and Division, Money, Statistics, Length Fractions, Time, Angles and Properties of Shapes, Mass, Capacity**<br><br>**Money Sense Enterprise Lesson 3 to be completed** |
| **5** |  <br>Link to times Tables 10x, 5x, 2x, 4x, 8x, 3x | Equivalent fractions using diagrams<br><br>Mass problem solving | |
| **6** |  | Comparing capacity | |

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|---|---|---|---|---|
| | | Link to times Tables 10x, 5x, 2x, 4x, 8x, 3x | Statistics problem solving | |
| | 7 | Retrieval – Number Bonds to 20 Times tables Doubling Halving | Capacity problem solving<br><br>Perpendicular and parallel lines | |

# Ashdene Primary School – Maths Curriculum

| | |
|---|---|
| Purpose of study | Mathematics is a creative and highly inter-connected discipline that has been developed over centuries, providing the solution to some of history's most intriguing problems. It is essential to everyday life, critical to science, technology and engineering, and necessary for financial literacy and most forms of employment. A high-quality mathematics education therefore provides a foundation for understanding the world, the ability to reason mathematically, an appreciation of the beauty and power of mathematics, and a sense of enjoyment and curiosity about the subject. |
| Aims | • become fluent in the fundamentals of mathematics, including through varied and frequent practice with increasingly complex problems over time, so that pupils develop conceptual understanding and the ability to recall and apply knowledge rapidly and accurately<br>• reason mathematically by following a line of enquiry, conjecturing relationships and generalisations, and developing an argument, justification or proof using mathematical language<br>• can solve problems by applying their mathematics to a variety of routine and non-routine problems with increasing sophistication, including breaking down problems into a series of simpler steps and persevering in seeking solutions. |
| Maths at Ashdene | At Ashdene in every maths lesson we aim to develop children's reasoning and problem solving. Furthermore, children develop their mathematical understanding through the use of concrete, pictorial and abstract resourcing which are made available to all children in every lesson. We aim to revisit and review mathematical concepts and make links between them in order to ensure children have a deeper understanding of the maths curriculum. |
| Personal Development Links | RESPECT · SMSC · RIGHTS RESPECTING · BRITISH VALUES · JIGSAW · TRIPS AND VISITS |

## Year 4

| | Week | Mental Maths | Suggested Long Term Retrieval | Maths Curriculum |
|---|---|---|---|---|
| HT1 | 1 (4 days) | Times Tables 10x, 5x, 2x, 4x, 8x, 3x | Add/ subtract money<br><br>Measure perimeter | **Place Value 4 Digit Numbers (1) – National Curriculum Links**<br>recognise the place value of each digit in a four-digit number (thousands, hundreds, tens, and ones)<br>round any number to the nearest 10, 100 or 1000<br>count in multiples of 6, 7, 9, 25 and 1000<br>identify, represent and estimate numbers using different representations<br>order and compare numbers beyond 1000<br>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 |
| | 2 | Times Tables 10x, 5x, 2x, 4x, 8x, 3x | Recognise 3D shapes<br><br>Recognise equivalent fractions using diagrams | |

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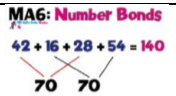
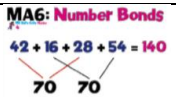
| | 3 | Times Tables 6x | Formal column subtraction<br><br>Recognise unit/ non-unit fractions | **KEY LANGUAGE**<br>There is some key language that children will need to know as part of the learning in this unit:<br>→ tens (10s), hundreds (100s), thousands (1,000s)<br>→ rounding, counting, represent, compare, order<br>→ more than (>), less than (<)<br>→ partition, recombine<br>→ numerals<br>→ nearest, distance |
| | 4 | Times Tables 6x | Formal column addition<br><br>Use inverse to check answers | **Place Value 4 Digit Numbers (2) – National Curriculum Links**<br>find 1000 more or less than a given number<br><br>order and compare numbers beyond 1000<br><br>round any number to the nearest 10, 100 or 1000<br><br>count in multiples of 6, 7, 9, 25 and 1000<br><br>count backwards through zero to include negative numbers<br><br>identify, represent and estimate numbers using different representations<br><br>solve number and practical problems that involve all of the above and with increasingly large positive numbers<br><br>interpret negative numbers in context, count forwards and backwards with positive and negative whole numbers, including through zero<br>**KEY LANGUAGE**<br>There is some key language that children will need to know as part of the learning in this unit.<br>→ thousands (1,000s), hundreds (100s), tens (10s), ones (1s)<br>→ place value<br>→ more, less<br>→ greater than (>), less than (<), equal to (=)<br>→ order, compare<br>→ round to, nearest<br>→ negative, positive<br>→ step<br>→ ascending, descending |
| | 5 | Times Tables 10x, 5x, 2x, 4x, 8x, 3x, 6x | Interpret pictograms<br><br>Roman Numerals | **Addition and Subtraction - National Curriculum Links**<br>add and subtract numbers with up to 4 digits using the formal written methods of columnar addition and subtraction where appropriate<br><br>estimate and use inverse operations to check answers to a calculation<br><br>solve addition and subtraction two-step problems in contexts, deciding which operations and methods to use and why<br><br>solve number and practical problems that involve all of the above and with increasingly large positive numbers<br><br>round any number to the nearest 10, 100 or 1000<br>**KEY LANGUAGE**<br>There is some key language that children will need to know as a part of the learning in this unit.<br>→ addition, subtraction<br>→ total<br>→ more than, less than<br>→ difference, exchange<br>→ column method<br>→ estimate, accurate, efficient, exact<br>→ strategy<br>→ diagram |
| | 6 |  | Identify right angles<br><br>Interpret negative numbers | |
| | 7 |  | Recognise 2D shapes | |

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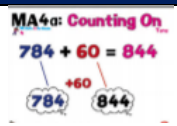
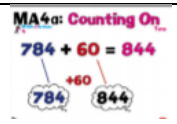
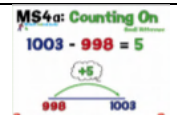
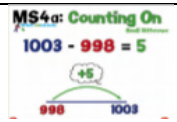
| | | | Find 1000 more than a given number | |
| HT2 | **Week** | **Mental Maths** | **Suggested Long Term Retrieval** | **Maths Curriculum** |
| | **1** (4 days) |  | Order and compare numbers beyond 1000<br><br>Addition/subtraction problems | **Retrieval Practice**<br>**Place Value, Addition and Subtraction** |
| | **2** |  | Place value in four-digit numbers<br><br>Count in multiples of 25 | **Measure Perimeter – National Curriculum Links**<br>convert between different units of measure [for example, kilometre to metre; hour to minute]<br><br>measure and calculate the perimeter of a rectilinear figure (including squares) in centimetres and metres<br><br>KEY LANGUAGE<br>There is some key language that children will need to know as part of the learning in this unit:<br>→ kilometres, metres, centimetres<br>→ convert, equivalent to<br>→ perimeter, distance, around<br>→ total<br>→ length, width<br>→ square, rectangle, rectilinear shape |
| | **3** |  | Round to 10, 100, 1000<br><br>Interpret bar charts | **Multiplication and Division (1) – National Curriculum Links (may continue into week 5)**<br><br>recall multiplication and division facts for multiplication tables up to 12 × 12<br><br>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<br><br>solve problems involving converting from hours to minutes; minutes to seconds; years to months; weeks to days<br><br>KEY LANGUAGE<br>There is some key language that children will need to know as part of the learning in this unit.<br>→ times-table, times, times by<br>→ multiply (×), multiple, multiply by<br>→ divide (÷), divide by<br>→ grouping, groups of, lots of, sets of, grouped, *x* groups of *y*<br>→ sharing, share, equal, equally<br>→ number facts, number sentences, multiplication facts/ sentences, division facts/sentences, fact family<br>→ ones (1s), tens (10s), hundreds (100s), zero (0), how many, total, method, calculation, exchange, solve, less then (<), greater than (>), added, sort, sum, recall |
| | **4** |  | Compare lengths (mm, cm, m)<br><br>Calculate perimeter | |

# Ashdene Primary School

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| | 5 | MA1: Partitioning<br>648 + 231 = 879<br>800 + 70 + 9 = 879 | Find the area by counting squares<br><br>Solve addition/ subtraction problems | **Measure Area – National Curriculum Links(continue into week 6)**<br><br>KEY LANGUAGE<br>There is some key language that children will need to know as part of the learning in this unit:<br>→ area, space, inside, units, rows<br>→ length, width, measure<br>→ shape, triangle, square, rectangle, trapezium, rectilinear shape, 2D shapes<br>→ larger, more area, smaller, less area, least area, greatest area<br>→ right angle<br>→ counting, subtraction<br>→ reflection, rotation<br>→ compare, order, size<br><br>find the area of rectilinear shapes by counting squares<br><br>estimate, compare and calculate different measures, including money in pounds and pence |
| | 6 | MA1: Partitioning<br>648 + 231 = 879<br>800 + 70 + 9 = 879 | Tell the time from an analogue clock<br><br>Count backwards through zero | **Responsive week**<br>**Money Sense Enterprise Lessons 1 and 2 to be completed** |
| | 7 | Times Tables 9x | Interpret data in tables<br><br>Round numbers to 10, 100, 1000 | |
| | 8 | Times Tables 9x | Recognise 2d shapes<br><br>Estimating answers using addition/ fractions | |
| **HT3** | **Week** | **Mental Maths** | **Suggested Long Term Retrieval** | **Maths Curriculum** |
| | **1**<br>**(4 days)** | Times Tables 10x, 5x, 2x, 4x, 8x, 3x, 6x, 9x | Calculate area<br><br>Convert lengths | **Multiplication and Division (2) – National Curriculum Links (may continue into week 4)** |

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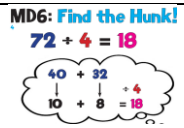
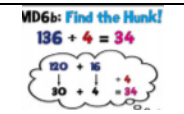
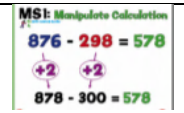
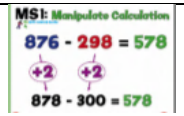
| HT4 | Week | Mental Maths | Suggested Long Term Retrieval | Maths Curriculum |
|---|---|---|---|---|
| | 2 | Times Tables 10x, 5x, 2x, 4x, 8x, 3x, 6x, 9x | Solve problems converting from hours to minutes, minutes to seconds<br><br>Calculate perimeter | solve problems involving multiplying and adding, 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<br><br>multiply two-digit and three-digit numbers by a one-digit number using formal written layout<br><br>recognise and use factor pairs and commutativity in mental calculations<br><br>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<br><br>solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign<br><br>**KEY LANGUAGE**<br>There is some key language that children will need to know as part of the learning in this unit.<br>→ multiplication (×), multiplication statement<br>→ grouping, groups, equal, total, repeated addition<br>→ correspondence, multiply, divide, combinations<br>→ divide (÷), division statement<br>→ times-tables<br>→ whole, left over, remainder<br>→ one-step, two-step, multi-step<br>→ array, bar model, part-whole model |
| | 3 |  | Order/compare numbers beyond 1000<br><br>Solve problems involving four operations | |
| | 4 |  | Factor pairs<br><br>Converting hours to minutes | **Fractions (1) – National Curriculum Links**<br>count up and down in hundredths; recognise that hundredths arise when dividing an object by one hundred and dividing tenths by ten<br><br>recognise and show, using diagrams, families of common equivalent fractions<br><br>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<br><br>**KEY LANGUAGE**<br>There is some key language that children will need to know as part of the learning in this unit:<br>→ tenth, hundredth<br>→ equivalent fraction<br>→ improper fraction, mixed number<br>→ simplify, simplest fraction |
| | 5 |  | Division with remainders<br><br>Dividing 3 digit by 1 digit number | |
| | 6 |  | Common equivalent fractions<br><br>Fractions greater than 1 | **Fractions (2) – National Curriculum Links (may continue into week 7)**<br>add and subtract fractions with the same denominator<br><br>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<br><br>**KEY LANGUAGE**<br>There is some key language that children will need to know as a part of the learning in this unit:<br>→ numerator, denominator<br>→ fraction, whole number, mixed number, proper fraction, improper fraction<br>→ add (+), subtract (−), multiply (×), divide (÷), sign, greater than (>), less than (<)<br>→ whole, part, find … of …<br>→ fraction strip, represent, number line, diagram, problem solving |

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| HT5 | 1 | Times Tables 7x | Tenths and hundredths<br><br>Finding area | **Decimals (1) – National Curriculum Links (Continue into week 2)**<br>recognise and write decimal equivalents of any number of tenths or hundredths<br>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<br>solve simple measure and money problems involving fractions and decimals to two decimal places<br>count up and down in hundredths; recognise that hundredths arise when dividing an object by one hundred and dividing tenths by ten<br>**KEY LANGUAGE**<br>There is some key language that children will need to know as a part of the learning in this unit.<br>→ decimal point, whole, tenths, hundredths, integer, tenths column, hundredths column<br>→ one more, one less, greater than, less than, increase, decrease<br>→ divide, regroup, equivalent, partition |
| | 2 | Times Tables 7x | Finding perimeter<br><br>Tenths/ Hundredths | |
| | 3 | Times Tables 11x | Subtracting fractions<br><br>Problem solving - division | **Decimals (2) – National Curriculum Links (continue week 4)**<br>recognise and write decimal equivalents of any number of tenths or hundredths<br>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<br>compare numbers with the same number of decimal places up to two decimal places<br>round decimals with one decimal place to the nearest whole number<br>recognise and write decimal equivalents to 1/4; 1/2; 3/4<br>solve simple measure and money problems involving fractions and decimals to two decimal places<br>estimate, compare and calculate different measures, including money in pounds and pence<br>add and subtract fractions with the same denominator<br>**KEY LANGUAGE**<br>There is some key language that children will need to know as part of the learning in this unit.<br>→ tens (10s), ones (1s), tenths, hundredths, fraction<br>→ decimal point, decimal place, 0·1, 0·01<br>→ equivalent, number bond, equivalent fraction<br>→ whole number, digit<br>→ rounding, round up, round down, multiply (×), divide (÷)<br>→ greater than (>), less than (<), equal to (=), smallest, lightest, greatest, heaviest, capacity<br>→ order, compare, statement, ascending, convert<br>→ part-whole, place value, bar model |
| | 4 | Times Tables 11x | Fraction of a quantity<br><br>Dividing by 10/ 100 | |
| | 5 (4 days) | Times Tables 10x, 5x, 2x, 4x, 8x, 3x, 6x, 9x, 7x, 11x | Adding fractions<br><br>Formal multiplication methods | Responsive week |
| | **Week** | **Mental Maths** | **Suggested Long Term Retrievall** | **Maths Curriculum** |

# Ashdene Primary School

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<table>
<tr><td></td><td>1</td><td>Times Tables 12x</td><td>Fraction/ decimal equivalence<br><br>Comparing area</td><td rowspan="2"><u>Time – National Curriculum Links</u><br>estimate, compare and calculate different measures, including money in pounds and pence<br><br>convert between different units of measure [for example, kilometre to metre; hour to minute]<br><br>solve simple measure and money problems involving fractions and decimals to two decimal places<br><br>KEY LANGUAGE<br>There is some key language that children will need to know as part of the learning in this unit.<br>→ seconds, minutes, hours<br>→ days, weeks, months, years<br>→ units of time<br>→ convert, equal to (=), compare<br>→ 12-hour, 24-hour, am, pm<br>→ analogue, digital<br>→ bar model</td></tr>
<tr><td></td><td>2</td><td>Times Tables 12x</td><td>Converting time<br><br>Decimals – making a whole</td></tr>
<tr><td></td><td>3</td><td>MA2: Round & Adjust<br>345 + 298 = 643<br>345 + 300 - 2<br>645 - 2 = 643</td><td>Roman numerals to 100<br><br>Ordering decimals</td><td><u>Money – National Curriculum Links (Continue into week 3)</u><br>estimate, compare and calculate different measures, including money in pounds and pence<br><br>solve simple measure and money problems involving fractions and decimals to two decimal places<br><br>KEY LANGUAGE<br>There is some key language that children will need to know as part of the learning in this unit.<br>→ notes<br>→ coins<br>→ pounds (£)<br>→ pence (p)<br>→ add (+)<br>→ subtract (-)<br>→ change<br>→ round to the nearest<br>→ order<br>→ greater than (>)<br>→ less than (<)<br>→ cheaper<br>→ more expensive<br>→ estimate<br>→ over estimate<br>→ under estimate<br>→ total</td></tr>
<tr><td></td><td>4<br>(4 days)</td><td>MA2: Round & Adjust<br>345 + 298 = 643<br>345 + 300 - 2<br>645 - 2 = 643</td><td>Dividing by 10/100<br><br>Fractions of a quantity</td><td rowspan="2"><u>Geometry (angles and 2d shapes) – National Curriculum Links (Continue into week 5 and 6)</u><br>compare and classify geometric shapes, including quadrilaterals and triangles, based on their properties and sizes<br><br>identify lines of symmetry in 2-D shapes presented in different orientations<br><br>complete a simple symmetric figure with respect to a specific line of symmetry<br><br>KEY LANGUAGE<br>There is some key language that children will need to know as part of the learning in this unit.<br>→ angle, acute, obtuse, right angle, quarter turn, half turn, interior angles, exterior angles<br>→ quadrilateral, square, oblong, rectangle, rhombus, parallelogram, trapezium, pentagon, hexagon, octagon, hexadecagon, kite arrowhead, polygon, circle<br>→ triangle, isosceles, equilateral, scalene<br>→ regular, irregular, side length, length, perimeter<br>→ symmetrical, symmetry, line of symmetry, horizontal, vertical, diagonal, reflective, sequence, pattern<br>→ sort, group, compare, order, properties<br>→ shape, vertices, parallel</td></tr>
<tr><td></td><td>5</td><td>MM1: Manipulate Calculation<br>16 x 3<br>+2 x2<br>8 x 6 = 48</td><td>Problem solving – money<br><br>Problem solving - decimals</td></tr>
</table>

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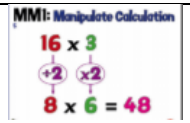
| | 6 |  | Classifying quadrilaterals<br><br>Rounding decimals | **Responsive week** |
| HT6 | **Week** | **Mental Maths** | **Suggested Long Term Retrieval** | **Maths Curriculum** |
| | **1**<br>**(4 days)** | Times Tables to 12x | Ordering amounts of money<br><br>Factor Pairs | **Geometry (Position and Direction) – National Curriculum Links (Continue into week 2)**<br>complete a simple symmetric figure with respect to a specific line of symmetry<br><br>describe positions on a 2-D grid as coordinates in the first quadrant<br><br>plot specified points and draw sides to complete a given polygon<br><br>describe movements between positions as translations of a given unit to the left/right and up/down<br><br>**KEY LANGUAGE**<br>There is some key language that children will need to know as part of the learning in this unit.<br>→ coordinates<br>→ position<br>→ horizontal, vertical<br>→ up, down<br>→ left, right<br>→ square, rectangle<br>→ vertex, vertices |
| | **2** | Times Tables to 12x | Formal addition and subtraction<br><br>Decimal equivalence to ¼, ½, 3/4 | **Statistics – National Curriculum Links (may continue into week 3)**<br>convert between different units of measure [for example, kilometre to metre; hour to minute]<br><br>interpret and present discrete and continuous data using appropriate graphical methods, including bar charts and time graphs<br><br>solve comparison, sum and difference problems using information presented in bar charts, pictograms, tables and other graphs<br><br>identify acute and obtuse angles and compare and order angles up to two right angles by size<br><br>compare and classify geometric shapes, including quadrilaterals and triangles, based on their properties and sizes<br><br>**KEY LANGUAGE**<br>There is some key language that children will need to know as part of the learning in this unit.<br>→ table, line graph, bar chart, pictogram<br>→ discrete data, continuous data<br>→ operation<br>→ altogether, more than, greatest, smallest<br>→ compare |

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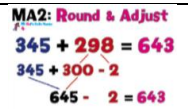
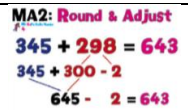
| | 3 |  | Formal multiplication<br><br>Decimal equivalence of tenths and hundredths | **Responsive/Retrieval**<br>**Place Value, Addition and Subtraction, Multiplication and Division, Perimeter, Area, Decimals, Fractions, Time, Statistics, Money, Angles and 2D shapes, Position and Direction**<br><br>**Money Sense Enterprise Lesson 3 to be completed** |
| | 4 |  | Dividing by 10 and 100<br><br>Classify Quadrilaterals | |
| | 5 | | Rounding to 10, 100, 1000<br><br>Classify triangles | |
| | 6 | | Place Value of each digit in 4-digit number<br><br>Acute and obtuse angles | |
| | 7 | Retrieval from across HT5 and 6 | Co-ordinates in the first quadrant<br><br>Line graphs | |

# Ashdene Primary School – Maths Curriculum

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|---|---|
| Purpose of study | Mathematics is a creative and highly inter-connected discipline that has been developed over centuries, providing the solution to some of history's most intriguing problems. It is essential to everyday life, critical to science, technology and engineering, and necessary for financial literacy and most forms of employment. A high-quality mathematics education therefore provides a foundation for understanding the world, the ability to reason mathematically, an appreciation of the beauty and power of mathematics, and a sense of enjoyment and curiosity about the subject. |
| Aims | • become fluent in the fundamentals of mathematics, including through varied and frequent practice with increasingly complex problems over time, so that pupils develop conceptual understanding and the ability to recall and apply knowledge rapidly and accurately<br>• reason mathematically by following a line of enquiry, conjecturing relationships and generalisations, and developing an argument, justification or proof using mathematical language<br>• can solve problems by applying their mathematics to a variety of routine and non-routine problems with increasing sophistication, including breaking down problems into a series of simpler steps and persevering in seeking solutions. |
| Maths at Ashdene | At Ashdene in every maths lesson we aim to develop children's reasoning and problem solving. Furthermore, children develop their mathematical understanding through the use of concrete, pictorial and abstract resourcing which are made available to all children in every lesson. We aim to revisit and review mathematical concepts and make links between them in order to ensure children have a deeper understanding of the maths curriculum. |
| Personal Development Links | RESPECT \| SMSC \| RIGHTS RESPECTING \| BRITISH VALUES \| JIGSAW \| TRIPS AND VISITS |

## Year 5

| | Week | Mental Maths | Suggested Long Term Retrieval | Maths Curriculum |
|---|---|---|---|---|
| HT1 | 1 (4 days) | Times tables facts up to 12x | | **Place Value within 100,000 – National Curriculum Links**<br>read, write, order and compare numbers to at least 1 000 000 and determine the value of each digit<br>round any number up to 1 000 000 to the nearest 10, 100, 1000, 10 000 and 100 000<br>solve number problems and practical problems that involve all of the above<br>read Roman numerals to 1000 (M) and recognise years written in Roman numerals<br>count forwards or backwards in steps of powers of 10 for any given number up to 1 000 000 |
| | 2 | Times tables facts up to 12x | Factor Pairs<br>Inverse operations | |
| | 3 | | Add fractions with same denominator | |

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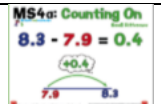
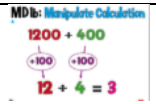
| | | | Decimal equivalence to ¼, ½, 3/4 | **KEY LANGUAGE**<br>There is some key language that children will need to know as part of the learning in this unit:<br>→ ones (1s), tens (10s), hundreds (100s), thousands (1,000s), ten thousands (10,000s)<br>→ place value, position<br>→ partition, equivalent<br>→ estimate, closer to, between<br>→ round<br>→ next multiple, previous multiple, nearest multiple of 10, 100, 1,000 or 10,000<br>→ compare, order, greater than (>), less than (<)<br>→ Roman numeral<br><br>**Place Value within 1,000,000 – National Curriculum Links**<br>read, write, order and compare numbers to at least 1 000 000 and determine the value of each digit<br><br>solve number problems and practical problems that involve all of the above<br><br>round any number up to 1 000 000 to the nearest 10, 100, 1000, 10 000 and 100 000<br><br>interpret negative numbers in context, count forwards and backwards with positive and negative whole numbers, including through zero<br><br>count forwards or backwards in steps of powers of 10 for any given number up to 1 000 000<br><br>**KEY LANGUAGE**<br>Here is some key language that children will need to know as part of the learning in this unit:<br>→ place value<br>→ ones (1s), tens (10s), hundreds (100s), thousands (1,000s), ten thousands (10,000s), hundred thousands (100,000s), million (1,000,000)<br>→ partition, partitioning<br>→ number line, count<br>→ negative number, positive number<br>→ minus<br>→ rounding, round up, round down<br>→ estimate<br>→ compare, order<br>→ sequence, rule<br>→ ascending, descending<br>→ less than (<), greater than (>), nearest. |
| **4** | | Subtract fractions<br><br>Convert metres to km | | |
| **5** |  | Calculate perimeter of rectilinear shapes<br><br>Convert between analogue/ digital | | **Addition and Subtraction - National Curriculum Links**<br>add and subtract whole numbers with more than 4 digits, including using formal written methods (columnar addition and subtraction)<br><br>use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy<br><br>add and subtract numbers mentally with increasingly large numbers<br><br>estimate and use inverse operations to check answers to a calculation<br><br>solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why |
| **6** |  | Round decimals with 1 dp to the nearest whole number<br><br>Solve money problems | | |

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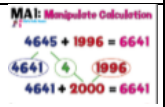
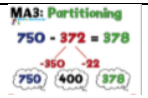
| | | | | **KEY LANGUAGE**<br>There is some key language that children will need to know as part of the learning in this unit:<br>→ add, subtract<br>→ 1s (ones), 10s (tens), 100s (hundreds), 1,000s (thousands), 10,000s (ten thousands)<br>→ total<br>→ difference<br>→ inverse<br>→ round<br>→ mentally<br>→ estimate |
| | **7** |  | Co-ordinates in the first quadrant<br><br>Classify quadrilaterals | **Graphs and Tables - National Curriculum Links**<br>complete, read and interpret information in tables, including timetables<br><br>solve comparison, sum and difference problems using information presented in a line graph<br><br>**KEY LANGUAGE**<br>Here is some key language that children will need to know as part of the learning in this unit:<br>→ line graph, **dual line graph**<br>→ horizontal axis, vertical axis, axes, scale<br>→ data, information<br>→ read, interpret, complete<br>→ table, **two-way table**. |
| **HT2** | **Week** | **Mental Maths** | **Suggested Long Term Retrieval** | **Maths Curriculum** |
| | **1** (4 days) | **Times tables facts up to 12 x** | Describe translations of shapes<br><br>Compare numbers up to 2 decimal places | **Retrieval Practice**<br>**Place Value, Addition and Subtraction, Graphs and Tables** |
| | **2** |  | Identify lines of symmetry in 2d shapes<br><br>Recognise using diagrams equivalent fractions | **Multiplication and Division (1) – National Curriculum Links** |

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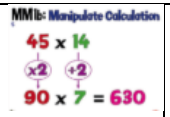
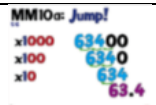
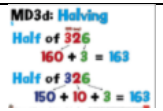
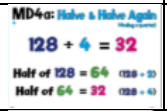
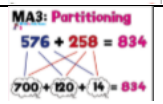
| | 3 |  | Recognise decimal equivalence of any tenth<br><br>Interpret continuous data | identify multiples and factors, including finding all factor pairs of a number, and common factors of two numbers<br><br>know and use the vocabulary of prime numbers, prime factors and composite (non-prime) numbers<br><br>solve problems involving multiplication and division including using their knowledge of factors and multiples, squares and cubes<br><br>recognise and use square numbers and cube numbers, and the notation for squared (²) and cubed (³)<br><br>solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates<br><br>multiply and divide whole numbers and those involving decimals by 10, 100 and 1000<br><br>establish whether a number up to 100 is prime and recall prime numbers up to 19<br><br>**KEY LANGUAGE**<br>Here is some key language that children will need to know as part of the learning in this unit:<br>→ multiple<br>→ factor<br>→ prime number<br>→ composite number<br>→ square ($x^2$)<br>→ cube ($x^3$)<br>→ multiply, multiplication, times<br>→ divide, division<br>→ inverse operation<br>→ place value<br>→ ones, tens, hundreds, thousands, tens of thousands |
| | 4 |  | Recognise decimal equivalence of any tenth<br><br>Identify acute and obtuse angles | **Area and Perimeter – National Curriculum Links (continue into week 5)**<br>measure and calculate the perimeter of composite rectilinear shapes in centimetres and metres<br><br>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<br>**KEY LANGUAGE**<br>There is some key language that children will need to know as part of the learning in this unit:<br>→ perimeter, distance, area, space<br>→ scale, actual area/actual size, convert<br>→ centimetres (cm), metres (m), square centimetres ($cm^2$), square metres ($m^2$)<br>→ rectangle, square, rectilinear shape, sides, length, width<br>→ measure, combine, brackets, total, double, estimate, array |
| | 5 |  | Classify triangles<br><br>Round any number up to 1,000,000 | |
| | 6 |  | Identify prime numbers<br><br>Formal addition | **Multiplication and Division (2) – National Curriculum Links (may continue into week 6)**<br>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<br><br>multiply and divide numbers mentally drawing upon known facts<br><br>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 |
| | 7 |  | Interpret negative numbers<br><br>Formal subtraction | |

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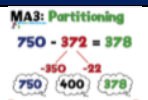
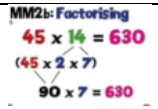
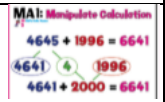
| | | | | **KEY LANGUAGE**<br>There is some key language that children will need to know as part of the learning in this unit:<br>→ total, sum, remainder<br>→ place value, partition<br>→ multiply, divide, add, subtract<br>→ factor, multiple |
| | **8** | Retrieval of methods across HT2 | Multiples<br><br>Names of 2d shapes | **Responsive week**<br>**Money Sense Enterprise Lesson 1 to be completed** |
| **HT3** | **Week** | **Mental Maths** | **Suggested Long Term Retrieval** | **Maths Curriculum** |
| | **1** (4 days) |  | Recognise square numbers<br><br>Interpret bar charts | **Fractions (1) – National Curriculum Links**<br>identify, name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths<br><br>recognise mixed numbers and improper fractions and convert from one form to the other and write mathematical statements > 1 as a mixed number [for example, 2/5 + 4/5 =6/5 = 1 1/5]<br>read, write, order and compare numbers with up to three decimal places<br><br>compare and order fractions whose denominators are all multiples of the same number<br>**KEY LANGUAGE**<br>There is some key language that children will need to know as part of the learning in this unit.<br>→ equivalent<br>→ numerator, denominator<br>→ whole, fraction<br>→ simplify, expand<br>→ multiply (×), divide (÷), multiplication, division, multiple, factor<br>→ remainder<br>→ improper, mixed number<br>→ convert<br>→ greater than (>), less than (<), equal to (=)<br>→ divisor, dividend, quotient |
| | **2** | | Solving addition problems | |
| | **3** |  | Recognise cube numbers<br><br>Identify place value to 1,000,000 | **Fractions (2)– National Curriculum Links**<br>add and subtract fractions with the same denominator and denominators that are multiples of the same number<br><br>recognise mixed numbers and improper fractions and convert from one form to the other and write mathematical statements > 1 as a mixed number [for example, 2/5 + 4/5 =6/5 = 1 1/5]<br>**KEY LANGUAGE**<br>There is some key language that children will need to know as part of the learning in this unit:<br>→ fraction, whole, part, equal parts, equivalent<br>→ add, sum, total, subtract, difference<br>→ divide, multiply, multiple<br>→ numerator, denominator, common denominator<br>→ simplify, convert<br>→ proper fraction, improper fraction, mixed number<br>→ method, multi-step, efficient |
| | **4** |  | Calculate area of rectilinear shapes<br><br>Factors | |

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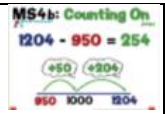
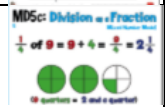
| | 5 |   | Multiply/ divide by 10, 100, 1000<br><br>Reading timetables | |
| | 6 | Retrieval of methods across HT3 | Compare fractions whose denominators are all multiples of the same no.<br><br>Convert imp. fra. to mixed numbers | **Responsive week**<br>**Money Sense Enterprise Lesson 2 to be completed** |
| **HT4** | **Week** | **Mental Maths** | **Suggested Long Term Retrieval** | **Maths Curriculum** |
| | 1 | | Divide by 10, 100, 1000<br><br>Venn Diagrams | **Complete Retrieval Practice work looking at fractions (2), which was completed during HT3, for 3 lessons before moving onto Fractions (3).** |
| | 2 |   | Formal multiplication<br><br>Money problems | **Fractions (3) - National Curriculum Links**<br>multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams<br>**KEY LANGUAGE**<br>There is some key language that children will need to know as part of the learning in this unit.<br>→ operators, add, subtract, multiply, divide<br>→ fraction, improper fraction, mixed number<br>→ denominator, numerator<br>→ convert, simplify, equivalent<br>→ whole, part<br>→ factor, multiple |

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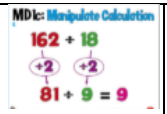
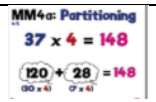
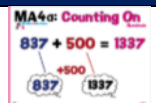
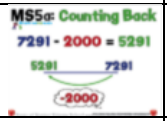
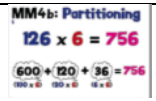
| | 3 |  | Division with remainders<br><br>Roman numerals | **Decimals and Percentages – National Curriculum Links**<br>read, write, order and compare numbers with up to three decimal places<br><br>read and write decimal numbers as fractions [for example, 0.71 = 71/100]<br><br>recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents<br><br>round decimals with two decimal places to the nearest whole number and to one decimal place<br><br>recognise the per cent symbol (%) and understand that per cent relates to 'number of parts per hundred', and write percentages as a fraction with denominator 100, and as a decimal<br>solve problems which require knowing percentage and decimal equivalents of 1/2, 1/4, 1/5, 2/5, 4/5 and those fractions with a denominator of a multiple of 10 or 25<br>identify, name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths<br><br>**KEY LANGUAGE**<br>There is some key language that children will need to know as part of the learning in this unit.<br>→ decimal place<br>→ tenths<br>→ hundredths<br>→ thousandths<br>→ decimal point<br>→ place value<br>→ digits<br>→ fractions<br>→ per cent (%)<br>→ rounding<br>→ improper fractions<br>→ mixed numbers<br>→ convert<br>→ exchange |
| | 4 |  | Convert between 12hr/ 24hr digital<br><br>Equivalent fractions | |
| | 5 | Retrieval of methods across HT4 | Adding fractions<br><br>Properties of quadrilaterals | |
| **HT5** | **Week** | **Mental Maths** | **Suggested Long Term Retrieval** | **Maths Curriculum** |
| | 1 |  | Percentage and fraction (out of 100) equivalence<br><br>Prime numbers | **Decimals – National Curriculum Links (may continue into week 4)**<br>solve problems involving number up to three decimal places<br><br>read, write, order and compare numbers with up to three decimal places<br><br>recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents<br><br>**KEY LANGUAGE**<br>There is some key language that children will need to know as part of the learning in this unit.<br>→ add, subtract, multiply, divide<br>→ ones, tenths, hundredths, thousandths<br>→ difference, group, share, compare, represent<br>→ decimal, decimal point, decimal place, digit<br>→ column, place value, exchange<br>→ mass, weight, length, width, cost, height |
| | 2 |  | Factors<br><br>Multiply fractions | |
| | 3 (4 days) | **Times tables facts up to 12 x** | Multiples<br><br>Decimals as fractions | |
| | 4 |  | Adding fractions<br><br>Interpreting line graphs | **Geometry Properties of Shape (1) – National Curriculum Links** |

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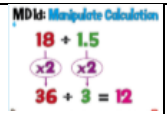
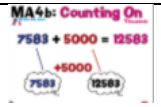
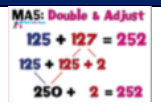
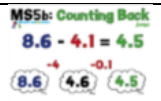
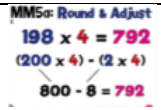
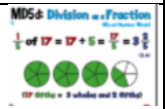
| | 5 |  | Subtracting fractions<br><br>Decimal sequences | know angles are measured in degrees: estimate and compare acute, obtuse and reflex angles<br><br>draw given angles, and measure them in degrees (°)<br><br>angles at a point on a straight line and 1/2 a turn (total 180°)<br><br>angles at a point and one whole turn (total 360°)<br><br>use the properties of rectangles to deduce related facts and find missing lengths and angles<br><br>**KEY LANGUAGE**<br>There is some key language that children will need to know as part of the learning in this unit.<br>→ angle, turn<br>→ whole turn, half turn, quarter turn<br>→ acute angle, right angle, obtuse angle, reflex angle<br>→ degrees (°)<br>→ 90 degrees<br>→ 180 degrees, 360 degrees<br>→ interior angle<br>→ protractor<br><br>**Geometry Properties of Shape (2) – National Curriculum Links**<br>use the properties of rectangles to deduce related facts and find missing lengths and angles<br><br>draw given angles, and measure them in degrees (°)<br><br>distinguish between regular and irregular polygons based on reasoning about equal sides and angles<br><br>identify 3-D shapes, including cubes and other cuboids, from 2-D representations<br><br>**KEY LANGUAGE**<br>There is some key language that children will need to know as part of the learning in this unit.<br>→ parallel<br>→ perpendicular<br>→ angle, right angle, interior angle<br>→ grid<br>→ regular, irregular<br>→ polygon, quadrilateral<br>→ 2D, 3D<br>→ viewpoint<br><br>**Retrieval Practice of fractions upon completion of Geometry (2)** |
| | 6 |  | Negative numbers in context<br><br>Composite numbers | |

# Ashdene Primary School

*Excellence: everyone, everywhere, every day*

| | Week | Mental Maths | Suggested Long Term Retrieval | Maths Curriculum |
|---|---|---|---|---|
| HT6 | 1 (4 days) |  | Recognising parallel lines<br><br>Formal multiplication | **Geometry (Position and Direction) – National Curriculum Links**<br>identify, describe and represent the position of a shape following a reflection or translation, using the appropriate language, and know that the shape has not changed<br>**KEY LANGUAGE**<br>There is some key language that children will need to know as part of the learning in this unit.<br>→ reflection, translation<br>→ mirror line<br>→ coordinate, horizontal coordinate, vertical coordinate<br>→ horizontal axis, vertical axis |
| | 2 |  | Classifying 3d shapes<br><br>Division with remainders | **Measure Converting Units – National Curriculum Links**<br>convert between different units of metric measure (for example, kilometre and metre; centimetre and metre; centimetre and millimetre; gram and kilogram; litre and millilitre)<br>use all four operations to solve problems involving measure [for example, length, mass, volume, money] using decimal notation, including scaling<br>understand and use approximate equivalences between metric units and common imperial units such as inches, pounds and pints<br>solve problems involving converting between units of time<br>**KEY LANGUAGE**<br>There is some key language that children will need to know as part of the learning in this unit:<br>→ mass, capacity, length, time, quantity<br>→ metric units, gram, kilogram, millilitre, litre, millimetre, centimetre, metre, kilometre<br>→ imperial units, ounce (oz), pound (lb), stone (st), pint (pt), gallon, inch (in), foot (ft), yard (yd)<br>→ second, minute, hour, day, week, month, year<br>→ convert, equal to, equivalent, approximately, per, measure, remainder, multiple<br>→ timetable, 24-hour, digital, duration |
| | 3 |  | Reflection of shapes<br><br>Translation with coordinates | |
| | 4 |  | Simplify fractions<br><br>Converting lengths | **Measure Volume and Capacity - Curriculum Links**<br>estimate volume [for example, using 1 cm³ blocks to build cuboids (including cubes)] and capacity [for example, using water] |

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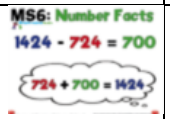
| | | | | **KEY LANGUAGE**<br>There is some key language that children will need to know as part of the learning in this unit:<br>→ volume, capacity, solid, liquid, container<br>→ cube, cuboid, triangular, prism<br>→ 3D shapes, objects<br>→ calculate, estimate, compare, count, accurately, order, amount, irregular, prediction, exact<br>→ unit (cm) cubes, units of measurement, measure<br>→ less, more, less than (<), more than (>), largest, smallest, least, greatest, equal<br>→ space inside<br>→ height, length, width, size, tall<br>→ layer, slice<br>→ multiple, total, take away, whole, part, almost half, identical<br>→ litre (l), millilitre (ml) |
| | **5** |  | Round any number to 1,000,000<br><br>Multiples | **Responsive/Retrieval**<br>**Place Value, Four Operations, Graphs and Tables, Area and Perimeter, Fractions, Decimals and Percentages, Properties of Shape, Position and Direction, Converting Units, Volume and Capacity**<br><br>**Money Sense Enterprise Lesson 3 to be completed** |
| | **6** | Retrieval of methods across HT5 and HT6 | Convert between grams/ kilograms<br><br>Calculating fractions | |
| | **7** | Retrieval of methods across HT5 and HT6 | Perpendicular lines<br><br>Measuring angles | |

Ashdene Primary School

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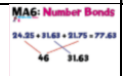
# Ashdene Primary School – Maths Curriculum

| | |
|---|---|
| Purpose of study | Mathematics is a creative and highly inter-connected discipline that has been developed over centuries, providing the solution to some of history's most intriguing problems. It is essential to everyday life, critical to science, technology and engineering, and necessary for financial literacy and most forms of employment. A high-quality mathematics education therefore provides a foundation for understanding the world, the ability to reason mathematically, an appreciation of the beauty and power of mathematics, and a sense of enjoyment and curiosity about the subject. |
| Aims | • become fluent in the fundamentals of mathematics, including through varied and frequent practice with increasingly complex problems over time, so that pupils develop conceptual understanding and the ability to recall and apply knowledge rapidly and accurately<br>• reason mathematically by following a line of enquiry, conjecturing relationships and generalisations, and developing an argument, justification or proof using mathematical language<br>• can solve problems by applying their mathematics to a variety of routine and non-routine problems with increasing sophistication, including breaking down problems into a series of simpler steps and persevering in seeking solutions. |
| Maths at Ashdene | At Ashdene in every maths lesson we aim to develop children's reasoning and problem solving. Furthermore, children develop their mathematical understanding through the use of concrete, pictorial and abstract resourcing which are made available to all children in every lesson. We aim to revisit and review mathematical concepts and make links between them in order to ensure children have a deeper understanding of the maths curriculum. |

## Year 6

| | Week | Mental Maths | Suggested Long Term Retrieval | Maths Curriculum |
|---|---|---|---|---|
| HT1 | 1 (4 days) | Times Tables to 12x | | **Retrieval Practice**<br>**Place Value**<br>White Rose – Re-cap numbers to 10,000<br>White Rose – Re-cap numbers to 100,000 |
| | 2 |  | Roman Numerals to 1000<br><br>Names of 2d shapes | **Place Value – National Curriculum Links**<br>read, write, order and compare numbers up to 10 000 000 and determine the value of each digit<br><br>solve number and practical problems that involve all of the above<br><br>round any whole number to a required degree of accuracy<br><br>use negative numbers in context, and calculate intervals across zero |
| | 3 | | Convert Metric lengths<br><br>Perimeter of a rectangle | |

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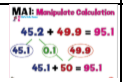
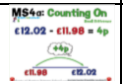
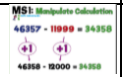
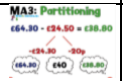
| | | | | **KEY LANGUAGE**<br>There is some key language that children will need to know as a part of the learning in this unit.<br>→ ones (1s), tens (10s), hundreds (100s), thousands (1,000s), ten thousands (10,000s), hundred thousands (100,000s), millions (1,000,000s), ten million (10,000,000)<br>→ place value<br>→ partition/partitioned/partitioning<br>→ interval<br>→ estimate<br>→ compare/comparison/comparing<br>→ order/ordering<br>→ less than (<), greater than (>), equal to (=)<br>→ rounding/rounded/round up/round down/rounds<br>→ negative, positive<br>→ odd, even<br>→ accurate/accurately, exactly, approximately |
| **4** |  | Convert metric mass<br><br>Telling the time | **Four Operations – National Curriculum Links**<br>solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why<br><br>multiply multi-digit numbers up to 4 digits by a two-digit whole number using the formal written method of long multiplication | |
| **5** |  | Convert metric volume<br><br>Area of a rectangle | divide numbers up to 4 digits by a two-digit whole number using the formal written method of long division, and interpret remainders as whole number remainders, fractions, or by rounding, as appropriate for the context<br><br>divide numbers up to 4 digits by a two-digit number using the formal written method of short division where appropriate, interpreting remainders according to the context<br><br>**KEY LANGUAGE**<br>There is some key language that children will need to know as part of the learning in this unit.<br>→ add, subtract, sum, total, difference<br>→ method, column, columnar<br>→ multiply, multiplication, product, approximation<br>→ divide, division, short division, long division<br>→ factor, multiple, divisor, dividend, remainder<br>→ inverse grid method<br>→ fraction, simplify, numerator, denominator | |
| **6** |  | Identify 3d shapes<br><br>Negative numbers | **Four Operations 2 – National Curriculum Links**<br>identify common factors, common multiples and prime numbers<br><br>recognise and use square numbers and cube numbers, and the notation for squared (²) and cubed (³)<br><br>use their knowledge of the order of operations to carry out calculations involving the four operations<br><br>perform mental calculations, including with mixed operations and large numbers<br><br>solve problems involving addition, subtraction, multiplication and division | |
| **7** |  | Place Value to 1,000,000<br><br>Rounding to 10, 100, 1000, | | |

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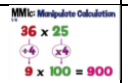
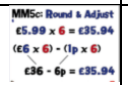
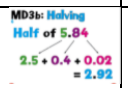
| | | | 10,000, 100,000 | **KEY LANGUAGE**<br>There is some key language that children will need to know as a part of the learning in this unit.<br>→ factor, common factor<br>→ multiple, common multiple<br>→ prime<br>→ squared ($x^2$), cubed ($x^3$)<br>→ order of operations, brackets<br>→ inverse operation |
| | **Week** | **Mental Maths** | **Suggested Long Term Retrieval** | **Maths Curriculum** |
| **HT2** | **1**<br>**(4 days)** | | Square numbers<br><br>Factors | **Fractions 1 – National Curriculum Links**<br>use common factors to simplify fractions; use common multiples to express fractions in the same denomination<br><br>compare and order fractions, including fractions > 1<br><br>add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fractions<br><br>**KEY LANGUAGE**<br>There is some key language that children will need to know as part of the learning in this unit.<br>→ whole, part<br>→ numerator, denominator, common denominator<br>→ equivalent<br>→ simplify, simplest form<br>→ factor, highest common factor, lowest common multiple<br>→ compare<br>→ order, ascending, descending<br>→ less than, greater than<br>→ proper fraction, improper fraction<br>→ mixed number<br>→ convert<br><br>**Fractions 2 – National Curriculum Links**<br>multiply simple pairs of proper fractions, writing the answer in its simplest form [for example, 1/4 × 1/2 = 1/8]<br><br>divide proper fractions by whole numbers [for example,1/3 ÷ 2 = 1/6 ].<br><br>add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fractions<br><br>use written division methods in cases where the answer has up to two decimal places<br><br>use their knowledge of the order of operations to carry out calculations involving the four operations |
| | **2** |  | Temperature problems<br><br>Count in steps of 10 to 1,000,000 | |
| | **3** |  | Addition and Subtraction problems | |
| | **4** |  | Multiplication and Division problems | |

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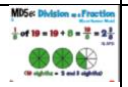
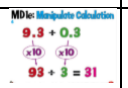
| | | | **KEY LANGUAGE**<br>There is some key language that children will need to know as part of the learning in this unit:<br>→ numerator, denominator<br>→ multiply, divide<br>→ proper fraction, improper fraction, mixed number, whole number<br>→ whole, part<br>→ order of operations |
| **5** |  | Names/ Properties of Quadrilaterals<br><br>Adding fractions | **Geometry (Position and Direction) – National Curriculum Links**<br>describe positions on the full coordinate grid (all four quadrants)<br><br>draw and translate simple shapes on the coordinate plane, and reflect them in the axes<br><br>**KEY LANGUAGE**<br>There is some key language that children will need to know as part of the learning in this unit:<br>→ plotting, coordinates, quadrant, point, axis, *x*-axis, *y*-axis, grid, *x*-coordinate, *y*-coordinate<br>→ vertices, vertex, square, side, rectangle, triangle, equilateral, oblong, shape, irregular, hexagon, identical, similar, parallelogram<br>→ perimeter, metre (m), distance, length, long<br>→ horizontal, vertical<br>→ halfway, line, properties, value, reason<br>→ negative, positive<br>→ translation, reflection, original, left, down, up, right, mirror, away, diagonal |
| **6** |  | Names/ Properties of Triangles<br><br>Subtracting fractions | **Responsive/Retrieval Practice**<br>Place Value, Four Operations, Fractions |
| **7** | Times Tables to 12x | Reading timetables<br><br>Multiply fractions | |

| | Week | Arithmetic | Suggested Long Term Retrieval | Maths Curriculum |
|---|---|---|---|---|
| HT3 | 1 (4 days) | | Regular and irregular Polygons<br><br>3D shapes | **Decimals – National Curriculum Links**<br>associate a fraction with division and calculate decimal fraction equivalents [for example, 0.375] for a simple fraction [for example, 3/8]<br><br>identify the value of each digit in numbers given to three decimal places and multiply and divide numbers by 10, 100 and 1000 giving answers up to three decimal places<br><br>multiply one-digit numbers with up to two decimal places by whole numbers |
| | 2 | | Reading line graphs<br><br>Simplify fractions | use written division methods in cases where the answer has up to two decimal places<br><br>solve problems which require answers to be rounded to specified degrees of accuracy<br><br>**KEY LANGUAGE**<br>There is some key language that children will need to know as part of the learning in this unit.<br>→ multiply (×), divide (÷)<br>→ decimal<br>→ placeholder<br>→ place value, tenths, hundredths, thousandths<br>→ factor, multiple, product<br>→ group, share<br>→ numerator, denominator<br>→ convert, simplify, equivalent<br>→ divisor, dividend, quotient, remainder |
| | 3 | | Reading tables<br><br>Order fractions | **Percentages – National Curriculum Links**<br>compare and order fractions, including fractions > 1<br><br>multiply simple pairs of proper fractions, writing the answer in its simplest form [for example, 1/4 × 1/2 = 1/8] |
| | 4 | | Dividing fractions | multiply one-digit numbers with up to two decimal places by whole numbers<br><br>solve problems which require answers to be rounded to specified degrees of accuracy<br><br>recall and use equivalences between simple fractions, decimals and percentages, including in different contexts<br><br>solve problems involving the calculation of percentages [for example, of measures, and such as 15% of 360] and the use of percentages for comparison |

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| | | | **KEY LANGUAGE**<br>There is some key language that children will need to know as part of the learning in this unit.<br>→ per cent (%), percentage<br>→ parts, whole<br>→ decimal<br>→ fraction, equivalent fraction, tenth, hundredth, half, quarter<br>→ less than (<), greater than (>)<br>→ divide (÷), share, multiply (×)<br>→ convert, compare, order, simplify |
| 5 | | Rotation<br><br>Fraction/percentage equivalence | **Shape – National Curriculum Links**<br>identify 3-D shapes, including cubes and other cuboids, from 2-D representations<br><br>draw 2-D shapes using given dimensions and angles |
| 6 | | Decimal/ fraction equivalence<br><br>Translation | recognise, describe and build simple 3-D shapes, including making nets<br><br>compare and classify geometric shapes based on their properties and sizes and find unknown angles in any triangles, quadrilaterals, and regular polygons<br><br>illustrate and name parts of circles, including radius, diameter and circumference and know that the diameter is twice the radius<br><br>recognise angles where they meet at a point, are on a straight line, or are vertically opposite, and find missing angles<br>**KEY LANGUAGE**<br>There is some key language that children will need to know as part of the learning in this unit.<br>→ degrees, measurement, length<br>→ angle, obtuse, acute, reflex, right angle, interior<br>→ protractor, baseline, crosshairs, scale<br>→ vertex, edge, face<br>→ parallel<br>→ properties<br>→ triangle, isosceles, equilateral, scalene<br>→ regular, polygon, quadrilateral, parallelogram, kite, rhombus, trapezium<br>→ diameter, radius, circumference, concentric, centre<br>→ perimeter<br>→ pyramid, tetrahedron, cylinder, prism, cuboid, cube |
| 7 | | Reflection<br><br>Rounding | **Responsive/Retrieval Practice**<br>Fractions and Percentages |

| | Week | Arithmetic | Suggested Long Term Retrieval | Maths Curriculum |
|---|---|---|---|---|
| HT4 | 1 | | Volume<br><br>Parts of a circle | **Measure - imperial and metric measures - National Curriculum Links**<br>solve problems involving the calculation and conversion of units of measure, using decimal notation to three decimal places where appropriate<br><br>use, read, write and convert between standard units, converting measurements of length, mass, volume and time from a smaller unit of measure to a larger unit, and vice versa, using decimal notation to up to three decimal places<br><br>convert between miles and kilometres<br><br>**KEY LANGUAGE**<br>There is some key language that children will need to know as part of the learning in this unit.<br>→ units (of measure/ment), metric, imperial, length, mass, volume, capacity, distance<br>→ measure, convert, equal, equivalent, approximate, smaller (unit), larger (unit), for every, ratio<br>→ millimetres (mm), centimetres (cm), metres (m), kilometres (km), grams (g), kilograms (kg), millilitres (ml), litres (l)<br>→ inches (in), feet (ft), ounces (oz), pounds (lbs), pints, miles, gallons, yards<br>→ digits, decimal<br>→ conversion table, conversion graph.<br><br>**Measure - perimeter, area and volume – National Curriculum Links**<br>recognise that shapes with the same areas can have different perimeters and vice versa<br><br>recognise when it is possible to use formulae for area and volume of shapes<br><br>calculate the area of parallelograms and triangles<br><br>calculate, estimate and compare volume of cubes and cuboids using standard units, including cubic centimetres ($cm^3$) and cubic metres ($m^3$), and extending to other units [for example, $mm^3$ and $km^3$] |
| | 2 | | Missing angles<br><br>Percentages of a number | |
| | 3 | | Using a protractor<br><br>Nets | |

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| | | | | **KEY LANGUAGE**<br>There is some key language that children will need to know as part of the learning in this unit.<br>→ perimeter, distance, area, space, volume<br>→ centimetres (cm), metres (m), square centimetres ($cm^2$), square metres ($m^2$), cubic centimetres ($cm^3$), cubic metres ($m^3$)<br>→ rectangle, square, triangle, rectilinear shape, sides, length, width, parallelogram, cube, cuboid<br>→ measure, combine, total, double, estimate. |
| | **4** | | Divide by 10, 100, 1000<br><br>Four operations with fractions | **Statistics – National Curriculum Links**<br>calculate and interpret the mean as an average<br><br>interpret and construct pie charts and line graphs and use these to solve problems<br><br>solve problems involving the calculation of percentages [for example, of measures, and such as 15% of 360] and the use of percentages for comparison |
| | **5** | | Volume<br><br>Co-ordinates | **KEY LANGUAGE**<br>There is some key language that children will need to know as part of the learning in this unit:<br>→ average, mean, set, share<br>→ pie chart, segment, whole, section, degree, angle, right angle<br>→ tally chart, bar chart<br>→ fraction, percentage<br>→ line graph, axis/axes, estimate, accurate, interpret, increase, above, below, zero (0), value, *x*-axis, *y*-axis, minus (–), between, plot, point, vertical, horizontal, construct, convert/conversion, straight, equivalent, predict, curve<br>→ more, equal, even, size, total, share, great(er/est), calculate, divide, highest, compare, lowest, group, data, represent, balance, odd, different/difference, least, inverse, operation, advantages, disadvantages, largest, half, scale, quarter, frequency, smallest, part, same, more, category, results, exact |
| **HT5** | **Week** | **Arithmetic** | **Suggested Long Term Retrieval** | **Maths Curriculum** |
| | **1** | ↓ | Fraction/ decimal/ percentage equivalence<br><br>Reading timetables | **Algebra – National Curriculum Links** |

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| **2** | | 2D shapes problems<br><br>Pie charts | generate and describe linear number sequences<br><br>express missing number problems algebraically<br><br>use simple formulae<br><br>find pairs of numbers that satisfy an equation with two unknowns<br><br>enumerate possibilities of combinations of two variables<br><br>**KEY LANGUAGE**<br>There is some key language that children will need to know as part of the learning in this unit.<br>→ pattern, growing pattern<br>→ sequence<br>→ rule<br>→ term<br>→ algebra, algebraic<br>→ expression<br>→ formula, formulae<br>→ substitute<br>→ generalise<br>→ operation<br>→ calculation, calculate<br>→ equation<br>→ inverse<br>→ solution<br>→ represent<br>→ value<br><br>**Ratio and Proportion – National Curriculum Links**<br>solve problems involving unequal sharing and grouping using knowledge of fractions and multiples<br><br>solve problems involving similar shapes where the scale factor is known or can be found<br><br>solve problems involving the relative sizes of two quantities where missing values can be found by using integer multiplication and division facts<br><br>**KEY LANGUAGE**<br>There is some key language that children will need to know as part of the learning in this unit.<br>→ ratio, ratio notation, 1 : 2<br>→ proportion<br>→ part, whole, total<br>→ group<br>→ fraction<br>→ unequal, equal<br>→ simplest form, simplify<br>→ for every *x* there are *y*<br>→ similar<br>→ enlarge, enlargement<br>→ scale, map scale, scale factor |

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| | 3 (4 days) | | Algebra simple formulae<br><br>Imperial and metric measures | **Retrieval Practice**<br>Revision Week |
| | 4 | | | **Retrieval Practice**<br>Revision Week |
| | 5 | | | **SATS Week** |
| | 6 | | | |
| | **Week** | **Mental Maths** | **Suggested Long Term Retrieval** | **Maths Curriculum** |
| HT6 | 1 (4 days) | | To retrieve arithmetic strategies from the year<br><br>↓ | |
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### White Rose Bakery

- Activity 1 - Resources
- Best value
- Activity 2 - Resources
- Profit & loss
- Packaging
- Cooking problems
- Activity 6 - Resources

### White Rose Tours

- Climate worksheet
- Activity 1 - Resources
- Distance conversion graph
- Conversion
- Airport
- Activity 2 - Resources
- Accommodation
- Activity 3 - Resources
- Budget
- Activity 4 - Resources
- Time problems

### White Rose Futures

- Annual salary
- Hourly rates
- Activity 1 - Resources
- Bills
- Activity 2 - Resources
- Mortgage
- Activity 3 - Resources
- House
- Activity 4 - Resources

**Money Sense Enterprise Lessons 1, 2 and 3 to be completed**