


PlanBee Primary Maths Curriculum | Year 5 and Year 6

	Autumn Term Y5	Autumn Term Y6	Spring Term Y5	Spring Term Y6	Summer Term Y5	Summer Term Y6
Week 1	<u>A Million Numbers</u> <ul style="list-style-type: none"> • read, write, order and compare numbers to at least 1 000 000 and determine the value of each digit • round any number up to 1 000 000 to the nearest 10, 100, 1000, 10 000 and 100 000 • solve number problems and practical problems that involve all of the above • read Roman numerals to 1000 (M) and recognise years written in Roman numerals 	<u>Decimal Place Value</u> <ul style="list-style-type: none"> • read, write, order and compare numbers up to 10 000 000 and determine the value of each digit • 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 • solve problems which require answers to be rounded to specified degrees of accuracy • calculate and interpret the mean as an average 	<u>Exploring Decimals</u> <ul style="list-style-type: none"> • read and write decimal numbers as fractions • round decimals with two decimal places to the nearest whole number and to one decimal place • read, write, order and compare numbers with up to three decimal places • solve problems involving number up to three decimal places 	<u>Working with Numbers</u> <ul style="list-style-type: none"> • round any whole number to a required degree of accuracy • use negative numbers in context, and calculate intervals across zero • solve number and practical problems that involve all of the above • 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 	<u>Positive and Negative Numbers</u> <ul style="list-style-type: none"> • count forwards or backwards in steps of powers of 10 for any given number up to 1 000 000 • interpret negative numbers in context, count forwards and backwards with positive and negative whole numbers, including through zero • solve number problems and practical problems that involve all of the above • multiply and divide whole numbers and those involving decimals by 10, 100 and 1000 	<u>Comparing and Ordering Numbers</u> <ul style="list-style-type: none"> • read, write, order and compare numbers up to 10 000 000 and determine the value of each digit • use negative numbers in context, and calculate intervals across zero • solve number and practical problems that involve all of the above

Week 2	<u>What's the Total?</u> <ul style="list-style-type: none"> • count forwards or backwards in steps of powers of 10 for any given number up to 1 000 000 • add and subtract whole numbers with more than 4 digits, including using formal written methods (columnar addition and subtraction) • add and subtract numbers mentally with increasingly large numbers • use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy 	<u>Choosing Methods</u> <ul style="list-style-type: none"> • perform mental calculations, including with mixed operations and large numbers • solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why • solve problems involving addition, subtraction, multiplication and division • use estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy 	<u>Calculating Decimals</u> <ul style="list-style-type: none"> • recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents • read, write, order and compare numbers with up to three decimal places • solve problems involving number up to three decimal places • read and write decimal numbers as fractions • add and subtract fractions with the same denominator and denominators that are multiples of the same number 	<u>Calculating Fractions and Decimals</u> <ul style="list-style-type: none"> • use common factors to simplify fractions; use common multiples to express fractions in the same denomination • add and subtract fractions with different denominators and mixed numbers, using the ^[1]_{SEP} concept of equivalent fractions • multiply simple pairs of proper fractions, writing the answer in its simplest form [for example, $\frac{1}{4} \times \frac{1}{2} = \frac{1}{8}$] • divide proper fractions by whole numbers [for example, $\frac{1}{3} \div 2 = \frac{1}{6}$] • recall and use equivalences between simple fractions, decimals and percentages, including in different contexts 	<u>Mental and Written Addition</u> <ul style="list-style-type: none"> • add and subtract whole numbers with more than 4 digits, including using formal written methods (columnar addition and subtraction) • add and subtract numbers mentally with increasingly large numbers • use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy • solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why • solve problems involving number up to three decimal places 	<u>Ratio, Percentages and Proportion</u> <ul style="list-style-type: none"> • solve problems involving the relative sizes of two quantities where missing values can be found by using integer multiplication and division facts • solve problems involving similar shapes where the scale factor is known or can be found • solve problems involving unequal sharing and grouping using knowledge of fractions and multiples
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Week 3	<u>What's the Difference?</u> <ul style="list-style-type: none"> • count forwards or backwards in steps of powers of 10 for any given number up to 1 000 000 • add and subtract whole numbers with more than 4 digits, including using formal written methods (columnar addition and subtraction) • add and subtract numbers mentally with increasingly large numbers • use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy 	<u>Subtraction Strategies</u> <ul style="list-style-type: none"> • solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why • solve problems involving addition, subtraction, multiplication and division • use estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy 	<u>Investigating Shapes</u> <ul style="list-style-type: none"> • identify 3-D shapes, including cubes and other cuboids, from 2-D representations • draw given angles, and measure them in degrees (°) • use the properties of rectangles to deduce related facts and find missing lengths and angles • distinguish between regular and irregular polygons based on reasoning about equal sides and angles 	<u>Grids and Coordinates</u> <ul style="list-style-type: none"> • describe positions on the full coordinate grid (all four quadrants) • draw and translate simple shapes on the coordinate plane, and reflect them in the axes 	<u>Mental and Written Subtraction</u> <ul style="list-style-type: none"> • add and subtract whole numbers with more than 4 digits, including using formal written methods (columnar addition and subtraction) • add and subtract numbers mentally with increasingly large numbers • use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why • solve problems involving number up to three decimal places 	<u>Fractions, Decimals and Percentages</u> <ul style="list-style-type: none"> • use common factors to simplify fractions; use common multiples to express fractions in the same denomination • associate a fraction with division and calculate decimal fraction equivalents [for example, 0.375] for a simple fraction [for example, 3/8] • use written division methods in cases where the answer has up to two decimal places • recall and use equivalences between simple fractions, decimals and percentages, including in different contexts • multiply one-digit numbers with up to two decimal places by whole numbers
Week 4	<u>Measuring Shapes</u> <ul style="list-style-type: none"> • measure and calculate the perimeter of composite rectilinear shapes in centimetres and metres • calculate and compare the area of rectangles (including squares), and including using standard 	<u>Calculating Compound Shapes</u> <ul style="list-style-type: none"> • recognise that shapes with the same areas can have different perimeters and vice versa • recognise when it is possible to use formulae for area and volume of 	<u>Decimals and Fractions</u> <ul style="list-style-type: none"> • compare and order fractions whose denominators are all multiples of the same number • identify, name and write equivalent fractions of a given fraction, represented 	<u>Parts and Percentages</u> <ul style="list-style-type: none"> • solve problems involving the relative sizes of two quantities where missing values can be found by using integer multiplication and division facts • solve problems involving the calculation 	<u>Symmetry, Reflection and Coordinates</u> <ul style="list-style-type: none"> • 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 	<u>Algebra</u> <ul style="list-style-type: none"> • use simple formulae • generate and describe linear number sequences • express missing number problems algebraically • enumerate possibilities of

	units, square centimetres (cm ²) and square metres (m ²) and estimate the area of irregular shapes <ul style="list-style-type: none"> estimate volume and capacity 	shapes <ul style="list-style-type: none"> calculate the area of parallelograms and triangles 	visually, including tenths and hundredths <ul style="list-style-type: none"> add and subtract fractions with the same denominator and denominators that are multiples of the same number multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams read and write decimal numbers as fractions 	of percentages [for example, of measures, and such as 15% of 360] and the use of percentages for comparison		combinations of two variables
Week 5	<u>Fractions and Proportion</u> <ul style="list-style-type: none"> compare and order fractions whose denominators are all multiples of the same number identify, name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths recognise mixed numbers and improper fractions and convert from one form to the other and write mathematical statements > 1 as a mixed number add and subtract fractions with the same 	<u>Parts and Proportion</u> <ul style="list-style-type: none"> compare and order fractions, including fractions > 1 solve problems involving similar shapes where the scale factor is known or can be found solve problems involving unequal sharing and grouping using knowledge of fractions and multiples 	<u>Let's Calculate</u> <ul style="list-style-type: none"> multiply and divide numbers mentally drawing upon known facts solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates 	<u>Mental Multiplication and Division</u> <ul style="list-style-type: none"> perform mental calculations, including with mixed operations and large numbers identify common factors, common multiples and prime numbers 	<u>Factors and Multiples</u> <ul style="list-style-type: none"> identify multiples and factors, including finding all factor pairs of a number, and common factors of two numbers multiply and divide numbers mentally drawing upon known facts solve problems involving multiplication and division including using their knowledge of factors and multiples, squares and cubes 	<u>Geometric Shapes</u> <ul style="list-style-type: none"> draw 2-D shapes using given dimensions and angles recognise, describe and build simple 3-D shapes, including making nets compare and classify geometric shapes based on their properties and sizes and find unknown angles in any triangles, quadrilaterals, and regular polygons illustrate and name parts of circles, including radius, diameter and circumference and know that the diameter is twice the radius recognise angles where they meet at a

	denominator and denominators that are multiples of the same number					point, are on a straight line, or are vertically opposite, and find missing angles
Week 6	<u>Methods for Multiplying and Dividing</u> <ul style="list-style-type: none"> 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 multiply and divide numbers mentally drawing upon known facts solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates 	<u>Practising Multiplication and Division</u> <ul style="list-style-type: none"> multiply multi-digit numbers up to 4 digits by a two-digit whole number using the formal written method of long multiplication 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 solve problems involving addition, subtraction, multiplication and division 	<u>Converting Measures</u> <ul style="list-style-type: none"> convert between different units of metric measure (for example, kilometre and metre; centimetre and metre; centimetre and millimetre; gram and kilogram; litre and millilitre) understand and use approximate equivalences between metric units and common imperial units such as inches, pounds and pints use all four operations to solve problems involving measure using decimal notation, including scaling 	<u>Measures</u> <ul style="list-style-type: none"> solve problems involving the calculation and conversion of units of measure, using decimal notation up to three decimal places where appropriate 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 convert between miles and kilometres calculate, estimate and compare volume of cubes and cuboids using standard units, including cubic centimetres (cm³) and cubic metres (m³), and extending to other units [for example, mm³ and km³] 	<u>Percentage and Proportion</u> <ul style="list-style-type: none"> 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 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 	<u>More Multiplication and Division</u> <ul style="list-style-type: none"> multiply multi-digit numbers up to 4 digits by a two-digit whole number using the formal written method of long multiplication 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 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 solve problems involving addition, subtraction, multiplication and division

Week 7	<u>Angles and Triangles</u> <ul style="list-style-type: none"> • know angles are measured in degrees: estimate and compare acute, obtuse and reflex angles • draw given angles, and measure them in degrees ($^{\circ}$) • identify angles at a point and one whole turn (total 360°) • identify angles at a point on a straight line and $1/2$ a turn (total 180°) • identify other multiples of 90° 	<u>Using Money</u> <ul style="list-style-type: none"> • solve problems involving addition, subtraction, multiplication and division • use negative numbers in context, and calculate intervals across zero • multiply one-digit numbers with up to two decimal places by whole numbers • use written division methods in cases where the answer has up to two decimal places 	<u>Graphs and Diagrams</u> <ul style="list-style-type: none"> • solve comparison, sum and difference problems using information presented in a line graph 	<u>Mean, Mode and Median</u> <ul style="list-style-type: none"> • calculate and interpret the mean as an average • interpret and construct pie charts and line graphs and use these to solve problems 	<u>Primes, Squares and Cubes</u> <ul style="list-style-type: none"> • recognise and use square numbers and cube numbers, and the notation for squared (2) and cubed (3) • solve problems involving multiplication and division including using their knowledge of factors and multiples, squares and cubes • know and use the vocabulary of prime numbers, prime factors and composite (non-prime) numbers • establish whether a number up to 100 is prime and recall prime numbers up to 19 	<u>More About Algebra</u> <ul style="list-style-type: none"> • use simple formulae • find pairs of numbers that satisfy an equation with two unknowns • enumerate possibilities of combinations of two variables
Week 8	<u>Changing Time</u> <ul style="list-style-type: none"> • solve problems involving converting between units of time • complete, read and interpret information in tables, including timetables 	<u>Mental Methods</u> <ul style="list-style-type: none"> • perform mental calculations, including with mixed operations and large numbers • use their knowledge of the order of operations to carry out calculations involving the four operations 	<u>Subtraction Methods</u> <ul style="list-style-type: none"> • add and subtract whole numbers with more than 4 digits, including using formal written methods (columnar addition and subtraction) • add and subtract numbers mentally with increasingly large numbers • solve addition and subtraction multi-step problems in contexts, deciding which 	<u>Using Subtraction and Addition</u> <ul style="list-style-type: none"> • solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why • solve problems involving addition, subtraction, multiplication and division • use estimation to check answers to calculations and 	<u>Formal Multiplication</u> <ul style="list-style-type: none"> • 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 • multiply and divide numbers mentally drawing upon known facts 	<u>Factors, Multiples and Primes</u> <ul style="list-style-type: none"> • round any whole number to a required degree of accuracy • multiply multi-digit numbers up to 4 digits by a two-digit whole number using the formal written method of long multiplication • divide numbers up to 4 digits by a two-digit whole number using the formal written method of long division, and

			operations and methods to use and why	determine, in the context of a problem, an appropriate degree of accuracy		<p>interpret remainders as whole number remainders, fractions, or by rounding, as appropriate for the context</p> <ul style="list-style-type: none"> • 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 • perform mental calculations, including with mixed operations and large numbers • identify common factors, common multiples and prime numbers • solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why • solve problems involving addition, subtraction, multiplication and division • use simple formulae
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Week 9	<u>Squares, Cubes and Factors</u> <ul style="list-style-type: none"> • identify multiples and factors, including finding all factor pairs of a number, and common factors of two numbers • multiply and divide numbers mentally drawing upon known facts • recognise and use square numbers and cube numbers, and the notation for squared (2) and cubed (3) • solve problems involving multiplication and division including using their knowledge of factors and multiples, squares and cubes 	<u>Calculators</u> <ul style="list-style-type: none"> • use their knowledge of the order of operations to carry out calculations involving the four operations • solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why 	<u>Solving Multiplication and Division</u> <ul style="list-style-type: none"> • 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 • solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates • 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 	<u>Difficult Division</u> <ul style="list-style-type: none"> • 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 • solve problems involving addition, subtraction, multiplication and division • use written division methods in cases where the answer has up to two decimal places 	<u>Short Division</u> <ul style="list-style-type: none"> • multiply and divide numbers mentally drawing upon known facts • 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 • solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates • solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign 	<u>Charts and Graphs</u> <ul style="list-style-type: none"> • interpret and construct pie charts and line graphs and use these to solve problems
Week 10	<u>Length, Weight and Capacity</u> <ul style="list-style-type: none"> • convert between different units of metric measure (for example, kilometre and metre; centimetre and metre; centimetre and millimetre; gram and kilogram; litre and 	<u>Solving Data Problems</u> <ul style="list-style-type: none"> • interpret and construct pie charts and line graphs and use these to solve problems 	<u>Calendars, Timetables and Calculators</u> <ul style="list-style-type: none"> • solve problems involving converting between units of time • complete, read and interpret information in tables, including timetables 	<u>Time and Money</u> <ul style="list-style-type: none"> • multiply one-digit numbers with up to two decimal places by whole numbers • solve problems involving the calculation and conversion of units of measure, using decimal notation up to 	<u>Describing Data</u> <ul style="list-style-type: none"> • solve comparison, sum and difference problems using information presented in a line graph • complete, read and interpret information in tables, including timetables 	<u>The Fibonacci Sequence</u> <ul style="list-style-type: none"> • solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why • solve problems involving addition, subtraction,

	millilitre) • estimate volume and capacity • use all four operations to solve problems involving measure using decimal notation, including scaling			three decimal places where appropriate • 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		multiplication and division • use simple formulae • generate and describe linear number sequences
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