

Year 4

Assessment criteria for mathematics

Learning Objective		Key milestone indicator(s)	Introduction	Independence	Application/Mastery
To know and use numbers	Counting	I can count in multiples of 2 to 9, 25, 50, 100 and 1,000	With concrete objects, I can count in multiples of 2, 5, 100 and 1,000	I can count in multiples of 2, 3, 4, 5, 25, 50 100 and 1,000	I can fluently count in multiples of 2 to 9, 25, 50, 100 and 1,000
		I can find 1,000 more or less than a given number	With support from a teacher, I can find 1,000 more or less than some numbers	Generally, I can find 1,000 more or less than a given number	I can independently find 1,000 more or less than a given number, including negative numbers
		I can count backwards through zero to include negative numbers	I have a process for counting back to zero, but sometimes I need prompts	I can count backwards to zero and through zero	I can count fluently backwards through zero to negative numbers
	Representing	I can identify, represent and estimate numbers using different representations	With support, I can represent numbers as a collection of ones, groups of 10 and groups of 100 With support, estimation is attempted	Generally, I can represent groups of numbers pictorially and in writing in groups of ones, 10s and 100s Generally my estimation is accurate	I can independently represent numbers in a variety of written and pictorial forms I can estimate accurately and justify why
		I can read Roman numerals to 100 (I to C); I know that over time, the numeral system changed to include the concept of zero and place value	I can read Roman numerals on a clock, with support	With reminders, I can read Roman numerals to 100 (I to C)	I can independently read Roman numerals up to 100 (C) and decipher years written in Roman numeral format
	Comparing	I can order and compare numbers beyond 1,000	With the support of a teacher, I understand the place value in numbers up to 1,000 and can order these numbers	With reminders, I understand the place value in numbers beyond 1,000 and I can order and compare these numbers	I can independently order and compare numbers past 1,000 and I understand the place value in numbers beyond 1,000 I can use place value to make approximations
	Place value	I know the place value of each digit in a 4-digit number	With reminders, I know the place value of each digit in a 3-digit number	With reminders, I know the place value of each digit in a 4-digit number	I know the place value of each digit in a 4-digit number I know the value of one decimal place, e.g. in the number 132.7 the number 7 is understood as 7/10ths
		I can round any number to the nearest 10, 100 or 1,000	When models or frameworks are provided, I can round any number	Generally, I can accurately round any number to the nearest 10, 100	Independently, I can round any number to the nearest 10, 100 or

Learning Objective		Key milestone indicator(s)	Introduction	Independence	Application/Mastery
			to the nearest 10 or 100	or 1,000	1,000 and I can generally accurately round any number to the nearest 10,000 or 100,000
	Solving problems	I can solve number and practical problems with increasingly large positive numbers	<p>With concrete objects, apparatus and guidance, I can solve number problems</p> <p>I am beginning to choose equipment to help solve problems</p>	<p>With occasional prompts, I can solve number and practical problems with large positive numbers</p> <p>I look for patterns in results when solving problems</p> <p>Generally, I have a secure awareness of which operation to use when solving problems</p>	<p>I can independently solve number and practical problems in a systematic and organised manner, with increasingly large positive numbers</p> <p>I can discuss how to break down a problem</p> <p>I can independently identify which operation to use when solving problems</p>
To add and subtract	Checking	I can estimate and use inverse to check an answer to a calculation	When help or structure is provided, I can use the inverse operation to check an answer	<p>Generally, during problem solving, I can check my work and make corrections</p> <p>Generally, I can use inverse operation to find missing numbers and to check answers to a calculation</p>	<p>During problem solving, I can independently check my work and make corrections</p> <p>I can use inverse operation to find missing numbers and to check answers to a calculation</p>
	Complexity	I can solve two-step addition and subtraction problems in context, deciding which operations and methods to use and why	With the support of a teacher and practical apparatus, I can solve two-step addition and subtraction problems	<p>I can solve two-step addition and subtraction problems in different contexts</p> <p>When reminders are given, I can choose and use the most appropriate operations and methods to solve problems</p>	<p>I can systematically solve two-step addition and subtraction problems in context</p> <p>I can independently choose and use the most appropriate method and operations and to solve two-step problems</p>
	Methods	I can add and subtract numbers with up to 4-digits using the formal written method of column addition and subtraction where appropriate	With support from a teacher, I can use the correct formal written method to add and subtract numbers up to 4 digits	Generally, I can use the formal written method to add and subtract numbers up to 4 digits	Independently, I can correctly use the formal written method to add and subtract numbers up to 4 digits
To multiple and divide	Methods	I can multiply 2-digit and 3-digit numbers by a 1-digit number using formal written layout	Using practical apparatus, I can multiply a 2-digit number by a 1-digit number	I can multiply 2-digit numbers by a 1-digit number using formal written layout accurately	I can independently multiply 2-digit and 3-digit numbers by a 1-digit number using formal written layout correctly

Learning Objective		Key milestone indicator(s)	Introduction	Independence	Application/Mastery
			With support, I can represent calculations using a formal written layout	With reminders, I can multiply 3-digit numbers by a 1-digit number using formal written layout	
		I can use place value, and known and derived facts, to multiply and divide mentally, including multiplying by 0 and 1, dividing by 1, multiplying together three numbers	<p>With the support of a teacher and the use of concrete objects, I can multiply and divide 2-digit numbers by 2, 3, 4 and 5</p> <p>When reminders of strategies to support me are given, I can mentally solve simple multiplication and division facts, including multiplying and dividing by 1</p>	<p>Generally, I can use place value and known multiplication and division facts to mentally multiply and divide, including multiplying by 0 and 1</p> <p>I can mentally multiply 2-digit numbers by 2, 3, 4 and 5</p> <p>Generally, I can multiply three numbers together</p> <p>I can mentally multiply 2-digit and 3-digit numbers by 0 and 1 and divide 2-digit and 3-digit numbers by 1, but I occasionally need reminders</p>	<p>I can independently mentally calculate the following:</p> <ul style="list-style-type: none"> multiply 2-digit and 3-digit numbers by 0 and 1 divide 2-digit and 3-digit numbers by 1 multiple three numbers together <p>I can use place value and known multiplication and division facts to mentally multiply and divide, including multiplying by 0 and 1</p>
		I can recognise and use factor pairs in mental calculations	With the support of a teacher and pictorial representations, I can recognise factor pairs	Generally, I can recognise and use factor pairs in mental calculations, e.g. $1 \times 48 = 48$, $2 \times 24 = 48$, $3 \times 16 = 48$	I can recognise and use factor pairs in mental calculations, e.g. $1 \times 48 = 48$, $2 \times 24 = 48$, $3 \times 16 = 48$
	Complexity	I can solve problems involving multiplying and adding, including using the distributive law to multiply 2-digit numbers by 1-digit, integer scaling problems and harder correspondence problems (such as n objects are connected to m objects)	Using pictorial representations, concrete objects, and at times the support of a teacher, I can solve simple multiplication and division problems	<p>Generally, I understand the distributive law of multiplying a number by a group of numbers added together is the same as doing each multiplication separately, e.g. $3 \times (2+4) = 3 \times 2 + 3 \times 4$</p> <p>I can use the distributive law and other multiplication and addition methods to solve:</p> <ul style="list-style-type: none"> problems involving multiplying 2-digit numbers by a 1-digit number integer scaling problems correspondence problems 	<p>I can use the distributive law and other multiplication and addition methods to solve:</p> <ul style="list-style-type: none"> problems involving multiplying 2-digit numbers by a 1-digit number without support problems involving multiplying 3-digit numbers by a 1-digit number without support integer scaling problems without support harder correspondence problems without support

Learning Objective		Key milestone indicator(s)	Introduction	Independence	Application/Mastery
	Using multiplication and division facts	I know all the times tables (up to 12x12) and the corresponding division facts	Generally, I can recall my 2, 5 and 10 times tables and the corresponding division facts With support, I can recall my 3 and 4 times tables and the corresponding division facts	I can recall my 2, 3, 4, 5 and 10 times tables, and the corresponding division facts, at speed Generally and with a few reminders or corrections, I can recall all the times tables and corresponding division facts	I can recall all the times tables and corresponding division facts at speed I can answer multiplication and division questions involving multiples of 10, 100 and 1,000 by using my times table knowledge, e.g. $6 \times 6 = 36$ so $60 \times 6 = 360$
To use fractions	Solving problems	I can solve problems involving increasingly harder fractions	With the support of a teacher, I can solve problems involving $\frac{1}{2}$ and $\frac{1}{4}$ as a fraction, decimal and percentage	Generally, I can correctly add and subtract fractions with the same denominator, e.g. $1\frac{1}{4} - \frac{3}{4} = \frac{1}{2}$	I can solve problems involving increasingly harder fractions, such as improper fractions, fractions with different denominations, and fractions with numerators other than 1, e.g. $\frac{2}{3}$
		I can add and subtract fractions with the same denominator	With the support of a teacher, I can solve problems such as $\frac{1}{2} + \frac{1}{2}$	With reminders, I can solve problems involving fractions with the same denominator	I can independently add and subtract fractions with the same denominator
		I can find the effect of dividing a 1-digit or 2-digit number by 10 and 100, and I can identify the value of the digits in the answer as ones, tenths and hundredths	With the support of a teacher and practical apparatus, I can find the effect of dividing a 1-digit or 2-digit number by 10 and can identify the value of the digits in the answer as ones, tenths and hundredths	With prompts, I can find the effect of dividing a 1-digit or 2-digit number by 10 and 100 and can identify the value of the digits in the answer as ones, tenths and hundredths	I can independently find the effect of dividing a 1-digit or 2-digit number by 10, 100 and 1,000 and can identify the value of the digits in the answer as ones, tenths, hundredths and thousandths
		I can solve simple measure and money problems involving fractions and decimals to two decimal places	When models are provided, such as concrete objects and pictorial images, I can solve measure and money problems involving fractions and decimals to two decimal places	Generally, I can solve simple measure and money problems involving fractions and decimals to two decimal places	I can independently solve measure and money problems involving fractions and decimals to two decimal places Generally, I can solve problems involving decimals to three decimal places
	Recognising fractions	I can round decimals with one decimal place to the nearest whole number	With support, I can round decimals with one decimal place to the nearest whole number	When prompted, I can round decimals with one decimal place to the nearest whole number	I can independently round decimals with one decimal place to the nearest whole number Generally, I can round decimals with two decimal places to the nearest whole number

Learning Objective		Key milestone indicator(s)	Introduction	Independence	Application/Mastery
		I can compare numbers with the same number of decimal places up to two decimal places	With support, I can correctly order two numbers with two decimal places	Generally, I can correctly order any sets of numbers with two decimal places	I can independently order any sets of numbers with two decimal places correctly Generally, I can correctly order any sets of numbers with three decimal places
		I can count up and down in hundredths; I recognise that hundredths arise from dividing an object by 100 and dividing tenths by 10	With support, I can count up and down in tenths and hundredths	Generally, I can correctly count up and down in tenths and hundredths Generally, I recognise that tenths or hundredths arise from dividing an object into 10 or 100 equal parts and from dividing 1-digit numbers or quantities by 10 or 100	I can independently count up and down in tenths and hundredths correctly I recognise that tenths or hundredths arise from dividing an object into 10 or 100 equal parts and from dividing 1-digit numbers or quantities by 10 or 100 Generally, I can count up and down in thousandths accurately
	Equivalence	I can recognise and show, using diagrams, families of common equivalent fractions	With the support of a teacher and by using diagrams, I can recognise families of common equivalent fractions	I can recognise and show, using diagrams, families of common equivalent fractions, e.g. $\frac{1}{2}$ is equivalent to $\frac{2}{4}$, $\frac{3}{6}$, $\frac{4}{8}$ etc.	I can independently recognise and show families of common equivalent fractions
		I can recognise and write decimal equivalents of any number of tenths or hundredths	With the support of a teacher, I can recognise a decimal equivalent to $\frac{1}{10}$	Generally, I can recognise and write decimal equivalents of any number of tenths With the support of a teacher, I can recognise and write decimal equivalents of any number of hundredths	I can independently recognise and write decimal equivalents of any number of tenths or hundredths I am beginning to solve balancing equations
		I can recognise and write decimal equivalents	I am developing my understanding of the decimal equivalent to $\frac{1}{4}$	Generally, I can recognise and write decimal equivalents to $\frac{1}{4}$, $\frac{1}{2}$ and $\frac{3}{4}$	I can independently recognise and correctly write decimal equivalents to $\frac{1}{4}$, $\frac{1}{2}$ and $\frac{3}{4}$ With support, I can recognise and write decimal equivalents of $\frac{1}{3}$ and $\frac{2}{3}$
To		I can compare and classify geometric	When prompts are given, I can	Generally, I can classify geometric	I can classify geometric shapes,

Learning Objective		Key milestone indicator(s)	Introduction	Independence	Application/Mastery
understand the properties of shape		shapes, including quadrilaterals and triangles, based on their properties and sizes	<p>classify geometric shapes, including quadrilaterals and triangles</p> <p>With the support of a teacher, I can classify different types of triangles</p> <p>With the support of a teacher, I can create a net of a cube</p>	<p>shapes, including quadrilaterals and triangles</p> <p>With help, I can classify different types of triangles using the properties</p>	<p>including quadrilaterals and triangles</p> <p>I can classify different types of triangles using the properties</p>
		I can identify acute and obtuse angles and compare and order up to two right angles by size	With the support of a teacher, I am beginning to use the terminology acute and obtuse	<p>Generally, I can compare and order angles up to 180 degrees</p> <p>Generally, I can use the language of acute and obtuse to describe angles</p>	I can independently compare and order angles
		I can identify lines of symmetry in 2D shapes presented in different orientations	With support, I can identify lines of symmetry in simple 2D shapes (such as squares and rectangles)	Generally, I can identify lines of symmetry in 2D shapes presented in different orientations	<p>I can independently identify lines of symmetry in 2D shapes presented in different orientations correctly</p> <p>I can complete a figure when using a vertical or horizontal line of symmetry</p>
		I can complete a simple symmetrical figure with respect to a specific line of symmetry	With the support of a teacher, I can complete a simple symmetrical figure when using a vertical line of symmetry	<p>With prompts, I can complete a simple symmetrical figure when using a vertical or horizontal line of symmetry</p> <p>I have started to recognise nets of 3D shapes and can create some nets for more common 3D shapes</p>	<p>Generally, I can reflect shapes at 45° to a mirror line</p> <p>I can recognise and construct a variety of nets for 3D shapes</p>
To describe position, direction and movement		I can describe positions on a 2D grid as coordinates in the first quadrant	<p>I can identify the x and y axis on a coordinate grid</p> <p>When help or structure is provided, I can describe positions on a 2D grid as coordinates in the first quadrant</p>	I can describe positions on a 2D grid as coordinates in the first quadrant and plot these	I can describe positions on a 2D grid as coordinates in the first, second, third or fourth quadrant
		I can describe movements between positions as translations of a given unit to the left/ right and up/down	I have a developing understanding of the terminology used to give directions: <i>left/ right</i> ,	I understand and can correctly use terminology to describe position, direction and movement: <i>left/</i>	I can independently reflect shapes on a vertical and horizontal mirror line

Learning Objective		Key milestone indicator(s)	Introduction	Independence	Application/Mastery
			<i>clockwise/anticlockwise, 90°</i>	<i>right, clockwise/anticlockwise, 90°</i>	I can describe movements between positions as translations of a given unit and plot translations using vectors
		I can plot specific points and draw sides to complete a given polygon	With support from the teacher and a structured activity, I can plot specific points on a coordinate grid to complete a triangle or square	When guidance is provided, I can plot specific points on a coordinate grid to draw sides to complete a given polygon, e.g. a hexagon	I can independently plot specific points on a coordinate grid to draw sides to complete a given polygon, e.g. a hexagon
To use measures		I can solve problems involving converting from hours to minutes, minutes to seconds, years to months, weeks to days	With concrete objects and the support of a teacher, I can calculate simple conversions between different units of measure, e.g. hours to minutes and cm to metres	With some guidance, I can solve problems involving converting from hours to minutes, minutes to seconds, years to months, weeks to days	I can independently solve problems involving converting from hours to minutes, minutes to seconds, years to months, weeks to days I can independently measure, compare, add and subtract lengths (m/cm/mm), mass (kg/g) and volume/capacity (l/ml)
		I can convert between different units of measure (e.g. km to m, hour to min)	With support, I can convert between different units of measure	Generally, I can convert between different units of measure	I can independently convert between different units of measure
		I can measure and calculate the area and perimeter of a rectilinear figure (including squares) in cm and m	I can find the area of a rectilinear shape by counting squares inside the shape	Generally, I can find the area and perimeter of rectilinear shapes by counting squares	I can independently measure and calculate the area and perimeter of rectilinear shapes
		I can estimate, compare and calculate different measures, including money in £ and p	With support, I can estimate, compare and calculate a range of measures	Generally, I can complete accurate estimations, comparisons and calculations of different measures	Without support, I can use estimation to help calculate in the context of measures I can independently and accurately order and compare different measures
		I can read, write and convert time between analogue and digital 12- and 24-hour clocks	With the support of a teacher, I can tell the time on analogue and digital 12- and 24-hour clocks	With reminders, I can read, write and convert times between analogue and digital 12- and 24-hour clocks (e.g. 3:00 o'clock – 15:00hrs)	Without support, I can read, write and convert times between analogue and digital 12- and 24-hour clocks (e.g. 3:00 o'clock – 15:00hrs)
To use statistics		I can interpret and present data using bar charts, pictograms and tables	With the support of a teacher, I can construct and interpret pictograms, tally charts, block diagrams and simple tables	Generally, I can interpret and present data using bar charts, pictograms, tables Venn diagrams and Carroll diagrams	I can interpret and present data using bar charts pictograms, tables, Venn diagrams and Carroll diagrams, without support
		I can solve one-step and two-step	I understand the terminology of	Generally, I can solve one-step and	I can independently solve one-step

Learning Objective		Key milestone indicator(s)	Introduction	Independence	Application/Mastery
		questions (e.g. 'How many more?' and 'How many fewer?') using information presented in scaled bar charts, pictograms and tables	many more and many fewer Generally, I can solve one-step questions using information presented in bar charts, pictograms and tables	two-step questions using information presented in bar charts, pictograms and tables	and two-step questions using information presenting in bar charts, pictograms and tables
		I can interpret and present discrete and continuous data using appropriate graphical methods, including bar charts and time graphs	With support, I can ask and answer questions about totalling and comparing categorical data .	When reminders are provided, I can make the most appropriate choice as to how to present and collect data I have a developing understanding of the difference between discrete and continuous data	I have a secure understanding of the difference between discrete and continuous data (<i>discrete data is counted; continuous data is measured</i>) I can accurately present and interpret discrete and continuous data using appropriate graphical methods I can independently choose the most appropriate graphical methods
		I can solve comparison, sum and difference problems using information presented in bar charts, pictograms, tables and other graphs	Generally, I can ask questions about information gathered for other children to answer	Generally, I can present and interpret discrete and continuous data using appropriate graphical methods	I can solve comparison, sum and difference problems using information presented in bar charts, pictograms, tables and other graphs