

Y5 Mathematics	TERM 1A		TERM 1B		TERM 2A		TERM 2B		TERM 3A		TERM 3B	
	Number: Place value		Number: Addition and subtraction Number: Fractions, decimals and percentages		Number: Multiplication and division Measurements		Number: Multiplication and division Geometry: Properties of shapes/position and direction		Number: Fractions, decimals and percentages		Measurement and statistics	
	Key knowledge	Key skills	Key knowledge	Key skills	Key knowledge	Key skills	Key knowledge	Key skills	Key knowledge	Key skills	Key knowledge	Key skills
	To know ten ones are called one ten.	To be able to read, write, order and compare numbers to at least 1,000,000 and determine the value of each digit.	To know addition is commutative; subtraction is not.	To be able to add and subtract whole numbers with more than 4 digits, including using formal written methods (columnar addition and subtraction).	To know a multiple of a number is the result of multiplying that number with a whole number.	To be able to identify multiples and factors, including finding all factor pairs of a number, and common factors of two numbers.	To know multiplication is the inverse of division. Multiplication is both commutative and associative. Division is not.	To be able to 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.	To know when a whole is divided into equal parts each part is a fraction of the whole.	To be able to compare and order fractions whose denominators are all multiples of the same number.	To know a day is the amount of time it takes the Earth to spin once on its axis. This period is divided into 24 hours which can be broken down into smaller units: minutes and seconds. These are the units used in telling the time.	To be able to solve problems involving converting between units of time.
	To know ten tens are called one hundred.		To know the language of addition: addend plus addend is equivalent to sum/total.		To know common multiple is a number that is a multiple of two or more other numbers.		To know the commutative law states that the order of the numbers does not affect the result. $a \times b = b \times a$.		To know a fraction can be expressed as one number written above another $\frac{\quad}{\quad}$. The bottom part of the fraction is the denominator. This represents the total number of equal parts. The numerator is the top part of the fraction; this represents the number of parts being considered.	To be able to identify, name and write equivalent fractions of a given fraction.		To be able to understand and use approximate equivalences between metric units and common imperial units such as inches, pounds and pints.
	To know ten hundreds are called one thousand.	To be able to count forwards or backwards in steps of powers of 10 for any given number up to 1,000,000.	To know the whole can be found by adding the parts.	To be able to add and subtract numbers mentally with increasingly large numbers.	To know the lowest common multiple of two or more numbers is the smallest number that is a multiple of each.	To be able to know and use the vocabulary of prime numbers, prime factors and composite (non-prime) numbers.		To be able to multiply and divide numbers mentally drawing upon known facts.		To be able to recognise mixed numbers and improper fractions and convert from one form to the other.	To know there are 60 minutes in one hour.	
	To know ten thousands are called one ten thousand.	To be able to interpret negative numbers in context, count forwards and backwards with positive and negative whole numbers.	To know that when the whole and one of the parts is known, the other part can be worked out.	To be able to use rounding to check answers to calculations.	To know a factor of a number is any whole number that divides into it exactly. While prime numbers only have two factors (1 and itself), other numbers can have many factors.	To be able to establish whether a number up to 100 is prime and recall prime numbers up to 19.	To know the associative law states that the grouping of numbers does not affect the result. $(a \times b) \times c = a \times (b \times c)$.	To be able to 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.	To know equivalent fractions refer to the same proportion of the whole but are written in different ways.	To be able to add and subtract fractions with the same denominator and denominators that are multiples of the same number.	To know there are 60 seconds in one minute.	To be able to solve comparison, sum and difference problems using information presented in a line graph.
	To know ten ten thousands are called one hundred thousand.	To be able to round any number up to 1,000,000 to the nearest 10, 100, 1,000, 10,000 and 100,000.	To know the language of subtraction: minuend subtract subtrahend is equivalent to difference.	To be able to solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why.	To know any whole number can be written as a product of its factors: factor \times factor = product.	To be able to recognise and use square numbers and cube numbers.	To know multiplication can be seen as repeated addition. $3 \times 4 = 4 + 4 + 4 = 3 + 3 + 3 + 3$.	To be able to solve problems involving multiplication and division including using their knowledge of factors and multiples, squares and cubes.	To know equivalent fractions can be calculated by multiplying or dividing the numerator and denominator by the same amount.	To be able to multiply proper fractions and mixed numbers by whole numbers.	To know the 12-hour clock is a time system in which the hours in a day are broken down into two groups of 12 hours.	
	To know ten one hundred thousands are called one million.	To be able to solve number problems and practical problems that involve all of the above.	To know that if 3 ones and 4 ones is 7 ones, then 3 tens plus 4 tens is 7 tens; 3 hundreds and 4 hundreds is 7 hundreds etc.	To be able to read and write decimal numbers as fractions.	To know a common factor is a number that divides exactly into two or more other numbers.	To be able to convert between different units of metric measure (for example, kilometre and metre; centimetre and millimetre; gram and kilogram; litre and millilitre).		To be able to solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign.	To know equivalent fractions can be calculated by multiplying or dividing the numerator and denominator by the same amount.	To be able to 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.	To know the 24-hour clock is a time system in which the 24 hours of the day are not expressed as am and pm but are numbered straight through from 0 – 23.	To be able to complete, read and interpret information in tables, including timetables.
	To know ten to the power of one is 10.	To be able to read Roman numerals to 1,000 (M) and recognise years written in Roman numerals.	To know ten tenths is equivalent to one whole.	To be able to recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents.	To know the highest common factor of two or more numbers is the largest number that is a factor of each.		To know multiplication can be seen as repeated addition. $3 \times 4 = 4 + 4 + 4 = 3 + 3 + 3 + 3$.	To be able to solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates.	To know when the numerator and denominator are divided by the same number, this is called cancelling or simplifying.	To be able to multiply proper fractions and mixed numbers by whole numbers.		
	To know ten to the power of two is 100.	To be able to divide 1,000, 10,000 and 100,000 into 2, 4, 5 and 10 equal parts, and read scales/number lines marked in multiples of 1,000 with 2, 4, 5 and 10 equal parts.	To know ten one hundredths is equivalent to one tenth.	To be able to round decimals with two decimal places to the nearest whole number and to one decimal place.	To know a prime factor is a factor which is also a prime number.	To be able to measure and calculate the perimeter of composite rectilinear shapes in centimetres and metres.		To be able to solve problems involving addition, subtraction, multiplication and division, including scaling by simple fractions and problems involving simple rates.	To know equivalent fractions can be calculated by multiplying or dividing the numerator and denominator by the same amount.	To be able to 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.	To know the 24-hour clock is a time system in which the 24 hours of the day are not expressed as am and pm but are numbered straight through from 0 – 23.	
	To know ten to the power of three is 1,000.	To be able to solve number problems and practical problems that involve all of the above.	To know ten tenths is equivalent to one whole.	To be able to round decimals with two decimal places to the nearest whole number and to one decimal place.	To know a prime factor is a factor which is also a prime number.	To be able to convert between different units of metric measure (for example, kilometre and metre; centimetre and millimetre; gram and kilogram; litre and millilitre).		To be able to solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates.	To know equivalent fractions can be calculated by multiplying or dividing the numerator and denominator by the same amount.	To be able to 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.	To know the 24-hour clock is a time system in which the 24 hours of the day are not expressed as am and pm but are numbered straight through from 0 – 23.	
	To know ten to the power of four is 10,000.	To be able to solve number problems and practical problems that involve all of the above.	To know ten tenths is equivalent to one whole.	To be able to round decimals with two decimal places to the nearest whole number and to one decimal place.	To know a prime factor is a factor which is also a prime number.	To be able to convert between different units of metric measure (for example, kilometre and metre; centimetre and millimetre; gram and kilogram; litre and millilitre).		To be able to solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates.	To know equivalent fractions can be calculated by multiplying or dividing the numerator and denominator by the same amount.	To be able to 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.	To know the 24-hour clock is a time system in which the 24 hours of the day are not expressed as am and pm but are numbered straight through from 0 – 23.	
	To know ten to the power of five is 100,000.	To be able to solve number problems and practical problems that involve all of the above.	To know ten tenths is equivalent to one whole.	To be able to round decimals with two decimal places to the nearest whole number and to one decimal place.	To know a prime factor is a factor which is also a prime number.	To be able to convert between different units of metric measure (for example, kilometre and metre; centimetre and millimetre; gram and kilogram; litre and millilitre).		To be able to solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates.	To know equivalent fractions can be calculated by multiplying or dividing the numerator and denominator by the same amount.	To be able to 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.	To know the 24-hour clock is a time system in which the 24 hours of the day are not expressed as am and pm but are numbered straight through from 0 – 23.	
	To know ten to the power of six is one million.	To be able to solve number problems and practical problems that involve all of the above.	To know ten tenths is equivalent to one whole.	To be able to round decimals with two decimal places to the nearest whole number and to one decimal place.	To know a prime factor is a factor which is also a prime number.	To be able to convert between different units of metric measure (for example, kilometre and metre; centimetre and millimetre; gram and kilogram; litre and millilitre).		To be able to solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates.	To know equivalent fractions can be calculated by multiplying or dividing the numerator and denominator by the same amount.	To be able to 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.	To know the 24-hour clock is a time system in which the 24 hours of the day are not expressed as am and pm but are numbered straight through from 0 – 23.	
	To know the value of digits becomes ten times bigger as digits move to the left.	To be able to solve number problems and practical problems that involve all of the above.	To know ten tenths is equivalent to one whole.	To be able to round decimals with two decimal places to the nearest whole number and to one decimal place.	To know a prime factor is a factor which is also a prime number.	To be able to convert between different units of metric measure (for example, kilometre and metre; centimetre and millimetre; gram and kilogram; litre and millilitre).		To be able to solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates.	To know equivalent fractions can be calculated by multiplying or dividing the numerator and denominator by the same amount.	To be able to 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.	To know the 24-hour clock is a time system in which the 24 hours of the day are not expressed as am and pm but are numbered straight through from 0 – 23.	
	To know the value of digits become ten times smaller as digits move to the right.	To be able to solve number problems and practical problems that involve all of the above.	To know ten tenths is equivalent to one whole.	To be able to round decimals with two decimal places to the nearest whole number and to one decimal place.	To know a prime factor is a factor which is also a prime number.	To be able to convert between different units of metric measure (for example, kilometre and metre; centimetre and millimetre; gram and kilogram; litre and millilitre).		To be able to solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates.	To know equivalent fractions can be calculated by multiplying or dividing the numerator and denominator by the same amount.	To be able to 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.	To know the 24-hour clock is a time system in which the 24 hours of the day are not expressed as am and pm but are numbered straight through from 0 – 23.	
	To know the value of a digit relies on its place in the number.	To be able to solve number problems and practical problems that involve all of the above.	To know ten tenths is equivalent to one whole.	To be able to round decimals with two decimal places to the nearest whole number and to one decimal place.	To know a prime factor is a factor which is also a prime number.	To be able to convert between different units of metric measure (for example, kilometre and metre; centimetre and millimetre; gram and kilogram; litre and millilitre).		To be able to solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates.	To know equivalent fractions can be calculated by multiplying or dividing the numerator and denominator by the same amount.	To be able to 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.	To know the 24-hour clock is a time system in which the 24 hours of the day are not expressed as am and pm but are numbered straight through from 0 – 23.	
	To know negative numbers are below zero.	To be able to solve number problems and practical problems that involve all of the above.	To know ten tenths is equivalent to one whole.	To be able to round decimals with two decimal places to the nearest whole number and to one decimal place.	To know a prime factor is a factor which is also a prime number.	To be able to convert between different units of metric measure (for example, kilometre and metre; centimetre and millimetre; gram and kilogram; litre and millilitre).		To be able to solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates.	To know equivalent fractions can be calculated by multiplying or dividing the numerator and denominator by the same amount.	To be able to 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.	To know the 24-hour clock is a time system in which the 24 hours of the day are not expressed as am and pm but are numbered straight through from 0 – 23.	
	To know negative numbers are less than zero.	To be able to solve number problems and practical problems that involve all of the above.	To know ten tenths is equivalent to one whole.	To be able to round decimals with two decimal places to the nearest whole number and to one decimal place.	To know a prime factor is a factor which is also a prime number.	To be able to convert between different units of metric measure (for example, kilometre and metre; centimetre and millimetre; gram and kilogram; litre and millilitre).		To be able to solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates.	To know equivalent fractions can be calculated by multiplying or dividing the numerator and denominator by the same amount.	To be able to 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.	To know the 24-hour clock is a time system in which the 24 hours of the day are not expressed as am and pm but are numbered straight through from 0 – 23.	
	To know positive numbers are above zero.	To be able to solve number problems and practical problems that involve all of the above.	To know ten tenths is equivalent to one whole.	To be able to round decimals with two decimal places to the nearest whole number and to one decimal place.	To know a prime factor is a factor which is also a prime number.	To be able to convert between different units of metric measure (for example, kilometre and metre; centimetre and millimetre; gram and kilogram; litre and millilitre).		To be able to solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates.	To know equivalent fractions can be calculated by multiplying or dividing the numerator and denominator by the same amount.	To be able to 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.	To know the 24-hour clock is a time system in which the 24 hours of the day are not expressed as am and pm but are numbered straight through from 0 – 23.	

	<p>To know positive numbers are greater than zero.</p> <p>To know zero is neither positive or negative.</p> <p>To know for both positive and negative numbers, the larger the value of the number, the further it is from zero.</p> <p>To know when rounding to the nearest ten, the ones digit is the digit to consider. If it is four or less, we round down to the previous multiple of 10. If it is five or more we round up to the next multiple of 10.</p> <p>To know when rounding to the nearest hundred, the tens digit is the digit to consider. If it is four or less, we round down to the previous multiple of 100. If it is five or more we round up to the next multiple of 100.</p> <p>To know when rounding to the nearest thousand, the hundreds digit is the one to consider. If it is four or less, we round down to the previous multiple of 1000. If it is five or more we round up to the next multiple of 1000.</p> <p>To know when rounding to the nearest ten thousand, the thousands digit is the digit to consider. If it is four or less we round down to the previous multiple of 10,000. If it is five or more we round up to the next multiple of 10,000.</p> <p>To know when rounding to the nearest one hundred thousand, the ten thousands digit is the digit to consider. If it is four or less, we round down to the previous of 100,000. If it is five or more we round up to the next multiple of 100,000.</p> <p>To know values of Roman numerals up to 1,000: I = 1; V = 5, X = 10, L = 50; C = 100; D = 500; M = 1000.</p>		<p>ten, the digits move one place to the right.</p> <p>To know when a number is multiplied by one hundred the digits move two places to the left.</p> <p>To know when a number is divided by one hundred the digits move two places to the right.</p> <p>To know when a number is multiplied by one thousand the digits move three places to the left.</p> <p>To know when a number is divided by one thousand the digits move three places to the right.</p> <p>To know 5NPV–4.</p>		<p>number by itself then multiplying by itself again. This is called cubing the number. E.g. $4 \times 4 \times 4 = 64$.</p> <p>To know: 1 cm = 10 mm 1 m = 100 cm 1 km = 1000 m 1 litre = 1000 millilitres 1 kilogram = 1000 grames.</p> <p>To know the distance around the edge of a shape is its perimeter.</p> <p>To know the amount of space occupied by a 2D shape is its area.</p> <p>To know to find the perimeter of a polygon, add together the lengths of all the sides.</p> <p>To know to find the area of a rectangle, multiply the length by the width.</p> <p>To know the amount of solid occupied by a 3D shape is called its volume. This space can be measured by the number of unit cubes that can fit inside it. Common units for measuring volume are cubic centimetres (cm³) and cubic metres (m³).</p> <p>To know the volume of a cuboid is calculated using volume = length x width x height.</p> <p>To know the volume of an object is closely related to its capacity – that is the amount it can contain. Capacity is measured in litres (l) and millilitres (ml).</p>		<p>The angle is measured by the amount of turn that one line must travel about this point to arrive at the position of the other line.</p> <p>To know angles are measured in degrees.</p> <p>To know there are several types of angles, classified by their size.</p> <p>To know a whole turn (full turn or complete turn) is equal to 360°.</p> <p>To know a right angle is a quarter of a full turn and equal to 90°. Lines that meet at a right angle are described as perpendicular.</p> <p>To know a straight angle is half a full turn and equal to 180°.</p> <p>To know an acute angle is any angle smaller than a right angle.</p> <p>To know an obtuse angle is an angle greater than a right angle but smaller than a straight angle.</p> <p>To know a reflex angle is any angle greater than a straight angle.</p> <p>To know angles at a point are formed when any number of lines meet at a point. These angles add up to 360°.</p> <p>To know vertically opposite angles are on opposite sides of the point where two lines cross. These pairs of angles are always equal.</p> <p>To know a rectangle is a quadrilateral in which opposite sides are equal and parallel. All interior angles are right angles. The diagonals of a rectangle are equal in length.</p> <p>To know a polygon is a shape formed from three or more points joined by three or more straight lines. The points are known as vertices (each point is a vertex) and the lines are called sides.</p>	<p>reasoning about equal sides and angles.</p> <p>To be able to identify, describe and represent the position of a shape following a reflection or translation.</p> <p>To be able to identify 3D shapes including cubes and other cuboids from 2D representations.</p>	<p>expressed as improper fractions.</p> <p>To know to add fractions, express each fraction in terms of the lowest common denominator and add the numerators together.</p> <p>To know to subtract a fraction, express each fraction in terms of the lowest common denominator and subtract the numerators.</p> <p>To know to multiply a fraction, multiply the numerators together and then multiply the denominators together.</p> <p>To know the % symbol is used to represent percentage.</p> <p>To know percent means number of parts per hundred.</p> <p>To know a percentage is a way of expressing a fraction or decimal as parts of a hundred.</p> <p>To know percentages have fraction and decimal equivalents.</p> <p>50% = 0.5 = $\frac{1}{2}$ 25% = 0.25 = $\frac{1}{4}$ 75% = 0.75 = $\frac{3}{4}$ 10% = 0.1 = $\frac{1}{10}$ 20% = 0.2 = $\frac{1}{5}$ 1% = 0.01 = $\frac{1}{100}$.</p>			
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	<p>To know 10,000 and 100,000 can be divided into two, four, five and ten equal parts and these units are used in graphing and measure contexts.</p>						<p>To know a regular polygon has equal sides and equal interior angles. An irregular polygon does not.</p> <p>To know a translation is where an object is moved to a new position without being turned or reflected. The translated image is the same size and shape as the original object.</p> <p>To know a reflection is where each point is mapped to a corresponding point. These are an equal distance and at right angles to a mirror line. The size and angles of the reflected image stay the same as the original object; its sense has changed in that the image is back to front.</p>					
	<p>Key vocabulary (tier 2)</p> <p>ascending compare descending digit equivalent estimate greater than hundred thousands hundreds less than millions negative numeral ones order partition place value round ten thousands tens thousands zero</p>	<p>Key vocabulary (tier 3)</p>	<p>Key vocabulary (tier 2)</p> <p>add addend altogether commutative decimal decrease difference equation equivalence equivalent exchange expression hundredth increase inverse less minuend minus more operation plus regroup subtract subtrahend sum tenth thousandths total</p>	<p>Key vocabulary (tier 3)</p>	<p>Key vocabulary (tier 2)</p> <p>area capacity centimetre (cm) common factor common multiple composite number cube number factor highest common factor kilometre (km) litre (l) lowest common multiple metre (m) millilitre (ml) millimetre (mm) multiple perimeter prime number product square number volume</p>	<p>Key vocabulary (tier 3)</p>	<p>Key vocabulary (tier 2)</p> <p>acute angle angle degrees diagonal full turn irregular obtuse angle origin parallel perpendicular polygon quarter turn reflection reflex angle regular right angle side straight angle translation coordinates vertex vertices x axis y axis</p>	<p>Key vocabulary (tier 3)</p>	<p>Key vocabulary (tier 2)</p> <p>cancel denominator equivalent fraction fraction improper fraction lowest common denominator mixed number numerator part percentage proper fraction proportion simplify unit fraction whole</p>	<p>Key vocabulary (tier 3)</p>	<p>Key vocabulary (tier 2)</p> <p>12-hour clock 24-hour clock day foot hour inch mile minute pint pounds second</p>	<p>Key vocabulary (tier 3)</p> <p>imperial metric</p>