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Maths Assessment Grid

Calculation (including algebra)					
Y1	**Y2**	**Y3**	**Y4**	**Y5**	**Y6**
Use the language of put together add, altogether, total, take away, difference, more than, less than	Extend language to include same and difference	Children should use varied language of all four operations			
Read, write and interpret mathematical statements involving +, -, = signs					
Represent and use number bonds and related subtraction facts within 20	Recall and use + and - facts to 20 fluently				
Memorise bonds to 10 and 20 in several forms e.g. 9 + 7 = 16, 16 - 7 = 9, 7 = 16 - 9	Derive and use + and - facts to 100 e.g. 3 + 7 = 10, 30 + 70 = 100				
Add and subtract 1 and 2 digit numbers to 20 (including 0)	Add and subtract numbers using concrete objects, pictoral representations and mentally including TU±Us, TU±Tens, TU±TU and U±U±U	Add and subtract numbers mentally including HTU±Us, HTU±Tens and HTU±Hundreds	Practice mental and written methods with large numbers to increase fluency	Practice mental and written methods with large numbers to increase fluency	Practice mental and written methods with large numbers to increase fluency
Solve missing number problems to 20 e.g. 7 = ? - 9	Show that addition of 2 numbers can be done in any order (commutative)	Add and subtract numbers with up to 3 digits efficiently (written)	Add and subtract up to 4 digits efficiently (written) including decimals	Add and subtract more than 4 digits efficiently (written) including decimals	Explore the 4 operations using brackets
Eealise the effect of +, - and 0	Show subtraction of one number from another cannot be done in any order	Solve missing number problems beyond 100 (mentally)			
Solve simple 1 step + and - problems using concrete objects, pictoral representations and arrays with teacher support	Recognise the inverse relationship between + and - and use this to check calculations (including missing number problems)	Estimate answers and use the inverse to check calculations	Estimate and use the in verse to check calculations	Use rounding to check answers and calculations (+/-)	Use estimating to check answers (all four operations)
Solve simple 1 step x problems using concrete objects, pictoral representations and arrays with teacher support	Recall and use ×/÷ facts for 2, 5 and 10× tables including recognising odd and even numbers	Recall and use ×/÷ facts for the 3, 4, 8× tables	Recall ×/÷ facts for × table facts up to 12×12	Identify multiples and factors including all factor pairs and common factors of 2 numbers	Identify common factors, common multiples and prime numbers
		Connect 2, 4, 8× tables through doubling	Multiply 3 numbers together		
Solve simple ÷ problems using concrete objects, pictoral representations and arrays with teacher support	Calculate mathematical statements for ×/÷ within 2, 5 and 10× tables and write them using the symbols	Write mathematical statements for × and ÷ using tables they know including TU×U	× and ÷ by 0 and 1 (HTU)	Know and use prime numbers, prime factors and composite (non-prime) numbers	
			Use place value, known and derived facts to × and ÷	Recall prime numbers up to 100	Multiply numbers up to 4 digits by a 2 digit whole number using an efficient written method
Understand grouping and sharing of small quantities	Recognise and use the inverse relationship between ×/÷	Develop mental × and ÷ strategies	Recognise and use factor pairs and commutativity	Recognise square and cubed numbers and the notation for squared and cubed	
			Multiply HTU×U and TU×U using written methods	Multiply ThHTUxU and ThHTUxTU using an efficient written method	Mentally solve 4 operation calculations
Double small numbers and quantities	Demonstrate that × of two numbers can be done in any order	Develop reliable written methods for ×/÷ beginning with TU×U (see written methods policy)	Divide numbers up to 3 digits by a one digit number using an efficient written method	Multiply numbers mentally using known facts	B.O.D.M.A.S
Find ½ and ¼ of small numbers, objects and quantities	Demonstrate that ÷ of one number by another cannot be done in any order	Develop strategies to find all possibilities		Divide numbers mentally using known facts	Divide numbers up to 4 digits by a 2 digit whole number using efficient written methods

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	Connect 10× table to P.V			Divide numbers up to 4 digits by a one digit number using an efficient written method	including remainders, fractions or rounding by context
	Connect 5× table to clock face divisions			Interpret remainders in context	
	× and ÷ mentally by 10 and 100	× and ÷ mentally by 10, 100 and 1000	× and ÷ mentally including 1dp, 10, 100 and 1000	Multiply and divide whole numbers and decimals by 10, 100 and 1000	
				Scale by simple fractions and simple rates	
				ALGEBRA Use simple formulae Generate and describe linear number sequences Express missing number problems algebraically Find pairs of numbers that satisfy an equation with two unknowns Use two variables to find all possibilities combinations	

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	Fractions (including decimals, percentages, ratio and proportion)					
	Y1	**Y2**	**Y3**	**Y4**	**Y5**	**Y6**
Fractions	Recognise, find and name ½ of an object, shape or quantity	Recognise, find, name and write ⅓, ¼, 2/4, ¾ of length, shape and sets of objects or quantities	Recognise, write and find fractions of objects and numbers where the fraction has a small denominator	Connect fractions on a number line to numbers and measures	Write mathematical statements >1 as a mixed number e.g. ⅖ + ⅘ = 6/5 = 1 ⅕	Use common factors to simplify fractions. Use common multiples to express fractions in the same denomination
				Simplify fractions where appropriate		
	Recognise, find and name ¼ of an object, shape or quantity	Know simple equivalent fractions e.g ½ = 2/4	Compare and order unit fractions with the same denominator	Identify, name and write equivalent fractions of a given fraction including 1/10 and 1/100	Compare and order fractions whose denominators are all multiples of the same number	Compare and order fractions including fractions >1
			Recognise and show (using diagrams) equivalent fractions with small denominators	Recognise and show, using diagrams, families of common equivalent fractions.	Identify, name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths.	
	Know ½ and ¼ as operators	Use fractions as operators e.g ½ of 6 = 3	Know that tenths arise by ÷ by 10	Recognise that hundredths arise when ÷ an object by 100 and that tenths arise by ÷ by 10	Recognise mixed numbers and improper fractions and convert from one to another	Associate a fraction with ÷ to calculate decimal fraction equivalents e.g. 0.375 = 3/8
			Recognise the relationship between denominator and operator	Practice counting using simple fractions and decimal fractions, forwards and backwards		
		Count in fractions up to 10 e.g. 1, 1 ½, 2	Count forwards and backwards in tenths	Count up and down in hundredths		
			Add and subtract fractions with the same denominator e.g. 5/7 + 1/7 = 6/7	Add and subtract fractions with the same denominator up to 1 whole	Add and subtract fractions with the same denominator beyond 1 whole and related fractions	Add and subtract fractions with different denominators and mixed numbers using the concept of equivalent fractions
				Solve problems involving increasingly harder fractions to calculate and divide quantities including non-unit fractions up to 1 whole	Multiply proper fractions and mixed numbers by whole numbers supported by materials and diagrams	Multiply simple pairs of proper fractions writing the answer in its simplest form e.g ¼ × ½ = 1/8
						Divide proper fractions by whole numbers e.g ⅓ ÷ 2 = ⅙
Decimals				Recognise and write decimal equivalents of any number of tenths or hundredths	Recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents	Recall and use equivalences between simple fractions, decimals and %
				Recognise and write decimal equivalents to ¼, ½ and 3/4 .	Read and write decimal numbers as fractions e.g. 0.71 = 71/100	
				Round numbers with 1 decimal place to the nearest whole	Round decimals with 2 d.p. to the nearest whole and the nearest 1 d.p.	Round decimals to 3 decimal places
				Compare numbers with the same number of decimal places up to 2 d.p.	Read, write, order and compare numbers with up to 3 d.p.	Identify the value of each digit in numbers up to 3 d.p.

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				Find the effect of dividing a number with 1 or 2 d.p. by 10 and 100, identifying the value of the digits as U, tenths or hundredths	Multiply and divide numbers by 10, and 100 giving the answers with up to 3 d.p.	Multiply and divide numbers by 10, 100 and 1000 giving the answers with up to 3 d.p.
						Multiply O.t x O and O.th x or TO
%					Recognise the % symbol and understand it relates to the number of parts per 100	Solve problems involving the calculation of percentages and the use of percentages for comparison
					Write % as fractions with denominators of 100 and as a decimal	
Ratio and proportion						Solving problems involving the relative sizes of two quantities where missing values can be found using integer multiplication and division facts
						Solve problems involving similar shapes where the scale factor is known r can be found
						Solve problems involving unequal sharing and grouping using knowledge of fractions and multiples

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	Geometry					
	Y1	**Y2**	**Y3**	**Y4**	**Y5**	**Y6**
Shape	Recognise and name common 2D (e.g. rectangles including squares, circles and triangles) and 3D shapes (cuboids including cubes, pyramids and spheres)	Identify and describe the properties of 2D shapes (including number of sides and line symmetry in a vertical line)	Draw 2D shapes and make 3D shapes using modelling materials.	Compare and classify geometric shapes, including quadrilaterals and triangles, based on their properties and sizes	Identify 3D shapes, including cubes and other cuboids, from 2D representations (e.g. nets)	Draw 2D shapes using given dimensions and angles
		Identify and describe the properties of 3D shapes (including number of edges, vertices and faces)			Use the properties of rectangles to deduce related facts and find missing lengths and angles	Compare and classify geometric shapes based on their properties and sizes
		Identify 2D shapes on the surface of 3D shapes (e.g. a circle on a cylinder and a triangle on a pyramid)			Distinguish between regular and irregular polygons based on reasoning about equal sides and angles	Recognise, describe and build simple 3D shapes including making nets
		Compare and sort 2D and 3D shapes and everyday objects				Illustrate and name parts of circles including radius, diameter and circumference. Know that the diameter of a circle is twice the radius. These relationships could be expressed algebraically e.g. d = 2r, a = 180 – (b+c)
Translation and co-ordinates	Recognise that a 2D shape stays the same in different orientations	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 ¼, ½ and ¾ turns (clockwise and anti-clockwise)	Recognise 3D shapes in different orientations and describe them	Identify lines of symmetry in 2D shapes presented in different orientations	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 position, direction and movement including whole, half, quarter and three-qrter turns	Order and arrange combinations of mathematical objects in patterns and sequences	Identify horizontal and vertical lines and pairs of perpendicular and parallel lines	Describe positions on a 2D grid as co-ordinates in the first quadrant		Describe positions on the four quadrant co-ordinates grid
				Describe movements between positions as translations of a given unit to the left/right and up/down		Draw and translate simple shapes on the co-ordinate plane and reflect them in the axes
				Reflect a simple symmetric figure using vertical, horizontal and diagonal lines of symmetry Plot specified points and draw sides to complete a given polygon		
Angl			Recognise angles as a property of shape or as a description of a turn.	Identify acute and obtuse angles and compare and order angles up to two right angles by size	Know that angles are measured in degrees	Recognise angles where they meet at a point, are on a straight line, or are vertically opposite

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e s			Identify right angles and recognise that two right angles make a half turn, three make ¾ of a turn and four a complete turn; identify whether angles are greater than or less than a right angle.		Estimate and compare acute, obtuse and reflex angles	Find missing angles on a straight line
					Draw a given angle and measure them in degrees	Find unknown angles in any triangles, quadrilaterals and regular polygons
					Identify that angles at a point, and one whole turn, total 360◦	
					Identify that angles at a point on a straight line, and half a turn, total 180◦	
					Identify other multiples of 90◦ (e.g. 180◦, 270◦ and 360◦)	

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	Measurement					
	Y1	**Y2**	**Y3**	**Y4**	**Y5**	**Y6**
Length and height	Compare, describe, measure, record and solve practical problems for lengths and heights (for example long/short, longer/shorter, tall/short, double/half)	Choose and use appropriate standard units to estimate and measure length and height in any direction (m and cm)	Measure, compare, add and subtract lengths (m, cm and mm)	Convert between different units of measure (mm to cm, cm to m, m to km and vice versa) Estimate, compare and calculate lengths and heights	Convert between different units of measure (mm to cm, cm to m, m to km and vice versa) Understand and use **approximate** equivalences between metric units and common imperial units (inches, feet, yards and miles)	Use, read, write and convert between standard and non-standard units converting measurement of length from a smaller unit of measurement to a larger unit and vice versa, using decimal notation up to three decimal places e.g. convert between miles and km)
			Measure the perimeter of simple 2D shapes	Measure and calculate the perimeter of a rectilinear figure (any shape with straight sides, including squares) in cm and m	Measure and calculate the perimeter of composite rectilinear shapes in cm and m	Recognise that shapes with the same areas can have different perimeters and vice versa.
		Compare and order using <,> and =		Find the area of rectilinear shapes (any shape with straight sides, including squares) by counting squares	Calculate and compare the area of rectangles (squares) and including using standard units, square cm and square meters and estimate the area of irregular shapes	Recognise when it is possible to use formulae for area of shapes Calculate the area of parallelograms and triangles
Mass and weight	Compare, describe, measure, record and solve practical problems for mass and weight (for example heavy/light, heavier than/lighter than)	Choose and use appropriate standard units to estimate and measure mass (kg, g)	Measure, compare, add and subtract mass (kg and g)	Convert between different units of measure (g to kg and vice versa)	Convert between different units of measure (g to kg and kg to g) Understand and use **approximate** equivalences between metric units and common imperial units (ounces, stone and pounds)	Use, read, write and convert between standard and non-standard units converting mass and weight from a smaller unit of measurement to a larger unit and vice versa, using decimal notation up to three decimal places e.g. g to kg, kg to g and g to ounces, kg to stones, stones to kg)
		Compare and order using <,> and =		Estimate, compare and calculate mass and height		
Capacity and volume	Compare, describe, measure, record and solve practical problems for mass and weight (for example full/empty, more than/less than, half full/quarter)	Choose and use appropriate standard units to estimate and measure capacity (l and ml)	Measure, compare, add and subtract capacity and volume (l and ml)	Convert between different units of measure (ml to l and vice versa)	Convert between different units of measure (ml to l and vice versa) Understand and use **approximate** equivalences between metric units and common imperial units (pint, gallons and fluid ounces)	Calculate, estimate and compare volume of cubes and cuboids using standard units cm^3, m^3, mm^3 and km^3
		Compare and order using <,> and =		Estimate, compare and calculate capacity and volume	Estimate volume using cm^3 blocks to build cuboids/and capacity (e.g. using water)	Recognise when it is possible to use formulae to calculate the volume of shapes

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Time	Compare, describe, measure, record and solve practical problems for time(for example quicker/slower, earlier/later)	Tell and write the time to five minutes including quarter past and quarter to and draw hands on a clock to show these times	Tell and write the time from an analogue clock including using Roman numerals to XII and digital 12- and 24- hour clocks	Read, write and convert time between analogue and digital 12- and 24-hour clocks	Solve problems involving converting between units of time	Introduce compound units for speed e.g. mph, kmph
	Sequence events in chronological order e.g. before/after, next/first, today/yesterday, tomorrow, morning/afternoon/evening	Compare and sequence intervals of time	Estimate and read the time to the nearest minute. Record and compare time in seconds, minutes and hours	Solve problems converting hours to minutes, minutes to seconds, years to months, and weeks to days		
		Know the number of minutes in an hour and how many hours there are in one day	Use vocabulary such as o'clock, am, pm, morning, afternoon, noon and midnight	Estimate, compare and calculate measurements of time		
	Recognise and use language of days, weeks, months and years		Know the number of seconds in a minute and the number of days in a month, year and leap year			
	Tell time to the hour and half past the hour. Draw hands on a clock face to show this		Compare durations of events (including interpreting timetables)			
Temperature		Choose and use appropriate standard units to estimate and measure temperature (◦C)	Compare and order using <,> (colder/warmer) and =	Count beyond 0◦C to include negative temperatures	Count forwards and backwards with positive and negative temperatures through 0◦C	Calculate differences in temperatures through 0◦C
Money	Recognise and know the value of different denominations of coins and notes	Recognise and use symbols for pounds (£) and pence (p)	Add and subtract amounts of money (to give change) using both the £ symbol and p in practical contexts	Estimate, compare and calculate using money in £ and p	Solve multi step worded problems involving money using some or all of the four operations	Solve multi step worded problems involving money using some or all of the four operations
		Combine amounts of money to make a particular value				
		Find different combinations of coins that equal the same amounts of money				
		Solve simple problems in a practical context involving addition and subtraction of money of the same unit, including giving change				

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Number and Place Value					
Y1	**Y2**	**Y3**	**Y4**	**Y5**	**Y6**
Count to and across 100, forwards and backwards or from any given number	Count in steps of 2, 3, 5 and 10 from any number(forward and backward)	Count in multiples of 4, 8, 50 and 100	Count in multiples of 6, 7, 9, 25 and 1000	Interpret negative numbers in contexts, count forwards and backwards with positive and negative numbers through 0	Use negative numbers in context
			Count backwards beyond 0 to include negative numbers	Count forwards and backwards in steps of powers of 10 for any number to 1,000,000	Calculate intervals across 0
Count, read and write numbers to 100 in numerals					
Count in multiples of 1, 2, 5, 10 (make connection to arrays)					
Identify 1 more/less than any number up to 20	Count in 10's forwards and backwards from any number	Identify 10 or 100 more or less than a given number	Find 1000 more or less than any given number		
Identify and represent numbers concretely and pictorally	Identify, represent and estimate numbers using different representations e.g. the number line (up to 100)	Identify, represent and estimate numbers using different representations (up to 1000)	Identify, represent and estimate numbers using different representations (up to 10,000)	Identify, represent and estimate numbers using different formats (up to 1,000,000)	Identify and represent and estimate numbers using different formats (10,000,000)
Use the language of equal to, more than, less than, most, least					
Read and write numbers from 1-20 in digits and words	Read and write numbers to at least 100 in numerals and words	Read and write numbers to numbers to at least 1000 in numerals and words	Read Roman numerals to 100 (I-C) and know that over time, the numeral system changed to include the concept of zero and place value	Read Roman numerals to 1000 (I-M)	
Counting 1,2,3 and order first, second, third					
Order using the language first, second, third	Compare and order numbers from 0 up to 100 and use the > < and = signs	Compare and order numbers up to 1000 using > < and =	Compare and order numbers beyond 1000 using > < and =	Read, write, order and compare numbers to at least 1,000,000	Read, write, order and compare numbers up to 10,000,000
Count to indicate quantity e.g. 3 apples, 2cm, 7cm					
Recognise patterns in the number system e.g. odd, even, 2/5/10	Recognise patterns in the number system up to 100				
Begin to recognise the value of tens and units	Recognise the place value of each digit in a 2 digit number	Recognise the place value of each digit in a 3 digit number	Recognise the place value of each digit in a 4 digit number	Determine the value of each digit up to 1,000,000	Determine the value of each digit up to 10,000,000
	Partition numbers in different ways e.g. 23 = 20 + 3 and 10 + 13	Partition numbers differently. Eg 46 = 40 + 6 or 30 + 16 or 20 + 26			
	Begin to understand 0 as a place holder		Begin to extend place value knowledge to include decimals		
	Begin to round numbers to the nearest 10	Round numbers to the nearest 10 and 100	Round any number to the nearest 10, 100 and 1000	Round any number up to 1,000,000 to the nearest 10, 100, 1000, 10,000 and 100,000	Round any number (including up to 2 d.p.) to the nearest integer

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Statistics					
Y1	**Y2**	**Y3**	**Y4**	**Y5**	**Y6**
	Interpret and construct simple pictograms, tally charts, block diagrams and simple tables	Interpret and represent data including using bar charts, pictograms and tables	Interpret and present discrete and continuous data using appropriate graphical methods including bar charts and time graphs	Complete, read and interpret information in tables (including timetables)	Interpret and construct pie charts and line graphs and use these to solve problems
	Ask and answers simple questions by counting the number of objects in each category and sorting the categories by quantity	Solve 1-step and 2-step questions (for example: how many more/how many fewer…?) using information presented in scaled bar charts, pictograms and tables	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	
	Ask and answer questions about totalling and comparing categorical data				Calculate and interpret the mean as an average