Maths objectives

Year 1 – Please refer to the NCETM 'Teaching for Mastery: Questions, tasks and activities to support assessment' for detailed examples.
https://www.ncetm.org.uk/public/files/23305594/Mastery_Assessment_Y1_Low_Res.pdf

	Mastery **These are the objectives from the National Curriculum.**	**Mastery with Greater Depth** **In many cases the objective is similar or the same as the expected standard. Greater depth means children explaining and reasoning, enabling them to deepen their mathematical understanding.**
Number and Place Value	Count to and across 100, forwards and backwards, beginning with 0 or 1, or from any given number.	
	Count, read and write numbers to 100 in numerals; count in multiples of twos, fives and tens.	Count forwards and backwards in multiples of twos, fives and tens.
	Given a number, identify one more and one less.	Given a number, identify one and ten more and one less up to and beyond 100.
	Identify and represent numbers using objects and pictorial representations including the number line, and use the language of: equal to, more than, less than (fewer), most, least.	Identify and represent numbers using objects and pictorial representations including the number line, beyond 100; and use the language of: equal to, more than, less than (fewer), most, least.
	Read and write numbers from 1 to 20 in numerals and words.	Read and write numbers from 1 to 50 in numerals and words.
Addition and Subtraction	Read, write and interpret mathematical statements involving addition (+), subtraction (–) and equals (=) signs.	
	Represent and use number bonds and related subtraction facts within 20.	Represent and use number bonds and related subtraction facts within 20, beginning to memorise the facts.
	Add and subtract one-digit and two-digit numbers to 20, including zero.	
	Solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems, such as 7 = [ ] – 9.	
Multiplication and Division	Solve one-step problems involving multiplication and division, by calculating the answer using concrete objects, pictorial representations and arrays with the support of the teacher.	
Fractions	Recognise, find and name a half as one of two equal parts of an object, shape or quantity.	Recognise, find and name a half as one of two equal parts of an object, shape or quantity, in various contexts, using reasoning.
	Recognise, find and name a quarter as one of four equal parts of an object, shape or quantity.	Recognise, find and name a quarter as one of four equal parts of an object, shape or quantity, in various contexts, using reasoning.

Measurement	Compare, describe and solve practical problems for: • lengths and heights [for example, long/short, longer/shorter, tall/short, double/half] • mass/weight [for example, heavy/light, heavier than, lighter than] • capacity and volume [for example, full/ empty, more than, less than, half, half full, quarter] time [for example, quicker, slower, earlier, later]	
	Measure and begin to record the following: • lengths and heights • mass/weight • capacity and volume • time (hours, minutes, seconds)	
	Recognise and know the value of different denominations of coins and notes.	
	Sequence events in chronological order using language [for example, before and after, next, first, today, yesterday, tomorrow, morning, afternoon and evening].	
	Recognise and use language relating to dates, including days of the week, weeks, months and years.	
	Tell the time to the hour and half past the hour and draw the hands on a clock face to show these times.	
Geometry - Shape	Recognise and name common 2D and 3D shapes, including: • 2D shapes [for example, rectangles (including squares), circles and triangles] • 3D shapes [for example, cuboids (including cubes), pyramids and spheres]	Recognise and name common 2D and 3D shapes, including: • 2D shapes [for example, rectangles (including squares), circles, triangles] • 3D shapes [for example, cuboids (including cubes), pyramids and spheres] *explaining some of the properties that indicate the name of the shape.*
Geometry – Position and Direction	Describe position, direction and movement, including whole, half, quarter and three-quarter turns.	Describe position, direction and movement, including whole, half, quarter and three- quarter turns, *being able to plan a short route using simple commands.*

Year 2 – Please refer to the NCETM 'Teaching for Mastery: Questions, tasks and activities to support assessment' for detailed examples.
https://www.ncetm.org.uk/public/files/23305594/Mastery_Assessment_Y2_Low_Res.pdf
GD statements taken from the Teacher assessment exemplification 2018.

	Mastery **These are the objectives from the National Curriculum.**	**Mastery with Greater Depth** **In many cases the objective is similar or the same as the expected standard. Greater depth means children explaining and reasoning, enabling them to deepen their mathematical understanding.**
Number and Place Value	Count in steps of 2, 3, and 5 from 0, and in tens from any number, forward and backward.	Count in steps of 2, 3, and 5 forwards from 0 and any number and backwards from any number, and in tens from any number, forward and backward, *explaining what happens to the tens and ones.*
	Recognise the place value of each digit in a two-digit number (tens, ones).	
	Identify, represent and estimate numbers using different representations, including the number line.	Read scales on a number line (or practical situation) where not all numbers on the scale are given and estimate points in between.
	Compare and order numbers from 0 up to 100; use <, > and = signs.	Compare and order numbers from 0 up to 200; use <, > and = signs.
	Read and write numbers to at least 100 in numerals and in words.	Read and write numbers to at least 200 in numerals and in words.
	Use place value and number facts to solve problems.	
Addition and Subtraction	Solve problems with addition and subtraction: • using concrete objects and pictorial representations, including those involving numbers, quantities and measures; applying their increasing knowledge of mental and written methods.	Use reasoning about numbers and relationships to solve more complex problems and explain their thinking (e.g. 29 + 17 = 15 + 4 + ¨; 'together Jack and Sam have £14. Jack has £2 more than Sam. How much money does Sam have?' etc)
	Recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100.	
	Add and subtract numbers using concrete objects, pictorial representations, and mentally, including: • a two-digit number and ones; • a two-digit number and tens; • two two-digit numbers; • adding three one-digit numbers.	
	Show that addition of two numbers can be done in any order (commutative) and subtraction of one number from another cannot.	

	Recognise and use the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems.	
Multiplication and Division	Recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers.	Recall and use multiplication and division facts for 2, 5 and 10 and make deductions outside known multiplication facts
	Calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication (×), division (÷) and equals (=) signs.	
	Show that multiplication of two numbers can be done in any order (commutative) and division of one number by another cannot.	
	Solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods, and multiplication and division facts, including problems in contexts.	Solve unfamiliar word problems that involve more than one step (e.g. 'which has the most biscuits, 4 packets of biscuits with 5 in each packet or 3 packets of biscuits with 10 in each packet?')
Fractions	Recognise, find, name and write fractions 1/3, ¼, 2/4, ¾ of a length, shape, set of objects or quantity.	Recognise, find, name and write fractions 1/3, ¼, 2/4, ¾ of a length, shape, set of objects or quantity, *explaining how to use fractions when solving problems.*
	Write simple fractions, for example, ½ of 6 = 3 and recognise the equivalence of 2/4 and ½.	Write simple fractions, for example, ½ of 6 = 3 and recognise the equivalence of 2/4 and ½., *counting to 10 in halves and quarters.*
Measurement	Choose and use appropriate standard units to estimate and measure length/ height in any direction (m/cm); mass (kg/g); temperature (°C); capacity (litres/ ml) to the nearest appropriate unit, using rulers, scales, thermometers and measuring vessels.	Choose and use appropriate standard units to estimate and measure length/ height in any direction (m/cm); mass (kg/g); temperature (°C); capacity (litres/ ml) to the nearest appropriate unit, using rulers, scales, thermometers and measuring vessels.
	Compare and order lengths, mass, volume/ capacity and record the results using >, < and =.	
	Recognise and use symbols for pounds (£) and pence (p); combine amounts 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.	
	Compare and sequence intervals of time.	
	Tell and write the time to five minutes, including quarter past/to the hour and draw the hands on a clock face to show these times.	Read the time on a clock to the nearest 5 minutes.
	Know the number of minutes in an hour and the number of hours in a day.	
Geometry - Shape	Identify and describe the properties of 2D shapes, including the number of sides and line symmetry in a vertical line.	
	Identify and describe the properties of 3D shapes, including the number of edges, vertices and faces.	

	Identify 2D shapes on the surface of 3D shapes, [for example, a circle on a cylinder and a triangle on a pyramid].	
	Compare and sort common 2D and 3D shapes and everyday objects.	Describe similarities and differences of 2-D and 3-D shapes, using their properties (e.g. that two different 2-D shapes both have only one line of symmetry; that a cube and a cuboid have the same number of edges, faces and vertices, but different dimensions).
Geometry – Position and Direction	Order and arrange combinations of mathematical objects in patterns and sequences.	
	Use mathematical vocabulary to describe position, direction and movement, including movement in a straight line and distinguishing between rotation as a turn and in terms of right angles for quarter, half and three-quarter turns (clockwise and anti- clockwise).	
Statistics	Interpret and construct simple pictograms, tally charts, block diagrams and simple tables.	Interpret and construct pictograms, tally charts, block diagrams and tables.

Year 3 – Please refer to the NCETM 'Teaching for Mastery: Questions, tasks and activities to support assessment' for detailed examples.
https://www.ncetm.org.uk/public/files/23305594/Mastery_Assessment_Y3_Low_Res.pdf

	Mastery **These are the objectives from the National Curriculum.**	**Mastery with Greater Depth** **In many cases the objective is similar or the same as the expected standard. Greater depth means children explaining and reasoning, enabling them to deepen their mathematical understanding.**
Number and Place Value	Count from 0 in multiples of 4, 8, 50 and 100; find 10 or 100 more or less than a given number.	Count from 0 and other numbers in multiples of 4, 8, 50 and 100; find 10 or 100 more or less than a given number, explaining what happens to the different place value.
	Recognise the place value of each digit in a three-digit number (hundreds, tens, ones).	
	Compare and order numbers up to 1000.	Begin to have an understanding about negative numbers recognising they are smaller than zero.
	Identify, represent and estimate numbers using different representations.	
	Read and write numbers up to 1000 in numerals and in words.	
	Solve number problems and practical problems involving these ideas.	
Addition and Subtraction	Add and subtract numbers mentally, including: • a three-digit number and ones; • a three-digit number and tens; • a three-digit number and hundreds.	
	Add and subtract numbers with up to three digits, using formal written methods of columnar addition and subtraction.	Add and subtract numbers with up to three digits, using formal written methods of columnar addition and subtraction. *To apply this method when reasoning problems and when working within a context.*
	Estimate the answer to a calculation and use inverse operations to check answers.	
	Solve problems, including missing number problems, using number facts, place value, and more complex addition and subtraction.	
Multiplication and Division	Recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables.	Recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables with increased fluency and speed. To know the corresponding division facts.
	Write and calculate mathematical statements for multiplication and division using the multiplication tables that they know, including for two-digit numbers times one- digit numbers, using mental and progressing to formal written methods.	Multiply and divide any 2-digit number by a single digit number and have an understanding of 'remainder'.

	Solve problems, including missing number problems, involving multiplication and division, including positive integer scaling problems and correspondence problems in which n objects are connected to m objects.	
Fractions	Count up and down in tenths; recognise that tenths arise from dividing an object into 10 equal parts and in dividing one-digit numbers or quantities by 10.	
	Recognise, find and write fractions of a discrete set of objects: unit fractions and non-unit fractions with small denominators.	Can find fractional values (from ½ to 1/10) of amounts up to 1000.
	Recognise and use fractions as numbers: unit fractions and non-unit fractions with small denominators.	
	Recognise and show, using diagrams, equivalent fractions with small denominators.	
	Add and subtract fractions with the same denominator within one whole [for example, 5/7 + 1/7 = 6/7.	
	Compare and order unit fractions, and fractions with the same denominators.	
	Solve problems that involve all of the above.	
Measurement	Measure, compare, add and subtract: lengths (m/cm/mm); mass (kg/g); volume/capacity (l/ ml).	Use knowledge of number to solve problems related to money, time and measures.
	Measure the perimeter of simple 2D shapes.	
	Add and subtract amounts of money to give change, using both £ and p in practical contexts.	
	Tell and write the time from an analogue clock, including using Roman numerals from I to XII, and 12-hour and 24-hour clocks.	
	Estimate and read time with increasing accuracy to the nearest minute; record and compare time in terms of seconds, minutes and hours; use vocabulary such as o'clock, am/pm, morning, afternoon, noon and midnight.	
	Know the number of seconds in a minute and the number of days in each month, year	
	Compare durations of events [for example to calculate the time taken by particular events or tasks].	Can relate knowledge of time to problems related to timetables.
Geometry - Shape	Draw 2D shapes and make 3D shapes using modelling materials; recognise 3D shapes in different orientations and describe them.	Draw 2D shapes and make 3D shapes using modelling materials with accuracy; recognise 3D shapes in different orientations and describe them.
	Recognise angles as a property of shape or a description of a turn.	Know that the total internal angles of a triangle measure 180° and can measure each.
	Identify right angles, recognise that two right angles make a half-turn, three make three quarters of a turn and four a complete turn; identify whether angles are greater than or less than a right angle.	
	Identify horizontal and vertical lines and pairs of perpendicular and parallel lines.	

Statistics	Interpret and present data using bar charts, pictograms and tables.	
	Solve one-step and two-step questions [for example, 'How many more?' and 'How many fewer?'] using information presented in scaled bar charts and pictograms and tables.	

Year 4 – Please refer to the NCETM 'Teaching for Mastery: Questions, tasks and activities to support assessment' for detailed examples.
https://www.ncetm.org.uk/public/files/23305594/Mastery_Assessment_Y4_Low_Res.pdf

	Mastery **These are the objectives from the National Curriculum.**	**Mastery with Greater Depth** **In many cases the objective is similar or the same as the expected standard. Greater depth means children explaining and reasoning, enabling them to deepen their mathematical understanding.**
Number and Place Value	Count in multiples of 6, 7, 9, 25 and 1000.	Count in multiples of 25 and 1000 *from any number.*
	Find 1000 more or less than a given number.	
	Count backwards through zero to include negative numbers.	Count backwards though zero to include negative numbers *and forwards from -10 through 0.*
	Recognise the place value of each digit in a four-digit number (thousands, hundreds, tens, and ones).	
	Order and compare numbers beyond 1000.	Order and compare numbers beyond 1000 *and explain.*
	Identify, represent and estimate numbers using different representations.	
	Round any number to the nearest 10, 100 or 1000.	
	Solve number and practical problems that involve all of the above and with increasingly large positive numbers.	Solve number and practical problems that involve all of the above and with increasingly large positive numbers with accuracy.
	Read Roman numerals to 100 (I to C) and know that over time, the numeral system changed to include the concept of zero and place value.	
Addition and Subtraction	Add and subtract numbers with up to 4 digits using the formal written methods of columnar addition and subtraction where appropriate.	
	Estimate and use inverse operations to check answers to a calculation.	
	Solve addition and subtraction two-step problems in contexts, deciding which operations and methods to use and why.	
Multiplication and	Recall multiplication and division facts for multiplication tables up to 12 × 12.	

Division	Use place value, known and derived facts to multiply and divide mentally, including: multiplying by 0 and 1; dividing by 1; multiplying together three numbers.	Rapidly recall answer when multiplying and dividing a whole or decimal number by 10 *with speed and accuracy.*
	Recognise and use factor pairs and commutativity in mental calculations.	
	Multiply two-digit and three-digit numbers by a one-digit number using formal written layout.	
	solve problems involving multiplying and adding, including using the distributive law to multiply two digit numbers by one digit, integer scaling problems and harder correspondence problems such as n objects are connected to m objects	
Fractions	Recognise and show, using diagrams, families of common equivalent fractions.	
	Count up and down in hundredths; recognise that hundredths arise when dividing an object by one hundred and dividing tenths by ten.	Count up and down in hundredths; *apply your understanding* that hundredths arise when dividing an object by one hundred and dividing tenths by ten.
	Solve problems involving increasingly harder fractions to calculate quantities, and fractions to divide quantities, including non- unit fractions where the answer is a whole number.	
	Add and subtract fractions with the same denominator.	Add and subtract fractions with the same denominator, *using knowledge of common equivalents to write the answers in a simpler form.*
	Recognise and write decimal equivalents of any number of tenths or hundredths.	Pupils can recognise relationships between fractions and decimals and express them as equivalent quantities
	Recognise and write decimal equivalents to ¼, ½ and ¾.	Recognise and write decimal equivalents to ¼, ½ and ¾ *using them in real-life examples.*
	Find the effect of dividing a one- or two- digit number by 10 and 100, identifying the value of the digits in the answer as ones, tenths and hundredths.	
	Round decimals with one decimal place to the nearest whole number.	
	Compare numbers with the same number of decimal places up to two decimal places.	Compare numbers with the same number of decimal places, *explaining your answer.*
	Solve simple measure and money problems involving fractions and decimals to two decimal places.	
Measurement	Convert between different units of measure [for example, kilometre to metre; hour to minute].	The pupils can calculate confidently with measures (time, capacity, length, mass)
	Measure and calculate the perimeter of a rectilinear figure (including squares) in centimetres and metres.	
	Find the area of rectilinear shapes by counting squares.	
	Estimate, compare and calculate different measures, including money in pounds and pence.	Converting and ordering across a range of measures

	Read, write and convert time between analogue and digital 12- and 24-hour clocks.	Use a 24-hour timetable to find out times for a journey between various places
	Solve problems involving converting from hours to minutes; minutes to seconds; years to months; weeks to days.	
Geometry - Shape	Compare and classify geometric shapes, including quadrilaterals and triangles, based on their properties and sizes.	Can compare angles in order to decide whether a polygon is regular.
	Identify acute and obtuse angles and compare and order angles by size.	The pupil can use mathematical reasoning to compare and order angles.
	Identify lines of symmetry in 2D shapes presented in different orientations.	
	Complete a simple symmetric figure with respect to a specific line of symmetry.	
Geometry – Position and Direction	Describe positions on a 2D grid as coordinates in the first quadrant.	
	Describe movements between positions as translations of a given unit to the left/right and up/down.	
	Plot specified points and draw sides to complete a given polygon.	
Statistics	Interpret and present discrete and continuous data using appropriate graphical methods, including bar charts and time graphs.	
	Solve comparison, sum and difference problems using information presented in bar charts, pictograms, tables and other graphs.	Collect own data on given project and present information in graphical formats of their choosing

Year 5 – Please refer to the NCETM 'Teaching for Mastery: Questions, tasks and activities to support assessment' for detailed examples.
https://www.ncetm.org.uk/public/files/23305594/Mastery_Assessment_Y5_Low_Res.pdf

	Mastery These are the objectives from the National Curriculum.	Mastery with Greater Depth In many cases the objective is similar or the same as the expected standard. Greater depth means children explaining and reasoning, enabling them to deepen their mathematical understanding.
Number and Place Value	Read, write, order and compare numbers to at least 1 000 000 and determine the value of each digit.	Have a concept of numbers well beyond 1,000,000 and their relative association to distances to planets; historical data and geographical aspects
	Count forwards or backwards in steps of powers of 10 for any given number up to 1 000 000.	Count forwards or backwards in multiples of 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.	Interpret negative numbers in context, count forwards and backwards in different steps with positive and negative whole numbers, including through zero.
	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.	Pupils can reason about place value.
	Read Roman numerals to 1000 (M) and recognise years written in Roman numerals.	
Addition and Subtraction	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.	The pupil can calculate mentally using efficient strategies
	Use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy.	Use rounding as a strategy for quickly assessing what approximate answers ought to be before calculating
	Solve addition and subtraction multi- step problems in contexts, deciding which operations and methods to use and why.	
Multiplication and Division	Identify multiples and factors, including finding all factor pairs of a number, and common factors of two numbers.	
	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.	

	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.	
	Divide numbers up to 4 digits by a one-digit number using the formal written method	Divide whole numbers (up to 4 digits) by 1digit numbers, using a range of methods.
	Multiply and divide whole numbers and those involving decimals by 10, 100 and 1000.	
	Recognise and use square numbers and cube numbers, and the notation for squared (^{2}) and cubed (^{3}).	Recognise the symbol for square root (√) and work out square roots for numbers up to 100
	Solve problems involving multiplication and division including using their knowledge of factors and multiples, squares and cubes.	
	Solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign.	The pupil can use formal methods to solve problems, including multi-step
	Solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates.	
Fractions	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 [for example, 2/5, 4/5, 6/5, 1/5]	
	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 [for example, 0.71 = 71/100].	Read and write decimal numbers as fractions
	Recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents.	
	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.	
	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.	Pupils can recognise relationships between fractions and decimals and percentages and express them as equivalent quantities

	Solve problems which require knowing percentage and decimal equivalents of ½, ¼, 1/5, 2/5, 4/5 and those fractions with a denominator of a multiple of 10 or 25.	
Measurement	Convert between different units of metric measure (for example, kilometre and metre; centimetre and metre; centimetre and millimetre; gram and kilogram; litre and millilitre).	Convert between different units of metric measure (for example, kilometre and metre; centimetre and metre; centimetre and millimetre; gram and kilogram; litre and millilitre) *using decimals to three places*.
	Understand and use approximate equivalences between metric units and common imperial units such as inches, pounds and pints.	
	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 units, square centimetres (cm^2) and square metres	Use knowledge of measurement to create plans (independently) of areas around school, such as classroom , field, outside play area, etc.
	Estimate volume [for example, using $1cm^3$ blocks to build cuboids (including cubes)] and capacity [for example, using water].	
	Solve problems involving converting between units of time.	Use a range of timetables to work out journey times on a fictional journey around the world, for example, 'How long would it take to reach the rainforests in the Amazon?
	Use all four operations to solve problems involving measure [for example, length, mass, volume, money] using decimal notation, including scaling.	
Geometry - Shape	Identify 3D shapes, including cubes and other cuboids, from 2D representations.	Identify 3D shapes, including cubes and other cuboids, from 2D representations *and nets.*
	Know angles are measured in degrees: estimate and compare acute, obtuse and reflex angles.	Know angles are measured in degrees: estimate *accurately* and compare acute, obtuse and reflex angles.
	Draw given angles, and measure them in degrees (^{o}).	
	Identify: • angles at a point and one whole turn (total 360°); • angles at a point on a straight line and a turn (total 180°); • other multiples of 90°.	
	Use the properties of rectangles to deduce related facts and find missing lengths and angles.	Pupils can apply angle properties in different contexts
	Distinguish between regular and irregular polygons based on reasoning about equal sides and angles.	Distinguish between regular and irregular polygons based on reasoning about equal sides and angles, *knowing some of the properties of regular polygons.*
Geometry – Position and Direction	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.	
Statistics	Solve comparison, sum and difference problems using information presented in a line graph.	Collect own data on personal project and present information in formats of their choosing, charts, graphs and tables

	Complete, read and interpret information in tables, including timetables.	’

Year 6 – Please refer to the NCETM ‘Teaching for Mastery: Questions, tasks and activities to support assessment’ for detailed examples.
https://www.ncetm.org.uk/public/files/23305594/Mastery_Assessment_Y6_Low_Res.pdf
GD statements taken from the Teacher assessment exemplification 2018.

	Mastery **These are the objectives from the National Curriculum.**	**Mastery with Greater Depth** **In many cases the objective is similar or the same as the expected standard. Greater depth means children explaining and reasoning, enabling them to deepen their mathematical understanding.**
Number and Place Value	Read, write, order and compare numbers up to 10,000,000 and determine the value of each digit.	Use =, ≠, <, >, ≤, ≥ correctly
	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.	
Addition, Subtraction, Multiplication and division	Multiply multi-digit numbers up to 4 digits by a two-digit whole number using the formal written method of long multiplication.	Multiply all integers, (using efficient written methods) including mixed numbers and negative numbers
	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.	
	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.	
	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. 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.	

Fractions	Use common factors to simplify fractions; use common multiples to express fractions in the same denomination.	
	Compare and order fractions, including fractions > 1.	
	Add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fractions.	
	Multiply simple pairs of proper fractions, writing the answer in its simplest form, for example, ½ x ¼ = 1/8	
	Divide *simple* proper fractions by whole numbers [for example,1/3 ÷ 2 = 1/6]	Divide proper fractions by whole numbers, [for example 4/5 ÷ 8 = 4/40 = 1/10
	Associate a fraction with division and calculate decimal fraction equivalents [for	
	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.	
	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.	
	Solve problems which require answers to be rounded to specified degrees of accuracy.	
	Recall and use equivalences between simple fractions, decimals and percentages, including in different contexts.	Compare, order and convert between fractions, decimals and percentages in contexts related to science, history or geography learning
Ratio and Proportion	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 of percentages [for example, of measures, and such as 15% of 360] and the use of percentages for comparison.	
	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.	
Algebra	Use simple formulae.	Use formulae.
	Generate and describe linear number sequences.	Generate and describe linear number sequences by writing equation for the nth term.
	Express missing number problems algebraically.	
	Find pairs of numbers that satisfy an equation with two unknowns.	*Explain how to find* pairs of numbers that satisfy an equation with two

	Enumerate possibilities of combinations of two variables.	
Measurement	Solve problems involving the calculation and conversion of units of measure, using decimal notation up to three decimal places where appropriate.	Use four operations with mass, length, time, money and other measures, including with decimal quantities
	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.	For example: Calculate costs and time involved to visit a destination in another part of the world relating to on-going learning in history or geography
	Convert between miles and kilometres.	
	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 shapes.	Use formula for measuring area of shape, such as cuboid and triangle to work out area of irregular shape in the school environment
	Calculate the area of parallelograms and triangles.	
	Calculate, estimate and compare volume of cubes and cuboids using standard units, including cubic centimetres (cm^3) and cubic metres (m^3), and extending to other units [for example, mm^3 and km^3].	
Geometry – Properties of shapes	Draw 2D shapes using given dimensions and angles.	Draw *accurately* 2D shapes using given dimensions and angles.
	Recognise, describe and build simple 3D 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.	Compare and classify geometric shapes based on their properties and sizes and find unknown angles in any triangles, quadrilaterals, and *know the angles in common* 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 point, are on a straight line, or are vertically opposite, and find missing angles.	
Geometry – Position and Direction	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.	Draw and translate simple shapes on the coordinate plane, and reflect them in the axes and about other vertical and horizontal lines.
Statistics	Interpret and construct pie charts and line graphs and use these to solve problems.	Collect own data on personal project and present information in formats of their choosing, charts, graphs and tables and answer specific questions related to their research
	Calculate and interpret the mean as an average.	

EYFS

	Numbers These are the objectives from 40-60+ months	Shape, space and measures These are the objectives from 40-60+ months
	Recognise some numerals of personal significance.	Beginning to use mathematical names for 'solid' 3D shapes and 'flat' 2-D shapes, and mathematical terms to describe shapes.
	Recognises numerals 1 to 5	Selects a particular named shape.
	Counts up to three or four objects by saying one number name for each item.	Can describe their relative position such as 'behind' or 'next to'.
	Counts actions or objects which cannot be moved	Orders two or three items by length or height.
	Counts objects to 10, and beginning to count beyond 10.	Orders two items by weight or capacity.
	Counts out up to six objects from a larger group.	Uses familiar objects and common shapes to create and recreate patterns and build models.
	Selects the correct numeral to represent 1 to 5, then 1 to 10 objects.	Uses everyday language related to time.
	Counts an irregular arrangement of up to ten objects.	Beginning to use everyday language related to money.
	Estimates how many objects they can see and checks by counting them.	Orders and sequences familiar events.
	Uses the language of 'more' and 'fewer' to compare two sets of objects.	Measures short periods of time in simple ways.
	Finds the total number of items in two groups by counting all of them.	
	Says the number that is one more than a given number	
	Finds one more or one less from a group of up to five objects, then ten objects	
	In practical activities and discussion, beginning to use the vocabulary involved in adding and subtracting.	
	Records, using marks that they can interpret and explain.	
	Begins to identify own mathematical problems based on own interests and fascinations.	