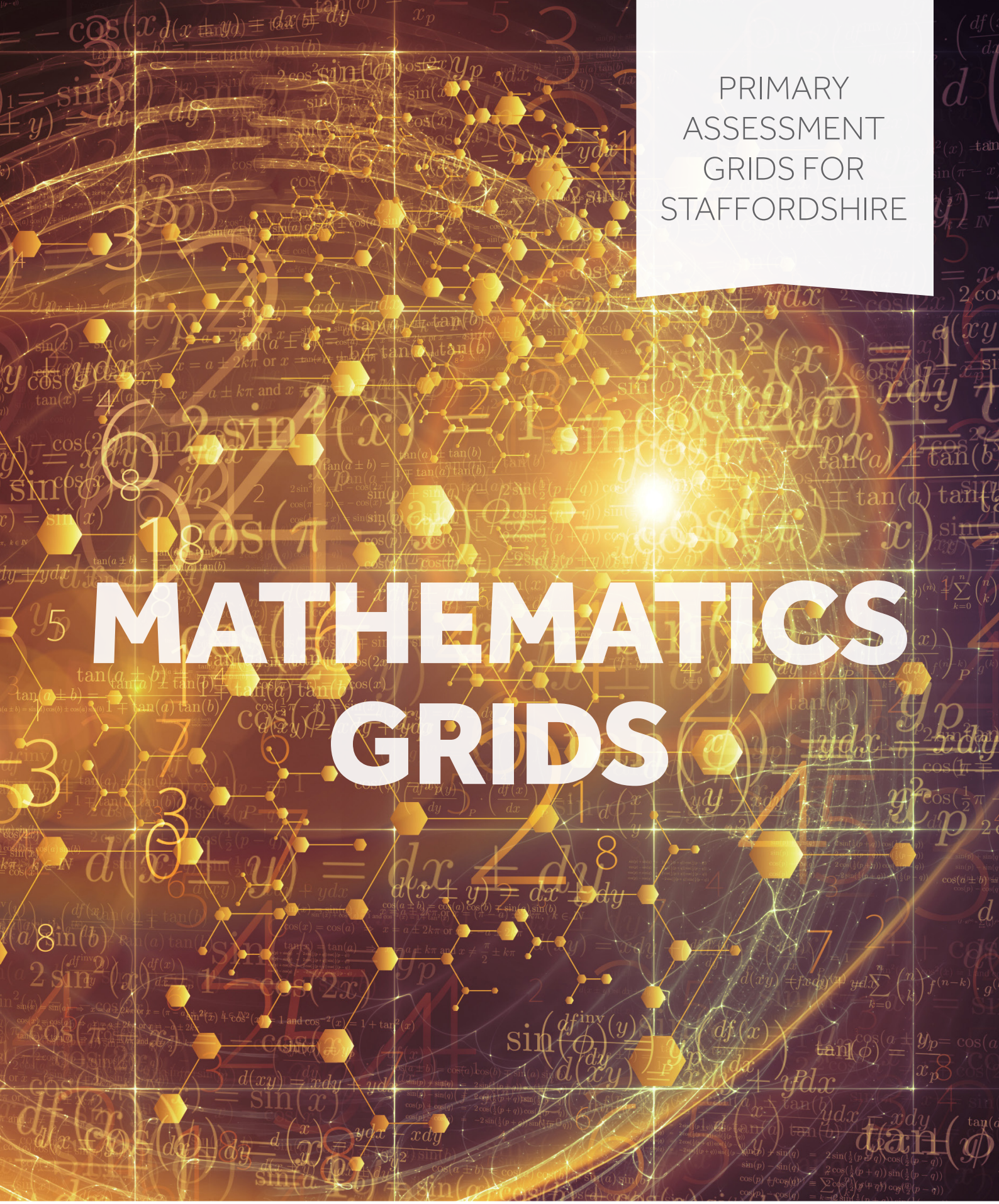
PRIMARY ASSESSMENT GRIDS FOR STAFFORDSHIRE

MATHEMATICS GRIDS



entrust
Inspiring Futures

ASSESSMENT WITHOUT LEVELS

The Entrust Mathematics **Assessment Without Levels** documentation has been developed by a group of Tamworth Mathematics subject leaders.

There are two differing approaches developed:

- Approach 1 is based on the attainment of (a percentage of) objectives including Key Performance Indicators (KPIs);
- Approach 2 identifies progression towards age related expectations.

Schools should select the approach that most reflects their needs and tailor the document to suit their assessment and planning requirements.

In addition, there are child/parent friendly yearly overview jigsaw sheets that can be used in conjunction with either approach which can be found on the Entrust website.

We wish to thank the following for their contribution and enthusiasm and acknowledge their hard work:

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July 2015

Mathematics Assessment – Age Related Progression Grids

This approach considers four different stages of progression: Beginner, Developing, Secure and Deepening. This is to aid teachers in making accurate judgements when assessing learners' progress and attainment. These assessment grids will accurately judge the achievements of a range of learners' abilities within a year group.

Learners who are assessed to have met age related expectations will be judged to be secure. It is the decision of individual schools as to the percentage of objectives that they would deem a learner needs in order to ensure judged as secure in their year group expectations. These grids can also be used in conjunction with other assessment tools. The amount/number of objectives within each category would allow teachers to make a judgement as to whether a learner is:

- **Beginner**
- **Beginner +**
- **Developing**
- **Developing +**
- **Secure**
- **Secure +**
- **Deepening**

You may like to consider the following as a guide:

Stage	% of objectives required
Beginning	Up to 15%
Beginning +	16 - 30%
Developing	31 - 45%
Developing +	46 - 60%
Secure	61 - 80/85% (at school's discretion)
Deepening	100%

Suggestions for using age related progression grids:

As a Planning Tool

- To ensure clear differentiation and progressive steps towards age related expectations.
- To enable challenge for more able learners to deepen understanding and reasoning skills.
- Individual grids can be used to highlight gaps for a particular learner/group of learners.

As Teacher Assessment

- To be completed for each learner individually/ability groups where statements are highlighted once objectives are achieved.
- To be used to aid the creation of Steps to Learning/Success criteria/Progress arrows to self-assess so that learners understand their next steps and how they can progress in different areas of Mathematics.
- To be highlighted in different colours termly/half termly to show progression and/or coverage

Moderation

- To be used in the same way as historical APP grids to assess groups of learners/all learners individually.
- To be highlighted termly to show progression.
- To be used to support teacher judgements by dating with evidence in books.
- To be used when moderating with Mathematics leaders, across phase groups, whole school and clusters.

Year 1			
Beginning	**Developing**	**Secure**	**Deepening**
Number and Place Value			
Continue to count from any number to 100.	Continue counting forwards and backwards to 100 from any given number.	Count to and across 100, forwards and backwards, beginning with 0 or 1, or from any given number.	Begin to recognise place value in numbers beyond 20 by reading, writing, counting and comparing numbers up to 100 .
Count and read numbers to 100 in numerals.	Write numbers to 100 in numerals	Count, read and write numbers to 100 in numerals; count in multiples of 2s, 5s and 10s	Recognise simple patterns of multiples e.g. Multiplies of 5 always end in a 0 or 5 and odd and even numbers.
Order numbers correctly to 50.	Say a number that is 1 more or 1 less to 50	Given a number, identifies 1 more and 1 less.	Be able to solve and begin to explain a word problem where 1 more or less is needed for the answer without counting.
Identify numbers using objects and use the language of: more than, less than (fewer), most, least	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, and use the language of: equal to, more than, less than (fewer), most, least	Be able to show if a number is bigger or smaller than another by positioning them on a blank number line.
Read and write number words from 1-10.	Read and write number words from 11-20.	Read and write numbers from 1 to 20 in numerals and words.	Be able to read number words in a simple Maths word problem.

Year 1			
Beginning	**Developing**	**Secure**	**Deepening**
Addition and Subtraction			
Understand the vocabulary related to addition (+), subtraction (−) and equals (=) signs.	Use the correct vocabulary when reading and interpreting a simple number sentence.	Read, write and interpret mathematical statements involving addition (+), subtraction (−) and equals (=) signs.	Be able to find the missing operation in a subtraction or addition mathematical statement.
Represent and use number bonds and related subtraction facts within 10.	Represent and use number bonds and related subtraction facts within 15.	Represent and use number bonds and related subtraction facts within 20.	Memorise and reason with number bonds to 10 and 20 in several forms e.g. 9 + 7 = 16, 16-9 = 7, 7 = 16 – 9 and realise the effect of adding or subtracting 0.
Add two 1-digit numbers.	Add a one-digit number to a two-digit number Subtract a one-digit number from a 2-digit number	Add and subtract one-digit and two-digit numbers to 20, including 0.	Confidently and accurately add and subtract two 2-digit numbers up to 20
Solve one-step problems that involve addition and subtraction, using concrete objects.	Solve one-step problems that involve addition and subtraction, using pictorial representations. Begin to work out the value of a missing number	Solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and solve missing number problems such as 7 = ? – 9	Record work using + - and = symbols and explain why it is used for a given problem

Year 1			
Beginning	**Developing**	**Secure**	**Deepening**
Multiplication and Division			
Recognise a pattern counting in 2s. Know doubles to double 5.	Know doubles to double 10. Recognise a pattern counting in 10s. Group objects in 2s, 10s and 5s for counting.	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.	Make connections between arrays, number patterns and counting in 2s, 5s and 10s.

Year 1			
Beginning	**Developing**	**Secure**	**Deepening**
Fractions			
Recognise, find and name a half as 1 of 2 equal parts of a shape. Find half of a quantity less than 10.	Recognise, find and name a half as 1 of 2 equal parts of an object, shape or quantity.	Recognise, find and name a half as 1 of 2 equal parts of an object, shape or quantity.	Use halves to solve problems using shapes, objects and quantities and begin to explain my reasoning.
Recognise, find and name a quarter as 1 of 4 equal parts of a shape.	Recognise, find and name a quarter as 1 of 4 equal parts of an object or shape.	Recognise, find and name a quarter as 1 of 4 equal parts of an object, shape or quantity.	Use quarters to solve problems using shapes, objects and quantities and begin to explain my reasoning.

Year 1			
Beginning	**Developing**	**Secure**	**Deepening**
Measurement			
Use everyday language to talk about size, weight, capacity, position, distance, time and money. Compare quantities and objects and solve problems	Begin to use the correct mathematical language for measurement when comparing quantities and objects	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]	Begin to use common standard units of measurement when comparing and using different quantities and objects Begin to recognise standard measures when using measuring tools such as a ruler, weighing scales and containers
Use everyday language to talk about size, weight, capacity, position, distance, time and money.	Use and compare different types of quantities and measures using non-standard units	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]	Show and explain my thinking when solving simple measurement problems e.g. how much I have left if I have 80p and I spend 10p guessing the name of the bear at the school fair, without counting in 1s
Know that each day has a different name Know what month their birthday is in	Say the days of the week in order Begin to name some of the months	Recognise and use language relating to dates, including days of the week, weeks, months and years	Answer simple questions related to the order of the days of the week, months and years

Begin to recognise and use the vocabulary of time	Begin to understand that an hour is longer than a minute Know a clock has an hour and a minute hand	Tell the time to the hour and half past the hour and draw the hands on a clock face to show these times	Begin to compare and sequence intervals of time e.g. the school day

Year 1			
Beginning	**Developing**	**Secure**	**Deepening**
Geometry - Properties of Shape			
Explore the characteristics of everyday 2D objects and shapes and use mathematical language to describe them.	Use mathematical language to describe common 2D shapes.	Recognise and name common 2-D shapes, including: 2-D shapes [for example, rectangles (including squares), circles and triangles]	Recognise 2D shapes in different orientations and sizes and explain why rectangles and triangles are not always similar to others.
Explore the characteristics of everyday 3D objects and shaped and use mathematical language to describe them.	Use mathematical language to describe common 3D shapes.	Recognise and name common 3-D shapes, including: 3-D shapes [for example, cuboids (including cubes), pyramids and spheres]	Recognise 3D shapes in different orientations and sizes and explain why cuboids and pyramids are not always similar to others.

Year 1			
Beginning	**Developing**	**Secure**	**Deepening**
Geometry Position and Direction			
Recognise, create and describe patterns.	Use the language of position, direction and motion, including: left and right, top, middle and bottom, on top of, in front of, above, between, around, near, close and far, up and down, forwards and backwards, inside and outside.	Describe position, direction and movement, including whole, half, quarter and three-quarter turns	Make whole, half, quarter and three-quarters turn in both directions and connect turning clockwise and anti-clockwise with movement on a clock face.

Year 2			
Beginning	**Developing**	**Secure**	**Deepening**
Number and Place Value			
Count in different multiples of 2's, 5's and 10	Count in steps of 2, 3, 5 and 10 from 0 forwards.	Count in steps of 2, 3, 5 and 10 from 0, forwards and backwards.	Recognise and identify a multiple of 2, 5 and 10 of any given number.
Understand that a two digit number is made up of tens and ones.	Partition a 2 digit number using Dienes apparatus and pictorial representations	Recognise the place value of each digit in a two-digit number (tens, ones)	Recognise and understand the place value of each digit in a three-digit number (hundreds, tens, ones)
Estimate number of objects to 20.	Identify, represent and estimate numbers up to 20 using different representations, including the number line.	Identify, represent and estimate numbers using different representations, including the number line for numbers up to 100.	Accurately estimate numbers on an empty line and explain why they have placed my number in that position.
Compare and order numbers of objects to 20.	Compare and order numbers up to 100	Compare and order numbers from 0 up to 100; use <, > and = signs	Solve problems using <, > and = signs numbers up to 100 and explain my reasoning.
Read and write numbers from 1-20 in numerals and words.	Read and write numbers to at least 50 in numerals and words.	Read and write numbers to at least 100 in numerals and words.	Read numbers correctly in words when solving a mathematical problem.
Use pictorial representations to solve problems involving number facts.	Use number facts to solve problems.	Use place value and number facts to solve problems	Explain the method I have used and how the problem was solved and why the answer is correct.

Year 2			
Beginning	**Developing**	**Secure**	**Deepening**
Addition and Subtraction			
Solve simple problems with addition and subtraction using pictorial representations	Solve problems with addition and subtraction using the correct operation	Solve problems with addition and subtraction applying my increasing knowledge of mental and written methods.	Solve a simple 2-step problem with addition and subtraction and explain the steps they have taken to solve it.
Derive addition and subtraction facts up to 20 e.g. counting on using a number line, using objects	Recall and use addition and subtraction facts to 20	Recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100	Use fluent recall of subtraction and addition facts to support mental calculations.
Add and subtract numbers using concrete objects and pictorial representations.	Add and subtract numbers using concrete objects, pictorial representations, and mentally, including: • a two-digit number and 1s • a two-digit number and 10s	Add and subtract numbers using concrete objects, pictorial representations, and mentally, including: • a two-digit number and 1s • a two-digit number and 10s • 2 two-digit numbers • adding 3 one-digit numbers	Use a written method to add and subtract two 2 digit numbers from 2 digit numbers.
Read, write and interpret mathematical statements involving addition (+) , subtraction (-) and equals (=) signs	Know that in addition the answer is more and I know that in subtraction the answer is less.	Show that addition of 2 numbers can be done in any order (commutative) and know that subtraction of 1 number from another cannot.	Understand that numbers can be rearranged in a number sentence to make a calculation easier to solve.
Recognise and use the inverse relationship between addition and subtraction with apparatus	Recognise and use the inverse relationship between addition and subtraction and use this to check calculations	Recognise and use the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems	Be able to make 2 correct additions and 2 subtractions using 2 digit numbers.

Year 2			
Beginning	**Developing**	**Secure**	**Deepening**
Multiplication and Division			
Understand that when multiplying I can use repeated addition on a number line and arrays to show understanding. When dividing I can use repeated subtraction and sharing/grouping using concrete apparatus.	Know and use the 2,5 and 10 times tables in order	Recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers.	IUse commutativity and inverse relations to develop multiplicative reasoning e.g. 4 X 5 = 20 and 20 ÷ 5 = 4
Calculate mathematical statements for multiplication and division for 2s and 10s and recognise multiplication (×), division (÷) and equals (=) signs	Recognise multiplication (×), division (÷) and equals (=) signs and calculate mathematical statements for multiplication and division for 2s, 10s and 5s	Calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication (×), division (÷) and equals (=) signs	Select the correct operation for a problem using multiplication and division
Make an array to support multiplication and division.	Read, write and interpret mathematical statements involving multiplication(X) , division (÷) and equals (=) signs	Show that multiplication of 2 numbers can be done in any order (commutative) and division of 1 number by another cannot	Recognise and use the inverse relationships between multiplication and division
Solve one-step problems involving multiplication and division using objects, pictorial representations and arrays with support	Solve one-step problems involving multiplication and division using objects, pictorial representations and arrays.	Solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods, and multiplication and division facts, including problems in contexts	Show and explain how knowing a multiplication fact helps me to solve a division word problem and record related number sentences

Year 2			
Beginning	**Developing**	**Secure**	**Deepening**
Fractions			
Recognise, find, name and write fractions ¼ and $\frac{2}{4}$ of a length or shape	Recognise, find, name and write fractions ⅓ ¼, $\frac{2}{4}$ and ¾ of a length, shape or set of objects	Recognise, find, name and write fractions ⅓ ¼, $\frac{2}{4}$ and ¾ of a length, shape, set of objects or quantity	Solve and explain how to use fractions when solving problems using shape, objects and quantities
Write simple fractions e.g. ½ of 6 = 3	Recognise the equivalence of $\frac{2}{4}$ and ½	Write simple fractions e.g. ½ of 6 = 3 and recognise the equivalence of $\frac{2}{4}$ and ½	Count in halves and quarters up to 10 on a numberline and begin to understand the concept of fractions as numbers

Year 2			
Beginning	**Developing**	**Secure**	**Deepening**
Measurement			
Begin to choose and use appropriate standard units to estimate and measure length/height ,(m/cm); mass (kg/g); temperature (°C); capacity (litres/ml, using rulers, scales, thermometers and measuring vessels with support	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 with increasing accuracy	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 I can compare and order lengths, mass, volume/capacity and record the results using >, < and =	Add and subtract different measures to help me solve and explain a problem
Recognise that different things cost different amounts of money	Recognise and know the value of different denominations of coins and notes	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	Solve and explain problems involving addition and subtraction of money of the same unit, including giving change
Write and tell the time to the hour, half past and quarter past and draw the hands on a clock face to show these times	Write and tell the time to the hour, half past and quarter past and quarter to and draw the hands on a clock face to show these times	Write and tell the time to five minutes, including quarter past/to the hour and draw the hands on a clock face to show these times Know the number of minutes in an hour and the number of hours in a day	Solve and explain simple problems involving time using a numberline

Year 2			
Beginning	**Developing**	**Secure**	**Deepening**
Geometry - Properties of Shape			
Begin to identify and describe the properties of 2-D shapes, including the number of sides using the correct vocabulary	Name a variety of common 2-D shapes with an increasing use of correct vocabulary	Identify and describe the properties of 2-D shapes, including the number of sides, and line symmetry in a vertical line Compare and sort common 2-D and everyday objects	Compare and sort a wide variety of 2-D shapes according to their properties and use precise vocabulary when explaining (including quadrilaterals and polygons)
Begin to identify and describe the properties of 3-D shapes, including the number of edges, vertices and faces with prompts or support.	Name a variety of common 3-D shapes with an increasing use of correct vocabulary	Identify and describe the properties of 3-D shapes, including the number of edges, vertices and faces Compare and sort common 3-D shapes and everyday objects Identify 2-D shapes on the surface of 3-D shapes, [for example, a circle on a cylinder and a triangle on a pyramid]	Compare and sort a wide variety of 3-D shapes according to their properties and use precise vocabulary when explaining (including prisms)

Year 2			
Beginning	**Developing**	**Secure**	**Deepening**
Geometry - position and direction			
Continue a mathematical repeating pattern or sequence	Make a mathematical repeating pattern or sequence	Order and arrange combinations of mathematical objects in patterns and sequences	Work with patterns of shapes and predict what will come next.
Use mathematical vocabulary to describe position,	Use mathematical vocabulary to describe direction and movement including distinguishing between rotation as a turn	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)	Understand the concept and language of angles (right angles) to describe 'turn' by applying rotations, including in practical contexts

Year 2			
Beginning	**Developing**	**Secure**	**Deepening**
Statistics			
Recognise simple pictograms, tally charts, block diagrams and tables.	Recognise simple pictograms, tally charts, block diagrams and tables.	Recognise simple pictograms, tally charts, block diagrams and tables.	Recognise simple pictograms, tally charts, block diagrams and tables.
Begin to ask questions about simple pictograms, tally charts, block diagrams and tables.	Be able to ask questions about simple pictograms, tally charts, block diagrams and tables.	Be able to ask questions about simple pictograms, tally charts, block diagrams and tables.	Be able to ask more complex questions about simple pictograms, tally charts, block diagrams and tables.

Year 3			
Beginner	**Developing**	**Secure**	**Deepening**
Number and place value			
Count in steps of 2, 3, 5 and 10 from any number forward and backwards.	Count from 0 in multiples of 4, 8, 50 and 100; find 10 or 100 more or less than a given number Find 10 more or less than a given number and 100 more than a given number	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 in multiples of 6, 25 and 1000
Recognise the place value of each digit in a two-digit number	Start to recognise the place value of each digit in a three-digit number (hundreds, tens, ones)	Recognise the place value of each digit in a three-digit number (hundreds, tens, ones)	Recognise the place value of each digit in a four-digit number (thousands, hundreds, tens, ones)
Compare and order numbers up to 100	Compare numbers up to 1000	Compare and order numbers up to 1000	Compare and order numbers beyond 1000
Identify, represent and estimate numbers up to 100 using different representations	Identify, represent and estimate numbers up to 500 using different representations	Identify, represent and estimate numbers up to 1000 using different representations	Identify, represent and estimate numbers beyond 1000 using different representations
Read and write numbers to at least 1000 in numerals and in words	Read and write numbers up to 1000 in numerals	Read and write numbers up to 1000 in numerals and in words	Read and write numbers beyond up to 10,000 in numerals and in words
Solve number problems and practical problems involving the ideas above	Solve number problems and practical problems involving the ideas above	Solve number problems and practical problems involving the ideas above	Solve number problems and practical problems involving the ideas above

Year 3			
Beginner	**Developing**	**Secure**	**Deepening**
Addition and subtraction			
Add and subtract numbers mentally, including: • a two-digit number and ones • a two-digit number and tens a two-digit number and hundreds	Add and subtract numbers mentally, including: • a three-digit number and ones • a three-digit number and tens	Add and subtract numbers mentally, including: • a three-digit number and ones • a three-digit number and tens • a three-digit number and hundreds	Pupils continue to practise both mental methods for addition and subtraction with increasingly large numbers
Record addition and subtraction in columns to support place value	Add and subtract numbers with up to two 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	Add and begin to subtract numbers with up to 4 digits using the formal written methods of columnar addition and subtraction where appropriate
Use the inverse relationship between addition and subtraction to check calculations	Start to estimate the answer to a calculation and use inverse operations to check answers	Estimate the answer to a calculation and use inverse operations to check answers on a regular basis	Use inverse operations to check answers to a calculation with numbers up to 4 digits.
Solve missing number problems	Solve problems, including missing number problems, using number facts and place value.	Solve problems, including missing number problems, using number facts, place value, and more complex addition and subtraction.	Begin to solve addition and subtraction two-step problems in contexts, deciding which operations and methods to use and why.

Year 3			
Beginner	**Developing**	**Secure**	**Deepening**
Multiplication and Division			
Recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables	Recall and use multiplication and division facts for the 3 and 4 multiplication tables	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, 6 and 8, 9 and 11 multiplication tables
Calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication, division and equals signs.	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 methods	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	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 formal written methods
Solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods, and multiplication and division facts, including problems in contexts.	Solve problems, including missing number problems, involving multiplication and division, including positive integer scaling problems	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.	Confidently 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.

Year 3			
Beginner	**Developing**	**Secure**	**Deepening**
Fractions			
Count up to 10 in halves and quarters	Count up in tenths; recognise that tenths arise from dividing an object into 10 equal parts and in dividing one-digit numbers or quantities by 10	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	Count up in hundredths; recognise that hundredths arise when dividing an object by one hundred and dividing tenths by ten and use these in a growing variety of problems.
Write simple fractions of numbers for example ½ of 6=3	Recognise, find and write fractions of a discrete set of objects: unit fractions with small denominators	Recognise, find and write fractions of a discrete set of objects: unit fractions and non-unit fractions with small denominators	Recognise, find and write fractions of a discrete set of objects: unit fractions and non-unit fractions with larger denominators and use these in a growing variety of problems.
	Recognise and use fractions as numbers: unit fractions with small denominators	Recognise and use fractions as numbers: unit fractions and non-unit fractions with small denominators	Recognise and use fractions as numbers: unit fractions and non-unit fractions with larger denominators and use these in a growing variety of problems.
Recognise the equivalence of $\frac{2}{4}$and $\frac{1}{2}$	Recognise the equivalence of halves, quarters, fifths and tenths.	Recognise and show, using diagrams, equivalent fractions with small denominators	Recognise and show, using diagrams, families of equivalent fractions and use these in a growing variety of problems.
Recognise that if you add 2 halves together or 4 quarters together they add up to 1.	Add fractions with the same denominator within one whole	Add and subtract fractions with the same denominator within one whole	Add fractions with the same denominator beyond one whole and use these in a growing variety of problems.
Compare and order fractions with the same denominators	Compare and order fractions with the same denominators and compare unit fractions	Compare and order unit fractions, and fractions with the same denominators	Begin to recognise there is equivalence between fractions and decimals.
Solve problems that involve all of the above	Solve problems that involve all of the above	Solve problems that involve all of the above	Solve problems that involve all of the above

Year 3			
Beginner	**Developing**	**Secure**	**Deepening**
Measurement			
Estimate and measure lengths (m/cm/mm); mass (kg/g); volume/capacity (l/ml)	Measure and compare lengths (m/cm/mm); mass (kg/g); volume/capacity (l/ml)	Measure, compare, add and subtract: lengths (m/cm/mm); mass (kg/g); volume/capacity (l/ml)	I can measure and compare, selecting the appropriate tools and units; add and subtract using mixed units and equivalence of units e.g. 75cm and ½ m
Be able to find the perimeter of squares and rectangles drawn on squared paper by counting	Measure the perimeter of squares, rectangles and triangles	Measure the perimeter of simple 2-D shapes	I can measure and calculate the perimeter of simple 2-D shapes accurately
Add and subtract simple amounts of money using the support of practical apparatus	Add and subtract amounts of money to give change, using practical apparatus if needed	Add and subtract amounts of money to give change, using both £ and p in practical contexts	I can add and subtract amounts of money including mixed units and give change in manageable amounts
Tell and write the time from an analogue clock to the nearest quarter of an hour	Tell and write the time from an analogue clock, including using Roman numerals from I to XII, to the nearest five minutes	Tell and write the time from an analogue clock, including using Roman numerals from I to XII, and 12-hour and 24-hour clocks	I can confidently apply knowledge of time, including using Roman numerals, 12-hour and 24-hour, to a wide range of practical contexts; convert between 12-hour and 24-hour clocks
Estimate and read time with increasing accuracy to the nearest quarter of an hour; record and compare time in terms of hours and o'clock; use vocabulary such as a.m./p.m., morning, afternoon, noon and midnight	Estimate and read time with increasing accuracy to the nearest five minutes; record and compare time in terms of seconds, minutes, hours and o'clock; use vocabulary such as a.m./p.m., morning, afternoon, noon and midnight	Estimate and read time with increasing accuracy to the nearest minute; record and compare time in terms of seconds, minutes, hours and o'clock; use vocabulary such as a.m./p.m., morning, afternoon, noon and midnight	Estimate and read time with accuracy to the nearest minute; record and compare time in terms of seconds, minutes, hours and days; Confidently use vocabulary such as a.m./p.m., morning, afternoon, noon and midnight
Know the number of seconds in a minute and the number of minutes in an hour	Know the number of seconds in a minute, the number of minutes in an hour and the number of days in each month.	Know the number of seconds in a minute and the number of days in each month, year and leap year	Know and apply knowledge of the number of seconds in a minute and the number of days in each month, year and leap year to a wide range of applications
Compare durations of events given in seconds or minutes	Compare durations of events that involve simple conversion	Compare durations of events, for example to calculate the time taken by particular events or tasks.	Confidently compare durations of events given in a range of formats

Year 3			
Beginner	**Developing**	**Secure**	**Deepening**
Geometry - Properties of shape			
Draw 2-D shapes and make 3-D shapes using modelling materials with support	Draw 2-D shapes and make 3-D shapes using modelling materials; begin to recognise 3-D shapes in different orientations	Draw 2-D shapes and make 3-D shapes using modelling materials; recognise 3-D shapes in different orientations and describe them.	Describe, with appropriate vocabulary, the properties of 2- D and 3-D shapes, when presented in a range of formats, using my knowledge of lengths and angles
Recognise that angles are a description of a turn with support	Recognise that angles are a description of a turn	Recognise that angles are a property of shape or a description of a turn	Recognise that angles are a property of shape or a description of a turn and can be measured in degrees or as a fraction both clockwise and anticlockwise
Identify right angles, and when prompted, recognise that two right angles make a half-turn and four a complete turn	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 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.	Demonstrate secure understanding that two right angles = 180° = ½ turn and three right angles = 270° = ¾ turn; Classify angles according to their size
Identify horizontal and vertical lines	Identify horizontal and vertical lines and begin to identify parallel lines.	Identify horizontal and vertical lines and pairs of perpendicular and parallel lines.	Apply knowledge of horizontal, vertical, parallel and perpendicular lines to shape using correct mathematical vocabulary

Year 3			
Beginner	**Developing**	**Secure**	**Deepening**
Statistics			
Interpret and present data using pictograms, tables and block graphs	Interpret and present data using pictograms, tables and bar charts with simple scales.	Interpret and present data using bar charts, pictograms and tables	Interpret and compare data presented in different formats, deriving simple conclusions
Solve simple one-step and two-step questions using information presented in simple block charts, pictograms and tables with support	Solve one-step and two-step questions using information presented in simple bar charts, pictograms and tables	Solve one-step and two-step questions such as 'How many more?' and 'How many fewer?' using information presented in scaled bar charts and pictograms and tables.	Solve increasingly complex multi-step questions deriving information from a range of charts and justify my solutions

Year 4			
Beginner	**Developing**	**Secure**	**Exceeding**
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	Begin to count in multiples of 6, 7, 9, 25 and 1000 recalling the first 5 in the sequence and 10x	Count in multiples of 6,7,9,25 and 1000	Apply counting to decimals and multiples of 10 eg. 0.6, 70, 900
Read and write numbers up to 1000 in numerals and in words	Read and write numbers up to 9999 in numerals and words	Find 1000 more or less than a given number	Find multiples of 1000 and 10,000 more or less than a given number, including in the context of problems.
	Understand how negative numbers are used in everyday life	Count backwards through zero to include negative numbers	Count forwards and backwards from numbers below zero, including in the context of problems.
Recognise the place value of each digit in a three-digit number (hundreds, tens, ones)		Recognise the place value of each digit in a four-digit number (thousands, hundreds, tens, and ones)	Recognise the place value of each digit in a five-digit number (ten thousands, thousands, hundreds, tens, and ones), including in the context of problems.
Compare and order numbers up to 1000		Order and compare numbers beyond 1000	Order and compare numbers up to 10,000, including in the context of problems.
Round any number to the nearest 10	Round any number to the nearest 10 or 100.	Round any number to the nearest 10, 100 or 1000	Round any number to the nearest 10, 100, 1000 and 10,000, including rounding to solve division problems and also using rounding to approximate.
Solve number problems and practical problems.	Solve number and practical problems that involve some 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	Solve number and practical problems that involve all of the above and with increasingly large positive numbers, that use an increasing number of steps and greater complexity
Read Roman numerals to 10 (I to X)	Know the key Roman numerals up to 100 (I=1, X=10, L=50 and C=100)	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	Read and write Roman numerals to 100 (I to C)

Year 4			
Beginner	**Developing**	**Secure**	**Exceeding**
Addition and subtraction			
Add and subtract numbers with up to 3 digits using the formal written methods of columnar addition and subtraction where appropriate	Add and begin to subtract numbers with up to 4 digits using the formal written methods of columnar addition and subtraction where appropriate	Add and subtract numbers with up to 4 digits using the formal written methods of columnar addition and subtraction where appropriate	Add and subtract numbers beyond 4-digits using the formal written methods of columnar addition and subtraction where appropriate
Estimate the answer to a calculation with numbers up to three digits.	Use inverse operations to check answers to a calculation with numbers up to 4 digits.	Estimate and use inverse operations to check answers to a calculation up to 4 digits.	Estimate whether the answer is sensible and explain reasoning. Explain whether the last digit in an answer is mathematically correct.
Solve problems, including missing number problems, using number facts, place value, and more complex addition and subtraction	Begin to solve addition and subtraction two-step problems in contexts, deciding which operations and methods to use and why.	Solve addition and subtraction two-step problems in contexts, deciding which operations and methods to use and why.	Solve addition and subtraction two-step problems efficiently in contexts, deciding which operations and methods to use and explaining choice of method,

Year 4			
Beginner	**Developing**	**Secure**	**Exceeding**
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, 6 and 8, 9 and 11 multiplication tables	Recall multiplication and division facts for multiplication tables up to 12 × 12	Recall multiplication and division facts for multiplication tables up to 12 × 12 with speed
Use place value, known and derived facts for 2,3,4,5,8 and10 and including multiplying by 0 and 1 and dividing by 1;	Use place value, known and derived facts for 2,3,4,5,6,8,9,10 and 11 including multiplying by 0 and 1; dividing by 1; multiplying together three numbers	Use place value, known and derived facts to multiply and divide mentally with numbers up to 12x12, including: multiplying by 0 and 1; dividing by 1; multiplying together three numbers	Use place value, known and derived facts to multiply and divide mentally with numbers greater than 12x12, including multiplying together three or more numbers
Recognise what factor pairs are.	Recognise some numbers have different numbers of factors. Find factor pairs for increasingly larger numbers	Recognise and use factor pairs and commutativity in mental calculations	Find all factor pairs of a number and find multiples.
Begin to multiply two-digit numbers a one-digit number using formal written layout	Multiply two-digit and three-digit numbers by a one-digit number using formal written layout	Multiply two-digit and three-digit numbers by a one-digit number using formal written layout consistently.	Multiply two-digit digit by two-digit number using formal written layout.
	Solve problems involving multiplying and adding, including using the distributive laws to multiply two digit numbers by one digit number.	Solve problems involving multiplying and adding, including using the associative and distributive laws to multiply two digit numbers by one digit number.	Solve problems involving multiplying and adding, including using the associative and distributive laws to multiply two digit numbers by two digit number.
Solve scaling problems using multiplication	Solve scaling problems using multiplication and division	Solve integer scaling problems and harder correspondence problems	Solve increasingly complex integer scaling problems and harder correspondence problems

Year 4			
Beginner	**Developing**	**Secure**	**Exceeding**
Fractions			
Recognise and show, using diagrams, equivalent fractions with small denominators	Recognise and show, using diagrams, families of equivalent fractions for ½ and ¼	Recognise and show, using diagrams, families of common equivalent fractions	Recognise and show, using diagrams, families of common equivalent fractions and simplify where necessary.
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	Count up in hundredths; recognise that hundredths arise when dividing an object by one hundred and dividing tenths by ten.	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 quickly and confidently in tenths and hundredths; recognise that hundredths arise when dividing an object by one hundred and dividing tenths by ten.
	Find the effect of dividing a one- or two-digit number by 10, identifying the value of the digits in the answer as ones and tenths.	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	Recognise and use thousandths
	Understand what one decimal place means.	Round decimals with one decimal place to the nearest whole number	Round decimals with two decimal places to the nearest whole number
Recognise, find and write fractions of a discrete set of objects: unit fractions and non-unit fractions with small denominators	Solve problems involving fractions to calculate quantities, and fractions to divide quantities, including non-unit fractions where the answer is a whole number	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	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 or a fraction.
Add and subtract fractions with the same denominator within one whole	Add fractions with the same denominator beyond one whole	Add and subtract fractions with the same denominator beyond one whole	Solve increasingly complex problems add and subtract fractions with the same denominator beyond one whole
Recognise and use fractions as numbers: unit fractions and non-unit fractions with small denominators	Recognise and write decimal equivalents of any number of tenths	Recognise and write decimal equivalents of any number of tenths or hundredths	Recognise and use thousandths and relate them to tenths and hundredths
	Recognise and write decimal equivalents to ½ and ¼	Recognise and write decimal equivalents to ½ ¼ and ¾	Read and write decimal numbers up to one decimal place as fractions e.g. 0.4 = 4/10
Compare and order unit fractions,	Compare numbers with the same number of decimal places up to one decimal place	Compare numbers with the same number of decimal places up to two decimal places	Compare and order numbers with the same number of decimal places up to two decimal places and beyond
Solve simple measure problems involving fractions within one whole	Solve simple measure and money problems involving fractions and decimals to one decimal places.	Solve simple measure and money problems involving fractions and decimals to two decimal places.	Solve simple problems involving number up to two decimal places. Use decimal equivalences of ½, ¼ and ¾

Year 4			
Beginner	**Developing**	**Secure**	**Deepening**
Measurement			
Convert between different units of measure resulting in integer answers when prompted	Begin to experience a wider range of conversions for measure and time	Convert between different units of measure [for example, kilometre to metre; hour to minute]	Be fluent in converting between different units of measure without prompts
Measure the perimeter of simple 2-D shapes and begin to calculate the perimeter when prompted	Calculate the perimeter of simple 2-D shapes with support	Measure and calculate the perimeter of a rectilinear figure (including squares) in centimetres and metres	Measure and calculate the perimeter of rectilinear shapes with accuracy
Make different shapes using squares and begin to record solutions on squared paper	Make different shapes using squares and record solutions on squared paper; begin to associate these diagrams with area	Find the area of rectilinear shapes by counting squares	Begin to explore the perimeter of rectilinear shapes in centimetres and metres
Measure and compare different measures, including money in pounds and pence	Begin to estimate different measures, including money in pounds and pence with support	Estimate, compare and calculate different measures, including money in pounds and pence	Estimate, with increasingly accuracy, different measures, including money in pounds and pence; calculate different measures, including money in pounds and pence confidently
Write and tell the time from analogue clocks; 12 and 24 hour clocks with confidence	Begin to convert time between analogue and digital 12- and 24-hour clocks with support	Read, write and convert time between analogue and digital 12- and 24-hour clocks	Be fluent in reading, writing and converting between analogue and digital clocks and begin to apply these skills to different situations
Begin to solve simple problems involving converting from hours to minutes; minutes to seconds; years to months; weeks to days with prompts	Solve simple problems involving converting from hours to minutes; minutes to seconds; years to months; weeks to days	Solve problems involving converting from hours to minutes; minutes to seconds; years to months; weeks to days.	Solve increasingly complex problems involving converting from hours to minutes; minutes to seconds; years to months; weeks to days without prompts

Year 4			
Beginner	**Developing**	**Secure**	**Deepening**
Geometry – properties of shapes			
Compare and sort geometric shapes, including quadrilaterals and triangles	Compare and classify geometric shapes, based on their properties and sizes with support	Compare and classify geometric shapes, including quadrilaterals and triangles, based on their properties and sizes	Explain and justify the classification of geometric shapes using correct mathematical vocabulary.
Confidently identify right angles without being prompted; begin to compare and order angles up to two right angles by size	Confidently identify whether an angle is less or greater than a right angle and begin to use the language of acute and obtuse when prompted	Identify acute and obtuse angles and compare and order angles up to two right angles by size	Confidently identify acute and obtuse angles using correct mathematical vocabulary.
Begin to identify lines of symmetry in simple 2-D shapes presented in different orientations	Identify lines of symmetry in 2-D shapes presented in different orientations when prompted	Identify lines of symmetry in 2-D shapes presented in different orientations	Identify all lines of symmetry in increasingly complex 2-D shapes
Begin to complete a simple symmetric figure with respect to a horizontal or vertical line of symmetry	Confidently complete a simple symmetric figure with respect to a horizontal or vertical line of symmetry and begin to complete figures with a specific line of symmetry	Complete a simple symmetric figure with respect to a specific line of symmetry.	Complete increasingly complex symmetric figure with respect to a specific line of symmetry.

Year 4			
Beginner	**Developing**	**Secure**	**Deepening**
Geometry – position and direction			
Begin to describe positions on a 2-D grid as coordinates in the first quadrant describe movements between positions	Describe positions on a 2-D grid as coordinates in the first quadrant describe movements and begin to use correct notation when prompted	Describe positions on a 2-D grid as coordinates in the first quadrant describe movements between positions as translations of a given unit to the left/right and up/down	Describe positions on a 2-D grid as coordinates in the first quadrant with accuracy; describe movements between positions using correct mathematical vocabulary
Plot specified points with support.	Plot specified points with increasing confidence	Plot specified points and draw sides to complete a given polygon.	Plot specified points accurately, using correct notation; draw axes with accuracy

Year 4			
Beginner	**Developing**	**Secure**	**Deepening**
Statistics			
Confidently interpret and present data with increasing accuracy using bar charts, pictograms and table	Begin to interpret and present data using time graphs	Interpret and present discrete and continuous data using appropriate graphical methods, including bar charts and time graphs.	Accurately interpret and present discrete and continuous data using appropriate graphical methods, being able to explain and justify an answer
Solve simple one-step and two-step problems using information presented in bar charts, pictograms, tables and other graphs when prompted	Begin to solve comparison, sum and difference problems using information presented in bar charts, pictograms, tables and other graphs with support	Solve comparison, sum and difference problems using information presented in bar charts, pictograms, tables and other graphs.	Solve increasingly complex comparison, sum and difference problems using information presented in a variety of ways

Year 5			
Beginner	**Developing**	**Secure**	**Deepening**
Number and Place Value			
Order and compare numbers beyond 1,000	Read, write, order and compare numbers to at 10,000 and determine the value of each digit	Read, write, order and compare numbers to at least 1,000,000 and determine the value of each digit	Read, write, order and compare numbers up to 10,000,000 and determine the value of each digit
Find 1,000 more or less than a given number Recognise the place value of each digit in a four-digit number (1,000s, 100s, 10s, and 1s) Count in multiples of 6, 7, 9, 25 and 1,000	Count forwards or backwards in steps of powers of 10 for any given number up to 10,000 and then 100,000	Count forwards or backwards in steps of powers of 10 for any given number up to 1,000,000	Count forwards or backwards in steps of powers of 10 for any given number up to 10,000,000
Count backwards through 0 to include negative numbers	Interpret negative numbers in context, count backwards with positive and negative whole numbers, including through 0	Interpret negative numbers in context, count forwards and backwards with positive and negative whole numbers, including through 0	Use negative numbers in context, calculating intervals across 0, including in the context of problems
Round any number to the nearest 10, 100 or 1,000	Round any number up to 10,000 to the nearest 10, 100, 1,000 and 10,000	Round any number up to 1,000,000 to the nearest 10, 100, 1,000, 10,000 and 100,000	Round any whole number to a required degree of accuracy
Solve number and practical problems that involve all of the above and with increasingly large positive numbers		Solve number problems and practical problems that involve all of the above	Solve number problems and practical problems that involve all of the above with a an increasing number of steps and greater complexity
Read Roman numerals to 100 (I to C) and know that over time, the numeral system changed to include the concept of 0 and place value		Read Roman numerals to 1,000 (M) and recognise years written in Roman numerals	

Year 5			
Beginner	**Developing**	**Secure**	**Deepening**
Addition and Subtraction			
Add and subtract numbers with up to 4 digits using the formal written methods of columnar addition and subtraction with prompting if appropriate	Add and subtract numbers with up to 4 digits using the formal written methods of columnar addition and subtraction where appropriate	Add and subtract whole numbers with 5 digits, including using formal written methods (columnar addition and subtraction)	Add and subtract whole numbers with 5 digits, including decimal numbers, using the most efficient method for the calculation.
Use mental methods for addition and subtraction including the use of partitioning to aid speed and fluency.	Add and subtract numbers mentally with increasingly large numbers, using known skills such as rounding to the nearest 10, 100 and 1000.	Add and subtract numbers mentally with increasingly large numbers, using known skills such as rounding and partitioning.	Add and subtract numbers mentally with increasingly large numbers, using the most efficient method to solve problems quickly.
Estimate by rounding to the nearest 10, 100 and 1000, and use inverse operations to check answers to a calculation	Estimate by rounding to the nearest 10, 100 and 1000, and use inverse operations to check answers to a calculation, including rounding pounds and pence to the nearest 10 pence or pound.	Use rounding and the inverse to check answers to calculations and determine, in the context of a problem, levels of accuracy	Use estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy
Solve addition and subtraction one-step problems in contexts, deciding which operations and methods to use and why	Solve addition and subtraction two-step problems in contexts, deciding which operations and methods to use and why	Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why	Solve addition and subtraction multi-step problems in contexts, deciding on the most efficient method to use.

Year 5			
Beginner	**Developing**	**Secure**	**Deepening**
Multiplication and Division			
Recognise and use factor pairs and commutativity in mental calculation.	Find all factor pairs of a number and find multiples.	Identify multiples and factors, including finding all factor pairs of a number, and common factors of 2 numbers	Identify common factors and common multiples of a range of numbers.
Recognise that some numbers have more factors than others.	Recognise that some numbers only have two factors, itself and one.	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	Confidently identify prime numbers and use divisibility checks to work out whether larger numbers are prime. Establish whether numbers beyond 100 are prime and recall prime numbers up to 50.
Multiply two-digit and three-digit numbers by a one-digit number using formal written layout	Multiply two-digit or three digit by two-digit number using formal written layout.	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 numbers up to 4 digits by a one- or two-digit number using a formal written method, including long multiplication for two-digit numbers with precision and accuracy, identifying potential errors.
Use place value, known and derived facts to multiply and divide mentally with numbers up to 12x12, including: multiplying by 0 and 1; dividing by 1; multiplying together three numbers	Use place value, known and derived facts to multiply and divide mentally with numbers greater than 12x12, including multiplying together three or more numbers	Multiply and divide numbers mentally, drawing upon known facts such as multiplication tables and related division facts and multiplying by multiples of 10.	Multiply and divide numbers mentally, drawing upon known facts such as multiplication tables and related division facts and multiplying by multiples of 10 and 100.
Divide two-digit and three-digit numbers by any one-digit number, using formal written layout	Confidently divide two-digit and three-digit numbers by any one-digit number, using formal written layout, introducing remainders.	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	Divide numbers using the most efficient method for the question (e.g.: 320 ÷ 8 using multiplication facts) and interpret remainders appropriately for the context
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	Find the effect of dividing a one- or two-digit number by 10 and 100 and 1000, identifying the value of the digits in the answer as ones, tenths and hundredths	Multiply and divide whole numbers and those involving decimals by 10, 100 and 1,000	Multiply and divide whole numbers and those involving decimals by 10, 100 and 1,000 including in different contexts e.g: measures.

Understand what a square number is.	Recognise and use square numbers and the notation for squared (^{2}).	Recognise and use square numbers and cube numbers, and the notation for squared (^{2}) and cubed (^{3})	Confidently solve problems involving multiplication and division, including using my knowledge of factors and multiples, squares and cubes.
Solve problems involving multiplication including using my knowledge of factors.	Solve problems involving multiplication and division, including using my knowledge of factors and multiples and squares.	Solve problems involving multiplication and division, including using my knowledge of factors and multiples, squares and cubes	
Solve two step problems involving addition, subtraction and multiplication, including understanding the meaning of the equals sign	Solve two step problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign	Solve two and three step problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign	Solve multi-step problems involving addition, subtraction, multiplication and division
Solve integer scaling problems and harder correspondence problems	Solve problems involving multiplication and division and problems involving simple rates.	Solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates	Solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates to support the introduction of ratio (adapting a recipe for more or less servings)

Year 5			
Beginner	**Developing**	**Secure**	**Deepening**
Fractions			
Compare and order unit fractions with increasingly large denominators and order on the number line	Compare and order fractions whose denominators are all multiples of the same number, within the multiplication tables up to 12x12, with up to three fractions in a set	Compare and order fractions whose denominators are all multiples of the same number, with up to four fractions in a set	Compare and order fractions, including fractions > 1
Recognise and show, using diagrams, families of common equivalent fractions	Identify, name and write equivalent fractions of a given fraction, represented visually, including tenths	Identify, name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths	Identify, name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths and cancel fractions to their simplest form using factors.
Recognise mixed numbers and improper fractions, knowing that they represent the same value using visual representations.	Recognise mixed numbers and improper fractions, understanding that they represent the same value, and convert from one to the other using visual representations as an aid.	Recognise mixed numbers and improper fractions and convert from one form to the other and write mathematical statements > 1 as a mixed number	
Add and subtract fractions with the same denominator	Add and subtract fractions with the same denominator where one is a multiple of the other.	Add and subtract fractions with the same denominator and denominators that are multiples of the same number	Add and subtract fractions with denominators that are multiples of the same number, including those >1.
Multiply proper fractions by whole numbers (e.g.: ½ x 5), supported by materials, diagrams and number lines	Multiply mixed numbers by whole numbers, supported by materials and diagrams	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
Recognise and write decimal equivalents to ¼, ½ and ¾	Recognise and write decimals numbers as fractions up to tenths.	Read and write decimal numbers as fractions up to hundredths	Read and write decimal numbers as fractions up to thousandths
Understand that one tenth is the same as 10 hundredths.	Recognise and use thousandths and relate them to hundredths.	Recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents	Solve problems fluently using a combination of these.
		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	

Round decimals with one decimal place to the nearest whole number	Round decimals with two decimal places to the nearest whole numbers	Round decimals with two decimal places to the nearest whole number and to one decimal place	Round decimals with three decimal places to the nearest whole number and to one decimal place and two decimal places
Compare numbers with the same number of decimal places up to two decimal places	Read, write, order and compare number with up to three decimal places, with the same number of places within one question	Read, write, order and compare numbers with up to three decimal places	Read, write, order and compare numbers with any number of decimal places including fractions
Solve problems involving number up to two decimal places	Solve problems involving number up to three decimal places with the same number of places within one question	Solve problems involving number up to three decimal places	Solve problems involving number up to three decimal places, with the answer rounded to a specified degree of accuracy.
Solve problems which require knowing decimal equivalents of ½, ¼ and ¾	Solve problems which require knowing percentage and decimal equivalents of ½, ¼ and 3/4	Solve problems which require knowing percentage and decimal equivalents of ½, ¼, 1/5, 2/5 and 4/5 and those fractions with a denominator of a multiple of 10 or 25.	Solve problems which require knowing percentage and decimal equivalents of a variety of fractions and those fractions with a denominator of a multiple of 10 or 25.

Year 5			
Beginner	**Developing**	**Secure**	**Deepening**
Measures			
Convert between different units of measure [for example, kilometre to metre; hour to minute]	Convert between different units of metric measure (for example, kilometre and metre; centimetre and metre; centimetre and millimetre)	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 standard units, converting measurements of length from a smaller unit of measure to a larger unit and vice versa, using decimal notation up to three decimal places.
Understand and use approximate equivalences between metric units	Understand and use approximate equivalences between metric units and common imperial units such as inches	Understand and use approximate equivalences between metric units and common imperial units such as inches, pounds and pints	Convert between miles and kilometres and use approximate conversions to tell if an answer is sensible.
Measure and calculate the perimeter of a rectilinear figure (including squares) in centimetres and metres	Measure and calculate the perimeter of composite rectilinear shapes (including squares) in centimetres and metres	Measure and calculate the perimeter of composite rectilinear shapes in centimetres and metres	Recognise how shapes with the same areas can have different perimeters and areas and vice versa.
Find the area of rectilinear shapes by counting squares	Find the area of rectilinear shapes and estimate the area of irregular shapes by counting squares	Calculate and compare the area of rectangles (including squares), and including using standard units, square centimetres (cm^2) and square metres (m^2) and estimate the area of irregular shapes	Calculate and estimate the area of irregular shapes and triangles including using mixed units of measure.
Estimate capacity (e.g.: using water) for a variety of containers	Estimate volume (e.g.: using 1cm3 blocks to build cuboids, including cubes) and capacity (e.g.: using water)	Estimate volume [for example, using 1 cm^3 blocks to build cuboids (including cubes)] and capacity [for example, using water]	Calculate, estimate and compare volume of cubes and cuboids using standard units, including centimetre cubed and cubic metres.
Solve problems involving converting from hours to minutes; minutes to seconds; years to months; weeks to days.	Solve problems involving converting between units of time.	Solve problems involving converting between units of time, including interpreting simple timetables.	Solve problems involving converting between units of time, including interpreting more complex timetables.
Use all four operations to solve problems for all of the above.	Use all four operations to solve problems for all of the above using decimal notation, including scaling.	Use all four operations to solve problems for all of the above using decimal notation, including scaling.	Use all four operations to solve problems for all of the above using decimal notation, including scaling.

Year 5			
Beginner	**Developing**	**Secure**	**Deepening**
Geometry – properties of shapes			
Identity and name regular and irregular polygons and identify and name 3-D shapes.	Identity cubes from 2-D representations	Identity 3-D shapes, including cubes and other cuboids, from 2-D representations	Identity 3-D shapes, including cubes and other cuboids, from 2-D representations including constructing the net of a cube or cuboid.
Identity acute and obtuse angles and compare and order angles up to two right angles by size	Know angles are measured in degrees compare acute, obtuse and reflex angles	Know angles are measured in degrees: estimate and compare acute, obtuse and reflex angles	Know angles are measured in degrees: estimate and compare acute, obtuse and reflex angles with increased accuracy and fluency
	Draw given angles, within accuracy of 5 degrees and measure them in degrees (°)	Draw given angles, within accuracy of 2 degrees and measure them in degrees (°), including reflex angles	Draw and construct triangles, using given dimensions including angles.
	Identity: • angles at a point and one whole turn (total 360°) • angles on a straight line and ½ a turn (total 180°)	Identify: • angles at a point and one whole turn (total 360°) • angles on a straight line and ½ a turn (total 180°) and other multiples of 90°	Identify: • angles at a point and one whole turn (total 360°) • angles on a straight line and ½ a turn (total 180°) and other multiples of 90° and 45°
Know that there are 360 degrees within a square or rectangle (4 lots of 90 degrees)	Use the properties of triangles to deduce related facts such as finding missing angles.	Use the properties of rectangles to deduce related facts and find missing lengths and angles	Use the properties of quadrilaterals and triangles to deduce related facts and find missing lengths and angles
Explain what the term regular means	Explain what the terms regular and irregular mean	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 for a variety of shapes .

Year 5			
Beginner	**Developing**	**Secure**	**Exceeding**
Geometry – Position and Direction			
Describe movements between positions as translations of a given unit to the left/right and up/down.	Describe movements between positions as translations of a given unit to the left/right and up/down with increasing fluency.	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.	Identify, describe (using specific mathematical vocabulary) and represent the position of a shape following a reflection or translation, using the appropriate language, and know that the shape has not changed.

Year 5			
Beginner	**Developing**	**Secure**	**Exceeding**
Statistics			
Solve comparison, sum and difference problems using information presented in bar charts, pictograms and tables.	Solve comparison, sum and difference problems using information presented in a line graph related to the key plotted points.	Solve comparison, sum and difference problems using information presented in a line graph	Solve comparison, sum and difference problems using information presented in a line graph. Decide which representations of data are moist appropriate for the data and support with reasoning.
Read and interpret information in tables	Complete, read and interpret information in tables	Complete, read and interpret information in tables, including timetables.	Complete, read and interpret information in tables, including timetables recording work systematically

Year 6			
Beginner	**Developing**	**Secure**	**Deepening**
Number & Place value			
Read and write numbers to 10 000 000 and know the value of the digit.	Read, write and order numbers to 10 000 000	Read, write, order and compare numbers up to 10 000 000 and determine the value of each digit	Read, write, order and compare numbers beyond 10 000 000
Round any whole number to the nearest 10, 100, 1000, 10 000, 100 000		Round any whole number to a required degree of accuracy	Round decimals to the nearest whole number
Use negative numbers in context, order negative and positive numbers	Use negative numbers in context, and begin to calculate intervals across zero	Use negative numbers in context, and calculate intervals across zero	Record number sentences using negative numbers for intervals across zero
Solve simple number and practical problems that involve all of the above.		Solve number and practical problems that involve all of the above.	Solve number and practical problems that involve all of the above in familiar and unfamiliar contexts.

Year 6			
Beginner	**Developing**	**Secure**	**Deepening**
Number – addition, subtraction, multiplication and division			
Add and subtract whole numbers with more than 4 digits, including using formal written methods (columnar addition and subtraction)	Solve addition and subtraction multi-step problems in context, including using formal written methods	Solve addition and subtraction multi-step problems in context, deciding which operations and methods to use and why	Solve increasingly complex problems involving addition, subtraction, multiplication and division in both familiar and unfamiliar contexts.
Solve problems involving addition, subtraction, multiplication and division with support	Solve simple problems involving addition, subtraction, multiplication and division	Solve problems involving addition, subtraction, multiplication and division	
Use rounding to check answers to calculations when prompted		Use estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy.	Use estimation to check answers without prompting.
Multiply whole numbers up to 4 digits by 2 digits using the formal written method of long multiplication with some support.	Begin to multiply multi digit numbers up to 4 digits by 2 digits using the formal written method of long multiplication with some support.	Multiply multi-digit numbers up to 4 digits by a two-digit whole number using the formal written method of long multiplication	Recognise when to use formal methods of short and long multiplication and division, calculate accurately, interpreting remainders appropriately.
Begin to divide a number with up to 4 digits by two digit numbers using the formal written method of long with some support that involve remainders	Begin to divide a number with up to 4 digits by two digit numbers using the formal written method of long division. Begin to interpret remainders as appropriate to the context	Divide numbers up to 4 digits by a two-digit whole number using the formal written method of long division, and interpret remainders as whole number remainders, fractions, or by rounding, as appropriate for the context.	
Divide numbers up to 4 digits by a one digit whole number using the formal written method of short division, with some support that may involve remainders	Divide numbers up to 4 digits by a one digit whole number using the formal written method of short division. Begin to interpret remainders as appropriate to 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	

Calculate mentally including mixed operations	Perform mental calculations, including with mixed operations and increasingly larger numbers	Perform mental calculations, including with mixed operations and large numbers.	Explain and justify mental methods used to solve a problem and recognise the most efficient method
Systematically find all factor pairs of a number.	Identify common factors and begin to find common multiples	Identify common factors and common multiples	Have and be able to explain systematic strategies to find common factors and multiples.
Know prime numbers up to 19	Know prime numbers up to 30 with some confidence.	Know prime numbers up to 50 with increasing confidence.	Know prime numbers up to 100 with confidence.
Begin to use order of operations to carry out calculations, including brackets	Begin to apply their knowledge of the order of operations to carry out calculations involving the 4 operations	Use their knowledge of the order of operations to carry out calculations involving the four operations.	Use order of operations with increasingly complex calculations accurately, including squares and cubes.

Year 6			
Beginner	**Developing**	**Secure**	**Deepening**
Fractions (including decimals and percentages)			
Identify, name and write equivalent fractions of a given fraction	Simplify fractions using common factors with support (likely to need more than one step)	Use common factors to simplify fractions; use common multiples to express fractions in the same denomination	Use common factors to simplify fractions with increasingly larger numerators and denominators, recognising and justifying when fractions are in their lowest possible terms.
Compare and order fractions >1 whose denominators are all multiples of the same number	Compare and order fractions, including fractions > 1 using the concept of equivalent fractions	Compare and order fractions, including fractions > 1	Compare and order numbers, including fractions, percentages and decimals
Add and subtract fractions with denominators that are multiples of the same number	Add and subtract fractions with different denominators	Add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fractions	Solve multi-step problems for addition and subtraction of mixed fractions with different denominators in a range of contexts
Multiply proper fractions and mixed numbers by whole numbers	Begin to multiply simple pairs of proper fractions	Multiply simple pairs of proper fractions, writing the answer in its simplest form [for example, ¼ x ½ = 1/8]	Multiply simple pairs of proper fractions, writing the answer in its simplest form without being prompted.
Begin to divide proper fractions by whole numbers supported by materials and diagrams with support	Begin to divide proper fractions by whole numbers supported by materials and diagrams	Divide proper fractions by whole numbers [for example, 1/3 ÷ 2 = 1/6]	Divide proper fractions by another proper fraction supported by diagrams
Write numbers with one or two decimals place as a fraction with a denominator of 10 or 100	Read and write decimal numbers as fractions and vice versa	Associate a fraction with division and calculate decimal fraction equivalents [for example, 0.375] for a simple fraction [for example, 3/8]	Associate a fraction with division and calculate decimal fraction equivalents, knowing when to apply this strategy
Read, write, order and compare numbers with up to three decimal places	Read, write, order and compare numbers with up to three decimal places, identifying the value of each digit	Identify the value of each digit in numbers given to three decimal places and multiply and divide numbers by 10, 100 and 1000 giving answers up to three decimal places.	Multiply and divide numbers by any power of 10

Begin to multiply one-digit numbers with one decimal place by a whole number with support.	Multiply one-digit numbers with one decimal place by a whole number.	Multiply one-digit numbers with up to two decimal places by whole numbers.	Choosing an appropriate method to use when multiplying one-digit numbers with up to three decimal places by whole numbers.
Begin to use written division methods in cases where the answer has one decimal places.	Use written division methods in cases where the answer has one decimal places.	Use written division methods in cases where the answer has up to two decimal places.	Choosing an appropriate method to use when using written division methods in cases where the answer has up to three decimal places.
Begin to solve problems which require answers to be rounded to specified degrees of accuracy.		Solve problems which require answers to be rounded to specified degrees of accuracy.	
Recall and use some equivalence between simple fractions, decimals and percentages, ½, quarters, fifths, tenths, hundredths with prompts.	Recall and use some equivalence between simple fractions, decimals and percentages, ½, quarters, fifths, tenths, hundredths	Recall and use equivalences between simple fractions, decimals and percentages, including in different contexts.	Have fluency between different equivalences for fractions, decimals and percentages without being prompted.

Year 6			
Beginner	**Developing**	**Secure**	**Deepening**
Ratio and proportion			
Begin to use multiplication and division facts to find the connection between two values or quantities		Solve problems involving the relative sizes of two quantities where missing values can be found by using integer multiplication and division facts	Begin to explore multipliers (fractional and decimals) to connect two quantities
Solve problems involving calculation of percentages where the percentage is a multiple of 10	Solve problems involving the calculation of percentages where the percentage is a multiple of 5 and 10 and begin to use of percentages for comparison	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 the calculation of any percentage involving a range of contexts both familiar and unfamiliar.
Solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates.	Solve problems involving similar shapes where the scale factor is known	Solve problems involving similar shapes where the scale factor is known or can be found	Solve problems involving similar shapes where the scale factor is known or can be found, including fractions
Begin to solve simple problems involving unequal sharing and grouping	Solve simple problems involving unequal sharing and grouping	Solve problems involving unequal sharing and grouping using knowledge of fractions and multiples.	Solve increasingly complex problems involving unequal sharing and grouping using knowledge of fractions and multiples.

Year 6			
Beginner	**Developing**	**Secure**	**Deepening**
Algebra			
Use simple familiar formulae, e.g. area of a rectangle to find missing values	Use a greater range of familiar formulae	Use simple formulae	Use more complex formulae in a range of contexts both familiar and unfamiliar
Describe a simple linear number sequence in words	Generate a simple number sequence given a rule	Generate and describe linear number sequences	Find the nth term of a simple number sequence linked to multiplication tables
Begin to express simple missing number problems algebraically with support	Express simple missing number problems algebraically	Express missing number problems algebraically	Read and interpret algebraic notation consistently
Find a pair of numbers that satisfy an equation with two unknowns when prompted	Find at least one pair of numbers that satisfy an equation with two unknowns without being prompted	Find pairs of numbers that satisfy an equation with two unknowns	Explain and justify how all possible values have been found
Find a combination of two variables that meet a stated criteria when prompted	Find at least one combination of two variables that meet a stated criteria without being prompted	Enumerate possibilities of combinations of two variables.	Explain and justify how all possible combinations have been

Year 6			
Beginner	**Developing**	**Secure**	**Deepening**
Measurement			
	Solve simple problems involving the calculation and conversion of units of measure, using decimal notation up to two decimal places, where appropriate when prompted	Solve problems involving the calculation and conversion of units of measure, using decimal notation up to three decimal places where appropriate	Choose an appropriate method to solve problems involving the calculation and conversion of units of measure and recognise the most efficient method
Begin to use, read, write, convert between standard units of length, mass and with support	Use, read, write, convert between standard units of length and mass. Convert between units of time with support.	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	Be fluent in using, reading, writing and converting between standard units.
Begin to use conversion between miles and kilometres		Convert between miles and kilometres	Use a greater range of imperial and metric conversions for length, mass and capacity
Draw a rectangle with a fixed perimeter or area	Find at least one shape with a fixed perimeter or area	Recognise that shapes with the same areas can have different perimeters and vice versa	Justify why a shape with a given perimeter has the largest area and vice versa
Find the area of rectangles when prompted	Use formulae for finding area of squares and rectangles	Recognise when it is possible to use formulae for area and volume of shapes	Find the area and volume of compound 2d and 3d shapes and explain decisions made
Begin to explore the area of a triangle and derive a formula	Calculate the area of triangles and begin to explore the area of a parallelogram	Calculate the area of parallelograms and triangles	Solve problems using missing lengths for triangles and parallelograms
Use cubes to begin to explore the volume of a cube and cuboid and have an awareness of the standard units used	Derive a formula for finding the volume of a cube or cuboid and use appropriate units if prompted	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].	Calculate the volume of cubes and cuboids using the correct units and notation without being prompted.

Year 6			
Beginner	**Developing**	**Secure**	**Deepening**
Geometry – properties of shapes			
Draw simple 2-D shapes using given angles with support	Draw simple 2-D shapes using given dimensions and angles	Draw 2-D shapes using given dimensions and angles	Draw complex 2-D shapes using given dimensions and angles
Recognise and build simple 3-D shapes using apparatus	Begin to relate simple 3-D shapes to their associated nets	Recognise, describe and build simple 3-D shapes, including making nets	Recognise, describe and build increasingly complex 3-D shapes, including making nets accurately
Classify geometric shapes given criteria; begin to find the unknown angles in triangles and simple quadrilaterals	Begin to find unknown angles in any triangles, quadrilaterals, and regular polygons with support	Compare and classify geometric shapes based on their properties and sizes and find unknown angles in any triangles, quadrilaterals, and regular polygons	Justify reasons for classifying shapes based on their properties using accurate mathematical vocabulary without prompts
Begin to name and use parts of the circle including radius, diameter and circumference when prompted		Illustrate and name parts of circles, including radius, diameter and circumference and know that the diameter is twice the radius	Use the language of circles including radius, diameter and circumference with confidence and accuracy. Begin to explore the formula for the circumference of circles.
Identify where angles meet on a straight line and find missing angles when prompted	Identify where angles are vertically opposite and find missing angles when prompted	Recognise angles where they meet at a point, are on a straight line, or are vertically opposite, and find missing angles.	Justify the missing angles of a diagram through use of correct mathematical vocabulary without prompts

Year 6			
Beginner	**Developing**	**Secure**	**Deepening**
Geometry – position and direction			
Be fluent in describing positions in the first quadrant	Begin to describe positions on the full coordinate grid (all four quadrants)	Describe positions on the full coordinate grid (all four quadrants)	Be fluent in describing positions on the full coordinate grid (all four quadrants) accurately; and draw and label axes accurately
Draw and translate simple shapes on the coordinate plane in the first quadrant	Draw and translate simple shapes on the coordinate plane in the full coordinate grid and begin to reflect in horizontal and vertical axes.	Draw and translate simple shapes on the coordinate plane, and reflect them in the axes	Draw and translate increasingly complex shapes on the coordinate plane, and reflect them in the axes, justifying a solution through the use of correct mathematical vocabulary without prompts

Year 6			
Beginner	**Developing**	**Secure**	**Deepening**
Statistics			
Interpret and construct simple pie charts based on simple fractions.	Interpret and construct pie charts and line graphs and begin to use these to solve problems with support	Interpret and construct pie charts and line graphs and use these to solve problems	Compare sets of data presented in different formats and be able to justify my reasons when solving a problem
Begin to calculate the mean as an average for small data sets	Calculate the mean as an average and begin to interpret my answer	Calculate and interpret the mean as an average	Calculate the mean of a set of data and be able to interpret the answer in relation to a range of unfamiliar contexts

New Mathematics Assessment based on Key performance indicators (KPI)

This approach considers four different stages of progression, Beginning, Developing, Secure and Exceeding, to aid teachers in making accurate judgements when assessing learners' progress and attainment. The Beginning and Developing stages have been sub-divided further in order to measure smaller steps of progress.
Learners who are judged to have met age related expectations will be assessed as Secure.
Teachers should consider an objective to be met when they feel learners have demonstrated understanding in both routine and non-routine problems and familiar and unfamiliar contexts.

In order to be judged as:

Stage	% of objectives required	KPI
Beginning	Up to 15%	a stated number of the objectives required must be **Key Performance Indicators** as identified for each stage (see year assessment overview)
Beginning +	16 - 30%	
Developing	31 - 45%	
Developing +	46 - 60%	
Secure	61 - 80/85% (at school's discretion)	
Exceeding	100%	

The number of objectives required for each stage listed above must include the relevant number of KPIs in addition to the total number of objectives. E.g. to be judged as being beginning in year 2, the learner should have 3 KPIs out of total of 7 highlighted objectives.

Suggestions for using the yearly KPI breakdown grids:

As a planning tool

- To ensure coverage of the whole curriculum for each year group.
- Can be highlighted on to show when topics will be covered, what has already been covered, what needs to be revisited.
- Could be re-written into 'Can I' questions to use as Learning challenges for each lesson.

Teacher assessment

- Could be completed for each child individually where statements are highlighted once objectives are achieved.
- Can be changed to 'Can I...?' questions for children to self-evaluate/to understand their achievements/next steps.
- Can be highlighted in different colours termly/half termly to show progression

Target setting/Intervention

- Collated grids of pupil achievement can be used to highlight gaps in learning for whole class teaching and consolidation.
- Individual grids can be used to highlight gaps for a particular child/group of children.

Moderation

- Can be used the same way as old APP grids to assess groups of children/all children individually.
- Highlighted termly to show progression.
- Used to back up teacher judgements by dating with evidence in books.
- Can be moderated by Math Leaders, across phase groups, across whole school, across cluster.

Rec 30-50mths	10 =15%	10+=30%	11 =45%	11+=60%	12 =80/85%	12+ =100%
	Beginning	Beginning +	Developing	Developing+	Secure	Exceeding
Objective	3	6	9	13	17	21

EYFS REC	Number and place value	Number Calculation	Measure	Geometry Properties of shapes	Geometry Position & Direction
Use some number names accurately in play. Recite numbers in order to 10. Know that numbers identify how many objects are in a set. Begin to represent numbers using fingers, marks on paper or pictures. Sometimes match numeral and quantity correctly. Show curiosity about numbers by offering comments or asking questions. Show an interest in numerals in the environment. Show an interest in representing numbers. Realise not only objects, but anything can be counted, including steps, claps or jumps.		Compare two groups of objects, saying when they have the same number. Show an interest in number problems. Separate a group of three or four objects in different ways, beginning to recognise that the total is still the same.	Begin to talk about the shapes of everyday objects, *e.g., 'tall'*.	Show an interest in shape and space by playing with shapes or making arrangements with objects. Show awareness of similarities of shapes in the environment. Show interest in shape by sustained construction activity or by talking about shapes or arrangements. Show interest in shapes in the environment. Use shapes appropriately for tasks. Begin to talk about the shapes of everyday objects, *e.g., 'round'*.	Use positional language. Shows understanding of prepositions such as 'under', 'on top', 'behind' by carrying out an action or selecting correct picture.

Rec 40-60mths	13 =15%	13+=30%	14 =45%	14+=60%	15 =80/85%	15+ =100%
	Beginning	Beginning +	Developing	Developing+	Secure	Exceeding
KPI	3	6	10	14	18	18
Objective	8	16	24	32	40 / 43	51

EYFS REC	Number and place value	Number Calculation	Measure	Geometry Properties of shapes	Geometry Position & Direction
Recognise some numerals of personal significance. Recognise numerals 1 to 5. Count up to three or four objects by saying one number name for each item. Count actions or objects which cannot be moved. Count objects to 10, and begin to count beyond 10. Count out up to six objects from a larger group. *Select the correct numeral to represent objects:* ➢ 1 to 5; ➢ 1 to 10. Count an irregular arrangement of up to ten objects. Estimate how many objects they can see and check by counting them. ***With numbers from one to 20:*** **- place them in order;** **- say which number is one more or one less than a given number. (ELG)** **Use everyday language to compare quantities and objects and to solve problems. (ELG)**	Use the language of 'more' and 'fewer' to compare two sets of objects. Find the total number of items in two groups by counting all of them. Say the number that is one more than a given number. *Find one more or one less from a group of:* - up to five objects; - up to ten objects. In practical activities and discussion, begin to use the vocabulary involved in adding and subtracting. Record, using marks that they can interpret and explain. Begin to identify own mathematical problems based on own interests and fascinations. **Use quantities and objects, they** ➢ **add** ➢ **subtract** **two single-digit numbers and count on** or **back to find the answers. (ELG)** **Solve problems, including doubling, halving and sharing. (ELG)**	**Use everyday language related to** **- time** **- distance. (ELG)** **Use everyday language related to money. (ELG)** Order and sequences familiar events. Measure short periods of time in simple ways. *Order two or three items by:* - *Length* - *Height* - *Weight* - *Capacity* **Use everyday language to talk about** - **size,** - **weight,** - **capacity** **and to compare quantities and objects and to solve problems. (ELG)**	*Begin to use mathematical names for:* - *solid 3D shapes* - *Flat 2D shapes* Use mathematical terms to describe shapes. Select a particular named shape. Use familiar objects and common shapes to create and recreate patterns and build models. Use everyday language to talk about size, to compare objects and to solve problems. **Recognise, create and describe patterns. (ELG)** **Explore characteristics of everyday objects and shapes and use mathematical language to describe them. (ELG)**	Describe their relative position such as 'behind' or 'next to'. **Talk about position. (ELG)**

Y1	16 =15%	16+=30%	17 =45%	17+=60%	18 =80/85%	18+ =100%
	Beginning	Beginning +	Developing	Developing+	Secure	Exceeding
KPI	2	4	6	8	11	11
Objective	5	10	15	20	28 / 30	35

Y1	Number and place value		Calculation		Measure	Geometry		Fractions Decimals Percentages	
Count	**Count to and across 100, forwards and backwards, beginning with 0 or 1, or from any given number** **Given a number, identify one more and one less** **Count in multiples of twos, fives and tens**	Understand calculation	**Represent and use number bonds and related subtraction facts within 20** Begin to understand multiplication, division and doubling through grouping and sharing small quantities	Understand units of measure	Sequence events in chronological order using language Recognise and use language relating to dates, including days of the week, weeks, months and years Recognise and know the value of different denominations of coins and notes Use non-standard units to measure length, mass and capacity	Classify shapes	**Recognise common 2-D shapes in different orientations and sizes i.e. including rectangles (including squares), circles and triangles** **Name common 2-D shapes in different orientations and sizes i.e. including rectangles (including squares), circles and triangles** **Recognise and name common 3-D shapes in different orientations and sizes i.e. including cuboids (including cubes), pyramids and spheres**	Understand FDP	**Recognise, find and name a half as one of two 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
Represent numbers	**Read and write numbers to 100 in numerals** Read and write numbers from 1 to 20 in words Identify and represent numbers using objects and pictorial representations including the number line	Calculate mentally	Mentally add and subtract one- and two-digit numbers to 20, including zero Mentally double numbers up to 10	Make measurements	**Tell the time to the hour and half past the hour and draw the hands on a clock face to show these times** Measure and begin to record time (hours, minutes, seconds) Measure and begin to record lengths and heights, mass/weight, capacity and volume	Describe position	Describe position using everyday language e.g. top, middle, bottom, in front of, between, near, inside Recognise and create simple repeating patterns with objects and shapes Describe movement in straight lines using everyday language and describe turns, including half, quarter and three-quarter turns in both directions and connect turning clockwise with movement on a clock face		
		Recall	Begin to memorise number bonds to 10 and 20, including noticing the effect of adding or subtracting zero						

Order / compare	Use the language of: equal to, more than, less than (fewer), most, least	**Solve calculation problems**	Solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as 7 = □ – 9 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	**Solve measurement problems**	Compare, describe and solve practical problems for time Begin to handle coins and become familiar with coins up to 20 pence **<u>Compare, describe and solve practical problems for lengths and heights, mass or weight and capacity/volume</u>**				
Solve number problems	Solve number problems with number and place value from the Year 1 curriculum	**Use written calculation**	Read, write and interpret mathematical statements involving addition (+), subtraction (–) and equals (=) signs Use arrays to represent multiplication and record grouping when doing division						

Y2	19 =15%	19+=30%	20 =45%	20+=60%	21 =80/85%	21+ =100%
	Beginning	Beginning +	Developing	Developing+	Secure	Exceeding
KPI	3	6	9	12	15	15
Objective	7	15	22	30	40 / 43	50

Y2	Number and place value		Calculation		Measure		Geometry		Statistics
Count	**Count in tens from any number, forward and backward** Identify ten more or ten less than any given number **Count in steps of 2, 3, and 5 from 0, forward and backward**	Understand calculation	Show that addition of two numbers can be done in any order (commutative) and subtraction of one number from another cannot Understand that sum and difference indicate addition and subtraction respectively Show that multiplication of two numbers can be done in any order (commutative) and division of one number by another cannot Use a variety of language to describe multiplication and division	Understand units of measure	Compare and sequence intervals of time Know the number of minutes in an hour and the number of hours in a day Recognise and use symbols for pounds (£) and pence (p) Compare and order measurements and record the results using >, < and = as well as simple multiples	Make and visualise shapes	Draw lines and shapes using a straight edge Identify 2-D shapes on the surface of 3-D shapes, [for example, a circle on a cylinder and a triangle on a pyramid]	Interpret data	**Interpret data from simple pictograms, tally charts, block diagrams and simple tables**
								present data	Present data in simple tables, simple pictograms, tally charts and block diagrams
Represent numbers	Recognise the place value of each digit in a two-digit number (tens, ones) Read and write numbers to at least 100 in numerals and words Identify, represent and estimate numbers to 100 using different representations, including the number line, and partitioning in different ways	Calculate mentally	Add and subtract numbers using concrete objects, pictorial representations, and mentally, including: two two-digit numbers and adding three one-digit numbers **Use addition and subtraction facts to 20** and derive related facts up to 100 **Calculate mentally using multiplication and division facts for the 2, 5 and 10 multiplication tables**	Make measurements	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 Record the time on an analogue clock in words (+) 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	Classify shapes	Identify 2-D shapes on the surface of 3-D shapes, [for example, a circle on a cylinder and a triangle on a pyramid] Identify and describe the properties of 2-D shapes, including the number of sides and line symmetry in a vertical line Identify and describe the properties of 3-D shapes, including the number of edges, vertices and faces	Solve data problems	**Ask and answer questions about totalling and comparing categorical data** Ask and answer simple questions by counting the number of objects in each category and sorting the categories by quantity
Order/compare	**Compare and order numbers from 0 up to 100; use <, > and = signs**	Check	Check subtraction calculations using addition calculations by adding in a different order						

Recall	**Recall addition and subtraction facts to 20 fluently, deriving related facts to 100** **Recall multiplication and division facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers**	**Solve calculation problems**	**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 the inverse relationship between addition and subtraction to solve missing number problems **Solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods, and multiplication and division facts, including problems in contexts**	**Solve measurement problems**	Calculate time intervals and develop a sense of the length of different units of time Combine amounts of money to make a particular value including different combinations of coins that equal the same amount of money **Solve simple problems in a practical context involving addition and subtraction of money of the same unit, including giving change** Solve problems involving comparing measures of length, mass and capacity/volume			**Understand FDP**	**Fractions** **Decimals** **Percentages** **Recognise, find, name and write fractions 1/3 and 1/4of a length, shape, set of objects or quantity** **Recognise, find, name and write fractions 2/4 and 3/4 of a length, shape, set of objects or quantity** Write simple fractions
Solve number problems	**Solve number problems with number facts and place value from the Year 2 curriculum**	**Use written calculation**	Record addition and subtraction in columns using an expanded format involving partitioning Calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication (×), division (÷) and equals (=) signs			**Describe position**	Use mathematical vocabulary to describe position Order and arrange combinations of mathematical objects in patterns and sequences	**Convert FDP**	Recognise the equivalence of 2/4 and 1/2
						Describe movement	Use mathematical vocabulary to describe movement, including movement in a straight line		

Y3	22 =15%	22+= 30%	23 = 45%	23+ =60%	24 =80/85%	24+=100%
	Beginning	Beginning +	Developing	Developing+	Secure	Exceeding
KPI	4	8	12	16	21	21
Objectives	9	18	27	36	49 /52	61

Y3	Number and place value		Calculation		Measure		Geometry		Statistics
Count	**Count from 0 in multiples of 50, 100** **Find 10 or 100 more or less than a given number** **Count from 0 in multiples of 4, 8, 50 and 100**	Understand calculation	Use understanding of place value and partitioning to develop methods for addition and subtraction with larger numbers Understand the structure of situations that require addition or subtraction Use commutativity and associativity and multiplication facts to derive related facts Understand the structure of situations that require multiplication	Understand units of measure	Convert between analogue and 12-hour digital clocks Know the number of seconds in a minute and the number of days in each month, year and leap year Become confident in exchanging between £ and p when handling money Record measurements using mixed units, e.g.1 kg 200 g	Make and	Draw 2-D shapes with straight sides measured in cm Make 3-D shapes using modelling materials	Interpret and present	**Interpret bar charts, pictograms and tables** **Present data in bar charts, pictograms and tables**
Order /compare	Compare and order numbers up to 1000					Classify shapes	Identify horizontal and vertical lines and pairs of perpendicular and parallel lines **Tell and write the time from an analogue clock, including using Roman numerals from I to XII, and 12-hour and 24-hour clocks** Recognise 3-D shapes in different orientations and describe them	Solve data problems	Solve problems with one or two steps using scaled bar charts, pictograms and tables Continue to count the number of objects in each category and sort the categories by quantity
Represent numbers	**Recognise the place value of each digit in a three-digit number (hundreds, tens, ones)** Read and write numbers up to 1000 in numerals and in words Identify, represent and estimate numbers to 1000 using different representations and partitioning in different ways	Calculate mentally	**Mentally add and subtract numbers including a three-digit number with ones, tens or hundreds** Continue to use addition and subtraction facts to 20 and derive related facts up to 100 **Calculate mentally using multiplication and division facts for the 3, 4 and 8 multiplication tables, including two-digit numbers times one-digit numbers**	Make measurements	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, a.m./p.m., morning, afternoon, noon and midnight **Tell and write the time from an analogue clock, including using Roman numerals from I to XII, and 12-hour and 24-hour clocks** Continue to choose the appropriate tools and units when measuring, selecting from a wider range of measures Measure the perimeter of simple 2-D shapes	Solve shape problems	**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** Recognise angles as a property of shape or a description of a turn	Fractions Decimals Percentages	
								Understand FDP	**Recognise, find and write fractions of a discrete set of objects, unit fractions with small denominators** **Recognise, find and write fractions of a discrete set of objects, non-unit fractions with small denominators** **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**

Solve number problems	**Solve number problems and practical problems with number and place value from the Year 3 curriculum**	**Solve calculation problems**	Solve problems including missing number problems, using place value and more complex addition and subtraction Solve problems including missing number problems, using number facts and more complex addition and subtraction Solve calculation problems involving multiplication and division, including missing number problems, simple positive integer scaling and simple correspondence problems in which n objects are connected to m objects	**Solve measurement problems**	Compare durations of events [for example to calculate the time taken by particular events or tasks] Continue to solve problems involving combinations of coins and notes **Add and subtract amounts of money to give change, recording £ and p separately** **Measure, compare, add and subtract: lengths (m/cm/mm); mass (kg/g); volume/capacity (l/ml)** Measure the distance around shapes in the classroom and outside environment	**Describe position**	Mark a given square on a grid, e.g. A3 Continue to recognise and devise patterns and sequences in shapes	**Convert FDP**	**Recognise and show, using diagrams, equivalent fractions with small denominators** Connect tenths to decimal measures and place value
Round numbers	Round whole numbers up to 100 to the nearest 10								
Recall	Develop recall of number facts linking addition and multiplication **Recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables**					**Describe movement**	Give and follow multi-step directions in own environment	**Use FDP as numbers**	Compare and order unit fractions, and fractions with the same denominators Add and subtract fractions with the same denominator within one whole [for example 5/7 + 1/7 = 6/7] **Recognise and use fractions as numbers: unit fractions and non-unit fractions with small denominators**
		Use written calculation	Add and subtract numbers with up to three digits, using formal columnar methods of addition and subtraction **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**					**Solve FDP problems**	Solve problems with fractions from the Year 3 curriculum
		Check	Check addition calculations using subtraction and addition and subtraction calculations using rounding						

Y4	25 =15%	25+= 30%	26 = 45%	26+ =60%	27 =80/85%	27+=100%
	Beginning	Beginning +	Developing	Developing+	Secure	Exceeding
KPI	3	7	10	14	17	17
Objective	10	20	30	40	55 / 59	69

Y4	Number and place value	Calculation		Measure		Geometry		Fractions, Decimals Percentages	
Count	**Count in multiples of 1000; count backwards through zero to include negative numbers** Find 1000 more or less than a given number **Count in multiples of 6, 7, 9 and 25**	Understand calculation	Use the distributive law to multiply two digit numbers by one digit Understand the inverse relationship between addition and subtraction Use commutativity in mental calculations Use factor pairs in mental calculations	Understand units of measure	Read, write and convert time between analogue and digital 12- and 24-hour clocks **Convert from larger to smaller units of time** Record money using decimal notation **Convert from larger to smaller units of metric measure**	Make and visualise shapes	Complete a simple symmetric figure with respect to a specific line of symmetry, and measure angles using a protractor **Identify lines of symmetry in 2-D shapes presented in different orientations, including where the line of symmetry does not dissect the original shape** Continue to recognise 3-D shapes, using the correct language	Understand FDP	Make connections between fractions of a length, of a shape and as a representation of one whole or a set of quantities Use factors and multiples to recognise equivalent fractions and simplify where appropriate **Count up and down in hundredths; recognise that hundredths arise when dividing an object by one hundred and dividing tenths by ten** Divide a one- or two-digit numbers by 10 and 100, identifying the value of the digits in the answer as ones, tenths and hundredths
Represent numbers	Recognise the place value of each digit in a four-digit number (thousands, hundreds, tens, ones) 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 Identify, represent and estimate numbers to 10 000 using different representations	Calculate mentally	Mentally add and subtract pairs of three-digit and four-digit numbers Use addition and subtraction facts to 100 and derive related facts up to 1000 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	Make measurements	Read time from analogue and digital 12- and 24-hour clocks Write time from analogue and digital 12- and 24-hour clocks Estimate and compare different measures, including money Measure the perimeter of a rectilinear figure Find the area of rectilinear shapes by counting squares and relate it to multiplication arrays	Classify shapes	**Compare and classify geometric shapes, including different types of quadrilaterals and triangles, based on their properties and sizes** Use the vocabulary of the different types of triangle and quadrilateral Continue to make and classify 3-D shapes, including by the 2-D shapes that form their surface	Convert FDP	**Recognise and show, using diagrams, families of common equivalent fractions** Recognise that the denominator of a fraction always tells you the number of equal parts that make one whole Recognise and write decimal equivalents of any number of tenths or hundredths and ¼, ½, ¾;
		Recall	Recognise factor pairs **Recall multiplication and division facts for multiplication tables up to 12 × 12**						

Oer/ compare	**Order and compare numbers beyond 1000**	**Solve calculation problems**	**Solve calculation problems involving two-step addition and subtraction in context, deciding which operations to use and why**	**Solve measurement problems**	Continue to solve problems relating to the duration of events Calculate with different measures Calculate with money in pounds and pence Continue to solve problems involving mixed units of length, mass and capacity/volume Calculate the perimeter of a rectilinear figure		Describe positions on a 2-D grid as coordinates in the first quadrant **Plot specified points and draw sides to complete a given polygon**	**Use FDP as numbers**	Continue to compare and order unit fractions, and fractions with the same denominators Add and subtract fractions with the same denominator Understand the relation between non-unit fractions and multiplication and division of quantities **Rounds decimals with one decimal place to the nearest whole number** Compares numbers with the same number of decimal places up to two decimal places
Round numbers	**Round whole numbers to 10,000 to the nearest 10, 100 or 1000**		**Solve calculation problems involving two-step addition and subtraction in context, deciding which methods to use and why**			**Describe position**	Describe positions on a 2-D grid as coordinates in the first quadrant **Plot specified points and draw sides to complete a given polygon**		
Solve number problems	Solve number and practical problems with number and place value from the Year 4 curriculum, with increasingly large positive numbers		Solve problems involving multiplying and adding, including integer scaling and harder correspondence problems such as n objects are connected to m objects			**Describe movement**	Describe movement between positions as translations of a given unit to the left/right and up/down		
		Check	Check answers to addition and subtraction calculations by estimating and using inverse operations Check answers to multiplication and division calculations using rounding	**Statistics**		**Solve shape problems**	Identify acute and obtuse angles Compare and order angles up to two right angles by size Continue to identify types of angles and to reason about their sizes	**Solve FDP problems**	Solve problems involving harder fractions to calculate and divide quantities, including non-unit fractions where the answer is a whole number **Solve simple measure and money problems involving fractions and decimals to two decimal places**
				Interpret data	Interpret discrete and continuous data using appropriate graphical methods, including time graphs				
		Use written calculation	Add and subtract numbers with up to 4 digits using the formal written methods of columnar addition and subtraction where appropriate Multiply two-digit and three-digit numbers by a one-digit number using formal written layout Divide two-digit and three-digit numbers by a one-digit number using formal written layout	**Present data**	Present discrete and continuous data using appropriate graphical methods, including bar charts and time graphs				
				Solve data problems	**Solve comparison, sum and difference problems using information presented in bar charts, pictograms, tables and other graphs** Begin to solve problems involving information presented in tables				

Y5	28 =15%	28+= 30%	29 = 45%	29+ =60%	30 =80/85%	30+=100%
	Beginning	Beginning +	Developing	Developing+	Secure	Exceeding
KPI	4	8	12	16	22	22
Objective	12	25	37	50	67 / 71	84

Y5	Number and place value		Calculation		Measure		Geometry		Fractions Decimals Percentages
Count	**Count forwards and backwards with positive and negative whole numbers, including through zero** Count forwards or backwards in steps of powers of 10 for any given number to 1 000 000 Continue to count in any multiples of 2 to 10, 25 and 50	Understand calculation	Continue to use the distributive law to partition numbers when multiplying them Develop their understanding of the meaning of the equals sign Establish whether a number up to 100 is prime Know and use the vocabulary of prime numbers, prime factors and composite (non-prime) numbers	Understand units of measure	Continue to develop understanding of how analogue and digital clocks tell the time Continue to practise converting between units of time Develop fluency in using money expressed in £, converting to p when necessary **Convert between different units of metric measure** Understand and use approximate equivalences between metric units and common imperial units Understand the difference between perimeter as a measure of length and area as a measure of two-dimensional space	Make and visualise shapes	**Draw given angles, and measure them in degrees and draw shapes with sides measured to the nearest millimetre** Use conventional markings for parallel lines and right angles Identify 3-D shapes, including cubes and other cuboids, from 2-D representations	Understand FDP	Write mathematical statements > 1 as a mixed number Continue to apply their knowledge of multiplication table facts to find equivalent fractions Recognise and use thousandths and relate them to tenths and hundredths Divide one- or two-digit numbers by 1000, identifying the value of the digits in the answer as ones, tenths, hundredths and thousandths Recognise the per cent symbol and understand that per cent relates to 'number of parts per hundred'
Order/ compare	**Order and compare numbers to at least 1 000 000**	Calculate mentally	**Add and subtract numbers mentally with increasingly large numbers** Continue to develop knowledge of addition and subtraction facts and to derive related facts Multiply and divide numbers mentally drawing upon known facts Multiply and divide whole numbers and those involving decimals by 10, 100 and 1000			Describe position	Continue to use coordinates in the first quadrant to become fluent in their use Identify the points required to complete a polygon		
Represent numbers	**Read and write numbers to at least 1 000 000 and determine the value of each digit** Read Roman numerals to 1000 (M) and recognise years written in Roman numerals Interpret negative numbers in context			Make measurements	Continue to become fluent in telling and writing the time Continue to estimate and compare different measurements **Measure the perimeter of composite rectilinear shapes** Estimate the area of irregular shapes and volume and capacity	Classify shapes	**Distinguish between regular and irregular polygons based on reasoning about equal sides and angles** Use the term diagonal	Solve FDP problems	Solve a variety of problems involving fractions Solve problems involving addition and subtraction involving numbers up to three decimal places **Solve problems which require knowing key percentage and decimal equivalents**

Solve number problems	Solve number problems and practical problems with number and place value from the Year 5 curriculum	**Solve calculation problems**	Solve addition and subtraction multi-step problems in familiar contexts, deciding which operations and methods to use and why Solve problems involving addition, subtraction, multiplication and division, and a combination of these **<u>Solve calculation problems involving multiplication and division including using their knowledge of factors and multiples, squares and cubes</u>** **<u>Solve problems involving scaling by simple fractions and problems involving simple rates</u>**	**Solve measurement problems**	Solve problems involving converting between units of time Become familiar with temperature measure using degrees Celsius, realising that the scale becomes negative below the freezing point of water Solve problems involving money, using the four operations Solve measurement problems using all four operations and decimal notation, including scaling and conversions **<u>Calculate the perimeter of composite rectilinear shapes</u>** **<u>Calculate and compare the area of rectangles</u>**	**Solve shape problems**	**Identify angles at a point and one whole turn, angles at a point on a straight line and ½ a turn and other multiples of 90º** **Estimate and compare acute, obtuse and reflex angles** **Use the properties of rectangles to deduce related facts and find missing lengths and angles**	**Use FDP as numbers**	**<u>Compare and order fractions whose denominators are all multiples of the same number</u>** Add and subtract fractions with the same denominator and denominators that are multiples of the same number, including calculations > 1 Multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams Round decimals with two decimal places to the nearest whole number and to one decimal place **<u>Read, write, order and compare numbers with up to three decimal places</u>** Add and subtract decimals including those with a different number of decimal places
Round numbers	Round any number up to 1 000 000 to the nearest 10, 100, 1000, 10 000 and 100 000								
Recall	**<u>Identify multiples and factors, including all factor pairs of a number, and common factors of 2 numbers</u>** Recall square numbers and cube numbers and the notation for them Recall prime numbers up to 19					**Describe position**	Continue to use coordinates in the first quadrant to become fluent in their use Identify the points required to complete a polygon		
		Use written calculation	**<u>Add and subtract whole numbers with more than 4 digits, including using formal written methods (columnar addition and subtraction)</u>** 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 Divide numbers up to 4 digits by a one-digit number using formal written method of short division and interpret remainders appropriately for the context	**Statistics**		**Describe movement**	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	**Convert FDP**	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 Relate thousandths to decimal equivalents **<u>Read and write decimal numbers as fractions</u>** Write percentages as a fraction with denominator hundred, and as a decimal **<u>Know percentage and decimal equivalents of 1/2, 1/4, 1/5, 2/5, 4/5 and those with a denominator of a multiple of 10 or 25</u>**
		Check	Use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy	**present data**	Interpret line graphs **<u>Interpret more complex tables, including timetables</u>** Decide the best way to present given data **<u>Complete tables, including timetables</u>**				
				Solve data problems	Solve comparison, sum and difference problems using information presented in a line graph Solve problems using information in tables, including timetables				

Y6	22	22+	23	23+	24	24+
	Beginning	Beginning +	Developing	Developing+	Secure	Exceeding
KPI	4	8	12	16	20	20
Objective	14	28	32	46	77 / 82	96

Y6	Number and place value	Calculation		Measure		Geometry		Fractions, Decimals Percentages	
Count	**Calculate intervals across zero** Consolidate counting forwards or backwards in steps of powers of 10 for any given number to 1 000 000 Consolidate counting in multiples of 2, through to 10, 25 and 50	Understand calculation	Use knowledge of the order of operations Consolidate their understanding of the equals sign as representing equivalence between two expressions Consolidate understanding of the structure of numbers Consolidate knowledge of types of number	Understand units of measure	Continue to develop understanding of how analogue and digital clocks tell the time Consolidate understanding of converting between units of time Consolidate fluency in using money expressed in £ and p **Use, read and write standard units with up to three decimal places, including converting from smaller to larger units and vice versa** Convert between miles and kilometres and use a conversion graph Recognise that shapes with the same areas can have different perimeters and vice versa	Make and visualise shapes	Draw 2-D shapes accurately using given dimensions and angles Use conventional markings and labels for lines and angles Build simple 3-D shapes, including making nets	Understand FDP	Associate a fraction with division Consolidate understanding of equivalent fractions by extending to improper fractions Identify the value of each digit in numbers given to three decimal places Multiply and divide numbers by 10, 100 and 1000 giving answers up to three decimal places Consolidate recognition of the per cent symbol and understanding that per cent relates to 'number of parts per hundred
Represent numbers	Read and write numbers to 10 000 000 and determine the value of digits Consolidate reading Roman numerals to 1000 (M) and recognising years written in Roman numerals **Use negative numbers in context**	Calculate mentally	Perform mental calculations, including with mixed operations and large numbers Consolidate knowledge of addition facts and the related subtraction facts, deriving further related facts as required Identify common factors, common multiples and prime numbers greater than 100 Consolidate solving calculation problems involving scaling by simple fractions and simple rates			Classify shapes	**Compare and classify geometric shapes based on increasingly complex geometric properties and sizes** Illustrate and names parts of circles, including radius, diameter and circumference and know that the diameter of a circle is twice the radius Recognise 3-D shapes from their nets	Convert FDP	Use common factors to simplify fractions Use common multiples to express fractions in the same denomination Consolidate understanding of the relation between tenths, hundredths and thousandths and decimal notation Calculate decimal fraction equivalents for a simple fraction Consolidate understanding of the connection between fractions, decimals and percentages **Recall and use equivalences between simple fractions, decimals and percentages, including in different contexts**

Order / compare	Order and compare numbers up to 10 000 000	**Solve calculation problems**	**Solve multi-step addition and subtraction problems in less familiar contexts, deciding which operations and methods to use and why** Consolidate solving problems using more than one of the four operations Solve multi-step calculation problems involving combinations of all four operations Consolidate solving calculation problems involving scaling by simple fractions and simple rates	**Make measurements**	Consolidate fluency in working with time Consolidate fluency in recording the time Continue to measure and compare using different standard units of measure Consolidate skills in identifying and measuring perimeter Estimate volume of cubes and cuboids	**Solve shape problems**	Recognise angles where they meet at a point, are on a straight line, or are vertically opposite, and find missing angles Check solutions to missing angle problems by estimating **Find unknown angles and lengths in triangles, quadrilaterals, and regular polygons**	**Use FDP as numbers**	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 Divide proper fractions by whole numbers Round decimals to three decimal places or other approximations depending on the context **Use written division methods in cases where the answer has up to two decimal places** Multiply one-digit numbers with up to two decimal places by whole numbers
Round numbers	**Round whole numbers to 10 000 000 to a required degree of accuracy**								
Solve number problems	Solve number problems and practical problems with number and place value from the Year 6 curriculum	**Recall**	Consolidate knowledge of multiples and factors, including all factor pairs of a number, and common factors of two numbers Consolidate recall of square numbers and cube numbers and the notation for them Consolidate recall of prime numbers up to 19	**Solve measurement problems**	Consolidate skills in solving problems converting between units of time Add and subtract positive and negative measurements such as temperature Continue to solve problems involving money using the four operations Solve measurement problems with decimal notation up to three decimal places and approximate equivalences between metric and imperial measurements	**Describe position**	Use positions on the full coordinate grid (all four quadrants) Draw and label rectangles (including squares), parallelograms and rhombuses specified by coordinates in the four quadrants, predicting missing coordinates using the properties of shapes	**Solve FDP problems**	Multiply a quantity that represents a unit fraction to find the whole quantity **Solve problems which require decimal answers to be rounded to specified degrees of accuracy** Solve problems with FDP from the Year 6 curriculum Multiply a quantity that represents a unit fraction to find the whole quantity
		Use written calculation	Consolidate adding and subtracting whole numbers with more than 4 digits, including using formal written columnar addition and subtraction **Multiply multi-digit numbers up to 4 digits by a two-digit whole number using the formal written method of long multiplication**			**Describe movement**	**Draw and translate simple shapes on the coordinate plane, and reflect them in the axes**		

			Divide numbers up to 4 digits by a two-digit whole number using the formal methods of short or long division, and interpret remainders as appropriate for the context as whole numbers, fractions or by rounding		Consolidate skills in calculating perimeter Calculate the area of parallelograms and triangles Recognise when it is possible to use formulae for area and volume of shapes Calculate and compare volume of cubes and cuboids using standard units				
								Statistics	
								Interpret	**Interpret data in pie charts** Consolidate skills in interpreting more complex tables, including timetables
		Check	**Check answers to calculations with mixed operations and large numbers, choosing the most appropriate method, including estimation, and determining, in the context of a problem, an appropriate degree of accuracy**					**Present data**	Present data using pie charts and line graphs Consolidate skills in completing tables, including timetables
								Solve data	**Solve problems using pie charts and line graphs** **Calculate and interpret the mean as an average**

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