Year 2 Learning and Progression Steps for Mathematics

What are Learning and Progression Steps (LAPS)?

The Learning and Progression Steps are designed to scaffold the learning required in order to meet the expectations of the National Curriculum. Statements in the Lancashire Key Learning for Mathematics document have been broken down into smaller steps to support teachers in planning appropriate learning opportunities. These key pieces of learning will support pupils in becoming fluent in the knowledge and skills of the curriculum and ensure that the learning is effective and sustained.

The number of steps is dependent on the learning and do **not** constitute expectations for the end of each term. The colour coding is **an approximate indicator** of end of term expectations.
Orange (including the end of previous year expectation) are the steps in learning for the autumn term.
Green are the steps in learning for the spring term.
Yellow are the steps in learning for the summer term and incorporate the end of year expectations.
The colours correspond with the structure of the Lancashire Mathematics Curriculum and reflect how often each learning objective is explicitly taught across the year. Some key learning objectives are not taught in every term, and in some cases not in the summer term. This means that end of year expectations may need to be met before the end of the summer term.

The final step in the progression for each strand of learning is the end of year expectation.

The steps are **not** of equal size and different amounts of time may be required for children to move between individual steps. For example,

Understand how multiplication and division statements can be represented using arrays	Use arrays to identify what the term 'factor' means	Use arrays to identify all the factor pairs of a given number	Identify factor pairs of a given number within the multiplication tables that they know

Progression is likely to be within the same lesson

Progression is likely to be over a series of lessons

Some learning within the same end of year expectation has been split and designed to run concurrently alongside each other. For example,

Read and write numbers up to 1000 in numerals and in words	Read multiples of 1000 to 10 000 in numerals and in words	Read multiples of 100 to 10 000 in numerals and in words	Read numbers to 10 000 where 0 is not used as a place holder	Read numbers to 10 000 where 0 is used as a place holder	***Read and write numbers to at least 10 000***
	Write multiples of 1000 to 10 000 in numerals and in words	Write multiples of 100 to 10 000 in numerals and in words	Write numbers to 10 000 where 0 is not used as a place holder	Write numbers to 10 000 where 0 is used as a place holder	

Some LAPS may need to be completed before another can be started.

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Where have they come from?

The Learning and Progression Steps (LAPS) have been derived from the Lancashire Key Learning in Mathematics statements, identified primarily from the National Curriculum 2014 programmes of study.

How are they different from the Key Learning Statements?

The Learning and Progression Steps (LAPS) are smaller, progressive steps which support learning towards the Key Learning in Mathematics expectations.

How are they different from the Key Learning Indicators of Performance (KLIPs)?

The Key Learning Indicators of Performance (KLIPs) document is an assessment tool. The Learning and Progression Steps (LAPS) document is a planning tool and is not intended to be used for summative assessment purposes. However, they may support teachers in judging whether children are on track to meet the end of year expectations at different points throughout the year.

The terms 'entering', 'developing' and 'secure' are used in Lancashire's assessment approach, KLIPs, as summative judgements in relation to age related expectations. Definitions for these terms can be found in the introduction to the KLIPs document.

How might Learning and Progression Steps (LAPS) in Mathematics be useful?

Learning and Progression Steps (LAPS) may be used in a number of ways. For whole class teaching, LAPS may be used to support differentiation. When planning, it may be appropriate to use LAPS statements to inform learning objectives for a session or number of sessions. Learning and Progression Steps (LAPS) in Mathematics should be selected according to the learning needs of the individual or group. Emphasis however, should always be on developing breadth and depth of learning to ensure skills, knowledge and understanding are sufficiently embedded before moving on.
The LAPS should **not** be used as an assessment tool, but they can inform teachers about children's progress towards the end of year expectations at the end of each term.

Are LAPS consistent with the other resources from the Lancashire Mathematics Team?

Yes, the LAPS are related to the content of the Mathematics Planning Support Disc and also the Progression Towards Written Calculation Policies and the Progression in Mental Calculation Strategies.
These can be found on the website:
www.lancsngfl.ac.uk/curriculum/primarymaths

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Key Learning in Mathematics – Year 2

Number – number and place value

- Count in steps of 2, 3, and 5 from 0, and in tens from any number, forward and backward
- Read and write numbers to at least 100 in numerals and in words
- Recognise the place value of each digit in a two-digit number (tens, ones)
- Identify, represent and estimate numbers using different representations, including the number line
- *Partition numbers in different ways (e.g. 23 = 20 + 3 and 23 = 10 + 13)*
- Compare and order numbers from 0 up to 100; use <, > and = signs
- *Find 1 or 10 more or less than a given number*
- *Round numbers to at least 100 to the nearest 10*
- *Understand the connection between the 10 multiplication table and place value*
- *Describe and extend simple sequences involving counting on or back in different steps*
- Use place value and number facts to solve problems

Number – fractions

- *Understand and use the terms numerator and denominator*
- *Understand that a fraction can describe part of a set*
- *Understand that the larger the denominator is, the more pieces it is split into and therefore the smaller each part will be*
- Recognise, find, name and write fractions $\frac{1}{3}$, $\frac{1}{4}$, $\frac{2}{4}$ and $\frac{3}{4}$ of a length, shape, set of objects or quantity
- Write simple fractions for example, $\frac{1}{2}$ of 6 = 3 and recognise the equivalence of $\frac{2}{4}$ and $\frac{1}{2}$
- *Count on and back in steps of* $\frac{1}{2}$ *and* $\frac{1}{4}$

Number – addition and subtraction

- *Choose an appropriate strategy to solve a calculation based upon the numbers involved (recall a known fact, calculate mentally, use a jotting)*
- *Select a mental strategy appropriate for the numbers involved in the calculation*
- Show that addition of two numbers can be done in any order (commutative) and subtraction of one number from another cannot
- *Understand subtraction as take away and difference (how many more, how many less/fewer)*
- Recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100
- *Recall and use number bonds for multiples of 5 totalling 60 (to support telling time to nearest 5 minutes)*
- Add and subtract numbers using concrete objects, pictorial representations, and mentally, including:
  - a two-digit number and ones
  - a two-digit number and tens
  - two two-digit numbers
  - adding three one-digit numbers
- Recognise and use the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems
- Solve problems with addition and subtraction *including with missing numbers:*
  - using concrete objects and pictorial representations, including those involving numbers, quantities and measures

Geometry – properties of shapes

- 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
- Identify 2-D shapes on the surface of 3-D shapes, [for example, a circle on a cylinder and a triangle on a pyramid]

Geometry – position and direction

- Order/arrange combinations of mathematical objects in patterns/sequences
- Use mathematical vocabulary to describe position, direction and movement, including movement in a straight line and distinguishing between rotation as a turn and in terms of right angles for quarter, half and three-quarter turns (clockwise and anti-clockwise)

Statistics

- Compare and sort *objects, numbers and* common 2-D and 3-D shapes and everyday objects
- Interpret and construct simple pictograms, tally charts, block diagrams and simple tables
- Ask and answer simple questions by counting the number of objects in each category and sorting the categories by quantity
- Ask and answer questions about totalling and comparing categorical data

Number – multiplication and division

- *Understand multiplication as repeated addition and arrays*
- *Understand division as sharing and grouping and that a division calculation can have a remainder*
- Show that multiplication of two numbers can be done in any order (commutative) and division of one number by another cannot
- Recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers
- *Derive and use doubles of simple two-digit numbers (numbers in which the ones total less than 10)*
- *Derive and use halves of simple two-digit even numbers (numbers in which the tens are even)*
- Calculate mathematical statements for multiplication *using repeated addition)* and division within the multiplication tables and write them using the multiplication (×), division (÷) and equals (=) signs
- Solve problems involving multiplication and division *(including those with remainders)*, using materials, arrays, repeated addition, mental methods, and multiplication and division facts, including problems in contexts

Measurement

- Choose and use appropriate standard units to estimate and measure length/height in any direction (m/cm); mass (kg/g); temperature (°C); capacity and volume (litres/ml) to the nearest appropriate unit, using rulers, scales, thermometers and measuring vessels
- Compare and order lengths, mass, volume/capacity and record the results using >, < and =
- Recognise and use symbols for pounds (£) and pence (p)
- Combine amounts to make a particular value
- Find different combinations of coins that equal the same amounts of money
- Compare and sequence intervals of time
- Tell and write the time to five minutes, including quarter past/to the hour and draw the hands on a clock face to show these times
- Know the number of minutes in an hour and the number of hours in a day
- Solve simple problems in a practical context involving addition and subtraction of money of the same unit, including giving change *and measures (including time)*

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These Learning and Progression Statements (LAPS) are designed to show the necessary steps in learning to make effective and sustainable progress within a single year. They begin with the 'end of year' expectation from the previous year and build up to the 'end of year expectation' of the current year.

The number of steps is dependent on the learning and do **not** constitute expectations for the end of each term.

The steps are **not** of equal size and different amounts of time may be required for children to move between individual steps.

	End of Year 1 expectation	Learning and Progression Statements						End of Year 2 expectation
Number and Place Value	**Count to and across 100, forwards and backwards, beginning with 0 or 1, or from any given number** **Count in multiples of twos, fives and tens**	Count in steps of 10 forwards and backwards from any number using base 10 equipment	Count in steps of 10 forwards and backwards from any number using a 100 square	Identify and discuss patterns on a 100 square when counting in steps of 2 or 5 from 0 and tens from any number	Count in steps of 3 from 0 using practical equipment such as counters / cubes arranged in an array	Count in steps of 3 using a fully labelled number line	Count in steps of 3 from 0	**Count in steps of 2, 3, and 5 from 0, and in tens from any number, forward and backward**
	Read and write numbers to 100 in numerals	Read numbers up to 100 in words using a word list (giving numbers up to 20 and the words for the multiples of 10)			Read numbers up to 100 in words			**Read and write numbers to at least 100 in numerals and in words**
		Write numbers up to 100 in words using a word list (giving numbers up to 20 and the words for the multiples of 10)			Write numbers up to 100 in words			
	Begin to recognise the place value of numbers beyond 20 (tens and ones)	Make and identify a two digit number up to 50 using concrete materials e.g. bundles of straws, base 10 apparatus and match these to arrow cards	Make and identify a two digit number up to 50 using concrete materials such as place value counters, abacus and match these to arrow cards	Make and identify a two digit number up to 100 using concrete materials e.g. bundles of straws, base 10 apparatus	Make and identify a two digit number up to 100 using concrete materials such as place value counters, abacus and arrow cards	Say what each digit represents in a two digit number		**Recognise the place value of each digit in a two-digit number (tens, ones)**
	Identify and represent numbers using objects and pictorial representations including the number line	Make and identify a two digit number up to 50 using concrete materials e.g. bundles of straws, base 10 apparatus and arrow cards	Make and identify a two digit number up to 50 using concrete materials such as place value counters, abacus and arrow cards	Make and identify a two digit number up to 100 using concrete materials e.g. base 10 apparatus, bundles of straws	Make and identify a two digit number up to 100 using equipment such as place value counters, abacus and arrow cards	Correctly place a number from 1 to 100 on a number line with multiples of 10 labelled	Correctly place a number from 1 to 100 on a number line with multiples of 10 marked but not labelled (with start and end labelled 0 and 100)	**Identify, represent and estimate numbers using different representations, including the number line**
	No equivalent objective in Year 1	Make a two-digit number using concrete materials e.g. base 10 apparatus, bundles of straws, place value counters	Partition a two-digit number (represented using base 10 apparatus) into tens and ones e.g. 43 is 4 tens (40) and 3 ones (3)	Partition a two-digit number (represented using base 10 apparatus) into two groups in different ways where one group is a multiple of 10	Partition a two-digit number (represented using base 10 apparatus) into two groups in different ways e.g. 43 = 40 + 3 or 31 + 12	Partition a two-digit number (represented using base 10 apparatus) in different ways e.g. 43 = 40 + 3 or 20 + 23 or 20 + 21 + 2		***Partition numbers in different ways (e.g. 23 = 20 + 3 and 23 = 10 + 13)***

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	Use the language of: equal to, more than, less than (fewer), most, least	Compare two 2-digit amounts when represented using the same practical equipment saying which amount has more and fewer/less Pay particular attention to numbers that have the same digits e.g. 34 and 43	Compare three or more 2-digit amounts when represented using the same practical equipment saying which amounts have more/most and fewer/less/ fewest/least Pay particular attention to numbers that have the same digits e.g. 34 and 43	Order three or more 2-digit amounts when represented using the same practical equipment Pay particular attention to numbers that have the same digits e.g. 34 and 43	Use the <, > and = signs when comparing one and two-digit numbers Pay particular attention to numbers that have the same digits e.g. 34 and 43		**Compare and order numbers from 0 up to 100; use <, > and = signs**
	Given a number, identify one more and one less	Identify the number 1 more and 1 less than a given number, where the tens digit stays the same	Identify the number 1 more and 1 less than a given number where the tens digit might change	Identify the number 10 more and less than a given number	Identify what changes and what stays the same when 10 is added or removed from a two-digit number		***Find 1 or 10 more or less than a given number***
	No equivalent objective in Year 1	Identify the multiples of 10 immediately before or after a given number		Identify the multiples of 10 immediately before and after a given number (not ending in 5), count to each of these multiples of 10 and say which multiple of 10 is closest	Recognise that if a number is exactly half way between two multiples of 10, then the number rounds to the higher multiple of 10		***Round numbers to at least 100 to the nearest 10***
	Recognise and create repeating patterns with numbers, objects and shapes	Know that our number system is organised using groups of 10 and what each digit represents in a two-digit number, e.g. 46 is 4 groups of ten and 6 ones			Recognise the correspondence between ones and tens, e.g. 6 ones = 6 6 tens = 60		***Understand the connection between the 10 multiplication table and place value***
	Identify odd and even numbers linked to counting in twos from 0 and 1	Describe the rule in a number sequence counting on and back in twos from any number	Extend number sequences counting on and back in twos from any number	Describe the rule in a number sequence counting on and back in tens or twos from any number	Extend number sequences counting on and back in tens or twos from any number	Describe the rule in a number sequence counting on and back in fives, tens or twos from any number	Extend number sequences counting on and back in fives, tens or twos from any number	***Describe and extend simple sequences involving counting on or back in different steps***
	Solve problems and practical problems involving all of the above	**Children need frequent access to a range of contexts using the content from all of the above.** **See Using and Applying, Contextual Learning and Assessment sections from the Lancashire Mathematics Planning Disc.**						**Use place value and number facts to solve problems**

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Number – Addition and Subtraction	End of Year 1 expectation	Learning and Progression Statements						End of Year 2 expectation
	No equivalent objective in Year 1	**Children need frequent opportunities to select appropriate strategies from the range they have learnt. The most efficient strategy may differ between children as it will be based on their confidence and competence.**						***Choose an appropriate strategy to solve a calculation based upon the numbers involved (recall a known fact, calculate mentally, use a jotting)***
	These steps fit the Lancashire Progression Towards Written Calculation Policies and Progression in Mental Calculations Policies							
	No equivalent objective in Year 1	Recognise and solve calculations that involve known facts e.g. 6 + 12	Recognise that the numbers in addition calculations can be reordered to make counting on more efficient e.g. 4 + 33 becomes 33 + 4 and use this strategy where appropriate *(This should be supported by concrete materials, pictures or jottings)*	Recognise calculations that require counting on or back mentally e.g. 47 - 20 (counting back in tens) and use this strategy where appropriate *(This should be supported by concrete materials, pictures or jottings)*	Recognise calculations that require mental partitioning e.g. 23 + 34 and use this strategy where appropriate *(This should be supported by concrete materials, pictures or jottings)*	Recognise calculations that require counting on mentally to find the difference e.g. 73 – 65 and use this strategy where appropriate *(This should be supported by concrete materials, pictures or jottings)*	Recognise calculations that require counting on or back mentally, bridging through a multiple of 10 efficiently e.g. 48 + 6 becomes 48 + 2 + 4 and use this strategy where appropriate *(This should be supported by concrete materials, pictures or jottings)* Recognise calculations that require a mental compensation method e.g. 73 – 9 becomes 73 – 10 + 1 and use this strategy where appropriate *(This should be supported by concrete materials, pictures or jottings)*	***Select a mental strategy appropriate for the numbers involved in the calculation***
	Read, write and interpret mathematical statements involving addition (+), subtraction (-) and equals (=) signs	Model addition number sentences using concrete materials and identify which groups in the number sentence are the parts and which is the whole	Recognise that addition of two or more numbers can be done in any order	Use the fact that addition of two or more numbers can be done in any order to reorder calculations for efficiency	Model subtraction number sentences using concrete materials and identify which groups in the number sentence are the parts and which is the whole	Recognise that (in practical situations) the subtraction of one number from another cannot be done in any order		**Show that addition of two numbers can be done in any order (commutative) and subtraction of one number from another cannot**
	Read, write and interpret mathematical statements involving addition (+), subtraction (-) and equals (=) signs	Know that 'take away' is removal of an amount (a **part**) from within another amount (the **whole**). Identify subtraction as 'take away' in different contexts by understanding and interpreting the language involved	Know that 'difference' is comparing two amounts and finding how many more or how many less/fewer	Model subtraction as 'difference' number sentences using concrete materials	Recognise subtraction as 'difference' in different contexts by understanding and interpreting the language involved			***Understand subtraction as take away and difference (how many more, how many less/fewer)***
	Represent and use number bonds and related subtraction facts within 20	Recall and use addition and subtraction facts totalling 10 for addition and subtraction	Recall and use addition and subtraction facts of all numbers up to 10 for addition and subtraction	Recall and use addition and subtraction facts totalling 20 for addition and subtraction	Derive and use addition and subtraction facts of multiples of 10 totalling 100	Use ten frames to explore addition and subtraction facts for all numbers up to 20		**Recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100**

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	Represent and use number bonds and related subtraction facts within 20	Derive and use addition and subtraction facts of multiples of 10 totalling 60				Derive and use addition and subtraction facts of multiples of 5 totalling 60				***Recall and use number bonds for multiples of 5 totalling 60 (to support telling time to nearest 5 minutes)***
	Add and subtract one-digit and two-digit numbers to 20, including zero *(using concrete objects and pictorial representations)*	Partition and combine multiples of tens and ones *(Practically then pictorially then mentally)*	Add and subtract a one-digit number to/from a two-digit number (not crossing tens boundary) *(Practically then pictorially then mentally)*	Add three single digit numbers including bridging through 10 and/or 20 *(Practically then pictorially then mentally)*	Add and subtract a multiple of 10 to/from a two-digit number (not crossing hundreds boundary) *(Practically then pictorially then mentally)*	Add and subtract a one-digit number to/from a two-digit number including crossing a tens boundary *(Practically then pictorially then mentally)*	Add and subtract a two-digit number to/from another two-digit number (not crossing any boundaries) *(Practically then pictorially then mentally)*	Add and subtract a two-digit number to/from another two-digit number including crossing a tens boundary *(Practically then pictorially)*	Add a two-digit number to another two-digit number including crossing the hundreds boundary *(Practically then pictorially)*	**Add and subtract numbers using concrete objects, pictorial representations, and mentally, including:** **- a two-digit number and ones** **- a two-digit number and tens** **- two two-digit numbers** **- adding three one-digit numbers**
	These steps fit the Lancashire Progression Towards Written Calculation Policies and Progression in Mental Calculations Policies									
	Solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as 7 = ☐ - 9	Recognise and use the knowledge that 4 + 5 = 9 can be checked by using the inverse operation 9 – 4 = 5 or 9 – 5 = 4	Recognise and use the knowledge that 12 – 4 = 8 can be checked by using the inverse operation 8 + 4 = 12 or 4 + 8 = 12	Recognise that 4 + ? = 9 can be solved by calculating 9 – 4 = ? because 9 is the **whole** which is made of **two parts** one of which is 4		Recognise that 12 – ? = 8 can be solved by calculating 12 – 8 = ? because 12 is the **whole** which is made of **two parts** one of which is 8	Recognise that ? + 3 = 11 can be solved by calculating 11 – 3 = ? because 11 is the **whole** which is made of **two parts** one of which is 3	Recognise that ? – 5 = 9 can be solved by calculating 9 + 5 = ? because **two parts** which are 9 and 5 go together to create the **whole**		**Recognise and use the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems**
	Solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as 7 = ☐ - 9	Represent and solve a problem using concrete materials			Represent and solve a problem using pictorial representations of the items in the context			Represent and solve a problem using structured pictorial representations such as the bar model		**Solve problems with addition and subtraction *including with missing numbers:*** **- using concrete objects and pictorial representations, including those involving numbers, quantities and measures** **- applying their increasing knowledge of mental and written methods**

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Number – Multiplication and Division	End of Year 1 expectation	Learning and Progression Statements					End of Year 2 expectation
	No equivalent objective in Year 1	Represent doubling using concrete materials Understand that doubling is adding a number to itself and multiplying by 2	Write two different number sentences to represent a doubling situation e.g. 6 + 6 = 12 and 6 x 2 = 12	Represent adding the same number three or more times using concrete materials arranged in groups and then in more structured form as an array and link this to multiplication	Write two different number sentences to represent repeated addition situations e.g. 5 + 5 + 5 = 15 and 5 x 3 = 15		***Understand multiplication as repeated addition and arrays***
	No equivalent objective in Year 1	Share an amount equally across sets where there is no remainder e.g. share 20 sweets between 5 children	In real life contexts, share an amount equally across sets where there is a remainder e.g. share 23 pencils between 3 tables results in 7 pencils on each table and 2 pencils that cannot be shared	Make equal sized groups from an amount where there is no remainder e.g. make teams of 5 from a group of 30 children; 24 ÷ 6	Make equal sized groups from an amount where there is a remainder e.g. give 3 buttons to each gingerbread man when there are 23 buttons in total; 26 ÷ 5		***Understand division as sharing and grouping and that a division calculation can have a remainder***
	No equivalent objective in Year 1	Model multiplication number sentences using concrete materials	Create an array and identify the two multiplication statements that are represented to show that multiplication of two numbers can be done in any order	Use the fact that multiplication of two numbers can be done in any order to derive one multiplication statement from another e.g. 'I don't know what two lots of four are but I know four lots of two are eight so it is the same.'	Model division number sentences using concrete materials	Recognise that (in practical situations) the division of one number from another cannot be done in any order because they give different answers	**Show that multiplication of two numbers can be done in any order (commutative) and division of one number by another cannot**
	Count in multiples of twos, fives and tens	Recall and use multiplication and division facts for the 10x table	Recall and use multiplication and division facts for the 5x table	Recall and use multiplication and division facts for the 2x table	Identify odd and even numbers by looking at the ones digit and relating even numbers to multiples of 2		**Recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers**
	Recall and use doubles of all numbers to 10 and corresponding halves	Use base 10 equipment to explore the relationship between the doubling of a single digit number to the doubling of its related multiple of 10 e.g. double 3 is 6 and double 3 tens is 6 tens which is 60	Use the previously identified relationship to recall and use doubles of all multiples of 10 up to 50	Use the previously identified relationship to recall and use doubles of all multiples of 10 up to 100	Use partitioning to double simple two-digit numbers (numbers in which the ones total less than 10)		***Derive and use doubles of simple two-digit numbers (numbers in which the ones total less than 10)***
	Recall and use doubles of all numbers to 10 and corresponding halves	Use base 10 equipment to explore the relationship between the halving of a single digit even number to the halving of its related multiple of 10 e.g. half of 6 is 3 and half of 6 tens is 3 tens which is 30	Use the previously identified relationship to recall and use halves of all multiples of 10 up to 100 with an even tens digit	Use partitioning to halve simple two-digit even numbers (numbers in which the tens are even)			***Derive and use halves of simple two-digit even numbers (numbers in which the tens are even)***

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<table>
<tr><td rowspan="2"></td><td rowspan="2">No equivalent objective in Year 1</td><td colspan="2">Represent adding the same number three or more times using concrete materials</td><td colspan="2">Create an array to represent a given multiplication fact</td><td colspan="2">Write two different number sentences to represent an array e.g.
5 + 5 + 5 = 15 and
5 x 3 = 15</td><td rowspan="2">Calculate mathematical statements for multiplication (using repeated addition) and division within the multiplication tables and write them using the multiplication (×), division (÷) and equals (=) signs</td></tr>
<tr><td>Use concrete materials to represent division as grouping by creating equal groups of a given size from an amount</td><td>Write a number sentence to represent the amount being grouped, the number in each group and how many groups are created e.g.
20 ÷ 5 = 4</td><td>Using an array, show how many groups of a given size can be made from the total (using the rows or columns)</td><td>Write a number sentence to represent the total and the number of groups of a given size e.g.
20 ÷ 5 = ? understanding this as how many groups of 5 can be made out of 20</td><td>Select from grouping or sharing strategies depending on the context e.g. sharing should be used when dividing by 2 and finding fractions</td></tr>
<tr><td></td><td>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</td><td>Represent and solve a problem using concrete materials</td><td>Represent and solve a problem using pictorial representations of the items in the context</td><td>Represent and solve a problem using structured pictorial representations e.g. an array</td><td>Understand what a remainder means in the context of a problem and how this may affect the answer</td><td>Solve problems involving multiplication and division (including those with remainders), using materials, arrays, repeated addition, mental methods, and multiplication and division facts, including problems in contexts</td></tr>
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Number – Fractions	End of Year 1 expectation	Learning and Progression Statements							End of Year 2 expectation
	Understand that a fraction can describe part of a whole ***Understand that a unit fraction represents one equal part of a whole***	Use concrete materials and pictorial representations to explore and recognise that the denominator is the number of equal parts into which a whole has been split				Use concrete materials and pictorial representations to explore and recognise that the numerator is the number of parts required in the given fraction			***Understand and use the terms numerator and denominator***
	Understand that a fraction can describe part of a whole ***Understand that a unit fraction represents one equal part of a whole***	Recognise that one 'whole' could be one whole group of items e.g. a group of 12 teddy bears could be one whole group							***Understand that a fraction can describe part of a set***
	No equivalent objective in Year 1	Split the same shape or set into different numbers of equal parts and compare the sizes of the denominators e.g. a half and a quarter							***Understand that the greater the denominator is, the more pieces it is split into and therefore the smaller each part will be***
	Recognise, find and name a half as one of two equal parts of an object, shape or quantity *(including measure)* **Recognise, find and name a quarter as one of four equal parts of an object, shape or quantity *(including measure)***	Find $\frac{1}{4}$ of a shape, object, **set of objects** / quantity and length and write the fraction $\frac{1}{4}$	Recognise and name $\frac{2}{4}$ as any two of four equal parts of an object or shape and write the fraction $\frac{2}{4}$	Find $\frac{2}{4}$ of an object, set of objects / quantity and length	Recognise and name $\frac{3}{4}$ as any three of four equal parts of an object or shape and write the fraction $\frac{3}{4}$	Find $\frac{3}{4}$ of a shape, object, set of objects / quantity and length	Recognise and name $\frac{1}{3}$ as any one of three equal parts of an object or shape and write the fraction $\frac{1}{3}$	Find $\frac{1}{3}$ of a shape, object, set of objects / quantity length	**Recognise, find, name and write fractions $\frac{1}{3}$, $\frac{1}{4}$, $\frac{2}{4}$ and $\frac{3}{4}$ of a length, shape, set of objects or quantity**
	No equivalent objective in Year 1	Use equations to represent the fractions of amounts being calculated $\frac{1}{4}$ of 8 = 2				Find $\frac{1}{2}$ and $\frac{2}{4}$ of an object, set of objects / quantity and length and recognise that these are the same			**Write simple fractions for example, $\frac{1}{2}$ of 6 = 3 and recognise the equivalence of $\frac{2}{4}$ and $\frac{1}{2}$**

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	No equivalent objective in Year 1	Count on in steps of $\frac{1}{2}$ in the form $\frac{1}{2}, \frac{2}{2}, \frac{3}{2}, \frac{4}{2}, \frac{5}{2}$	Count back in steps of $\frac{1}{2}$ in the form $\frac{5}{2}, \frac{4}{2}, \frac{3}{2}, \frac{2}{2}, \frac{1}{2}$	Use concrete materials or pictorial representations to change the counting sequence from $\frac{1}{2}, \frac{2}{2}, \frac{3}{2}, \frac{4}{2}, \frac{5}{2}$ to $\frac{1}{2}$, 1, $1\frac{1}{2}$, 2, $2\frac{1}{2}$	Count on in steps of $\frac{1}{4}$ in the form $\frac{1}{4}, \frac{2}{4}, \frac{3}{4}, \frac{4}{4}, \frac{5}{4}$	Count back in steps of $\frac{1}{4}$ in the form $\frac{5}{4}, \frac{4}{4}, \frac{3}{4}, \frac{2}{4}, \frac{1}{4}$	Use concrete materials or pictorial representations to change the counting sequence from $\frac{1}{4}, \frac{2}{4}, \frac{3}{4}, \frac{4}{4}, \frac{5}{4}$… to $\frac{1}{4}, \frac{1}{2}, \frac{3}{4}$, 1, $1\frac{1}{4}$…	***Count on and back in steps of $\frac{1}{2}$ and $\frac{1}{4}$***

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	End of Year 1 expectation	Learning and Progression Statements					End of Year 2 expectation
Geometry – Properties of Shapes	**Recognise and name common 2-D shapes, including rectangles (including squares), circles and triangles**	Know that a vertex in a 2-D shape is where two sides meet (and the plural is vertices)	Identify the number of sides and vertices of 2-D shapes and recognise that this is the basis for naming them, e.g. any shape with five sides (or vertices) is a pentagon	Describe 2-D shapes according to the number of sides and vertices, and whether any of the sides or vertices are the same size as each other, e.g. oblong and regular hexagon	Identify a vertical line of symmetry in a shape	From a set of shapes, identify those with a vertical line of symmetry and those without	**Identify and describe the properties of 2-D shapes, including the number of sides and line symmetry in a vertical line**
	Recognise and name common 3-D shapes, including cuboids (including cubes), pyramids and spheres	Know that a face is a flat surface of a 3-D shape	Identify the number and shape of the faces or curved surfaces of 3-D shapes and recognise that this is the basis for naming them, e.g. a triangular prism has three rectangular faces and two identical (congruent) triangular faces which can be any type of triangle	Know that an edge on a 3-D shape is where two faces / curved surfaces meet Know that a vertex on a 3-D shape is where three or more edges meet	Describe 3-D shapes according to the number and shape of the faces, the number of edges and vertices and whether any of the faces are the same as each other	Identify similarities and differences between pairs / sets of 3-D shapes	**Identify and describe the properties of 3-D shapes, including the number of edges, vertices and faces**
	Recognise and name common 2-D shapes, including rectangles (including squares), circles and triangles	Find the face on a 3-D shape that is a specified 2-D shape, e.g. find the square face on this square based pyramid					**Identify 2-D shapes on the surface of 3-D shapes, [for example, a circle on a cylinder and a triangle on a pyramid]**

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Geometry – Position and Direction	**End of Year 1 expectation**	**Learning and Progression Statements**					**End of Year 2 expectation**
	Recognise and create repeating patterns with objects and shapes	This is consolidation of Year 1 learning and therefore there are no steps towards this end of year expectation					**Order/arrange combinations of mathematical objects in patterns /sequences**
	Describe position and direction **Describe movement, including whole, half, quarter and three-quarter turns**	Know that a full turn is the same as a turn through four right angles	Know that a half turn is the same as a turn through two right angles	Know that a quarter turn is the same as a turn through one right angle	Know that a three-quarter turn is the same as a turn through three right angles	Understand and use the language clockwise and anti-clockwise	**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)**

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Statistics	**End of Year 1 expectation**	**Learning and Progression Statements**						**End of Year 2 expectation**
	Sort objects, numbers and shapes to a given criterion and their own	Use everyday language to compare two objects by identifying properties that they both share and properties that make them different	Use mathematical language to compare two numbers by identifying properties that they both share and properties that make them different	Use mathematical language to compare two shapes by identifying properties that they both share and properties that make them different	Sort a set of objects, numbers or shapes using the range of mathematical properties that they know	Identify the property / properties by which a set of objects, numbers or shapes has been sorted		**Compare and sort *objects, numbers and* common 2-D and 3-D shapes and everyday objects**
	Present and interpret data in block diagrams using practical equipment	Construct and interpret simple tables	Use given data to construct and interpret a block graph on squared paper	Use given data to construct and interpret a pictogram in which each symbol is worth 1	Construct and collect data using a tally chart and interpret tally charts	Construct and interpret data as a pictogram in which each symbol is worth 10	Construct and interpret data as a pictogram in which each symbol is worth 5	Construct and interpret data as a pictogram in which each symbol is worth 2	**Interpret and construct simple pictograms, tally charts, block diagrams and simple tables**
	Ask and answer simple questions by counting the number of objects in each category	Answer questions which ask 'How many…?' in a given data category		Understand and use the language of most and least common / popular		Order the amounts for each category in a data set			**Ask and answer simple questions by counting the number of objects in each category and sorting the categories by quantity**
	Ask and answer questions by comparing categorical data	Answer questions which ask 'How many more…?' or 'How many fewer…?' when comparing two categories in a data set			Answer questions which ask 'How many in total…?' in given data categories e.g. How many children walk or cycle to school? *(totalling two categories)* How many children are in the sample altogether? *(totalling all categories)*				**Ask and answer questions about totalling and comparing categorical data**

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<table>
<tr><td rowspan="8">Measurement</td><td>End of Year 1 expectation</td><td colspan="6">Learning and Progression Statements</td><td>End of Year 2 expectation</td></tr>
<tr><td rowspan="4">Measure and begin to record:
- lengths and heights, using non-standard and then manageable standard units (m/cm)
- mass/weight, using non-standard and then manageable standard units (kg/g)
- capacity and volume using non-standard and then manageable standard units (litres/ml)
- time (hours/ minutes/seconds) within children's range of counting competence</td><td colspan="2">Choose the correct standard units to measure length and height (m/cm)</td><td colspan="2">Choose and correctly use the appropriate equipment to measure lengths and heights e.g. ruler, metre rule, tape measure, trundle wheel</td><td>Know common points of reference for length / height such as a ruler is 30cm and a doorway is 2m tall</td><td>Use the common points of reference they know to estimate the lengths and heights of other objects</td><td rowspan="4">Choose and use appropriate standard units to estimate and measure length/height in any direction (m/cm); mass (kg/g); temperature (°C); capacity and volume (litres/ml) to the nearest appropriate unit, using rulers, scales, thermometers and measuring vessels</td></tr>
<tr><td colspan="2">Choose the correct standard units to measure mass (kg/g)</td><td colspan="2">Choose and use the correct equipment to measure mass e.g. balance scales, kitchen scales (with appropriate scale)</td><td>Know common points of reference for mass such as a small packet of crisps has a mass of between 25g and 30g and a bag of sugar has a mass of 1kg</td><td>Use the common points of reference they know to estimate the mass of other objects</td></tr>
<tr><td colspan="2">Choose the correct standard units to measure volume / capacity (litres/ml)</td><td colspan="2">Choose and use the correct equipment to measure volume / capacity e.g. measuring cylinders / jugs with appropriate scales</td><td>Know common points of reference for volume / capacity such as a teaspoon / medicine spoon has a capacity of 5ml and a large bottle of fizzy drink is 2 litres</td><td>Use the common points of reference they know to estimate the volume in / capacity of other vessels</td></tr>
<tr><td>Know that temperature is measured in degrees Celsius (°C)</td><td>Know that temperature is measured using a thermometer and read the temperature on a thermometer</td><td>Know that average room temperature is between 18°C and 20°C</td><td>Use the knowledge of average room temperature to say whether the temperature outside is hotter / warmer or colder / cooler</td><td>Estimate and read the temperature on a partially marked thermometer scale where the reading is a multiple of 5</td><td>Estimate and read the temperature on a partially marked thermometer scale, using the labelled marks to read to the nearest degree</td></tr>
<tr><td>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)</td><td colspan="2">Compare the values of two:
lengths,
masses,
volumes / capacities</td><td colspan="2">Order the values of three or more:
lengths,
masses,
volumes / capacities</td><td colspan="2">Use <, > and = to compare the values of lengths, masses and volumes / capacities,
e.g. 34cm < 43cm; 76g > 67g; 80ml = 80ml (when comparing two differently shaped vessels)</td><td>Compare and order lengths, mass, volume/capacity and record the results using >, < and =</td></tr>
</table>

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	Recognise and know the value of different denominations of coins and notes	Recognise that p in the context of money stands for pence and use this symbol correctly		Recognise that £ in the context of money stands for pounds and use this symbol correctly *(whole pounds only)*	**Recognise and use symbols for pounds (£) and pence (p)**
	Recognise and know the value of different denominations of coins and notes	Add two prices together to find the total cost	Recognise that amounts of money can be partitioned in different ways *(using coins)* e.g. 50p can be 30p and 20p or 15p and 35p	For a given value, identify how much more can be spent following the purchase of one item, e.g. 38p + ? = 50p	Identify combinations which can be bought for a specific amount of money e.g. what two or more items can I buy for exactly 70p?	**Combine amounts to make a particular value**
	Recognise and know the value of different denominations of coins and notes	Exchange 2p, 5p and 10p coins for the correct number of 1p coins and understand that, for example, ten 1p coins have the same value as one 10p coin	Exchange 20p, 50p and £1 coins for the correct number of 10p coins and understand that, for example, five 10p coins have the same value as one 50p coin	Exchange different coins for other coins of the same value		**Find different combinations of coins that equal the same amounts of money**
	Recognise and use language relating to dates, including days of the week, weeks, months and years	Know that there are 60 minutes in 1 hour				**Know the number of minutes in an hour and the number of hours in a day**
		Know that there are 24 hours in 1 day				
	Recognise and use language relating to dates, including days of the week, weeks, months and years **Sequence events in chronological order using language (for example, before and after, next, first, today, yesterday, tomorrow, morning, afternoon and evening**	Put units of time (second, minute, hour, day, week, month, year) in order from shortest to longest and vice versa		To enable comparison between different units of time, use appropriate calculation strategies to convert between units, e.g. $\frac{1}{2}$ an hour in minutes is $\frac{1}{2}$ of 60 minutes which is 30 minutes; the number of hours in 2 days is double 24 which is 48 hours		**Compare and sequence intervals of time**

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	Tell the time to the hour and half past the hour and draw the hands on a clock face to show these times	Tell the time for quarter past the hour and draw hands on a clock to show the time, recognising that the hour hand will not be exactly on the hour *(NB - it will have moved one quarter of the way between the hour numbers)*	Tell the time for quarter to the hour and draw hands on a clock to show the time, recognising that the hour hand will not be exactly on the hour *(NB - it will have moved three quarters of the way between the hour numbers and therefore has one quarter of the space left to go))*	Count in fives clockwise starting at 12 (for zero) to 6 (for thirty) progressing to counting in times, e.g. 5 minutes past, 10 minutes past, 15 minutes past (quarter past), 20 minutes past etc.	Tell the time to the nearest five minutes past the hour (up to 25 minutes past)	Count in fives anti-clockwise starting at 12 (for zero) to 6 (for thirty) progressing to counting in times, e.g. 5 minutes to, 10 minutes to, 15 minutes to (quarter to), 20 minutes to etc.	Tell the time to the nearest five minutes to the next hour (up to 25 minutes to)	Draw the hands on a clock to show the time to the nearest five minutes	**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**
	No equivalent objective in Year 1	**Children need frequent access to a range of contexts using the content from all of the above. See Using and Applying, Contextual Learning and Assessment sections from the Lancashire Mathematics Planning Disc.**							**Solve simple problems in a practical context involving addition and subtraction of money of the same unit, including giving change *and measures (including time)***

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