Key Learning in Mathematics – Year 1
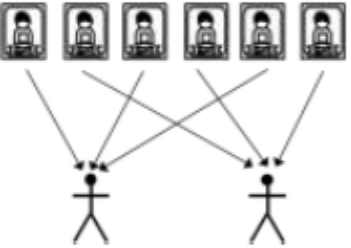
Number – number and place value

- 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
- Read and write numbers to 100 in numerals
- Read and write numbers from 1 to 20 in numerals and words
- *Begin to recognise the place value of numbers beyond 20 (tens and ones)*
- Identify and represent numbers using objects and pictorial representations including the number line
- Use the language of: equal to, more than, less than (fewer), most, least
- Given a number, identify one more and one less
- *Recognise and create repeating patterns with numbers, objects and shapes*
- *Identify odd and even numbers linked to counting in twos from 0 and 1*
- *Solve problems and practical problems involving all of the above*

Number – addition and subtraction

- Read, write and interpret mathematical statements involving addition (+), subtraction (-) and equals (=) signs
- Represent and use number bonds and related subtraction facts within 20
- Add and subtract one-digit and two-digit numbers to 20, including zero *(using concrete objects and pictorial representations)*
- Solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as 7 = □ - 9

Number – multiplication and division

- *Recall and use doubles of all numbers to 10 and corresponding halves*
- 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

Measurement

- 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
- 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)
- 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
- Tell the time to the hour and half past the hour and draw the hands on a clock face to show these times
- Recognise and know the value of different denominations of coins and notes

Number – fractions

- *Understand that a fraction can describe part of a whole*
- *Understand that a unit fraction represents one equal part of a whole*
- 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)*

Geometry – properties of shapes

- Recognise and name common 2-D shapes, including rectangles (including squares), circles and triangles
- Recognise and name common 3-D shapes, including cuboids (including cubes), pyramids and spheres

Geometry – position and direction

- Describe movement, including whole, half, quarter and three-quarter turns
- *Recognise and create repeating patterns with objects and shapes*
- Describe position and direction

Statistics

- *Sort objects, numbers and shapes to a given criterion and their own*
- *Present and interpret data in block diagrams using practical equipment*
- *Ask and answer simple questions by counting the number of objects in each category*
- *Ask and answer questions by comparing categorical data*

Arithmetic Expectations – Year 1

Skills	Examples
Counting	
Count in multiples of 2, 5 and 10.	Count from 0 in twos What number would come next in this counting sequence? 0, 5, 10, 15, 20, __ What number is missing from this counting sequence? 0, 10, 20, 40, 50
Recognise even and odd numbers when counting in twos from 0 or 1.	Continue this count: 2, 4, 6, 8, 10, 12, 14… Are these even numbers or odd? How do you know? Continue this count: 1, 3, 5, 7, 9, 11, 13… Are these even numbers or odd? How do you know? Which are the even numbers in this set? 5 16 22 47 32
Number Facts	
Recall number bonds and related subtraction facts for all numbers to 10.	6 + 4 = ___ 2 + ___ = 10 10 = ___ + 5 10 – 3 = ___ 10 – ___ = 1 7 = 10 – ___ 3 + 4 = ___ 5 + ___ = 7 7 = ___ + 6 7 – 2 = ___ 7 – ___ = 3 5 = 7 – ___
Recall doubles of all numbers to 10 and corresponding halves.	3 + 3 = ___ double 6 is ___ half of 14 is ___ halve 8 double ___ is 10
Mental Calculation Strategies – Addition and Subtraction	
Count on or back in ones (chain count and link to objects, i.e. 1-1 correspondence). *Concrete – counters, beadstring, cubes on a number track* *Pictorial – number line*	4 + 5 count on in ones from 4 (or in ones from 5) 8 – 3 count back in ones from 8 10 + 7 count on in ones from 10 (or use place value) 13 + 5 count on in ones from 13 17 – 3 count back in ones from 17
Reorder numbers in a calculation. *Concrete – counters, counters in a ten frame*	8 + 3 doesn't need reordering as the greater number is first already 2 + 7 reorder as 7 + 2 5 + 13 reorder as 13 + 5 11 + 6 doesn't need reordering as the greater number is first already
Partition small numbers, e.g. 8 + 3 = 8 + 2 + 1 and 11 – 3 = 11 – 1 – 2 *Concrete – counters in a ten frame, beadstring* *Pictorial – number line*	7 + 5 partitioned as 7 + 3 + 2 9 + 7 partitioned as 9 + 1 + 6 6 + 8 partitioned as 6 + 4 + 4 or reordered and partitioned as 8 + 2 + 4 12 – 5 partitioned as 12 – 2 – 3 14 – 8 partitioned as 14 – 4 – 4
Mental Calculation Strategies – Multiplication and Division	
Apply counting in twos, fives and tens to solve multiplication problems with a repeated addition context. *Concrete – real items to model the context of the problem* *Pictorial – images of the items in the context of the problem*	How much money is the total of six 5p coins? How many fingers would seven children have altogether? How many boots are lined up after five children take them off?
Share an amount into equal parts. *Concrete – real items to model the context of the problem* *Pictorial – images of the items in the context of the problem*	A bunch of 20 grapes are shared equally between two children? How many grapes do they each get? Five children are given £50 to share equally by their grandma. How much money do they each get?

Separate an amount into equal groups. *Concrete – real items to model the context of the problem* *Pictorial – images of the items in the context of the problem*	Each sandwich needs two slices of bread. How many sandwiches can be made using 20 slices of bread? Five seeds need to be planted in each pot. How many pots can be planted if there are 30 seeds altogether?

Progression Towards Written Calculation Strategies – Addition

Count on to find the total. *Concrete – ten frames, Diennes equipment* *Pictorial – images of ten frames, tens and ones jottings*	11 + 5 Add the ones, then add the ten(s)

Progression Towards Written Calculation Strategies – Subtraction

Count the amount to subtract (take away) and count the amount left. *Concrete – ten frames, Diennes equipment* *Pictorial – images of ten frames, tens and ones jottings*	13 – 4 To avoid the need to exchange, it is advisable to use cubes or counters. Count the amount (part) to subtract (take way) 4 3 2 1 Count the amount (part) that is left. 1 2 3 4 5 6 7 8 9

Progression Towards Written Calculation Strategies – Multiplication

Recognise multiplication as real arrays showing repeated addition. *Concrete – real arrays e.g. baking trays, ice cube trays, egg boxes* *Pictorial – images of real arrays*	How many eggs are needed to fill the box? How many buns can be made with this tray?

Progression Towards Written Calculation Strategies – Division

Recognise division as sharing amounts into equal parts. Introduce simple remainders as the items are shared into equal parts, but some may be left over. *Concrete – real sets of items shared according to a real context* *Pictorial – images real items being shared into equal parts (possibly represented as shapes)*	Six stickers shared equally between two children. How many stickers will they each get? If it was seven stickers being shared equally between two children, how many stickers would they each get?

Decision Making

When calculating, children should ask themselves:
- do I know the answer because it is a fact I have learnt?
- can I work it out easily in my head?
- can I use some equipment or a jotting?

Year 1 Mathematics Yearly Overview

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Week 1	**Unit 1** Place Value	**Unit 5** Sequencing and Sorting	**Unit 10** Place Value	**Unit 16** Length and Mass	**Unit 21** Place Value	**Unit 27** Time
Week 2		**Unit 6** Fractions	**Unit 11** Mass	**Unit 17** Addition and Subtraction	**Unit 22** Addition and Subtraction	**Unit 28** Multiplication and Division
Week 3	**Unit 2** Length and Mass	**Unit 7** Capacity and Volume	**Unit 12** 2-D and 3-D Shape	**Unit 18** Fractions	**Unit 23** Capacity and Volume	**Unit 29** Statistics and Calculation
Week 4	**Unit 3** Addition and Subtraction	**Unit 8** Money	**Unit 13** Counting and Money	**Unit 19** Position & Direction	**Unit 24** Fractions	**Unit 30** Measurement
Week 5		**Unit 9** Time	**Unit 14** Multiplication	**Unit 20** Time	**Unit 25** Position & Direction and Time	**Unit 31** Sorting and Sequencing
Week 6	**Unit 4** 2-D and 3-D Shape	Assess and review week	**Unit 15** Division	Assess and review week	**Unit 26** 2-D and 3-D Shape	Assess and review week

YEAR	AUTUMN	
1	**Topic**	**Sequence of Learning**
	Number and place value	- Counting items 0-9 Value of 0 Read and write numbers Use blocks to create a block graph - Counting items 10-19 by making tens and ones (balloons, biscuits, pens in pots etc.) Group of ten Different and same - Recognise quantities on a 10 frame - Counting items 10-19 by making tens and ones (straws, multilink, 10 frames) Group of ten Different and same - Counting items 10-19 by making tens and ones (10 frames and base 10) Group of ten Different and same - Counting items 20-29 by making tens and ones (all prior equipment) Groups of ten and numbers not in groups of 10 Different and same - Counting and representing numbers to 30 Read and write numbers Structured equipment Concrete patterning - Identifying and representing numbers to 30 Read and write numbers Structured equipment Patterning on number track/hundred square alongside concrete - One more and one fewer 0-30 focus on bridging (10 frame and number track) - Comparing quantities to 20 More, fewer, equal to Different sizes of items, lining up, different orientations of lines
	Length and mass/weight Application of number and place value	- Compare and describe objects by length and height using, longer/shorter (long/short) and taller/shorter (tall, short) - Measure and record lengths and heights using body parts, including the teacher - Measure and record lengths and heights using uniform non-standard units (multilink) - Compare and describe objects by mass/weight using, lighter/heavier, light/heavy - Measure and record masses using uniform non-standard units
	Addition and subtraction	- Bonds for 10 – 10 frame, addition and subtraction facts relationships Part – part – whole language - Counting all Part – part – whole including diagram Include adding 0 - Adding 10 and a single digit - Counting on practically including part – part – whole diagram - Solving one step addition problems – language focus - Subtract single digit from another using take away concrete items including subtracting 0 - Subtract single digit from another using take away, concrete items on part – part – whole diagram - Subtract 10 from teens number, subtract ones from teens number concrete 10 frames, base 10 - Solving one step subtraction problems – language focus - Solving one step addition and subtraction problems
	2D and 3D Shapes	- Name circles and triangles – different sizes, orientations, colours, examples and non-examples Different and same Complete the sort/follow my rule/guess my rule What is a…? - Name square rectangles and oblong rectangles – different sizes, orientations, colours, examples and non-examples Different and same Complete the sort/follow my rule/guess my rule What is a…? - Name spheres and pyramids – different sizes, orientations, colours, examples and non-examples Different and same Complete the sort/follow my rule/guess my rule What is a…? - Name cubes and cuboids – different sizes, orientations, colours, examples and non-examples Different and same Complete the sort/follow my rule/guess my rule What is a…?
	Sequencing	- Count in 5s – identify patterns and sort - Count in 2s – identify patterns and sort Odd and even - Arrange even amount into groups of 2 to check - Recognise and create repeating patterns (2 and 3 numbers and shapes) - Identify criteria that things have in common objects, shapes and numbers - Sort to a given criterion
	Fractions	- Use concrete materials to explore part and whole (that a fraction is part of a whole) - Importance of equal parts to name the fraction - Fraction of 2-D shapes including equal and non-equal parts - Recognise and name half of a shape or object - Find half of a shape or object - Recognise and name quarter of a shape - Find quarter of a shape - Find half of different objects
	Capacity and volume	- Compare and describe a capacity or volume by using more/less, full/empty, half full, nearly full, nearly empty - Measure and record capacity and volume using uniform non-standard units (cups)
	Money	- Recognise coins to 20p by colour, shape, size and words - Use the correct number of 1p coins for 2p, 5p, 10p and 20p coins - Order coins by value Link to number line - Represent an amount using coins - Adding two prices (some bonds to 10 within)
	Time	Days of the week and sequencing – before, after, next, morning, afternoon, evening

		• Months of the year – before, after, next, first Use birthdays, festivals
		• Compare the duration of two events use language of quicker and slower, i.e. which activity is quicker to do?
		• Measure and compare time using seconds
		• Compare the duration of two events use language of quicker and slower, i.e. Pete was quicker than Tim at tying his shoe laces

YEAR 1	SPRING	
	Topic	**Sequence of Learning**
	Number and place value	• Counting to 100 from 0, 1 and any number Counting back from 100 or any number Patterning - focus on the bridging across tens • Compare two numbers/amounts up to 50 using more, fewer, same • Compare three numbers/amounts up to 20 using most, least/fewest, same • Add 10 to a group to identify 10 more • Take 10 from a group to identify 10 fewer Mass/Weight and Application of Number and Place
	Mass/weight Application of number and place value	• Read, write and represent numbers to 100 – concrete, jottings, numerals • Number tracks and lines – full demarcation then labelled in 2s • Number tracks and lines – labelled in 5s • Measure and record mass using balance scales, standard units using 10g and 1g masses
	2D and 3D shapes	• Identify circles and triangles – different sizes, orientations, colours, from a wider set Different and same Hide and reveal/What is a…? • Identify square rectangles and oblong rectangles – different sizes, orientations, colours, from a wider set Different and same Hide and reveal/What is a…? • Identify spheres and pyramids – different sizes, orientations, colours, from a wider set Different and same Hide and reveal/What is a…? • Identify cubes and cuboids – different sizes, orientations, colours, from a wider set Different and same Hide and reveal/What is a…? • Sort shapes using given and own criteria
	Counting Money	• Counting objects in 2s – link concrete to pattern of numbers, identify odd and even numbers, scattered objects then represent using an array • Counting objects in 5s – link concrete to pattern of numbers, identify odd and even numbers, scattered objects then represent using an array • Counting objects in 10s – link concrete to pattern of numbers, identify odd and even numbers, scattered objects then represent using an array • Recap coins to 20p and recognise coins 50p, £1 and £2 by colour, shape, size and words • Recognise and know the value of £5, £10 and £20 notes Order all coins and notes from least to greatest value and vice versa
	Multiplication	• Recognise when two groups of items are the same size and when they are not Use concrete materials to model doubles 1-5 as adding the same number to itself Look at patterns created • Use concrete materials to model doubles 6-10 as adding the same number to itself Look at patterns created • Solve problems involving multiplication Make/draw groups of equal size Use efficient counting to find out how many altogether (this may be in ones, twos, fives and tens) • Solve problems involving multiplication Concrete Use efficient counting to find out how many altogether (this may be in ones, twos, fives and tens) • Solve problems involving multiplication Arrays Use efficient counting to find out how many altogether (this may be in ones, twos, fives and tens)
	Division	• Recognise when a whole has been split into two parts that are equal and when they are not Use concrete materials to model halving even numbers to 10 as splitting into two equal parts Look at patterns created • Use concrete materials to model halves of even numbers from 12-20 as splitting into two equal parts Look at patterns created • Solve problems involving division by sharing into two equal groups – including 5 biscuits, when the remainder can be split between the two groups • Solve problems involving division by sharing into more than two equal groups (no remainders)
	Length and mass/weight Application of number and place value	• Measure and record mass/weight using 10g and 1g masses – link to PV Consolidate comparison language • Measure and record length using base 10 cubes Consolidate comparison language • Measure and record length using base 10 rods and cubes – link to PV Consolidate comparison language • Understand that base 10 cubes are 1cm and rods are 10cm – link to ruler Measure and record length using rulers and metre rules • Measure and record length using rulers and metre rules Choose most appropriate estimate, e.g. book length 2cm, 20cm, 100cm?
	Addition and subtraction	• Use concrete materials (ten frames) to represent addition facts for twenty • Add one- and two digit numbers using an appropriate strategy • Subtract a one digit from a two digit number using an appropriate strategy Mixed + and – sentences (some related) • Use concrete materials to create linked calculations Understand/identify part – part – whole • Write mathematical statements involving addition and subtraction • Use concrete materials to create linked calculations Understand/identify part – part – whole Identify missing number in calculation • Understand/identify part – part – whole Identify missing number in calculation
	Fractions	• Recognise when a whole has been split into two parts that are equal and when they are not Use concrete materials to model halving even numbers as splitting into two equal parts • Find half of an even quantity • Recognise and name a quarter as one of four equal parts of a shape (Autumn) and object (Spring) e.g. KitKat • Find quarter of an object using objects that can be accurately quartered and those that cannot

		• Describe a capacity or volume using language of more than half full, less than half full, a quarter full
	Position and direction linked to fractions	• Describe turning movements for whole and half turns – link to fractions Describe turning movements using left and right • Describe direction using forwards/backwards, (sideways) left/right • Describe position using the terms top, middle, bottom and between and direction using up and down • Describe position using the terms on top of, in front of, above, below • Describe position using the terms on around, inside and outside
	Time linked to position and direction and fractions	• Tell the time to the hour Sequence and order familiar events of the day • Tell the time to the hour Draw hands on the clock to show times to the hour • Tell the time to the half hour (minute hand focus) • Tell the time to the half hour • Tell the time to the hour and half hour (mixed)

YEAR	SUMMER	
1	**Topic**	**Sequence of Learning**
	Number and place value	• Compare two numbers up to 20 using language of more and fewer Compare three numbers up to 20 (represented using concrete materials) using language of most and least and put them in order Identify the numbers on a fully labelled number track/line • Correctly place a number from 1-20 on the number line (labelled in 2s, 5s then only 0 and 20) • Compare three numbers up to 50 (represented using concrete materials) using language of most and least and put them in order Identify the numbers on a fully labelled number track/line • Find 10 more than a given number using base 10 equipment Find numbers on 100 square – identify 10 more • Find 10 less than a given number using base 10 equipment Find numbers on 100 square – identify 10 less
	Addition and subtraction	• Use concrete materials to solve missing number problems e.g. ? + 3 = 7, 3 = ? – 4 • Partitioning to add: 12 + 4 • Partitioning to add: 8 + 6 • Partitioning to subtract: 14 – 4 and 14 – 10 • Partitioning to subtract 14 – 6 = 14 – 4 – 2 • Choose appropriate method for addition or subtraction questions
	Capacity and volume	• Measure and record capacity and volume using manageable standard units (litres and ml)
	Fractions	• Recap of half of a shape, object, quantity Recognise and name a half as one of two equal parts of an odd quantity • Recognise and name a half as one of two equal parts of an odd quantity • Find half of an odd quantity using materials that can be cut e.g. grapes, buns • Recap of quarter of a shape and object • Recognise, name and find a quarter as one of four equal parts of a quantity (which is a multiple of 4)
	Position and direction Time	• Describe turning movements for quarter turns including using left and right • Describe turning movements for three-quarter turns including using left and right • Recap of all positional language from earlier in the year • Describe position using the terms before, after and the ordinal numbers Recognise and use the language related to dates e.g. today is Monday 18th May 2020 • Solve practical problems for time e.g. describe a task that would take you about 1 minute to complete • Measure and record time using hours (identify durations of events e.g. lunch time, time at school time sleeping at night)
	2D and 3D shapes	• Recognise and name common 2-D shapes • Recognise and name common 3-D shapes • Reason about shapes (odd one out, identifying similarities and differences) • Recognise and create a repeating pattern using more than three shapes Describe position using the terms before, after and the ordinal numbers
	Time	• Recap telling the time to the hour Drawing hands on the clock to show these times • Recap telling the time to the half hour (hour hand focus) • Recap telling the time to the half hour • Draw hands on the clock to show times to half past the hour and recognising that the hour hand is between the hour numbers • Tell the time mixed hour and half hour (and some that are not either)
	Multiplication and division	• Solve problems involving multiplication Make/draw groups of equal size Use efficient counting to find out how many altogether (this may be in ones, twos, fives and tens) • Solve problems involving division by grouping • Solve problems involving division by sharing or grouping (children represent the problem correctly)

	Statistics and counting	• Present and interpret data in block diagrams using concrete materials Recap how many in a given data category (answer and ask) • Present and interpret data in block diagrams using concrete materials How many in two given data categories (answer and ask) • Present and interpret data in block diagrams using concrete materials How many more/fewer when comparing two categories using concrete materials (ask and answer) • Problem solving/reasoning around block diagrams true/false statements
	Measurement	• Measure and record mass/weight using weighing scales with a simple scale and manageable standard units (kg/g) within children's range of counting competence Compare items and notice the movement of the needle for lighter/heavier items • Solve practical problems for mass/weight e.g. use the balance scales to find two boxes that will balance this box • Solve practical problems for length and height e.g. which of these bags would I use to fit the cricket bat in? • Solve practical problems for capacity and volume e.g. which of these vessels would hold about two of these others? • Solve mixed measurement problems
	Sorting and sequencing	• Recap counting in 2s, 5s and 10s from 0 using concrete objects • Counting in 2s, 5s and 10s from 0 using number tracks and 100 squares – spotting patterns • Sorting objects and shapes using their own criterion • Sorting numbers using their own criterion • Recognise and create a repeating pattern using more than three numbers