Hassocks Infant School

Calculation Policy

✯ Explore ✯ Respect ✯ Flourish

Date policy agreed:	March 2026
Date policy to be reviewed:	Four yearly – March 2030
Responsibility:	Maths Subject Lead – Hannah Mitchell

Document History

Date	Version	Amended By	Comment *(e.g Reason for version change)*
March 2026		Hannah Mitchell	Document created, review in four years

HIS Calculation Policy- EYFS

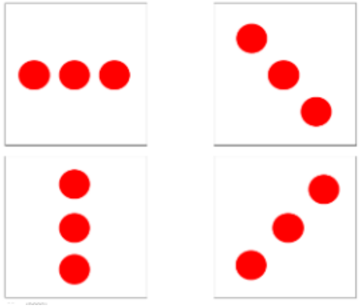
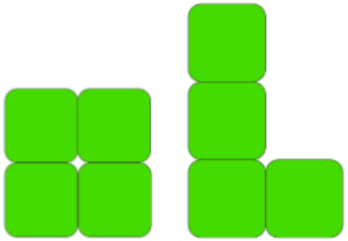
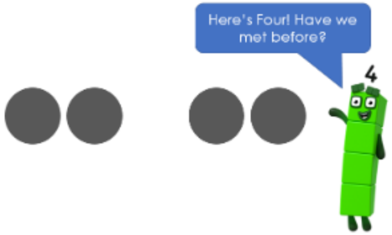
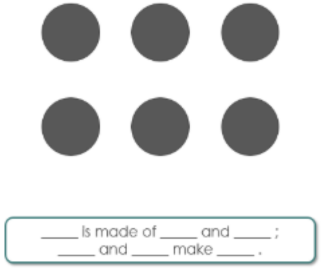
“Developing a strong grounding in number is essential so that all children develop the necessary building blocks to excel mathematically. Children should be able to count confidently, develop a deep understanding of the numbers to 10, the relationships between them and the patterns within those numbers. By providing frequent and varied opportunities to build and apply this understanding - such as using manipulatives, including small pebbles and tens frames for organising counting - children will develop a secure base of knowledge and vocabulary from which mastery of mathematics is built.” (Development Matters, 2020)

Through the Mastering Number programme (NCETM), children will develop a strong number sense, which provides the foundation for all math's learning. They will be taught skills and knowledge in four key areas; subitising, counting ordinality & cardinality, composition and comparison. Children will also take part in learning about shape, measure and capacity.

Subitising

Subisiting allows children to instantly recognise small quantities. The ability to subitise will support more complex skills such as addition, subtraction and recall of composition. It will help children to identify efficient strategies and visualise numbers and the relationships between quantities.

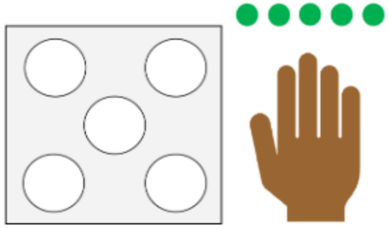
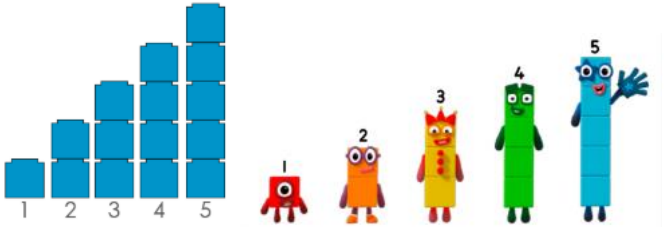
During Reception, pupils will subitise different arrangements, both unstructured and structured. This includes a Hungarian number frame, which organises amounts as ‘five and a bit’. They will make different arrangements of numbers within five and talk about what they can see, to develop their conceptual subitising skills. They will also spot smaller numbers ‘hiding’ inside larger numbers.

Within 3- **STEM: don’t count, see the amount!**	Objects and sounds	Match numerals to quantities within 5	Subitise to 6- including structured arrangements **STEM: __ is made of __ and __. __ and __ make __.**
			

Counting, Ordinality and Cardinality

Learning about counting, ordinality and cardinality will enable children to have a deep understanding of the number system. Reliable counting enables children to use 1:1 correspondence, counting large amounts and apply this skill to abstract things, such as actions. Cardinality helps children grasp the concept of "how many" and forms the basis for comparing numbers and their relative values. Ordinality is crucial for developing number sense, mental number lines, and more complex calculation strategies, as it helps children understand the linear structure and relationships within numbers.

During Reception pupils will begin by developing counting skills and knowledge, including: that the last number in the count tells us 'how many' (cardinality); to be accurate in counting, each thing must be counted once and once only and in any order; the need for 1:1 correspondence; understanding that anything can be counted, including actions and sounds. They will connect quantities and numbers to finger patterns and explore different ways of representing numbers on their finger. They will join in with verbal counts beyond 20, hearing the repeated pattern within the counting numbers and connect this to the 'staircase' pattern of the counting numbers, seeing that each number is made of one more than the previous number. Following this, children will begin to order numbers and play track games.

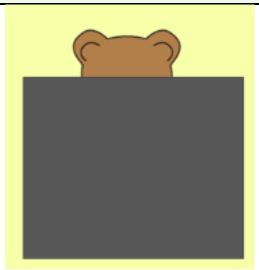
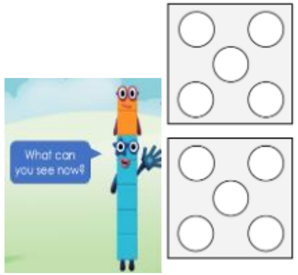
Focus on counting skills	Focus on the 'five-ness of 5' using one hand and the die pattern	Match numerals to quantities within 10 Verbal counting beyond 20	Ordinality and the 'staircase' pattern See that each number is one more than the previous number
			

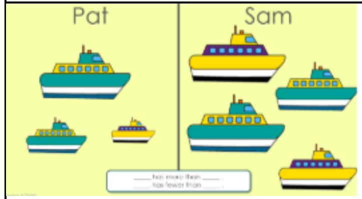
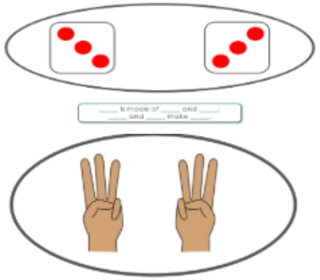
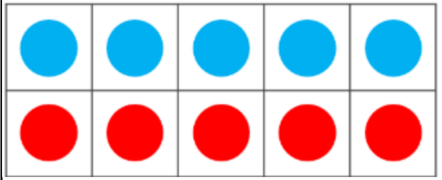
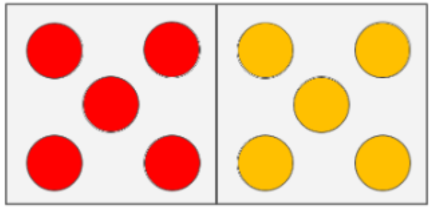
Composition

Composition helps children understand that a number can be composed of two or more smaller numbers, promoting a secure understanding of number structure. By visualising the whole number and its parts, children will be able to recall number bonds, for example ‘5 is made of 3 and 2’. Composition also underpins the understanding of addition and subtraction as inverse operations, where numbers are partitioned and put back together. It supports flexibility with number, allowing children to see numbers in different ways and apply this to various mathematical contexts. This will enable children to develop more efficient and accurate calculation strategies in Key Stage One.

During Reception pupils will begin to develop the language of ‘whole’ when talking about objects which have parts, for example puzzles or games. They will then start to identify the missing parts for numbers within 5, before exploring the structure of the numbers 6 and 7 as ‘5 and a bit’ and connect this to finger patterns and the Hungarian number frame.

Pupils will also compare quantities and numbers, including sets of objects which have different attributes, such as size or colour. They will understand that two equal groups can be called a ‘double’ and connect this to finger patterns. The children will be encouraged to sort odd and even numbers according to their ‘shape’, using Numicon and 10-frames to recognise these arrangements.

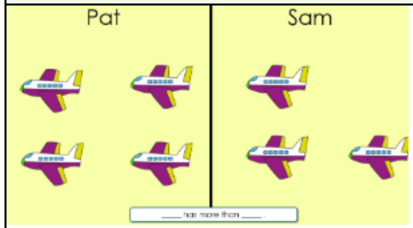
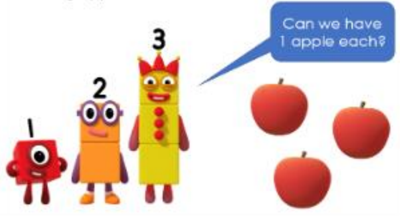
Explore how all numbers are made of 1s	Explore the concept of ‘whole’ and ‘part’	Composition of 3, 4 and 5	6 and 7 as ‘5 and a bit’
			

Compare sets and use language of comparison: *more than, fewer than, an equal number to* **STEM: __ has more than __. __ has fewer than __.**	Doubles – explore how some numbers can be made with 2 equal parts **STEM: __ is made of __ and __. __ and __ make __.**	Sorting numbers according to attributes - odd and even numbers	Composition - of 10 **STEM: __ needs __ to make 10.** **10 is made of __ and __.**
			 
	 **STEM; __ needs __ to make 10**		

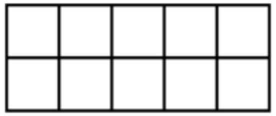
Comparison

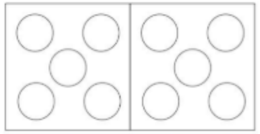
By learning to compare amounts, children develop an understanding of a number's relative value (more or less than another). It is crucial that children understand that some numbers are worth more than others and can compare quantities. When children have a secure number sense, they will be able to use this knowledge to solve calculations.

During Reception, children will compare sets of objects by matching. They will focus on equal and unequal groups when comparing numbers. They will also order numbers and play track games, as well as compare quantities and numbers, including sets of objects which have different attributes such as size or colour. They will develop a sense of magnitude, e.g. knowing that 8 is quite a lot more than 2, but 4 is only a little bit more than 2.

Comparison of sets - 'just by looking'. *Use the language of comparison: more than and fewer than* **STEM: __ has more than __.** **__ has fewer than __.**	Comparison of sets - by matching *Use the language of comparison: more than, fewer than, an equal number*	Focus on ordering of numbers to 8 *Use language of less than*	Comparison – linked to ordinality Play track games
			

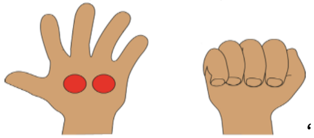
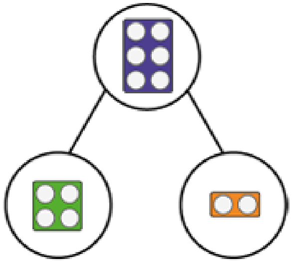
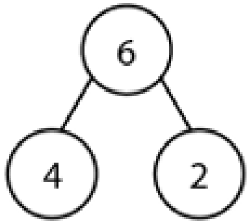
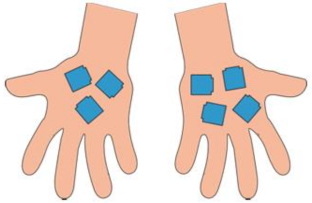
Key Resources

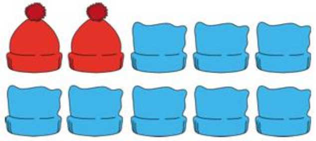
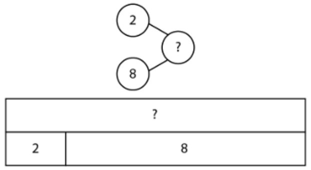
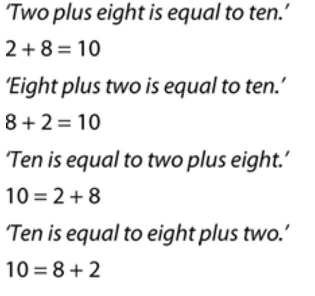
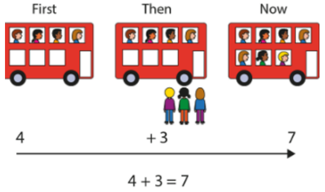
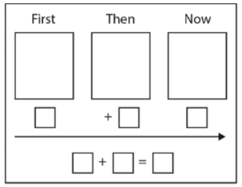
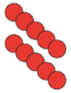
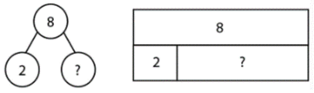


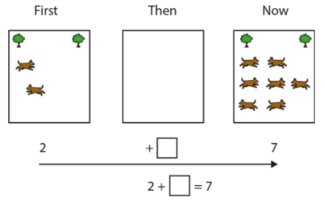
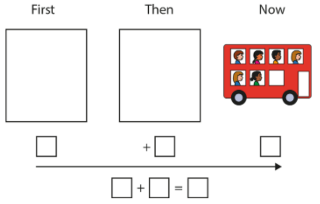
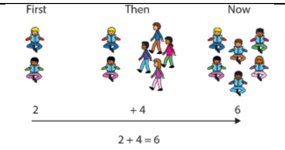
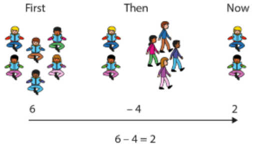
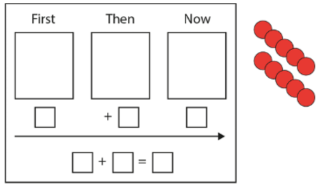
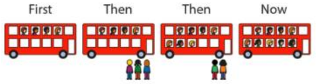
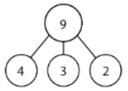
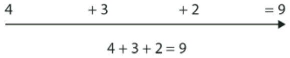


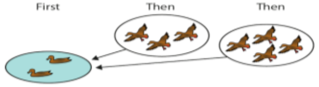
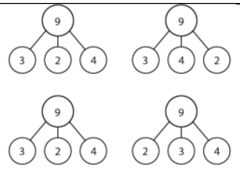
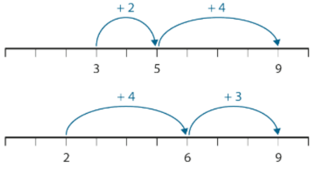
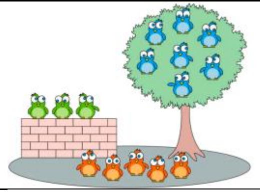
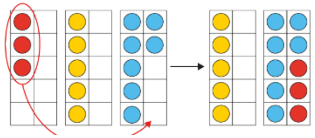
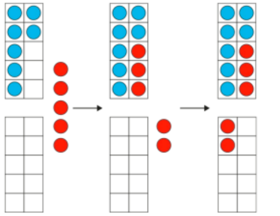
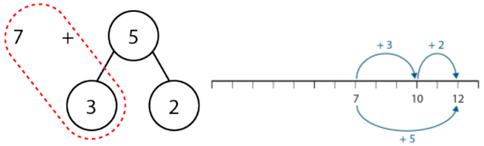
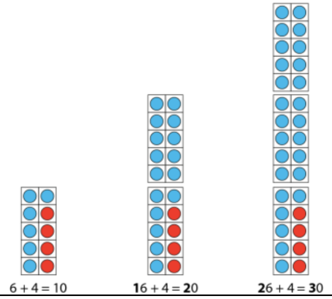
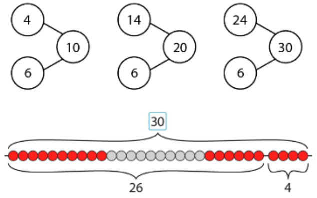
KS1- Addition

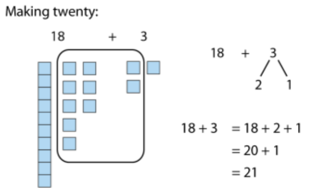
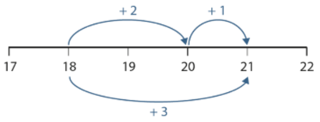
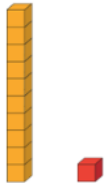
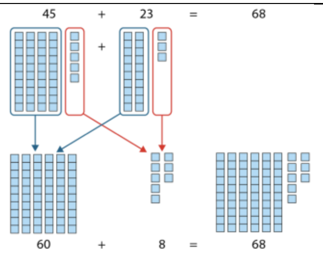
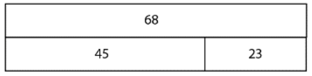
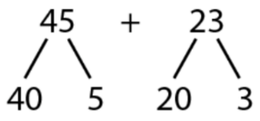
Additive structures are based on the part-part- whole relationship of numbers. This can be used to represent aggregation (combining parts to find a whole) and partitioning (splitting a whole into parts). Augmentation is also used to show a 'first, then, now' story in relation to addition. Children link abstract symbols (+, =) to real world stories and contexts. There is a strong focus on addition and subtraction being inverse operations, and using a given two parts, to find the third in a sum.

Year One			
Partitioning *Numbers to 10 can be partitioned in different ways.* *These numbers can be partitioned into 2 parts. If we know one part, we can find the other.* ***STEM: 6 is the whole; 4 is a part and 2 is a part***	*'I have six counters. There are two counters in my open hand. How many counters are there in my closed hand?'*  'I have six counters in my open hand; how many are in my closed hand?'		
Aggregation *Combining two or more parts to make a whole is called aggregation.* *The addition symbol '+' can be used to represent this.*	***'There are… and…'*** ***'We can write this as___ plus___.'*** ***'The___ represents the…'*** ***'The___ represents the...'*** 		2 + 4 4 + 2

Missing Parts *Each addend represents a part, and these combine to form the whole. We can find the value of the whole by adding the parts.* *We can represent problems with missing parts using an addition equation with a missing addend.*			*'Two plus eight is equal to ten.'* 2 + 8 = 10 *'Eight plus two is equal to ten.'* 8 + 2 = 10 *'Ten is equal to two plus eight.'* 10 = 2 + 8 *'Ten is equal to eight plus two.'* 10 = 8 + 2
Augmentation *Addition in the context of a 'first..then..now..' story. The story is linked to numerical representation. Each number represents something in the story.*	First, four children were on the bus. Then, three more got on. Now, seven children are on the bus. *Act this out*		 
Partitioning structure *Breaking a whole down into two or more parts is called partitioning; the subtraction symbol '-', can be used to represent partitioning.* ***Partitioning/ 'not' structure:*** *finding the unknown part of a subtraction structure*	There are six children. Two have put their coats on. How many of them have not put their coats on? *Act this out*	*'There are six children. Two of them have put their coats on. How many have not put their coats on?'*	 8 – 2 = 6

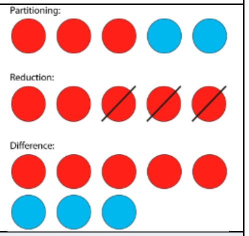
Missing Number *Given any two parts of the story, we can work out the third part; given any two numbers in the equation we can work out the third one.*	First, there were two dogs in the park. We don't know what happened then. Now, there are seven dogs in the park. How many more dogs came into the park?		*'Can you write a story which ends with six children on the bus?'* 
Inverse *Addition and subtraction are inverse operations.* *When both addends are the same we are doubling. Halving is the inverse of doubling.*	First, there were two children in the book corner. Then, four more children came in. Now there are six children in the book corner. First, there were six children in the book corner. Then, four children left. Now there are two children in the book corner. *Act this out*	 	
Year Two			
3 Addends *Addition with 3 addends can be described with an aggregation story of 3 parts. 'First, then, then, now'*	First, four children were on the bus. Then, three more got on and then two more got on. Now, nine children are sitting on the bus. *Act this out*		 

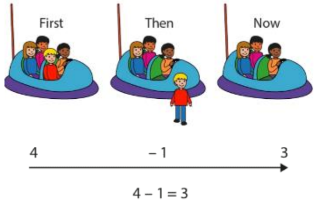
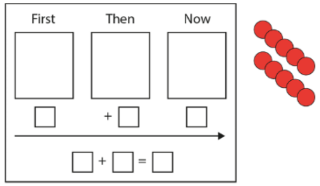
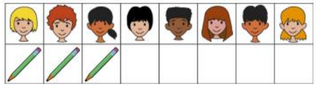
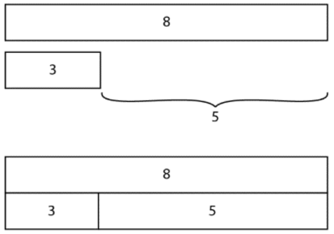
Associative and Commutative laws *The order in which addends (parts) are added or grouped does not change the sum.* ***‘When we add three numbers, the total will be the same whichever pair we add first.’***	 At first, there were two ducks in the pond, then three ducks arrived, and then four more. Now there are nine ducks in the pond.		 3 + 2 + 4 = 2 + 4 + 3
Combining *When we are adding three numbers, we choose the most efficient order in which to add them, including identifying two addends that make ten.* ***‘___ plus ___ is equal to ten, then ten plus ____ is equal to ___.’***	There are three birds on the wall, five birds on the ground, and seven in the tree. How many are there altogether? *Act this out*		Using tens frames: 
‘Make ten’ strategy *We can add two numbers which bridge the tens boundary.*	A ride at the funfair has ten seats in each carriage. You have to fill up the whole carriage before the children can get in a new one. There are seven children in the first carriage. Five more get on. How many children are there altogether? *Act out with chairs*	Tens frames: 	
‘Make ten’ single-digit from two-digit *Use number bonds to 10 to add single-digit numbers from a two-digit number*			10 = 5 + 5 41 + 9 = 50 20 = 15 + 5 42 + 8 = 50 30 = 25 + ☐ 43 + 7 = ☐

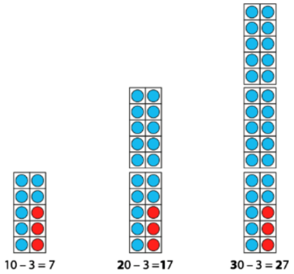
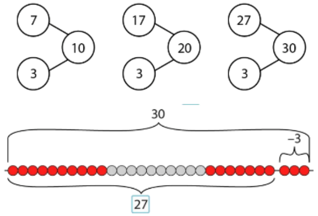
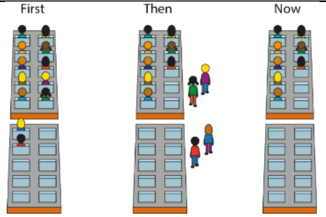
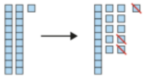
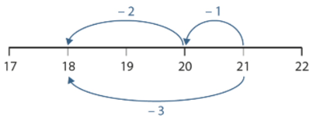
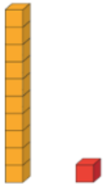
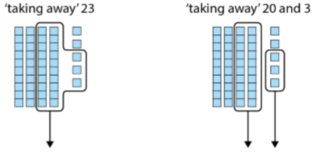
‘Make ten’ two-digit numbers *This strategy can be extended from ‘make ten’, to ‘make a multiple of ten’.* *The single-digit addend is partitioned, so that a multiple of ten can be made.*			$8 + 3 = 11$ $18 + 3 = 21$ $28 + 3 = 31$ $38 + 3 = 41$
Addition: two-digit and two-digit numbers *Two two-digit numbers can be added by partitioning one or both of them into tens and ones.*	 What is the total cost of the bike (£45) and construction set (£23)?		 

Subtraction

There are multiple structures to subtract, including ’reduction’ (take away) and ’difference’ (comparing quantities). There is a focus on teaching different strategies for children to use, rather than rote memorization. These strategies will require children to partition numbers, to subtract across the tens boundary and work with two-digit numbers. There is a focus on subtraction being the inverse of addition.

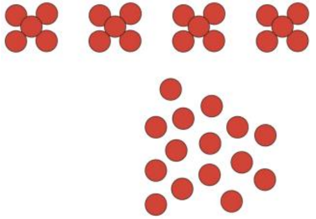
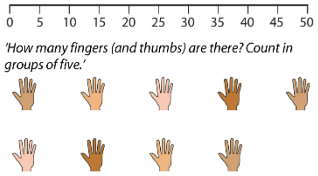
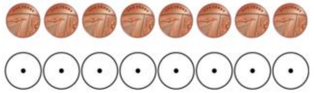
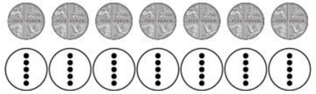
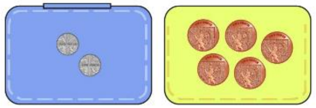
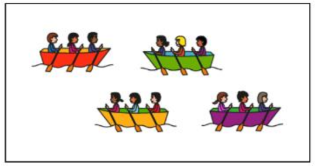


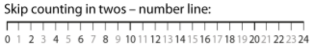
Year One			
Reduction *Subtraction in the context of a ‘first..then..now..’ story. The story is linked to numerical representation. Each number represents something in the story.*	First there were four children in the car. Then one got out. Now there are three children in the car’		
Partitioning *This is the inverse to aggregation. Start with an initial amount and split into two parts.*	‘I have four cups, one is broken, how many are not broken?’	*‘I have four cups. One of the cups is broken. How many cups are not broken?’* 	4-1=3
Year Two			
Difference Structure *Using real-world contexts, the children will see that the difference between two numbers can be represented as subtraction.* *This is conceptually more complex than partitioning or reduction, since the difference is referring to an absence.*	‘There are eight children and only three pencils, how many more do we need so each child has one?’- Act out		

‘Make ten’ single-digit from two-digit *Use number bonds to 10 to subtract single-digit numbers from a two-digit number*			10 – 3 = ☐ 20 – ☐ = 17 ☐ – 3 = 27
Subtracting through/ from ten *We can subtract across the tens boundary by subtracting through ten or subtracting from ten.*	First there were twelve children on the ride. Then four got off. Now there are eight children on the ride’		**Through ten** 12 – 4 2 2 12 – 2 = 10 10 – 2 = 8 so 12 – 4 = 8
Subtracting through ten (two-digit numbers) *Subtraction through multiples of ten involves partitioning the single-digit subtrahend .*	Subtracting through twenty:  21 – 3 1 2 21 – 3 = 21 – 1 – 2 = 20 – 2 = 18		11 – 3 = 8 21 – 3 = 18 31 – 3 = 28 41 – 3 = 38
Subtraction: two-digit and two-digit numbers *A two-digit number can be subtracted from a two-digit number by partitioning the subtrahend into tens and ones.*	 There were 45 children in the playground, 23 of them went to eat lunch, how many are still in the playground?		45 – 23 20 3 45 – 23 = 45 – 20 – 3

Multiplication & Division

The NCETM aim to develop multiplicative thinking, this means to move beyond treating multiplication as repeated addition, instead understanding the relationship between factors and products. Children will make links between multiplication and division operations. They will also be encouraged to use known facts, and to partition numbers to help solve calculations. Children are taught to understand the rules of multiplication work, including the commutative law, and non-commutative law for division.

Year One			
Counting in 2s, 5s and 10s *Count forwards and backwards in multiples of 2, 5 and 10, up to 10 multiples, beginning with any multiple, and count forwards and backwards through the odd numbers.*		 0 5 10 15 20 25 30 35 40 45 50 *'How many fingers (and thumbs) are there? Count in groups of five.'*	
Multiplication and coins *By counting in groups of 2, 5 or 10 can be used to work out the value of a set of identical low-denomination coins* *Find the value of a set of coins and pre-money tokens.* *Compare sets and different quantities.*			- *'Which purse would you rather have?'* 
Year Two			
Multiplication and representing equal groups *Equal groups can be represented with a multiplication expression.* *The multiplication symbol can be used to show repeated addition.* - ***'There are ___ groups of ___.'*** to the multiplication expression: - ___ × ___	 Use counters to represent the expression 4x3		*'Fill in the missing numbers.'* $4 + \square + 4 = 3 \times \square$

<table>
<tr>
<td>Times Tables: groups of 2 and commutativity
For equally grouped objects, the number of groups is a factor, the group size is a factor, and the overall number of objects is the product; this can be represented with a multiplication equation. Counting in multiples of two can be used to find the product, when the group size is two.</td>
<td>Skip counting in twos- number line

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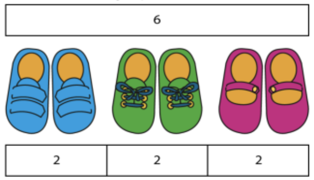
<td>
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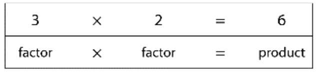
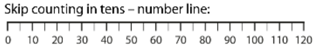
<td><table><tr><td>3</td><td>×</td><td>2</td><td>=</td><td>6</td></tr><tr><td>factor</td><td>×</td><td>factor</td><td>=</td><td>product</td></tr></table></td>
</tr>
<tr>
<td>Times Tables: groups of 5 and 10
Counting in multiples of five or ten can be represented by the 5- or 10-times tables. Adjacent multiples have a difference of 5/ 10 .</td>
<td>Skip counting in tens- number line

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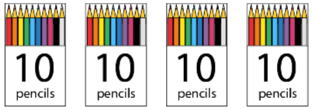
<td>
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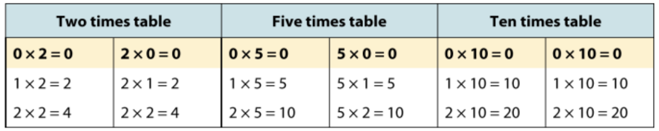
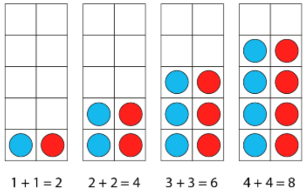
<td>

4 x 10 = 40</td>
</tr>
<tr>
<td>Times Tables: factors of 0 and 1
Use non-contextualised multiplication equations, to spot patterns to generalise about cases when zero or one is a factor, irrespective of the factor order.</td>
<td colspan="3"><table><tr><th colspan="2">Two times table</th><th colspan="2">Five times table</th><th colspan="2">Ten times table</th></tr><tr><td>0 × 2 = 0</td><td>2 × 0 = 0</td><td>0 × 5 = 0</td><td>5 × 0 = 0</td><td>0 × 10 = 0</td><td>0 × 10 = 0</td></tr><tr><td>1 × 2 = 2</td><td>2 × 1 = 2</td><td>1 × 5 = 5</td><td>5 × 1 = 5</td><td>1 × 10 = 10</td><td>1 × 10 = 10</td></tr><tr><td>2 × 2 = 4</td><td>2 × 2 = 4</td><td>2 × 5 = 10</td><td>5 × 2 = 10</td><td>2 × 10 = 20</td><td>2 × 10 = 20</td></tr></table>Comparing multiplication equations when zero or one is a factor</td>
</tr>
<tr>
<td>Doubling
If two is a factor, knowledge of doubling facts can be used to find the product; problems about doubling can be solved using facts from the two times table.</td>
<td>There are two groups of three.
There are three, two times.
This is the same as double three.</td>
<td>
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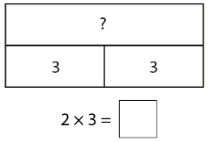
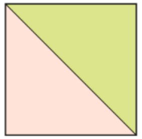
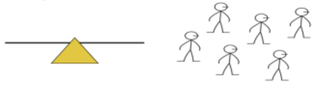
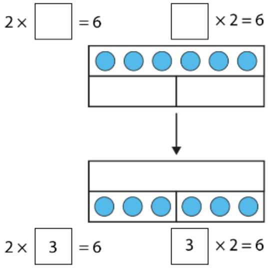
<td>

• 'Two groups of three.'
• 'Three, two times.'
• 'Double three.'</td>
</tr>
<tr>
<td>Halving
Halving is the inverse of doubling; problems about halving can be solved using facts from the two times table and known doubling facts.</td>
<td>Half of a whole:

• 'The whole is split into two equal parts.'
• 'Each part is one half of the whole.'</td>
<td>Finding half of a number of objects:
• 'There are six stick-children who want to play on the seesaw; half of them should sit on each side. How many is half of six?'

Find half of a number of objects:
There are six children who want to play on the see-saw; half of them should sit on each side. How many is half of six?</td>
<td>
 </td>
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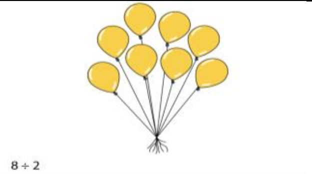
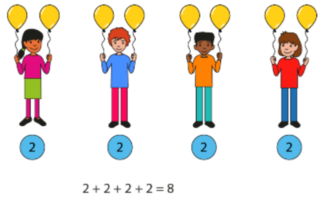
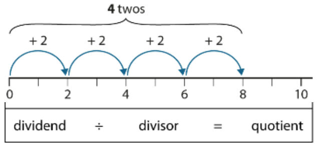
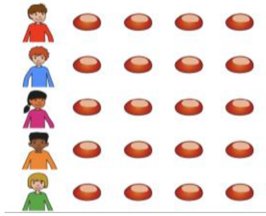
</table>

Structure: Quotitive division *Division equations can be used to represent ‘grouping’ problems, where the total quantity (dividend) and the group size (divisor) are known; the number of groups (quotient) can be calculated by skip counting in the divisor. (quotitive division)*	 I have 8 balloons. I give 2 balloons to each child. How many children get balloons?		
Partitive division *Division equations can be used to represent ‘sharing’ problems, where the total quantity (dividend) and the number we are sharing between (divisor) are known; the size of the shares (quotient) can be calculated by skip counting in the divisor. (partitive division)*	 I have twenty conkers and I share them equally between five children. How many conkers does each child get? *Act this out*	‘One five is one each. That’s five.’ ‘Four fives is four each. That’s twenty.’ 20 ÷ 5 = 4 ‘Twenty divided between five is equal to four each.’ So, each child gets four conkers.