

Dropmore Infant School
Written Calculation Policy



Addition

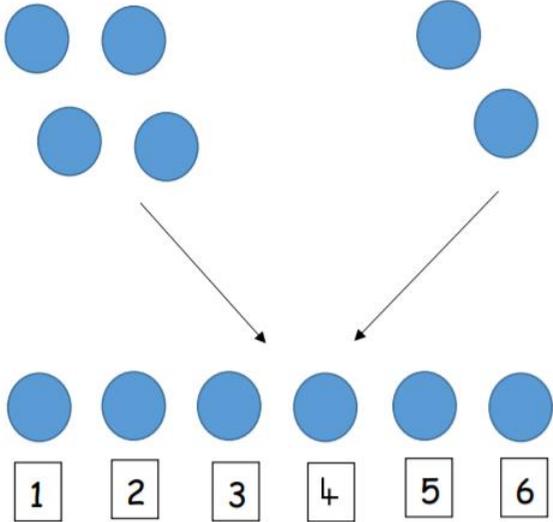
Children need to understand the concept of addition as:

- Combining two or more groups to give a total or sum.
- Increasing an amount

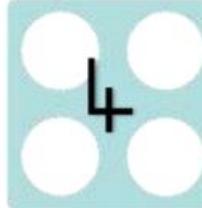
They also need to understand and work with certain principles:

- Inverse of subtraction
- It is commutative – $5 + 3 = 3 + 5$
- It is associative – $5 + 3 + 7 = 5 + (3+7)$

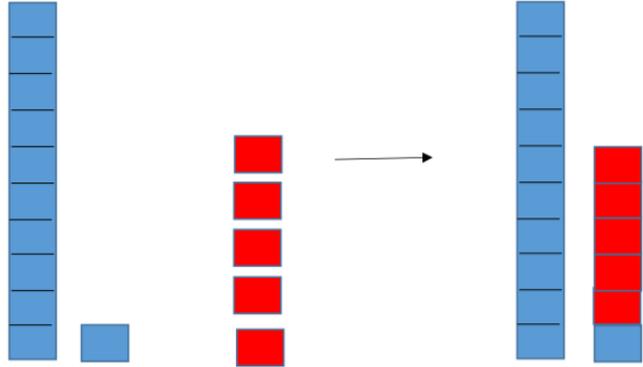


Stage 1- Addition – counting altogether (EYFS)			
Teaching	Examples	Success criteria	Skill and knowledge
<p>Children should count two sets of quantities and find how many altogether.</p> <p>Children are taught that addition is combining of two or more amounts. They begin by counting all of the items in the groups. Children are encouraged to think of a mental image of the size of numbers.</p>		<ul style="list-style-type: none">Children point to each object as they count (touch count)	<ul style="list-style-type: none">Understanding that a group changes quantity when something is added
		Vocabulary	Resources
		Add Plus More Greater quantity Addition Altogether Increasing	Counters Beads Counting objects Unifix cubes

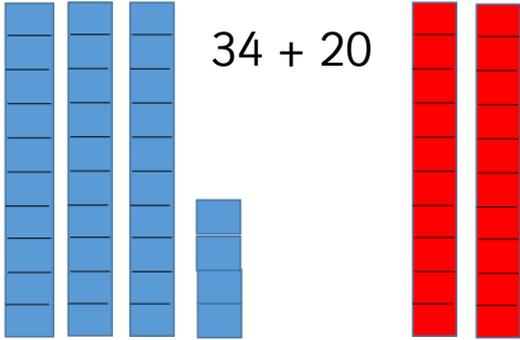
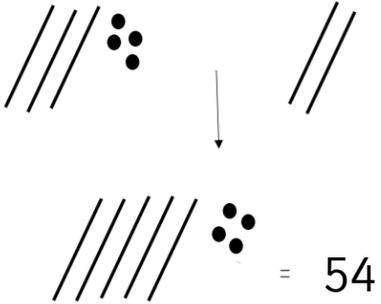


Stage 2- Addition – counting on (EYFS/Y1)			
Teaching	Examples	Success criteria	Skill and knowledge
<p>Children should count two sets by covering the larger amount. They should then count on the other amount.</p> <p>Children learn to think about addition as combining amounts in practical and real-life situations. They begin to record addition number sentences e.g. $4 + 2 = 6$</p>	<p>Other resources can be used to demonstrate counting on. Numicon is very helpful for children to recognise the value of the number.</p>   	<ul style="list-style-type: none">• Start with the greatest number• Count on• Find the solution	<ul style="list-style-type: none">• Knowing the numerical value of a quantity e.g. recognising and identifying the '4' piece of numicon without touch counting the holes• Being able to identify the largest quantity to begin with• Understanding of symbols + and =• Beginning to see and recognise patterns within numbers and groups of numbers
		Vocabulary	Resources
		Add Plus More Greater quantity Addition Altogether Increasing Count on What comes next?	Counters Beads Counting objects Unifix cubes Numicon Base 10 cubes Cuisenaire
Fluency facts - Number bonds to 10 and 20			

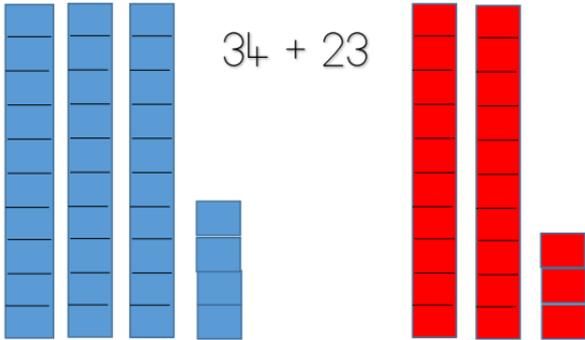
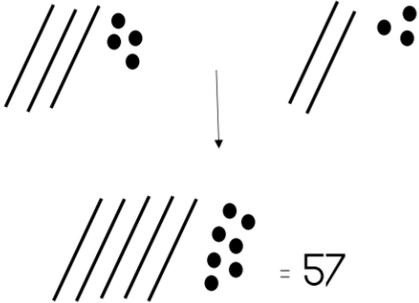


Stage 3 - Addition – using base 10 to add a 2-digit number and ones (Y1)			
Teaching	Examples	Success criteria	Skill and knowledge
<p>Children use base 10 equipment to support their developing understanding of addition</p> <p>Children should also start to draw their own representations of base 10 equipment using lines for tens and dots for ones.</p>	<p>$11 + 5 =$</p>  <p>11 cubes are lined up (1 ten and 1 unit/ one). 5 cubes are added to the line of 11 giving a total of 16.</p> <p>Fluency in partitioning numbers</p>	<ul style="list-style-type: none">• Start with the greatest number• Split into tens and ones• Count on• Find the solution	<p>Counting forwards in ones</p> <ul style="list-style-type: none">• Counting using one to one correspondence• Being able to identify the largest quantity• Understanding place value of tens and ones• Understanding of symbols = and +
		Vocabulary	Resources
		<p>Add Plus More Sum Addition Increasing Tens Ones Units Altogether Count on What comes next?</p>	<p>Base 10 cubes (including interlinking 1cm cubes) Other resources may be used to support this but must reflect place value of tens and ones: Place value Counters Bead strings Unifix cubes Numicon Cuisenaire</p>

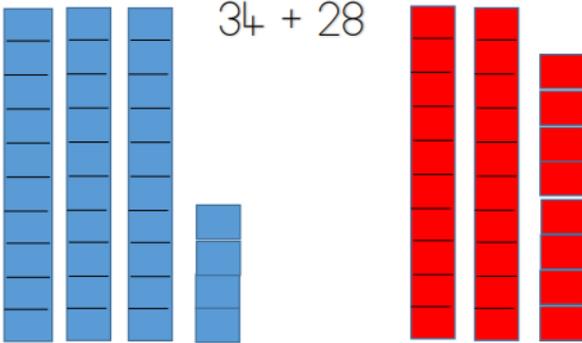


Stage 4 - Addition – using base 10 to add a 2-digit number and tens (Y1/Y2)				
Teaching	Examples	Success criteria	Skill and knowledge	
Children use base 10 equipment to support their developing understanding of addition Children should also start to draw their own representations of base 10 equipment using lines for tens and dots for ones.	 <p>34 + 20</p>	<ul style="list-style-type: none">• Start with the greatest number• Split into tens and ones• Count on• Find the solution	Counting forwards in ones <ul style="list-style-type: none">• Counting using one to one correspondence• Being able to identify the largest quantity• Understanding place value of tens and ones• Understanding of symbols = and +	
	Children should draw the diagrams of the equipment.	 <p>= 54</p>	Vocabulary Add Plus More Sum Addition Increasing Tens Ones Units Altogether Count on What comes next?	Resources Base 10 cubes (including interlinking 1cm cubes) Other resources may be used to support this but must reflect place value of tens and ones: Place value Counters Bead strings Unifix cubes Numicon Cuisenaire

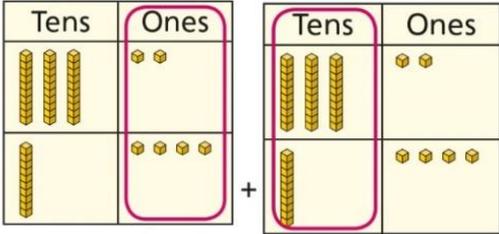
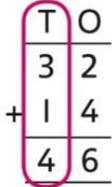
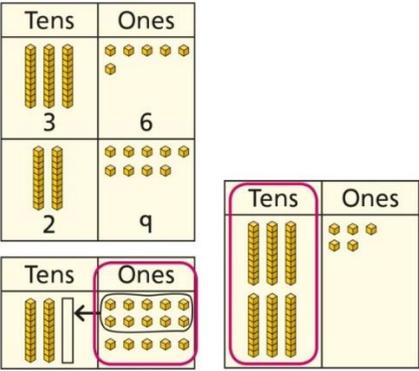
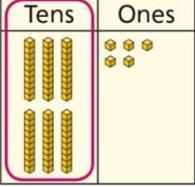


Stage 5 - Addition – Using Base 10 – 2-digit addition not crossing the boundary (Y2)				
Teaching	Examples	Success criteria	Skill and knowledge	
Children continue to use base 10 equipment to support their calculations, with an increasing number of digits Children should be taught how to record their own drawing of base 10 equipment using lines for tens and dots for ones.		<ul style="list-style-type: none">• Draw/ collect equipment• Count the ones first• Count the tens• Add the tens and ones together• Find the solution	Counting forwards in ones and tens <ul style="list-style-type: none">• Understanding place value of tens and ones• Understanding which digit represents tens and which represents ones• Partition into tens and ones• Ones must be counted first (for the purposes of teaching exchanging)	
	Children should draw the diagrams of the equipment.		Vocabulary Add Plus More Sum Addition Increasing Tens Ones Digit Partition Multiples Multiples of 10	Resources Base 10 cubes (including interlinking 1cm cubes) Other resources may be used to support this but must reflect place value of tens and ones: Place value Counters Bead strings Unifix cubes Numicon Cuisenaire



Stage 6 - Addition – Using Base 10 – 2-digit addition crossing the boundary (Y2)			
Teaching	Examples	Success criteria	Skill and knowledge
<p>Children continue to use base 10 equipment to support their calculations, with an increasing number of digits and with crossing the tens boundary.</p> <p>Children will be taught to exchange up and change 10 ones/ units for a ten piece.</p> <p>Once children have exchange they then follow the success criteria</p>	<p>34 + 28</p>  <p>Children should draw the diagrams of the equipment and show their exchange</p> 	<ul style="list-style-type: none">• Draw/ collect equipment• Count the ones first• Exchange up the ones for ten if there are more than 10 ones.• Count the tens• Add the tens and ones together• Find the solution	<ul style="list-style-type: none">• Counting forwards in ones and tens• Understanding place value of tens and ones<ul style="list-style-type: none">• Understanding which digit represents tens and which represents ones• Partition into tens and ones• Ones must be counted first (for the purposes of teaching exchanging)
		<p>Vocabulary</p> <p>Add Plus More Sum Addition Increasing Tens Ones Digit Partition Exchanging Crossing the boundary</p>	<p>Resources</p> <p>Base 10 cubes (including interlinking 1cm cubes)</p> <p>Other resources may be used to support this but must reflect place value of tens and ones:</p> <p>Place value Counters</p> <p>Bead strings</p> <p>Unifix cubes</p> <p>Numicon</p> <p>Cuisenaire</p>



Stage 7 - Addition – beginning to use the column method (Y2/ Y3)			
Teaching	Examples	Success criteria	Skill and knowledge
<p>Children are applying prior learning of partitioning into writing the addition in the column method.</p> <p>Children will be taught to exchange up and change 10 ones/ units for a ten piece.</p> <p>Once children have exchanged up they then follow the success criteria</p> <p>Children use place value grid to represent their numbers, they then exchange ten ones for a ten piece and move this to the correct column. They then follow the success criteria.</p>	<p>Not crossing the boundary</p>  $\begin{array}{r l} \text{T} & \text{O} \\ 3 & 2 \\ + 1 & 4 \\ \hline 4 & 6 \end{array}$ 	<ul style="list-style-type: none"> • Draw/ collect equipment • Count the ones first • Exchange up the ones for ten if there are more than 10 ones. • Count the tens • Add the tens and ones together • Find the solution 	<p>Skill and knowledge</p> <ul style="list-style-type: none"> • Counting forwards in ones and tens • Understanding place value of tens and ones • Understanding which digit represents tens and which represents ones • Partition into tens and ones • Ones must be counted first (for the purposes of teaching exchanging)
	<p>Exchanging/ crossing the boundary-</p>  $\begin{array}{r l} \text{T} & \text{O} \\ 3 & 6 \\ + 2 & 9 \\ \hline 6 & 5 \end{array}$ 		<p>Vocabulary</p> <p>Add Plus More Sum Addition Increasing Tens Ones Digit Partition Exchanging Crossing the boundary Column Place Value Carrying Over</p>



Subtraction

Children need to understand the concept of subtraction as:

- Removal of an amount from a larger group (take away)
- Comparison of two amounts (difference)

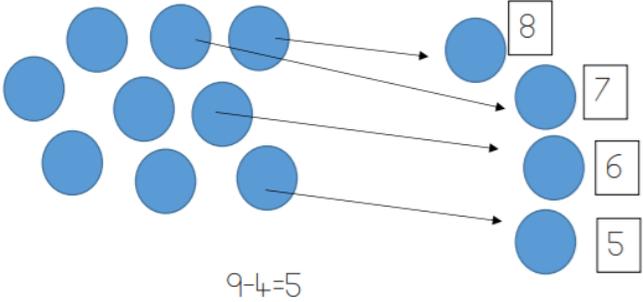
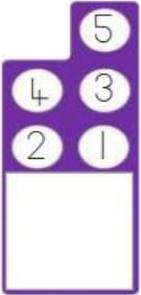
They also need to understand and work with certain principles:

- Inverse of addition
- It is NOT commutative – $5 - 3 \neq 3 - 5$
- It is NOT associative – $(9-3)-2 \neq 9-(3-2)$

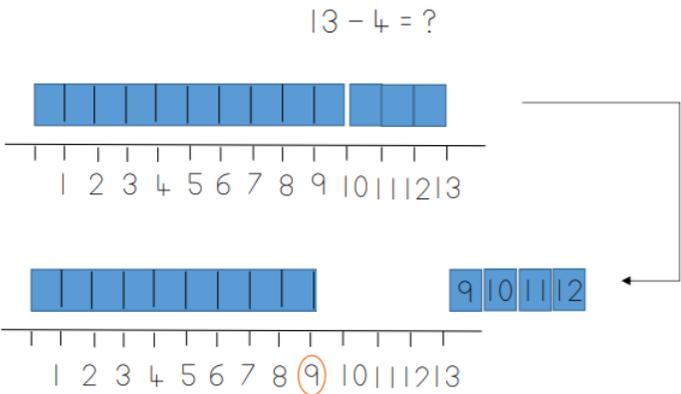


Stage 1 - Subtraction – Taking away (EYFS)			
Teaching	Examples	Success criteria	Skill and knowledge
<p>Children will take the required amount of objects by taking one at a time. Children will count how many objects are left.</p> <p>Children are encouraged to think of a mental image of the size of numbers.</p>	<p>The diagram shows a group of 9 blue circles. Four arrows point to four of these circles, indicating they are being removed. To the right, a group of 5 blue circles remains. Below this, a number line is shown with five blue circles above the numbers 1, 2, 3, 4, and 5. A box containing '9 - 4' is positioned above the top-right circle of the initial group.</p>	<ul style="list-style-type: none">Children remove an object one at a time to the required amountChildren point to each object as they count (touch count)	<p>Understanding that a group changes quantity when something is taken away</p> <ul style="list-style-type: none">Encourage children to think of a mental image of the value of the number (quantity)Knowing the numerical value of a quantity e.g. recognising and identifying the '4' piece of Numicon without touch counting the holes
		Vocabulary	Resources
		Subtract Take away Less Fewer Smaller quantity Subtraction How many left? Decreasing	Counters Beads Counting objects Unifix cubes

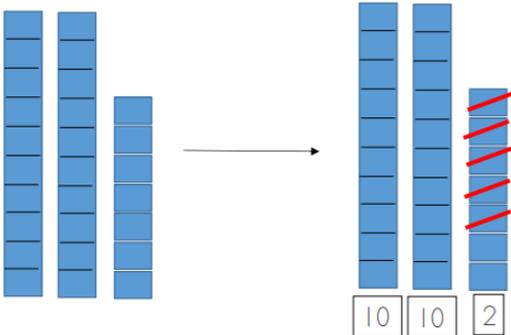
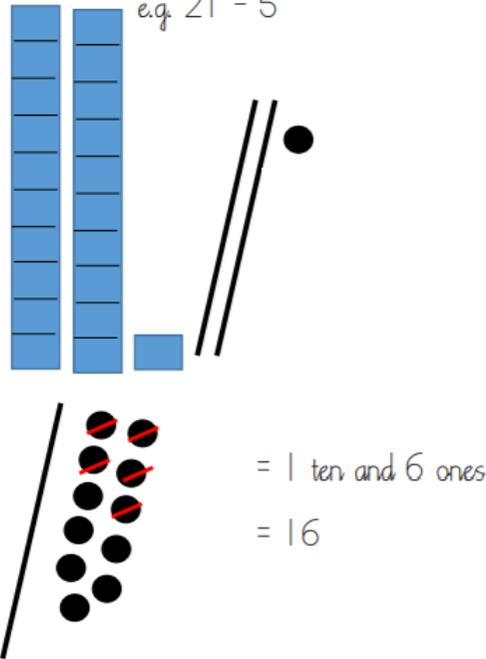


Stage 2 - Subtraction – counting back (Y1)			
Teaching	Examples	Success criteria	Skill and knowledge
<p>Children will develop this skill of taking away by counting back in sequence as they 'take away' an item.</p> <p>Children learn to think about subtraction as 'take away' in practical and real-life situations. They begin to record number sentences. E.g. $9 - 4 = 5$</p>	 <p>Numicon is a valuable resource that can be used to support counting back.</p>  <p>A cover is used to show the removal of the number</p>	<ul style="list-style-type: none"> Start with the greatest number Take away one item at a time Say out loud the number each time you count back. 	<ul style="list-style-type: none"> Knowing the numerical value of a quantity e.g. recognising and identifying the '4' piece of numicon without touch counting the holes <ul style="list-style-type: none"> Being able to count backwards in ones
		Vocabulary	Resources
		<p>Subtract Take away Less Fewer Smaller quantity Subtraction How many left? Decreasing Count back What comes before?</p>	<p>Counters Beads Counting objects Unifix cubes</p>



Stage 3 - Subtraction – Base 10 and Number lines/ tracks (Y1)			
Teaching	Examples	Success criteria	Skill and knowledge
<p>Children use base 10 equipment alongside a number track to develop their understanding of subtraction.</p> <p>Number tracks are preferable to number lines as they give children parameters to place their objects within.</p>	<p style="text-align: center;">$13 - 4 = ?$</p>  <ol style="list-style-type: none"> 1. 13 cubes are lined up 2. 4 cubes are removed from the end of the line. Children are encouraged to count back through the sequence of numbers each time they remove one cube. 3. The number track supports learning as the children can use this check they have counted back to the correct number. 	<ul style="list-style-type: none"> • Start with the greatest number • Take away one item at a time • Say out loud the number each time you count back. 	<ul style="list-style-type: none"> • Counting backwards in ones • Partition numbers in different ways e.g. 5 could be partitioned as 3 and 2 or 1 and 4 • Know and quickly derive number bonds up to and including 10
		Vocabulary	Resources
		Subtract Take away Less Fewer Smaller quantity Subtraction How many left? Decreasing Count back What comes before? Partition Number facts Subtraction facts What do you know? Tens Ones	Base 10 Number tracks Number lines Other place value objects may be used alongside the main resources.

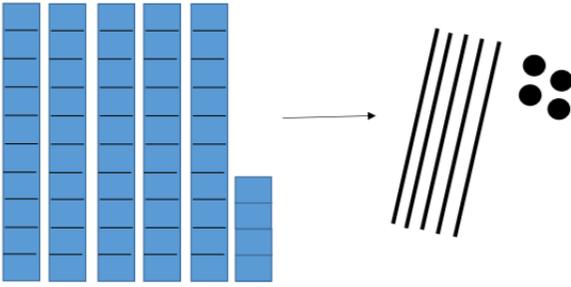


Stage 4 - Subtraction – Base 10 with a 2-digit number and subtracting ones (Y2)			
Teaching	Examples	Success criteria	Skill and knowledge
<p>Children use base 10 to represent 2-digit numbers and to subtract them from their first number.</p> <p>Children are taught to draw the base ten using a line for a ten and a dot for a one.</p> <p>Subtraction becomes more difficult for children when crossing the boundary when exchanging is needed.</p> <p>When a number contains multiple tens children find it confusing to suggest subtracting ones. Where there is a greater amount of ones that needs to be subtracted a ten should be exchanged down for 10 ones.</p>	<p>No exchange down:</p> <p>$27 - 5 = ?$</p> 	<ul style="list-style-type: none">• Start with the greatest number• Exchange down a ten if needed• Subtract ones• Subtract tens	<ul style="list-style-type: none">• Counting backwards in ones• Partitioning numbers into 10s and 1s• Starting quantity is plotted at the end of a number line
	<p>Exchange down:</p> <p>e.g. $21 - 5$</p> 	<p>Vocabulary</p> <p>Subtract Take away Less Fewer Smaller quantity Subtraction How many left? Decreasing Count back What comes before? Partition Number facts Subtraction facts What do you know? Tens Ones</p>	<p>Resources</p> <p>Base 10 Number tracks Number lines</p> <p>Other place value objects may be used alongside the main resources.</p>



Stage 5 - Subtraction – Subtracting using Base 10 with two 2-digit numbers (Y2)			
Teaching	Examples	Success criteria	Skill and knowledge
<p>Children use base 10 to represent 2-digit numbers and to subtract them from the first number.</p> <p>Children are taught to draw the base ten using a line for a ten and a dot for a one.</p> <p>It is highly encouraged for children to use jottings and diagrams to support them.</p> <p>Subtraction becomes more difficult for children when crossing the boundary when exchanging is needed. This is explained in stage 6.</p>	<p>No exchange down:</p> <p>The diagram shows five tens rods and four ones units. Two tens rods are crossed out, and one ten rod is replaced by one ten rod and one ones unit. The remaining blocks are three tens rods and one ones unit, representing 31.</p> <p>$54 - 23 = ?$</p> <p>$= 3 \text{ tens and } 1 \text{ one}$ $= 31$</p>	<ul style="list-style-type: none"> Start with the greatest number Count the ones to see if exchanging is needed Exchange down a ten if needed Subtract ones Subtract tens 	<ul style="list-style-type: none"> Counting backwards in tens Understanding of place value of tens and ones Starting quantity is plotted at the end of a number line
		Vocabulary	Resources
		Subtract Take away Less Fewer Smaller quantity Subtraction How many left? Decreasing Count back What comes before? Partition Number facts Subtraction facts What do you know? Tens Ones Jumps of 10 Multiples Multiples of 10	Base 10 Number tracks Number lines Other place value objects may be used alongside the main resources.



Stage 6 - Subtraction – Subtracting using Base 10 with two 2-digit numbers (Y2)			
Teaching	Examples	Success criteria	Skill and knowledge
<p>Children use base 10 to represent 2-digit numbers and to subtract them from the first number.</p> <p>Children are taught to draw the base ten using a line for a ten and a dot for a one.</p> <p>It is highly encouraged for children to use jottings and diagrams to support them.</p> <p>Subtraction becomes more difficult for children when crossing the boundary when exchanging is needed.</p> <p>Children are taught to draw/collect equipment of only the first number. Then to count the ones to check if they need to exchange. The exchange of a ten piece to ten ones takes place. Then children carry on the rest of the success criteria.</p>	<p>Exchange down:</p> <p>$54 - 28$</p>    <p>= 2 tens and 6 ones = 26</p>	<ul style="list-style-type: none"> • Start with the greatest number • Count the ones to see if exchanging is needed • Exchange down a ten if needed • Subtract ones • Subtract tens 	<ul style="list-style-type: none"> • Starting quantity is plotted at the end of a number line • Counting forwards and backwards in jumps of tens and ones
		<p>Vocabulary</p> <p>Subtract Take away Less Fewer Smaller quantity Subtraction How many left? Decreasing Count back What comes before? Partition Number facts Subtraction facts What do you know? Tens Ones Jumps of 10 Multiples Multiples of 10</p>	<p>Resources</p> <p>Base 10 Number tracks Number lines</p> <p>Other place value objects may be used alongside the main resources.</p>



Stage 7 - Subtraction - Column Subtraction (Y2/Y3)							
Teaching	Examples	Success criteria	Skill and knowledge				
<p>Children are applying prior learning of partitioning into writing the subtraction in the column method.</p> <p>Children will be taught to exchange down and change 1 ten for ten ones.</p> <p>Once children have exchanged up they then follow the success criteria</p> <p>Children use place value grid to represent their numbers, they then exchange 1 ten for ten ones and move these to the correct column. They then follow the success criteria.</p>	<p>No exchange down:</p> <table border="1" style="display: inline-table; margin-right: 20px;"> <tr><th>Tens</th><th>Ones</th></tr> <tr><td></td><td></td></tr> </table> $\begin{array}{r} \text{T} \quad \text{O} \\ 4 \quad 5 \\ - 1 \quad 2 \\ \hline 3 \quad 3 \end{array}$	Tens	Ones			<ul style="list-style-type: none"> Start with the greatest number Count the ones to see if exchanging is needed Exchange down a ten if needed Subtract ones Subtract tens 	<ul style="list-style-type: none"> Counting forwards in ones and tens Understanding place value of tens and ones Understanding which digit represents tens and which represents ones Partition into tens and ones Ones must be counted first (for the purposes of teaching exchanging)
	Tens	Ones					
	<p>Exchange down:</p> <table border="1" style="display: inline-table; margin-right: 20px;"> <tr><th>Tens</th><th>Ones</th></tr> <tr><td></td><td></td></tr> </table> $\begin{array}{r} \text{T} \quad \text{O} \\ 4 \quad 5 \\ - 2 \quad 7 \\ \hline \end{array}$	Tens	Ones			Vocabulary	Resources
	Tens	Ones					
	<table border="1" style="display: inline-table; margin-right: 20px;"> <tr><th>Tens</th><th>Ones</th></tr> <tr><td></td><td></td></tr> </table> $\begin{array}{r} \text{T} \quad \text{O} \\ \cancel{3} \quad 15 \\ - 2 \quad 7 \\ \hline \end{array}$	Tens	Ones			<p>Subtract Take away Less Fewer Smaller quantity Subtraction How many left? Decreasing Count back What comes before? Partition Number facts Subtraction facts What do you know? Tens Ones Jumps of 10 Multiples Multiples of 10 column row</p>	<p>Base 10 Number tracks Number lines</p> <p>Other place value objects may be used alongside the main resources.</p>
Tens	Ones						
	<table border="1" style="display: inline-table; margin-right: 20px;"> <tr><th>Tens</th><th>Ones</th></tr> <tr><td></td><td></td></tr> </table> $\begin{array}{r} \text{T} \quad \text{O} \\ \cancel{3} \quad 15 \\ - 2 \quad 7 \\ \hline 8 \end{array}$	Tens	Ones				
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	<table border="1" style="display: inline-table; margin-right: 20px;"> <tr><th>Tens</th><th>Ones</th></tr> <tr><td></td><td></td></tr> </table> $\begin{array}{r} \text{T} \quad \text{O} \\ \cancel{3} \quad 15 \\ - 2 \quad 7 \\ \hline 1 \quad 8 \end{array}$	Tens	Ones				
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Multiplication

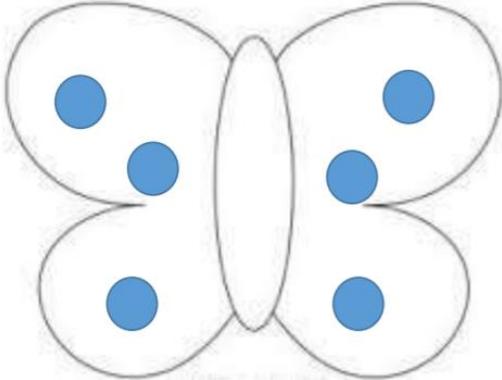
Children need to understand the concept of multiplication as:

- Repeated addition
- Can be represented as an array

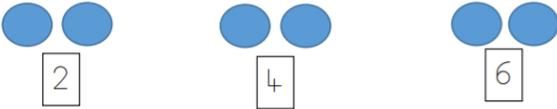
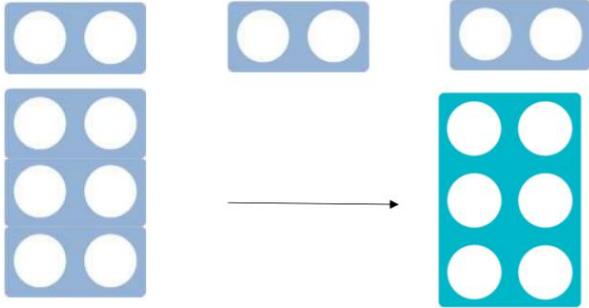
They also need to understand and work with certain principles:

- It is the inverse of division
- It is commutative
- It is associative

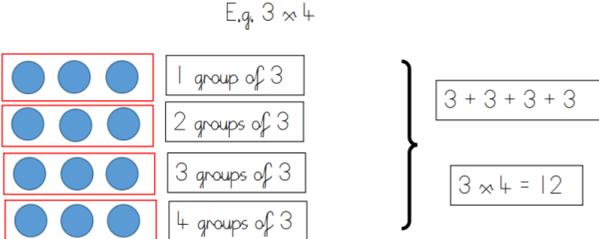


Stage 1 - Multiplication - Doubling (EYFS)			
Teaching	Examples	Success criteria	Skill and knowledge
<p>Children begin learning about the concept of multiplication through doubling.</p> <p>These will be practical, real life situations.</p> <p>Children are encouraged to develop a mental image of the size of numbers. They can begin to record these situations using pictures and diagrams.</p>	<p>The butterfly has the same number of spots on both sides of the wings.</p>  <p>3 spots on one side and 3 spots on the other side. $3+3 = 6$ or double 3 is 6</p> <p>Numicon can be used on the wings to demonstrate doubles.</p>	<p>Touch counting where needed.</p>	<ul style="list-style-type: none">• Understanding the meaning of the language 'same'• Understanding basic equivalence
		<p>Vocabulary</p>	<p>Resources</p>
		<p>Double Same Equal</p>	<p>Butterfly/ ladybird templates Numicon Counters</p>

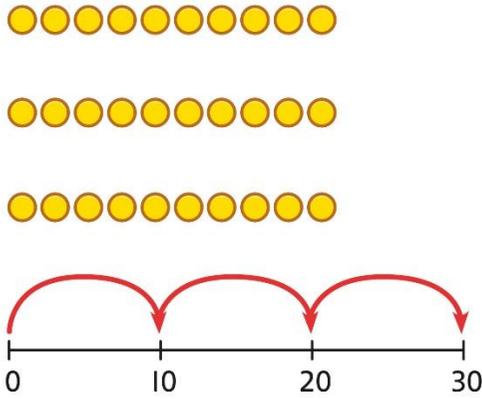


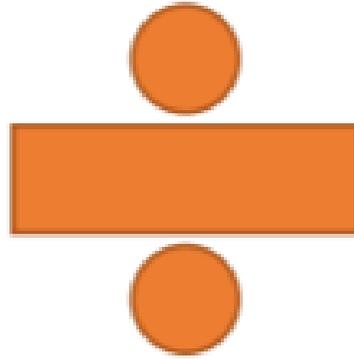
Stage 2 - Multiplication – Repeated addition (Y1)			
Teaching	Examples	Success criteria	Skill and knowledge
Repeated addition follows on from doubling but uses a wider vocabulary.	<p style="text-align: center;">$2 + 2 + 2 = ?$</p>  <p>Numicon can also be used to represent groups of numbers.</p> 	<ul style="list-style-type: none">•	<ul style="list-style-type: none">• Understanding of counting in 2's, 5's and 10's• Understanding equal groups of 2, 5 and 10
		<p>Vocabulary</p> <p>Double Same Equal Repeat Lots of</p>	<p>Resources</p> <p>Counters Numicon Counting objects</p>
Children should be encouraged to use the language of multiplication to enable them to correctly write multiplication number sentences			



Stage 3 - Multiplication - Arrays (Y2)			
Teaching	Examples	Success criteria	Skill and knowledge
<p>Children use arrays to enable them to visualise the multiplication.</p> <p>Rows represent the number of groups. Columns represent the number in each group.</p> <p>It is important that children understand the x symbol represented lots of but us spoken as times or multiplied.</p>	<p>E.g. 3×4</p> 	<ul style="list-style-type: none">•	<ul style="list-style-type: none">• Understanding the difference between a row and a column• Understanding of the x symbol
		Vocabulary	Resources
		Array Times Lots of Groups of Row Column Repeat Representation Multiply	



Stage 4 - Multiplication - Arrays using known facts(Y2)			
Teaching	Examples	Success criteria	Skill and knowledge
	 <p>The examples show three rows of 10 yellow dots each, representing 10 groups of 10. Below this is a number line from 0 to 30 with tick marks at 0, 10, 20, and 30. Three red arcs are drawn above the number line, each starting at a multiple of 10 and ending at the next multiple of 10: from 0 to 10, 10 to 20, and 20 to 30.</p>	<ul style="list-style-type: none">•	<ul style="list-style-type: none">• Double any multiple of 10 up to 100• Understanding that doubling is adding any number to itself• Understanding that doubling is multiplying by 2• Recall multiplication tables
		Vocabulary	Resources
		Array Times Lots of Groups of Multiply Row Column Facts Repeat Product Multiple Factor	



Division

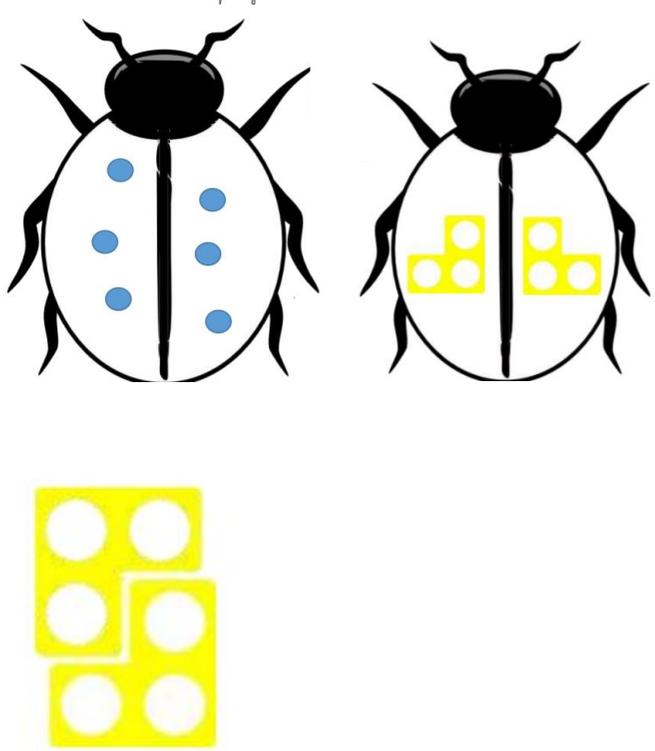
Children need to understand the concept of division as:

- Repeated subtraction

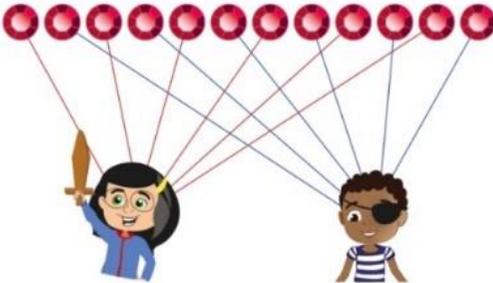
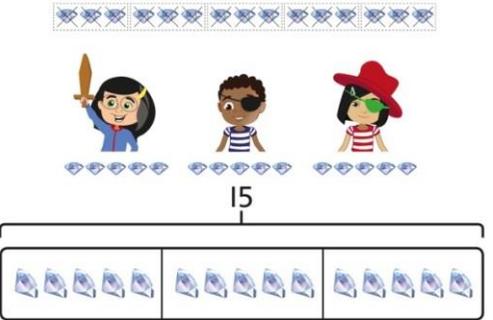
They also need to understand and work with certain principles:

- It is the inverse of multiplication
- It is NOT commutative
- It is NOT associative



Stage 1 – Division - halving (EYFS)			
Teaching	Examples	Success criteria	Skill and knowledge
Children should experience practical calculation opportunities involving equal groups and equal sharing.	<p>A lady bird has 6 spots on its back. Can you share them equally between both sides?</p> 	<ul style="list-style-type: none">•	<ul style="list-style-type: none">• Understanding that halving is sharing into 2 groups equally.• Understanding of equivalence• Understanding that halving is splitting down the middle into 2
		Vocabulary	Resources
		Half Equal Same Split	

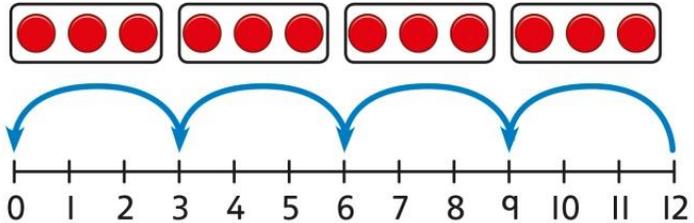


Stage 2 – Division – division as sharing (Y1/Y2)			
Teaching	Examples	Success criteria	Skill and knowledge
Children start their learning of division by sharing. Children may use the ‘one for you and one for me’ strategy until all the items have been given out. This strategy ensures sharing into equal groups.	12 divided by 2 12 gems are shared equally between 2 people. How many gems to they each get? 	<ul style="list-style-type: none">	<ul style="list-style-type: none">Understanding the language and symbol for divisionKnow multiples of 2 5 and 10Understand and apply related division facts e.g. 8 divided by 2 = 4 so 80 divided by 2 = 40
	15 gems shared equally between 3 people.  	Equal Share Divide Divided by	Resources



Stage 3 – Division – division as grouping (Y1/Y2)			
Teaching	Examples	Success criteria	Skill and knowledge
To develop more efficient strategies for division, children need to develop the understanding of division as grouping.	This can be through grouping images into equal groups.  Or grouping using equipment or pictorial representations. $12 \div 3 = 4$  $12 \div 4 = 3$  $12 \div 6 = 2$  $12 \div 2 = 6$ 	<ul style="list-style-type: none">	<ul style="list-style-type: none">Understanding the language and symbol for divisionKnow multiples of 2, 5 and 10Understand and apply related division facts e.g. 8 divided by 2 = 4 so 80 divided by 2 = 40
		Vocabulary Equal groups Groups of Divide Divided by	Resources Numicon Counting objects Unifix Bead strings Counters Connecting cubes



Stage 4 – Division – division as grouping using jottings (Y1/Y2)			
Teaching	Examples	Success criteria	Skill and knowledge
<p>Children will begin to investigate ways to represent division calculations.</p> <p>The could use bar models, number lines or sharing circles to calculate their division.</p> <p>They many also use arrays to show the commutative representation between multiplication and division</p>	 <p>There are 4 groups now.</p>	<ul style="list-style-type: none">•	<ul style="list-style-type: none">• Know multiples of 2,5, 10 and 3• Understand and apply related division facts e.g. 8 divided by 2 = 4 so 80 divided by 2 = 40
		Vocabulary	Resources
		Equal groups Groups of Divide Divided by Multiples	Numicon Counting objects Unifix Bead strings Counters Connecting cubes



Stage 5 – Division – division as grouping with remainders (Y2/ Y3)			
Teaching	Examples	Success criteria	Skill and knowledge
<p>Children need to understand that division calculations sometimes have remainders.</p> <p>Depending on the question children may either need to leave the remainder as how many are left over or may have to round up or down.</p>	<p>E.g. 13 divided by 3 =?</p>  <p>There are four groups of 3 with one left over $13 \text{ divided by } 3 = 4 \text{ r } 1$</p> <p>Round DOWN: I have 13p. sweets are 3p each. How many can I buy? Remaining 1p is not enough to buy another sweet</p> <p>Round up: Apples are packed into boxes of 3. There are 13 apples how many boxes do I need? 1 remaining apple still needs to be in a box</p>	<ul style="list-style-type: none"> • 	<ul style="list-style-type: none"> • Know multiples of 2,5, 10 and 3 • Understand and apply related division facts e.g. 8 divided by 2 = 4 so 80 divided by 2 = 40 • Understanding quantities cannot always be split into equal groups with nothing left over
		Vocabulary	Resources
		Equal groups Groups of Divided by Multiples Remainder Left Over	Numicon Counting objects Unifix Bead strings Counters Connecting cubes