Calculation Knowledge and Skills Progression: DIVISION

	Progression in Knowledge and Skills in NUMBER in Nursery and Reception - Bridging into Year 1 through 'subitising' activities and seeing INSIDE the number	
	Nursery: Birth to Three • Combine objects like stacking blocks and cups. Put objects inside others and take them out again. • Take part in finger rhymes with numbers. • Compare amounts, saying 'lots', 'more' or 'same'. • Notice patterns and arrange things in patterns. **Nursery: Three and Four year olds** • Fast recognition of up to 3 objects, without having to count them individually ('subitising'). • Link numerals and amounts: for example, showing the right number of objects to match the numeral, up to 5. • Experiment with their own symbols and marks as well as numerals. • Solve real world mathematical problems with numbers up to 5.	**Reception:** • Count objects, actions and sounds. • Subitise. • Link the number symbol (numeral) with its cardinal number value. • Compare numbers. • Explore the composition of numbers to 10. • Automatically recall number bonds for numbers 0–10.
	Key KNOWLEDGE and VOCABULARY	
	Early Learning Goals	
	Number • Have a deep understanding of number to 10, including the composition of each number. • Subitise (recognise quantities without counting) up to 5. • Automatically recall (without reference to rhymes, counting or other aids) number bonds up to 5 (including subtraction facts) and some number bonds to 10, including double facts. **Numerical Patterns** • Verbally count beyond 20, recognising the pattern of the counting system. • Compare quantities up to 10 in different contexts, recognising when one quantity is greater than, less than or the same as the other quantity. • Explore and represent patterns within numbers up to 10, including evens and odds, double facts and how quantities can be distributed equally.	

Calculation Knowledge and Skills Progression: DIVISION

<table>
<tr><th>Year</th><th colspan="2">1</th><th colspan="2">2</th></tr>
<tr><td>Layers of vocabulary

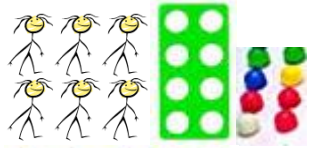
Appendix 1a
Beck's Tiers of Vocabulary
Appendix 1b:
Vocabulary book</td><td colspan="2">Basic to subject specific (Beck's Tiers):
count in ones, twos… tens…
share, groups of, equal groups
odd, even

Instructional vocabulary:
count out, share out, left, left over</td><td colspan="2">Basic to subject specific (Beck's Tiers):
share, share equally one each, two each, three each… group in pairs, threes… tens equal groups of ÷, divide, divided by, divided into left, left over

Instructional vocabulary:
tell me, describe, name, pick out, discuss, talk about, explain, explain your method, explain how you got your answer, give an example of… show how you</td></tr>
<tr><td>NC 2014</td><td colspan="2">solve one-step problems involving multiplication and division, by calculating the answer using concrete objects, pictorial representations and arrays with the support of the teacher.</td><td colspan="2">Calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication (x), division (÷) and equals (=) signs.</td></tr>
<tr><td>Developing Conceptual / Procedural Understanding</td><td>Grouping/Sharing models
Using practical contexts and cross-curricular links (PE) such as socks and shoes; animals in the ark to get into groups.
Sharing models such as sharing pieces of fruit.

Sharing into equal groups
6 frogs shared equally between 2 lily pads gives 3 frogs on each lily pad
or
Grouping in equal groups
6 frogs grouped in 2s need 3 lily pads to sit on
 

GROUPING ITP
How many twos?</td><td>Arrays
(rectangular arrangements to show equal groups)



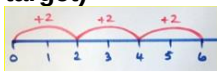
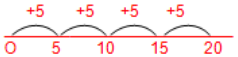
Decision making
How many cars can you make if you have 8 wheels?

How many different ways</td><td>Grouping/Sharing models
Introduce the ÷ symbol

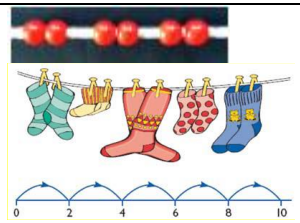
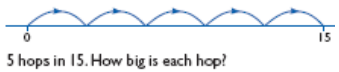
15 frogs shared equally between three lily pads
15 ÷3 = 5
or
15 frogs grouped in 5s need 3 lily pads to sit on
15 ÷5 = 3

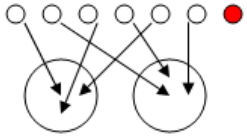
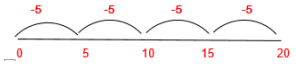
15 ÷ 3 = 5 groups of 3 (grouping)


20 ÷ 2 = 10
</td><td>Arrays representing the dividend

10 ÷ 2 = 5 and 10 ÷ 5 = 2
Repeated addition (to reach a given target)

There are 20 sweets in a bag. How many children can have 5 each?

Repeated subtraction (from a given quantity)</td></tr>
</table>

Calculation Knowledge and Skills Progression: DIVISION

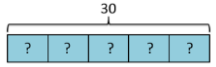
<table>
<tr>
<td></td>
<td colspan="2">
</td>
<td>can you arrange 12 buttons in equal groups?
</td>
<td colspan="2">

5 hops in 15. How big is each hop?
There are 7 cakes and 2 children. How many cakes will they get each? (Leftovers/remainders introduced)

7 ÷ 2 = 3r1</td>
<td>

Links to tables

Use language of division linked to tables using counting stick

Representing problems

Jane has 30 cakes. She wants to share them equally between 5 boxes. How many cakes should go in each box?


30 ÷ 5 = 6
Number of cakes in each box = 6</td>
</tr>
<tr>
<td>Known facts</td>
<td colspan="2">Count in multiples of twos, fives and tens.</td>
<td colspan="2">Recall and use x and ÷ facts for the 2, 5 and 10 x tables, including recognising odd and even numbers.</td>
</tr>
<tr>
<td rowspan="3">Essential Knowledge</td>
<td>Count back in 2s</td>
<td>Halves up to 10</td>
<td>Division facts (2 x table)</td>
<td>Halves up to 20</td>
</tr>
<tr>
<td>Count back in 10s</td>
<td>Halve multiples of 10</td>
<td>Division facts (10 x table)</td>
<td>Review division facts (2 x, 5 x, 10 x tables)</td>
</tr>
<tr>
<td>Count back in 5s</td>
<td>How many 2s? 5s? 10s?</td>
<td>Division facts (5 x table)</td>
<td>Count back in 3s</td>
</tr>
<tr>
<td>Tests of divisibility</td>
<td>All even numbers will divide by 2</td>
<td></td>
<td>All numbers ending in 0 will divide by 10</td>
<td>All numbers ending in 5 and 0 will divide by 5</td>
</tr>
</table>