




<p>Stage One: Exploring sharing and grouping practically</p> <p>Key Vocabulary: double, share, group, odd, even, how many?</p>	<p>Reception</p>
<p>Reception children begin to use the early language of division. They look at the idea of sharing equally through provision and adult led play for example sharing games and role play such as teddy bears picnic.</p> <p>In specific maths lessons, they explore sharing and grouping using concrete manipulatives and learn about odd and even sharing. It is important staff do not always show children examples of amounts being shared equally as this may reinforce misconceptions later on that odd numbers cannot be divided.</p> <p>Examples:</p> <div data-bbox="94 686 479 983" data-label="Image">  </div> <div data-bbox="508 699 880 987" data-label="Image">  </div> <div data-bbox="902 686 1323 965" data-label="Image">  </div> <div data-bbox="483 987 922 1257" data-label="Image">  </div>	<p>Children need to be able to:</p> <p>Number</p> <ul style="list-style-type: none"> • 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. <p>Numerical Patterns</p> <ul style="list-style-type: none"> • 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.

Stage Two: Sharing and grouping – beginning to record

Key Vocabulary: half, equal, unequal, share, group, odd, even, divide, division

In year 1 children begin by using stories that link to pictures and concrete resources to help support them in recognising equal groups.

They recognise and explain how they know when there are equal groups and when there are not. In order to do this, children need to see lots of different examples of equal groups in different contexts, for example trays of buns or bunches of flowers. It is important for children to see equal groups that are arranged differently, so they understand that groups can look different but still be equal in number. For example, 5 dots arranged as on a dice, 5 dots in a row close together and 5 dots spaced further apart are all groups of 5. Children can begin to explore ways of making unequal groups equal by adding to or removing from some of the groups.

In year 2 this is developed and children are introduced to the division symbol for the first time, and this should be supported by language and sentence stems rather than just written in an abstract calculation. The explore division by 2, 5 and 10 and look at the close links between division and multiplication in context.

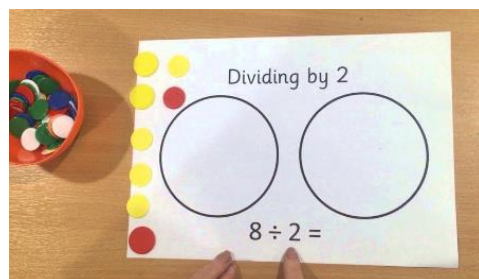
Examples;



There are equal groups of

Use objects in your classroom to make these groups.

- 5 equal groups of 3
- 3 equal groups of 5



Share 40 counters equally between 10 groups.

Draw your counters.



Complete the division.

$$40 \div \boxed{} = \boxed{}$$

Max has these number cards.



Complete the number sentences using only these numbers.

$$\boxed{} \div \boxed{} = \boxed{}$$

$$\boxed{} \times \boxed{} = \boxed{}$$

Key Stage One

In Y1 children need to be able to:

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.

In Y2 children need to be able to:

Recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers

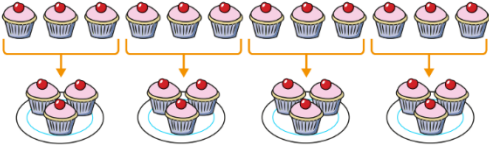
Calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication (\times), division (\div) and equals (=) signs

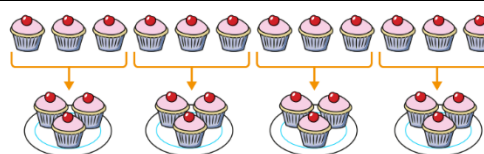
Show that multiplication of 2 numbers can be done in any order (commutative) and division of 1 number by another cannot

Solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods, and multiplication and division facts, including problems in contexts



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<p>Stage Three: Division using written methods</p> <p>Key Vocabulary: factor pairs, factor, formal method, informal method, remainder, bus stop method, product exchange, short division, dividend, divisor, long division, short division,</p>	<p>Key Stage 2</p>										
<p>Initially children are reminded of the idea of sharing and grouping and use pictorial representations such as bar models and place value grids using base 10. Y3 children link division to the 2, 3, 4 and 8 times tables.</p> <div><div><div>30 ÷ 5 =</div><div></div></div><div><table><tr><td colspan="5">30</td></tr><tr><td></td><td></td><td></td><td></td><td></td></tr></table></div></div>	30										<div><div></div><div><p>Complete the sentences.</p><p>There are <input type="text"/> plates.</p><p>Each plate has <input type="text"/> cakes.</p><p>12 shared into <input type="text"/> equal groups is <input type="text"/></p></div></div> <p>In Y3 children need to be able to: Recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables</p> <p>Write and calculate mathematical statements for division using the multiplication tables that they know</p> <p>In Y4 children need to be able to: Recall multiplication and division facts for multiplication tables up to 12 × 12</p> <p>Use place value, known and derived facts to multiply and divide mentally, including dividing by 1</p> <p>In Y5/6 children need to be able to: Divide numbers up to 4 digits by a two-digit whole number using the formal written method of long division, and interpret remainders as whole number remainders, fractions, or by</p>
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Complete the sentences.

There are plates.

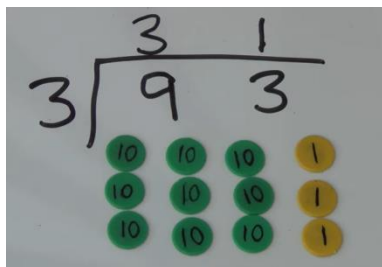
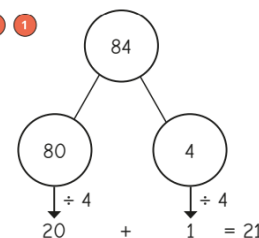
Each plate has cakes.

12 shared into equal groups is

In LKS2 children carry out divisions where the tens and ones are both divisible by the number being divided by without any remainders, for example $96 \div 3$ and $84 \div 4$.



Tens	Ones
10 10	1
10 10	1
10 10	1
10 10	1



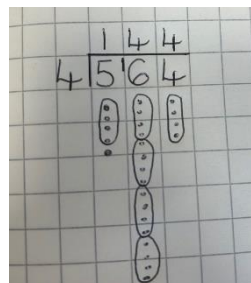
They then move on to calculations where they need to exchange between tens and ones, for example $96 \div 4$.

Place value counters are used to explore the sharing structure of division before moving onto 2 digit by 1 digit bus stop method division to prepare children for more complex divisions later on. The bus stop method is used alongside place value counters.

Example.

Children then move on to using the bus stop method alongside written annotations rather than place value counters to help with the idea of grouping. They are encouraged to draw or make annotations only if needed. Secure knowledge of tables is required to progress with division so these are a large focus in Y4 and Y5.

Example.



Children in In Year 5 learn to use short division to divide numbers with up to four digits by single-digit numbers.

rounding, as appropriate for the context

Divide numbers up to 4 digits by a two-digit number using the formal written method of short division where appropriate, interpreting remainders according to the context

		1	2	1	
	5	6	0	5	

		1	2	2	3	r2
	4	4	8	9	4	

In UKS2 children are introduced to the idea of long division.

Children are introduced to long division as a different method for dividing by a 2-digit number, now including numbers that cannot be factorised into single-digit numbers.

Children divide 3-digit numbers without remainders, using an expanded method that shows the multiples, before progressing to a more formal long division method. This method is only introduced once children are fully secure with the concept of dividing by a 1-digit number.

		0	3	6	
12	4	3	2		
	3	6	0		
		7	2		
		7	2		
			0		

(12 × 30)

(12 × 6)

Multiples of 12: $12 \times 1 = 12$

$$12 \times 2 = 24$$

$$12 \times 3 = 36$$

$$12 \times 4 = 48$$

$$12 \times 5 = 60$$

$$12 \times 6 = 72$$

		0	1	0	9	r	9
13	1	4	2	6			
	1	3	0				
		1	2	6			
		1	1	7			
				9			