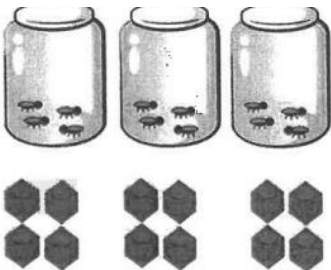
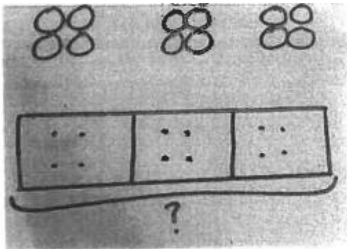
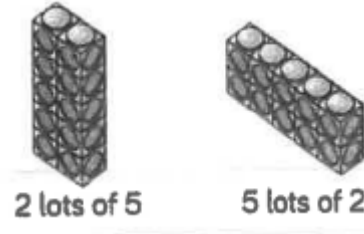
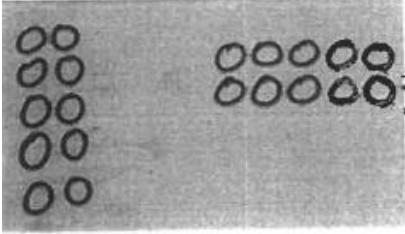
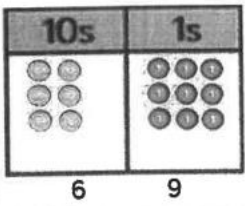
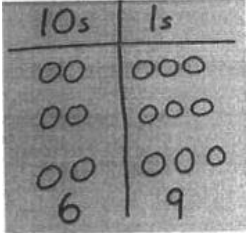
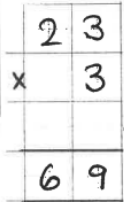
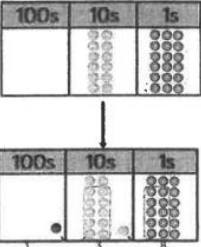
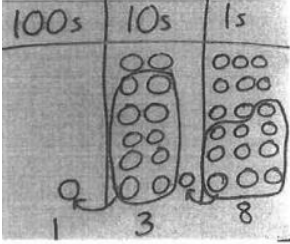
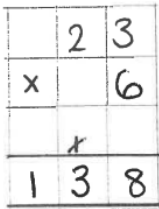


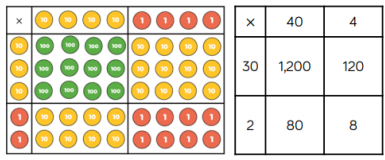
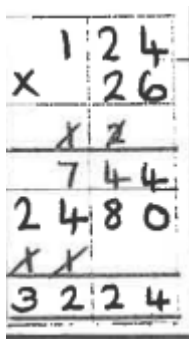
Progression in Multiplication

<p>Year 1</p>	<p><i>Repeated grouping/repeated addition</i></p>		
	<p>Concrete</p>	<p>Pictorial</p>	<p>Abstract</p>
	<p>3×4 $4 + 4 + 4$ There are 3 equal groups, with 4 in each group.</p> 	<p>Children to represent the practical resources in a picture and use a bar model.</p> 	<p>$3 \times 4 = 12$ $4 + 4 + 4 = 12$</p>
<p>Year 2</p>	<p><i>Use arrays to illustrate commutativity</i></p>		
	<p>Concrete</p>	<p>Pictorial</p>	<p>Abstract</p>
	<p>Counters and other objects can also be used. $2 \times 5 = 5 \times 2$</p> 	<p>Children to represent the arrays pictorially.</p> 	<p>Children to be able to use an array to write a range of calculations. E.g.</p> <p>$10 = 2 \times 5$ $5 \times 2 = 10$ $2 + 2 + 2 + 2 + 2 = 10$ $10 = 5 + 5$</p>

Progression in Multiplication

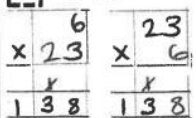
<p>Year 2 - 3</p>	<p>Formal column method - starting with partitioning to multiply</p>		
	<p>Concrete</p> <p>Formal column method with place value counters. (Base 10 can also be used)</p> <p>$3 \times 23 =$</p> 	<p>Pictorial</p> <p>Children to represent the counters pictorially.</p> 	<p>Abstract</p> <p>Children to record what they are doing and to show an understanding.</p> <p> 3×23 $3 \times 20 = 60$ $20 \quad 3$ $3 \times 3 = 9$ $60 + 9 = 69$ </p> 
<p>Year 3</p>	<p>Formal column method continued</p>		
	<p>Concrete</p> <p>Formal column method with place value counters.</p> <p>6×23</p> 	<p>Pictorial</p> <p>Children to represent the counters/ base 10 pictorially e.g. the image below.</p> 	<p>Abstract</p> <p>Formal written method. Carry above the line.</p> <p>$6 \times 23 =$</p> 
<p>Children should be confident multiplying by a 1 digit number using the formal method by the end of year 3. They should continue to practice using the method in a variety of ways including: money, measure, word problems etc.</p>			

Progression in Multiplication

Year 5	Formal method multiplying by 2 digit numbers		
	Concrete	Pictorial	Abstract
	<p>Children use base 10 or counters in a grid.</p> <p>44 X 32</p> 	<p>Draw counters or base ten into a grid.</p>	<p>Column method</p> 

Conceptual variation; different ways to ask children to solve 6×23

<table border="1"> <tr> <td>23</td> <td>23</td> <td>23</td> <td>23</td> <td>23</td> <td>23</td> </tr> <tr> <td colspan="6">_____</td> </tr> </table>	23	23	23	23	23	23	_____						<p>Mai had to swim 23 lengths, 6 times a week. How many lengths did she swim in one week?</p>	<p>Find the product of 6 and 23</p>	<p>What is the calculation? What is the product?</p>
23	23	23	23	23	23										

<p>?</p>	<p>With the counters, prove that $6 \times 23 = 138$</p>	<p>$6 \times 23 =$</p> <p>$\square = 6 \times 23$</p> 	<table border="1"> <thead> <tr> <th>100s</th> <th>10s</th> <th>1s</th> </tr> </thead> <tbody> <tr> <td></td> <td></td> <td></td> </tr> </tbody> </table>	100s	10s	1s									
100s	10s	1s													