



Progression in calculation Key Stage 2 Workshop

Thursday 15th November
2018



Aims of the workshop

- Gain a better understanding of the progression in calculation from Year 3-6.
- Understand the methods used in school for addition, subtraction, multiplication and division.
- Be more confident to help children at home

Aims of the 2014 National Curriculum

MATHS

The national curriculum for mathematics aims to ensure that all pupils:

- become **fluent** in the fundamentals of mathematics, including through varied and frequent practice with increasingly complex problems over time, so that pupils develop conceptual understanding and the ability to recall and apply knowledge rapidly and accurately.
- **reason mathematically** by following a line of enquiry, conjecturing relationships and generalisations, and developing an argument, justification or proof using mathematical language
- can **solve problems** by applying their mathematics to a variety of routine and non-routine problems with increasing sophistication, including breaking down problems into a series of simpler steps and persevering in seeking solutions.

Written methods of calculations are based on **mental strategies**. Each of the four operations builds on mental skills which provide the foundation for **jottings** and **informal written methods** of recording. Skills need to be taught, practised and reviewed constantly. These skills lead on to more formal written methods of calculation.

Strategies for calculation need to be represented by **models and images** to support, develop and secure understanding. This, in turn, builds **fluency**. When teaching a new strategy it is important to start with numbers that the child can easily manipulate so that they can understand the methodology.

The transition between stages should not be hurried as not all children will be ready to move on to the next stage at the same time, therefore the progression in this document is outlined in stages. Previous stages may need to be revisited to consolidate understanding when introducing a new strategy.

A sound understanding of the number system is essential for children to carry out calculations efficiently and accurately.

What does this number sentence mean?

$$5 \times 4 =$$

Represent this number sentence in words, pictures or with concrete materials (things!)

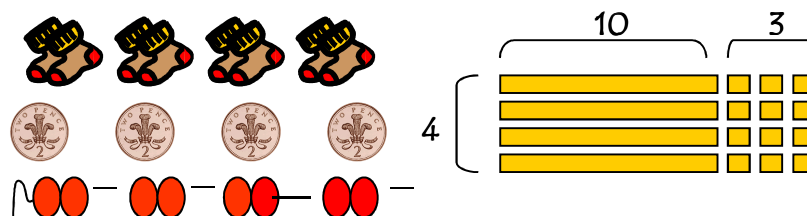
Represent it in more than one way !

Structures of Multiplication (Haylock and Cockburn 2008)

Children should experience problems with all the different multiplication structures in a range of practical and relevant contexts e.g. money and measurement

Repeated addition

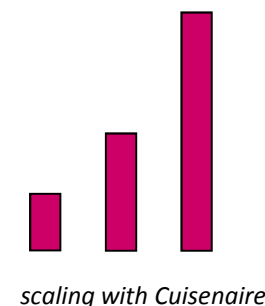
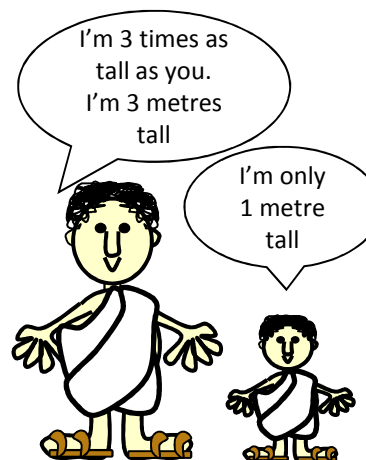
So many lots (sets) of so many
How many (how much) altogether
Per, each



Scaling

Scaling, scale factor
Doubling, trebling

So many times bigger than (longer than, heavier than, and so on)
So many times as much as (or as many as)

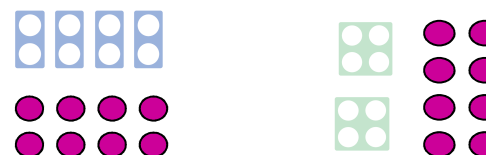


Commutative law

Scaling, scale factor
Doubling, trebling

So many times bigger than (longer than, heavier than, and so on)
So many times as much as (or as many as)

a x b and b x a are equal



4 x 2 is the same as/equal to 2 x 4

$1 \times 4 = 4$

$1 \times 5 = 5$

$1 \times 6 = 6$

$1 \times 7 = 7$

$1 \times 8 = 8$

$1 \times 9 = 9$

$2 \times 5 = 10$

$2 \times 6 = 12$

$2 \times 7 = 14$

$2 \times 8 = 16$

$2 \times 9 = 18$



$3 \times 6 = 18$

$3 \times 7 = 21$

$3 \times 8 = 24$

$3 \times 9 = 27$



$4 \times 7 = 28$

$4 \times 8 = 32$

$4 \times 9 = 36$



$5 \times 8 = 40$

$5 \times 9 = 45$



6

$6 \times 6 = 36$

$6 \times 7 = 42$

$6 \times 8 = 48$

$6 \times 9 = 54$

7

$7 \times 7 = 49$

$7 \times 8 = 56$

$7 \times 9 = 63$

8

$8 \times 8 = 64$

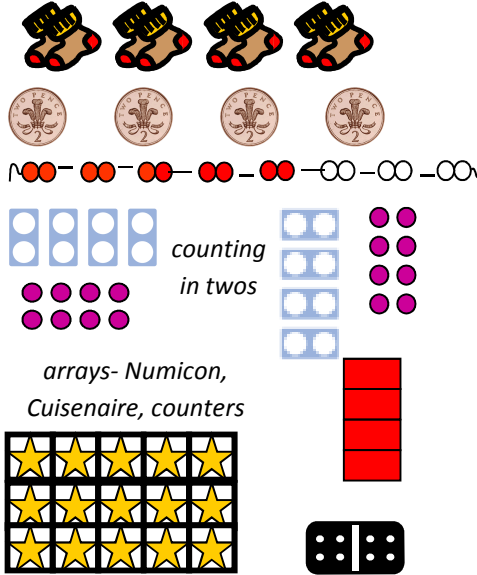
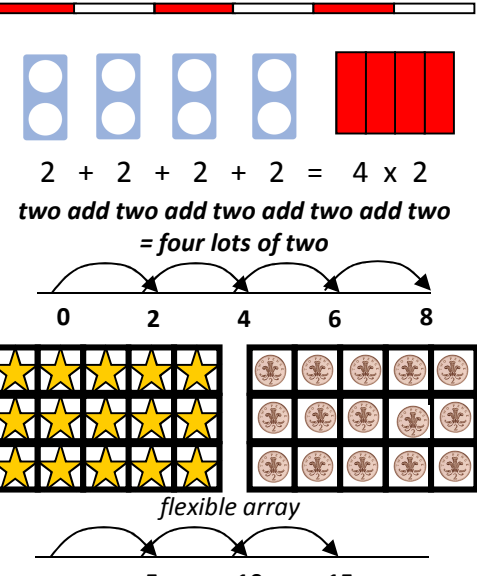
$8 \times 9 = 72$

9

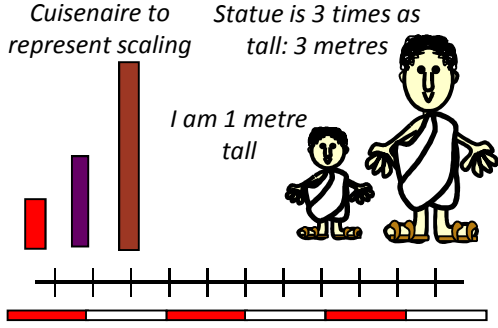
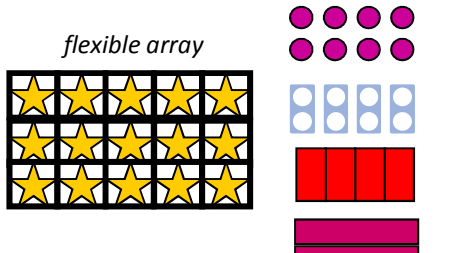
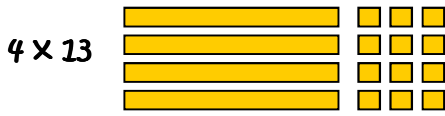
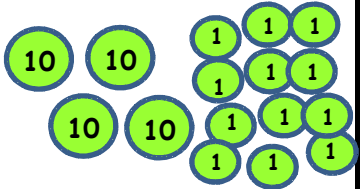
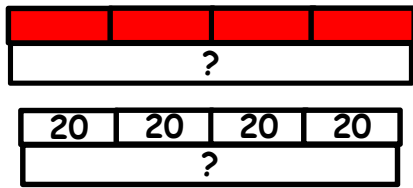
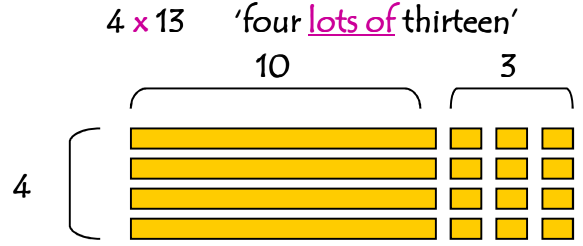
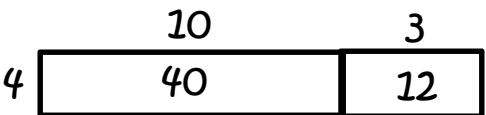
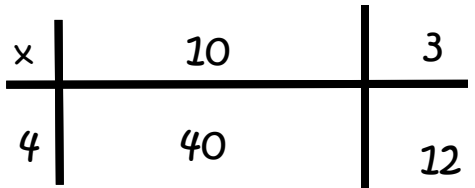
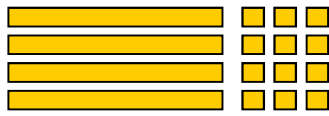
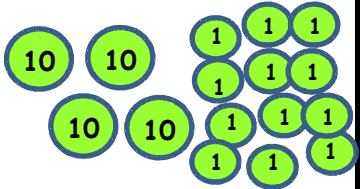
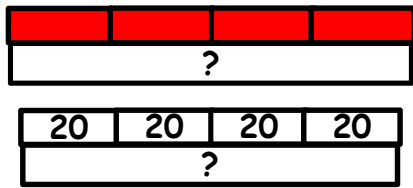
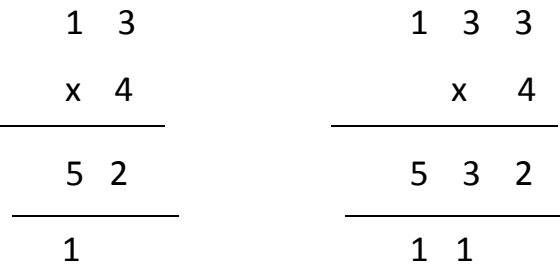
$9 \times 9 = 81$

Multiplication

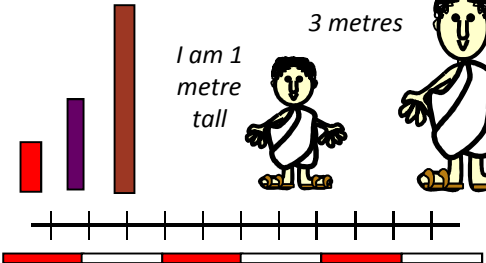
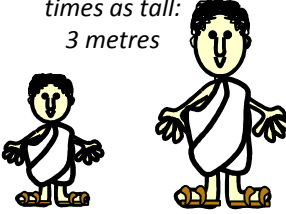

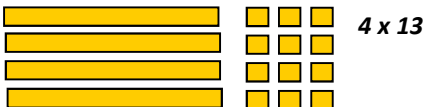
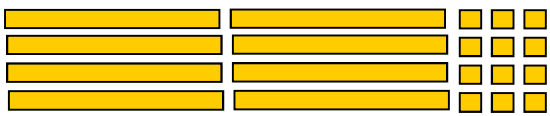
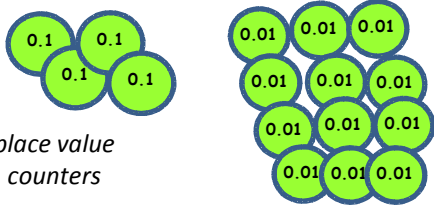

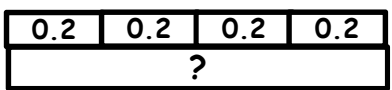
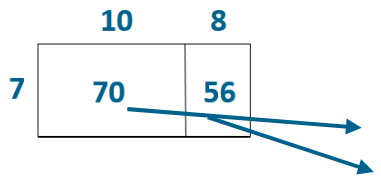
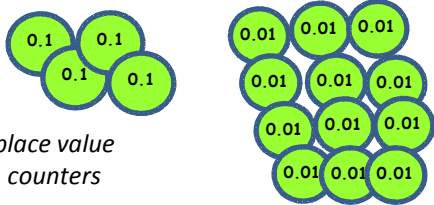

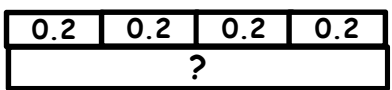
Pupils develop the concept of multiplication and division and are enabled to use these operations flexibly.
 Multiplication and division should be taught together.

End of Year Expectations	Possible concrete and visual representation	Children's Recording	Fluency
<div data-bbox="117 298 285 370" style="border: 1px solid black; padding: 2px; display: inline-block; margin-bottom: 10px;">Year 1</div> <p data-bbox="128 427 518 487">Solve single step practical problems involving multiplication</p> <p data-bbox="117 548 512 609">Use concrete objects, pictorial representations to explore grouping</p> <p data-bbox="128 654 506 743">Make connections between arrays, number patterns and counting in twos, fives and tens</p> <p data-bbox="142 816 489 844">Double numbers and quantities</p>	 <p data-bbox="583 654 821 722"><i>arrays- Numicon, Cuisenaire, counters</i></p> <p data-bbox="619 885 766 909"><i>flexible array</i></p>	<p data-bbox="1144 313 1539 341">Practical only e.g. link to small world</p> <p data-bbox="1087 362 1598 483">Using concrete objects, pictorial representations and arrays with the support of an adult – take photographs/draw pictures – if using Numicon small icons could be stuck in</p> <p data-bbox="1312 524 1444 581"><i>four lots of two is eight</i></p> <p data-bbox="1312 621 1444 678"><i>two lots of four is eight</i></p> <p data-bbox="1207 841 1432 865"><i>track with cuisenaire</i></p>	<p data-bbox="1675 378 1938 470">Count in twos, fives and tens from different multiples</p> <p data-bbox="1707 492 1917 519">e.g. 6, 8, 10, 12 etc</p> <p data-bbox="1707 540 1917 600">Emphasise number patterns</p> <p data-bbox="1707 621 1917 682">Double number and quantities</p>
<div data-bbox="117 930 285 1002" style="border: 1px solid black; padding: 2px; display: inline-block; margin-bottom: 10px;">Year 2</div> <p data-bbox="170 1036 485 1096">Understand multiplication as repeated addition</p> <p data-bbox="128 1120 512 1209">Calculate mathematical statements for multiplication within the tables and write them using symbols</p> <p data-bbox="170 1239 464 1299">Understand and solve problems involving arrays</p> <p data-bbox="128 1323 533 1412">Ensure children understand that multiplication is commutative (can be done in any order)</p> <p data-bbox="142 1437 520 1497">Understand that multiplication and division are inverse operations</p>	 <p data-bbox="598 1084 1008 1185"><i>two add two add two add two add two = four lots of two</i></p> <p data-bbox="724 1421 877 1445"><i>flexible array</i></p>	<p data-bbox="1129 946 1602 971">Record practical work as number sentences</p> <p data-bbox="1438 1039 1554 1063">$4 \times 2 = 8$</p> <p data-bbox="1438 1096 1554 1120">$2 \times 4 = 8$</p>	<p data-bbox="1665 1003 1980 1096">Count in twos, threes, fives from zero and tens from any number</p> <p data-bbox="1717 1117 1927 1144">e.g. 6, 8, 10, 12 etc</p> <p data-bbox="1665 1166 1980 1193">Emphasise number patterns</p> <p data-bbox="1665 1218 1980 1339">Introduction to multiplication tables. Practise to become fluent in multiplication facts for 2, 5 and 10</p> <p data-bbox="1665 1360 1980 1421">Solve multiplication problems mentally</p>

Multiplication – multiplication and division should be taught together– refer to structures of multiplication

End of Year Expectations	Possible concrete and visual representation	Teacher Modelling/Children’s Recording	Fluency
<p>Year 3</p> <p>Develop reliable written methods</p> <p>Understand and solve scaling problems</p> <p>Solve problems involving multiplication including correspondence</p>	<p>Cuisenaire to represent scaling Statue is 3 times as tall: 3 metres</p>  <p>I am 1 metre tall</p> <p>flexible array</p>  <p>arrays</p>  <p>place value counters</p>   <p>bar models</p>	<p>Children <u>must</u> use manipulatives alongside algorithms</p> <p>4×13 ‘four lots of thirteen’</p>   <p>Expanded methods for TU and HTU first.</p>  <p>$40 + 12 = 52$</p>	<p>Count from 0 in multiples of 4, 8, 50 and 100</p> <p>Use multiples of 2, 3, 4, 5, 8, 10, 50 and 100</p> <p>Practise mental recall of multiplication tables – 3, 4 and 8x times tables</p> <p>Connect the 2, 4 and 8 times tables using doubling</p> <p>Develop efficient mental methods using commutativity and multiplication facts to derive related facts e.g. $4 \times 4 \times 12 = 12 \times 4 \times 5 = 12 \times 20$</p>
<p>Year 4</p> <p>Multiplying three numbers</p> <p>Solve two-step problems</p> <p>Multiplying by 0 and by 1</p> <p>Develop fluency in short multiplication using formal written layout</p> <p>Solve problems involving multiplication including using the distributive law, integer scaling problems and harder correspondence problems</p>	<p>4×13</p>  <p>place value counters</p>   <p>bar models</p>	<p>Progressing to developing fluency in short multiplication</p>  <p>Start with digits that are below five so children can practise method without encountering difficulty with multiplication tables</p>	<p>Count in multiples of 6, 7, 9, 25 and 1000</p> <p>Recall and use multiplication facts up to 12×12 with increasing fluency</p> <p>Derive multiplication facts with up to three-digits</p> <p>Recognise and use factor pairs and commutativity in mental calculations</p> <p>Use the distributive law</p> <p>Combine knowledge of number facts and rules of arithmetic to solve mental and written calculations e.g. $2 \times 6 \times 5 = 10 \times 6$</p>

Multiplication - multiplication and division should be taught together– refer to structures of multiplication

End of Year Expectations	Possible concrete and visual representation	Teacher Modelling/Children's Recording	Fluency
<div data-bbox="107 289 275 354" style="border: 1px solid black; padding: 2px; margin-bottom: 10px;">Year 5</div> <p>Multiply decimals with up to three decimal places</p> <p>Identify multiples and factors including finding all factor pairs of a number, and common factors of two numbers</p> <p>Solve problems involving all four operations where larger numbers are used by decomposing them into their factors</p> <p>Multiply whole numbers and those involving decimals by 10, 100 & 1000</p> <p>Understand and use multiplication and division as inverses including in problems involving missing numbers and balancing equations</p> <p>Solve problems involving multiplication and division including scaling by simple fractions</p> <p>Know and use the vocabulary of prime numbers, prime factors and composite (non-prime)</p> <p>Recognise and square and cube numbers and associated notation</p>	<p><i>Cuisenaire to represent scaling</i></p>  <p><i>Statue is 3 times as tall: 3 metres</i></p>  <p><i>I am 1 metre tall</i></p> <p><i>flexible array</i></p>  <p><i>4 x 13</i></p>  <p><i>4 x 23</i></p>  <p><i>arrays</i></p>  <p><i>place value counters</i></p>   <p><i>bar models</i></p>	<p><i>Children might use manipulatives alongside algorithms</i></p>  <p><i>Short multiplication</i></p> $\begin{array}{r} 18 \\ \times 7 \\ \hline 56 \\ 70 \\ \hline 126 \end{array}$ $\begin{array}{r} 1 \ 3 \ 2 \ 4 \\ \times 6 \\ \hline 7 \ 9 \ 4 \ 4 \end{array}$ $\begin{array}{r} 3 \ . \ 2 \ 4 \\ \times 6 \\ \hline 1 \ 9 \ . \ 4 \ 4 \end{array}$ $\begin{array}{r} 1 \ 1 \ 2 \\ \times 10 \\ \hline 100 \\ 30 \\ \hline 130 \end{array}$ $\begin{array}{r} 18 \\ \times 13 \\ \hline 54 \quad (3 \times 8 + 10 \times 3) \\ 180 \quad (8 \times 10 + 10 \times 10) \\ \hline \end{array}$ <p><i>Long multiplication</i></p> $\begin{array}{r} 1 \ 3 \ 2 \ 4 \\ \times 2 \ 6 \\ \hline 7 \ 9 \ 4 \ 4 \\ 2 \ 6 \ 4 \ 8 \ 0 \\ \hline 3 \ 4 \ 4 \ 2 \ 4 \end{array}$ $\begin{array}{r} 3 \ . \ 2 \ 4 \\ \times 2 \ 6 \\ \hline 1 \ 9 \ . \ 4 \ 4 \\ 6 \ 4 \ . \ 8 \ 0 \\ \hline 8 \ 4 \ . \ 2 \ 4 \end{array}$ $\begin{array}{r} 1 \ 1 \ 1 \\ \times 1 \\ \hline 1 \ 1 \ 1 \end{array}$ $\begin{array}{r} 1 \ 1 \\ \times 1 \\ \hline 1 \ 1 \end{array}$	<p>Count forwards in steps of powers of 10 from any given number up to 1 000 000</p> <p>Practise and extend use of formal written method of short multiplication</p> <p>Apply all multiplication tables frequently. Commit them to memory and use them confidently to make larger calculations</p> <p>Multiply numbers mentally drawing upon known facts</p>
<div data-bbox="107 1101 275 1166" style="border: 1px solid black; padding: 2px; margin-bottom: 10px;">Year 6</div> <p>Multiply numbers up to 4-digit x TU</p> <p>Multiply numbers with up to two decimal places x whole number</p> <p>Multiply multi-digit numbers up to four-digits by a two-digit whole number</p> <p>Multiply single-digit numbers with up to two-decimal places by whole numbers</p> <p>Solve problems involving all four operations</p>	<p><i>arrays</i></p>  <p><i>place value counters</i></p>   <p><i>bar models</i></p>	<p><i>Long multiplication</i></p> $\begin{array}{r} 1 \ 3 \ 2 \ 4 \\ \times 2 \ 6 \\ \hline 7 \ 9 \ 4 \ 4 \\ 2 \ 6 \ 4 \ 8 \ 0 \\ \hline 3 \ 4 \ 4 \ 2 \ 4 \end{array}$ $\begin{array}{r} 3 \ . \ 2 \ 4 \\ \times 2 \ 6 \\ \hline 1 \ 9 \ . \ 4 \ 4 \\ 6 \ 4 \ . \ 8 \ 0 \\ \hline 8 \ 4 \ . \ 2 \ 4 \end{array}$ $\begin{array}{r} 1 \ 1 \ 1 \\ \times 1 \\ \hline 1 \ 1 \ 1 \end{array}$ $\begin{array}{r} 1 \ 1 \\ \times 1 \\ \hline 1 \ 1 \end{array}$	<p>Undertake mental calculations with increasingly large numbers</p> <p>Continue to use all multiplication tables to calculate mathematical statements in order to maintain fluency</p>

Pictorial and concrete progression slides

Grid method and **Column** method

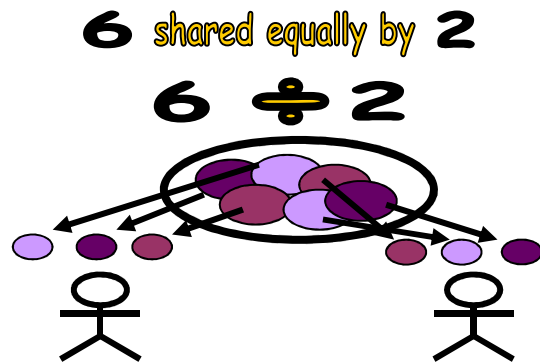
Page 10 and 11

Structures for Division (Haylock and Cockburn 2008)

Children should experience problems with the different division structures in a range of practical and relevant contexts e.g. money and measurement

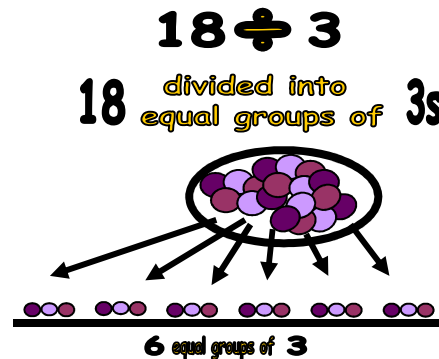
Equal-sharing

Sharing equally between
How many (much) each?

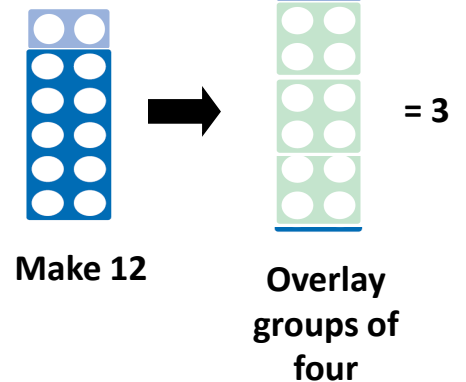


Inverse of multiplication (Grouping)

So many lots (sets/groups) of so many
Share equally in to groups of ...



Divide twelve into equal groups of four



Ratio structure

comparison

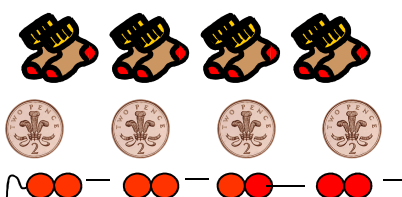
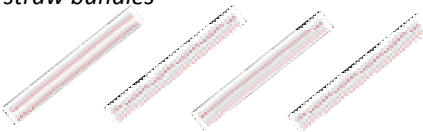

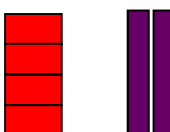

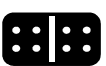
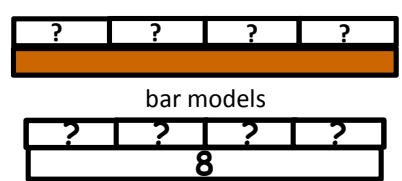
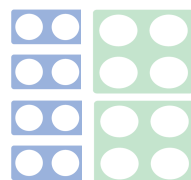
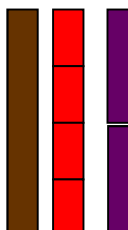
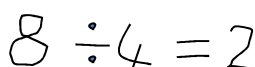


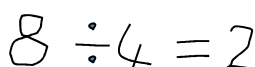

inverse of scaling structure of multiplication
scale factor (decrease)

Barney earns three times more than Fred. If Barney earns £900 how much does Fred earn?

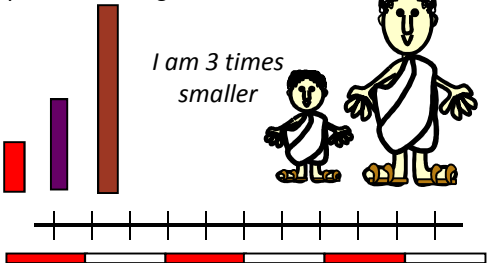
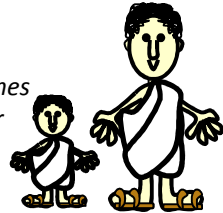

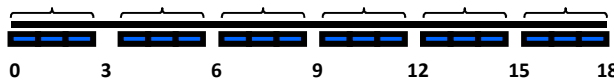
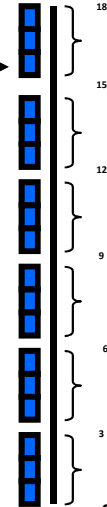
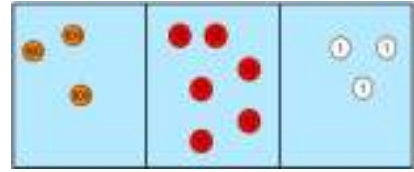
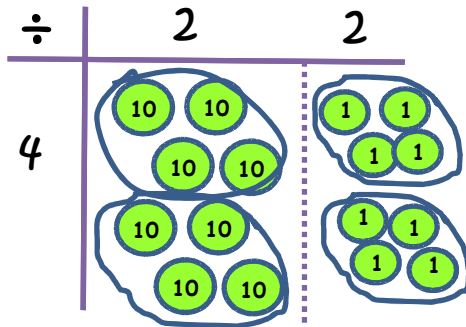
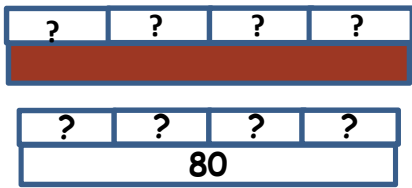
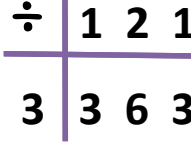
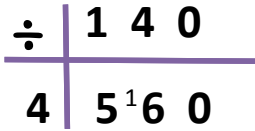
Jo's journey to school is three times as long as Ella's. If Jo walks to school in 30 minutes how long does it take Ella?

Division

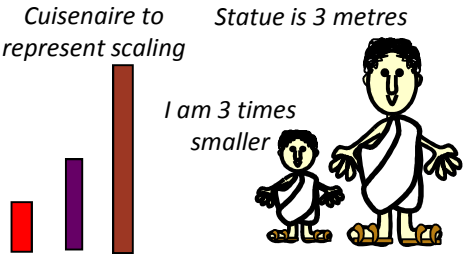

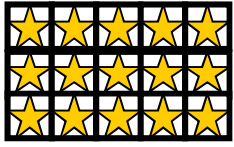
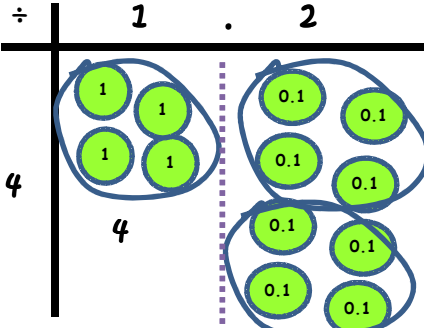


Pupils develop the concept of multiplication and division and are enabled to use these operations flexibly.
 Multiplication and division should be taught together.

End of Year Expectations	Possible concrete and visual representation	Teacher Modelling/Children's Recording	Fluency
<p>Year 1</p> <p>Solve single step practical problems involving division</p> <p>Use concrete objects, pictorial representations</p> <p>Understand division as grouping and sharing</p> <p>Use the language of 'sharing equally between'</p>	<p><i>counting in groups of twos</i></p>  <p><i>straw bundles</i></p>   <p><i>Numicon and counter arrays</i></p>  <p><i>Cuisenaire</i></p> <p><i>four lots of two</i> <i>two lots of four</i></p>  <p><i>doubling</i></p>  <p><i>flexible array</i></p>  <p><i>bar models</i></p>	<p>Practical only e.g. link to small world</p> <p>Using concrete objects, pictorial representations and arrays with the support of an adult – take photographs/draw pictures – if using Numicon small icons could be stuck in</p>  <p><i>Eight can be divided into four equal groups of two or two equal groups of four</i></p> 	<p>Count in twos, fives and tens from different multiples</p> <p>e.g. 6, 8, 10, 12 etc</p> <p>Emphasise patterns</p> <p>Find simple fractions eg half and quarter, of objects, numbers and quantities</p>
<p>Year 2</p> <p>Solve single step practical problems involving division</p> <p>Use concrete objects, pictorial representations</p> <p>Understand division as grouping</p> <p>Find halves and then quarters</p> <p>Work with a range of materials and contexts in which multiplication and division relate to grouping and sharing discrete quantities and to arrays</p>	<p><i>Record as number sentences using ÷ and =</i></p> <p>$8 \div 4$</p> <p>Eight divided into four equal groups = two in each group</p>    <p><i>Eight can be divided into four equal groups of two or two equal groups of four</i></p>	<p>Record as number sentences using ÷ and =</p> <p>$8 \div 4$</p> <p>Eight divided into four equal groups = two in each group</p>   <p><i>Eight can be divided into four equal groups of two or two equal groups of four</i></p>	<p>Count back in twos, threes, fives from zero and tens from any number</p> <p>e.g. 12, 10, 8, 6 etc</p> <p>Emphasise patterns</p> <p>Connect ten times table to place value and five times table to divisions on a clock face</p> <p>Introduction to multiplication tables. Practise to become fluent in division facts for 2, 5 and 10</p> <p>Solve division problems involving grouping and sharing</p>

Division - multiplication and division should be taught together– refer to structures of division

End of Year Expectations	Possible concrete and visual representation	Teacher Modelling/Children's Recording	Fluency
<div data-bbox="107 293 275 363" style="border: 1px solid black; padding: 2px; margin-bottom: 10px;">Year 3</div> <ul style="list-style-type: none"> Develop a reliable written method for division Solve problems involving missing numbers Solve problems including those that involve scaling Recognise, find and name $\frac{1}{2}$ and $\frac{1}{4}$ of an object, shape or quantity Understand the link between unit fractions and division Connect $1/10$ to division by 10 Count in tenths 	<p><i>Cuisenaire to represent scaling</i></p>  <p><i>Statue is 3 metres</i></p>  <p><i>arrays</i></p> 	<p><i>Children should use manipulatives alongside algorithms</i></p>  <p>Repeated subtraction - chunking</p> <p>Ensure children see/understand the link between grouping on a number line and vertical recording for chunking</p>  $95 \div 5 = 19$ $\begin{array}{r} 95 \\ - 50 \quad (\underline{10} \times 5) \\ \hline 45 \\ - 25 \quad (\underline{5} \times 5) \\ \hline 20 \\ - 20 \quad (\underline{4} \times 5) \\ \hline 0 \end{array}$ <div style="border: 1px solid black; padding: 5px; display: inline-block; margin: 10px;"> <p>Fact Box</p> <p>$2 \times 5 = 10$</p> <p>$5 \times 5 = 25$</p> <p>$10 \times 5 = 50$</p> </div> 	<p>Recall and use related division facts for the 3, 4 and 8x tables (Continue to practise other tables)</p> <p>Write and calculate mathematical statements for division using what is known</p> <p>Use division facts to derive related division facts e.g. using $6 \div 3 = 2$ to work out $60 \div 3 = 20$</p>
<div data-bbox="107 862 275 932" style="border: 1px solid black; padding: 2px; margin-bottom: 10px;">Year 4</div> <ul style="list-style-type: none"> Become fluent in the formal written method of short division with exact answers when dividing by a one-digit number Divide one- or two-digit numbers by 10 or 100, identifying value of digits as tenths or hundredths Solve two-step problems in different contexts, choosing the appropriate operation, working with increasingly harder numbers including correspondence questions e.g. three cakes shared equally between 10 children 	<p>$88 \div 4$</p>   <p><i>bar models</i></p>	 $363 \div 3$ <p>Short division- no remainders</p>  $560 \div 4$	<p>Continue to practise recalling division facts for multiplication tables up to 12×12</p> <p>Practise mental methods and extend this to three-digit numbers for example $200 \times 3 = 600$ into $600 \div 3 = 200$</p> <p>Use place value, known and derived facts to divide mentally, including dividing by 1</p> <p>Recognise and use factor pairs and commutativity in mental calculations</p>

Division - multiplication and division should be taught together– refer to structures of division

End of Year Expectations	Possible concrete and visual representation	Teacher Modelling/Children's Recording	Fluency
<div style="border: 1px solid black; padding: 5px; margin-bottom: 10px;">Year 5</div> <p>Identify factors, including finding all factor pairs of a number, and common factors of two numbers</p> <p>Practise and extend the formal written method of short division: numbers up to four-digits by a one-digit number</p> <p>Interpret non-integer answers to division by expressing results in different ways according to the context, including with remainders, as fractions, as decimals or by rounding as appropriate for the context</p> <p>Use multiplication and division as inverses</p> <p>Solve problems involving division including scaling down</p> <p>Divide whole numbers and those involving decimals by 10, 100 & 1000</p>	<p style="text-align: center;"><i>Cuisenaire to represent scaling</i></p>  <p style="text-align: center;"><i>Statue is 3 metres</i></p>  <p style="text-align: center;"><i>flexible arrays</i></p>  <div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 10px auto;"> $4.8 \div 4$ </div>   <p style="text-align: center;">bar models</p>	<p style="text-align: center;"><i>Children might use manipulatives alongside algorithms</i></p> <p>without remainder</p> $560 \div 4 = 140$ <p>remainder as a decimal</p> $560 \div 4 = 140.0$ <p>remainder as a fraction</p> $560 \div 4 = 140 \frac{0}{4}$ <p>long division</p> $24 \overline{) 560} = 23 \text{ r } 8$ <p>remainder as a whole number</p> $24 \overline{) 560} = 23 \text{ r } 8$ <p>remainder as a fraction in its lowest form</p> $24 \overline{) 560} = 23 \frac{8}{24} \left(\frac{1}{3} \right)$ <p>remainder as a decimal</p> $24 \overline{) 560.0} = 23.3$	<p>Count backwards in steps of powers of 10 for any given number up to 1 000 000</p> <p>Count backwards with positive/negative whole numbers through zero</p> <p>Practise mental calculation with increasingly large numbers</p> <p>Apply all multiplication tables and related division facts frequently, commit them to memory and use them to confidently to make larger calculations</p>
<div style="border: 1px solid black; padding: 5px; margin-bottom: 10px;">Year 6</div> <p>Divide numbers up to 4-digits by a 2-digit whole number using formal written methods of long division, interpret remainders as whole numbers, fractions or by rounding, as appropriate for the context</p> <p>Divide numbers with up to 2 decimal places by 1-digit and 2-digit whole numbers, initially in practical contexts involving money and measures</p> <p>Understand the relationship between unit fractions and division</p> <p>Recognise division calculations as the inverse of multiplication</p> <p>Solve problems involving division</p>	 <p style="text-align: center;">bar models</p>	<p>remainder as a whole number</p> $24 \overline{) 560} = 23 \text{ r } 8$ <p>remainder as a fraction in its lowest form</p> $24 \overline{) 560} = 23 \frac{8}{24} \left(\frac{1}{3} \right)$ <p>remainder as a decimal</p> $24 \overline{) 560.0} = 23.3$	<p>Practise division for larger numbers, using the formal written methods of short and long division</p> <p>Continue to use all multiplication tables and division facts to maintain fluency</p> <p>Perform mental calculations, including with mixed operations and larger numbers</p>

Pictorial and concrete progression slides
Grouping, **Arrays**, **Remainders** and **Short Division**
Page 12,13,14