Written Calculation Policy

Division

Reviewed March 2021

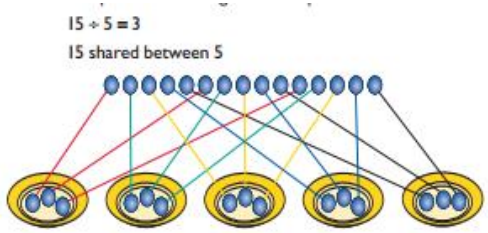
Obj Gui **Year 1** Vid Ex

Children must have secure counting skills- being able to confidently count in 2s, 5s and 10s.
Children should be given opportunities to reason about what they notice in number patterns.

Group AND share small quantities- understanding the difference between the two concepts.

Sharing

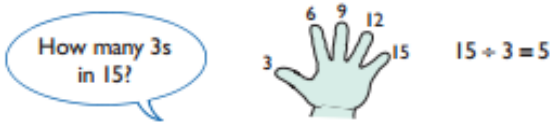
Develops importance of one-to-one correspondence.



Children should be taught to share using concrete apparatus.

Grouping

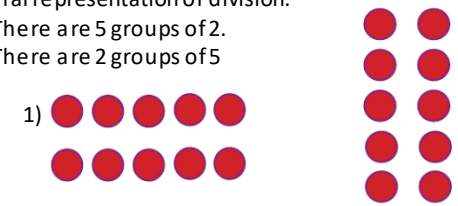
Children should apply their counting skills to develop some understanding of grouping.



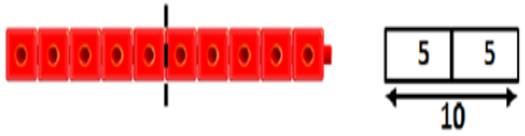
Arrays

Teacher to model use of arrays as a Pictorial representation of division.

1) There are 5 groups of 2.
2) There are 2 groups of 5



Children should be able to find ½ and ¼ and simple fractions of objects, numbers and quantities.



Obj Gui **Year 2** Vid Ex

÷ = signs and missing numbers

6 ÷ 2 = □ □ = 6 ÷ 2
6 ÷ □ = 3 3 = 6 ÷ □
□ ÷ 2 = 3 3 = □ ÷ 2
□ ÷ ∇ = 3 3 = □ ÷ ∇

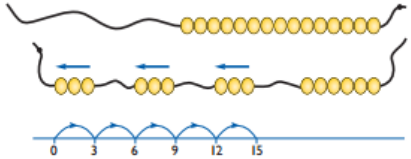
Know and understand sharing and grouping- introducing children to the ÷ sign.

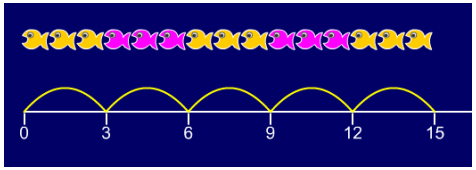
Children should continue to use grouping and sharing for division using practical apparatus, arrays and pictorial representations.

Grouping using a number line

Group from zero in jumps of the divisor to find our 'how many groups of 3 are there in 15?'.

15 ÷ 3 = 5



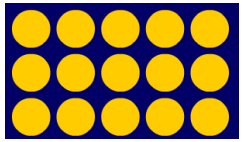


Arrays

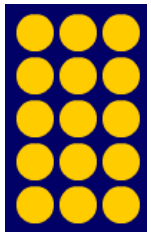
Children create arrays independently. Support children to understand how multiplication and division are inverse. Look at an array – what do you see?

1) 15 ÷ 3 = 5 There are 5 groups of 3.
2) 15 ÷ 5 = 3 There are 3 groups of 5.

1)



2)



GDS children only to progress onto calculations that involve remainders.

Use practical apparatus And number lines to model the concept of remainders.

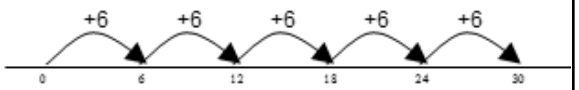
Obj Gui **Year 3** Vid Ex

÷ = signs and missing numbers

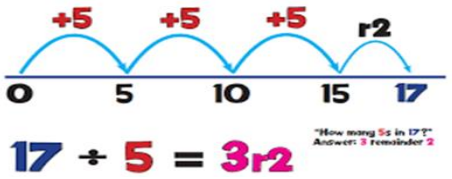
Continue using a range of equations as in year 2 but with appropriate numbers.

Grouping using a number line

How many 6's are in 30? 30 ÷ 6 can be modelled as:



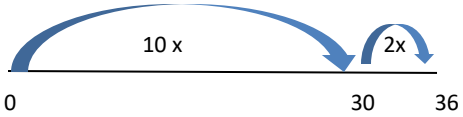
Grouping with remainders using a number line



Becoming more efficient using a number line

Children need to be able to partition the dividend in different ways.

36 ÷ 3 = 12

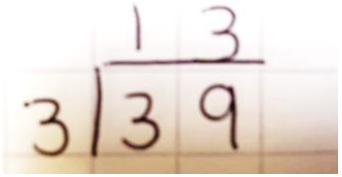


Remainders

37 ÷ 3 = 12 r1

Short Division Method (2d by 1d no remainders)

Dividend just over 10x the divisor, e.g. 39 ÷ 3 = 12



Year 4

Obj Gui Vid Ex

÷ = signs and missing numbers

Continue using a range of equations as in year 3 but with appropriate numbers.

Sharing, Grouping and using a number line

Children will continue to explore division as sharing and grouping, and to represent calculations on a number line until they have a secure understanding.

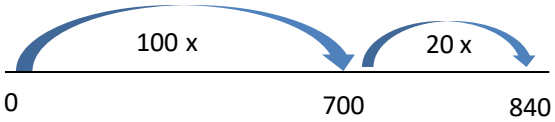
e.g. 840 ÷ 7 = 120

Jottings

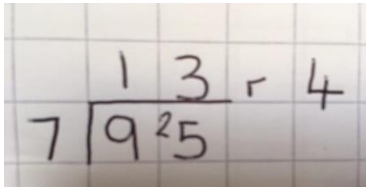
7 x 100 = 700

7 x 10 = 70

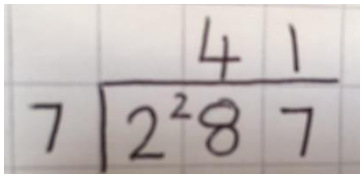
7 x 20 = 140



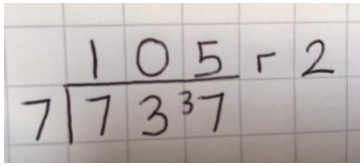
Short Division Method (3d by 1d with remainders)



2d by 1d with remainders



3d by 1d with no remainders



4d by 1d with and without remainders – examples with 0 to hold place value

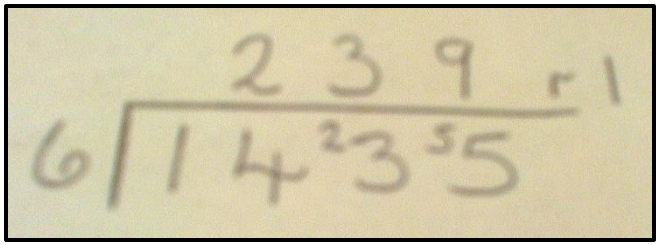
All of the above stages should include calculations with remainders as well as without. Remainders should be interpreted according to the context. (i.e. rounded up or down to relate to the answer to the problem)

Year 5

Obj Gui Vid Ex

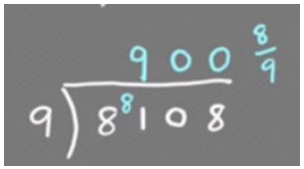
Short Division Method (4d by 1d with remainder expressed as either a decimal or fraction)

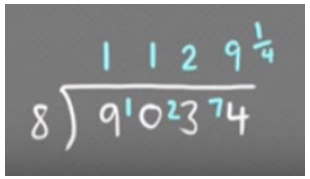
Continued as shown in Year 4, leading to the efficient use of a formal method. E.g. 1435 ÷ 6



Children begin to practically develop their understanding of how to express the remainder as a decimal or a fraction. Ensure practical understanding allows children to work through this (e.g. what could I do with this remaining 1? How could I share this between 6 as well?)

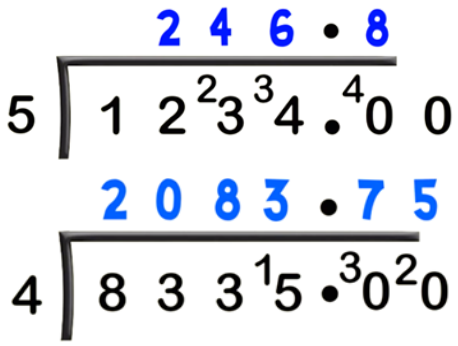
Remainder as a Fraction





Ensure children reduce fraction to its simplest form.

Remainder as a Decimal to 2 dp



Year 6

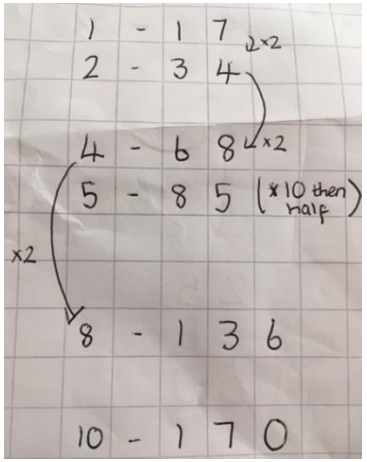
Obj Gui Vid Ex

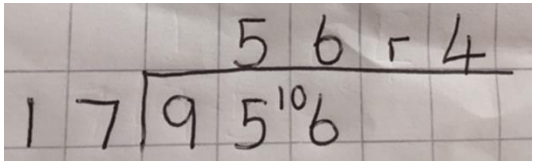
Short Division Method (4d by 1d with remainder expressed as either a decimal or fraction)

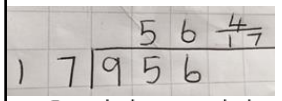
Continue to secure Short Division as in Year 5 but with appropriate numbers.

Short Division Method (4d by 2d)

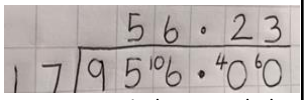
Children taught to create a table list using doubling and halving E.g.







Remainder recorded as a fraction .



Remainder recorded as a decimal to 2 dp .

Problem Solving

Teachers should ensure that pupils have the opportunity to apply their knowledge in a variety of contexts and problems (exploring cross curricular links) to deepen their understanding. The bar model should continue to be used to help visualise when problem solving .