Year 1—Division

Focus: Grouping and sharing small quantities without remainders

As an introduction to division, children in year 1 will solve problems in familiar and relevant contexts where they have to group and share. They will use objects and pictorial representations to solve problems and they will begin to use counting in 2s, 5s and 10s to support their problems solving.

A farmer has 15 roses and shares them between 3 friends. How many roses do they each get?

15 roses shared between 3 = 5 roses each

Bats fly in groups of 2. How many groups of 2 will there be if there are 8 bats?

8 bats shared into groups of 2 = 2 bats in each group

Key Vocabulary

Share, share equally, one each, two each…, group, groups of, lots of, array, quotient, dividend, divisor

Key Skills

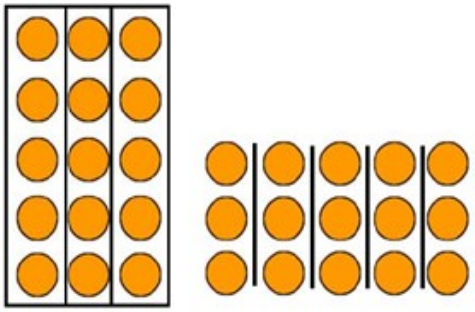
-Solve one step problems involving multiplication and division using concrete objects with support from adults.
-Children use grouping and sharing to understand division and to begin to understand finding simple fractions.
-Children make connections between arrays and counting in 2s, 5s and 10s.
-Children use halving and understand that this is the same as sharing into 2 equal groups.

Year 2—Division

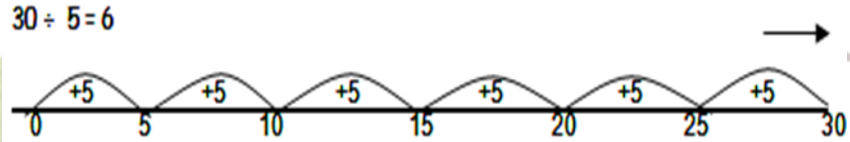
Focus: Grouping and sharing larger quantities using written methods and symbols

Children will continue to use the methods of sharing and grouping in division with objects to support their understanding of arrays for sharing and grouping and the division numberline for grouping.

To solve problems such as 15 ÷ 3 =, children will share 15 objects into 3 groups like in the first array or make groups of 3 until they get to 15, like in the second image.



Completing both of these processes will help children see the link between sharing and grouping but also the link between 15 ÷ 3 = 5 and 15 ÷ 5 = 3.



Key Vocabulary

Share, share equally, one each, two each…, group, groups of, lots of, array, divide, divided by, divided into, division, grouping, number line, left, left over, quotient, dividend, divisor

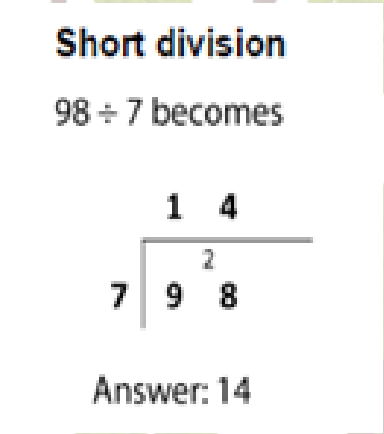
Key Skills

-Count in steps of 2,3 and 5 from 0.
-Recall and use x and ÷ facts for the 2,5 and 10 times tables.
-Solve division problems and write division number sentences for problems.
-Understand that division is not commutative unlike multiplication.
-Solve increasingly challenging division problems using concrete objects, arrays, and simple written methods such as grouping on a numberline.

Year 3—Division

Focus: Dividing two digit numbers by one digit numbers moving from numberline methods to short division

Children in Year three will move on from using a numberline to solve division problems and will begin to use short division without any remainders.



Key Vocabulary

Share, share equally, one each, two each…, group, groups of, lots of, array, divide, divided by, divided into, division, grouping, number line, left, left over, inverse, short division, carry, remainder, multiple, quotient, dividend, divisor

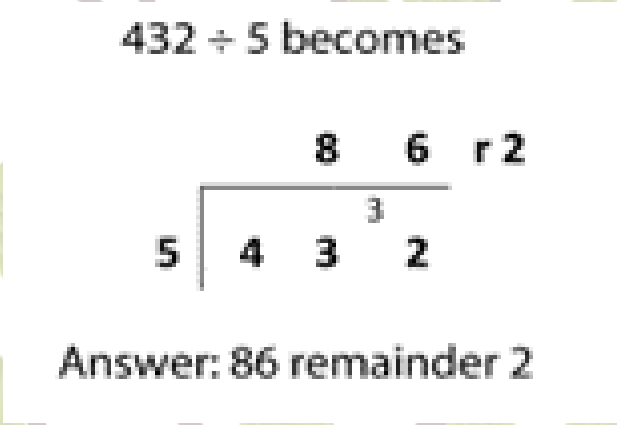
Key Skills

-Recall and use and ÷ facts for the 2,3,4,5,6,8 and 10 x tables (using doubling to connect the 2,4 and 8 x tables)
-Solving division problems where a 2 digit number is divided by a 1 digit number using mental and written.
-Solve problems in a variety of contexts including missing number problems.
-Pupils begin to derive related facts e.g. 9 ÷ 3 = 3 means 90 ÷ 3 = 30 or 90 ÷ 30 = 3.
-Pupils develop confidence in written methods, moving from number lines to short division.

Year 4—Division

Focus: Consolidating and extending use of short division

Children in Year four will continue to use short division to solve division problems. They will begin to work on remainders, including problems where there are remainders in the first numbers but not in the final answer.



Key Vocabulary

Share, share equally, one each, two each…, group, groups of, lots of, array, divide, divided by, divided into, division, grouping, number line, left, left over, inverse, short division, carry, remainder, multiple, divisible by, factor, quotient, dividend, divisor

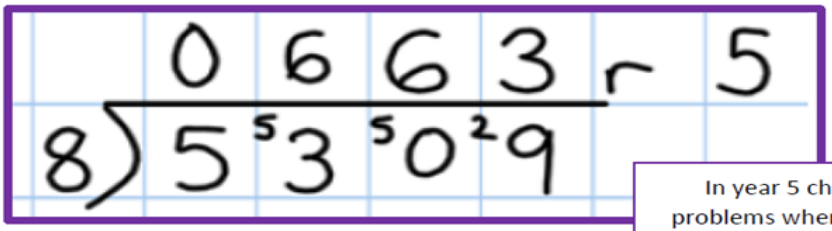
Key Skills

-Recall multiplication and division facts for all numbers to 12 x 12.
-Use place value and known facts to derive facts mentally- including multiplying and dividing by 100, 10 and 1.
-Practise mental methods and extend this to three digit numbers using derived facts- e.g. 100 ÷ 5 = 20 so 20 x 5 = 100.
-Solve two step problems with increasingly harder numbers in a range of contexts, using language to identify the correct operation.
-Correspondence problems should be introduced such as 3 cakes are shared equally between 10 children, 1 man has 6 cats so how many cats do 3 men have etc.

Year 5—Division

Focus: Extending use of short multiplication to four digits and remainders

Children in Year Five will use short division to solve problems up to 4 digits long. For the first time they will use short division to solve problems that have a remainder in the final answer.



In year 5 children will begin to solve division problems where a number up to 4 digits is divided by a single digit number including answers with remainders. These division problems need to be contextual so the children learn how to express the remainder- as a number, a fraction, a decimals, rounded up or rounded down.

Key Vocabulary

Share, share equally, one each, two each…, group, groups of, lots of, array, divide, divided by, divided into, division, grouping, number line, left, left over, inverse, short division, carry, remainder, multiple, divisible by, factor, quotient, prime number, prime factors, composite number (non-prime), quotient, dividend, divisor

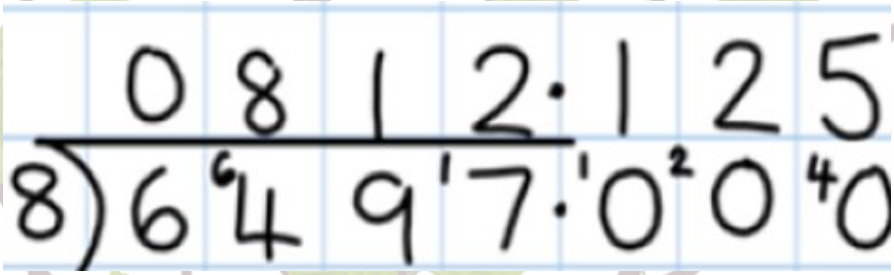
Key Skills

-Multiply and divide numbers mentally, using known facts.
-Identify multiples and factors, including all factor pairs of a number and common factors between 2 numbers.
-Solve x and ÷ problems where larger numbers are decomposed into their factors.
-Multiply and divide whole numbers and decimals by 10, 100 and 1000.
-Use vocabulary of prime numbers, prime factors and composite numbers.
-Work out whether a number up to 100 is prime and know all prime numbers to 30.
-Use and understand multiplication and division as inverses.
-Present division with remainders answers differently, showing the remainder as a fraction, decimal or whole number by rounding.
-Solve problems with a combination of all four operations including fraction scaling problems and problems involving simple rates.

Year 6—Division

Focus: Using short division to divide four digit numbers by one and two digit numbers and express remainders as decimals.

In Year six, children will use short division to divide decimal numbers by single digit numbers. The final step of division will be used to divide numbers by two digits.



Key Vocabulary

Share, share equally, one each, two each…, group, groups of, lots of, array, divide, divided by, divided into, division, grouping, number line, left, left over, inverse, short division, carry, remainder, multiple, divisible by, factor, quotient, prime ~number, prime factors, composite number (non-prime), common factor, quotient, dividend, divisor

Key Skills

-Use multiplication and division facts up to 12 x 12 to solve more complex problems.
-Decide when to use short or long division and interpret remainders in a way that is appropriate to the problem.
-Perform mental calculations for problems involving large numbers and mixed calculations.
-Identify common factors, common multiples and prime numbers.
-Use estimation to check answers to calculations and determine accuracy.
-Use written methods of division to solve decimal problems up to 2 decimal places.
-Solve problems which require rounding to 10, 100, 1000 and beyond.