FAIRMEADOWS FOUNDATION PRIMARY SCHOOL

Calculation Policy

Division

The following calculation policy has been devised to meet requirements of the National Curriculum for the teaching and learning of mathematics and is also designed to give pupils a consistent and smooth progression of learning in calculations across the school.

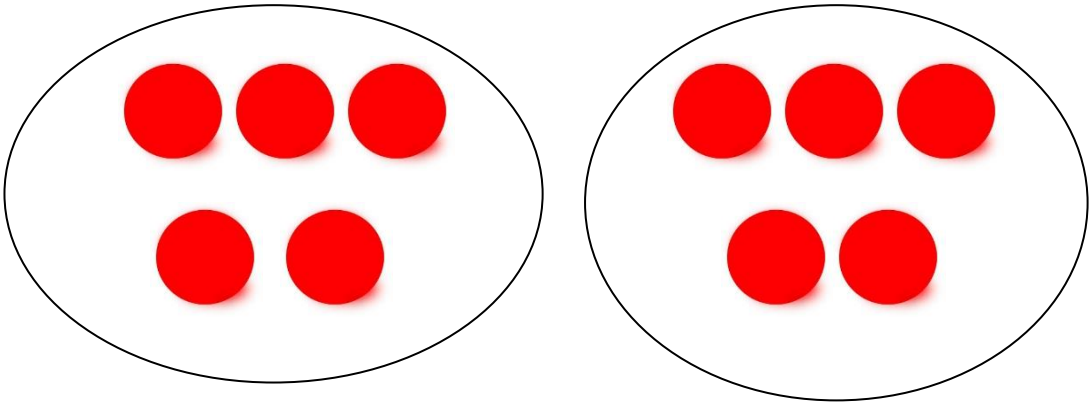
Age/stage expectations

The calculation policy is organised according to academic year expectations as set out in the National Curriculum; **however, it is vital that pupils are taught according to the stage that they are currently working at,** being moved onto the next level as soon as they are ready or working at a lower stage until they are secure enough to move on.

Division: Year One

Sharing

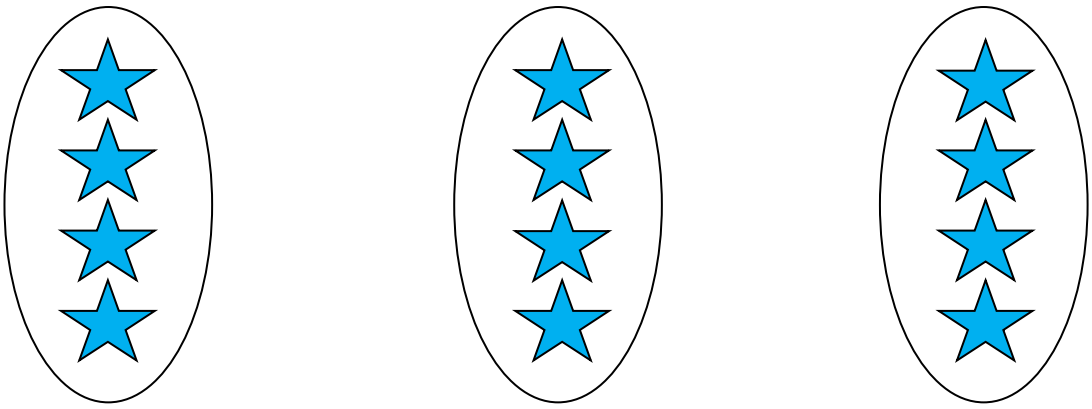
10 shared by 2 is 5



10 ÷ 2 = 5

Grouping

How many 4s are there in 12?



How many 4s are there in 12?

Key Vocabulary: share, share equally, one each, two each…, group, groups of, lots of, array

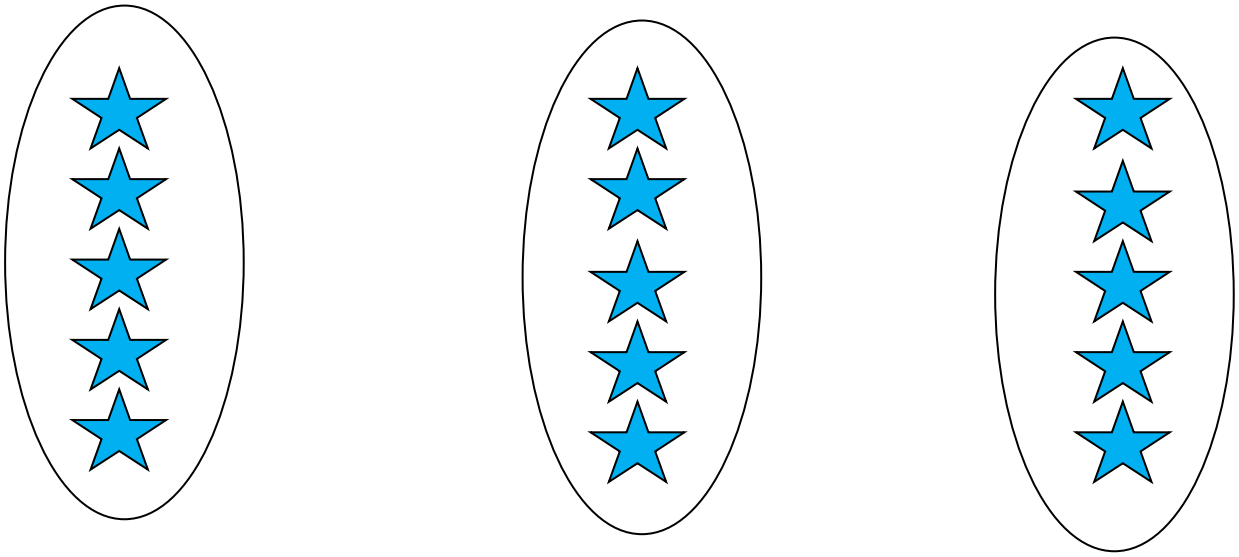
Key number skills needed for division at Year One:

- Solve one-step problems involving multiplication and division, by calculating the answer using concrete objects, pictorial representations arrays with the support of the teacher
- Through grouping and sharing small quantities, pupils begin to understand, division, and finding simple fractions of objects, numbers and quantities.
- They make connections between arrays, number patterns, and counting in twos, fives and tens.

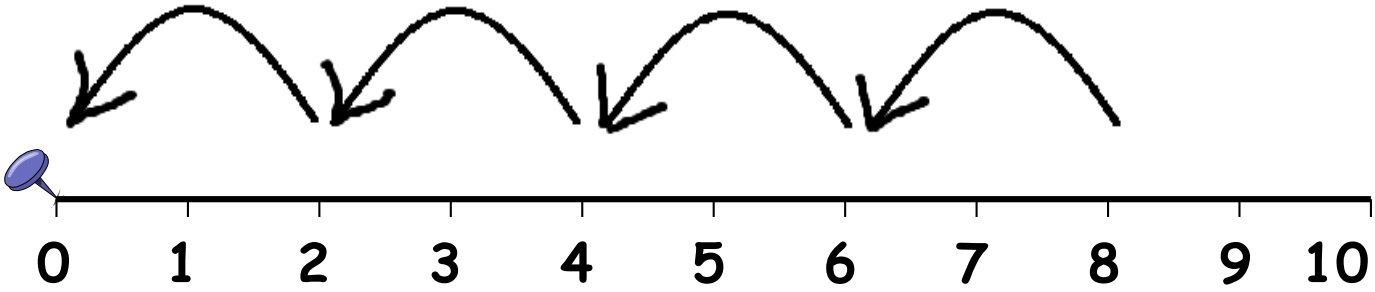
Division: Year Two

Arrays

15 ÷ 5 = 3



Number Line



8 ÷ 2 = 4

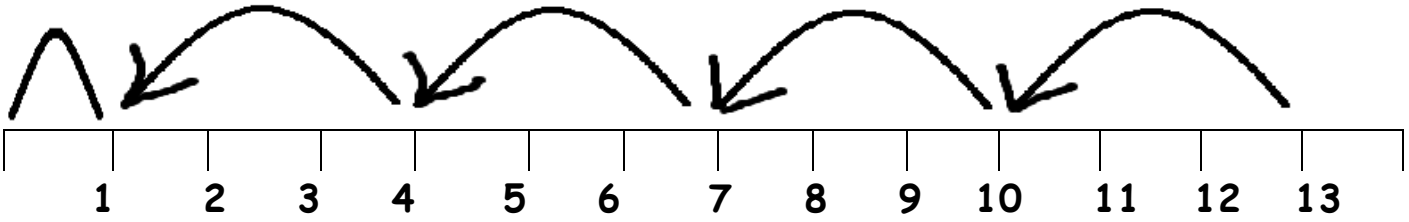
Key Vocabulary: share, share equally, one each, two each…, group, equal groups of, lots of, array, divide, divided by, divided into, division, grouping, number line, left, left over

Key skills needed for division at Year Two:

- Count in steps of 2, 3, and 5 from 0
- 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 x, ÷ and = signs.
- Show that multiplication of two numbers can be done in any order (commutative) and division of one number by another cannot.

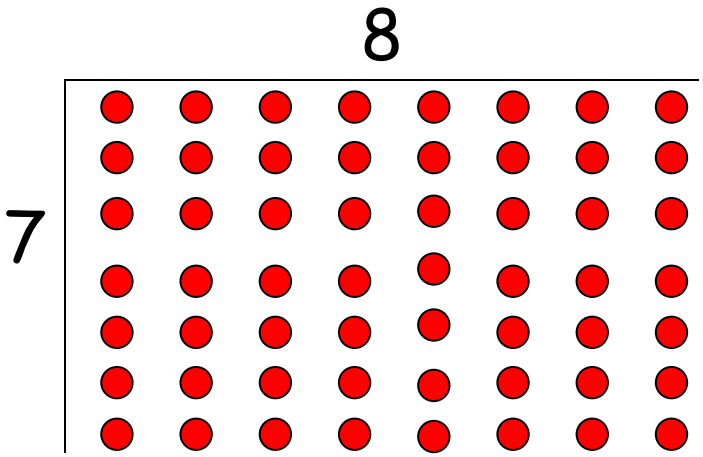
Division: Year Three

Divide a two digit by a single digit number



13 ÷ 3 = 4 r1

Short division no remainders using array



$$7\overline{)56}\ 8$$

Key Vocabulary: share, share equally, one each, two each…, group, equal groups of, lots of, array, divide, divided by, divided into, division, grouping, number line, left, left over, inverse, short division, remainder, multiple.

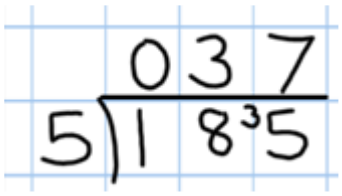
Key number skills needed for division at Year Three:

- Write and calculate mathematical statements for multiplication and division using the multiplication tables that they know, including for two-digit numbers times one-digit numbers, using mental and progressing to for-mal written methods.
- Pupils develop efficient mental methods, for example, using multiplication and division facts (e.g. using 3 × 2 = 6, 6 ÷ 3 = 2 and 2 = 6 ÷ 3) to derive related facts (30 × 2 = 60, so 60 ÷ 3 = 20 and 20 = 60 ÷ 3).
- Pupils develop reliable written methods for division, starting with calculations of 2-digit numbers by 1-digit numbers and progressing to the formal written method of short division.

Division: Year Four

Reducing the equipment

$$4\overline{)72}=18$$



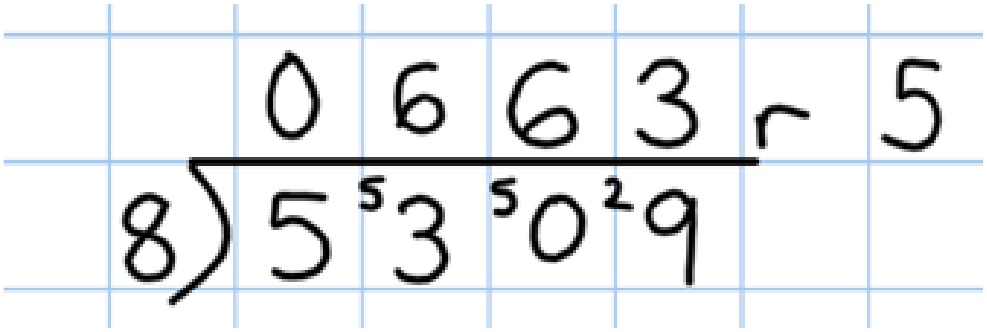
Key Vocabulary: share, share equally, one each, two each…, group, equal groups of, lots of, array, divide, divided by, divided into, division, grouping, number line, left, left over, inverse, short division, remainder, multiple, divisible by, factor.

Key number skills needed for division at Year Four:

- Recall multiplication and division facts for all numbers up to 12 x 12.
- Use place value, known and derived facts to multiply and divide mentally, including: multiplying and dividing by 10 and 100 and 1.
- Pupils practise to become fluent in the formal written method of short division with exact answers when dividing by a one-digit number
- Pupils practise mental methods and extend this to three-digit numbers to derive facts, for example 200 × 3 = 600 so 600 ÷ 3 = 200
- Pupils solve two-step problems in contexts, choosing the appropriate operation, working with increasingly harder numbers. This should include correspondence questions such as three cakes shared equally between 10 children.

Division: Year Five

Short division with remainders



Key Vocabulary: share, share equally, one each, two each…, group, equal 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, inverse.

Key number skills needed for division at Year Five:

- Multiply and divide numbers mentally, drawing upon known facts.
- Identify multiples and factors, including finding all factor pairs of a number, and common factors of two number.
- Solve problems involving multiplication and division where larger numbers are decomposed into their factors.
- Multiply and divide whole numbers and those involving decimals by 10, 100 and 1000.
- Use the vocabulary of prime numbers, prime factors and composite (non-prime) numbers.
- Work out whether a number up to 100 is prime, and recall prime numbers to 19.
- Divide numbers up to 4 digits by a one-digit number using the formal written method of short division and interpret remainders appropriately for the context
- Use multiplication and division as inverses.
- 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 (e.g. 98 ÷ 4 = 24 r 2 = 241/2 = 24.5 ≈ 25).
- Solve problems involving combinations of all four operations, including understanding of the equals sign, and including division for scaling by different fractions and problems involving simple rates.

Division: Year Six

Long division

432 ÷ 15 = 28 r12

				2	8	r12
1	5		4	3	2	
		-	3	0	0	15X20
			1	3	2	
		-	1	2	0	15X8
				1	2	

28 r12

13

15 | 4 3 2

Key number skills needed for division at Year Six:

- Recall and use multiplication and division facts for all numbers to 12 x 12 for more complex calculations
- 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 rounding, as appropriate for the context. Use short division where appropriate.
- Perform mental calculations, including with mixed operations and large numbers.
- Identify common factors, common multiples and prime numbers.
- Solve problems involving all 4 operations.
- Use estimation to check answers to calculations and determine accuracy, in the context of a problem.