2MD–2 Grouping problems: missing factors and division

Relate grouping problems where the number of groups is unknown to multiplication equations with a missing factor, and to division equations (quotitive division).

2MD–2 Teaching guidance

Pupils need to be able to represent problems where the total quantity and group size is known, using multiplication equations with missing factors. For example, "There are 15 biscuits. If I put them into bags of 5, how many bags will I need?'' can be represented by the following equation:

$$\boxed{} \times 5 = 15$$

Pupils can use skip counting or their emerging 2, 5 and 10 multiplication table fluency to calculate the missing factor.
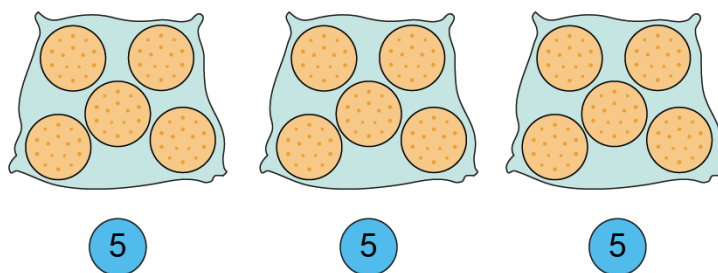

Figure 54: 3 bags of 5 biscuits alongside three 5-value counters

Pupils should then learn that unknown-factor problems can also be represented with division equations (quotitive division), for example, $15 \div 5 = \boxed{}$. They should be able to use skip counting or their multiplication-table fluency to find the quotient: $15 \div 5 = 3$.

Pupils should be able to describe how each term in the division equation links to the context and describe the division equation in terms of 'division into groups'.

Language focus

"The 15 represents the total number of biscuits."

"The 5 represents the number of biscuits in each bag."

"The 3 represents the number of bags."

"15 divided into groups of 5 is equal to 3."

Pupils also need to be able to solve division calculations that are not set in contexts. They should recognise that they need to skip count in the divisor (2, 5 or 10), or use the associated multiplication fact, to find the quotient. For example, to calculate $60 \div 10$, they can skip count in tens (counting the required number of tens) or apply the fact that $6 \times 10 = 60$.

You can find out more about fluency and recording for division by 2, 5 or 10 here in the calculation and fluency section: **2MD–2**

2MD–2 Example assessment questions

1. Miss Robinson asked Harry to get 60 apples from the kitchen. The apples come in bags of 10. How many bags does Harry need to get?

2. Diego has some 5p coins. He has 40p altogether. How many 5p coins does Diego have?

3. The pictogram shows how many socks each child has.

represents 2 socks

Lena has 8 socks. How would this be represented on the pictogram? Draw it.

4. There are 5 balloons in a pack. I need 15 balloons for my party. How many bags should I buy?

5. Fill in the missing numbers.

$\boxed{} \times 5 = 30$ $\qquad$ $50 \div 10 = \boxed{}$ $\qquad$ $2 \times \boxed{} = 14$