

Curriculum objectives

- To recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables.
- To 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.

Success criteria

- I can use an empty number line to solve multiplication of ten numbers.

Differentiation**Less confident learners**

Children work with numbers using just the two-, five- and ten-times tables.

More confident learners

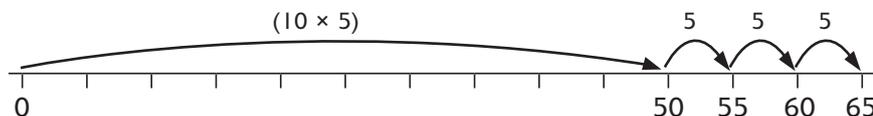
Challenge these children to try more complex multiplications such as 23×5 .

Lesson 2

Oral and mental starter 35

Main teaching activities

Whole-class work: Explain that the children will be using informal methods to record multiplication. Begin with an example, such as 13×5 . Explain that this can be seen as: 10×5 add 3×5 . Draw this diagram on the board:



Underneath the diagram write: $13 \times 5 = 10 \times 5$ add $3 \times 5 = 50 + 15 = 65$.

Now provide further examples for the children to try for themselves:

14×3 ; 16×2 ; 18×4 . Give the children about five minutes to work through the examples and then review these together, using empty number lines on the board and writing out the number sentence as shown above.

Paired work: Write the two-digit numbers 10, 14, 15 and 17 on the board, and the single-digit numbers 2, 3, 4, 5 and 8. Encourage the pairs to use an empty number line to help them to model multiplication facts and to write the multiplication sentences. Ask the children to begin with 14×2 .

Progress check: Review together: 14×2 . Draw the empty number line onto the board. Invite a child to show the multiplication on the empty line. Ask: *What is 14×2 ? So what is 2×14 ? What division facts can you find from the numbers 14, 2 and 28?*

Review

Review some of the paired work examples. Invite children to draw their empty number line diagrams on the board, write the multiplication sentences, and to explain which number facts they chose to use. Ask: *Did everyone do this in this way?*

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- I can use an empty number line to solve multiplication of teen numbers.

Differentiation**Less confident learners**

Work with this group of children to solve 11×3 , 13×3 and 14×3 .

More confident learners

Provide these children with some more challenging examples such as 22×4 .

Lesson 3

Oral and mental starter 36

Main teaching activities

Group work: Review the work from the previous lesson. Write on the board, 15×4 . Ask the children to suggest how this can be solved using an empty number line. Write the number sentence:

$$15 \times 4 = (10 \times 4) + (5 \times 4) = 40 + 20 = 60.$$

Repeat this for further examples, such as 14×3 , 16×5 , and so on.

Independent work: Write on the board 13, 14, 15 and 16, and 3, 4 and 8. Ask the children to multiply each teen number by 3, then by 4, then 8 and to record each multiplication using an empty number line and writing the multiplication sentence.

Progress check: Ask individual children to explain how they find each answer. Invite them to say another multiplication sentence that uses the three linked numbers, and the two division sentences.

Review

Review the children's work, as in the previous lesson. Invite the more confident to explain how they worked without the empty number line and to demonstrate the solution to their challenge. Ask questions such as: *What is the other multiplication sentence that uses these numbers? Tell me the two division sentences that use these three numbers.*