Unit 12: Multiplication

Counting in 10s, 5s and 2s

➜ pages 6–8

1. a) Children should have matched the pictures to the number lines as follows:
Top picture (fingers) ➜ middle number line (0 to 20)
Middle picture (sticks) ➜ bottom number line (0 to 40)
Bottom picture (eyes) ➜ top number line (0 to 10)
b) There are 20 fingers. There are 40 sticks. There are 10 eyes.

2. Missing numbers on number line: 20, 25, 30, 35. There are 35 beads.

3. Children should have noticed that Filip has missed out 20 when counting in 5s so there are 30 bags, not 35.

4. a) Children should have circled 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30
b) Children should have coloured in 5, 10, 15, 20, 25, 30
c) 10, 20, 30
d) Any multiple of 10 would have both a circle and a colour so 40, 50, 60…

Reflect

Children could have written different explanations for how to count the wheels on 5 bicycles, e.g.

I would count up in 2s until I get to five 2s: 2, 4, 6, 8, 10. There are 10 wheels.

I would add 5 and 5 to get 10.

Making equal groups

➜ pages 9–11

1. a) There are 5 groups of 4 candles.
b) There are 5 groups of 6 lollies.
c) There are 3 groups of 2 gloves.
d) There are 4 groups of 2 hats.
e) There are 2 groups of 2 scarves.

2. a) Children should have added 3 dots in the second group and 2 dots in the third group to complete 3 equal groups of 4. Alternatively, some children might have added dots to the first picture as well, to make equal groups of a different size.
b) Children should have drawn 2 more groups of triangles, so that **not all** of the groups contain 4 triangles.

3. Oliver made 3 groups of 4.

4. Children could have written different stories, e.g.
Equal groups: There are 3 equal groups of 5 books.
Unequal groups: There is a group of 3 computer screens and a group of 2 computer screens.
The CDs are in two unequal groups, with 2 CDs in one pile and 1 CD in another.

Reflect

Children should have drawn different pictures, one to show equal groups and the other to show unequal groups. Children should have understood that equal groups each contain the same number of objects but do not necessarily need to be organised in the same way.

Adding equal groups

➜ pages 12–14

1. a) Missing number on number line: 6, 8, 10.
2 + 2 + 2 + 2 + 2 = 10. There are 10 wheels.
b) 5 + 5 + 5 + 5 = 20. There are 20 spots.

2. 5 + 5 + 5 = 15. 15 buttons are needed for 3 snowmen.

3. Children should have completed the table as follows:
4th column: 5 + 5 + 5 = 15
5th column: 5 + 5 + 5 + 5 = 20

4. a) Missing number on number line: 30
10 + 10 + 10 = 30
b) Missing numbers on number line: 30, 40
10 + 10 + 10 + 10 = 40

5. Oliver and Anna are both incorrect. They have **the same** number of stickers because 5 + 5 + 5 + 5 = 20 and 4 + 4 + 4 + 4 + 4 = 20.

Reflect

Children could have described different methods, e.g.

I can work out how many shells there are by counting up in 5s: 5, 10, 15, 20, 25, 30. There are 30 shells.

5 + 5 + 5 + 5 + 5 + 5 = 30. There are 30 shells.

I can work out how many shells there are by drawing circles around two groups of 5 each time and then counting in 10s: 10, 20, 30.

Making simple arrays

➜ pages 15–17

1. a) There are 3 objects in each row. There are 2 rows.
b) There are 3 objects in each row. There are 4 rows.

2. Children should have matched the arrays to the descriptions as follows:
top array ➜ top description (4 columns, 2 triangles in each column)
middle array ➜ bottom description (3 columns, 4 triangles in each column)
bottom array ➜ middle description (4 columns, 3 triangles in each column)

3. Missing numbers in number line: 10, 15
5 + 5 + 5 = 15. There are 15 stars.

4. Tim has made a mistake. Children could have explained their reasoning in different ways, e.g.

Every row in an array should be the same but Tim has put 6 counters in the top two rows and 7 counters in the bottom row.

Tim has not organised his array so that every row is the same and every column is the same.

5. It is most likely that children will draw 3 dots to complete a 3 by 10 array, however children could have drawn in more dots to create larger arrays.

Reflect

Children will have needed to know the number of rows and the number of columns to work out how many smiley faces are in the array. They could have completed the number line by drawing two jumps of 5 or by drawing five jumps of 2 (or both). Hopefully, children will have started to appreciate that it does not matter whether they think of each row as a group (giving 2 groups of 5) or each column as a group (giving 5 groups of 2) as the total number of objects is the same (10).

Making doubles

➜ pages 18–20

1. Children should have circled the dominoes that show: double 2, double 4, double 3.

2. Children should have drawn counters into the right column of each ten frame so that it matches the counters in the left column.

Double 1 is 2. Double 2 is 4. Double 3 is 6. Double 4 is 8. Double 5 is 10.

3. Children should have matched:
1st card in top row (3) ➜ 4th card in bottom row (6)
2nd card in top row (7) ➜ 1st card in bottom row (14)
3rd card in top row (5) ➜ 2nd card in bottom row (10)
4th card in top row (8) ➜ 3rd card in bottom row (16)

4. a) Double 4 is 8.
b) 10 is double 5.
c) 2 is double 1.
d) Double 6 is 12.

5. Children could have chosen any number from 1 to 10 and coloured its double in the grid. They could have noticed that the double is a number they say when they count in 2s from 0.

Reflect

Different children will have been able to recall a different range of doubles facts from the following:

Number:	1	2	3	4	5	6	7	8	9	10
Double:	2	4	6	8	10	12	14	16	18	20

Solving word problems – multiplication

➜ pages 21–23

1. a) There are 5 pots of 2 brushes. There are 10 brushes altogether. Children should have completed the number line with 6, 8, 10.
b) There are 30 pencils altogether. Children should have completed the number line with 15, 20, 25, 30.

2. Children should have matched the questions to the number lines as follows:

How many circles? ➜ middle number line (0 to 10)

How many squares? ➜ bottom number line (0 to 8)

How many triangles? ➜ top number line (0 to 6)

3. There are 15 dots in total.

4. a) 14
b) 5

Reflect

Children could have written many different questions to match the number line, e.g.

I have 5 groups of 2 objects. How many objects do I have altogether?

5 children have got paint all over their hands. How many hands are covered in paint?

I have five 2 pence coins in my purse. How many pennies would have the same value?

End of unit check

➜ pages 24–25

My journal

Children could have given a number of different reasons, e.g.

Joe is right because there are 2 groups of 10. When there is the same number twice it means there is double that number.

Sara is right because the columns in the array show 10 groups of 2.

Poppy is right because the rows in the array show 2 groups of 10.