Unit 14: Halves and quarters

Finding halves (I)

➜ pages 43–45

1. Children should have drawn lines as follows:
Rectangle: any line through the centre of the shape, e.g. horizontal line, vertical line, diagonal line
Heart: vertical line down the middle of the shape
Oval: any line through the centre of the shape, e.g. horizontal line, vertical line, diagonal line
Butterfly: vertical line down middle of shape

2. a) Children should have coloured one of the marked parts on each shape.
b) Any straight line which passes through the centre of the shape, e.g. vertical, diagonal.

3. Children should have ticked: 1st and 4th triangles, 1st and 3rd circles.

4. Children should have matched each shape with its mirror image:
The two right-angle, isosceles triangles together would make a square.
The two right-angle, non-isosceles triangles together would make a non-square rectangle (oblong).
The two rectangles whose horizontal sides are twice as long as their vertical sides together would make a square.
The two other rectangles together would make a non-square rectangle (oblong).

5. Shapes should be matched to descriptions as follows:
4th shape in top row, 1st shape in bottom row, 2nd shape in bottom row ➜ less than half shaded.
1st shape in top row, 3rd shape in top row, 4th shape in bottom row ➜ exactly half shaded.
2nd shape in top row, 3rd shape in bottom row ➜ more than half shaded.

Reflect

Children could have given different answers but the most likely answer is that the 3rd shape is the odd one out because less than half of it is shaded whereas exactly half of each of the others is shaded.

Finding halves (2)

➜ pages 46–48

1. a) Half of 8 children is 4 children.
b) Half of 10 children is 5 children.

2. Children should have coloured:
a) 2 cars.
b) 7 books.
c) 6 bananas.
d) 8 smiley faces.

3. a) Half of 10 is 5.
b) 9 is half of 18.
c) 2 is half of 4.
d) Half of 6 is 3.

4. Children should have coloured, from left to right: any 2 squares, any 3 squares, any 3 squares, any 3 squares

5. star = 3, triangle = 6

Reflect

Children could have explained different methods, e.g.

I can find half of 12 by sharing 12 counters into 2 equal sets.

I can find half of 12 by colouring a row of 12 squares on squared paper and drawing a line down the middle.

Finding quarters (I)

➜ pages 49–51

1. There are different ways to draw lines to divide the rectangle into quarters, e.g.

3 evenly spaced horizontal lines, 3 evenly spaced vertical lines, 1 horizontal line and 1 vertical line through the centre of the shape, 2 diagonal lines through the centre of the shape

2. Children should have coloured a quarter in the following ways:
Shapes on first and second rows – shade one marked part of each shape.
Rectangles in third row – draw lines to divide each shape into 4 equal pieces (probably in similar ways to 2nd row) and then shade one piece.

3. Children should have ticked the following:
Top row: 1st shape and 4th shape
Bottom row: 3rd shape

4. Children should have matched shapes to descriptions as follows:
Top row: 2nd shape, bottom row: 2nd shape, bottom row: 4th shape ➜ less than a quarter shaded
Top row: 1st shape, top row: 3rd shape, bottom row: 3rd shape ➜ exactly a quarter shaded
Top row: 4th shape, bottom row: 1st shape ➜ more than a quarter shaded

5. There are alternative answers but the most likely answers are:
Cross: 1 vertical and 1 horizontal line crossing in centre of shape; two diagonals which cross at right-angles at centre of shape
Star: 1 vertical and 1 horizontal line crossing in centre of shape; two diagonals which cross at right-angles at centre of shape
Rhombus: 1 vertical and 1 horizontal line crossing in centre of shape; lines from the centre of one side to the centre of the opposite side and cross at centre of shape.

Reflect

There are many ways to divide a rectangle into quarters. The most likely ways children will have shown are:

3 evenly spaced horizontal lines, 3 evenly spaced vertical lines, 1 horizontal line and 1 vertical line through the centre of the shape, 2 diagonal lines through centre of the shape

Finding quarters (2)

→ pages 52–54

1. a) A quarter of 4 is 1.
b) A quarter of 8 is 2.
c) A quarter of 20 is 5.
d) A quarter of 12 is 3.

2. Children should have circled the 2nd, 3rd and 4th pictures.

3. a) more than
b) exactly
c) less than

4. a) A quarter of 4 is 1.
b) A quarter of 8 is 2.
c) A quarter of 16 is 4.
d) A quarter of 4 is 1.

5. Meg is right. Children might have explained their reasoning in different ways, e.g.
There are 20 sweets and a quarter of 20 is 5.
4 is a quarter of 16 but there are more than 16 sweets altogether.

6. star = 6, square = 4

Reflect

Children could have explained different methods, e.g.

I can find a quarter of 12 by dividing 12 objects into 4 equal sets.

I can find a quarter of 12 by dividing 12 objects in half and then dividing each set in half again.

Solving word problems – halves and quarters

→ pages 55–57

1. a) Half of 8 donuts is 4 donuts. 4 donuts are eaten.
b) 5 is a quarter of 20. There are 20 toy cars in total.

2. a) A half of 20 is 10. 10 pebbles have dots.
b) A quarter of 20 is 5. 5 pebbles have stripes.

3. There are 9 birds left.

4. Children should have circled picture **C**.

Reflect

Which questions needed you to think about quarters?
1b, **2**b, **3**, **4**

Which questions needed you to think about halves?
1a, **2**a, **4**

Children could have identified different questions as harder.

End of unit check

→ pages 58–59

My journal

It is easier for Luke because you can share the strawberries equally into two halves. It is harder for Eva because you cannot share the strawberries equally into quarters. There will be two left over.

Power puzzle

Children should shade half of the total number of boxes in each grid without producing the same pattern twice.