New carpet for the library

Annotation

Ben understands that the attribute of a shape to be measured is its area. He is able to mentally separate the shape into two rectangles and then combine the areas of both rectangles to calculate the total area. When asked to show the 20 square centimetres in the second rectangle, Ben is able to create the structure of an array in which he locates all units.

Problem: New carpet for the library

The teacher shows the student a shape and asks:

What is the area of this shape in square centimetres?

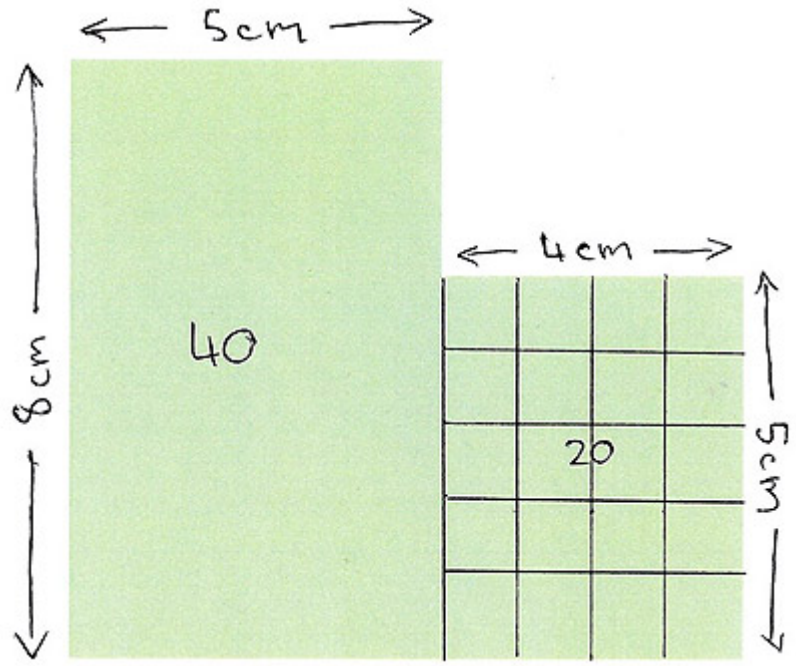
Then the teacher asks the student to measure the shape to check the accuracy of his estimation.

Student Response

Ben places his fingertip repeatedly along the sides of the shape.

Ben: I estimate the area of the shape to be 62 square centimetres.
Teacher: Now can you work out the area to check your estimate?

Ben splits the shape into two rectangles and measures and records the side lengths of each rectangle. He then writes 40 in one rectangle and 20 in the other.



Ben: It’s 60 square centimetres.

Teacher: Could you draw the 20 square centimetres on this rectangle for me?

Ben draws a 4 by 5 array in the rectangle labelled “20”.