

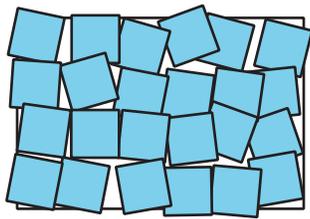
Family Support Materials

Area and Multiplication

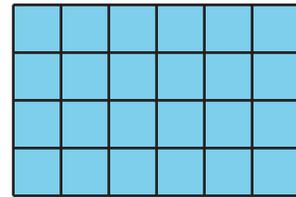
In this unit, students learn about the concept of area and relate area to multiplication and addition.

Section A: Concepts of Area Measurement

In this section, students make sense of the area of flat shapes. They learn that the area of a shape is the amount of space it covers, and it can be measured by the number of square units that cover it without gaps or overlaps. Students explore this idea by tiling shapes with squares and counting the number of squares.



We cannot measure area by the number of squares when they cover a shape with gaps and overlaps.

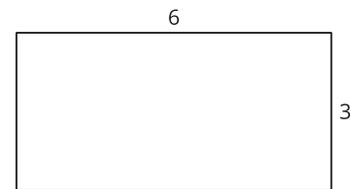
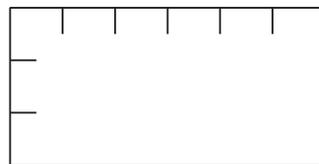
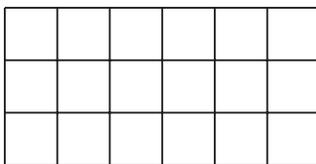


We can measure the area of this shape by the number of squares because the squares tile the shape.

Section B: Relate Area to Multiplication

In this section, students relate the area of rectangles to multiplication. They see that rectangles can be tiled with squares in equal-size rows (or columns), so if the rectangle is 6 units by 4 units, there are 6 groups of 4 or 4 groups of 6. The number of square units is then 6×4 or 4×6 .

Students come to understand that multiplying the side lengths of a rectangle gives the same number of squares as counting them. A rectangle that is 3 units by 6 units can be tiled with 3 rows of 6 squares, so its area is 3×6 or 18 square units.

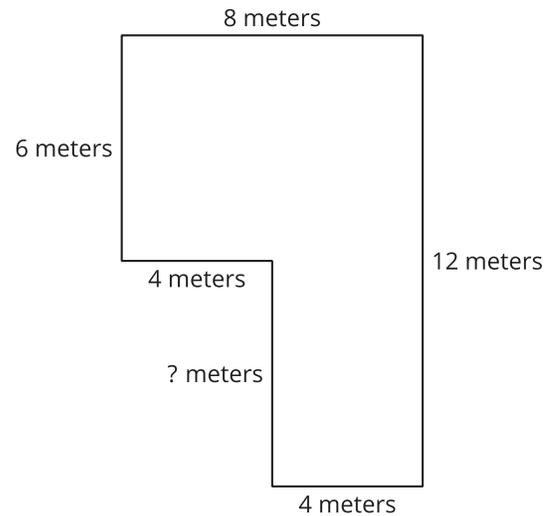


Students then use these ideas to solve real-world story problems related to area.

Section C: Find Area of Figures Composed of Rectangles

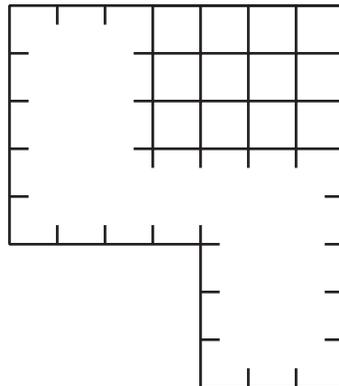
In this section, students find the area of figures composed of rectangles. They do so by decomposing (breaking apart) the figures into non-overlapping rectangles, finding the area of each rectangle, and adding all the areas.

Students also use the structure of rectangles to find missing side lengths in figures composed of rectangles.



Try it at home!

Near the end of the unit, ask your student to find the area of this figure:



Questions that may be helpful as they work:

- How can this figure be decomposed into rectangles?
- How many rows (or columns) are there in each rectangle?
- What multiplication expressions would you use to find the area?
- Where do we see this kind of design in our home or in places we visit?