Introduction

The exciting thing about this book is that amazingly your students really will be able to figure out the areas of the complex figures in it! Just have them follow through the puzzles from the beginning and you'll see how each step enables them to solve more interesting designs. Finding the area of the more complicated figures is easy when they're broken down into parts.

Some suggestions:

1. When creating their own designs (for example, in #4-6) you may want to let your students experiment by actually moving around some centimeter squares. These can easily be cut out from construction paper or sheets of craft foam.

2. Another option is to make a geoboard. Hammer finishing nails part way into a piece of wood, spacing them 1 cm apart. Since rubber bands usually don't come big enough for these designs, get elastic string at a fabric store and tie loops the needed size to stretch around the nails. Alternatively, at one end of a long piece tie a tiny loop to fit over a single nail. Leave the other end loose for students to weave in and out among the nails as they experiment with designs.

3. If your students tend to get the terms "area" and "perimeter" confused, point out to them the word "rim" in perimeter. "Rim" means edge and perimeter is the length around the outside edge of a figure.

4. When beginning the section in the book on triangles (#15), you may want to let your students experiment with some rectangular pieces of paper of different sizes. Have them draw a straight line from one corner to the opposite corner and then cut along it. To compare the areas of the two parts, they should place the resulting triangles on top of each other.

5. The puzzles from #23 onward ask the students to dissect the figures (i.e., divide them into sections). Initially they'll want to divide all the space into rectangles and triangles, but most people soon realize that sectioning off the triangles is all that's really needed. The area of the rest of the figure can be determined just by counting the centimeter squares indicated by the dots.

I hope your students have as much fun solving these area puzzles as I had creating them. After they've completed my puzzles, they may want to create some of their own to share with each other.

Evelyn

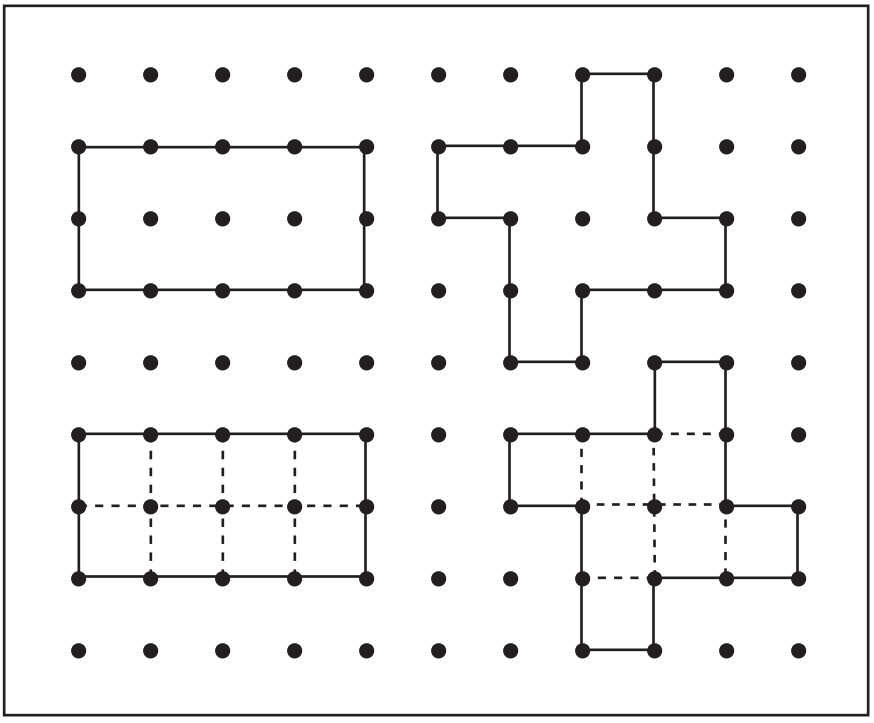
ADVENTURES WITH AREA #1

The **area** of a flat figure is the amount of space it takes up.

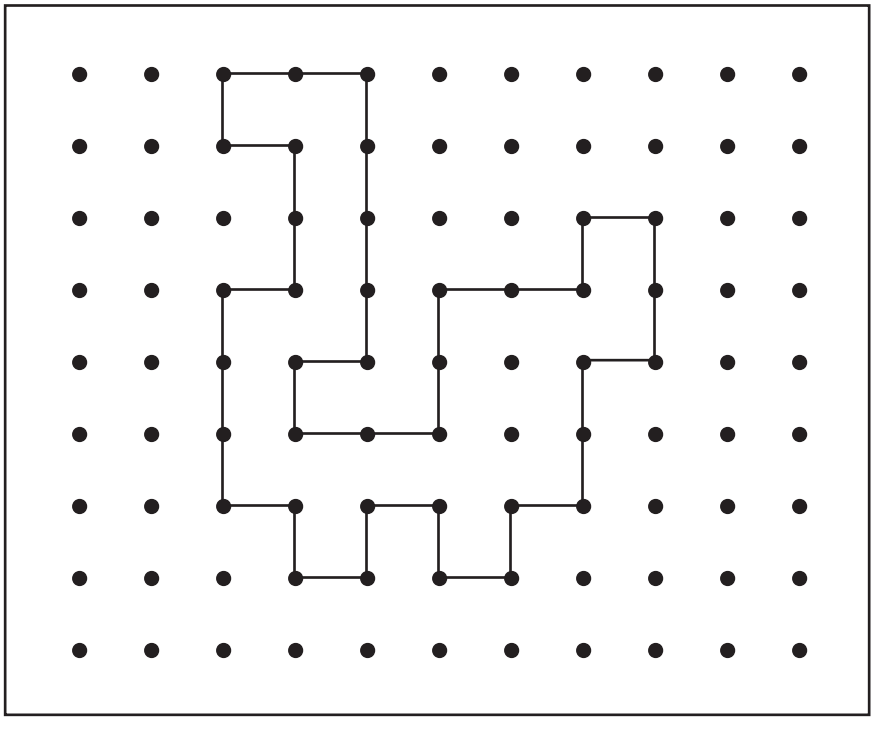
Area is measured in squares.

The two figures here have been divided into squares.

Since each square has sides 1 centimeter long, it's called a **square centimeter** (sq.cm).



Both of these figures take up the space of 8 of these squares, so we say each has an area of 8 sq. cm.



Draw dotted lines to show the square centimeters in this figure.

Count the squares.

This figure has an area of _____ square centimeters.

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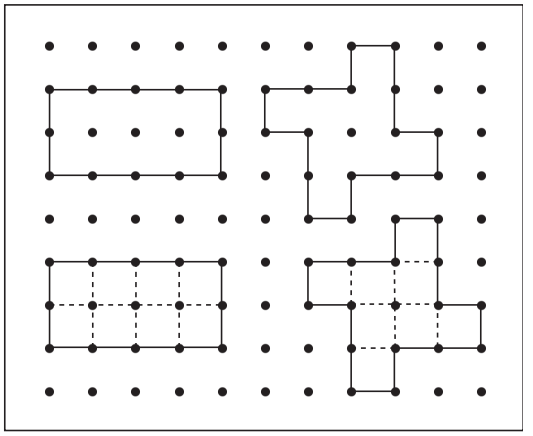

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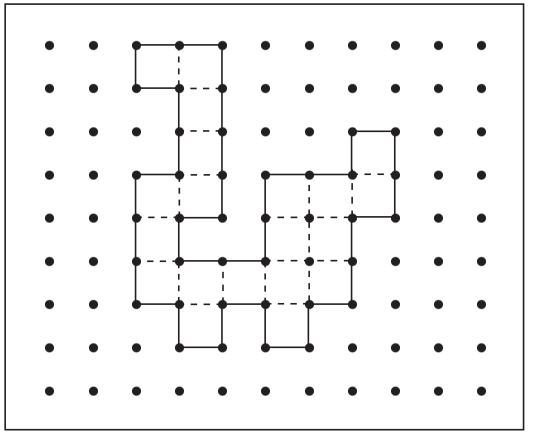


Draw dotted lines to show the square centimeters in this figure.

Count the squares.

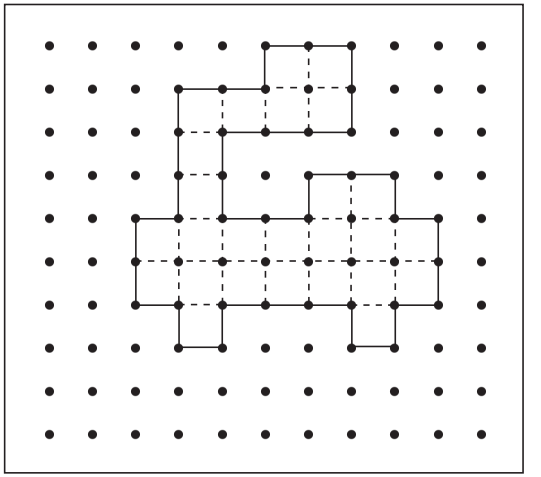
This figure has an area of 20 square centimeters.

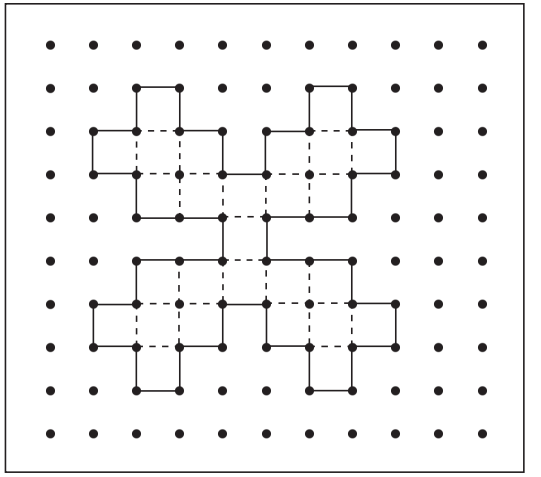
ADVENTURES WITH AREA #2

Draw dotted lines to show the square centimeters in this figure.

Count the squares.

This figure has an area of 26 square centimeters.





Draw dotted lines to show the square centimeters in this figure.

Count the squares.

This figure has an area of 27 square centimeters.