

Understand Area



Dear Family,

This week your child is exploring the idea of measuring area.

Area is the amount of space a flat shape covers. In this lesson students learn that area is measured with **square units**.

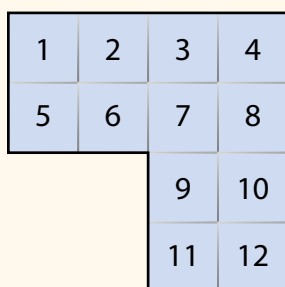


1 square unit

They measure the area of a shape by exactly covering the shape with square units, using these three rules:

- All of the square units must be the same size.
- There can be no gaps between the squares.
- The squares cannot overlap each other anywhere.

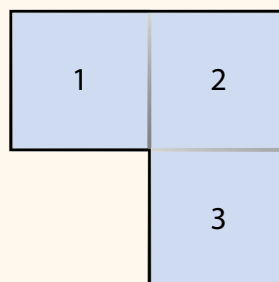
Then they count to find how many square units cover the shape.



The area of this shape is 12 square units.

You can use smaller or larger square units to find the area of a shape. You just have to identify the size of the unit you are using.

Students will see that it takes fewer of the larger square units than the smaller square units to completely cover the same shape.



1 square unit

Invite your child to share what he or she knows about area by doing the following activity together.

ACTIVITY AREA

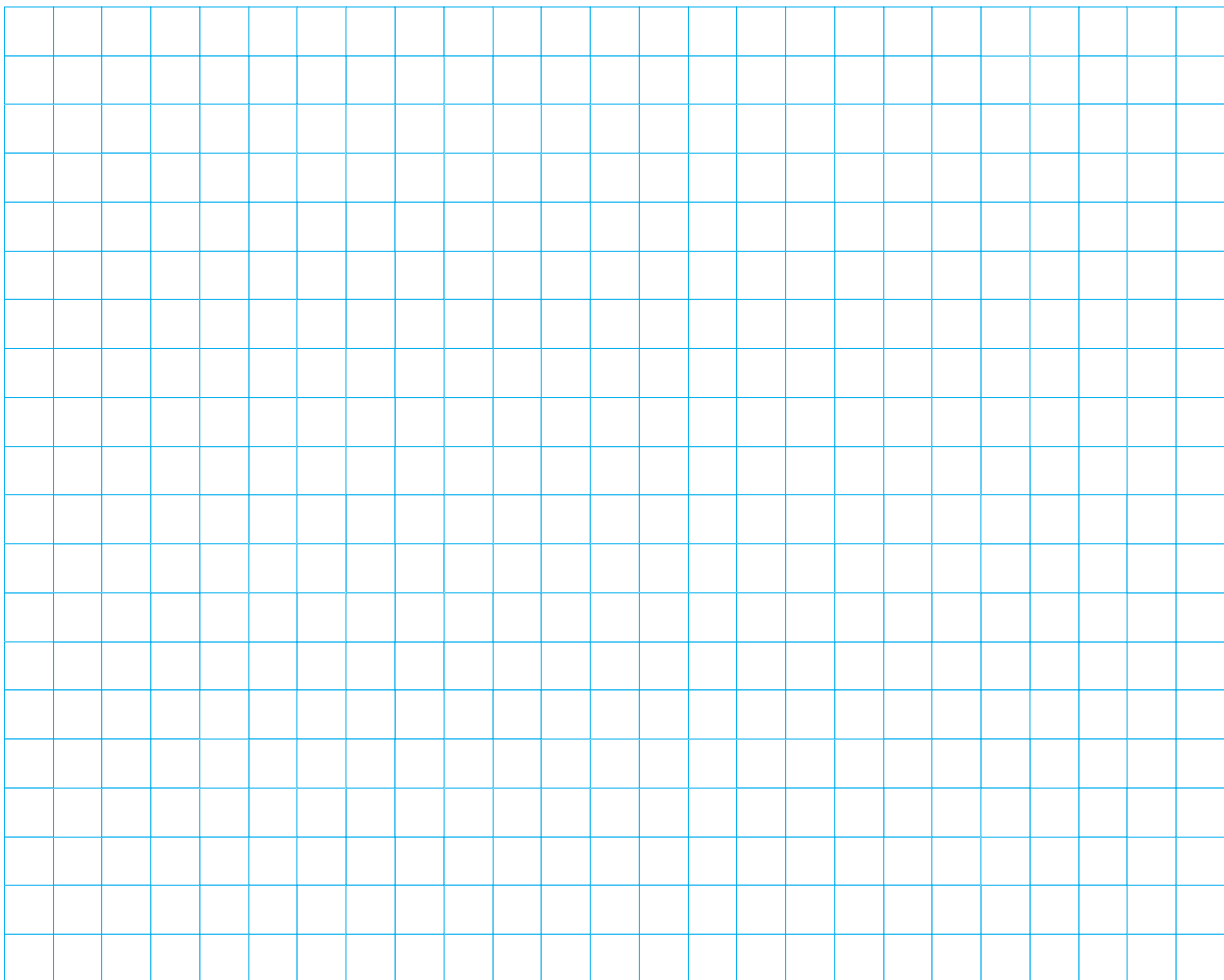
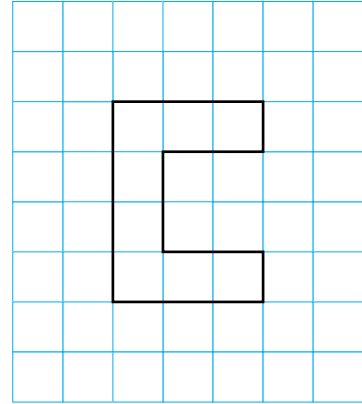
Do this activity with your child to understand area.

Work with your child to draw shapes that look like letters and then find their areas.

For example, the shape to the right looks like the letter C.

Use this style to draw the initial of your first name on the grid paper below.

- Find the area of the initial you drew by counting the square units.
- Now make your initial another way so that it has a different area.
- Can different initials have the same area? Draw an example.



Multiply to Find Area



Dear Family,

This week your child is learning to multiply to find the area of a rectangle.

Previously, your child learned that **area** is the number of square units that cover a shape and then just counted the squares to find the area.

When the shape is a rectangle, you can use multiplication to find the number of square units that cover the shape.

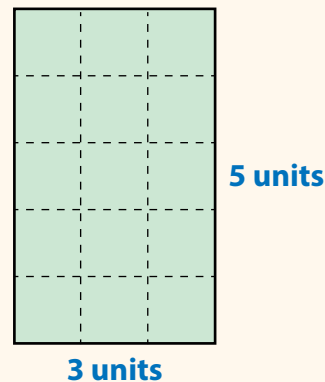
In this rectangle, there are 5 rows, each with 3 square units.

$5 \times 3 = 15$ tells how many square units in all.

There are 3 columns, each with 5 square units.

$3 \times 5 = 15$ tells how many square units in all.

The area of this rectangle is 15 square units.



To find the area of *any* rectangle, multiply the length by the width (or the width by the length).

$$4 \times 2 = 8$$

$$2 \times 4 = 8$$



The area of this rectangle is 8 square centimeters.

Invite your child to share what he or she knows about multiplying to find area by doing the following activity together.

ACTIVITY MULTIPLYING TO FIND AREA

Do this activity with your child to multiply to find area.

Materials inch ruler or yardstick, calculator, pencil and paper

Practice using multiplication to find the area of different rectangular surfaces with your child.

Have a five-minute *Area Scavenger Hunt*.

Each player looks around the house for two rectangular objects with dimensions less than a foot. The goal is to find one with a “small” area and one with a “large” area.

Determine who found the larger rectangle.

- Measure the length and the width of the two larger rectangles to the nearest whole inch.
- Multiply the length and width of each rectangle to calculate the area in square units (square inches).
- Was the result what you expected?

Determine who found the smaller rectangle.

- Measure the length and the width of the two smaller rectangles to the nearest whole inch.
- Multiply the length and width of each rectangle to calculate the area in square units (square inches).
- Was the result what you expected?

Discuss with your child whether there could be another rectangle with the same area as yours but with different length and width. For example, if you know a rectangle has an area of 24 square inches, what could the length and width be?



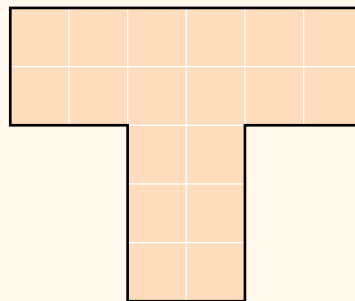
Add Areas



Dear Family,

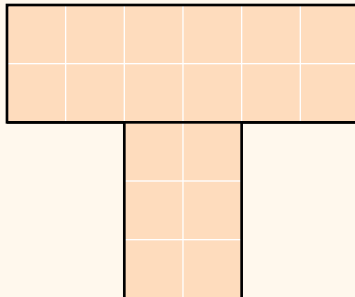
This week your child is learning to find the area of a shape that is not a rectangle by adding up the areas of rectangles inside the shape.

There are several ways to find the area of this "T" shape.



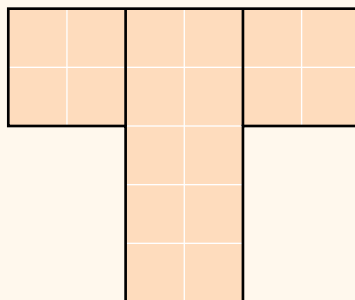
For example, you can add 2×6 plus 3×2 :

$$2 \times 6 \text{ plus } 3 \times 2 = \\ 12 + 6 = 18$$



Or you can add 2×2 plus 2×2 plus 5×2 :

$$2 \times 2 \text{ plus } 2 \times 2 \text{ plus } 5 \times 2 = \\ 4 + 4 + 10 = 18$$



So, the area of the shape is 18 square units.

The more complicated the shape, the more fun it can be to find different ways to break it up into rectangles.

Invite your child to share what he or she knows about adding areas by doing the following activity together.

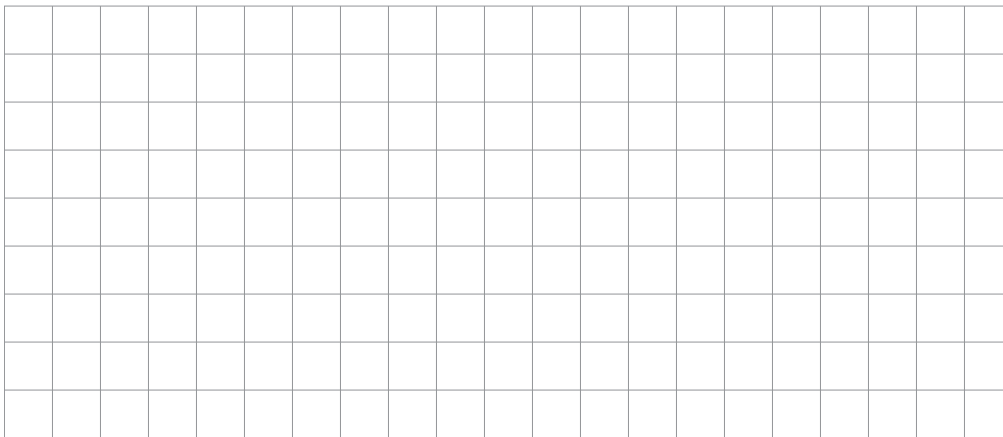
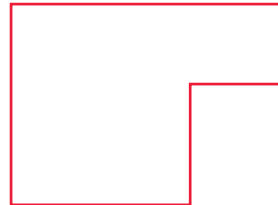


ACTIVITY ADDING AREAS

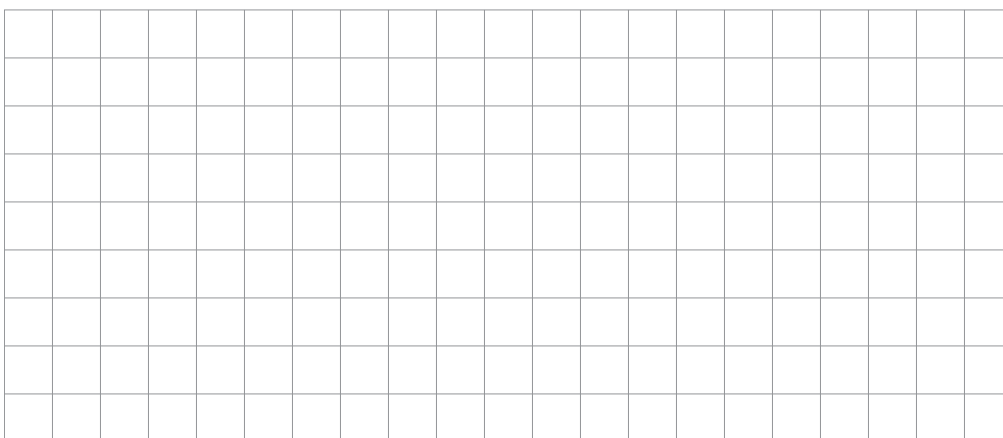
Do this activity with your child to practice breaking apart a shape into rectangles to find its area.

First, invite your child to draw an interesting shape in the grid below. For example, the shape might look like the one at the right, or it might be more complex.

Then work together to find the area of the shape by breaking the shape apart into two or more rectangles. Find the area of each rectangle and add the areas.



Now, draw the same shape but break it apart in a different way.



Talk together about whether there are other ways you can break apart your shape into rectangles. Will you always get the same area?