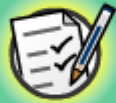


$$5 \times 7 = 35$$
$$20 + 2 = 22$$

Area



Common core icons



This icon indicates a slide where the Standards for Mathematical Practice are being developed. Details of these are given in the Notes field.



Slides containing examples of mathematical modeling are marked with this stamp.



This icon indicates an opportunity for discussion or group work.

The **Standards for Mathematical Practice** outlined in the Common Core State Standards for Mathematics describe varieties of expertise that mathematics educators at all levels should seek to develop in their students.

These are:

- 1) **Make sense of problems and persevere in solving them.**
- 2) **Reason abstractly and quantitatively.**
- 3) **Construct viable arguments and critique the reasoning of others.**
- 4) **Model with mathematics.**
- 5) **Use appropriate tools strategically.**
- 6) **Attend to precision.**
- 7) **Look for and make use of structure.**
- 8) **Look for and express regularity in repeated reasoning.**



This icon indicates that the slide contains activities created in Flash. These activities are not editable.



This icon indicates teacher's notes in the Notes field.

The **area** of a shape is how much surface the shape covers.
To find the area of a shape, we must measure its **length** and **width**.

Press **start** to learn more.

start



Find the area



Create a shape by pressing squares in the grid to shade them blue. Select “highlight squares,” then press your shape to tile it with unit squares. Press the yellow rectangle on the right to reveal the area of your shape, in cm^2 .

Press **start** to begin.

start





Mr. Carson's class is making mosaics using 1 in^2 tiles. Each student's mosaic will be 5 inches long and 7 inches wide.

How many tiles will each student need to make his or her mosaic?

What will the area of each mosaic be?





Finding areas

The Kawalskis are getting new floors in their house. They need to find the area of some of their rooms. Can you help?
Press each button to study a blueprint and use your knowledge of area to find the answer.
Then press play to see if you were right.

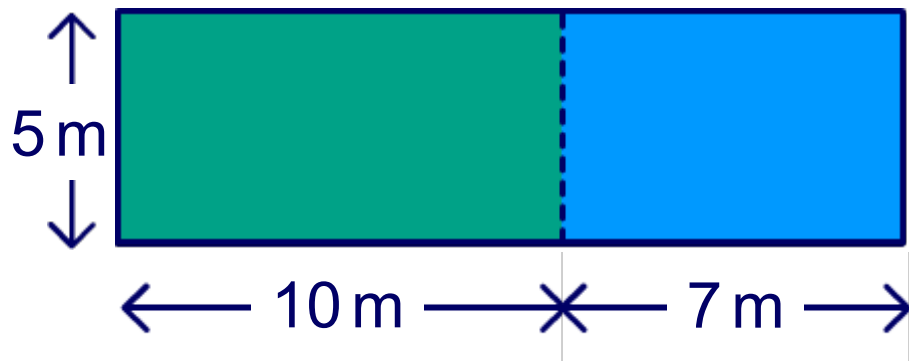
Kitchen

Living room

Hallway



We can **decompose** large numbers to make it easier to find the area of large shapes.



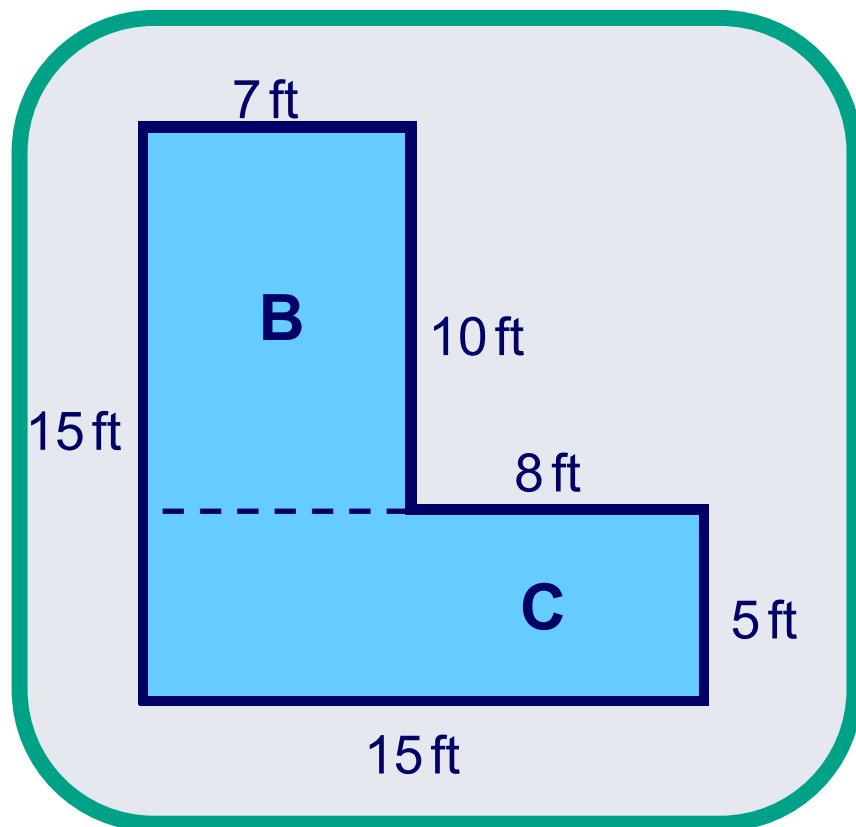
How could we use decomposition to find the area of this rectangle?

We can make 17 easier to work with by using expanded form:
 $10 + 7$.

$$\begin{aligned}\text{Now we can find: } & (5 \times 10) + (5 \times 7) \\ & = (50) + (35) \\ & = \mathbf{85 \text{ m}^2}\end{aligned}$$



Sarah is buying carpet for her room. How can she find the area of the room so she knows how much carpet to buy?



We can divide this shape into two rectangles.

Either like this ... or like this.

Label the rectangles B and C.

$$\text{Area B} = 10 \times 7 = 70 \text{ ft}^2$$

$$\text{Area C} = 5 \times 15 = 75 \text{ ft}^2$$

$$\text{Total area} = 70 + 75 = \mathbf{145 \text{ ft}^2}$$

Sarah should buy 145 ft^2 of carpet.



Press each button to see a different shape.
Use what you have learned to find the area of each
shape. Remember to include units in your answers!
Once you have found the area of a shape, press
play to see if you are correct.

Shape 1

Shape 3

Shape 2

Shape 4

