

## Grade 3 Math

### Day 33 3.MD.7d

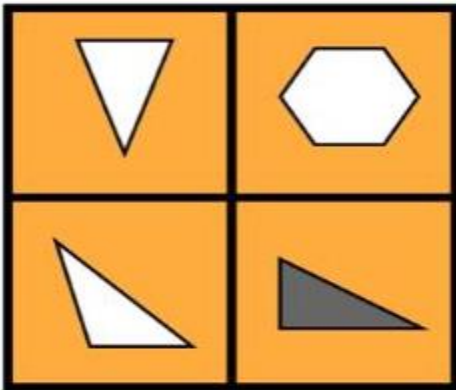
**Standard:** Recognize area as additive. Find areas of rectilinear figures by decomposing them into non-overlapping rectangles and adding the areas of the non-overlapping parts, applying this technique to solve real-world problems.

**Objective:** I can add the area of smaller rectangles to find the area of larger irregular shapes.

**Instructional learning video to support the objective:**

<https://www.khanacademy.org/math/cc-third-grade-math/imp-geometry/imp-decompose-figures-to-find-area/v/decomposing-shapes-to-find-area-add-math-3rd-grade-khan-academy>

1. **Practice Worksheet:** EnVisions Student Reteach 6-6, Student Practice 6-6
2. **Problem of the Day (POD)** Which one doesn't belong? Use evidence and tell someone at home. Try using vocabulary like sides or edges, right angles, corners (vertices).



3. **\*NEW!! Fun Online Practice:** Go on ST Math 30 minutes a day (access through Clever)

**Digital Games to play to support math:**

[http://www.sheppardsoftware.com/mathgames/fruitshoot/fruitshoot\\_addition.htm](http://www.sheppardsoftware.com/mathgames/fruitshoot/fruitshoot_addition.htm)

[http://www.sheppardsoftware.com/mathgames/earlymath/shapes\\_shoot.htm](http://www.sheppardsoftware.com/mathgames/earlymath/shapes_shoot.htm)

**Additional Online Resources:**

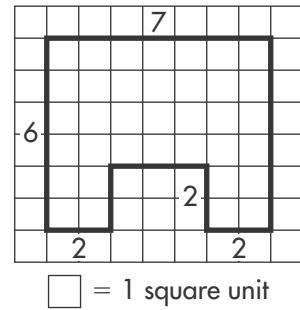
- <https://www.khanacademy.org/math/cc-third-grade-math/imp-geometry/imp-decompose-figures-to-find-area/e/decompose-shapes-to-find-area>
- Imagine Learning (via Clever)

**AZ Vocabulary**

1. To find the area of an irregular shape, you can count unit squares. A unit square has 1 **square unit** of area.

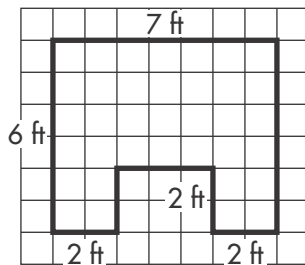
Find the area of the irregular shape by counting unit squares.

The area of the irregular shape is \_\_\_\_\_ square units.



2. To find the area of an irregular shape, you can also divide the shape into rectangles, find the area of each rectangle, and then add the areas.

First, draw lines to separate the shape into one rectangle and two squares.



Next, find the area of the rectangle and the areas of the squares.

**Rectangle:**  $4 \times \underline{\hspace{1cm}} = \underline{\hspace{1cm}}$  square feet

**Squares:**  $2 \times \underline{\hspace{1cm}} = \underline{\hspace{1cm}}$  square feet

$2 \times \underline{\hspace{1cm}} = \underline{\hspace{1cm}}$  square feet

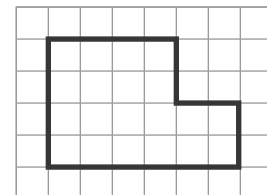
Add the areas together to find the total area of the shape.

$\underline{\hspace{1cm}} + \underline{\hspace{1cm}} + \underline{\hspace{1cm}} = \underline{\hspace{1cm}}$  square feet

The area of the irregular shape is \_\_\_\_\_ square feet.

**On the Back!**

3. Find the area of the irregular shape by counting unit squares. Then find the area of the irregular shape by dividing the shape into rectangles. Find the area of each rectangle, and add the areas together. Show your work.



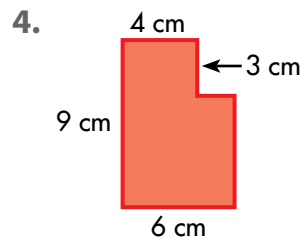
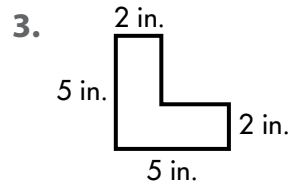
## ☆ Guided Practice \*

### Do You Understand?

1. Explain why you can find the area of the putting green on page 332 using different rectangles.
2. **MP.8 Generalize** Explain what operation you use to find the total area of the smaller rectangles.

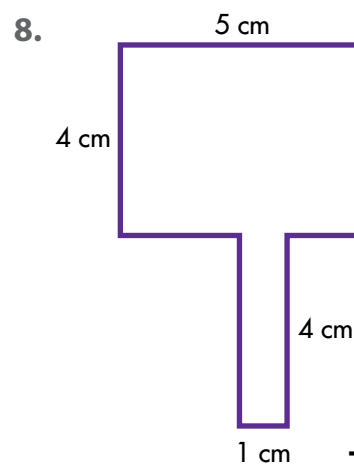
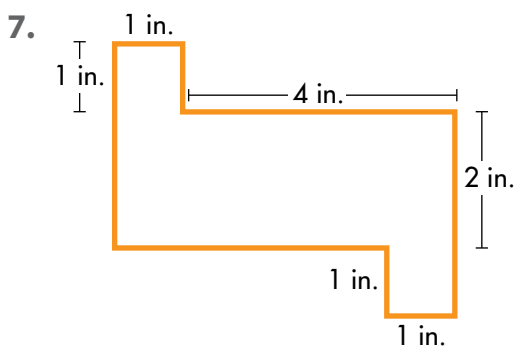
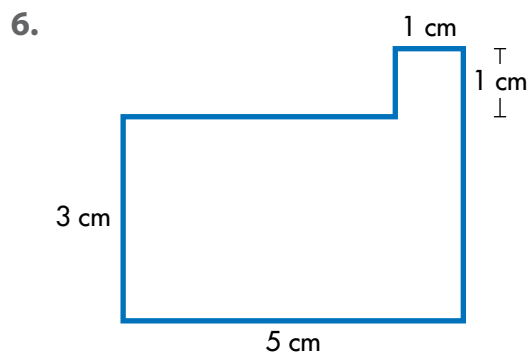
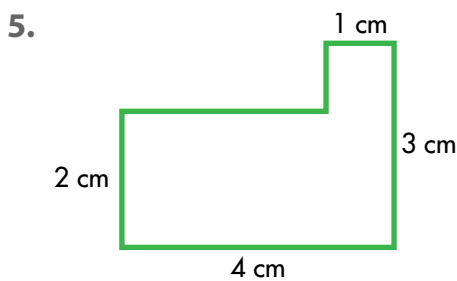
### Do You Know How?

In **3**, and **4**, find the area of each figure. Use grid paper to help.



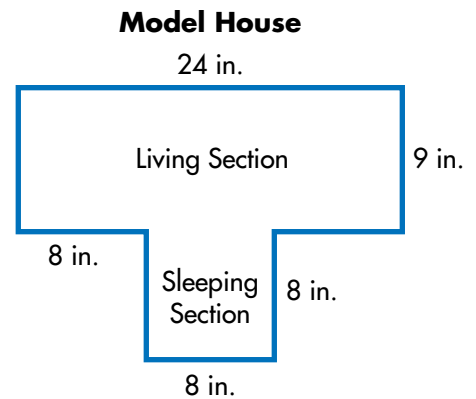
## ☆ Independent Practice ☆

In **5–8**, find the area of each figure. Use grid paper to help.

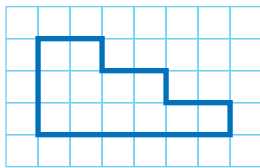


# Math Practices and Problem Solving

9. **MP.2 Reasoning** Mr. Kendel is making a model house. The footprint for the house is shown at the right. What is the total area? Explain your reasoning.

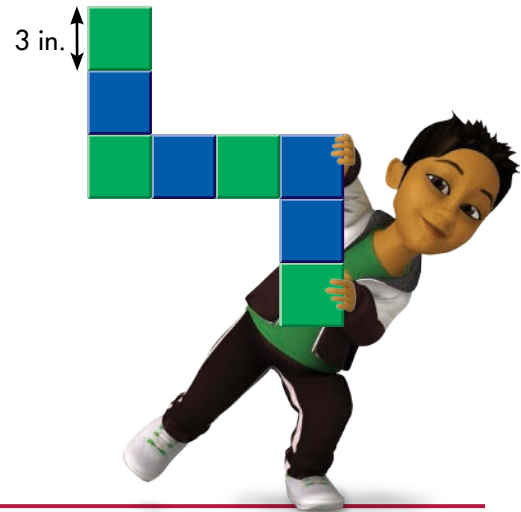


10. **A-Z Vocabulary** Fill in the blanks. Mandy finds the \_\_\_\_\_ of this shape by dividing it into rectangles. Phil gets the same answer by counting \_\_\_\_\_.



11. **Algebra** Use a question mark to represent the unknown quantity in the phrase "six times a number is 24." Solve the equation.

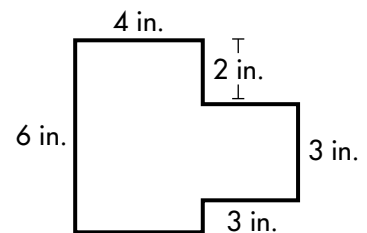
12. **Higher Order Thinking** Mrs. Delancy used 3-inch square tiles to make the design at the right. What is the area of the design she made? Explain how you found it.



## Common Core Assessment

13. Jared drew the figure to the right. Draw lines to show how you can divide the shape to find the area. What is the area of the figure?

square inches

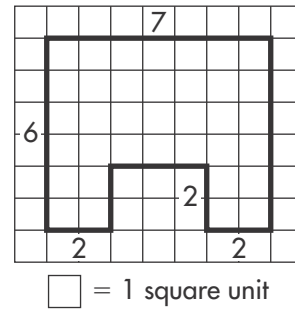


**AZ Vocabulary**

1. To find the area of an irregular shape, you can count unit squares. A unit square has 1 **square unit** of area.

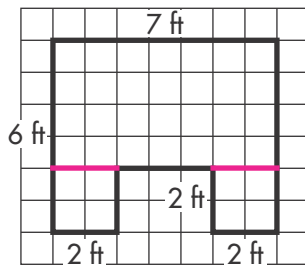
Find the area of the irregular shape by counting unit squares.

The area of the irregular shape is **36** square units.



2. To find the area of an irregular shape, you can also divide the shape into rectangles, find the area of each rectangle, and then add the areas.

First, draw lines to separate the shape into one rectangle and two squares.



Next, find the area of the rectangle and the areas of the squares.

**Rectangle:**  $4 \times \underline{7} = \underline{28}$  square feet

**Squares:**  $2 \times \underline{2} = \underline{4}$  square feet

$2 \times \underline{2} = \underline{4}$  square feet

Add the areas together to find the total area of the shape.

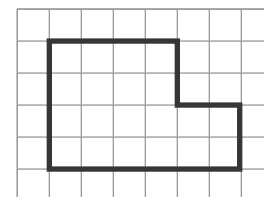
$\underline{28} + \underline{4} + \underline{4} = \underline{36}$  square feet

The area of the irregular shape is **36** square feet.

**On the Back!**

3. Find the area of the irregular shape by counting unit squares. Then find the area of the irregular shape by dividing the shape into rectangles. Find the area of each rectangle, and add the areas together. Show your work.

**20 square units; Check students' work.**



Name \_\_\_\_\_



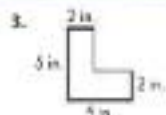
## Guided Practice

### Do You Understand?

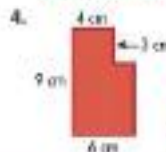
- Explain why you can find the area of the putting green on page 332 using different rectangles.  
**Sample answer:** The total area of the putting green stays the same. The smaller rectangles can have different areas, but their sum is still the same.
- MP.8 Generalize** Explain what operation you use to find the total area of the smaller rectangles.  
**Sample answer:** Since the smaller rectangles are not equal groups, I use addition.

### Do You Know How?

In 3, and 4, find the area of each figure. Use grid paper to help.



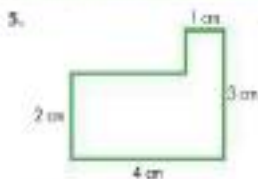
16 square units



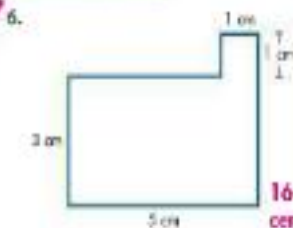
48 square centimeters

## Independent Practice

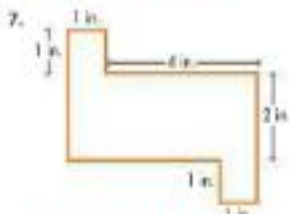
In 5–8, find the area of each figure. Use grid paper to help.



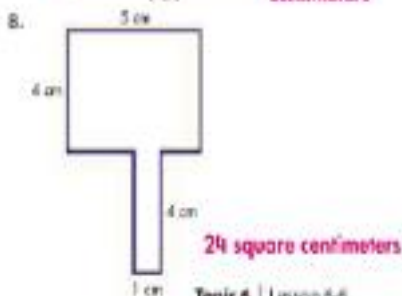
9 square centimeters



16 square centimeters



12 square inches

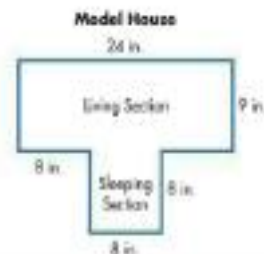


24 square centimeters

\*For another example, see Set F on page 348.

## Math Practices and Problem Solving

9. **MP.2 Reasoning** Mr. Kendel is making a model house. The footprint for the house is shown at the right. What is the total area? Explain your reasoning.  
**280 square inches; Sample answer:** I divided the diagram into two rectangles. Then I found and added their areas:  $24 \times 9 = 216$ ;  $8 \times 8 = 64$ ;  $216 + 64 = 280$  square inches.



10. **Vocabulary** Fill in the blanks. Mandy finds the **area** of this shape by dividing it into rectangles. Phil gets the same answer by counting **unit squares**.



11. **Algebra** Use a question mark to represent the unknown quantity in the phrase "six times a number is 24." Solve the equation.  
 $6 \times ? = 24$ ;  $? = 4$



12. **Higher Order Thinking** Mrs. Delancy used 3-inch square tiles to make the design at the right. What is the area of the design she made? Explain how you found it.  
**The area is 72 square inches. Sample answer:** I found the area of one tile:  $3 \times 3 = 9$  square inches. Then I multiplied that area by the number of tiles to find the total area:  $9 \times 8 = 72$  square inches.

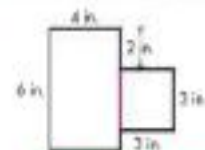


### Common Core Assessment



13. Jared drew the figure to the right. Draw lines to show how you can divide the shape to find the area. What is the area of the figure?

33 square inches



Sample answer shown.