# Unit Squares

Explore ideas and representations

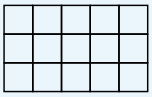
**Name** _____ **Date** _____ **Score** _____ / 6

## QUICK REVIEW

A unit square has side lengths $1$ unit and covers $1$ square unit. If its sides are each $1$ cm, the area is $1$ cm$^2$. Count squares, not edges. A larger tile may cover more than one unit square.

**Worked example**

Each small square has sides $1$ cm long. Find the area of the tiled rectangle and name the unit.



Each: $1$ cm$^2$

**1.** One $1$-cm-by-$1$-cm square covers $1$ cm$^2$. There are $5$ squares in each of $3$ rows.

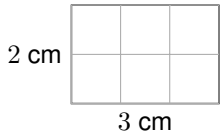
**2.** The count is $5 \times 3 = 15$ unit squares, so the area is $15$ cm$^2$.

**Answer:** $15$ cm$^2$.

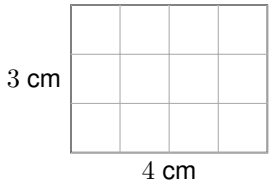
## Practice Problems

Show your thinking.

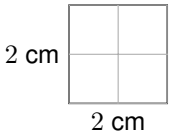
**1.** Each small square has sides $1$ cm long. Find the area of the tiled rectangle and name the unit.



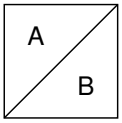

**2.** Each small square has sides $1$ cm long. Find the area of the tiled rectangle and name the unit.




**3.** An area label says $4$ cm for this tiled surface. Correct its unit.

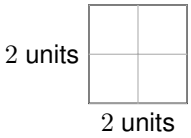



**4.** $6$ half-square pieces fit together in pairs without overlap. How many unit squares can they make?




**5.** A mat has area $6$ square meters. It is covered by $1$-meter-by-$1$-meter tiles. How many tiles are needed?

**6.** A floor has $8$ square tiles, each $2$ units by $2$ units. Is its area $8$ square units? Find the actual area.



# Answer Key

1. $6$ cm$^2$.
2. $12$ cm$^2$.
3. $4$ cm$^2$, not $4$ cm.
4. $3$ unit squares.
5. $6$ tiles.
6. No; $32$ square units.

## Step-by-Step Solutions

Follow each calculation, then check your own work.

### Problem 1

**1.** One $1$-cm-by-$1$-cm square covers $1$ cm$^2$. There are $3$ squares in each of $2$ rows.

**2.** The count is $3 \times 2 = 6$ unit squares, so the area is $6$ cm$^2$.

### Problem 2

**1.** One $1$-cm-by-$1$-cm square covers $1$ cm$^2$. There are $4$ squares in each of $3$ rows.

**2.** The count is $4 \times 3 = 12$ unit squares, so the area is $12$ cm$^2$.

### Problem 3

**1.** The $2 \times 2 = 4$ tiles each have sides $1$ cm and area $1$ cm$^2$.

**2.** Counting these tiles measures square centimeters. Centimeters alone measure a length, so write $4$ cm$^2$.

### Problem 4

**1.** Two half-square pieces fill exactly one unit square: $\frac{1}{2} + \frac{1}{2} = 1$.

**2.** $6 \div 2 = 3$ pairs make $3$ unit squares.

### Problem 5

**1.** One $1$-m-by-$1$-m tile has area $1 \times 1 = 1$ m$^2$.

**2.** $6 \div 1 = 6$ such tiles cover $6$ m$^2$ without gaps or overlaps.

### Problem 6

**1.** One large tile contains $2 \times 2 = 4$ unit squares; it is not one unit square.

**2.** $8$ large tiles cover $8 \times 4 = 32$ square units.

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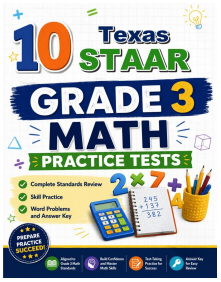


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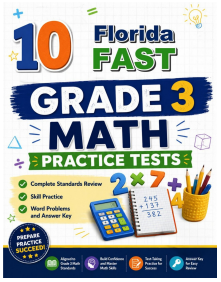


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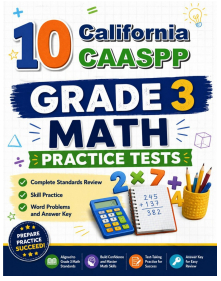


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