

Square Count Quest

Estimate, count, and explain area in square units.

GRADE 3 • 3.MG.2.a.ii

3.MG.2.a.ii "Solve problems, including those in context, involving area: estimate and determine the area of a given surface by counting the number of square units, describe the measurement (using the number and unit) and justify the measurement."

NAME _____

DATE _____

COUNT SQUARE UNITS

Area tells how many same-size square units cover a flat surface. Count each unit square once, then state the number and the unit, such as square units, and explain your count by rows.

WORKED EXAMPLE

A tray cover has 4 rows of 6 unit squares. What is its area?

1. Count the squares in 1 row: 6.
2. There are 4 equal rows.
3. Add the rows: $6 + 6 + 6 + 6 = 24$.
4. The cover is filled with 24 unit squares.

Answer: 24 square units

PRACTICE 6 problems

- 1** A craft mat is covered by 2 rows of 5 unit squares. What is its area? Describe how you counted.

ANSWER _____

- 2** A book card has 3 rows of 7 unit squares. Is its area closer to 20 or 30 square units? Then find the exact area and explain.

ANSWER _____

- 3** A small sticker sheet has 5 rows of 5 unit squares. What is its area? Describe how you counted.

ANSWER _____

- 4** A rectangle is covered by 7 rows of 8 unit squares. What is its area? Describe how you counted.

ANSWER _____

- 5** A shape has 5 rows of unit squares. The rows have 7, 7, 5, 5, and 5 squares. What is its area? Explain your count.

ANSWER _____

- 6** A game card is covered by 8 rows of 9 unit squares. What is its area? Describe how you counted.

ANSWER _____

APPLY IT Show your work

- 1** Kai is making a name poster with a grid of 7 rows of 7 square units. Before counting, is the area closer to 40 or 50 square units? Then find the exact area and justify your measurement.

WORK SPACE

ANSWER _____

- 2** A photo frame has 5 rows of 8 square tiles. Each tile is 1 square unit. What area do the tiles cover? Explain how you know.

WORK SPACE

ANSWER _____

CHALLENGE One step up

CHALLENGE

Ava has a surface with 9 rows of 7 unit squares. Ben has a surface with 8 rows of 8 unit squares. Which surface has the greater area? Find both areas and explain how you know.

PART 1 • PRACTICE

#	PROBLEM	ANSWER
1	A craft mat is covered by 2 rows of 5 unit squares. What is its area? Describe how you counted.	10 square units. I counted 2 rows of 5 unit squares.
2	A book card has 3 rows of 7 unit squares. Is its area closer to 20 or 30 square units? Then find the exact area and explain.	It is closer to 20 square units. The exact area is 21 square units because 3 rows of 7 squares make 21 squares.
3	A small sticker sheet has 5 rows of 5 unit squares. What is its area? Describe how you counted.	25 square units. I counted 5 rows of 5 unit squares.
4	A rectangle is covered by 7 rows of 8 unit squares. What is its area? Describe how you counted.	56 square units. I counted 7 rows of 8 unit squares.
5	A shape has 5 rows of unit squares. The rows have 7, 7, 5, 5, and 5 squares. What is its area? Explain your count.	29 square units. I added $7 + 7 + 5 + 5 + 5$ to count all the unit squares.
6	A game card is covered by 8 rows of 9 unit squares. What is its area? Describe how you counted.	72 square units. I counted 8 rows of 9 unit squares.

PART 2 • APPLY IT

- The estimate is 50 square units. The exact area is 49 square units because the poster has 7 rows of 7 unit squares.** Count 7 squares in each of 7 rows, or add 7 seven times. Since 49 is closer to 50 than 40, 50 is a reasonable estimate.
- 40 square units. The tiles cover 5 rows of 8 unit squares, so there are 40 square units.** Count 8 tiles in each of 5 equal rows. The total is 40 unit squares.

CHALLENGE

Ben's surface has the greater area. Ava's area is 63 square units, and Ben's area is 64 square units. Since 64 is 1 more than 63, Ben's surface is larger.

Require a number with the unit square units and a counting explanation using rows, repeated addition, or equal groups. Accept reasonable estimates when students also give the exact area.