

LESSON 3



CA Standards

KEY NS.2.2 Memorize to automaticity the multiplication table for numbers between 1 and 10.

MR 2.3 Use a variety of methods, such as words, numbers, symbols, charts, graphs, tables, diagrams, and models, to explain reasoning.

Also **NS 2.0, KEY AF 2.1, MR 1.0**

Vocabulary

The product of a whole number multiplied by itself is a **square number**.

$$3 \times 3 = 9$$

Materials

Learning Tool 11
(Centimeter Grid Paper)

Square Arrays

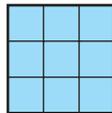
Objective Use square arrays to multiply 2 factors that are the same. Identify square numbers.

Learn by Example

In this lesson, we will look at multiplication facts that have special arrays. The arrays are squares.

Model It

1 $3 \times 3 = \bigcirc$

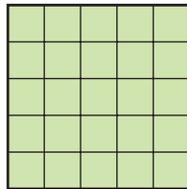


Write It

$$3 \times 3 = 9$$

9 is a **square number**.

2 $5 \times 5 = \bigcirc$



$$5 \times 5 = 25$$

25 is a square number.

Ask Yourself

Does my array have the same number of rows and columns?

Guided Practice

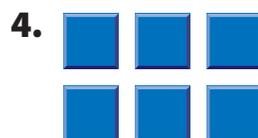
Draw an array to find the product. Use grid paper.

1. 9×9

2. 8×8

3. 1×1

Does the array show a square number? If not, how many squares could be added to make it a square number?



Guided Problem Solving

Use the questions to solve the problem.

7. Chris is hanging pictures in a gallery, in a square array. There are 4 rows of 4 pictures. How many pictures are there in all?
- a. **Understand** What do you know?
What do you want to find out?
 - b. **Plan** You can draw an array.
Will the array be a square?
 - c. **Solve** Draw the array. Use the array to solve the problem.
There are pictures in all.
 - d. **Look Back** Use another multiplication strategy to solve the problem. Did you get the same answer?



Math Talk How can knowing $4 \times 2 = 8$ help you to find 4×4 ?