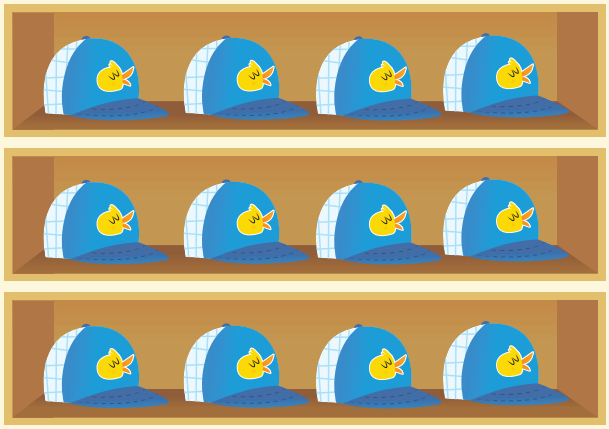
Add Using Arrays

Use What You Know

Review adding 3 one-digit numbers.

Rob's team has shelves for their hats. How many hats are there in all?



a. Does each shelf have the same number of hats? _____

b. How many hats are on each shelf? _____

c. How many shelves are there? _____

d. Look at the lines at the right. Each line shows one shelf. Use numbers to write how many hats are on each shelf.

_____

_____

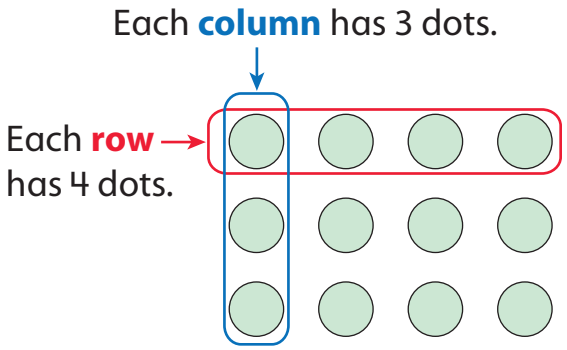
_____

e. Use your answer to Problem d. Write an equation to show the total number of hats.

_____

Find Out More

The hats on shelves on the previous page show an **array**. An array has **rows** and **columns**. Here is the same array made out of dots instead of hats.



In an array,

- every row has the same number of objects.
- every column has the same number of objects.

Reflect Work with a partner.

1 **Talk About It** Kimi makes an array using 10 stamps. Her array has 2 rows. How many stamps are in each column? Explain how you know.

Write About It _____

_____

_____

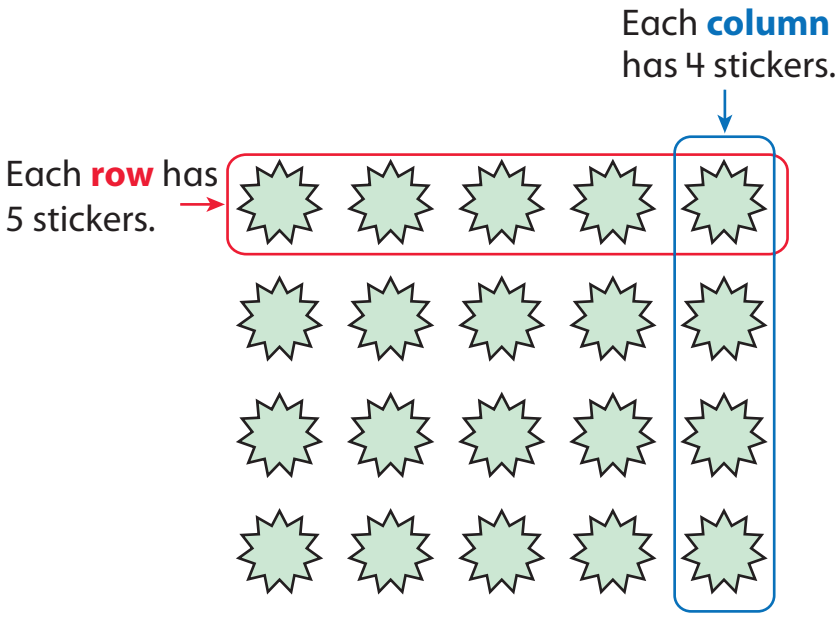
Learn About

Adding Using Arrays

Read the problem. Then you will look at ways to use an array.

Mike puts some stickers into an array. Each row has 5 stickers. Each column has 4 stickers. How many stickers are there in all?

Picture It You can draw an array.



Model It You can use the rows in the array to write an equation.

Add the number of stickers in each row.
Each row has 5 stickers → 5 + 5 + 5 + 5 = ?

Model It You can use the rows in the array to skip count.

There are 5 stickers in each row. Skip count by 5s → 5, 10, 15, 20.

Connect It Use the array and models to solve the problem.

2 Look at the first *Model It* on the previous page. Why is 5 written four times in the equation?

3 Write an equation you could use to find the total number of stickers using the columns.

4 Look at the second *Model It* on the previous page. Why do you skip count by 5s?

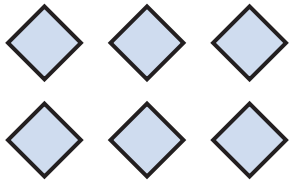
5 **Talk About It** **Work with a partner.**

Do you need to see the array from *Picture It* to solve the problem on the previous page?

Write About It

Try It Try another problem.

6 Write two equations you could use to find the total number of shapes in this array.



Practice Adding Using Arrays

Study the model below. Then solve Problems 7–9.

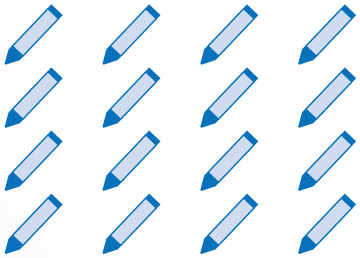
Example

There are 4 rows of crayons in a box. Each row has 4 crayons. How many crayons are in the box?

You can show your work using an array.

4 rows of 4

4 columns of 4



4 + 4 + 4 + 4

8 + 8 = 16

Answer 16 crayons

7 In a game, players put pieces in 3 columns. Each column holds 5 pieces. How many pieces fill all 3 columns? Draw an array as part of your answer.

Show your work.

Can you skip count to find the answer?

Answer _____

8 A package has 2 rows of soup cans. Each row has 3 cans. How many cans of soup are in the package? Draw an array as part of your answer.

Show your work.

You can add the numbers in each row or the numbers in each column.

Answer _____

9 Some students line up in 2 rows to play catch. Each row has 8 students. How many students play catch?

A 8

B 10

C 16

D 18

What number can you skip count by to find the answer?

Vic chose **B** as the answer. This answer is wrong. How did Vic get his answer?

_____

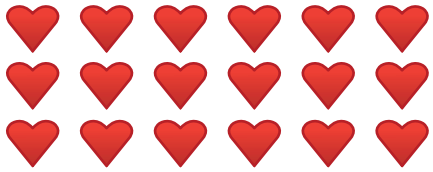
_____

_____

Practice Adding Using Arrays

Solve the problems.

1 Which equation shows the total number of hearts in this array?
Circle all the correct answers.



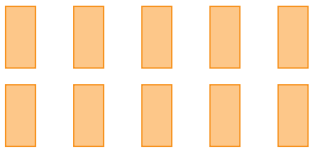
A $6 + 6 + 6 = 18$

B $3 + 3 + 3 + 3 + 3 + 3 = 18$

C $6 + 3 = 9$

D $3 + 3 + 3 = 9$

2 Which doubles fact can you use to find the total number of shapes in this array?
Circle the correct answer.



A $5 + 2 = 7$

B $5 + 5 = 10$

C $2 + 2 = 4$

D $10 + 10 = 20$

3 Olga draws an array of dots. The array has 3 columns. The first column has 4 dots. Which equation can you use to find the total number of dots? Circle all the correct answers.

A $3 + 3 + 3 = ?$

B $3 + 3 + 3 + 3 = ?$

C $4 + 4 + 4 = ?$

D $4 + 4 + 4 + 4 = ?$

4 Dana makes an array using these rules.

- The number in each row is different from the number in each column.
- There is more than one row and more than one column.

Tell if each number could be the number of objects in Dana's array. Circle *Yes* or *No* for each number.

a. 6 Yes No

b. 17 Yes No

c. 9 Yes No

d. 15 Yes No

5 Draw an array with 5 rows. Put 6 objects in each row. Show how to use doubles facts to find the total number of objects.

6 Show or explain how you can use skip counting to check your answer to Problem 5.

Self Check **Now you can solve problems using an array. Fill this in on the progress chart on page 1.**