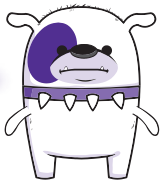
Understand Multiplication

Name: _____

Prerequisite: How do you show and write multiplication?



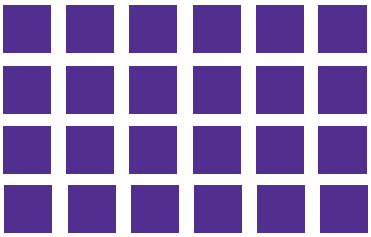
Study the example showing multiplication with an array and a number sentence. Then solve problems 1–5.

Example

In art class, 4 students each painted 6 tiles.

Draw an array to show the tiles.

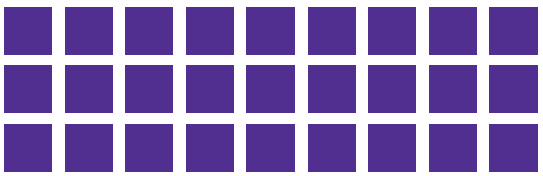
4 rows of 6 tiles
is 24 tiles in all.



Write a multiplication sentence. $4 \times 6 = 24$

1 Look at the arrays. Complete the sentences.

a. 3 rows of _____ tiles
is _____ tiles in all.
3 × _____ = _____



b. _____ rows of 8 triangles
is _____ triangles in all.
_____ × 8 = _____

c. _____ rows of _____ stars
is _____ stars in all.
_____ × _____ = _____

Vocabulary

multiplication an operation used to find the total number of items in equal-sized groups.

Solve.

2 Each of 3 students in a book club read 7 books. Draw an array and write a multiplication sentence to show the number of books read.

3 Write a word problem that could be modeled by the multiplication sentence $6 \times 8 = 48$.

4 Leila's bookshelf has 4 shelves. Each shelf has 9 books. Write a multiplication sentence to tell about the books. Explain what each number in the multiplication sentence means.

5 Look at problem 4. Suppose Leila moves her books onto a bookshelf with 6 shelves. She puts an equal number of books on each shelf. Describe what the array for this problem looks like and write a multiplication sentence.

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Show Multiplication

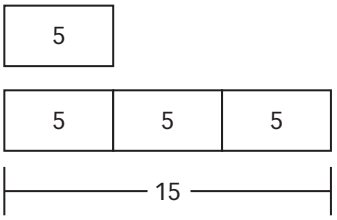
Study the example showing how a bar model is used to show multiplication as a comparison. Then solve problems 1–7.

Example

Harris rides his bike 5 blocks to school. Daniel rides his bike 3 times as far as Harris. How far does Daniel ride his bike to school?

You can use a bar model to show multiplication as a comparison.

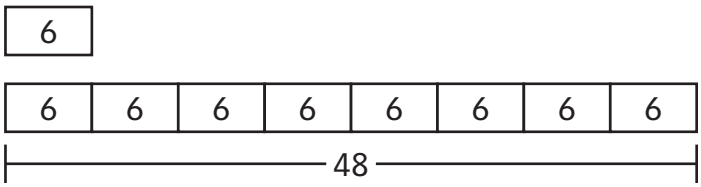
15 is 3 times as many as 5.
$15 = 3 \times 5$



1 Use the bar model to the right to describe the comparison and write an equation.

48 is _____ times as many as _____.

_____ = _____ × _____



2 Draw and label a bar model to show a number that is 5 times as many as 7.

3 Write a word problem that the bar model in problem 2 could represent.

_____

_____

_____

Solve.

4 Tara scored 6 times as many soccer goals as Leah during one season. Leah scored 3 goals. Draw a bar model and write an equation that represents the number of goals Tara scored.

5 What two comparisons does the equation $4 \times 2 = 8$ show?

a. _____ is _____ times as many as _____.

b. _____ is _____ times as many as _____.

6 Draw two different bar models to represent $2 \times 4 = 8$.

7 A pet caretaker walks dogs 9 times a day. He walks dogs from Monday to Friday, 5 days a week. Draw and label a bar model to show the total number of times the caretaker walks dogs in a week.

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Reason and Write

Study the example. Underline two parts that you think make it a particularly good answer and a helpful example.

Example

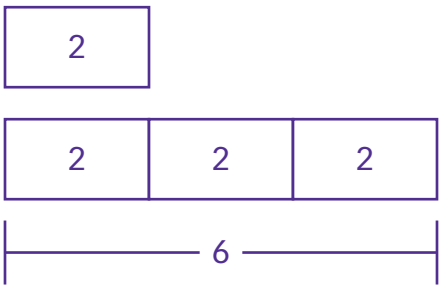
Sylvie needs 2 cups of flour to make one loaf of bread. She wants to make 3 loaves of bread. She says she needs 5 cups of flour.

Is Sylvie correct? What did she do right? What did she do wrong?

Show your work. Use a bar model, an equation, and words to explain.

Sylvie is not correct. She used the numbers 2 and 3, but she added 2 + 3 instead of multiplying 2 × 3.

Sylvie needs 2 cups of flour for one loaf of bread, so she needs 3 times as many cups of flour for 3 loaves of bread.

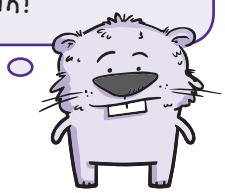


6 is 3 times as many as 2.
6 = 3 × 2

Sylvie needs 6 cups of flour to make 3 loaves of bread.

Where does the example ...

- answer the questions?
- use a bar model to explain?
- use numbers in an equation to explain?
- use words to explain?



Solve the problem. Use what you learned from the model.

Victor needs 3 teaspoons of salt to make dough for one pizza. He wants to make dough for 8 pizzas. Victor says he needs 24 teaspoons of salt.

Is Victor correct? What did he do right? What did he do wrong?

Show your work. Use a bar model, an equation, and words to explain.

Did you . . .

- answer the questions?
- use a bar model to explain?
- use numbers in an equation to explain?
- use words to explain?