

Lesson 2: What Is Multiplication?

Getting Started

? Questions to Explore

- What is multiplication?
- Why do we multiply?
- How do we read and write in mathematical language?



Facts and Definitions

- **Multiplication:** mathematical operation that requires adding a number to itself a certain number of times; repeated addition
- **Factor:** number that is multiplied
- **Product:** the answer to a multiplication problem
- $\times$: mathematical symbol that means we multiply; also called the times symbol or times sign

⦿ Skills

- Interpret products of whole numbers (for example, interpret 5×7 as the total number of objects in 5 groups of 7 objects each)
- Use the language of multiplication

✂ Materials

- "Equal Groups" sheet from Lesson 1
- colored pencils
- construction paper (kit)
- counters (kit)
- fine point dry-erase markers (kit)
- glue or glue stick
- Interactive Notebook
- scissors
- whiteboard (kit)

Introduction

Ask your child to look at the "Equal Groups" sheet that she put in her Interactive Notebook during the previous lesson. Depending on the things that she listed, pose questions that ask her to find sums based on the number of items in specific groups. For example, you might ask, "How many legs do five horses have?" (20) and "How many sides do two stop signs have?" (16) Allow your child to use the whiteboard and a dry-erase marker to draw or write to find the answers to your questions, and pose four or five different questions using different things from her lists.

Now, say, "Skip counting, arrays, and repeated addition can help you find sums when you're adding more than two things together, but there's another mathematical operation that's much quicker than addition — it's called multiplication. You're going to start learning about that today."

Activities

Activity 1: Why Do We Multiply?

Give your child time to watch the read aloud of *Amanda Bean's Amazing Dream* (written by Cindy Neuschwander) at the following web link. This book explains why multiplying is often better and easier than counting.



Mr. Boyd Reads: "Amanda Bean's Amazing Dream"

www.beyondthepage.com/link/6268/

Once your child has watched the video once, allow her to look back through the images in it as you ask her the following questions:

1. Why does Amanda Bean's teacher want her to learn how to multiply? (because it's faster than counting)
2. What are some things that Amanda Bean wants to count? (possible answers: tiles on the countertop, books on the bookcase, wheels on the bicycles, legs on the sheep, balls of yarn held by the sheep, the grandmas' knitting needles, arms on the sweaters)
3. What are some examples of arrays in the book? (possible answers: window panes, lollipops, cookies, cakes, brownies, tiles)
4. Where do you see equal groups? (possible answers: lollipops, flowers on cakes, food in jars, books on shelves, wheels on bikes, balls of yarn, knitting needles)
5. Just like there is a symbol for addition and one for subtraction, there's also a symbol for multiplication. What is it? ($\times$)

Tell your child that she will work with *Amanda Bean's Amazing Dream* again in upcoming lessons.

Activity 2: What is Multiplication?

Say, "**Multiplication** is a mathematical operation that helps us count groups of things, and when you know your multiplication facts like you know your addition facts, you can count things really quickly."

Show 4 groups that each have 5 counters, and say, "I could count these one at a time, but if I understand multiplication, I can figure out how many counters there are in all much more quickly." Write $4 \times 5 =$ on the whiteboard. Point to the 4 and the 5, and say, "We call these factors. **Factors** are the numbers that we multiply together to find a **product**, or an answer to a multiplication problem. The $\times$ between the factors tells me to multiply them. In this example, I have 4 groups of counters, and there are 5 counters in each group. Because I know how to count by 5, I can use this approach to figure out the product." Model counting by 5 to get to a total of 20, and say, "Four times five equals 20." Write 20 at the end of the multiplication sentence: $4 \times 5 = 20$.

Now, show 2 groups that each have 3 counters. Say, "This shows 2 groups of 3 counters or two times three." Ask your child to write "two times three" on the whiteboard using numbers and the multiplication symbol. She should write " 2×3 ."

Multiplication and Division I — 2: What Is Multiplication?

Give your child time to watch the video at the following web link. This video reinforces that multiplication is about counting groups of things and shows how to write multiplication sentences.



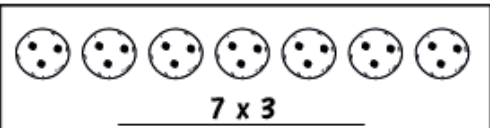
Multiplication 3rd Grade: Learn Multiplication

www.beyondthepage.com/link/6269/

Your child will complete the "Creating Multiplication Sentences" sheet using the example provided on it.

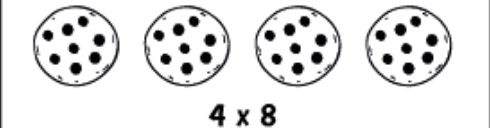
Answer Key:

There are 7 cookies. Each cookie has 3 chocolate chips.



7×3

There are 4 cookies. Each cookie has 8 chocolate chips.



4×8

Each bag has 6 donuts. You buy 5 bags.



5×6 or 6×5

Each spider has 8 legs. There are 3 spiders.



3×8 or 8×3

Wrapping Up

Give your child the "Multiplication Vocabulary" sheet, colored pencils, scissors, glue, and a piece of construction paper. She will do the following:

1. cut out each box on the sheet,
2. color the words (including the title),
3. and glue the words, numbers, and images to the construction paper.

Her final product should show a multiplication sentence, labeled with its parts and images (dots) to represent it. Ask her to lay everything out before gluing pieces down so that you can check her work.

Once she has created a correct multiplication sentence ($4 \times 5 = 20$), ask her to read it aloud as she points to the numbers and symbols ("four times five equals 20") and explain how she knows that it's correct. She may say that she counted by 5 or that she counted all of the dots in the boxes. Explain that the multiplication symbol is also called the "times symbol" or "times sign."

When she's finished gluing all of the boxes to the construction paper, she can store this paper in her Interactive Notebook.

Learning Gates

Have your child take the [Learning Gates quiz](#) for this lesson.

Creating Multiplication Sentences

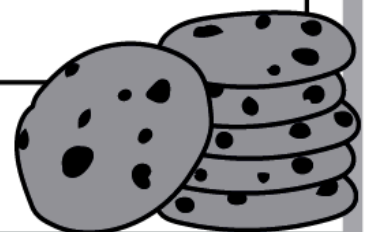
There are 6 cookies. Each cookie has 4 chocolate chips.



$$6 \times 4$$

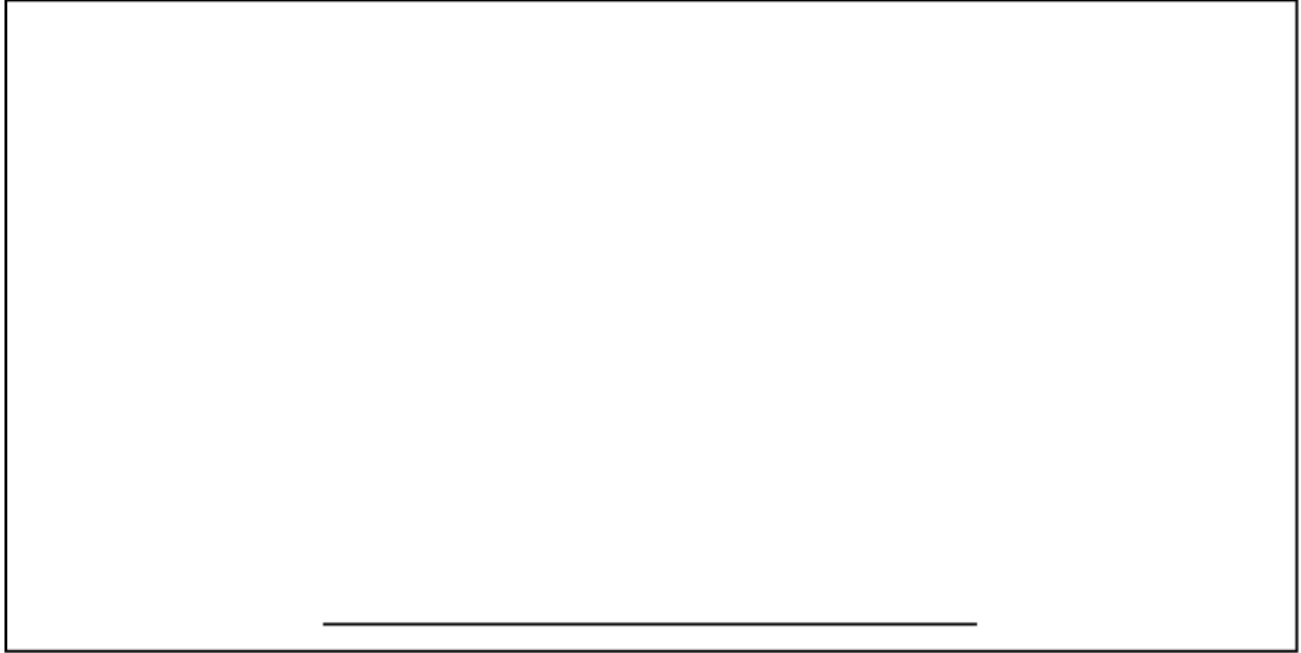
There are 7 cookies. Each cookie has 3 chocolate chips.

There are 4 cookies. Each cookie has 8 chocolate chips.



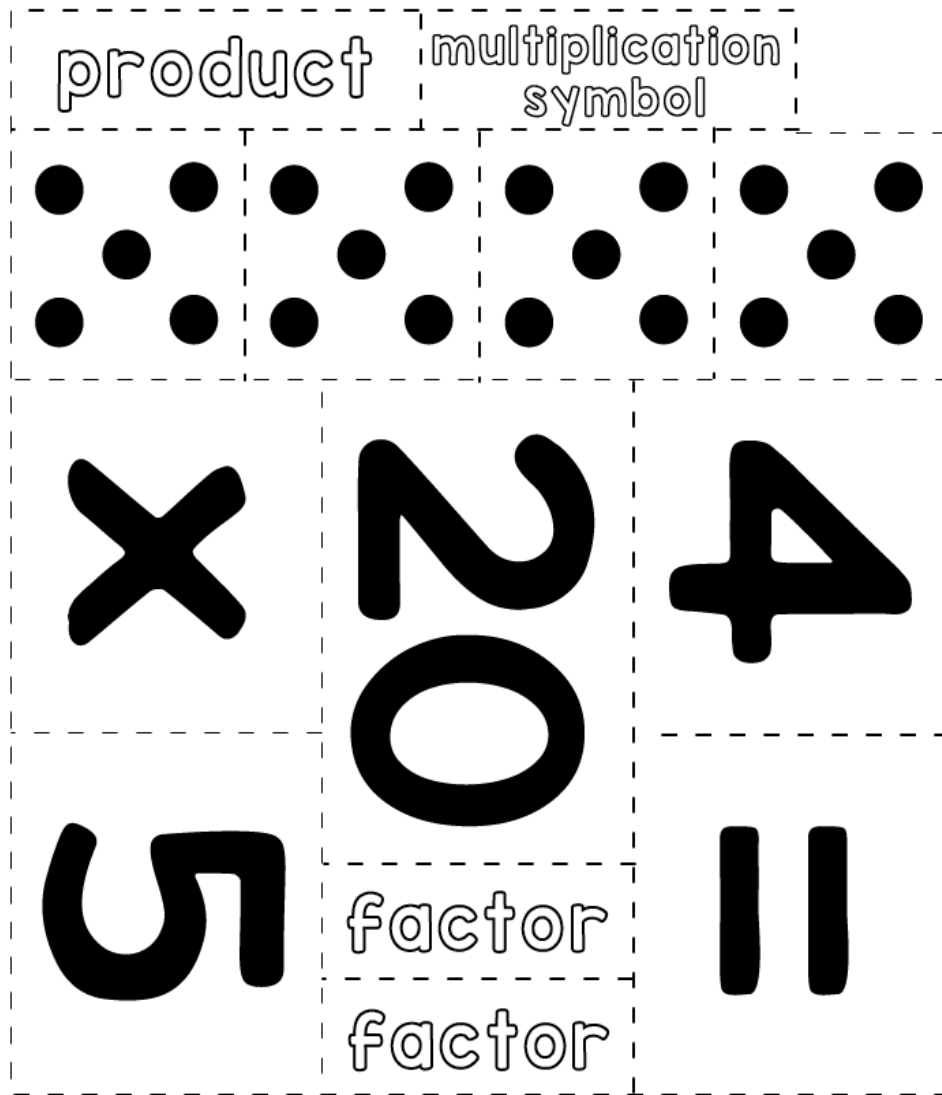
- Try this! Create a multiplication sentence for each situation. Draw a picture to show each situation.

Each bag has 6 donuts. You buy 5 bags.



Each spider has 8 legs. There are 3 spiders.



Multiplication Vocabulary