G3 Playlist: Understanding Products of Whole Numbers

Aligns with *CCSS.MATH.CONTENT.3.OA.A.1:* Interpret products of whole numbers, e.g., interpret 5 × 7 as the total number of objects in 5 groups of 7 objects each. For example, describe a context in which a total number of objects can be expressed as 5 × 7.

Related Standards

- *CCSS.MATH.CONTENT.2.OA.C.3:* Determine whether a group of objects (up to 20) has an odd or even number of members, e.g., by pairing objects or counting them by 2s; write an equation to express an even number as a sum of two equal addends.
- *CCSS.MATH.CONTENT.2.OA.C.4*: Use addition to find the total number of objects arranged in rectangular arrays with up to 5 rows and up to 5 columns; write an equation to express the total as a sum of equal addends.
- *CCSS.MATH.CONTENT.3.OA.A.2:* Interpret whole-number quotients of whole numbers, e.g., interpret 56 ÷ 8 as the number of objects in each share when 56 objects are partitioned equally into 8 shares, or as a number of shares when 56 objects are partitioned into equal shares of 8 objects each. For example, describe a context in which a number of shares or a number of groups can be expressed as 56 ÷ 8.
- *CCSS.MATH.CONTENT.3.OA.A.3:* Use multiplication and division within 100 to solve word problems in situations involving equal groups, arrays, and measurement quantities, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem.1
- *CCSS.MATH.CONTENT.3.OA.A.4:* Determine the unknown whole number in a multiplication or division equation relating three whole numbers. For example, determine the unknown number that makes the equation true in each of the equations 8 × ? = 48, 5 = _ ÷ 3, 6 × 6 = ?

Objectives

In this module, you will learn and practice the following skills:

- Represent multiplication equations using groups
- Explain how the product of a multiplication equation represents the total amount
- Describe an example of a product of a multiplication equation

Let's get started!

Key Terms

- **Repeated addition** is adding the same number over and over again.
- An **array** is a representation of a number using rows and columns.
- An **open number line** is a number line that does not have a set endpoint.
- A **closed number line** is a number line that does have a set endpoint.
- When you **multiply**, or do **multiplication**, you add equal groups together a specific number of times.
- A **product** is the answer to a multiplication problem. The product represents the total number you get after putting the equal groups together.
- A **factor** is one number that is multiplied by another number to create a certain product.
- A **property** is a math rule.

Understanding Products of Whole Numbers

(3.OA.A.1)

Repeated addition is adding the same number over and over again. An **array** is a representation of a number using rows and columns. An **open number line** is a number line that does not have a set endpoint. A **closed number line** is a number line that does have a set endpoint. When you **multiply**, or do **multiplication**, you add equal groups together a specific number of times. A **product** is the answer to a multiplication problem, which represents the total number you get after putting the equal groups together. A **factor** is one number that is multiplied by another number to create a certain product. A **property** is a math rule.

If your students…

Struggle with identifying multiplication as equal groups:

WATCH: Introduction to Multiplication

https://www.khanacademy.org/math/cc-third-grade-math/cc-3rd-mult-div-topic/cc-3rd-mult/v/multiplication-intro

Struggle with multiplying the number in the most efficient order:

WATCH: Commutative Property of Multiplication

https://www.opened.com/video/commutative-property-of-multiplication-yourteacher-com/115517

Struggle with relating multiplication to repeated addition:

WATCH: Multiplication as Repeated Addition

https://www.opened.com/video/multiplication-as-repeated-addition/180935

WATCH

http://www.oercommons.org/courses/relating-addition-and-multiplication/view

For extra practice with multiplication:

PLAY: Math Playground: Thinking Blocks

http://www.mathplayground.com/NewThinkingBlocks/thinking_blocks_multiplication_division.html

For extra practice with relating multiplication to repeated addition:

PLAY: Relating Addition to Multiplication

http://mrnussbaum.com/grade_3_standardsrelating_addition_to_multiplication/