

G3 Playlist: Determining the Unknown Number in Multiplication and Division Equations

Aligns with *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 $8 \times ? = 48$, $5 = _ \div 3$, $6 \times 6 = ?$

Related Standards

- *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 .
- *CCSS.MATH.CONTENT.3.OA.A.2*: Interpret whole-number quotients of whole numbers, e.g., interpret $56 \div 8$ 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 $56 \div 8$.
- *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.
- *CCSS.MATH.CONTENT.3.OA.B.5*: Apply properties of operations as strategies to multiply and divide. 2 Examples: If $6 \times 4 = 24$ is known, then $4 \times 6 = 24$ is also known. (Commutative property of multiplication.) $3 \times 5 \times 2$ can be found by $3 \times 5 = 15$, then $15 \times 2 = 30$, or by $5 \times 2 = 10$, then $3 \times 10 = 30$. (Associative property of multiplication.) Knowing that $8 \times 5 = 40$ and $8 \times 2 = 16$, one can find 8×7 as $8 \times (5 + 2) = (8 \times 5) + (8 \times 2) = 40 + 16 = 56$. (Distributive property.)



Objectives

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

- Determine the unknown number in a multiplication equation
- Determine the unknown number in a division equation

Let's get started!

Key Terms

- When you **multiply**, or do **multiplication**, you add equal groups together a specific number of times.
- A **factor** is one number that is multiplied by another number to create a certain product.
- A **product** is the answer to a multiplication problem.
- When you **divide**, or do **division**, you take a whole amount of objects and divide them into smaller, equal groups.
- The **dividend** is the total amount that is being divided.
- The **divisor** is how many groups or how many are in each group when dividing.
- The **quotient** is the answer to a division problem.
- A **variable** is an unknown piece of an equation that can be represented with a letter, picture, or other symbol.
- A **fact family** is a group of numbers that are related through different operations.



Determining the Unknown Number in Multiplication and Division Equations

(3.OA.A.4)

When you **multiply**, or do **multiplication**, you add equal groups together a specific number of times. A **factor** is one number that is multiplied by another number to create a certain product. A **product** is the answer to a multiplication problem. When you **divide**, or do **division**, you take a whole amount of objects and divide them into smaller, equal groups. The **dividend** is the total amount that is being divided. The **divisor** is how many groups or how many are in each group when dividing. The **quotient** is the answer to a division problem. A **variable** is an unknown piece of an equation that can be represented with a letter, picture, or other symbol. A **fact family** is a group of numbers that are related through different operations.

If your students...

Struggle with multiplication:

WATCH: Intro to Multiplication

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

Struggle with division:

WATCH: The Idea of Division

<https://www.khanacademy.org/math/cc-third-grade-math/cc-3rd-mult-div-topic/cc-3rd-division/v/the-idea-of-division>

Struggle with fact families:

WATCH: Elementary Math: Division and Multiplication Fact Families

<https://www.youtube.com/watch?v=YeVQ0X2hrRc>

For extra practice with multiplication equations:

PLAY: Times Tables Game: $2\times$ to $10\times$

<http://www.helpingwithmath.com/resources/games/3oa7-times-tables01/3oa7-times-tables01.htm>

PLAY: Multiplying 1-digit Numbers (some include 10)

https://www.khanacademy.org/math/arithmetics/multiplication-division/multiplication_fun/e/multiplication_0.5

