

## G3 Playlist: Understanding Quotients of Whole Numbers

Aligns with *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  $56 \div 8$ .

### Related Standards

- *CCSS.MATH.CONTENT.3.OA.A.1*: Interpret products of whole numbers, e.g., interpret  $5 \times 7$  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  $5 \times 7$ .
- *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.<sup>1</sup>
- *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  $8 \times ? = 48$ ,  $5 = \_ \div 3$ ,  $6 \times 6 = ?$
- *CCSS.MATH.CONTENT.3.OA.B.6*: Understand division as an unknown-factor problem. For example, find  $32 \div 8$  by finding the number that makes 32 when multiplied by 8.



## Objectives

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

- Represent division equations using shares and groups
- Explain how the quotient of a division equation represents the number of shares or number of groups
- Create a story problem to represent a division equation

Let's get started!

## Key Terms

- **Repeated subtraction** is subtracting the same amount over and over.
- A **share** is another name for an equal group.
- 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.
- An **array** is a representation of a number using rows and columns.
- When you **divide**, or do **division**, you take a whole amount of objects and divide them into smaller, equal groups.
- A **quotient** is the answer to a division problem. The quotient represents the number of shares or the number of groups created by dividing the whole.



## Understanding Quotients of Whole Numbers

(3.OA.A.2)

**Repeated subtraction** is subtracting the same amount over and over. A **share** is another name for an equal group. 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. An **array** is a representation of a number using rows and columns. When you divide, or do division, you take a whole amount of objects and divide them into smaller, equal groups. A **quotient** is the answer to a division problem. The quotient represents the number of shares or the number of groups created by dividing the whole.

If your students...

### Struggle with division in general:

WATCH: Division I

<https://www.opened.com/video/division-1/181490>

### Struggle with writing story problems to represent equations:

WATCH: Division Word Problems

<https://www.noodle.com/learn/details/133580/division-word-problems-yourteachercom-pre-algebra-help>

### For extra practice with division:

PLAY: 1-digit Division

[https://www.khanacademy.org/math/cc-third-grade-math/cc-3rd-mult-div-topic/cc-3rd-division/e/division\\_1](https://www.khanacademy.org/math/cc-third-grade-math/cc-3rd-mult-div-topic/cc-3rd-division/e/division_1)

PLAY: Division Terms

<http://www.oercommons.org/courses/division-terms/view>

