

Represent and solve problems involving multiplication and division within 100

Standard 3.OA.2 Interpret whole-number quotients of whole numbers. For example, interpret $56 \div 8$ as the number of objects in each share when 56 objects are partitioned equally into eight shares (partitive), or as a number of shares when 56 objects are partitioned into equal shares of eight objects each (quotative).

Key Elements:

- Solidifying understanding of subtraction helps with developing a good foundation for division.
- Similar to Multiplication, be sure to emphasize equal parts. Students are breaking apart numbers into equal groups, when in multiplication they are combining equal groups. Solidifying this concept is helpful for students.
- It is particularly important to include the label in these questions because knowing what each number represents demonstrates mastery of understanding the operation in the word problem.

See models from 3.OA.6 for models and examples

- **Partitive:** The number of object in each of the groups is unknown, while the number of groups is known.
 - **Example word problems:**
 - i. Danny has 56 Jelly beans. If he puts the jelly beans equally into 8 bags, how many jelly beans will there be in each bag?
 - ii. Samantha is going to the park for her birthday party. There are 15 people going. If they all fit equally in 3 cars, how many people are in each car?
- **Quotative:** The number of groups is unknown, while the number of objects is known.
 - **Example word problem:**
 - i. Danny has 56 jelly beans. If he puts 8 in each bag, how many bags will he need?
 - ii. Samantha is going to the park for her birthday party. There are 15 people going and 5 people can fit in each car. How many cars do they need?

Common Misconception

With repeated subtraction teachers often teach that:

$56 - 8 = 48 - 8 = 40 - 8 = 32 - 8 = 24 - 8 = 16 - 8 = 8 - 8 = 0$. This is stating that $56 - 8 = 0$, which is not true.

In order to accurately represent repeated subtraction, it needs to be written as $56 - 8 - 8 - 8 - 8 - 8 - 8 - 8 = 0$.