

Represent and solve problems involving multiplication and division within 100

Standard 3.OA.4 Determine the unknown whole number in a multiplication or division equation relating three whole numbers. For example, determine the unknown number—product, factor, quotient, dividend, or divisor—that makes the equation true in each of the equations $8 \times ? = 48$, $5 = ? \div 3$, $6 \times 6 = ?$.

Key Elements: Use fact families to illustrate the relationship between addition and subtraction, and the relationship between multiplication and division. Students can connect the relationship between addition and subtraction, which they learned in 2nd grade, to the relationship between multiplication and division. Assign the correct terminology to these connections: *Commutative Property*.

Key Vocabulary:

Factor: Either the number of groups or the number in each groups in a multiplicative equation.

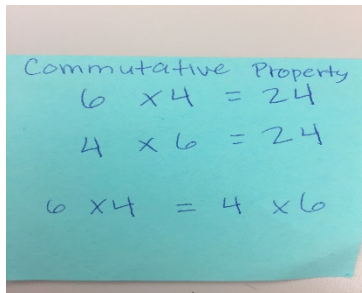
Product: The end number when equal groups are combined.

Quotient: The end results when a number is partitioned, or broken up, into equal groups. (*Partitive) OR the end result when a number is equally partitioned, or broken up, into a set number of groups. (*Quotative)

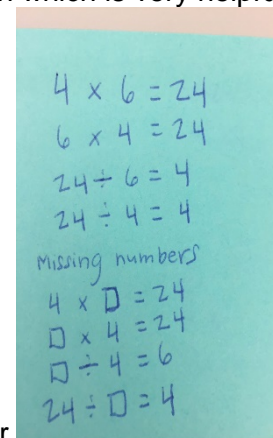
Divisor: The number that either gets broken up into a set number of equal groups, or groups with a set number in each group.

Dividend: Either the set number of groups, or the set number in each group.

*Students do not need to know these terms.



- Knowing the commutative property of multiplication helps with this because it shows the relationship between the two factors and the quotient.
- Helping students understand multiplication and division fact families is one way of demonstrating the relationship between multiplication and division which is very helpful



when solving multiplication word problems with a missing number.

- Relating this concept to addition and subtraction fact families is a good way to introduce multiplication and division fact families. It is something the students should be able to make connections with because of what they learned in second grade.
- Relating this to real world situations and having the students draw pictures of situations with missing numbers is one strategy that can be used to help this concept become more concrete and less abstract.
 - **Example:** Max has 6 bags of candy. If there are 4 pieces in each bag, how many pieces of candy does Max have altogether?