Read About Multiplication Comparisons

WHAT IS MULTIPLICATIVE COMPARISON?

Multiplication can also be used to compare two quantities. This is called multiplicative comparison.

To better understand multiplicative comparison...

LET'S BREAK IT DOWN!

Berry Picking

You have been at the berry farm picking strawberries all day. You have picked 4 flats of berries and your friend has picked 10 flats of berries. We can compare how many more flats of berries your friend picked by using additive comparison. As the name implies, we use addition to find the comparison. 10 is 6 more than 4, so your friend picked 6 more flats than you. Try this one yourself: There are 7 birds in one cage at the pet store. In another cage, there are 15 birds. How many more birds are in the second cage than the first? Use additive comparison to solve.

Cookie Bake-Off!

There are problems where using additive comparison just won't work, so we use multiplicative comparison. Just like additive uses addition, multiplicative uses multiplication to compare amounts. Jamal donated 3 trays of cookies for the bake sale. Maurice donated 3 times as many trays of cookies as Jamal. If we place the trays on a table, we have 3 trays in a row for Jamal and 3 rows of 3 trays in a row for Maurice, since he donated 3 times as many as Jamal. We could write it as: 3 rows × 3 trays = 9 trays. Try this one yourself: **Stacey has 8 awards on her table, and they are all in one row. Montel has 3 times as many awards on his table. What might Montel's table look like? How can you solve to find how many awards Montel has?**

Ping Pong Party!

When you use multiplication to compare, there are different ways to interpret or say the information you are trying to compare. You have two types of ping pong balls. There are 8 white balls and 4 times as many orange balls as white. The number of orange balls is 4 times 8! 4 × 8 = 32. There are 32 orange balls. Try this one yourself: **There are 2 colors of pool noodles at the local swimming pool. There are 10 pink noodles and 5 times as many green noodles as pink. How many green noodles are there?**

I Scream You Scream!

The kids are planning an ice cream sundae party. They are making a granola mix as a topping. They found a recipe that was made for 6 servings that uses 2 cups of oats. They found out that 18 people are coming to the party, so they need to make more granola topping. First, they need to find what number times 6 is 18: ? × 6 = 18. THREE! So they need 3 times as many cups of oats. They originally needed 2 cups of oats, and now they need 3 times that. So 3 times 2 cups equals 6 cups. They need 6 cups of oats to make enough granola mix! Try this one yourself: **Tammi is making soup for the fall soup fest. Her recipe uses 3 cups of beef broth and makes enough for 8 people. She wants to make enough for 40 people. How much beef broth does she need to make enough soup for 40 people?**

MULTIPLICATION COMPARISONS VOCABULARY

Multiplication	When you multiply two whole numbers, a and b, you are repeatedly adding a to itself b times. Multiplication is shown using an × symbol.
Factor	A factor is one of the numbers being multiplied.
Product	A product is the result of multiplying.
Compare	When you compare numbers, you identify which number is the greater quantity. You can also compare numbers in terms of how much greater or how many times greater one number is.
Multiplicative comparison	Comparing two amounts using multiplication.
Additive comparison	Comparing two amounts using addition.

Travis is 9 years old. His uncle is 5 times as old as Travis. Find Travis's uncle's age using multiplication.

9 × 5 = 45 years old.

If you see that something is X times more than something else, what operation would you use to find the answer?

Multiply.

A recipe calls for 4 cups of flour for one batch of cookies. You want to make 6 times more than one batch. How many cups of flour do you need?

24 cups of flour.

Janice has 12 fish in her pond. Her friend Keisha has 4 times as many fish in her pond. How many fish are in Keisha's pond? Show your work.

12 x 4 = 48 fish.

There are 7 cat toys in the display at the front of the store. There are 3 times as many cat toys in the back of the store. How many cat toys are in the back of the store?

7 x 3 = 21 cat toys.