

## GCF Vs. LCM

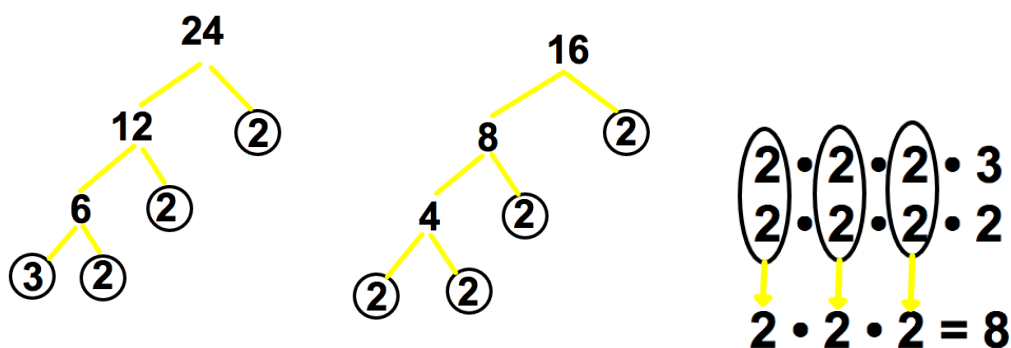
### Top Doc

It's easy to confuse **Greatest Common Factor (GCF)** with **Least Common Multiple (LCM)** especially when you learn both concepts in the same week! So try to remember a couple important facts to keep them straight.

A **factor** must always be **less than or equal to** the number factored. For example the factors of 16 are 1, 2, 4, 8, 16. All the factors are equal to or smaller than the number factored!

The **gcf** of two or more numbers **must be equal to or smaller than the smallest number of the numbers factored.**

Find the GCF of 24 & 16.



Notice that 8 is less than 24 & 16. A **factor**, even the **greatest common factor**, will be **LESS THAN OR EQUAL TO, the numbers factored!**

A **multiple** is always **greater than or equal to the number for which you find multiples.** The LCM of two or numbers **must be equal to or greater than the largest number of the numbers you use.**

You can also use the upside down cake method. **Upside Down Birthday Cake or Cake Method**

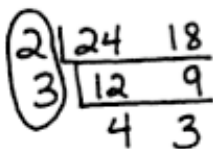
1. Write the factors inside the 1<sup>st</sup> layer of your upside down cake.

$$\underline{24 \quad 18}$$

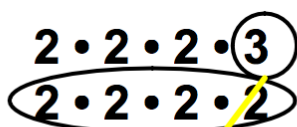
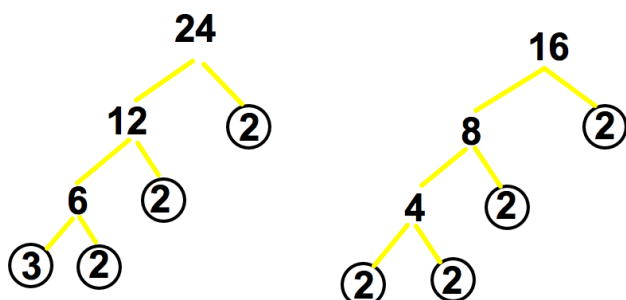
2. Ask yourself what common factor does 24 & 18 have? 2; write the factor on the side of your cake layer. Divide both numbers inside of your cake by the factor outside of your cake. Write the quotients in your next layer.

$$\begin{array}{r} 2 \overline{) 24 \quad 18} \\ 12 \quad 9 \end{array}$$

3. Repeat the process until the numbers at the bottom don't have any common factors. Multiply the numbers on the outside of the cake and you get 6!



Find the LCM of 16 & 24.

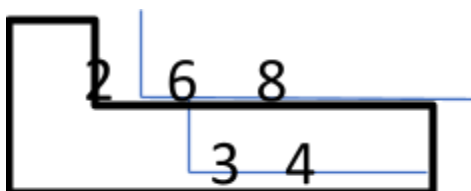


$$2 \cdot 2 \cdot 2 \cdot 2 \cdot 3 = 48$$

Notice that 48 is greater than both 24 & 16. A **multiple, even the least common multiple, will be GREATER THAN OR EQUAL TO, the numbers used!**

You can also use the **CAKE** method as long as you are using it for just two numbers. It is possible to use it for more than two numbers, but you must know the exception.

Once you reach the point where there are no common factors between the two numbers, you form an "L" around the outside numbers and the lowest level of the cake. Then multiply all of the numbers inside the "L". This gives you the LCM.



$$2 \times 3 \times 4 = 24$$