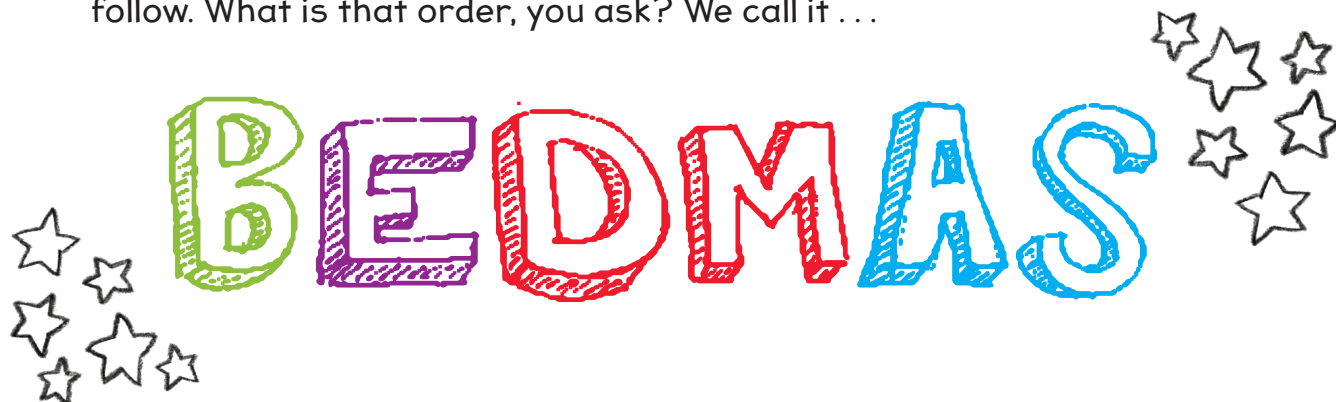


Multi-Step Operations

Becoming BFFs with BEDMAS!

What even is it? Sometimes you get more than just two numbers and one mathematical operation. There are problems asking you to do calculations with a bunch of numbers and different operations. How do you know where to start? We read left to right, so you may think that you should do the operations left to right as well. But that's not necessarily true! There's a certain order that all math people have agreed on and that's the order everyone is supposed to follow. What is that order, you ask? We call it ...



It's a weird-sounding word but it tells you exactly the order in which to perform each and every operation. Here's what each letter stands for:

Brackets **E**xponents **D**ivision **M**ultiplication **A**ddition **S**ubtraction

Actually Using BEDMAS

It's not like EVERY single one of these operations will be in ALL of your questions, but if any of them are, just make sure you do them in order. If, like, you don't have any brackets or exponents, cool – just move on to division. Just follow the order! Let's look at each letter in **BEDMAS** and see exactly what the rule tells us to do.



Brackets:

This rule tells us to do things IN brackets first!

The first thing to do when we see a calculation is check if there is anything in a set of brackets. If there is, we do what's in the brackets first.

Do things in brackets first!

$$\checkmark \quad 6 \times (5 + 3) = 6 \times 8 = 48$$

$5 + 3 = 8$

$$\times \quad 6 \times (5 + 3) = 30 + 3 = 33 \text{ (wrong)}$$

Exponents:

The next thing to check for is exponents or square roots. If you have 'em, do 'em next! If you haven't covered exponents or square roots yet in your class, just skip this step for now.

Okay, so check out this question. There are no brackets in this question, so we can ignore the "B" in BEDMAS. We have multiplication and we have an exponent. BEDMAS tells us to do exponents before multiplication. So do it!

Do exponents first!

$$\checkmark \quad 5 \times 2^2 = 5 \times 4 = 20$$

$2^2 = 2 \times 2 = 4$

$$\times \quad 5 \times 2^2 = 10^2 = 100 \text{ (wrong)}$$



Division & Multiplication:

We divide and multiply BEFORE we add or subtract. Here's a kicker: division and multiplication are done IN THE ORDER THEY APPEAR FROM LEFT TO RIGHT. I know, confusing. But just remember that they're sort of attached, so whichever comes first in your question, you do first!

Division comes before multiplication here, so do it first!

$$30 \div 5 = 6$$

✓ $30 \div 5 \times 3 = 6 \times 3 = 18$

✗ $30 \div 5 \times 3 = 30 \div 15 = 2$ (wrong)

Addition & Subtraction:

Finally, the last thing we look for is addition and subtraction. Again, remember to do these in the order they appear from left to right, just like division and multiplication. Because they're best friends, and are as important as one another, whoever comes first gets to go first!

Subtraction comes before addition here, so do it first!

$$6 - 2 = 4$$

✓ $6 - 2 + 1 = 4 + 1 = 5$

✗ $6 - 2 + 1 = 6 - 3 = 3$ (wrong)



BEDMAS in Action!

When you look at questions with lots of operations it can be sooo confusing. Just remember – you've got your BFF **BEDMAS**! All you need to do is follow the order of operations, **ONE** at a time, and you'll see how easy it is.

$$Q: 6 + 7 \times (4 - 2) = ?$$

$$6 + 7 \times (4 - 2)$$

↙ $4 - 2 = 2$

Remember, first we have to do what's inside the brackets! Once we're done with what's inside, we can remove the brackets so that we're just left with a number.

$$6 + 7 \times 2$$

↙ $7 \times 2 = 14$

Now, even though the + comes before the x from left to right, BEDMAS tells us to multiply first! So we're left with...

$$6 + 14$$

↙ $6 + 14 = 20$

Finally, we add the numbers together! And we get...

$$A: 6 + 7 \times (4 - 2) = 20$$



Cool Trick!

A great way to memorize the **BEDMAS** order is to come up with a phrase you can remember, like "Bad Eggs Demand More Attention, Silly" or "Bears Eat Doughnuts, Muffins And Strudel."

Fancy Lingo!

If your teacher uses one of these other weird-sounding words – **PEDMAS**, **PODMAS**, **BIDMAS** or **BODMAS** – it means basically the same thing as **BEDMAS**. Just follow the rules we've outlined here and you'll kill it.