


[lessons / practice](#)
[geometry / art](#)
[other fun](#)
[Teachers](#)
[Parents](#)
[Coolified Games](#)
[Science Monster](#)
[Coolmath.com](#)

## How to Do Long Division

Help with long division (page 1 of 5)

Let's just dive right in and do one! I'm going to go really slowly and I'll show each step. After you see a few examples, it's going to start making sense!

$$68 \div 2 =$$

The first thing we do is change the way the problem is written...

$$2 \overline{)68}$$

The first math step is to look at that first number of the guy we are dividing into... that **6**. **This is the division step!**

We want to see how many times **2** will go into **6**... **2** goes into **6** **three** times, right? So, we put that **3** right above the **6**:

That wasn't hard at all, was it?

Here's the second step... **This is the multiplication step!**

Multiply the **3** and the **2** and put the **answer** right under the **6**:

Here's the third step... **This is the subtraction step!**

Do the subtraction...  
That's **6 - 6 = 0**

Hey, we just finished the first chunk of steps! And it wasn't that bad!

**Division, then multiplication, then subtraction.**

## Let's call it the DMS loop!

Hey, those letters go alphabetically!! You can use that to remember it!

OK, now we're going to do the exact same thing, but with a different number...

First thing:  
Drag the 8 down.

$$\begin{array}{r} 3 \\ 2 \overline{)68} \\ -6 \\ \hline 08 \end{array}$$

Now, let's go back into our division, multiplication, subtraction loop using the 8!

### Division:

We want to see how many times 2 will go into 8... 2 goes into 8 four times... So, we put that 4 right above the 8:

$$\begin{array}{r} 34 \\ 2 \overline{)68} \\ -6 \\ \hline 08 \end{array} \quad 8 \div 2 = 4$$

### Multiplication:

Multiply the 4 and the 2 and put the answer right under the 8:

$$\begin{array}{r} 34 \\ 2 \overline{)68} \\ -6 \\ \hline 08 \\ 8 \end{array} \quad 4 \times 2 = 8$$

### Subtraction:

That's  $8 - 8 = 0$

$$\begin{array}{r} 34 \\ 2 \overline{)68} \\ -6 \\ \hline 08 \\ -8 \\ \hline 0 \end{array}$$

**Guess what? We are DONE! (No way.) WAY!**

We used the 6 and the 8...  
and we ended with a 0

at the bottom...  
Which I made into a "happy  
face" because I was so  
happy to be done!

The answer is **34**.

$$\begin{array}{r}
 34 \\
 \hline
 2 \overline{)68} \\
 \underline{-6} \phantom{0} \\
 08 \\
 \underline{-8} \\
 \hline
 \text{☺}
 \end{array}$$

So, we do our DMS loop (division-multiplication-subtraction) until we use all the numbers in the guy we are dividing into (that guy is officially called the dividend).

We have two ways to check whether our answer is right or not:

- 1) Grab a calculator and do 68 divided by 2.
- 2) Use multiplication! Remember that division and multiplication go together... They undo each other! So,  $34 \times 2$  should = 68! This is great practice for you.

Let's do a bunch more... Go to the next page to do another one!

[Go to next page >>](#)

The printing, distribution and/or downloading of these lessons is strictly prohibited.

[◀ back to long division ▶](#)

[The Coolmath Network's PRIVACY POLICY](#)



|| [about us](#) || [safe surfing](#) || [terms of use](#) || [copyrights & fair use](#) ||

If you believe that your own copyrighted content is on our Site without your permission, please follow the Copyright Infringement Notice procedure [linked here](#).

|| [cool math 4 kids lessons and games](#) || [cool geometry & art](#) || [cool math games for arithmetic](#) || [cool free online puzzles](#) || [other cool math fun](#) ||

[|| cool math ||](#) [math for ages 13-100 ||](#) [cool math for teachers ||](#) [coolmath for parents ||](#) [cool math games ||](#)  
[math help lessons ||](#) [cool math games and practice problems ||](#) [online math dictionary ||](#) [Coolified Games ||](#)  
[|| Science Monster ||](#) [Spike's Cool Games ||](#) [continuing teacher education ||](#) [cool math algebra lessons ||](#) [math anxiety ||](#)

Thanks for visiting Coolmath4kids.com  
© 2014 Coolmath.com LLC. All Rights Reserved.