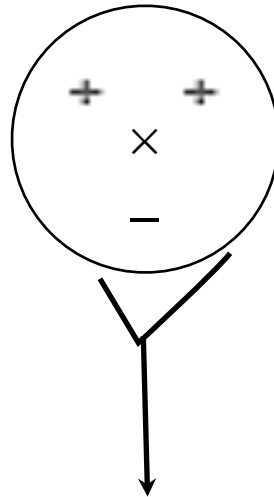| • Divide • Multiply • Subtract • Check • Bring Down	An easy way to remember this may be to use a mnemonic such as: <u>D</u>oes <u>M</u>cDonald's <u>S</u>erve <u>C</u>heese <u>B</u>urgers? or <u>D</u>racula's <u>M</u>other <u>S</u>ucks <u>C</u>hicken <u>B</u>lood.	
Let's look at an example: **50.778 ÷ 12.6**	also written like this $\dfrac{50.778}{12.6}$	or like this $12.6\overline{)50.778}$

Note: The <u>dividend</u> is what we are <u>dividing **into**</u>: 50.778. The <u>divisor</u> is what we are <u>dividing **by**</u>: 12.6. The <u>quotient</u> is the <u>answer</u> to this division problem.

$126\overline{)507.78}$	**Where does the decimal point go?** The <u>divisor</u> must be a <u>whole number</u>. In order to make 12.6 a whole number we must multiply by 10 (or move the decimal place one space to the right). When we do this, we must do the same to the dividend. 50.778 x 10 = 507.78. Finally, we move the decimal point directly up to where it should be located in the quotient.
$\begin{array}{r} 4. \\ 126\overline{)507.78} \end{array}$	**_Step One_**: <u>Divide</u>: Divide the divisor into the first part of the dividend. Does 126 go into 5? **No.** Does 126 go into 50? **No.** Does 126 go into 507? **Yes.** Start here. Write the first digit of your answer above the 7 in 507.

Note: It often helps to **estimate**. Think: *how many times does 125 go into 500? About 4.*
OR remove the last digits and think: how many times does 12 go into 50? Again, about 4.
Using that estimate, you write a 4 above the 7 as the first digit in your answer.

$\begin{array}{r} 4. \\ 126\overline{)507.78} \\ -504 \end{array}$	**_Step Two_**: <u>Multiply</u>: Multiply the first digit of your quotient, or answer, by your divisor. Multiply 4 by 126. Write the product directly below 507. 4·126 = 504
$\begin{array}{r} 4. \\ 126\overline{)507.78} \\ -504 \\ \hline 3 \end{array}$	**_Step Three_**: <u>Subtract</u>: Subtract the product you just found from the first part of your dividend. 507-504 = 3
$\begin{array}{r} 4. \\ 126\overline{)507.78} \\ -504 \\ \hline \mathbf{3} \end{array}$	**_Step Four_**: <u>Check</u>: Is your remainder smaller than your divisor? • If the answer is no, the digit you choose in step one was not big enough. Go back to step one. • If the answer is yes, move on. Is 3 (your remainder) smaller than 126 (your divisor)? Yes. Move on to step five.
$\begin{array}{r} 4. \\ 126\overline{)507.78} \\ -504 \\ \hline 37 \end{array}$	**_Step Five_**: <u>Bring Down</u> Bring down the next number in your dividend…in this case, a 7.

Repeat. Start again at step one.

$$4.0$$ $$126\overline{)507.78}$$ $$-504$$ $$37$$	**_Step One_**: <u>Divide</u>: Divide the divisor into the remainder with the addition of the number you just brought down…in this case *how many times does 126 go into 37? <u>The answer is zero</u>.* Write 0 next to your 4. It is the second digit of your quotient.
$$4.0$$ $$126\overline{)507.78}$$ $$-504$$ $$37$$ $$\underline{-0}$$	**_Step Two_**: <u>Multiply</u>: Multiply the second digit of your quotient (answer) by your divisor. Multiply 0 by 126. Write the answer directly below the 37. $0 \cdot 126 = 0$
$$4.0$$ $$126\overline{)507.78}$$ $$-504$$ $$37$$ $$\underline{-0}$$ $$37$$	**_Step Three_**: <u>Subtract</u>: Subtract the product you just found from the first part of your dividend. $37-0 = 37$
$$4.0$$ $$126\overline{)507.78}$$ $$-504$$ $$37$$ $$\underline{-0}$$ $$\mathbf{37}$$	**_Step Four_**: <u>Check</u>: Is your remainder smaller than your divisor? If the answer is no, the digit you choose in step one was not big enough. Go back to step one. If the answer is yes, move on. Is 37 (your remainder) smaller than 126 (your divisor)? Yes. Move on to step five.

$$4.0$$ $$126\overline{)507.78}$$ $$-504$$ $$37$$ $$\underline{-0}$$ $$37$$	$$4.0$$ $$126\overline{)507.78}$$ $$-504$$ $$37$$	**_Please note: after multiplying by 0 and subtracting 0, we are at the same point as we were before; so, when 0 is part of the quotient steps 2-4 are often skipped._**

$$4.0$$ $$126\overline{)507.78}$$ $$-504$$ $$378$$	**_Step Five_**: <u>Bring Down</u> Bring down the next number in your dividend…in this case, an 8.

Repeat. Start again at step one.	
$$4.03$$ $$126\overline{)507.78}$$ $$-504$$ $$378$$	**_Step One_**: <u>Divide</u>: Divide the divisor into the remainder with the addition of the number you just brought down…in this case *how many times does 126 go into 378?* <u>*Estimate again. How many times does 125 go into 375?*</u> <u>*Another estimate…dropping the last digits…how many times does 12 go into 37?*</u> Both answers are 3. Write 3 next to your 0. It is the third digit of your quotient.

divide

multiply

subtract

check

bring down

$\dfrac{4.03}{126\overline{)507.78}}$ $\underline{-504}$ 378 $\underline{-378}$	***Step Two***: <u>Multiply</u>: Multiply the third digit of your quotient (answer) by your divisor. Multiply 3 by 126. Write the answer directly below the 378. $3 \cdot 126 = 378$
$\dfrac{4.03}{126\overline{)507.78}}$ $\underline{-504}$ 378 $\underline{-378}$ 0	***Step Three***: <u>Subtract</u>: Subtract the product you just found from the first part of your dividend. $378\text{-}378 = 0$
	Step Four: <u>Check</u>: Is your remainder smaller than your divisor? Is 0 (your remainder) smaller than 126 (your divisor)? Yes. Move on to step five.
	Step Five: <u>Bring Down</u> There are no more numbers to bring down.
How do you know when you are finished dividing? 1) There are no more numbers to bring down AND 2) The remainder is 0. Otherwise, keep going until you have reached a complete answer or an answer that suits your needs.	