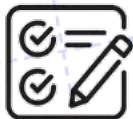




Mathematics



GRAPHIC ORGANIZERS



Long Division QUOTIENT
An algorithm for dividing multi-digit numbers. DIVISOR} DIVIDEND

Divide

M

S

B

Repeat or remainder

FREE!

Does Mcdonald's Serve Hamburgers Rare?

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Long Division

An algorithm for dividing multi-digit numbers.

$$\begin{array}{r} \text{QUOTIENT} \\ \text{DIVISOR} \overline{) \text{DIVIDEND}} \end{array}$$

Divide

Multiply

Subtract

Bring down

Repeat or remainder

Does McDonald's Serve Hamburgers Rare?

Long Division

An algorithm for dividing multi-digit numbers.

$$\begin{array}{r} \text{QUOTIENT} \\ \text{DIVISOR} \overline{) \text{DIVIDEND}} \end{array}$$

Divide

Multiply

Subtract

Bring down

Repeat or remainder

The Long Division Algorithm

DIVIDE • MULTIPLY • SUBTRACT • BRING DOWN • REPEAT

$$\begin{array}{r} 0 \\ 3 \overline{) 258} \end{array}$$

First, we will try to divide the leftmost digit of the dividend. But **3** doesn't fit in **2**, so we'll skip that digit and put a **0** in the quotient as a placeholder.

$$\begin{array}{r} 08 \\ 3 \overline{) 258} \end{array}$$

Next, we'll try to divide the left two digits, **25**. **8** whole **3**'s can fit into **25**. So, we know **8** is part of the quotient. We write the **8** above the last digit of **25**.

$$\begin{array}{r} 86 \\ 3 \overline{) 258} \\ - 24 \\ \hline 18 \end{array}$$

Now we multiply and write the product under the digits we divided.

$$3 \times 8 = 24$$

Then, we subtract ...

$$25 - 24 = 1$$

... and bring down the **8** from the dividend.

$$\begin{array}{r} 86 \\ 3 \overline{) 258} \\ - 24 \\ \hline 18 \\ - 18 \\ \hline 0 \end{array}$$

Time to repeat the algorithm!

Divide ...

6 whole **3**'s fit into **18**.

Multiply ...

$$3 \times 6 = 18$$

Subtract ...

$$18 - 18 = 0$$

There are no more digits to bring down.

You're done!

$$258 \div 3 = 86$$

(The zero in the hundreds place of the quotient has no value. Therefore, we can remove it.)

GET THE COMPLETE SET!

ANCHOR CHART POSTERS
ALGORITHM MNEMONIC POSTER
STEP-BY-STEP CHEAT SHEET

ESSENTIAL VOCABULARY
WORD SEARCH
CROSSWORD PUZZLE

Long Division
 An algorithm for dividing multi-digit numbers.

Divide

Multiply

Subtract

Bring down

Repeat or remainder

Does McDonald's Serve Hamburgers Rain?

The Long Division Algorithm

0
 $\overline{3} \overline{) 258}$
 08
 $\overline{) 258}$
 86
 $\overline{) 58}$
 18
 $\overline{) 0}$

First, we'll try to divide the leftmost digit of the dividend, 2, by the divisor, 3. Since 3 doesn't fit into 2, we will skip that digit and put a 0 in the quotient as a placeholder.

Next, we'll try to divide the next two digits, 25, by 3. Since 3 goes into 25 eight times, we write the 8 above the last digit of 25.

Now we multiply and enter the product under the digits we divided. $3 \times 8 = 24$. Then, we subtract. $25 - 24 = 1$... and bring down the 8 from the dividend.

Time to repeat the algorithm: Divide ... $6 \times 3 = 18$. Multiply ... $3 \times 6 = 18$. Subtract ... $18 - 18 = 0$. There are no more digits to bring down. You're done! $258 \div 3 = 86$. (The zero in the hundreds place of the quotient has to stay. Therefore, we can't remove it.)

LONG DIVISION VOCABULARY

LONG DIVISION VOCABULARY

FUN STUFF!

algorithm bring down difference dig
 divide dividend divisor ell
 factor long division minuend mn
 multiple multiply product quo
 remainder repeat subtract sub

1. The amount being subtracted from in a subtraction equation.
 2. The result of a subtraction.
 3. The number of groups of a given number.
 4. The amount being subtracted from in a subtraction equation.
 5. The result of a subtraction.
 6. A whole number that can be multiplied to produce a given number.
 7. The result of multiplication.
 8. The amount being subtracted from in a subtraction equation.
 9. The result of a subtraction.
 10. The number being divided in a division equation.
 11. The result of multiplication.
 12. The amount being subtracted from in a subtraction equation.
 13. The result of a subtraction.
 14. The number being divided in a division equation.
 15. The result of a subtraction.

Word Bank
 quotient repeat divisor
 multiple difference factor
 product remainder minuend
 subtract long division

GRAPHIC ORGANIZERS
SINGLE-DIGIT DIVISOR • SINGLE-DIGIT DIVISOR WITH REMAINDERS
MULTI-DIGIT DIVISOR • LONG DIVISION AS A TALLY SYSTEM

Long Division

Long Division

Long Division

Long Division

FLEXIBLE FORMATS!

Identify the DIVIDEND and the DIVISOR. $258 \div 3$

List multiples of the divisor or consult a multiplication table.

Write the problem in long division format.

Divide

Multiply

Subtract

Bring down

Repeat or Remainder

Interpret the quotient: There are 86 groups of 3 in 258.

Challenge: Write a statement to help you remember the Long Division Algorithm.

SCAFFOLDED PRACTICE PROBLEMS
LONG DIVISION • LONG DIVISION AS A TALLY SYSTEM

Long Division

Long Division

NO PREP!

Use the long division algorithm to divide.

1. $907 \div 7$
 2. $124 \div 4$
 3. $136 \div 12$
 4. $1884 \div 12$

5. $1448 \div 24 = 60 \text{ R} 8$
 6. $7024 \div 32 = 219 \text{ R} 16$
 7. $8058 \div 31 = 260 \text{ R} 18$

Tally the place-value estimates.

5 thousands $\div 4 =$ _____ thousand ($5000 \div 4 =$ _____)

14 hundreds $\div 4 =$ _____ hundreds ($1400 \div 4 =$ _____)

22 tens $\div 4 =$ _____ tens ($220 \div 4 =$ _____)

24 ones $\div 4 =$ _____ ones ($24 \div 4 =$ _____)

4 hundreds $\div 5 =$ _____ hundreds ($400 \div 5 =$ _____)

80 tens $\div 5 =$ _____ tens ($800 \div 5 =$ _____)

20 ones $\div 5 =$ _____ ones ($20 \div 5 =$ _____)

“A very useful resource for students who need help practicing the steps for long division.”

★ ★ ★ ★ ★

Annie G.

We  your
feedback!

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Steve & Christine