Division Walkthrough - All Steps Shown

Divide 4-Digit Number by 1-Digit Number

Column	C1	C2	C3	C4

Row

R1

R2   4 | 8   3   2   0

R3

R4

R5

…

4 STEP PROCESS

STEP 1: Divide
STEP 2: Multiply
STEP 3: Subtract
STEP 4: Bring down next number

Keep repeating the 4 steps until there are no more numbers to bring down.

Follow steps with color-matching.

Column	C1	C2	C3	C4

Row

R1   2

R2   4 | 8   3   2   0

R3

R4

…

STEP 1: Divide
a) How many times does 4 divide into 8?
b) Answer is exactly 2 times.
c) Put 2 in Quotient at R1C1.

Column	C1	C2	C3	C4

Row

R1   2

R2   4 | 8   3   2   0

R3   8

R4

…

STEP 2: Multiply
a) 2 times 4 is 8.
b) Put 8 at R3C1.

Column   C1   C2   C3   C4

Row

R1   2

R2   4 | 8   3   2   0

R3   −   8

R4

...

STEP 3: Subtract
a) 8 minus 8 is 0.
b) Instead of writing 0, leave a blank at R4C1.

Column   C1   C2   C3   C4

Row

R1   2

R2   4 | 8   3   2   0

R3   −   8   ↓

R4   3

...

STEP 4: Bring down next number
a) Bring down next digit to the right, which is the number 3.
b) Put 3 at R4C2.

REPEAT 4 STEPS FOR THE NUMBER 3 AT R4C2

Column   C1   C2   C3   C4

Row

R1   2   0

R2   4 | 8   3   2   0

R3   −   8

R4   3

...

STEP 1: Divide
a) How many times does 4 divide into 3?
b) Answer is 0 times. The 3 is too small for the 4.
c) Put 0 in Quotient at R1C2.

Diagram 1

Column	C1	C2	C3	C4
Row				
R1		2	0	
R2	4	8	3	2	0
R3	−	8		
R4			3	
R5			0	
...				

STEP 2: Multiply
a) 0 times 4 is 0.
b) Put 0 at R5C2.

Diagram 2

Column	C1	C2	C3	C4
Row				
R1		2	0	
R2	4	8	3	2	0
R3	−	8		
R4			3	
R5	−		0	
R6			3	
...				

STEP 3: Subtract
a) 3 minus 0 is 3.
b) Put 3 at R6C2.

Diagram 3

Column	C1	C2	C3	C4
Row				
R1		2	0	
R2	4	8	3	2	0
R3	−	8		
R4			3	
R5	−		0	
R6			3	2
...				

STEP 4: Bring down next number
a) Bring down next digit to the right, which is the number 2.
b) Put 2 at R6C3.

STEP 1: Divide
a) How many times does 4 divide into 32?
b) Answer is exactly 8 times.
c) Put 8 in Quotient at R1C3.

STEP 2: Multiply
a) 8 times 4 is 32.
b) Put 32 at R7,C2-C3.

STEP 3: Subtract
a) 32 minus 32 is 0.
b) Instead of writing 0, leave a blank at R8,C2-C3.

First diagram

Column	C1	C2	C3	C4
R1		2	0	8	
R2	4	8	3	2	0
R3	−	8			
R4			3		
R5	−		0		
R6			3	2	
R7	−		3	2	
R8					0
...					

STEP 4: Bring down next number
a) Bring down next digit to the right, which is the number 0.
b) Put 0 at R8C4.

REPEAT 4 STEPS FOR THE NUMBER 0 AT R8C4

Second diagram

Column	C1	C2	C3	C4
R1		2	0	8	0
R2	4	8	3	2	0
R3	−	8			
R4			3		
R5	−		0		
R6			3	2	
R7	−		3	2	
R8					0
...					

STEP 1: Divide
a) How many times does 4 divide into 0?
b) Answer is 0 times. Any number that divides into 0 results in 0.
c) Put 0 in Quotient at R1C4.

Column   C1   C2   C3   C4

Row

			C1	C2	C3	C4
R1			2	0	8	0
R2		4	8	3	2	0
R3		−	8			
R4				3		
R5		−		0		
R6				3	2	
R7		−		3	2	
R8						0
R9						0

STEP 2: Multiply
a) 0 times 4 is 0.
b) Put 0 at R9C4.

Column   C1   C2   C3   C4

Row

			C1	C2	C3	C4
R1			2	0	8	0
R2		4	8	3	2	0
R3		−	8			
R4				3		
R5		−		0		
R6				3	2	
R7		−		3	2	
R8						0
R9		−				0
R10						0

STEP 3: Subtract
a) 0 minus 0 is 0.
b) Put 0 at R10C4.

STEP 4: Bring down next number
a) There are no more digits to bring down.
b) The remainder is 0 listed in R10C4.
c) The problem is done.

Row

			C1	C2	C3	C4	
R1			2	0	8	0	R 0
		4	8	3	2	0	

The final answer is the Quotient with Remainder, listed in Row 1. Answer is written as **2080 R0**.

Courtesy of **George Hartas**