How do you divide a

4 digit number by a 2 digit number?

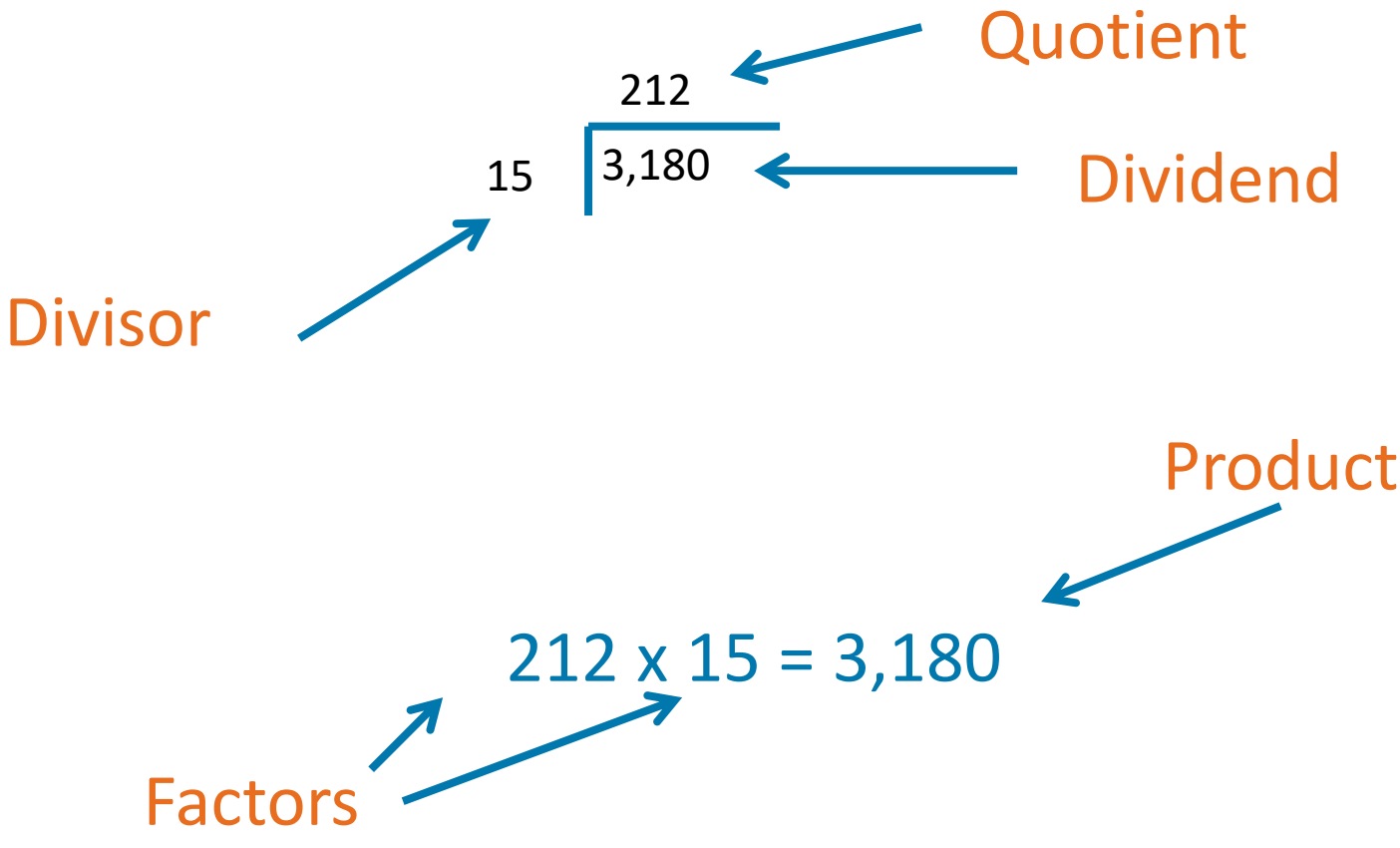
For example:

3,145 students were split into 37 groups for a field trip. How many students were in each group?

In this lesson you will learn how to divide a 4 digit number by a two digit number by using long division.

Let's Review

$3{,}180 \div 15 = 212$



LEARNZILLION

Let's Review

Multiplication and Division are Inverse Operations

$$A = BC$$

$$B = \frac{A}{C}$$

$$C = \frac{A}{B}$$

$$20 = 4 \times 5$$

$$4 = \frac{20}{5}$$

$$5 = \frac{20}{4}$$

A Common Mistake

Assuming a computation

is harder than it really is

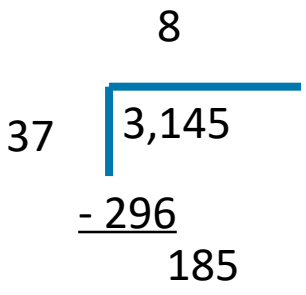
Distributive & Commutative Properties

$$a(b + c) = ab + ac = ba + ca = ca + ba = (c + b)a$$

$$12 \times 34 = 12(30 + 4)$$
$$= 12(30) + 12(4)$$
$$= 360 + 48 = 408$$

$$408 \div 12 = (360+48) \div 12$$
$$= (360 \div 12) + (48 \div 12)$$
$$= 30 + 4 = 34$$

Core Lesson



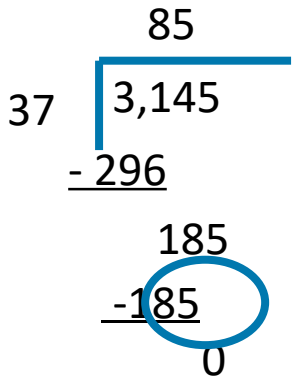
Can 3 be divided into 37 groups where there is at least 1 object in each group?

Can 31 be divided into 37 groups where there is at least one object in each group?

Can 314 be divided into 37 groups where there is at least 1 object in each group?

How many objects would be in each group?

Core Lesson



Look at leading digits

18 divided by 3 is 6.

37 x 6 = (40-3) x 6 =

(40x6) – (3x6)=

240 – 18 = 240 – 20 + 2 = 222. Too big,

222 – 37 = 222 – 40 + 3 = 185

37x5 = (40-3)x5 = 200-15=185

In this lesson you have learned how to find products by interpreting division computations.

Guided Practice

Based on the division computation find the following products:

```
        789
   ┌─────────
123 │ 97,047
    - 861
      1094
     -984
        1107
      -1107
          0
```

123 x 700

123 x 80

123 x 780

123 x 9

123 x 789

Extension Activities

Write a letter to a friend explaining how you can use division computations to find products. Be sure to discuss how inverse operations and the distributive and commutative properties are involved in this process.

Extension Activities

Brainstorm at least 3 real world examples of when it may be helpful to find partial products based on a division computation.

Quick Quiz

What is 123 x 500?

```
        567
   ┌─────────
123 │ 69,741
    - 615
      824
    - 738
      861
    - 861
        0
```

What is 123 x 60?