

Lesson 4 – Division Strategies with Decimals

Starter

Solve

1) $2x = 16$

2) $3x - 1 = 17$

3) $4x + 7 = 8$

4) $\frac{x}{3} = 8$

Starter Answers

1) 14

2) 26

3) 27

4) 14

In this lesson, we will look at how to divide **decimals by decimals**.

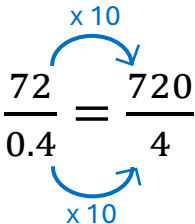
Example 1

Work out $72 \div 0.4$

First, write the calculation as a fraction: $\frac{72}{0.4}$

This means the same as $72 \div 0.4$

Next, find an equivalent fraction without decimals. The easiest way to get rid of the decimals here is by multiplying the numerator and denominator by 10.

$$\frac{72}{0.4} = \frac{720}{4}$$


We must make sure we multiply the numerator and the denominator by the same number so that it is an **equivalent fraction**.

Now answer the calculation $720 \div 4 = 180$.

Since the fractions are equivalent, they have the same value, so $72 \div 0.4 = 180$.

NOTE: Notice how when we divide by 0.4, the answer gets **bigger**. This is because dividing by 0.4 is like saying “how many 0.4’s fit into 72?”

Example 2

Work out $1.56 \div 0.03$

$$\frac{1.56}{0.03} = \frac{156}{3} = 52$$

x 100 (above the arrow from 1.56 to 156)
x 100 (below the arrow from 0.03 to 3)

Use bus stop division to do
156 ÷ 3

The answer is 52

This means that 0.03 fits into 1.56 fifty two times.

Example 3

Work out $5.2 \div 0.65$

$$\frac{5.2}{0.65} = \frac{520}{65}$$

x 100 (above the arrow from 5.2 to 520)
x 100 (below the arrow from 0.65 to 65)

This is still quite difficult to do. When this happens, try to simplify the fraction further to make the numbers smaller.

$$\frac{5.2}{0.65} = \frac{520}{65} = \frac{104}{13} = 8$$

x 100 (above the arrow from 5.2 to 520)
x 100 (below the arrow from 0.65 to 65)
÷ 5 (above the arrow from 520 to 104)
÷ 5 (below the arrow from 65 to 13)

To do $104 \div 13$, we could write out the 13 times table: 13, 26, 39, 52, 65, 78, 91, **104**

So, $5.2 \div 0.65 = 104$.

This means that 0.65 fits into 5.2 eight times.