

Note: The use of unit language (e.g., 21 hundredths rather than 0.21) allows students to use knowledge of basic facts to compute easily with decimals.

1. Complete the sentence with the correct number of units, and then complete the equation.

$$0.21 = 21 \text{ hundredths}$$

3 groups of 7 hundredths is 0.21.

I know the basic fact $3 \times 7 = 21$. This is similar.
 3×7 hundredths = 21 hundredths

$$0.21 \div 3 = \underline{0.07}$$

Since $21 \div 3 = 7$, then
 21 hundredths $\div 3 = 7$ hundredths.

2. Complete the number sentence. Express the quotient in units and then in standard form.

Since the divisor is 4, I'll decompose 8.16 into 8 ones and 16 hundredths.
 Both 8 and 16 are multiples of 4.

$$8.16 \div 4 = \underline{8} \text{ ones} \div 4 + \underline{16} \text{ hundredths} \div 4$$

$$= \underline{2} \text{ ones} + \underline{4} \text{ hundredths}$$

$$8 \text{ ones} \div 4 = 2 \text{ ones} = 2$$

$$= \underline{2.04}$$

$$16 \text{ hundredths} \div 4 = 4 \text{ hundredths} = 0.04$$

$$2 + 0.04 = 2.04$$

3. Find the quotients. Then, use words, numbers, or pictures to describe any relationships you notice between the pair of problems and their quotients.

a. $35 \div 5 = \underline{7}$

I know this basic fact!

b. $3.5 \div 5 = \underline{0.7}$

I can use that basic fact to help me solve this one.
35 tenths \div 5 = 7 tenths = 0.7

Both problems are dividing by 5, but the quotient for part (a) is 10 times larger than the quotient for (b). That makes sense because the number we started with in part (a) is also 10 times larger than the number we started with in part (b).

4. Is the quotient below reasonable? Explain your answer.

a. $0.56 \div 7 = 8$

56 hundredths \div 7 = 8 hundredths

0.56 = 56 hundredths

No, the quotient is not reasonable.

$56 \div 7 = 8$, so 56 hundredths \div 7 must be 8 hundredths.

5. A toy airplane weighs 3.69 kg. It weighs 3 times as much as a toy car. What is the weight of the toy car?

I draw 1 strip diagram to show the weight of the airplane.

3.69 kg

airplane

car

?

The car is equal to the weight of 1 unit.

The airplane weighs 3 times as much as the car, so I partition the strip diagram, into 3 equal units.

I can use unit language and basic facts to solve.

$3 \text{ ones} \div 3 = 1 \text{ one}$

$6 \text{ tenths} \div 3 = 2 \text{ tenths} = 0.2$

$9 \text{ hundredths} \div 3 = 3 \text{ hundredths} = 0.03$

3 units = 3.69

1 unit = $3.69 \div 3$

1 unit = 1.23

The toy car weighs 1.23 kg.

Name _____

Date _____

1. Complete the sentences with the correct number of units, and then complete the equation. The first one is done for you.

a. 3 groups of 5 tenths is 1.5.

$1.5 \div 3 = \underline{0.5}$

b. 6 groups of _____ hundredths is 0.24.

$0.24 \div 6 = \underline{\hspace{2cm}}$

Extension:

c. 5 groups of _____ thousandths is 0.045.

$0.045 \div 5 = \underline{\hspace{2cm}}$

2. Complete the number sentence. Express the quotient in units and then in standard form.

a. $9.36 \div 3 = \underline{\hspace{2cm}}$ ones $\div 3 + \underline{\hspace{2cm}}$ hundredths $\div 3$

$= \underline{\hspace{2cm}}$ ones $+ \underline{\hspace{2cm}}$ hundredths

$= \underline{\hspace{2cm}}$

b. $36.12 \div 3 = \underline{\hspace{2cm}}$ ones $\div 3 + \underline{\hspace{2cm}}$ hundredths $\div 3$

$= \underline{\hspace{2cm}}$ ones $+ \underline{\hspace{2cm}}$ hundredths

$= \underline{\hspace{2cm}}$

c. $3.55 \div 5 = \underline{\hspace{2cm}}$ tenths $\div 5 + \underline{\hspace{2cm}}$ hundredths $\div 5$

$= \underline{\hspace{2cm}}$

$= \underline{\hspace{2cm}}$

Extension:

d. $3.545 \div 5 = \underline{\hspace{2cm}}$

$= \underline{\hspace{2cm}}$

$= \underline{\hspace{2cm}}$

3. Find the quotients. Then, use words, numbers, or pictures to describe any relationships you notice between each pair of problems and quotients.

a. $21 \div 7 =$ _____ $2.1 \div 7 =$ _____

b. $48 \div 8 =$ _____ $0.48 \div 8 =$ _____

4. Are the quotients below reasonable? Explain your answers.

a. $0.54 \div 6 = 9$

b. $5.4 \div 6 = 0.9$

c. $54 \div 6 = 0.09$

5. A toy airplane costs \$4.84. It costs 4 times as much as a toy car. What is the cost of the toy car?
6. Julian bought 3.9 liters of cranberry juice, and Jay bought 8.74 liters of apple juice. They mixed the two juices together and then poured them equally into 2 bottles. How many liters of juice are in each bottle?

