

Unit 5 Lesson 12: Dividing Decimals by Whole Numbers

1 Number Talk: Dividing by 4 (Warm up)

Student Task Statement

Find each quotient mentally.

$$80 \div 4$$

$$12 \div 4$$

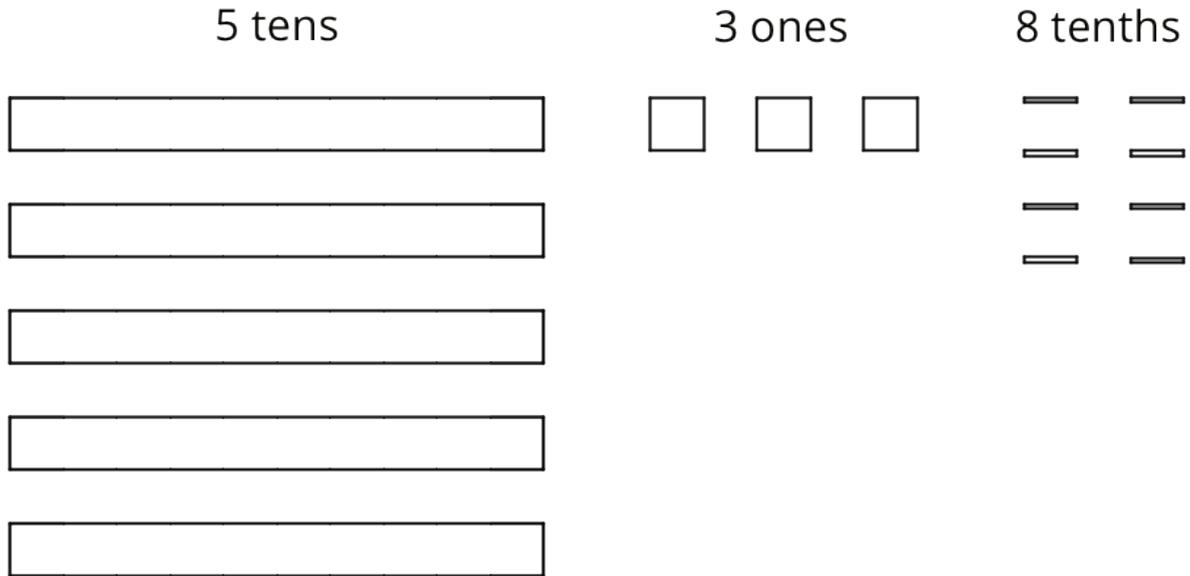
$$1.2 \div 4$$

$$81.2 \div 4$$

2 Using Diagrams to Represent Division

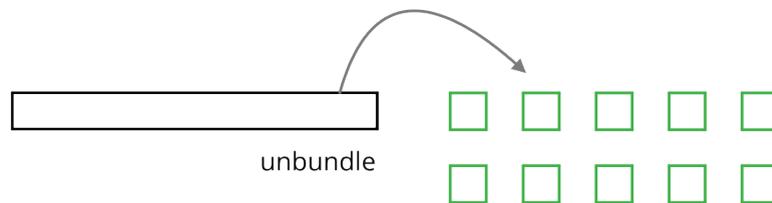
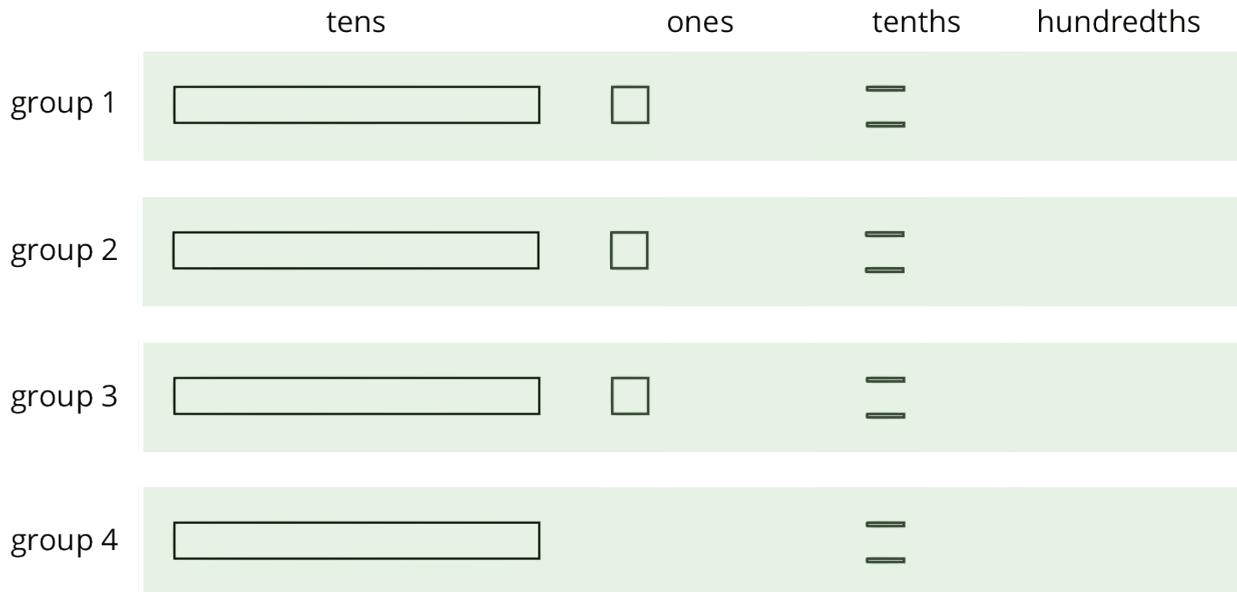
Student Task Statement

To find $53.8 \div 4$ using diagrams, Elena began by representing 53.8.



She placed 1 ten into each group, unbundled the remaining 1 ten into 10 ones, and went on distributing the units.

This diagram shows Elena's initial placement of the units and the unbundling of 1 ten.



1. Complete the diagram by continuing the division process. How would you use the available units to make 4 equal groups?

As the units get placed into groups, show them accordingly and cross out those pieces from the bottom. If you unbundle a unit, draw the resulting pieces.

2. What value did you find for $53.8 \div 4$? Be prepared to explain your reasoning.

3. Use long division to find $53.8 \div 4$. Check your answer by multiplying it by the divisor 4.

4. Use long division to find $77.4 \div 5$. If you get stuck, you can draw diagrams or use another method.

3 Dividends and Divisors

Images for Launch

$$\begin{array}{r} 8 \\ 1 \overline{) 8} \\ - 8 \\ \hline 0 \end{array}$$

$$\begin{array}{r} 8 \\ 100 \overline{) 800} \\ - 800 \\ \hline 0 \end{array}$$

$$\begin{array}{r} 8 \\ 10000 \overline{) 80000} \\ - 80000 \\ \hline 0 \end{array}$$

Student Task Statement

Analyze the dividends, divisors, and quotients in the calculations, and then answer the questions.

$$\begin{array}{r} 24 \\ 3 \overline{) 72} \\ - 6 \downarrow \\ \hline 12 \\ - 12 \\ \hline 0 \end{array}$$

$$\begin{array}{r} 24 \\ 30 \overline{) 720} \\ - 60 \downarrow \\ \hline 120 \\ - 120 \\ \hline 0 \end{array}$$

$$\begin{array}{r} 24 \\ 300 \overline{) 7200} \\ - 600 \downarrow \\ \hline 1200 \\ - 1200 \\ \hline 0 \end{array}$$

$$\begin{array}{r} 24 \\ 3000 \overline{) 72000} \\ - 6000 \downarrow \\ \hline 12000 \\ - 12000 \\ \hline 0 \end{array}$$

1. Complete each sentence. In the calculations shown:

- Each dividend is _____ times the dividend to the left of it.
- Each divisor is _____ times the divisor to the left of it.
- Each quotient is _____ the quotient to the left of it.

2. Suppose we are writing a calculation to the right of $72,000 \div 3,000$. Which expression has a quotient of 24? Be prepared to explain your reasoning.

- a. $72,000 \div 30,000$
- b. $720,000 \div 300,000$
- c. $720,000 \div 30,000$
- d. $720,000 \div 3,000$

3. Suppose we are writing a calculation to the left of $72 \div 3$. Write an expression that would also give a quotient of 24. Be prepared to explain your reasoning.

4. Decide which of the following expressions would have the same value as $250 \div 10$. Be prepared to share your reasoning.

a. $250 \div 0.1$

b. $25 \div 1$

c. $2.5 \div 1$

d. $2.5 \div 0.1$

e. $2,500 \div 100$

f. $0.25 \div 0.01$