

Chapter 9  
**Lesson 6**

# Dividing Decimals by One-Digit Numbers

**You will need**

- base ten blocks

**GOAL**

Divide a decimal by a one-digit number using models and symbols.



Rosa's family has a small storage shed with a floor that measures  $3.72 \text{ m}^2$ .

Rosa has divided the floor into four equal sections.



**What is the floor area of each section of the storage shed?**

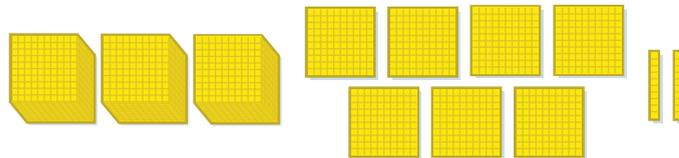


## Abby's Model

To figure out the floor area of each section, I need to divide the total floor area of  $3.72 \text{ m}^2$  by 4.

I estimate that the floor area of each section is a bit more than  $0.9 \text{ m}^2$ , since  $4 \times 0.9 = 3.6$  and  $3.72$  is a bit more than  $3.6$ .

I can use base ten blocks to model ones, tenths, and hundredths. I'll use the large cube to represent one.



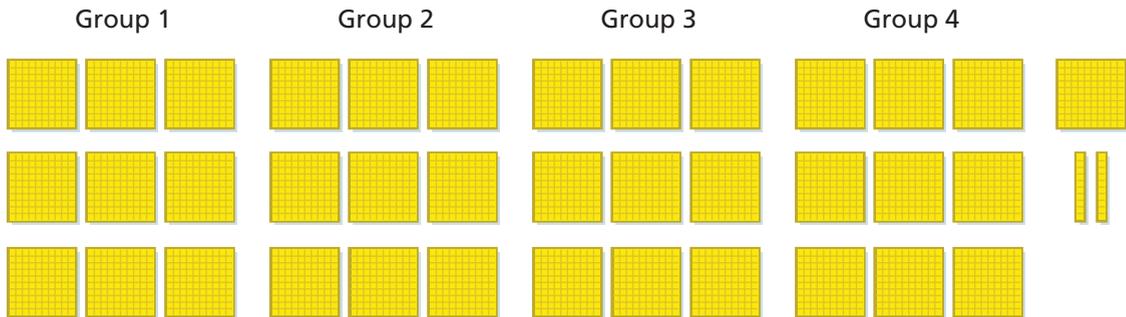
I can think of dividing as sharing the blocks in 4 equal groups. Each group represents the floor area of 1 section.



I can't put a whole block into each group, since I only have 3 blocks. I'll trade the 3 ones for 30 tenths. There were already 7 tenths, so now there are 37 tenths.

$$\begin{array}{r} 0.9 \\ 4 \overline{)3.72} \\ -3.6 \\ \hline 0.12 \end{array}$$

I can put 9 tenths in each group.



## Shaun's Calculation

I know that  $3.72 = 372$  hundredths.

$$4 \overline{)372}$$

I can divide 372 by 4 and then just remember that the quotient is actually hundredths.

- A. Why did Abby write 0 in the quotient above the 3?
- B. Copy and complete Abby's division. Sketch your model.
- C. Copy and complete Shaun's division. Show your work.
- D. What is the floor area of each section of the storage shed?

## Reflecting

- E. How are the two strategies for dividing, in Parts B and C, different? How are they the same?
- F. What other strategy could you use to divide 3.72 by 4?

## Checking

1. Niall had 22.5 kg of rice. He divided the rice equally into five containers.
  - a) Estimate the mass of rice in each container. Explain your thinking.
  - b) Calculate the mass of rice in each container. Show your work.

## Practising

2. A line of nine toonies is 26.1 cm. How wide is one toonie?



3. Calculate.
  - a)  $5.2 \div 4$
  - b)  $17.46 \div 6$
  - c)  $4.92 \div 3$
  - d)  $2.864 \div 8$
4. Amy divided 0.456 kg of barbecued pork into four equal portions. What is the mass of each portion? Show your work.
5. Renée had 40.984 kg of clay to work with. She divided it equally into four containers.
  - a) Calculate the mass of clay in each container. Show your work.
  - b) Estimate to see whether your answer for part a) is reasonable.
  - c) Calculate the mass of the clay in each container another way. Explain your thinking.
6. Each quotient is missing a decimal point. Describe where the decimal point should be placed. Explain one answer.
  - a)  $17.25 \div 5 = 345$
  - b)  $90.72 \div 8 = 1134$
  - c)  $25.48 \div 1 = 2548$
  - d)  $277.2 \div 9 = 308$



