Chapter 9
Lesson 2

Dividing by Halving

GOAL

Relate division facts by halving.

8 vans are taking 56 students to the Pioneer Village Museum.

How many students should go in each van?

Lauren's Division

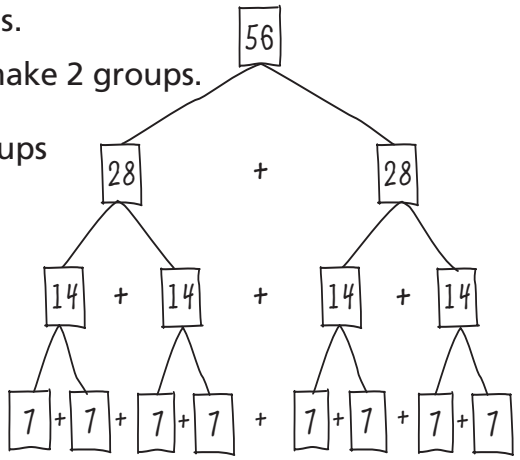
I need to make 8 groups.

I can divide 56 by 2 to make 2 groups.

I can divide these 2 groups by 2 to make 4 groups.

I can divide these 4 groups by 2 to make 8 groups.

7 students should go in each van.



Reflecting

A. How might Lauren have calculated $56 \div 2 = 28$ and $28 \div 2 = 14$?

B. You know that $8 = 2 \times 2 \times 2$. How does this help to explain Lauren's method for dividing by 8?

C. How can you use Lauren's method to calculate $36 \div 4$?

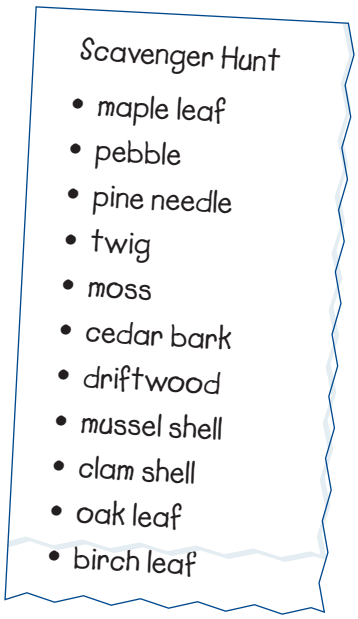
Checking

1. 4 vans were taking 24 students on a field trip. Use dividing by 2 to calculate the number of students in each van.

Practising

2. Calculate each quotient by dividing by 2 as many times as necessary.

a) $64 \div 8$ **b)** $32 \div 4$ **c)** $72 \div 8$ **d)** $48 \div 8$



3. Colin and 17 friends are going on a scavenger hunt. They decide to form 6 equal groups. Colin calculated the size of each group by dividing by 3 and then dividing by 2.

a) Why does his method work? Explain your thinking.

b) Could Colin have divided by 2 and then by 3? Explain your thinking.

4. Use the strategy of dividing by 2 and then by 3 to calculate each quotient.

a) $42 \div 6$ **b)** $54 \div 6$ **c)** $48 \div 6$ **d)** $36 \div 6$

5. Ian knows that $32 \div 8 = 4$.

a) How can he use that fact to calculate $32 \div 4$?

b) How can he use that fact to calculate $32 \div 2$?

6. Why does a halving strategy make sense only when dividing by an even number?