Unit 5, Lesson 6

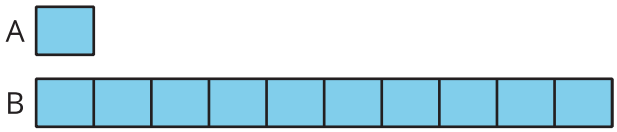
Ten Times as Many

Let's represent "10 times as many."

Activity 1

Ten Times as Many

Here is a diagram that represents 2 quantities, A and B.



1. What are some possible values of A and B?

2. Select the equations that could be represented by the diagram.

   A. $15 \times 10 = 150$

   B. $16 \times 100 = 1{,}600$

   C. $30 \div 3 = 10$

   D. $5{,}000 \div 5 = 1{,}000$

   E. $80 \times 10 = 800$

   F. $12{,}000 \div 10 = 1{,}200$

3. For the equations that can't be represented by the diagram:

   a. Explain why the diagram does not represent these equations.

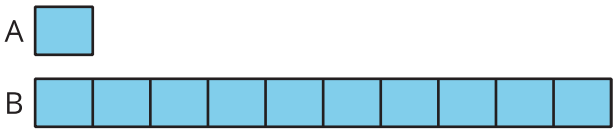
   b. How would you change the equations so the diagram could represent them?

   c. Compare your equations with your partner's. Make at least 2 observations about the equations you and your partner wrote.

Activity 2

What Remains the Same?

1. Use the diagram to complete the table.



value of A	value of B
14	
	1,000
160	
	850
1,000	
	2,070
	3,900

2. Select some values from your table to explain or show:
   a. How you found the value of B when the value of A is known.

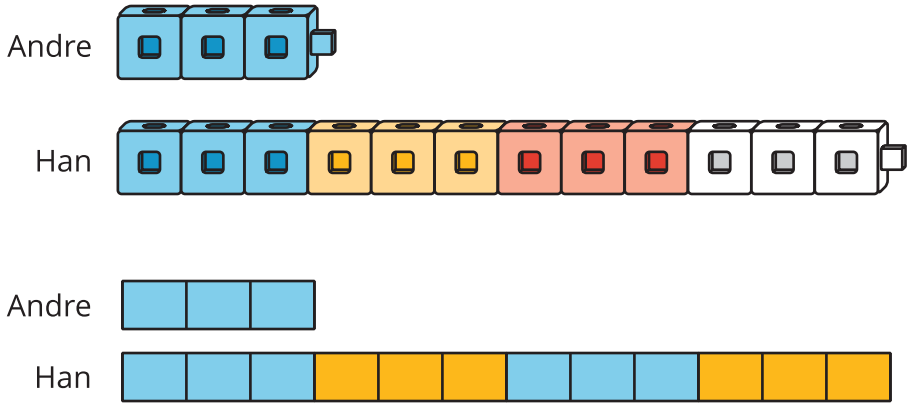
   b. How you found the value of A when the value of B is known.

Section A Summary

We learned to use multiplication and the phrase "____ times as many" or "____ times as much" for comparing two quantities.

At first, we used cubes and drawings to represent the quantities. For example: Andre has 3 cubes and Han has 12 cubes. We compared the number of cubes by:

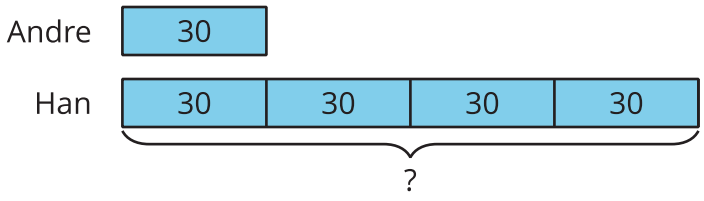
- Saying "Han has 4 times as many cubes as Andre."
- Drawing diagrams that show 3 pieces for Andre and 4 times as many pieces for Han.



- Writing an equation, such as $4 \times 3 = 12$.

Drawing every unit became less convenient as the numbers became greater, so we used simpler diagrams, with numbers to represent the sizes of these quantities.

If Andre has 30 cubes and Han has 4 times as many, we can represent the comparison, with a diagram like this:



Finally, we compared quantities in which one quantity is 10 times as much as another. We used our understanding of patterns in numbers to multiply a number by 10.