

Using Expressions to Describe Patterns

Use this table for 1–4.

Total Cups in Boxes	18	36	54	66	72	84
Total Number of Boxes	3	6	9	□	□	□

- How many boxes are needed for 66, 72, and 84 cups? _____
- How many cups will be in 20 boxes? _____
- Write an algebraic expression that explains the relationship between the input (total cups in boxes) and output values (total number of boxes) if the variable c is the input. _____
- Writing to Explain** Jason thinks he needs 25 boxes to pack 144 cups. Is Jason correct? Explain.

- Make a Table** Lily is using seashells to make necklaces. Each necklace has 7 shells. Make an input/output table that shows the number of shells used for 10, 15, 20, and 25 necklaces. Write an algebraic expression that explains the relationship between the input and output values.

Use this table for 6 and 7.

Large White Butterfly Wing Beats					
Number of seconds	1	2	3	4	5
Number of beats	12	24	36	48	60

- Critical Thinking** What algebraic expression shows the number of wing beats for a chosen number of seconds?
A $60 + x$ **B** $x \div 12$ **C** $12 \div x$ **D** $12x$
- How many times will a large white butterfly beat its wings in 12 seconds?
A 144 **B** 120 **C** 84 **D** 72