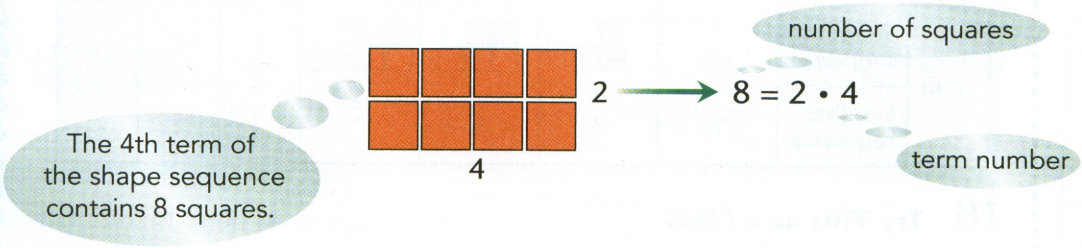
▶ **In Question 14, you used a pattern to predict a term of the sequence 2, 4, 6, 8, ... You may have noticed that the number of squares in each term of the shape sequence is equal to 2 times the term number. For example:**



▶ **An equation such as 8 = 2 • 4 is a mathematical sentence stating that two quantities are equal. Sometimes you can use *variables* to write an equation that gives a rule for finding any term of a sequence. A variable is a quantity that is unknown or that changes. It can be represented by a letter, a word, or a symbol. To evaluate an expression with one or more variables, you substitute a number for each variable. Then you carry out any operations in the expression using the order of operations.**

EXAMPLE

Write an equation for the rule for the sequence 2, 4, 6, 8, ... Use the equation to predict the 90th term of the sequence.

SAMPLE RESPONSE

Because the terms and the term numbers change, you can use variables to represent them. Let ***t*** = the term. Let ***n*** = the term number.

The term is equal to 2 times the term number.

$$t = 2 \cdot n$$

or $$t = 2n$$

"2 times *n*" can be written 2 • *n* or 2*n*.

Use this equation to predict the 90th term of the sequence. Evaluate the expression 2 • *n* when *n* = 90.

$$\begin{aligned} t &= 2 \cdot n \\ &= 2 \cdot 90 \\ &= 180 \end{aligned}$$

For the 90th term, the term number *n* is 90.

The 90th term of the sequence 2, 4, 6, 8, ... is 180.