GOAL

LEARN HOW TO...
- write an equation to find the terms of a sequence
- make predictions

AS YOU...
- model sequences
- explore visual patterns

KEY TERMS
- equation
- variable
- evaluate an expression

Exploration 2

ANALYZING SEQUENCES

SET UP *You will need 20 square tiles or graph paper.*

▶ **Like Pythagoras, you can use patterns to predict the terms in sequences. A table can help you see the relationship between the term numbers and the terms of the sequences.**

11 How are the sequence of numbers and the sequence of shapes in the table related?

Term number		1	2	3	4	5	6	...
Term	Shape sequence					?	?	...
	Number sequence	2	4	6	8	?	?	...

12 **a.** Use square tiles (or draw pictures) to model the 5th and 6th terms of the shape sequence.

b. What are the 5th and 6th terms of the number sequence?

13 **a.** What pattern can you use to predict the 10th term of the shape sequence?

b. How is each term of the number sequence related to its term number?

c. Predict what the 10th term of the number sequence will be. To check, use your pattern from part (a) to model the 10th shape and count the squares in it.

14 **Try This as a Class**

a. Share your patterns from Question 13(a).

b. Describe the 90th term in the shape sequence.

c. Predict the 90th term of the number sequence.

d. Are the numbers in the number sequence even or odd?