## *Activity Lesson Opener*

For use with pages 766–772

SET UP: Work in a group.
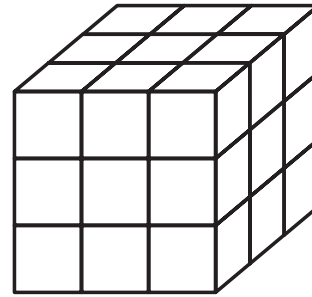**YOU WILL NEED: • box of sugar cubes**

1. Each group uses sugar cubes to build successively bigger cubes. Start with one sugar cube, and let its side length be 1 unit. Then build cubes with side lengths of 2 units, 3 units, 4 units, and 5 units. As soon as you build a cube, find its surface area and volume to complete the table. How is the volume related to the number of sugar cubes used?
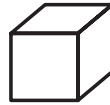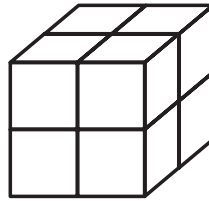
| 1 unit | 2 units | 3 units |

Side length (units)	Surface area (square units)	Volume (cubic units)
1		
2		
3		
4		
5		

2. Look for a pattern in the numbers in the Surface area column. Write a formula for the surface area of a cube with side length n.

3. Look for a pattern in the numbers in the Volume column. Write a formula for the volume of a cube with side length n.

4. As the side length of a cube increases by a factor of n, how does the surface area increase? How does the volume increase?