



**My Notes**

1. Halite, or table salt, is a mineral that is made up of cubic crystals. Use unit cubes, provided by your teacher, as models of 1-inch cubes.
  - a. Use the unit cubes to build models of 2-inch and 3-inch cubes. Then complete the table.

Length of Edge (in.)	Area of Face (in. <sup>2</sup> )	Volume of Cube (in. <sup>3</sup> )
1		
2		
3		

- b. Describe any patterns you see in the table.
  
2. **Make use of structure.** Describe how you can use the patterns you found in the table to determine the volume of a cube when you do not have enough unit cubes to build the cube.
  
3. Let the variable  $e$  represent the length of the edge of a cube. Write a rule for finding the volume,  $V$ , of a cube in terms of the length of an edge,  $e$ .
  
4. **Model with mathematics.** Cut out the nets of cubes, Figure 1 and Figure 2, on page 341.
  - a. Fold each figure to form a cube.
  
  - b. How many of the smaller cubes made from Figure 1 will fit into the larger cube made from Figure 2?
  
  - c. Look back at the table in Item 1. How many cubes with edge length 1 inch will fit into the cube with edge length 2 inches?



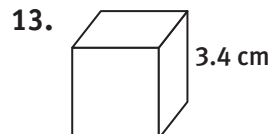
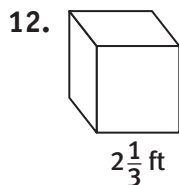
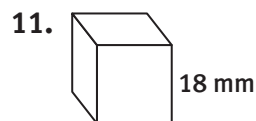
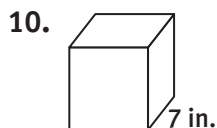
## My Notes

## Check Your Understanding

8. A cube has an edge length of 5 centimeters. What is the volume of the cube?
9. What is the volume of a cube with an edge length of  $\frac{1}{6}$  foot?

## LESSON 26-1 PRACTICE

For Items 10–13, find the volume of each cube.



14. A cube has an edge length of 4.3 meters. What is the volume of the cube?
15. What is the volume of a cube with an edge length of  $\frac{1}{4}$  yard?
16. A cube has a volume of 1,000 cubic feet. What is the edge length of the cube?
17. The area of one face of a cube is 36 cubic inches. What is the volume of the cube?
18. How much greater is the volume of a cube with edges that are  $2\frac{1}{2}$  feet long than a cube with edges that are 2 feet long?
19. A fish tank shaped like a cube has sides that are 9 inches long. What is the volume of the fish tank?
20. **Reason quantitatively.** A cube has a surface area of 96 square inches. What is the volume of the cube? Explain your thinking.
21. **Make sense of problems.** A tower is made from three cubes stacked on top of each other. The edges of the cubes are 4 inches, 6 inches, and 8 inches. What is the total volume of the tower?