



# Surface Area of a Cube

Let's write a formula to find the surface area of a cube.

## 18.1

## Math Talk: Expressions and Their Values

Decide mentally which expression has a greater value.

- $12 + 12 + 12 + 12 + 12$  or  $4 \cdot 12$
- $15 \cdot 3$  or  $15^3$
- $19^2$  or  $18 \cdot 18$
- $5 \cdot 21^2$  or  $(5 \cdot 21) \cdot (5 \cdot 21)$



18.2

- b. Explain why the area of each face of this cube is  $17^2$  square units.

## 18.3

# Every Cube in the Whole World

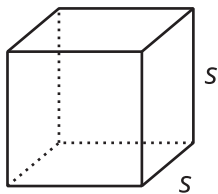
A cube has an edge length of  $s$ .

1. Draw a net for the cube.
2. Write an expression for the area of each face. Label each face with its area.
3. Write an expression for the surface area.
4. Write an expression for the volume.



## Lesson 18 Summary

The volume of a cube with an edge length of  $s$  is  $s^3$ .



A cube has 6 faces that are all identical squares. For a cube with an edge length of  $s$ , the area of each square face is  $s^2$ . This means that the surface area of the cube is  $6 \cdot s^2$ .

