1. Name two attributes these figures have in common.

1 cm

1 cm 1 cm

1 in

1 in 1 in

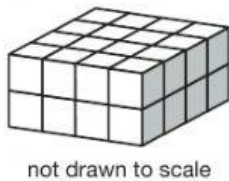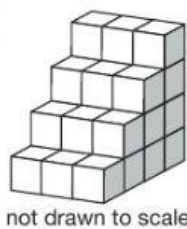not drawn to scale
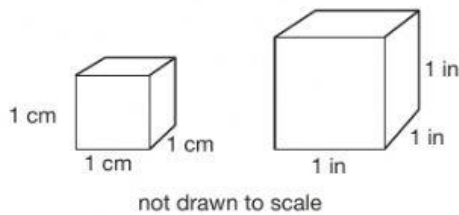
Answers:

a. _____

b. _____

2. U-Store-It offers a storage space shaped like this model. Each cube represents one cubic yard. What is the volume, in cubic yards, of the storage space?

not drawn to scale

Answer: _____

3. Bo builds a plant stand with bamboo cubes.

not drawn to scale

Each cube represents one cubic foot. What is the volume of Bo's plant stand?

Answer: _____

4. Thana helps her math teacher by placing foam dice into a storage box. Each die is a cube with 1-inch edges. Figure 1 shows how many dice are in the first layer. Figure 2 shows how many layers of dice are in the storage box.
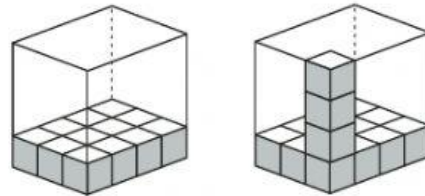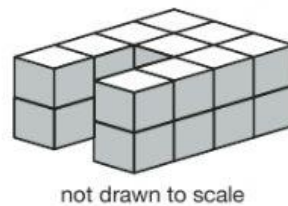

Figure 1   **Figure 2**

not drawn to scale

What is the volume, in cubic inches, of the storage box?

Answer: _____

Explain how you found your answer.

_____

_____

_____

5. Each cube in this figure is one cubic inch.

not drawn to scale

What is the volume, in cubic inches, of the figure?

Answer: _____

LIVEWORKSHEETS

Unit 22 Vocabulary/Journal

Words for the Wise

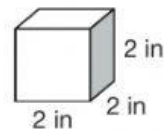|		
area of a base	cubic unit	length
cubic centimeter (cm^3)	cubic yard (yd^3)	rectangular prism
cubic foot (ft^3)	dimension	unit cube
cubic inch (in^3)	edge	volume
cubic meter (m^3)	height	width

Vocabulary Activity

Circle each geometric figure that represents a unit cube.

1 ft 1 ft 1 ft   1 oz 1 oz 1 oz   1 m 1 m 1 m   2 in 2 in 2 in
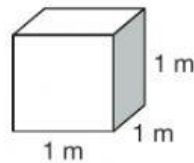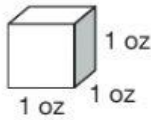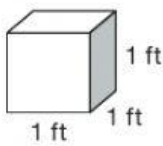
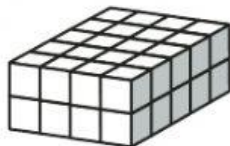not drawn to scale

Explain your answers.

_____

_____

_____

_____

_____

Journal

Unit cubes are commonly used to determine the volume of an object. Why do you think cubes are used instead of cylinders?

_____

_____

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mentoring**minds**.com

LIVEWORKSHEETS

1. Select **THREE** true statements about a cube with one-inch edges.

   Ⓐ Its length, width, and height are each one inch.

   Ⓑ It can be used to help find the volume of a box.

   Ⓒ It has a volume of one inch.

   Ⓓ It is a unit cube.

   Ⓔ It has a volume of 3 cubic inches.

2. Amber bought a necklace for her mother for Mother's Day. The necklace came in a box shaped like this model. Each cube represents one cubic inch.

   not drawn to scale

   What is the volume of the box?

   Ⓐ 48 in^3 Ⓒ 24 in^3

   Ⓑ 40 in^3 Ⓓ 20 in^3

3. Maizie wants to display her toy collection. She uses one-foot storage cubes to build display shelves in the corner of her bedroom, as shown in this model.
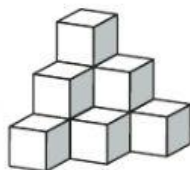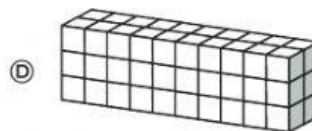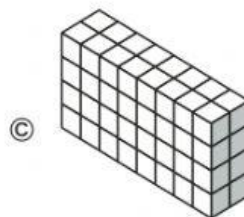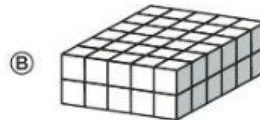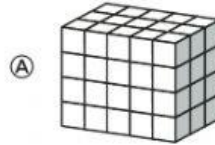
   not drawn to scale

   How many cubic feet are in Maizie's display shelves?

   Ⓐ 6 ft^3 Ⓒ 9 ft^3

   Ⓑ 8 ft^3 Ⓓ 10 ft^3

4. Wallace finds a box of sugar cubes in the kitchen. He uses the cubes to create a rectangular prism with a volume of 60 cubic units. Which of these drawings could **NOT** represent Wallace's rectangular prism?

   Ⓐ

   Ⓑ

   Ⓒ

   Ⓓ

5. Isaac makes fudge for his grandfather. He cuts the fudge in one-inch cubes and packs the fudge in a container as shown.
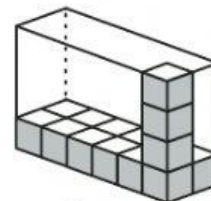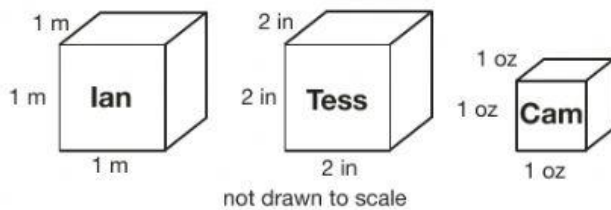
   not drawn to scale

   How many pieces of fudge will be packed into the filled container?

   Ⓐ 12   Ⓒ 48

   Ⓑ 17   Ⓓ 60

LIVEWORKSHEETS

1. Ian, Tess, and Cam were asked to draw a unit cube in math class. Their drawings are shown.


not drawn to scale

Who received credit for a correct answer?

Ⓐ Ian only

Ⓑ Cam only

Ⓒ Ian and Tess only

Ⓓ Ian and Cam only

2. Mark needs a shipping box that holds between 65 and 85 cubic inches. Each cube in these boxes represents one cubic inch. Which box meets Mark's need?
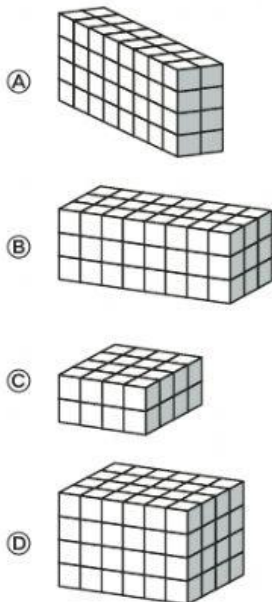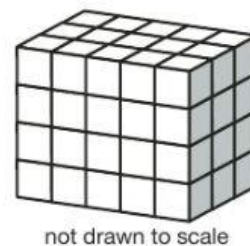

3. Hector solves a puzzle. The puzzle is a large cube made of smaller cubes, as shown in this model. Each small cube represents one cubic unit.
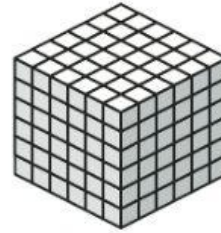
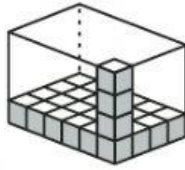What is the volume of the puzzle?

Ⓐ 216 units^3

Ⓑ 108 units^3

Ⓒ 36 units^3

Ⓓ 18 units^3

4. Acme Appliance Center receives a large carton filled with toasters in boxes, as shown in the diagram. Each toaster box in the carton has a volume of one cubic foot.

not drawn to scale

What is the volume of the large carton?

Ⓐ 400 ft^3

Ⓑ 120 ft^3

Ⓒ 72 ft^3

Ⓓ 60 ft^3

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LIVEWORKSHEETS

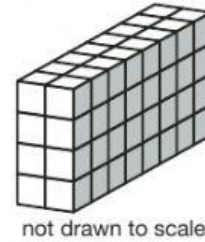1. Jennifer packs game cubes in a packing box for shipping as shown.

Jennifer completely fills the box with game cubes. How many game cubes can Jennifer fit in the box?

Ⓐ 24

Ⓑ 27

Ⓒ 72

Ⓓ 96

2. Select **THREE** rectangular prisms with a volume of 48 cubic units.

Ⓐ

Ⓑ

Ⓒ

Ⓓ
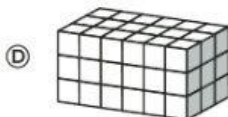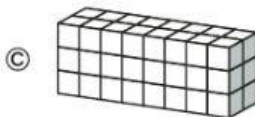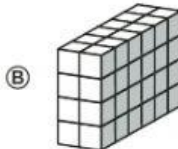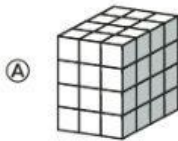
3. This model shows a rectangular prism made of 1-inch cubes.

not drawn to scale

What is the volume in cubic inches?

Ⓐ 32 in^3

Ⓑ 48 in^3

Ⓒ 56 in^3

Ⓓ 64 in^3

4. Speedy Print Shop received a shipment of paper. The warehouse manager stacked the boxes of paper as shown in the diagram. Each box has a volume of one cubic foot.

not drawn to scale
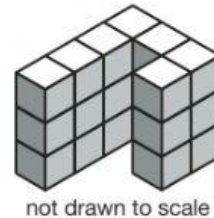
How many cubic feet of boxes are in the stack?

Ⓐ 19 ft^3

Ⓑ 21 ft^3

Ⓒ 22 ft^3

Ⓓ 24 ft^3

Unit 22 Assessment

5. Vicki and Sasha explore measurement in the math center. The girls find the volume of a box shaped like a rectangular prism. Vicki fills the box with small cubes and then counts the cubes to find the volume. Sasha fills the box with marbles and then counts the marbles to find the volume. Which girl finds a more accurate measure of the volume of the rectangular prism?
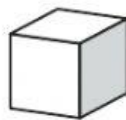
Answer: _____

Explain your answer.

_____

_____

6. Tony uses one-centimeter cubes to create a model of a skyscraper. What is the volume, in cubic centimeters, of the model?

Answer: _____
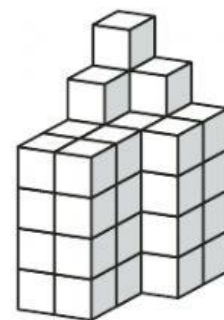
not drawn to scale

7. This diagram represents a unit cube.

In the following list, circle each measurement that could represent the length of one edge of the cube.

11 feet	1 meter	1 cup
1 gram	1 yard	0.1 inch

Justify your answers.

_____

_____

LIVEWORKSHEETS

Analysis
i
Analyze
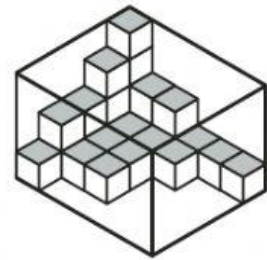
1. This box contains several unit cubes.
How many unit cubes are currently
in the box?

Answer: _____

What is the total volume of the box?

Answer: _____

Explain how you found your answers.

_____

_____

_____

Synthesis
i
Create

2. Use the dot paper to draw a geometric figure with a volume of exactly
24 cubic units.
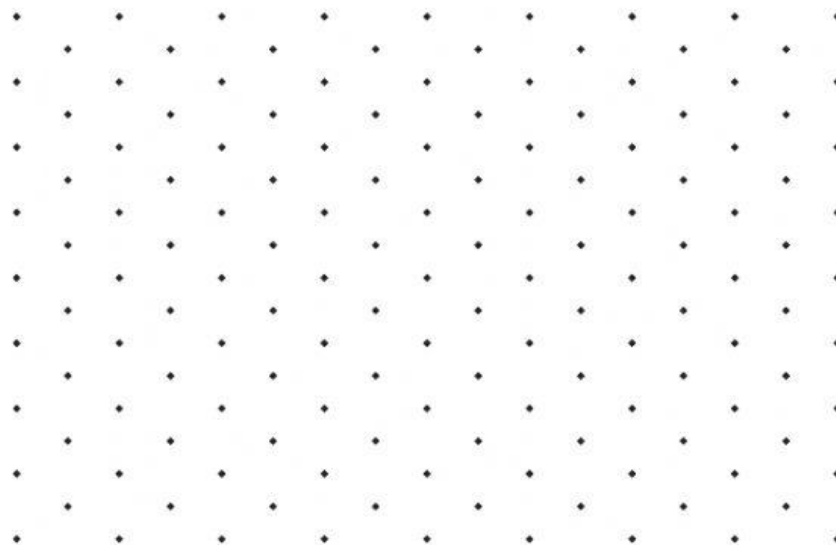
represents 1 cubic unit

Vie for Volume Victory

Play "Vie for Volume Victory" with the class. The teacher signals start to begin the game. Each player finds the volumes of the shapes and containers and ranks them from greatest volume to least volume, with the rank of 1 noting the greatest volume and 12 noting the least volume. The winner is the first player to correctly rank the volumes of the shapes.
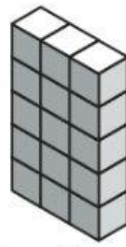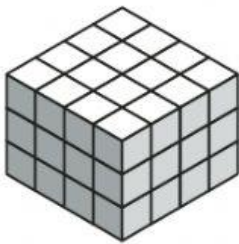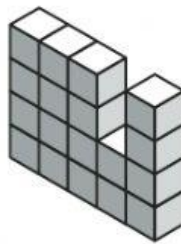
represents 1 cubic unit
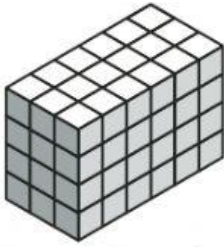
Volume	Rank
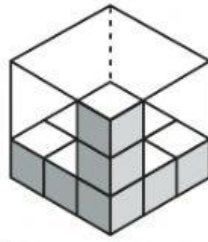
Volume	Rank

Volume	Rank

Volume	Rank

Volume	Rank
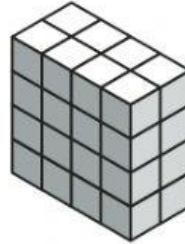
Volume	Rank

Volume	Rank
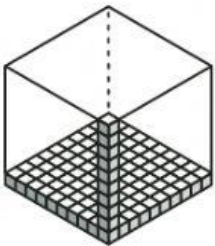
Volume	Rank
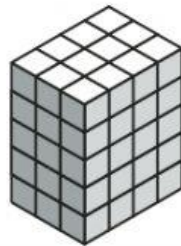
Volume	Rank
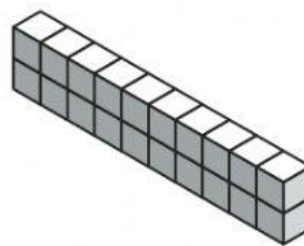
Volume	Rank
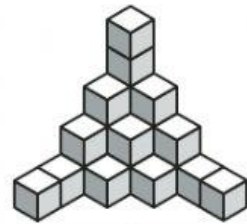
Volume	Rank

Volume	Rank

Parent Activities

1. Have your child use sugar cubes or 1-inch blocks to fill boxes of different sizes. Record the approximate volume of each box.

2. Have your child create a sculpture using sugar cubes. Count the cubes to determine the volume of the sculpture in cubic units.