UNIT 10 · STANDARD 6.G.2

Volume with Whole Number Edges

Lesson 10-1

Name: Type your name **Date:** Today's date **Class:** Class period

Key Vocabulary Level 2 Standard

Picture first, then the word, then a plain-language meaning. Say each word out loud.

unit cubes

A box 3 × 2 × 4 holds 24 unit cubes, so V = 24 cubic units

Volume

Write the definition:

length × width × height

A cereal box or shoe box — it has length, width, and height

Rectangular prism

Write the definition:

one cubic unit

A tiny cube that is 1 in × 1 in × 1 in = 1 in³ (one cubic inch)

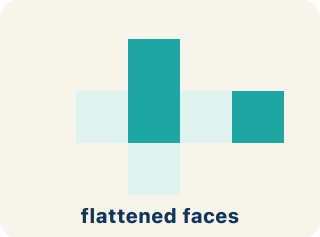
Cubic units

Write the definition:

V = l × w × h: for a box 5 × 3 × 2, volume = 30 cubic units

Length, width, height

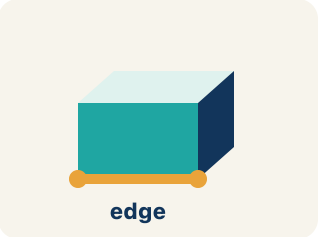
Write the definition:



A cross-shaped pattern of 6 rectangles folds into a rectangular box

Net

Write the definition:



A cube has 12 edges — 4 along the top, 4 along the bottom, 4 vertical

Edge

Write the definition:

Guided Notes Level 2 Standard

🎯 **WHAT WE'RE LEARNING TODAY**

I can find the volume of a rectangular prism with whole-number edges using length × width × height.

✏️ **Fill in each blank as we go. Use the Word Bank to help you.**

📚 **WORD BANK — FILL EACH BLANK WITH THE BEST WORD**

Volume | Rectangular prism | Cubic units | Length, width, height | Net | Edge

☝️ *Tap any word to see what it means and a picture.*

1. The amount of space inside a three-dimensional solid is its _____.

2. A solid with six rectangular faces, like a box, is a _____.

3. The unit used to measure volume, like cubic centimeters, is _____.

4. The three edge measurements of a rectangular prism are its _____.

5. A flat pattern that folds up into a solid is a _____.

6. A line segment where two faces of a solid meet is an _____.

🧱 Watch & Try — Worked Examples

See the notes in action: watch one worked all the way through, then try the next with the same steps.

👀 I do — watch

Follow each step as your teacher solves it.

Problem: What is the volume of a rectangular prism with l = 7 in, w = 3 in, h = 4 in?

A. 84 in^3

B. 14 in^3

C. 84 in^2

D. 42 in^3

Step 1 $V = l \times w \times h = 7 \times 3 \times 4 = 84$ cubic inches.

✅ **Answer:** A. 84 in^3

🤝 We do — together

Solve this one with your class using the same steps.

Problem: A time capsule box has a volume of 120 cm^3. Its length is 10 cm and width is 4 cm. What is its height?

A. 3 cm

B. 6 cm

C. 4 cm

D. 12 cm

Step 1 _____

Step 2 _____

Answer: _____

✏️ **You do — your turn**

Now try one on your own. Show every step.

Problem: Which unit is used for volume?

A. Cubic inches (in^3)

B. Square inches (in^2)

C. Inches (in)

D. Degrees (°)

Show your work:

Try It

Solve on your own. Check the answer key when you are done.

1. A time capsule box is 5 units long, 3 units wide, and 2 units tall. How many unit cubes fill it?

A. 30 cubic units

B. 10 cubic units

C. 15 cubic units

D. 25 cubic units

Show your work:

2. You stack unit cubes in a capsule: each layer has 6 cubes, and there are 4 layers. What is the volume?

A. 24 cubic units

B. 10 cubic units

C. 12 cubic units

D. 18 cubic units

Show your work:

Stretch Your Thinking

Level 2 enrichment

Challenge task — explain your reasoning in full sentences.

A box needs to hold exactly 60 cubic inches. Give three different sets of whole-number dimensions that work. Which set would make the box closest to a cube shape? Why might that matter?

Sentence starter: Option 1: ___ × ___ × ___. Option 2: ___ × ___ × ___. Option 3: ___ × ___ × ___. The ___ option is closest to a cube because ___. This matters because ___.

Show your work:

Reflect — Exit Ticket

A rectangular prism has l = 11 in, w = 5 in, h = 4 in. What is the volume?

A. 220 in^3

B. 55 in^3

C. 220 in^2

D. 200 in^3

Your answer: