UNIT 10 · STANDARD 6.G.2

Volume with Whole Number Edges Flagship

Lesson 10-1-flagship

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

CLASS LEGACY MISSION

Seal the Time Capsule

You are the lead builder for the school's 50-year time capsule project. Every memory must fit inside rectangular containers, and the principal needs to know exactly how much each one holds before they are buried. Master volume and the capsule gets sealed for the future.

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)

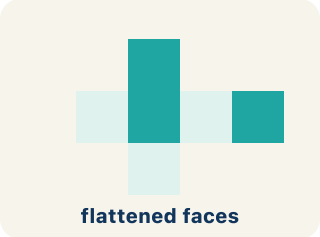
Cubic units

Write the definition:

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

Length, width, height

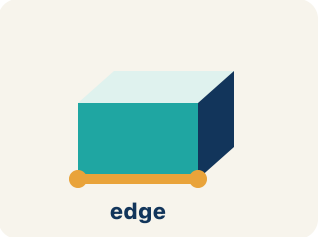
Write the definition:



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. Blueprint 2: A capsule must hold exactly 72 cubic inches. Its length is 6 in and its width is 4 in. What height does the engineer need?

A. 3 in

B. 12 in

C. 62 in

D. 9 in

Show your work:

2. Blueprint 5: The principal wants a capsule that is 10 in long, 4 in wide, and 5 in tall. What is its volume?

A. 200 cubic inches

B. 19 cubic inches

C. 200 square inches

D. 50 cubic inches

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: