UNIT 10 · STANDARD 6.G.2

Volume of Rectangular Prisms

Lesson 10-2

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 2 × 1.5 × 1 = 3 ft³ — it holds 3 cubic feet of stuff

Volume

Write the definition:

length × width × height

A tissue box, a fish tank, a brick — all rectangular prisms

Rectangular prism

Write the definition:

one cubic unit

1 ft³ = a cube that is 1 foot on every edge

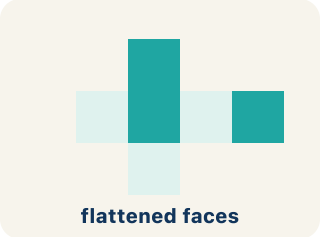
Cubic units

Write the definition:

A box with dimensions 4 × 3 × 2 means l = 4, w = 3, h = 2

Dimensions

Write the definition:



flattened faces

Cut a cereal box along its edges, unfold it flat — that is the net

Net

Write the definition:

Area = 15 square units

If the base is 6 × 4 = 24 cm² and h = 3, then V = 24 × 3 = 72 cm³

Base area

Write the definition:

Guided Notes Level 2 Standard

🎯 **WHAT WE'RE LEARNING TODAY**

I can find the volume of a rectangular prism, including ones with fractional edge lengths, using base area × 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 | Dimensions | Net | Base area

☝️ *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 is a _____.

3. The unit used to measure volume is _____.

4. The measurements of length, width, and height of a solid are its _____.

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

6. The area of the bottom face of a prism, multiplied by height to find volume, is the _____.

🧱 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 = 4 in, w = 3 in, h = 5 in?

A. 60 in^3

B. 12 in^3

C. 60 in^2

D. 24 in^3

Step 1 $V = l \times w \times h = 4 \times 3 \times 5 = 60$ cubic inches.

✅ **Answer:** A. 60 in^3

🤝 **We do — together**

Solve this one with your class using the same steps.

Problem: A box has a volume of 36 cm^3. Its length is 6 cm and width is 3 cm. What is the height?

A. 2 cm

B. 6 cm

C. 3 cm

D. 12 cm

Step 1 _____

Step 2 _____

Answer: _____

✏️ **You do — your turn**

Now try one on your own. Show every step.

Problem: How is volume different from area?

A. Volume measures 3D space (cubic units); area measures 2D surface (square units)

B. Volume uses square units; area uses cubic units

C. Volume only applies to cubes; area applies to all shapes

D. There is no difference

Show your work:

Try It

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

1. Two storage boxes are ready to pack. Box A is 5 × 5 × 2 inches and Box B is 4 × 4 × 3 inches. Which box holds more?

A. Box A, because 50 cubic in is more than 48 cubic in

B. Box B, because 48 cubic in is more than 50 cubic in

C. They hold the same amount

D. Box B, because it is taller

Show your work:

2. A keepsake box is 4 in long, 3 in wide, and 1½ in tall. What is its volume?

A. 18 cubic in

B. 8.5 cubic in

C. 12 cubic in

D. 36 cubic in

Show your work:

Stretch Your Thinking

Level 2 enrichment

Challenge task — explain your reasoning in full sentences.

A toy company ships action figures in boxes that are 4 × 3 × 6 inches. A shipping crate is 24 × 12 × 18 inches. How many action figure boxes fit in the crate? Explain your reasoning step by step.

Sentence starter: Each toy box has a volume of ____ in³. The crate has a volume of ____ in³. I can fit ____ boxes because ____. I checked by ____.

Show your work:

Reflect — Exit Ticket

A rectangular prism has l = 7 ft, w = 2 ft, h = 3 ft. What is the volume?

A. 42 ft³

B. 24 ft³

C. 42 ft²

D. 12 ft³

Your answer: