

Grade 6 - Volume of Prisms with Fractional Edges - Worksheet

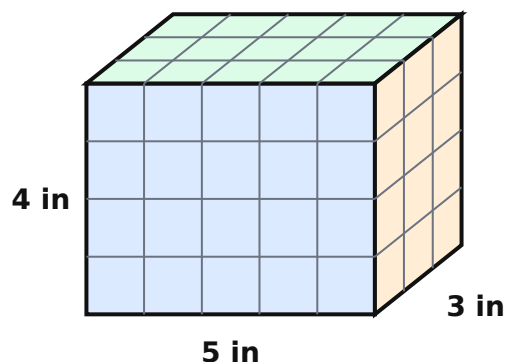
Common Core 6.G.A.2 · maths-pdf.fr/en/

Name: _____ Class: _____ Date: ____/____/____

These 20 problems practice the volume of right rectangular prisms with whole-number and fractional edge lengths (Common Core 6.G.A.2). You will count unit cubes, use $V = lwh$ and $V = Bh$, find missing edges, and solve real-world problems about tanks, boxes, and sand.

Grade 6 · Common Core State Standards: **6.G.A.2**

Exercise 1 - Volume with unit cubes



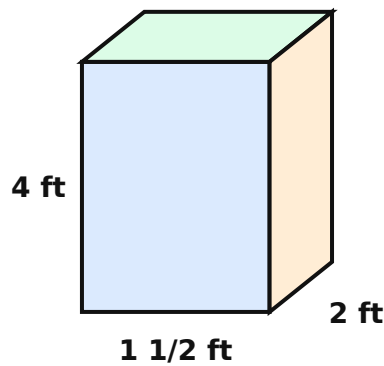
A prism built from 1-inch cubes.

Find the volume of the prism.

Exercise 2 - Volume of a cube

Find the volume of a cube with edge length 3 inches.

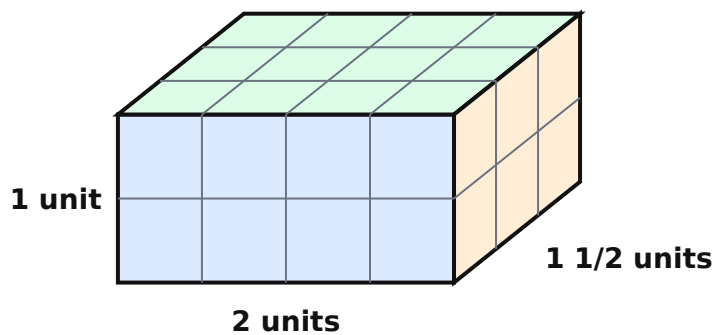
Exercise 3 - One fractional edge



A box.

A prism has length $1\frac{1}{2}$ feet, width 2 feet, and height 4 feet. Find its volume.

Exercise 4 - Packing with half-unit cubes



Each small cube has an edge of $\frac{1}{2}$ unit.

The prism is filled with cubes with edge length $\frac{1}{2}$ unit. Count the cubes, find the volume of one cube, and find the volume of the prism.

Exercise 5 - Volume with all fractions

Find the volume of a prism with length $\frac{1}{2}$ meter, width $\frac{3}{4}$ meter, and height 4 meters.

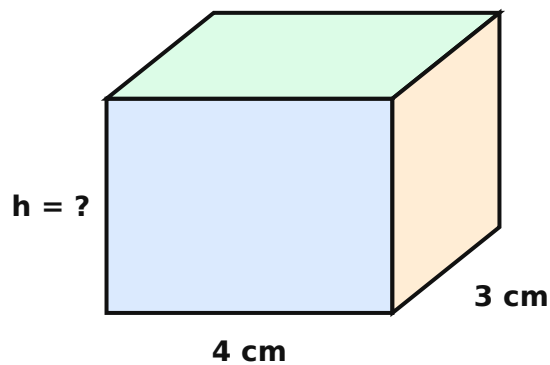
Exercise 6 - Base times height

The base of a prism has an area of 12 square feet. The prism is 5 feet tall. Find its volume using $V = Bh$.

Exercise 7 - Fractional base area

The base of a prism has an area of $\frac{3}{4}$ square meter. The prism is 8 meters tall. Find its volume.

Exercise 8 - Find the missing height



The volume is 36 cubic centimeters.

A prism has a volume of 36 cubic centimeters, a length of 4 centimeters, and a width of 3 centimeters. Find its height.

Exercise 9 - Find the missing length

A prism has a volume of 45 cubic inches, a width of 3 inches, and a height of 5 inches. Find its length.

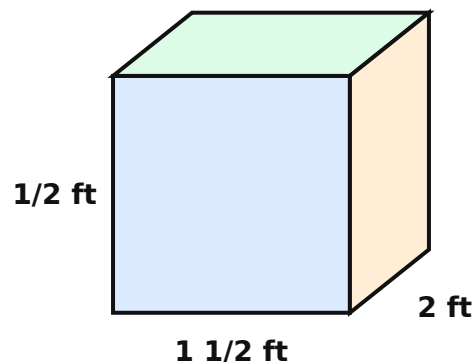
Exercise 10 - Fish tank

A fish tank is 24 inches long, 10 inches wide, and 12 inches tall. Find its volume.

Exercise 11 - Mixed number edges

Find the volume of a prism with length $2\frac{1}{2}$ feet, width 3 feet, and height $1\frac{1}{2}$ feet.

Exercise 12 - Partly filled tank



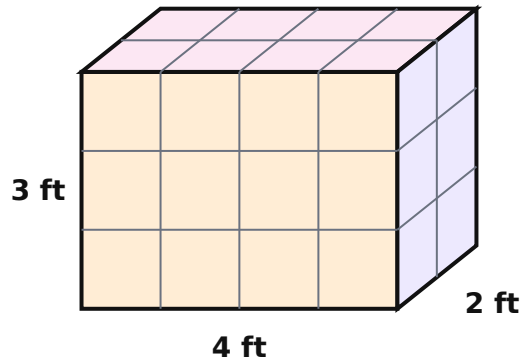
A water tank.

A tank is $1\frac{1}{2}$ feet long, 2 feet wide, and $1\frac{1}{2}$ feet tall. It is filled $\frac{3}{4}$ full of water. Find the volume of the water.

Exercise 13 - Same volume

Box A is 4 by 3 by 2 feet. Box B is 2 by 2 by 6 feet. Compare the volumes.

Exercise 14 - Boxes in a crate



A shipping crate.

A crate is 4 feet by 2 feet by 3 feet. Small boxes are 1 foot by $\frac{1}{2}$ foot by $\frac{1}{2}$ foot. How many small boxes fit in the crate?

Exercise 15 - Sandbox

A sandbox is 6 feet long, 4 feet wide, and $\frac{1}{2}$ foot deep. Sand costs \$5 per cubic foot. Find the volume and the cost to fill it.

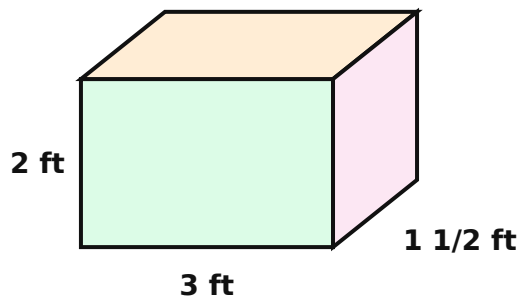
Exercise 16 - Cubes of half a unit

A cube with edge length $\frac{1}{2}$ inch is used to fill a box that is 3 inches by 2 inches by 1 inch. How many cubes fill the box?

Exercise 17 - Butter block

A block of butter is $3\frac{1}{2}$ inches long, $1\frac{1}{2}$ inches wide, and $1\frac{1}{2}$ inches tall. Find its volume.

Exercise 18 - Planter box



A planter box.

A planter box is 3 feet long, 1 1/2 feet wide, and 2 feet tall. A bag of soil holds 3 cubic feet. How many bags fill the box?

Exercise 19 - Three fractions

Find the volume of a small prism with length $\frac{3}{4}$ inch, width $\frac{2}{3}$ inch, and height $\frac{1}{2}$ inch.

Exercise 20 - Multi-step volume

Two boxes are stacked. The bottom box is 4 feet by 3 feet by 1 1/2 feet. The top box is 4 feet by 3 feet by 2 feet. Find the total volume of the stack and the total height.