

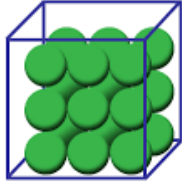
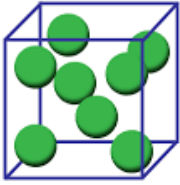
10.6 Density

Objective: Students will be able to use volume to find the density of 3D shapes

Density

A measure of how much matter is in a certain volume

Density



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Important Formula!

$$\text{Density} = \frac{\text{Weight}}{\text{Volume}}$$

A gold bar has a weight of 4000g. If the gold bar has a base with length of 2 inches, a width of 3 inches, and a height of 5 inches, what is the density of the box to the nearest tenth?



A cylindrical water tank has an inside diameter of 10 feet and a height of 15 feet. If water has a density of 45 pounds per cubic foot, what is the weight of the water in a full tank, to the nearest pound?



Mr. Siegel has a cat farm up in Albany, NY. He keeps 1000 cats in a rectangular area that has a length of 50 feet and a width of 20 feet. What is the population density of cats at his farm.



Independent Practice

A pyramid made of copper has a square base with side length of 6 and a height of 8. If the pyramid weighs 3456g, what is the density of the pyramid to the nearest tenth?

A sphere made of wood has a weight of 100 ounces. If the sphere has a diameter of 4 cm, what is the density of the sphere to the nearest hundredth?

A shipping container is in the shape of a right rectangular prism with a length of 12 feet, a width of 8.5 feet, and a height of 4 feet. The container is completely filled with contents that weigh, on average, 0.25 pound per cubic foot (density). What is the weight, in pounds, of the contents in the container?

Trees that are cut down and stripped of their branches for timber are approximately cylindrical. A timber company specializes in oak trees, which have a typical diameter of 50 cm and a typical height of about 10 meters. If the density of the wood is 380 kilograms per cubic meter, how much, to the nearest kilogram does the an oak tree typically weigh?

In a fenced in area, there are 336 chickens. If the length of the rectangular pen is 6 meters and the length is 8 meters, what is the population density of the fenced in area?

During an experiment, bacteria is grown in a petri dish. If the petri dish has a diameter of 51 mm and has approximately 40,000 bacteria after 1 hour, what is the population density of bacteria in the petri dish?

