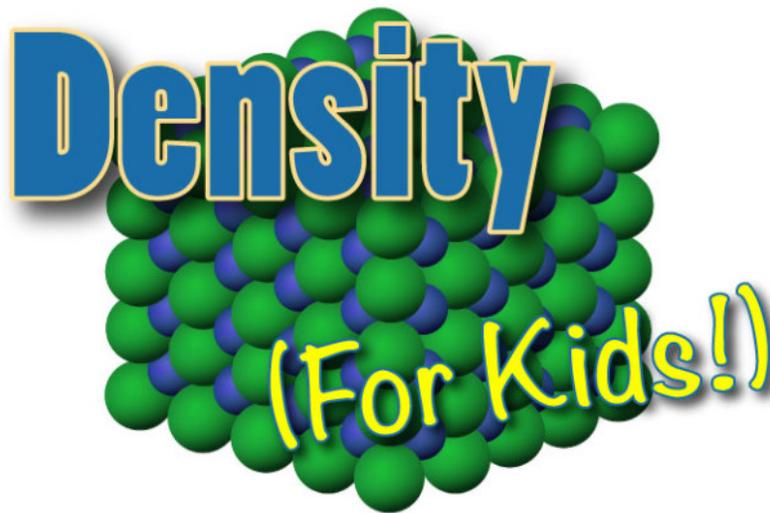


Density

<http://www.activewild.com/density-for-kids/>



This page is all about density. It will show you what density is, how it is defined and how it is measured. The article includes a simple explanation and facts about density for kids.

Density Trick Question

Our investigation of density starts with a common trick question:

Which is heaviest, 1 kilogram of gold or 1 kilogram of feathers?

I hope you didn't fall for it and say gold! The answer is, of course, that 1 kilogram of gold is just as heavy as 1 kilogram of feathers. They both weigh 1 kilogram!

Now think how big a 1 kg bag of feathers would be.



How many of these would make up 1kg?

Compare it to the size of 1 kg of gold.



1kg of gold wouldn't be very big!

The 1kg bag of feathers would be much bigger than 1kg of gold.

This is because the density of gold is higher than that of feathers.

Another Question...

If you had two boxes, both of the same size, and you filled one with gold and one with feathers, which box would be the heaviest?

Answer: the box filled with gold of course! Because feathers aren't as **dense** as the gold, the same volume of feathers would be much lighter.

What Is The Definition Of Density?

Basically, density is how compact an object is.

Put another way, **density** is the **mass** of an object divided by its **volume**. We'll find out about mass and volume below.

How Do You Find Density?

In order to find out the **density** of an object, you need to know two other things about the object: its **volume**, and its **mass**.

You would then divide the mass of the object by its volume to find its density.

Volume

Volume is the amount of space that something takes up.

For example, if you've been given a box containing a present, then you could find the box's volume by measuring its length, its width and its height.

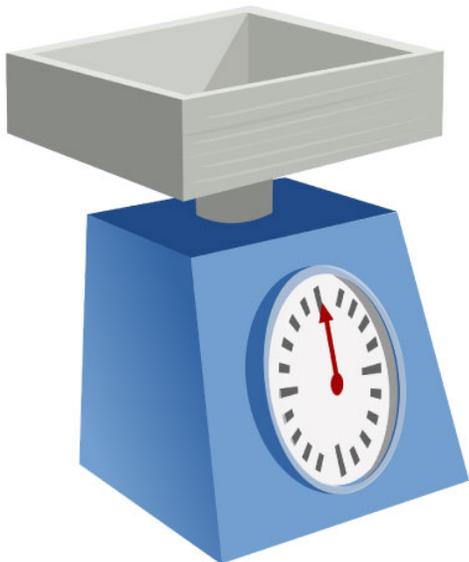
You would then multiply the length by the width, then multiply this figure by the height.

This would give you the box's volume.

If the box was very heavy, your present would be very dense. It could be a box of gold!

If you could pick the box up easily, then your present wouldn't be very dense (or someone could be playing a trick on you by giving you box of feathers)!

Mass



Scales actually measure weight, rather than mass. However, they can still be used to find out density.

The other thing you need to know when finding out the density of an object is its mass. Mass is actually quite difficult to explain, and the best way to think of it (for the time being) is how heavy something is.

However, mass is slightly different than weight. Weight is a force, and is affected by gravity. An object would weigh less on the moon than on the Earth, because there is less gravity there.

Mass stays the same wherever you are: the earth, the moon, or floating in outer space!

For simple density experiments, you can use scales to measure the mass of an object. Remember, however, that scales will measure weight, not mass.

If you want to be very scientific, you can use a **triple beam balance**. This will measure an object's mass, rather than its weight.

What Is The Formula For Density?

So once you know the object's volume, and the object's mass, you can find out its density.

This is done by dividing the object's mass by its volume.

The formula for density is: **Density = Mass / Volume**

This equation can also be written: **$\rho = m/V$**

In the formula, **ρ** is the symbol for density. Scientists measure density in **kilograms per cubic metre** (kg/m³).

m is the symbol for mass. Scientists measure mass in **kilograms** (kg).

V is the symbol for volume. Scientists measure volume in **cubic metres** (m³).

SI Unit For Density

The **SI** unit for density is **kilograms per cubic metre** (kg/m³).

Scientists need to be able to share their discoveries with other scientists all over the world. This means they all need to measure their findings using the same units.

It wouldn't be much good if an Australian scientist measured mass using koala bears and an English scientist measured mass with cups of tea! They wouldn't be able to understand each others' results.

That's why scientists have all agreed to all use the same units to measure with. This system is called the **International System of Units**.

The International System of Units is usually shortened to SI units (SI really stands for Le Système International d'Unités, which is French).

So, when a French scientist is talking about density, he will use kilograms per cubic metre, and an American scientist will understand him!

Density For Kids Conclusion

We hope that you have enjoyed this article about density for kids. Want to know more about science? [See all of our scientific articles!](#)

This entry was posted in [Science Facts For Kids](#) on [February 14, 2015](#).