In My World

Balloons are a great example of how density works in our world. The density of a material decreases when its volume increases. Because a gas expands when its temperature increases, heating air will decrease its density. Because the air inside the balloon is less dense than the surrounding air the balloon will rise.

Our Hot Air Balloon Rising Because of Density

Flip to inside of brochure!

Group: Purple
John
Mary
Frank
Harry
Period 2

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Up, Up, and Away

Mrs. Aldridge's 9th Grade Science

Density
Unit Review

Flip to outside of brochure!

What's the deal with density?

In order to understand density you must first grasp mass and volume.

Mass is the m[illegible]f h[illegible] matte[illegible].

You need to measure mass and volume in order to calculate density.

balance.

Volume is a measurement of how much space an object occupies. You can measure volume with a graduated cylinder for liquids and a metric ruler for solids.

Now that you know what mass and volume are you can calculate an object's density by dividing mass by volume. **Density** is the amount of matter

Density of a liquid

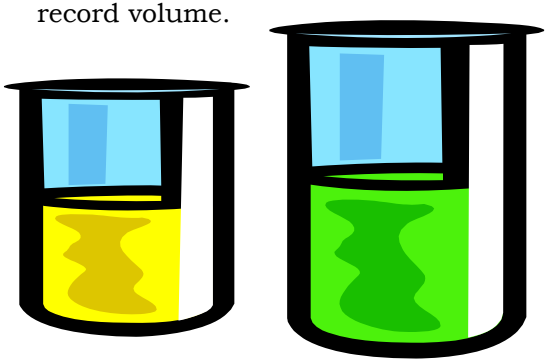
1. Mass graduated cylinder, hit tare button.
2. Pour liquid into cylinder and record volume.
3. Then record the mass showing on the electronic balance.
4. Then divide the mass by the volume.
5. Don't forget unit. (g/mL)

Density of a solid

1. Record mass of object.
2. Measure its length, height, and width and multiple them by each other to calculate the volume
3. Then divide mass by the volume.
4. Don't forget the unit. (g/cm^3)

What about the volume of odd-shaped objects?

1. Put some water in a graduated cylinder, record volume.
2. Add object, record volume.
3. Subtract first volume from second to get volume of the object.



You can pour liquids with different densities together and they will layer. The lowest density will be on top and as you go down the densities of the liquids will increase.

What are some uses for density?

- To determine what will float or sink
- To identify substances

Operational Definitions

An operational definition tells you:

- How to identify or detect something

- OR -

- How to measure something

Some Examples of Operational Definitions:

- Density: Mass divided by volume
- Carbon dioxide: Turns phenol red yellow, causes a lit match to go out
- Solid volume: length x width x height

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