

DENSITY

INVESTIGATION

HOW DENSE ARE YOU?

REQUIREMENTS

ruler, measuring cylinder, weighing scales, any objects that you have

INSTRUCTIONS

- For each substance you will need to determine the mass and volume of each object you have.
- Then calculate Density = Mass \div Volume in grams/cm³.
- Compare this with the density of distilled water which is exactly 1 g/cm³.
- If the density is less than 1 g/cm³, the object will float.
- If it is equal to 1 g/cm³, the object will remain suspended if placed in water.
- If it is more than 1 g/cm³, the object will sink.



Example: Sugar in a bag.

Measure mass on the scales. (Remember to subtract the mass of the bag.)

Measure the volume by pouring the sugar into a measuring cylinder.

Calculate the density of sugar.

Example: A 200mL fruit juice drink.

Measure mass on the scales. (Remember to subtract the mass of the container.)

Check the volume of the juice is really 200 cm³. It will be if the capacity is really 200mL.

Calculate the density of fruit juice. How does this compare with water?

Example: 500mL of cooking oil.

Measure mass on the scales. (Remember to subtract the mass of the container.)

Calculate the density of cooking oil. How does this compare with water?

Now, use your ingenuity to estimate the density of the human body.

Would you float in water?

What are the limitations of this method?