

Multiple Causes

What has this got to do with density?

Density has multiple possible causes.

Differences in density are caused by:

- **Atomic Mass:** Different atoms have different masses due to the number of protons and neutrons that the atoms are made up of.
- **Atomic and Molecular Bonds:** The strength and structure of the bonds determines the distance between atoms.
- **Mixed Density:** When there are two or more materials or substances that make up the object or substance, it is mixed density. For instance, when gas molecules are spread out with other molecules in between them, or when something is hollow inside and is a combination of air and the material around the outside, mixed density applies.

The three causes of density work in different ways to explain different cases, so that sometimes just one cause leads to the outcome of density, sometimes two of three **possible** causes work together, and sometimes all three work together. For example:

