

In this chemistry unit, we learned about particles, elements, compounds, mass, volume, density, buoyancy and law of conservation of mass. The phenomenon for this unit was the burning candle. The big question that we focused on was, "how did the mass of the candle decrease?". The topics that we covered that was used the most to answer the big question were compounds, the law of conservation of mass, and buoyancy.

The definition of a compound is, a substance made up of two or more elements, that can be broken down by chemical reactions, and has different properties from the elements that make it up. The definition of the law of conservation of mass is, if nothing is added or taken away, the mass remains the same, despite changes in appearance. Buoyancy is the upward force that an object feels when it is in a fluid, this goes with density and density is the mass of the object divided by its volume. If the density of an object is less than the fluid it is in the buoyant force pushing up in the object is greater than the force of gravity pushing down causing the object to float. These although we learned other terms I feel that these two terms were the most useful when answering the big question. The big question was, "how did the mass of the candle decrease?" I think the candle got lighter because wax is a compound and the candle lost atoms through the smoke that was produced.

It is important that the candle was a compound because, a compound can be broken down through a chemical reaction, so when the candle was lit the energy provided by the fire caused the elements in the wax to break apart. Some of the mass of the candle went into the air through the smoke which shows the law of conservation of mass and buoyancy because the candle lost mass through the smoke when it was broken down so because the mass was lost the weight decreased. The particles that left the candle through the smoke did that because the density of the particles was less than the air's buoyant force pushing up in the particles was less than the force of gravity pushing down causing the particles to float away from the candle resulting in the loss of mass. In addition, because the candle was not in an enclosed space there were atoms that were lost. In class, we did a lab with water and Alka-Seltzer, for this lab we had to place a little tube of water next to the tablet of Alka-Seltzer on the scale and record the mass. We then dropped the Alka-Seltzer into the tube and as the Alka-Seltzer dissolved the mass decreased. The mass decreased because as the Alka-Seltzer dissolved carbon dioxide atoms were lost, similar to how the candle lost atoms through the smoke.

All things considered, the mass of the candle decreased because as the wax was broken down it lost atoms through the smoke, and due to the fact that the candle was not in an enclosed space the mass of the candle decreased.