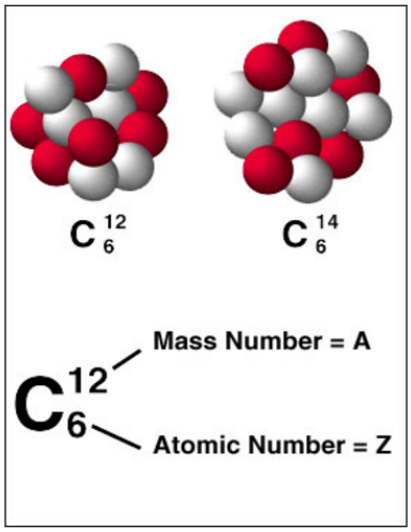
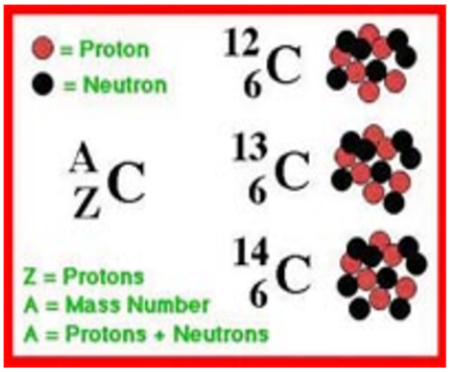
C. Isotopes

1. Isotopes are atoms with the same number of protons but differ in number of neutrons; e.g., a carbon atom has six protons but may have more or less than usual six neutrons.



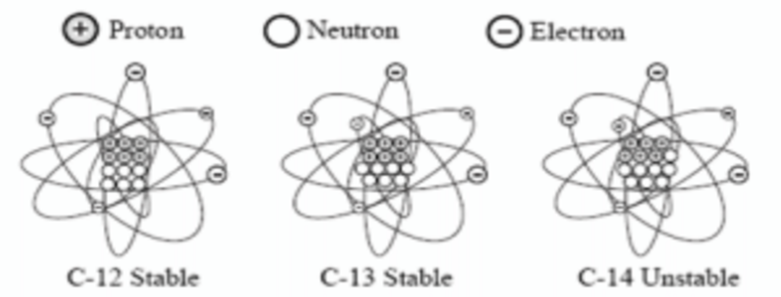


Carbon 14 - Break it Down!

Carbon- 12 is the most common form of carbon, it has 6 protons, 6 electrons, and 6 neutrons

It is called Carbon 12 because that is its weight (6 + 6)

Carbon 14 has 2 extra neutrons, its weight is 14 (6 + 8); it is an isotope of carbon



2. A carbon with eight rather than six neutrons is unstable; it releases rays and subatomic particles and is a radioactive isotope.

Sample Question:

A 200 g sample of muskopfonian is left in a container from 8:00 AM one morning until 8:00 AM the next day. If the final mass of the sample was 50 g, what is the half-life of muskopfonian??