Unit 1 - ***Atomic Theory*.**

C2.5a Determine the age of materials using the ratio of stable and unstable isotopes of a particular type.

C3.5a Explain why matter is not conserved in nuclear reactions.

C4.7b Compare the density of pure water to that of a sugar solution.

C4.8A Identify the location, relative mass, and charge for electrons, protons, and neutrons.
C4.8A.a I can identify the location in the atom of protons, neutrons, and electrons.
C4.8A.b I can identify the relative mass of protons, neutrons, and electrons.
C4.8A.c I can identify the charge of protons, neutrons, and electrons.

C4.8B Describe the atom as mostly empty space with an extremely small, dense nucleus consisting of the protons and neutrons and an electron cloud surrounding the nucleus.

C4.8C Recognize that protons repel each other and that a strong force needs to be present to keep the nucleus intact.

C4.8D Give the number of electrons and protons present if the fluoride ion has a -1 charge.

C4.10A List the number of protons, neutrons, and electrons for any given ion or isotope.
C4.10A.a I can list the number of protons, neutrons, and electrons for various elements.
C4.10A.b I can list the number of protons, neutrons, and electrons for various isotopes.
C4.10A.c I can list the number of protons, neutrons, and electrons for various ions.

C4.10B Recognize that an element always contains the same number of protons.

C4.10e Write the symbol for an isotope, $\mathrm{XA_Z}$, where Z is the atomic number, A is the mass number, and X is the symbol for the element.

C5.2C Draw pictures to distinguish the relationships between atoms in physical and chemical changes.