**SC10F Chemistry Outcomes**

**Outcomes highlighted in bold are on the final exam. General teaching Notes in regular font, and notes on examinable materials in red.**

**S1-2-01 Describe how historical ideas and models furthered our understanding of the nature of matter. Include: Greek ideas, alchemy, Lavoisier**

* Greeks: Empedocles, Democritus, Aristotle, Alchemists, Modern Chemists (in general)Goal is to show the different approaches to science and the progression from 4 elements to many elements, not the individual scientists

**S1-2-02 Investigate the historical progression of the atomic model. Include: Dalton, Thompson, Rutherford, Bohr, quantum model**

S1-2-03 Define element and identify symbols of some common elements. Include: the first 18 elements, K, Ca, Fe, Ni, Cu, Zn, I, Ag, Sn, Au, W, Hg, Pb, U. Periodic table provided.

**S1-2-04 Explain the atomic structure of an atom in terms of the number of protons, electrons, and neutrons, and explain how those numbers define atomic number and atomic mass.**

**S1-2-05 Assemble or draw Bohr atomic models for the first 18 elements and group them according to the number of outer shell electrons.**

* Pair up electrons after the first orbit.

**S1-2-06 Investigate the development of the periodic table as a method of organizing elements. Include: periods, families (groups)**

* Give a brief history of the development of the table, Mendeleev and Mosley Groups/families/ organization of table.

**S1-2-07 Investigate the characteristic properties of metals, non-metals, and metalloids and classify elements according to these properties. Examples: ductility, conductivity of heat and electricity, lustre, reactivity**

**S1-2-08 Relate the reactivity and stability of different families of elements to their atomic structure. Include: alkali metals, alkaline earths, chalcogens, halogens, noble gases**

* Reactivity is relative between families that are discussed (not high/med/low)

**S1-2-09 Compare elements to compounds. Include: atoms, molecules**

* Atoms – Smallest unit of an element
* Molecules – two or more atoms combined, all non-metals
* Compounds – two or more different atoms combined

**S1-2-10 Interpret chemical formulas of elements and compounds in terms of the number of atoms of each element. Examples: He, H2, O2, H2O, CO2, NH3**

* Include compounds with brackets and coefficients.

**S1-2-11 Investigate properties of substances and explain the importance of knowing these properties. Examples: usefulness, durability, safety. Include** terms physical and chemical property, be able to identify different physical and chemical properties.

**S1-2-12 Differentiate between physical and chemical changes.**

Phys-chem change lab/demo day.

Physical and chemical change. Identify different physical and chemical changes.

**S1-2-13 Experiment to determine indicators of chemical change. Examples: colour change, production of heat and / or light, production of a gas or precipitate or new substance**

S1-2-14 Investigate technologies and natural phenomena that demonstrate chemical change in everyday situations. Examples: photography, rusting, photosynthesis, combustion, baking