Chemistry Content Connections between 2021 and 2014

The purpose of this document is to assist teachers with identifying the content connections between the South Carolina College-and Career-Ready 2021 Science Standards and the 2014 Science Standards and Performance Indicators (PI**). These content connections may not be direct or match in breadth/depth between the two sets of standards.**

2021 Performance Expectation	**2014 PI**
C-PS1-1. Use the periodic table as a model to predict the relative properties of elements based on the patterns of electrons in the outermost energy level of atoms.	H.C.2A.1 H.C.2A.2 H.C.3A.1 H.P.3G.1
C-PS1-2. Construct and revise an explanation for the outcome of a simple chemical reaction based on the outermost electron states of atoms, trends in the periodic table, and knowledge of the patterns of chemical properties.	H.C.3A.1 H.C.3A.2 H.C.6A.1
C-PS1-3. Plan and conduct an investigation to gather evidence to compare the structure of substances at a bulk scale to infer the strength of various forces between particles.	H.C.3A.4 H.C.4A.1
C-PS1-4. Develop a model to illustrate that the release or absorption of energy from a chemical reaction system depends upon the changes in total bond energy.	H.C.7A.1 H.C.7A.2
C-PS1-5. Apply scientific principles and evidence to provide an explanation about the effects of changing the temperature or concentration of the reacting particles on the rate at which a reaction occurs.	H.C.7A.3 H.C.7A.4
C-PS1-6. Refine the design of a chemical system by specifying a change in conditions that would produce increased amounts of products at equilibrium.	H.C.6A.2
C-PS1-7. Use mathematical representations to support the claim that atoms, and therefore mass, are conserved during a chemical reaction.	H.C.6A.3 H.C.6A.4

2021 Performance Expectation	2014 PI
C-PS1-8. Develop models to illustrate the changes in the composition of the nucleus of the atom and the energy released during the processes of fission, fusion, and radioactive decay.	H.C.2B.1 H.C.2B.3 H.P.3G.2 H.P.3G.4
C-PS2-6. Communicate scientific and technical information about why the molecular structure determines the functioning of designed materials.	H.C.3A.6 H.B.2A.1
C-PS3-4. Plan and conduct an investigation to provide evidence that the transfer of thermal energy when two components of different temperatures are combined within a closed system results in a more uniform energy distribution among the components in the system (second law of thermodynamics).	H.P.3C.1
C-PS4-4. Evaluate the validity and reliability of claims in published materials of the effects that different frequencies of electromagnetic radiation have when absorbed by matter.	H.C.2A.3
C-PS4-5. Communicate technical information about how some technological devices use the principles of the electromagnetic spectrum to cause matter to transmit and capture information and energy.	Nothing Direct