

Science : Chemistry

Grade 10



#	Essential Knowledge/Skill	Alignment
1	INQUIRY: I can plan and carry out a controlled scientific experiment.	NGSS Science & Engineering Practices: Asking Questions & Defining Problems, Planning & Carrying Out Investigations
2	DATA: I can effectively collect, process, and communicate scientific data and observations.	NGSS Science & Engineering Practices: Using Math & Computational Thinking
3	DEFENSE: I can construct an explanation using scientific evidence.	NGSS Science & Engineering Practices: Constructing Explanation & Designing Solutions, Engaging in Argument for Evidence, Analyzing & Interpreting Data
4	I can use a model to illustrate how photosynthesis transforms light energy into stored chemical energy.	HS-LS1-5
5	I can predict the outcome of a simple chemical reaction based on trends in the periodic table, knowledge of the patterns of chemical properties, and the law of conservation of matter.	HS-PS1-2 HS-PS1-7
6	I can develop a model of a chemical system, describe whether energy is released or absorbed in terms of changes in total bond energy, and explain how the system reacts to changes in conditions.	HS-PS1-4 HS-PS1-5 HS-PS1-6
7	I can plan and conduct an investigation of designed materials at the bulk scale and communicate scientific and technical information about why the molecular-level structure is important in the functioning of such substances.	HS-PS1-3 HS-PS2-6
8	I can 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.	HS-PS1-1
9	I can design, build, and refine a calorimeter that works within given constraints to convert chemical energy into thermal energy and identify examples of the second law of thermodynamics in its function.	HS-PS3-3 HS-PS3-4
10	I can create a computational model to calculate the change in the energy of one component in the system of a calorimeter when the change in energy of the other component(s) and energy flows in and out of the system are known.	HS-PS3-1
11	I can 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.	HS-PS1-8