

Oregon 2022 Standards (NGSS Performance Expectations)	Course Embedded In	Unit	Primary Unit Embedded In
HS-PS3-2. Develop and use models to illustrate that energy at the macroscopic scale can be accounted for as a combination of energy associated with the motions of particles (objects) and energy associated with the relative positions of particles (objects)	Chemistry	Unit 1	KMT and Climate Change
HS-ESS3-6. Use a computational representation to illustrate the relationships among Earth systems and how those relationships are being modified due to human activity.	Chemistry	Unit 1	KMT and Climate Change
HS-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.	Chemistry	Unit 2	Atomic Structure and the Periodic Table
HS-ETS1-2. Design a solution to a complex real-world problem by breaking it down into smaller, more manageable problems that can be solved through engineering.	Chemistry	Unit 2	Atomic Structure and the Periodic Table
HS-ETS1-3. Evaluate a solution to a complex real-world problem based on prioritized criteria and trade-offs that account for a range of constraints, including cost, safety, reliability, and aesthetics as well as possible social, cultural, and environmental impacts.	Chemistry	Unit 2	Atomic Structure and the Periodic Table
HS-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.	Chemistry	Unit 3	Nuclear Chemistry
HS-ESS1-1. Develop a model based on evidence to illustrate the life span of the sun and the role of nuclear fusion in the sun's core to release energy in the form of radiation.	Chemistry	Unit 3	Nuclear Chemistry
HS-ESS1-3. Communicate scientific ideas about the way stars, over their life cycle, produce elements.	Chemistry	Unit 3	Nuclear Chemistry
HS-ESS1-6. Apply scientific reasoning and evidence from ancient Earth materials, meteorites, and other planetary surfaces to construct an account of Earth's formation and early history. (radiometric dating)	Chemistry	Unit 3	Nuclear Chemistry
HS-PS1-3. Plan and conduct an investigation to gather evidence to compare the structure of substances at the bulk scale to infer the strength of electrical forces between particles.	Chemistry	Unit 4	Bonding and IMF
HS-PS2-6. Communicate scientific and technical information about why the molecular-level structure is important in the functioning of designed materials.	Chemistry	Unit 4	Bonding and IMF
HS-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.	Chemistry	Unit 5	Chemical Reactions
HS-ETS1-1. Analyze a major global challenge to specify qualitative and quantitative criteria and constraints for solutions that account for societal needs and wants.	Chemistry	Unit 5	Chemical Reactions
HS-PS1-7. Use mathematical representations to support the claim that atoms, and therefore mass, are conserved during a chemical reaction.	Chemistry	Unit 6	Stoichiometry
HS-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.	Chemistry	Unit 7	Thermodynamics
HS-PS3-4. Plan and conduct an investigation to provide evidence that the transfer of thermal energy when two components of different temperature are combined within a closed system results in a more uniform energy distribution among the components in the system (second law of thermodynamics)	Chemistry	Unit 7	Thermodynamics
HS-PS1-6. Refine the design of a chemical system by specifying a change in conditions that would produce increased amounts of products at equilibrium.*	Chemistry	Unit 8	Equilibrium
HS-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.	Chemistry	Unit 8	Equilibrium
Unassigned to Units			
HS-ESS3-5. Analyze geoscience data and the results from global climate models to make an evidence-based forecast of the current rate of global or regional climate change and associated future impacts to Earth systems.	Chemistry		Climate change
HS-ESS2-5. Plan and conduct an investigation of the properties of water and its effects on Earth materials and surface processes.	Chemistry		Bonding