

Chemistry of Earth and Space Science Scope and Sequence

Days	Unit	Standard(s)/ Outcome(s)	Essential/Guiding Questions
25	Chemistry of the Big Bang • Solar System Formation-Planetary Formation • Atomic Foundations • Light • Atomic Structure • Radioactivity & Radiation • Fusion & Fission	HS-ESS1-1 HS-ESS1-2 HS-ESS1-3 HS-ESS1-5 HS-ESS1-6 HS-ESS2-1 HS-ESS2-3 HS-ESS2-4 HS-ESS3-6 HS-PS1-8 Maryland Environmental Literacy Standards: 1, 2	<i>How can we use chemistry to explain what we observe in the universe?</i>
16	Toxic Tides: The Chemistry of Contaminated Water • Chemical Properties of Water • Mixtures & Pure Substances • Density • Qualitative vs. Quantitative Properties • Physical Properties of Water • Chemical Properties of Water	HS-PS1-3 HS-PS1-5 HS-ESS2-2 HS-ESS2-4 HS-ESS2-5 HS-ESS3-2 HS-ESS3-5 HS-ESS3-6 Maryland Environmental Literacy Standards: 1, 2, 3, 4, 5	<i>Why isn't water always considered safe?</i>

20	Dangerous Compounds ● Electron Configuration ● Lewis Dot Diagrams ● Periodic Table Patterns ● Ionic Compounds ● Covalent Compounds	HS-PS1-1 HS-PS1-2 HS-PS1-3 HS-PS1-4	<i>How might elements and compounds pose a danger to us?</i>
25	Hot and Cold Packs ● Exothermic and Endothermic Reactions ● Synthesis Reactions ● Decomposition Reactions ● Single Replacement Reactions ● Double Replacement Reactions - Acid Rain ● Neutralization Reactions - Ocean Acidification ● Combustion Reactions ● Stoichiometry	HS-PS1-2 HS-PS1-4 HS-PS1-6 HS-PS1-7 HS-ESS2-4 HS-ESS3-6	<i>How is energy transferred in hot and cold packs?</i>