



Chemistry Curriculum Pacing Guide Chemical Reactions

Crosscutting Concepts: Patterns, Scale, proportion, and quantity, System and System Models

Topics: Balancing chemical reactions, Synthesis, Decomposition, Single & Double replacement, Combustion, Periodic trends, Identifying indicators of chemical reactions, Precipitation, Equilibrium, Reaction rates, Energy of chemical reactions

Estimated Time: 12 weeks

Anchoring Phenomenon	Standard	Instructional Segments	Disciplinary Core Ideas	Science and Engineering Practices	Instructional Notes
Electrolysis of Water Precipitation Reactions Energy Change of Chemical Reactions Equilibrium Shift of a Chemical System	SC2.g SC3.a, b, c, d, e SC4.a, b, c, d SC5.a	Chemical Reactions Chemical Stoichiometry	Frameworks of K-12 Science Education: <i>By the end of grade 12</i> PS1.A: Structure and Properties of Matter PS1.B: Chemical Reactions PS2.B: Types of Interactions - Explain the structure & properties of matter using attraction & repulsion between electric charges PS2.C: Stability and Instability in Physical Systems - rates of chemical change PS3.A: Definitions of Energy - Enthalpy PS3.B: Conservation of Energy and Energy Transfer - Conservation of energy	<ul style="list-style-type: none"> ● Planning and carrying out investigations ● Using mathematics and computational thinking ● Developing and using models ● Constructing explanations ● Obtaining, evaluating, and communicating information 	Teacher notes and materials are linked within instructional segments. By the end of this unit, students are using the following language in their speaking and writing during EXPLAIN or ELABORATE. <ul style="list-style-type: none"> ● Synthesis ● Decomposition ● Single replacement ● Double replacement ● Combustion ● Neutralization ● Precipitate ● Gas evolution ● Balanced equation ● Solubility ● Net ionic equation ● Endothermic ● Exothermic ● Reaction rate



					<ul style="list-style-type: none">● Equilibrium● Enthalpy● Catalyst● Activation energy
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This instructional segment will connect to SC6a-h. where students will investigate antacid and acid reflux to the chemistry of acids and bases, relating the strength of acids and bases to their percent dissociation in water and developing a particulate diagram that explains the concepts of the Arrhenius and Bronsted-Lowry model of the acids and bases as well as the concepts of pH and neutralization.