

Grade 10 Scope & Sequence – Term 1

Approx Time Frame	7 Weeks (30 th September – 11 th November)		
Unit Title and Key Components	<p>Chemical Reactions: Chapter 2: Matter and Change Chapter 11: Chemical Reactions Chapter 18: Reaction Rates and Equilibrium Chapter 12: Stoichiometry</p> <p>Structure and Properties of Matter: Chapter 7: Ionic and Metallic Bonding Chapter 8: Covalent Bonding</p>		
Unit Question	<ul style="list-style-type: none"> - What factors affect the rate of a reaction? -How is matter conserved in a chemical reaction? -How can bonding determine the properties of a substance? - How can matter change form? -How can you predict the products of a chemical reaction? -How can the rate of a chemical reaction be controlled? - How can you calculate amounts of reactants and products in a chemical reaction? - How do ionic compounds form? - How is the bonding in molecular compounds different from the bonding in ionic compounds? 		
Standards	<p>HS-PS1-1. Use the periodic table to predict the relative properties of elements based on the patterns of electrons in the outermost energy level of atoms.</p> <p>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.</p> <p>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.</p> <p>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.</p> <p>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.</p> <p>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.</p> <p>HS-PS1-7 Use mathematical representations to support the claim that atoms, and therefore mass, are conserved during chemical reactions.</p>		
Theme	Chemical Reactions and Bonding		
Weekly Planning	Week 1 Describing chemical reactions Week 2: Investigating Factors Affecting Rates Week 3: Investigating Factors Affecting Rates Week 4: Law of conservation of mass Week 5. Atoms bonding and the periodic table Week 6: Ionic Bonding	Significant Concept (s)	SCF
		<ul style="list-style-type: none"> -Identify ways to tell if a chemical reaction has occurred. -Identify three categories of chemical reaction. - identify factors that can significantly affect the rate of a reaction. - conservation of mass in a reaction. - certain elements have individual properties 	Initiative, collaboration, communication, self-confidence, responsibility, independent learning,

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Bloom's Level	Week 7: Covalent bonding	<ul style="list-style-type: none"> - metals react in certain ways and can be placed in a reactivity series - ionic compounds occur between certain Groups of elements in the periodic table - collision theory in chemical reactions - bonding is dependent upon the charges on the individual elements involved 	problem solving, creativity
	Remembering, understanding, analyzing, creating, evaluating, investigating, comparing		
Assessment Criteria	-Formative Monitoring (Questioning/Discussion) -Building models - Kagan Strategies for assessments. - Laboratory skills rubrics -Starter Questions-Tickets to leave – Unit tests – Quizzes – International style End of Topic Questions		
Possible Resources	Pearson Realize, Brain Pop, Education City, Science Buddies, You tube, Google classroom		