

Planned Course: Physical Science	Course Number: 400	Department: Science	
Unit 8: Compounds and Bonding	Grade Level: 9th		
Estimated Time: 4 weeks	Level/Track: General	Date Approved: 9/25/2014	
PA Academic Standards	Core Concepts (in question format) • Skills/Knowledge	Activities/Strategies/Study Skills (identify some activities as remedial or enrichment activities)	Assessments (include types and topics)

<p>3.2 Physical Science: Chemistry and Physics</p> <p>3.2.10.A2</p> <ul style="list-style-type: none"> • Compare and contrast different bond types that result in the formation of molecules and compounds. • Explain why compounds are composed of integer ratios of elements. <p>3.2.C.A2</p> <ul style="list-style-type: none"> • Explain how atoms combine to form compounds through both ionic and covalent bonding. • Predict chemical formulas based on the number of valence electrons. • Predict the chemical formulas for simple ionic and molecular compounds. <p>Biology Keystone Anchor BIO.A.2 The Chemical Basis</p>	<p>► What is the structure of an atom and how does it affect the properties of matter?</p> <ul style="list-style-type: none"> • The student will explain the formation of compounds (ionic and covalent). • The student will be able to understand bonding theories. • The student will be able to explain how a compound differs from the elements it is composed of. • The student will be able to write formulas for compounds from their names and name compounds from their formulas. • The student will be able to state the reason why chemical bonding occurs. • The student will be able to explain that polymers are made up of monomers. 	<ul style="list-style-type: none"> • Bond busters activity • Concept mapping • Mystery crystals • Making and using tables • Lab on chemical bonds • Bonding activity 	<ul style="list-style-type: none"> • Hands on Lab Assessment (Washers, Nuts and Bolts Lab, Oxidation Bond Puzzle) • Lab Simulations Assessment (Ionic and Covalent Bond Gizmo, Molecule Shapes Simulation) • Quizzes on major concepts • Homework to reinforce major concepts • Unit Test
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for Life BIO.A.2.2.1 Explain how carbon is uniquely suited to form biological macromolecules.			
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