

Planned Course: Physical Science	Course Number: 400	Department: Science	
Unit 9: Solutions	Grade Level: 9th		
Estimated Time: 2 weeks	Level/Track: General	Date Approved: 9/25/2014	
PA Academic Standards	Core Concepts (in question format)	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.A1</p> <ul style="list-style-type: none"> • Predict properties of elements using trends of the periodic table. • Identify properties of matter that depend on sample size. • Explain the unique properties of water (polarity, high boiling point, forms hydrogen bonds, high specific heat) and support life on Earth. <p>Biology Keystone Anchor BIO.A.2 The Chemical Basis for Life</p> <p>BIO.A.2.1.1 Describe the unique properties of water and how these properties support life on Earth (e.g., freezing point, high specific heat, cohesion).</p> <p>BIO.A.2.3.2 Explain how factors such as pH, temperature, and concentration levels can affect enzyme</p>	<p>► What makes up a solution and how does one type of matter dissolve into another?</p> <ul style="list-style-type: none"> • The student will explain the dissolving process. • The student will be able to classify solutions into three types and identify their solutes and solvents. • The student will be able to describe the factors that affect the rates at which solids and gases dissolve into liquids. • The student will be able to demonstrate an understanding of solution concentration. • The student will be able to compare and contrast saturated/unsaturated and supersaturated solutions. • The student will be able to identify substances based on the 	<ul style="list-style-type: none"> • Solute lab • Saturation Situation • Solubility Charts • Making and using graphs • Concept mapping • Solution concentrations 	<ul style="list-style-type: none"> • Hands on Lab Assessment (Ice Cream Lab, Reaction in a Bag, Interpreting Solubility Graphs) • Lab Simulations <p>Assessment (Solubility and Rate of Dissolving, Acid-Base Solutions, Reactions and Rates)</p> <ul style="list-style-type: none"> • Quizzes on major concepts • Homework to reinforce major concepts • Unit Test
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<p>function.</p> <p>Biology Keystone Anchor BIO.A.4 Homeostasis and Transport BIO.A.4.1.2 Compare the mechanisms that transport materials across the plasma membrane (i.e., passive transport - diffusion, osmosis, facilitated diffusion, and active transport - pumps, endocytosis, exocytosis).</p>	<p>pH scale and classify substances as an acid or base.</p> <ul style="list-style-type: none"> • The student will be able to explain the unique properties of water. • The student will be able to describe the diffusion and osmosis. 		
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