| Planned Course: Physical Science | Course Number: 400 | Department: Science | |
|---|---|---|---|
| Unit 10: Chemical Reactions<br>Estimated Time: 4 weeks | Grade Level: 9th<br>Level/Track: General | Date Approved: 9/25/2014 | |
| **PA Academic Standards** | **Core Concepts (in question format)**<br>• **Skills/Knowledge** | **Activities/Strategies/Study Skills (identify some activities as remedial or enrichment activities)** | **Assessments (include types and topics)** |
| 3.2. Physical Science: Chemistry and Physics<br><br>3.2.10.A2<br>● Compare and contrast different bond types that result in the formation of molecules and compounds.<br>● Explain why compounds are composed of integer ratios of elements.<br><br>3.2.10.A4<br>● Describe chemical reactions in terms of atomic arrangement and/or electron transfer.<br>● Explain the difference between endothermic and exothermic reactions.<br>● Identify the factors that affect the rates of reactions.<br><br>3.2.C.A4<br>● Predict how combinations of | Why do chemical reactions occur and how do they operate?<br><br>● The student will be able to state and explain the law of conservation of mass.<br>● The student will be able to identify reactants and products in a chemical reaction.<br>● The student will be able to balance chemical equations.<br>● The student will be able to describe the four general types of chemical reactions.<br>● The student will be able to explain how bonding and energy relate to chemical reactions.<br>● The student will be able to identify factors that influence chemical reaction rates.<br>● The student will be able to describe the | ● Demonstration on the Conservation of Mass<br>● Demonstrations of the general types of chemical reactions<br>● Balancing Chem<br>● Reaction Activity<br>● Balancing chemical equations practice<br>● Exothermic vs Endothermic lab | ● Hands on Lab Assessment<br><br>● Lab Simulations: Balancing Chemical Equations Gizmo, Collision Theory Gizmo<br><br>● Quizzes on major concepts<br><br>● Homework to reinforce major concepts<br><br>● Unit Test |

| Planned Course: Physical Science | Course Number: 400 | Department: Science | |
|---|---|---|---|
| Unit 10: Chemical Reactions<br>Estimated Time: 4 weeks | Grade Level: 9th<br>Level/Track: General | Date Approved: 9/25/2014 | |
| **PA Academic Standards** | **Core Concepts (in question format)**<br>• **Skills/Knowledge** | **Activities/Strategies/Study Skills (identify some activities as remedial or enrichment activities)** | **Assessments (include types and topics)** |
| substances can result in physical and/or chemical changes.<br>● Interpret and apply the laws of conservation of mass, constant composition (definite proportions), and multiple proportions.<br>● Balance chemical equations by applying the laws of conservation of mass.<br><br>Biology Keystone Anchor<br>BIO.A.3 Bioenergetics<br>BIO.A.3.2.1 Compare the basic transformation of energy during photosynthesis and cellular respiration. | photosynthesis reaction. | | |