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| Desired Results for:  8th grade chemistry unit  DRAFT | |
| Essential Understanding:  Apply an understanding of atomic and molecular structure to explain the properties of matter, and predict outcomes of chemical and nuclear reactions  Established Goals:  **State Standards:**  **Inquiry Questions:**   1. What evidence can indicate whether a change is physical or chemical? 2. Is it easier to observe the conservation of mass in physical or chemical changes? Why? 3. What would happen if mass were not conserved? | |
| Understandings:  Students will understand . . .   1. Identify the distinguishing characteristics between a chemical and a physical change (DOK 1) 2. Gather, analyze, and interpret data on physical and chemical changes (DOK 1-2) 3. Gather, analyze, and interpret data that show mass is conserved in a given chemical or physical change (DOK 1-2) 4. Identify evidence that suggests that matter is always conserved in physical and chemical changes (DOK 1)   Examine, evaluate, question, and ethically use information from a variety of sources and media to investigate physical and chemical changes (DOK 1-2) | Essential Questions:  Essential Questions:  1. What is the basic structure of an  atom?  2. What does an element’s location on  the periodic table tell us about its  atomic structure, characteristics and  trends?  3. What does atomic structure tell us  about an atom’s tendency to  combine with other atoms?  4. What are the signs that indicate a  chemical reaction might be taking  place? |
| Essential Vocabulary:  Period  • group  • periodic  • element  • atomic number  • proton  • neutron  • electron  • atomic mass  • mass number  • valence electron  • chemical bonding | |
| Resultant Knowledge:  Students will know…  Resultant Knowledge:  Students will know…  • the parts of an atom.  • the relationship between parts of an  atom.  • The reason for the organization of the  periodic table  • that the arrangement of electrons  determines how atoms combine   1. • signs of a chemical reaction | Resultant Skills:  Students will be able to . . .  1. explain how elements are arranged in the  periodic table.  2. predict and explain why elements in a  group often have similar properties.  3. describe how atoms combine with an  understanding of their atomic structure.  4. recognize chemical reactions, and that  they produce new substances that have  different chemical and physical properties |
| Stage 2 – Assessment Evidence | |
| Performance tasks.  Calculate and illustrate the number of  protons, neutrons, and electrons in an  atom.  • Predict placement of an element  based on periodic trends or similarities.  • Create models showing electron  arrangement  • Perform a chemical reaction, and   * provide evidence that it occurred. * End Project- Students will construct in the lab their own heat pack and cold pack using a supply list, they will need to research the endo and exothermic reactions needed to do so. | Other Evidence.  Assessment on key terms and concepts  2. Completion of atomic math  computations  3. Completion of periodic table project   * 4. Carry out chemical reactions |
| Stage 3 Learning Plan | |
| Activities | |
| Demos   1. Alkali Metals 2. Whoosh Bottle 3. Spontaneous Combustion | |
| Specifics | |
| Labs  Density of a Liquid  Classification of Matter  Boiling point of liquids  Creating alloy- Golden Penny  Chemical Change, element to compound  Electrolysis of copper  Endo/Exothermic  Boyles Law  Properties of Salts(spectrum)  Micro Chemical Reactions vs Physical Change  Density of a gas | |
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| Lessons/homework  Section review chapters 1,2,3 of P Hall text, guided reading and selected wksheets on mryoast.weebly.com | |
| Notes  Online at mryoast.weebly.com | |
| Pre Assessments  Vocab quiz  Lab Safety Quiz  Pre Test   1. What evidence can indicate whether a change is physical or chemical? 2. Is it easier to observe the conservation of mass in physical or chemical changes? Why?   3. What would happen if mass were not conserved? | |