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| **Week**  **Of**  **November 9, 2015** | | **Jennings Junior High Lesson Plan Template** | | | | | | |
| **Subject: Matter and Energy: Properties and Changes in Matter** | | | | **Grade Level: 7** | | | **Instructor(s): Jefferson (Science Department)** | |
|  | **Monday** | | **Tuesday** | **Wednesday** | | | **Thursday** | **Friday** |
| **Key Concepts -Learning**  **Targets /Daily Objective** | I will be able to:  Identify elements (unique atoms) and compounds (molecules or crystals) are pure substances that have  characteristic properties  appropriate senses and tools  Describe the physical and chemical properties (e.g., magnetic attraction, conductivity, melting point and boiling point, reactivity) of pure substances (elements or compounds) (e.g., copper wire, aluminum wire, iron, charcoal, sulfur, water, salt, sugar, sodium bicarbonate, galena, quartz, magnetite | | I will be able to:  Describe the properties of each component in a mixture/solution and their distinguishing properties (e.g., salt water, oil and vinegar, pond water, Kool-Aid) | I will be able to:  Describe appropriate ways to separate the components of different types of mixtures (sorting, evaporation, filtration, magnets, boiling, chromatography, screening | | | I will be able to:  Describe appropriate ways to separate the components of different types of mixtures (sorting, evaporation, filtration, magnets, boiling, chromatography, screening | I will be able to:  Predict how various solids (soluble/insoluble) behave (e.g., dissolve, settle, float) when mixed with water |
| **Essential Question(s)** | How do scientists classify matter?  What are chemical and physical properties?  Differentiate between elements, compound, and mixtures.  How are properties of elements and compound used to separate a mixture?  How do we know that atoms exist? | | | | | | | |
| **Common Core**  **Standards** | W.6.1.B, R.1.6.1, S.L.6.4 | | | | | | | |
| **DOK Level(s)** | 2/3 | | 2/3 | | 2/3 | 2/3 | | 2/3 |
| **Vocabulary** | Element  Compound  Atom  Mixtures  Solutions  Conductivity  Solution  Heterogeneous mixture  Homogeneous mixture | | Properties  Sodium  Chloride  Acetic Acid  Carbon  Hydrogen  Oxygen  Water  Compound  Element  Periodic Table | | Sorting  Evaporation  Filtration  Mixture  Compound  Element  Magnetism  Evaporation  Boiling  Chromatography  Screening | Sorting  Evaporation  Filtration  Mixture  Compound  Element  Magnetism  Evaporation  Boiling  Chromatography  Screening | | Element  Compound  Atom  Mixtures  Solutions  Conductivity  Solution Sorting  Evaporation  Filtration  Mixture  Compound  Element  Magnetism  Evaporation  Boiling  Chromatography  Screening |
| **Class Procedures/Lesson Design** | **Do Now: (3-5 minutes)**  Worksheet classifying matter (mixture, element, and compound) | | **Do Now:** (**3-5 minutes)**  Test practice: Mixture, elements, and compounds | | **Do Now:** (**3-5 minutes)**  Answer the following questions: what happens to the properties of elements when they become compounds or what happens to the mixture when individual components are separated from it. Give an example of this… | **Do Now:** (**3-5 minutes)**  What do you know about how the properties of the elements and compounds help to separate a mixture? | | **Do Now:** (**3-5 minutes)**  5 minutes to review notes for CFA |
| **Whole Group Lesson Anticipatory Set/Objective, including strategies**  Notes: Elements, Compounds, and Mixtures PowerPoint  Independent Practice worksheet | | **Whole Group Lesson Anticipatory Set/Objective, including strategies**  **(12 – 15 minutes)**  Introduce properties of water, oil, vinegar and Koolaid  1. To illustrate the difference between a solution and a suspension, add about 4 grams of salt to 500 mL of water. Also, prepare a solution of calcium carbonate (4.0 grams) and 500 mL of water.  2. Make certain that each mixture is stirred well. Ask the students to list any differences or similarities between the two mixtures.  3. Darken the room and shine a flashlight through each beaker. The beaker with calcium carbonate will appear cloudy. Point out that this method is one way to differentiate between a solution and a suspension. | | **Whole Group Lesson Anticipatory Set/Objective, including strategies**  **(12 – 15 minutes)**  Agree and Disagree Statements about Mixtures to activate prior knowledge | **Whole Group Lesson Anticipatory Set/Objective, including strategies**  **(12 – 15 minutes)**  Challenge: Tell students that they are going to design an apparatus that will separate a mixture.  Inform students that they learn how scientists separate mixtures. | | **Whole Group Lesson Anticipatory Set/Objective, including strategies**  **(12 – 15 minutes)**  Review for CFA: Jeopardy and Kahoot it. Review notes and lab |
| **Whole Group Instruction/ Modeling and Checking for Understanding, including strategies: (20 Minutes)**  Enrichment: Students who have mastered the concept will create a poster, video or PowerPoint that explains, illustrates and gives examples of elements, compounds, and mixtures  Remediation Activities:   1. Study Jam Video: Mixtures, Elements, Compounds 2. Create non-linguistic representations of the following terms: heterogeneous mixture, solution, homogeneous mixture, element, compound 3. Students use marshmallow molecular models to understand elements compounds and mixtures. | | **Whole Group Instruction/ Modeling and Checking for Understanding, including strategies: (20 Minutes)**  Properties of Mixtures and Solutions Lab http://galileo.phys.virginia.edu/education/outreach/8thgradesol/MixSoln.htm  Notes: Properties of Mixtures elements and compounds | | **Whole Group Instruction/ Modeling and Checking for Understanding, including strategies: (20 Minutes)**    It’s in the Cards or Vocabulary Squares    Internet Sources  Textbook: Chemical Building Blocks or CK12 Separating Mixtures  Video: CK12 Separating Mixtures  Virtual Separating Mixtures Lab  <http://www.harcourtschool.com/activity/mixture/mixture.html>  Reinforce the above: Notes: Separating Mixtures | **Whole Group Instruction/ Modeling and Checking for Understanding, including strategies: (20 Minutes)**  Separating Mixtures Lab: Students rotate to stations that are set up for chromatography, density  Evaporation  Filtration  Mixture  Compound  Element  Magnetism  Evaporation  Boiling  Chromatography  Screening | | **Whole Group Instruction/ Modeling and Checking for Understanding, including strategies: (20 Minutes)**  CFA Mixture  Retesting for previous CFA |
| **Practice/Independent/Small Group Instruction, including strategies: (20 Minutes)**  Enrichment: students complete Elements, Compounds, and Mixtures Project  Remediation Group will retake Classification of Matter assessment. | | **Guided Practice/Independent/Small Group Instruction, including strategies: (20 Minutes**    Review end of the lab questions with the students  Its in the Cards Vocabulary:  Properties  Sodium  Chloride  Triglyceride  Acetic Acid  Carbon  Hydrogen  Oxygen  Water  Compound  Element  Periodic Table  (if internet access is not available, then provide the definitions for the students | | **Guided Practice/Independent/Small Group Instruction, including strategies: (20 Minutes**  Concept Web: Separating mixtures | **Guided Practice/Independent/Small Group Instruction, including strategies: (20 Minutes**  Show students the mixture they will separate. Have them to create a blueprint of their design and explain how it works.  Students can begin to design their apparatus and afterwards, they will attempt to separate the mixture, | | **Guided Practice/Independent/Small Group Instruction, including strategies: (20 Minutes**  CFA |
| **Highly Tested GLEs:**  **(MAP Time) Devoted to MAP Skill/Reinforcers (20 Minutes)** | Using non-linguistic representations, videos, and manipulatives to help students to grasp concepts | | Hands-on lab  Vocabulary Organizer  Check for comprehension at the end | | Vocabulary Organizer or Concept Web to help students understand concepts | Vocabulary Organizer or Concept Web to help students understand concepts | | Vocabulary Organizer or Concept Web to help students understand concepts |
| **Daily Formative Assessment**  **(5-10 Minutes)** | Exit Slip: | | Exit Slip: | | Exit Slip: | Exit Slip | | Exit Slip:  CFA Properties of Matter |
| **Summative Assessment** | Post-Assessment at the end of the unit | | | | | | | |
| **Materials and Resources** | Power Point Presentations (Refer to personal web page)  Lung Capacity Lab: http:www.biologycorner.com/worksheets/lungcapacity.html | | | | | | | |
| **Unit Planner and Special Notes** | Obstacles noted while data consultation includes the following weaknesses: understanding elements, compounds, examples, types of mixtures, and solution vs. heterogeneous mixture. As a result, Monday will involve re-teaching of these concepts/terms. Enrichment will be available for students who have mastered these concepts. | | | | | | |