SIOP LESSON PLAN

Adapted from Echevarria, Vogt, and Short Making Content Comprehensible

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Date: Week 2, Day 2 **Period(s):** N/A **Subject/Class/Grade:** Investigative Science

Unit/Theme: Laboratory Techniques and Safety Rules **Standard(s):** 1a, 1b, 1c, 1d, 1l

Content Objective (Benchmark) – SWBAT describe the physical and chemical changes in the laboratory investigation.

Language Objective (Desired Result) – SWBAT work in collaborative groups to verbally discuss and write observations of the physical properties of materials.

Academic ToolKit Words	**Key Vocabulary**	**Supplementary Materials (graphs, models, visuals)**
Property Physical Observation Absorb Release	Odor Density Luster Ductility Malleability Elasticity Conductivity Insulator Organic/Inorganic Chemical Endothermic/Exothermic	(Per Group) 1 gallon resealable plastic bag 1/2 teaspoon of baking soda 1/2 teaspoon of calcium chloride 50 mL of white vinegar paper towels safety goggles

Preparation
- ☐ Adaptation of content
- ☐ Links to background (bridge to what is known)
- ☒ Links to Past Learning
- ☐ Meaningful activities (connect to real world)

Strategies
- ☒ Modeling
- ☐ Guided Practice
- ☒ Independent Practice
- ☒ Higher Order Thinking Qs
- ☒ Opportunities to use learning strategies

Grouping Options
- ☒ Whole Class
- ☒ Small Group
- ☐ Partners
- ☐ Independent

Practice/Application
- ☒ Integration of skills
  - ☒ Reading
  - ☒ Listening
  - ☒ Writing
  - ☒ Speaking
- ☐ Application of knowledge
- ☒ Hands-on materials and manipulatives

Comprehensible Input
- ☒ Clear explanation of tasks (explain directions)
- ☒ Uses gestures demonstration and adjusts speech
- ☒ Modeling, visuals, and/or graphic organizers

Review/Assessment
- ☒ Review of key concepts
- ☐ Review of key vocabulary
- ☐ Provides regular feedback
- ☐ Various assessments
- ☒ Ongoing
  - ☐ Product
  - ☐ Performance
  - ☒ Portfolio
  - ☐ Testing

Procedure -

Assessment: Students will be assessed on their lab notebooks. Lab notebooks will follow a particular structure and be graded based on a predesignated rubric (see lab notebook rubric). For this particular lab, students will be required to record observations of the physical properties of the substances and observations of the chemical and physical changes that occur after the experiment. Their ability to accurately distinguish between physical and chemical changes, as well as the accuracy of their observations, will serve as the assessment of their degree of mastery.

Teaching Strategies/Student Activities: A variety of engagement strategies will be implemented in this lesson (see Engagement Strategies Matrix).

1. Toolbox vocabulary will be frontloaded by the teacher and practiced by students at the beginning of the class.
2. The teacher will present information using a 8-2 lecture. The lecture will explicitly teach the definition of physical and chemical properties and changes. The teacher will check for understanding by giving examples of physical and chemical properties. The classroom will be labeled so that one side represents "physical" and one side represents "chemical". The students will be instructed to move to the side of the room that indicates the appropriate category of each example.
3. Students will analyze the materials in pairs or groups and record observations in a graphic organizer.
4. Students will discuss physical properties in House Parties. After analyzing the substances, students will physically move around the room and compare observations with other classmates. They will compare with three other students and record physical properties that other students observed.
5. Students will use the sentence frame "I observed that _____" when reporting their observations.
6. Students will share out observations of physical properties using an idea wave/whip around. All students will contribute and use sentence frames. The teacher will record all observations on a chart.
7. Students will pair-read the laboratory instructions and the teacher will model the laboratory procedure.
8. Students will perform the experiment and write a summary of their observations.
9. Students will answer discussion questions about the changes that occurred.
10. Students will complete an exit slip explaining what they learned in the laboratory activity.

Resources: Physical and Chemical Properties of Matter: An Investigation into the Property Changes of Materials

Reflection – Keepers! Clunkers?