**Teaching Science as Inquiry (TSI) Lesson Plan**

**Module 1: Physical Aquatic Science**

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Activity: Soda and Scientific Reasoning

Why did you choose to do this activity? This activity helps students with scientific practices and is a good way to learn about properties of density.

What are your classroom learning goals? Students will explain how variables can affect density. Students will design and implement an experiment by group collaboration.

How does this activity tie into your classroom learning goals? This activity supplements physical science lessons on Density. It a

What date do you plan to start this activity? Nov. 12, 2012

*If applicable:* HIDOE standards this lesson will address

**Standard 1: The Scientific Process: SCIENTIFIC INVESTIGATION: Discover, invent, and investigate using the skills necessary to engage in the scientific process**

**Ocean**

1. Describe how you will connect this activity to the ocean:

We will have whole class discussion about “how it feels” to swim in the ocean and a freshwater pool. Students will describe how they “float” more in the ocean

1. Select the Ocean Literacy Principle(s) that you anticipate this activity will address. (check all that apply)

□ 1. The Earth has one big ocean with many features.

□ 2. The ocean and life in the ocean shape the features of the Earth.

□ 3. The ocean is a major influence on weather and climate.

□ 4. The ocean makes earth habitable

□ 5. The ocean supports a great diversity of life and ecosystems.

x□ 6. The ocean and humans are inextricably interconnected

□ 7. The ocean is largely unexplored

**Preparation**

1. How will you prepare your students for this activity? (For example, review of prior knowledge.) Students will already have had a unit from textbook on desity and have used the formula for measuring density.
2. Explain any instructional struggles that you foresee and how you will address these issues. (For example, student misconceptions, classroom discussion, aspects most difficult for students to grasp, etc.)Students may not understand the labels of the soda and what they mean. Hopefully the sodas will “cooperate” (sink and float).
3. Select the TSI Mode(s) of Inquiry that you will focus on for this activity. (check all that apply)

x□ Curiosity

x□ Description

x□ Authoritative knowledge

x□ Experimentation

□ Product evaluation

□ Technology

x□ Replication

□ Induction

x□ Deduction

x□ Transitive Knowledge

**Questioning and Assessment Strategies**

1. What *questioning strategies* will you use to help your students meet your learning goals? Open ended questions will be asked as students work together on the activity. I will ask them if they think the can has an influence on their results. I will ask them about other drinks and what results they would expect. I will ask them about the water in the tub and if changes to that might make changes to floating and sinking
2. What *assessment strategies* will you use to help your students meet your learning goals and monitor their progress? Students will answer the Activity Questions. Verbal, ongoing questioning will help me with knowing where their understanding is.

Please provide any additional comments that will help you prepare to teach this activity or help the TSI facilitators understand how you plan to teach this activity. This is a good activity for hands-on learning about density. Next time I will plan a second day so that students can perform Step 9.