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

**Module 1: Physical Aquatic Science**

Name: Andrea Bell

Activity: Density Bags

Why did you choose to do this activity? This will be the last activity we do in this unit on water temperature, salinity and density. This will give students confidence in their knowledge and communication skills about physical oceanography

What are your classroom learning goals? Students will design their investigation, record and analyze data.

How does this activity tie into your classroom learning goals? Students have enough background knowledge about density to design and carry out their investigation and collaborate in a small group.

What date do you plan to start this activity? October 31, 2012

*If applicable:* HIDOE standards this lesson will address

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| **Standard 1: 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 discuss on changes in density and how this affects the movement of ocean water. This is a supplement to the C-MORE lesson on Ocean deep water currents

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

x 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

x 7. The ocean is largely unexplored

**Preparation**

1. How will you prepare your students for this activity? (For example, review of prior knowledge.) Students have already completed the Soda and Scientific Reasoning, and water layering in the C-More Lessons. We will review what they’ve already observed and discuss their predictions
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 have difficulty making and recording predictions.
3. Select the TSI Mode(s) of Inquiry that you will focus on for this activity. (check all that apply)

x□ Curiosity

x□ Description

□ Authoritative knowledge

x□ Experimentation

□ Product evaluation

x□ Technology

□ Replication

x□ Induction

x□ Deduction

□ Transitive Knowledge

**Questioning and Assessment Strategies**

1. What *questioning strategies* will you use to help your students meet your learning goals?I will have them make predictions on the different liquid combinations by asking about the different combinations.

2 What *assessment strategies* will you use to help your students meet your learning goals and monitor their progress? I will verbally ask them the Activity Questions in whole class discussion.

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. At this stage of their learning, I would like them to be able to design their investigation rather than follow the written procedures. I think that with guidance and demonstration they will be able to come up with their own procedures for the different variables to be tested. Having a data table for each part of the activitiy (Salinity and Temperature) will help guide their investigation.