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

**Module 1: Physical Aquatic Science**

Name: Kevin Johnson

Activity: Density Bags

Why did you choose to do this activity?

I thought it did a very good job of demonstrating density differences in liquids. I thought it would be easy to relate this to sea water/fresh water in a brief study of world's oceans.

What are your classroom learning goals?

To provide students with an intuitive understanding of the concept of the density of matter and how it affects ocean circulation, as well as the behavior of liguids in general. Also, why ice floats.

How does this activity tie into your classroom learning goals?

The understanding of Density is a fundamental step in thinking about the atomic nature of matter. This is crucial in a high school chemistry class.

What date do you plan to start this activity? 10/18/12

*If applicable:* HIDOE standards this lesson will address

**Standard 3: Properties of Matter –Understand different states of matter**

**Ocean**

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

I plan to initiate a discussion about the causes and consequences of ocean circulation. I will ask the question, "If you lost at sea and floating in the water, which would you rather be flaoting in, sea water of fresh water?"

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.

□ 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.)

We did a previous activity on density and we did the Mystery Water activity at the beginning of this 90 minute period.

1. 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.)

With my 5th period class I anticipate that they will goof around too much and not finish in time.

X Experimentation

□ Product evaluation

□ Technology

□ Replication

🞩 Induction

□ Deduction

□ Transitive Knowledge

**Questioning and Assessment Strategies**

1. What *questioning strategies* will you use to help your students meet your learning goals?

Paraphrase/Summarize, Amplify, Clarify, Qualification.

1. What *assessment strategies* will you use to help your students meet your learning goals and monitor their progress?

Answer questions on worksheet, discussion participation, exam.

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.

Hopaco sells the small bags for really cheap. They go through them quickly.