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

**Module 1: Physical Aquatic Science**

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Activity: Density Bags

Why did you choose to do this activity?

I was interested in using my students’ observations to help them arrive at conclusions about water densities and the ocean. As 5th graders they had very little accurate prior knowledge about density, and this lesson was a great way to introduce the concept and allow them to observe and comprehend.

What are your classroom learning goals?

My HSA Science standards at the 5th grade level include a strand on The Scientific Process: Scientific Investigation and the Nature of Science.

How does this activity tie into your classroom learning goals?

Along with my initial observations using TSI, I can also use this lesson to help my students grasp the HAS strands listed above.

What date do you plan to start this activity?

 Monday, October 22, 2012

*If applicable:* HIDOE standards this lesson will address

SC 5.1.1, 5.1.2, 5.2.1

**Ocean**

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

We will have a classroom discourse about how freshwater reacts when it meets the ocean (i.e. Hanalei River meets Hanalei Bay). We will discuss how the waters may eventually mix.

We will review the information provided in the Ocean Literacy brochure.

We will tie our ‘Ike Hawai’i lesson (oli) about where to find the Kane waters using Hawaiian vocabulary when applicable.

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.

X 4. The ocean makes earth habitable

X 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 will review and list on the board all prior knowledge the students are able to share in class.

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.)

Cooperative group work

Accurately recording observations

1. 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

□ 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?

Initially, I will question what they understand about density using their prior knowledge.

During the experiment, I will question what point each group may be struggling with and ask them to repeat a process if necessary.

I will question them on their findings and ask them to share using a graph on the board.

After their observations, I will question what they discovered and how it may apply to the ocean.

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

Group discourse during the experiment

Classroom on the results

Classroom discourse on the groups’ findings

List the stages of the Scientific Process used in the experiment

Discourse and list on conclusions

Write conclusions in students’ Science notebooks

Review the next day

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.