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

**Module 1: Physical Aquatic Science**

**Name:** Mary Costello

**Activity:** Practices of Scientists

**Why did you choose to do this activity?**

I chose this activity to facilitate student awareness about the nature of science, the process of science, and what it means “to do” science. In addition, I hope to increase student understanding of the discipline of science and “who” is a scientist.

**What are your classroom learning goals?**

1. To increase awareness about the nature of and processes of science.
2. To connect the practice of science to our daily lives
3. To understand what a “discipline” is and compare and contrast the discipline of science with other academic disciplines
4. To understand scientific demeanors
5. To create group cohesion and focus

**How does this activity tie into your classroom learning goals?**

Many students do not seem to have any idea about science beyond the fact that it’s a class they need to take to get a credit toward graduation. We are integrating performance character into our curriculum this year and this activity dovetails with what we are trying to accomplish in Marine Science as well as what we hope to accomplish in terms of performance character building. Many of the students are impulsive. This lesson, with its emphasis on characteristics and demeanors, can help students to adopt these behaviors and apply them to their conduct during class.

Another emphasis of this class is “citizen science” and this activity helps to show student that scientists are not just people working in a lab with glassware, heat, and chemicals.

**What date do you plan to start this activity?**

September 26, 2012. Although we have a block schedule this day, the lesson will cover two class days.

***If applicable:* HIDOE standards this lesson will address** N/A

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**Ocean**

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

Our major project this year is a study of reef health at Hanauma Bay. Students need to understand who scientists are, how science is done, and the demeanor of scientists. They also need to understand that they are, in fact, scientists who are doing real work. Our work and the results will be published on a citizen science webpage (ReefQuest.org). The study will continue over several years with subsequent classes continuing the study.

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

The ocean makes earth habitable

The ocean supports a great diversity of life and ecosystems.

The ocean and humans are inextricably interconnected

**Preparation**

1. **How will you prepare your students for this activity? (For example, review of prior knowledge.)**

1. Students will be asked to think about what a scientist is and what doing science means (a homework assignment) then be ready to discuss their ideas 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.)**
   1. Structured Overview
   2. Peer/partner Learning
   3. Demonstrating
   4. Questioning
   5. Assigned Questions (homework reflection)
2. **Select the TSI Mode(s) of Inquiry that you will focus on for this activity. (check all that apply)**

x Curiosity

x Description

x Product evaluation

**Questioning and Assessment Strategies**

1. **What *questioning strategies* will you use to help your students meet your learning goals?**
   1. Open-Ended: what do you mean by that? Can you give me an example of that? Can you tell me more about that?

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

**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.**

I thought this would be a good lesson to help students (some of whom tend to be a bit impulsive and silly at times) develop some of the habits and demeanors of scientists.

My goal in teaching this activity is to have students understand that science is simply more than learning some facts in order to pass a test. I anticipate that students will realize that they are “real scientists” and that they are capable of doing “real science”. In addition, I hope to instill a classroom culture of quality and achievement.