Teaching Science as Inquiry (TSI) Lesson Plan
Module 1: Physical Aquatic Science

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Activity: Practices of Science

Why did you choose to do this activity?

At my school we believe that in order to learn science, students learn science best by doing science in an authentic way in the classroom. To do this, they must practice as scientists do. This is a great activity to do at the beginning of the school year and again to close the year so that the students can see how their ideas as well as their knowledge of scientists and their view of themselves as scientists change.

What are your classroom learning goals?

I want my students to be self-directed and reflective learners as well as learn the content related to the ocean.

How does this activity tie into your classroom learning goals?

In order to truly practice science authentically, students should use the tools and processes (including thought processes) that scientists use, so it is important for them to first examine their prior knowledge and conceptions of scientists, then to see how they are like scientists and how they can become more like scientists throughout the year.

What date do you plan to start this activity?

October 3, 2012

If applicable: HIDOE standards this lesson will address

- **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:

   No real connection except to mention what types of scientists study the ocean.

2. 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.
   - ☐ 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.)

   I do not plan to prepare the students before this activity since it is meant to assess their prior knowledge and perceptions of science and scientists. We will also come back to this later in the year to see how their ideas have changed.

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.)

   Some students may struggle with drawing their scientists, others may over-censor their thoughts while trying to

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
   - ☐ Experimentation
   - ☐ Product evaluation
   - ☐ Technology
   - ☐ Replication
   - X 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?

    - I will ask students:
        - why they chose certain attributes in their drawings
        - why they chose certain descriptors
        - what words seemed to be the most common to describe scientists
        - poll students on if they had similar responses to see the overall picture for the class
    - I will prompt students to:
        - think about what scientists do on a daily basis
        - think about what kinds of scientists and fields of scientific study there are
        - think about whether they themselves are scientists

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

    - Written responses on folder paper
    - Drawing
    - Words to describe partner's drawings
    - Contributions in class when called upon

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 the first time I am teaching this activity but I think it will be one that students will really like. They are usually very creative and like to draw and especially like to share their ideas with each other.