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

**Module 3: Biological Aquatic Science**

Name: ***Dan VanRavenswaay***

Activity: ***Scientific Language***

1. Why did you choose to do this activity?

***This is one of the Mod 3 mandatory target activities. I include some***

***discussion of epistemology and the nature of natural science in my***

***courses, and this will fit in nicely with that discussion.***

2. What are your classroom learning goals?

***I want my students to understand the meanings of terms that are going to be used in association with upcoming lessons on natural selection, experimentation, etc.***

3. How does this activity tie into your classroom learning goals?

**See previous two answers.**

4. What date do you plan to start this activity? ***Tuesday, January 29, 2013***

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

**Ocean**

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

***This is not critical to this lesson, though there are plenty of ocean-related examples that I’ll end up using. Biology, including marine biology, includes a large amount of new vocabulary specific to the field.***

7. 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.

**X** 6. The ocean and humans are inextricably interconnected

***Science is a human endeavor.***

□ 7. The ocean is largely unexplored

**Preparation**

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

***Review the idea that natural science is a discipline with, among other things,***

***a specialized language. A common understanding of this language is needed***

***for us to communicate with each other about science.***

9. 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.)

***I don’t foresee any major difficulties. There are plenty of examples of other fields, hobbies, sports, etc., that have their own lexicon, and I believe my***

***students will understand this.***

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

***The lesson itself is about clarifying the meanings of terms that get tossed***

***around all the time. I will most likely have to spend some effort focusing***

***the discussion from time to time.***

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| Use the following table to plan your lesson using TSI.  For each phase:   * **Teacher:** Describe what you will be doing * **Student:** Describe what your students will be doing * **Assess:** Describe how you will assess your students in this phase so you can monitor their progress through the activity |

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| **INTERPRETATION** | | **INITIATION** | |
| Teacher | Provide TSI activity worksheets. | Teacher | Ask for examples of lexicons associated with common activities.  Asking if students can think of words with different meanings in science than in colloquial English. |
| Student | Answering TSI-provided Activity Questions | Student | List of terms associated with some hobby. |
| Assess | Compare answers. | Assess | Student participation and list of terms. |
| **INSTRUCTION** | | | |
| Teacher | Introduce the terms FACT, OPINION, HYPOTHESIS, and THEORY. | | |
| Student | Reading and writing definitions of words  Make Cornell notes for these terms. (Add FACT | | |
| Assess | Share and compare answers | | |
| **INVESTIGATION** | | **INVENTION** | |
| Teacher |  | Teacher |  |
| Student | Recording answers | Student | Filing out TSI-provided table |
| Assess | Comparing statements | Assess |  |

11. Briefly describe how you will guide your students through the TSI Phases of Inquiry. (You are the research director of your classroom, and thus guide or facilitate the learning in your classroom, even if an activity is very student-directed).

***Initiate discussion – entertain questions – pose questions – provide worksheet(s) with questions to further understanding***

***I am also going to use this lesson to reintroduce Cornell notes, and have my students save the definitions of our terms in that format. I plan to have them add to these notes as we introduce a lot of new vocabulary in TSI Mod 3 and Mod 4.***

12. What *overarching* TSI mode(s) will you focus on for this activity? Why?

Modes: Curiosity, Description, Authoritative knowledge, Experimentation, Product evaluation, Technology, Replication, Induction, Deduction, Transitive knowledge

***Authoritative Knowledge, Transitive Knowledge***

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.

**Initiating Discussion**

**Questioning & follow-up sharing/discussions**

**Note-taking**