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

**Module 4: Ecological Aquatic Science**

Name: Kevin Johnson

Activity: Sampling for Abundance

1. Why did you choose to do this activity?

It is a required activity.

2. What are your classroom learning goals?

To become scientifically literate individuals.

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

A basic understanding of sampling methods is an important piece of knowledge to possess in order to apply scientific skepticism to modern media in this information age.

4. What date do you plan to start this activity? April 11

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

**Standard 1: The Scientific Process: SCIENTIFIC INVESTIGATION: Discover, invent, and investigate using the skills necessary to engage in the scientific process**

6. Describe how this activity relates to at least one of the TSIA PD Themes.

Themes: Community, Metacognition, Science as a Human Endeavor, Observations and Inference, Modeling Science, Scientific Language, Connections

Modeling science: The students are modeling the behavior of scientists as they actively collect data in a simulated habitat.

**Ocean**

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

We pretended that the sampled habitat was an intertidal zone.

8. 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

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**

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

I used the power point slides and gave a brief presentation on sampling. Also they had done the M&M's lab.

10. 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 didn't foresee any. I thought it would be simple.

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

What types of questioning or approaches to discussion will you take to support student

engagement and learning? See questioning handout for suggestions (Mod 3 Binder under “TSI Pedagogy and online in Mod 3 PD section)

Focusing, Extending and Clarifying.

12. What ***TSI practices of inquiry teaching strategies*** will you focus on implementing to help your students meet your learning goals?

See TSI Practices of Inquiry teaching strategies handout for suggestions (Mod 4 Binder under “TSI Pedagogy” and online in Mod 4 PD section)

Model and require students to exhibit the demeanors of a scientist.

Purposefully use scientific language.

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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 | Remind students to consider how circumstances would be different in an actual inter-tidal zone. | Teacher | Remind them of the need to be objective. |
| Student | Be as accurate as possible in their data collection. | Student | Don't allow themselves to collect data that is not part of the point or quadrant just to make the data look prettier. |
| Assess | Look at how they are collecting data and examine the data sheets. | Assess | Monitor them collecting data. |
| **INSTRUCTION** | | | |
| Teacher | Provide a presentation on the sampling methods. | | |
| Student | Listen to the lecture/presentation and give them time to look over the data sheets. | | |
| Assess | Monitor. | | |
| **INVESTIGATION** | | **INVENTION** | |
| Teacher | Monitor. | Teacher | Monitor. |
| Student | Collect data at the habitat. | Student | Collect data at the habitat. |
| Assess | Answer questions on the worksheet. | 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).

From Instruction to Initiation, Invention, then to Investigation and finally Interpretation.

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

Experimentation, Replication, Curiosity and Frustration.

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 anticipate it will go well with no problems.