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

**Module 2: Chemical Aquatic Science**

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Activity: Phases and Modes of Scientific Practice.

1. Why did you choose to do this activity?

It was one of the 'Target Activities'. I was also very curious to see how my students would respond to such an exercise that required such introspection.

2. What are your classroom learning goals?

I would like the students to spend time living inside their minds. Mostly in school they simply do the work without ever taking the time to evaluate how they are processing the information.

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

This activity forces the students to think about their thinking. It makes them philosophers whether they like it or not.

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

1/24/13

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

**Ocean**

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

They will choose either Electrolysis or Conductivity to use to address the phases and modes of TSI. We discussed connections to the ocean in those activities, however, in this particular exercise I don't think they will spend much time thinking about the ocean. If we are really quiet we can hear the sound of waves from the room.

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.

□ 6. The ocean and humans are inextricably interconnected

□ 7. The ocean is largely unexplored

🞪 8. We are the ocean walking around lonesome for the ocean.

**Preparation**

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

I intend to blindside them brutally with this. No preparation at all. I can't wait to see how they react to being told to think about their thinking. Asking them to think upsets them, making them think makes them violent, let's see what this holds!

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.)

Are you kidding me?!?!

**Questioning and Assessment Strategies**

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

I expect to learn as much, if not more, than them. My learning strategy is to see what they will do with this.

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

I will listen to them.

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| Use the following table to plan your lesson using TSI. For each phase:* **Mode(s):** List the Mode(s) of Inquiry you will incorporate
* **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

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

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| **INTERPRETATION** | **INITIATION** |
| Mode(s) | Deduction | Mode(s) | Curiosity |
| Teacher | Let them complete the answers to the questions provided in the handouts. | Teacher | Try to get them interested in the workings of their mind. Coax them into becoming philosophers.  |
| Student | Answering questions. | Student | Listening. |
| Assess (look for) | An animated expression. | Assess (look for) | Enthusiasm. |
| **INSTRUCTION** |
| Mode(s) | Description |
| Teacher | Explaining the assignment and reviewing the phases and modes. |
| Student | Listening and trying to understand. |
| Assess (look for) | Comprehension. |
| **INVESTIGATION** | **INVENTION** |
| Mode(s) | Deduction, Transitive knowledge. | Mode(s) | Induction |
| Teacher | Watching, answering questions. | Teacher | Providing additional explanation. |
| Student | Working on the questions. | Student | Asking questions |
| Assess (look for) | Completion. | Assess (look for) | Are they focusing on the task and are they really trying? |

12. Briefly describe how you will direct your students through the Phases of Inquiry.

I am going to turn them loose on this assignment.

13. What will be the *overarching* mode(s) of this activity? Why?

Induction. They are looking for patterns in their own thought proceeses.

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.