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

**Module 2: Chemical Aquatic Science**

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Activity: Practices of Science

1. Why did you choose to do this activity?

It is a mandatory activity. However, it will be very beneficial to the students and me so that we can get very familiar with the terms. It is also important for students to learn the vocabulary to help them expand their knowledge and understanding of how ‘scientists’ learn. I also would like students to get excited about learning science.

2. What are your classroom learning goals?

Students will determine which modes(s) of inquiry are being applied as they go through the activity.

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

This activity will provide students with vocabulary to use and experience to refer to when they write reflections about any activity.

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

December 10, 2012

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

Standards 1: The Scientific Process: Scientific Investigation – Discover, invent, and investigate using the skills necessary to engage in the scientific process.

**Ocean**

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

I shall reteach ocean principles #1, 6, and 7. I shall also talk about marine biologists. The words we are going to stuy are words scientists use to learn through scientific inquiry.

7. Select the Ocean Literacy Principle(s) that you anticipate this activity will address. (check all that apply)

x□ 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

x□ 7. The ocean is largely unexplored

**Preparation**

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

I shall review the steps in the scien

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 can see my students struggling with the modes: induction, deduction, authoritative knowledge, transitive knowledge, and product evaluation. Even though they have been introduced in the language arts classes and they are expected to use the words, students will struggle with induction and deduction. I have met with the language arts teacher and had discussions on how to help students.

**Questioning and Assessment Strategies**

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

I shall use the KWL graphic organizer to see what they know about the modes. I intend to modify the introduction by asking students to walk around, read the different words, and ask them to stand by the word they are most familiar with. Then, each student will have to define or give an example of the word they are familiar with.

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

I shall use the KWL graphic organizer to check for understanding of the different modes.

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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) |  | Mode(s) | Curiosity, description, authoritative knowledge, transitive knowledge |
| Teacher |  | Teacher | I shall be reintroducing the different phases and also explaining what we are going to learn. I shall explain to students that they may have heard some of these words in their language arts classes. |
| Student |  | Student | Students will be listening and taking notes and filling a KWL. |
| Assess (look for) |  | Assess (look for) | KWL graphic organizer |
| **INSTRUCTION** | | | |
| Mode(s) | Curiosity, description, authoritative knowledge, transitive knowledge | | |
| Teacher | I shall be introducing the different modes while giving the directions for each portion of the activity. | | |
| Student | Students will be listening and writing notes and participate as instructed. | | |
| Assess (look for) | Students writing notes. | | |
| **INVESTIGATION** | | **INVENTION** | |
| Mode(s) | Curiosity, description, authoritative knowledge, transitive knowledge, experimentation, technology, replication | Mode(s) | Curiosity, description, authoritative knowledge, transitive knowledge, experimentation, technology, replication |
| Teacher | I shall providing instructions for each part of the activity. | Teacher | I shall be giving directions, and asking questions. |
| Student | Listening, writing notes, participating | Student | Participating and answering questions |
| Assess (look for) | Students participating, asking questions | Assess (look for) | Students participation and understanding by showing thumbs up (for understanding) or thumbs down (not understanding |

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

I shall review the phases before we start the activity and do a group activity to reinforce learning.

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

Overarching modes will be: curiosity, description, authoritative knowledge, and transitive knowledge. This group of students is very focused and are always asking for a challenge. They are also academically above average. Whenever we learn something new, these students ask critical thinking questions. Most of them also are able to learn new concepts quickly and share this knowledge with their peers.

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.