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

**Module 3: Biological Aquatic Science**

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Activity: Scientific Language / Hypothesis, Opinion, Theory (HOT)

1. Why did you choose to do this activity? I chose this activity because it coordinates with the study of Fact vs Opinion in Language Arts

(Transitive Knowledge)

2. What are your classroom learning goals? The goal is to make the connection that Language Arts and Science are related. The terms apply in both disciplines.

3. How does this activity tie into your classroom learning goals? This activity is a perfect tie in. We can also relate to our prior knowledge of theory study with Malama Aina….Science and Math.

4. What date do you plan to start this activity? 2/22/13

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

**Ocean**

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

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.

X 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**

8. How will you prepare your students for this activity? (For example, review of prior knowledge.) Review prior knowledge of Phases/Modes & Behaviors of Scientists also Fact vs Opinion in Language Arts.

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.) There may be some misconceptions in merging the disciplines of Science and Language Arts. We have studied Fact/Opinion already in Language Arts and it comes up again this week. Making the connection to Science may carry over some misconceptions, especially when trying to share that a hypothesis is not necessarily a Fact until tested and proven.

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

Clarifying, Focusing and Summarizing

|  |
| --- |
| 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 |

I will introduce the topics of Hypothesis, Opinion and Theory. We also will have two of these terms in our Journey’s Language Arts.

Students will work in pairs to answer the questionnaires provided by TSI.

Assess: review as a class and discuss together.

|  |  |  |  |
| --- | --- | --- | --- |
| **INTERPRETATION** | | **INITIATION** | |
| Teacher | Assess students’ interpretations | Teacher | Introduce terms |
| Student | Answering questions on the TSI questionnaire | Student | Rely on prior knowledge |
| Assess | Compare/Contrast how the terms are used in LA vs Science | Assess |  |
| **INSTRUCTION** | | | |
| Teacher | Share the slides with the class and refer to our study in Language Arts | | |
| Student |  | | |
| Assess |  | | |
| **INVESTIGATION** | | **INVENTION** | |
| Teacher |  | Teacher | I don’t think there is invention in this activity? |
| Student | Sharing information with each other re the TSI questions in class | Student |  |
| Assess |  | 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).

I will let students work in pairs to go over the questionnaire. We will then follow up in a class discussion and use the slides provided by TSI to move through the process. The slies are really great but I am not sure what will qualify as “invention” for this activity?

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

The overarching mode of this activity is Transitive Knowledge, Induction/Deduction

These modes are the focus because we use terms in Language Arts as well and will be basing our process on prior knowledge of terms thus reaching Induction/Deduction. The upcoming lesson in Language Arts is also interesting as it is about Pompeii / volcanoes which relates to our island chain and plate tectonics, ie 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.

I think the class will get this activity and enjoy working HOT. We also use this acronym in class to stand for Help Others Triumph or Help Others Think….and now Hypothesis, Opinion, Theory.