# Teaching Science as Inquiry (TSI) Lesson Plan
# Module 2: Chemical Aquatic Science

Name: Karyn Herrmann

Activity: Electrolysis – Target 2

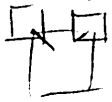
1. Why did you choose to do this activity? I am following the TSI Module 2 format as presented in the workshop. It is the logical progression for scaffolding the concepts from a broader foundation of knowledge.
2. What are your classroom learning goals? To continue to explore the unique properties of water by new vocabulary and Chemical/Physical Changes.
3. How does this activity tie into your classroom learning goals? This activity introduces chemical terms - elements, compounds, bonding, decomposition, electrolysis, electrodes and ties to middle school goals.
4. What date do you plan to start this activity? 3rd week
5. *If applicable:* HIDOE standards this lesson will address (N/A) private school
   Nature of Science 6.2.1

**Ocean**

6. Describe how you will connect this activity to the ocean: We will explore the differences of running electrolysis with baking soda and seeing the gases separate. How does salt water conduct electricity?
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

(2)

**Preparation**

8. How will you prepare your students for this activity? (For example, review of prior knowledge.) We will make $H_2O$ models with marshmallows.  and toothpicks. One large one dipped in strawberry-vanilla flavoring with 2 little ones in blue-vanilla. We reviewed Brainpops bonding, and →

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.) The students understanding of how the atoms come together and how they are separated is complex. We will not do the equations or try to go into too much detail. (Simple explanations of anode + cathode are OK.)

**Questioning and Assessment Strategies**

10. What *questioning strategies* will you use to help your students meet your learning goals? I will use the Activity Questions from the Module 2 prompts and allow them to discuss amongst their lab partners while observing the electrolysis lab

11. What *assessment strategies* will you use to help your students meet your learning goals and monitor their progress? I will use the TSI material the way we did it in the workshop in order to be consistent with the methodology and content. Also, Journal writing peer + Sharing

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

"The Periodic Table" card game for review. We watched the Youtube clip about electrons & the used the TSI website for the older students. The intro helps prepare them for the lab.

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

We will try to incorporate more metacognition and awareness about the "thinking" process We will discuss if it is an action, or communication or thought. Then we will trace the steps and place arrows to indicate the phase.

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

It will probably be curiosity & experimentation because those are the best for this activity

**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 plan to follow the TSI Activity the way it was presented at the workshop.