Pedagogy 3: Ocean Lesson Plan
Ocean Literacy: The Essential Principles of Ocean Science K-12

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My current job is Science Coordinator in a school district in Overland Park, Kansas. I am responsible for science curriculum K-12. I looked through our current district and state curriculum and did not see ocean literacy addressed. There may be some indicators that could focus on Ocean Literacy but we tent to discuss salinity, ocean currents, or any other ocean related topics in a superficial way… these are never our big ideas. I decided to write a professional development plan instead of a lesson plan for this assignment.

This professional development plan could be used K-12. The topic would be Ocean Literacy: Essential Principles and Fundamental Concepts. Most of the content addressed could be embedded in our current Earth Space Science standards but I would challenge my teachers to think outside of that box. I would ask them to look for physical and life science connections and to look for places to learn about Ocean Literacy through STEM. I would use the Essential Principles and Fundamental Concepts as the 'standards' to be learned. This would happen during one professional development session (three hours) for this activity.

I would download the brochure from the following link and have this document available for all teachers to use. Ocean Literacy is defined and this document (brochure) identifies the 7 Principles of Ocean Literacy and then provides detailed information about each principle. I would also have our current district and state science document as well as the CCSS for Literacy in Science available.

http://www.coexploration.org/oceanliteracy/documents/OceanLitChart.pdf

The objectives for this professional development are:

- Teachers will become familiar with the Principles of Ocean Literacy
- Teachers will look for and identify any connections between our current curriculum to the Ocean Literacy Principles
- Teachers will create lesson plans using the Principles of Ocean Literacy

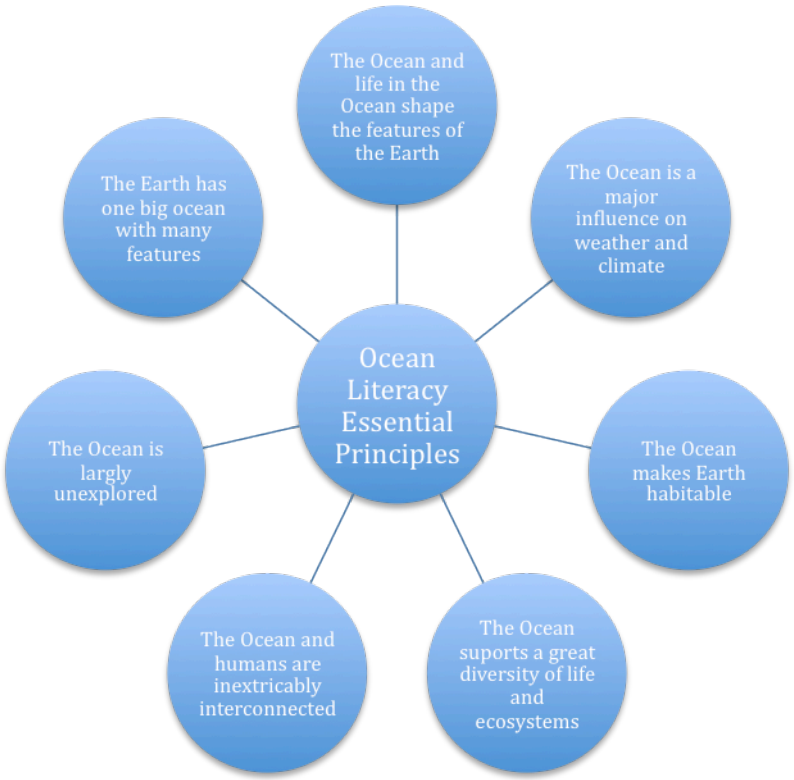
I will begin by asking some general questions about Ocean Literacy such as:

- How many oceans are there?
- How much of our Earth is covered by oceans?
- What percentage of Earth's water is the ocean?
- How much of the ocean has been explored?

After these and other questions I will share some facts about the oceans such as:

- Many earth materials and geochemical cycles originate in the ocean.
- The ocean dominates the Earth's carbon cycle.
- Most of the oxygen in the atmosphere originally came from the activities photosynthetic organisms in the ocean.
- The diversity of major groups of organisms is much greater in the ocean than on land.

I will present the following graphic to my teachers as well as the brochure on Ocean Literacy. I will divide teachers into 7 groups (each group will be assigned one Ocean Literacy Principle). Each teacher group will read and become familiar with their principle then engage in a discussion about the principle and fundamental concepts and decide if they already teach any of those concepts. Teachers will share ideas for incorporating the principle and concepts into their grade level curriculum or course. Finally each group will share with the whole group. The goal is to learn about Ocean Literacy and to think about how, when, and where these concepts can be integrated into our existing curriculum. A sub goal is that even if there is not some obvious areas for inclusion teachers will know about the principles and concepts and make those informal connections when possible.



The assessment of this work will be informal. I cannot change our curriculum at this point but can support teachers in making those changes that make sense and still apply to our standards and indicators. I will take notes from each group as they present and

then create a document showing the connections each group made. This document will sit beside our curriculum document. I will also provide the following resource for teachers so they can take these principles and concepts and find lesson plans for teaching them within their content.

file:///Users/ccpurdon/Desktop/Ocean%20Science%20Home%20-%20Teach%20Ocean%20Science.html