

INTRODUCTION

BY CRAIG STRANG AND LYNN UYEN TRAN

This NMEA Special Report on Ocean Literacy brings together seven years of dedication and collaboration among hundreds of individuals and institutions committed to promoting an ocean literate populace. In particular, this Special Report celebrates the official launch of the *Ocean Literacy Scope and Sequence for Grades K-12*, which can also be found in its entirety on the new Ocean Literacy website (www.oceanliteracy.net). It is our hope that the publication of the Scope and Sequence will propel the Ocean Literacy Campaign from the somewhat abstract world of “essential principles and fundamental concepts” directly into standards, curriculum, and classrooms nationwide. In no way does this mean the work of the Campaign is done. Instead, this Special Report serves as a reflective tool for our community to take a look back at the progress we have made together, and hopefully to offer some inspiration for the new wave of Ocean Literacy activism that lies ahead.

To begin, Sarah Schoedinger, Lynn Uyen Tran, and Lynn Whitley provide a historical overview of the making of what we are calling “The Ocean Literacy Framework,” comprised of *Ocean Literacy: The Essential Principles of Ocean Sciences K-12* and the complementary *Ocean Literacy Scope and Sequence for Grades K-12*. The story they tell demonstrates how a diverse community of agencies, institutions, and committed individuals put agendas and self-interest aside to do ground-breaking work together to define and promote Ocean Literacy. Up until now, many people and organizations have contributed their time, resources, and intellect toward these documents without much credit; in the Honor Roll, we acknowledge those who have contributed to the process. We publish the Honor Roll with some trepidation since we know it is incomplete. If you know of missing names, including your own, please offer your additions at the Ocean Literacy website.

Following the Honor Roll is a compilation of several notable projects, programs, and publications that have resulted from and enacted the *Ocean Literacy Framework*. Like the Honor Roll, this compilation is not complete. Rather it exemplifies how the Ocean Literacy Campaign has been inspiring and useful. It is a tribute to the creative work and impact of marine educators around the world, most of them NMEA members, who are making tools for teachers, scientists, and informal educators. We hope many of you will add your own vignettes and accomplishments via the Ocean Literacy website.

As we continue to reflect on what we have done as a community, we consider the relationships that have evolved. Catherine Halversen and Lynn Uyen Tran take a critical look at these relationships, and propose that, perhaps, as ocean scientists and educators in this community work together on various

projects within the Ocean Literacy Campaign, they are creating new rules of engagement. They offer examples to show that a new “community of practice” may be emerging from these collaborative partnerships that could redefine the ways in which scientists and educators serve society.

Promoting Ocean Literacy requires that we know how people understand the ocean. Lynn Uyen Tran, Diana Payne, and Lynn Whitley provide an abridged version of two recent literature reviews on ocean sciences education in their discussion of the limited availability of educational research on students’ understanding of the ocean. They argue for the value and significance of learning research in ocean sciences, identify what is missing, and then offer insights from existing research that have significant implications for teaching.

The *Ocean Literacy Scope and Sequence for Grades K-12* is presented in this Special Report as a series of 28 conceptual flow diagrams that represent and organize the ideas of the seven Principles into four grade bands—K-2, 3-5, 6-8, and 9-12. This document provides guidance to educators, standards committees, curriculum developers, and scientists conducting outreach. This section of the Report begins with an explanation from Craig Strang, Kathy DiRanna, and Jo Topps of the theoretical underpinnings of conceptual flow diagrams, and how they are developed and used. Next, the complete 28 flows are presented, followed by four supporting resources. First, “Ideas from Teachers” is a set of possible ways the Ocean Literacy Framework can be used in classrooms that are generated by some of the teachers who have been part of the Campaign. Second, the “Ocean Literacy Alignment Matrix” shows the extent to which each of the flow aligns with the Principles and Concepts, and is organized according to the seven Essential Principles and 44 Fundamental Concepts. Third, the Ocean Literacy “Index of Topics” shows how the major ideas that are included in each of the flow builds from K-12 for each principle. Fourth, we offer an initial attempt to demonstrate how the Scope and Sequence aligns with state science standards. In this example, we align the flow for grades 3-8 with the New York State Science Standards. Future development will focus on aligning the Scope and Sequence to state and national science standards, and making this resource increasingly versatile for a variety of purposes and audiences.

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