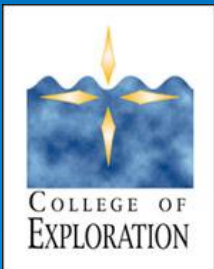


Ocean Literacy: A Short History

by Sarah Schoedinger

New England Ocean Science Education
Collaborative Workshop



The Challenge

- Ocean topics were mostly ignored in US K-12 education
- There was no consensus on what was important to include in the classroom
- Ocean topics were left out of most national education standards
- The American public was largely ignorant of the importance of the ocean in their lives

The Response

- National Geographic Society, National Marine Educators Association, NOAA, COSEEs, and others agreed to work together
- A mechanism was developed to build consensus
- An online conference was sponsored to solicit input
- Face-to-face meeting + interactive feedback online
- Agreement was reached in several key areas

The Result

- Ocean literacy was defined
- Essential principles were identified and supported by detailed fundamental principles
- These principles and concepts were then aligned to the National Science Education Standards

An archive of this conference can be seen at
-- www.oceanliteracy.net

The Definition

Ocean literacy is an understanding of the ocean's influence on you and your influence on the ocean.

An ocean-literate person:

- Understands the Essential Principles and Fundamental Concepts;
- Can communicate about the ocean in a meaningful way; and
- Is able to make informed and responsible decisions regarding the ocean and its resources

“Ocean literacy is an understanding of the ocean’s influence on you and your influence on the ocean.”

Seven Essential Principles:

1. The Earth has one big ocean with many features.
2. The ocean and life in the ocean shape the features of Earth.
3. The ocean is a major influence on weather and climate.
4. The ocean makes the 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.

NSES/Ocean Literacy Matrix

	Earth: 1 big ocean, many features: 1.a.
Earth & Space: 6. Properties of Earth Materials	X
Earth & Space: 9. Structure of Earth System	X

An X in a Box Denotes:

- A dead-on match to one or more NSES Fundamental Concepts;
- An important ocean example or illustration of the NSES Fundamental Concepts;
- Would be a direct match if only the NSES Fundamental Concepts said...

Essential Principle #1: Earth has 1 big ocean, with many features.

- 1.a. The ocean is the dominant physical feature on Earth covering 70% of planet's surface. There is one ocean with many basins, such as...

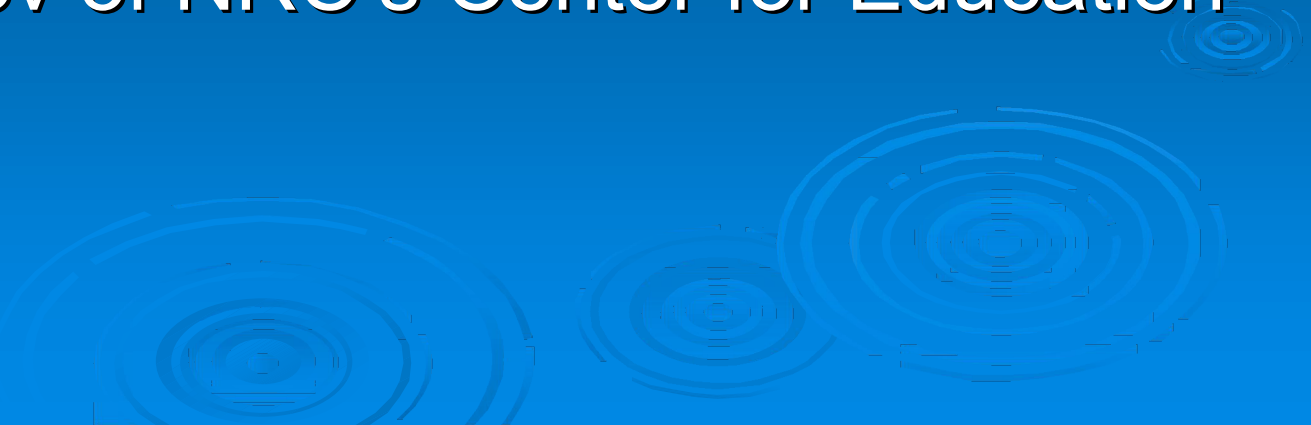
➤ NSES Properties of Earth Materials:

- Earth materials are solid rocks, soils, water, gases...
- Soils have properties...
- Fossils

Essential Principle #1: Earth has 1 big ocean, with many features.

- 1.a. The ocean is the dominant physical feature on Earth covering 70% of planet's surface. There is one ocean with many basins, such as...
- NSES Structure Earth System:
 - Earth has layers...
 - Plates...
 - **Landforms (but not basins)**
 - Rock cycle...
 - Soil...
 - **H2O covers majority of earth/circulates in H2O cycle...**
 - Water is solvent...
 - Atmosphere...
 - Clouds...
 - Weather...
 - Organisms in earth system..

Next steps...some early feedback

- Remaining NMEA Ad Hoc Committee's recommendations
 - COSEE National Advisory Board recommendations
 - Jay Labov of NRC's Center for Education
- 
- A decorative graphic consisting of several sets of concentric circles in a lighter shade of blue, located in the bottom right corner of the slide.

NMEA Ad Hoc Committee's Recommendations, 2003

- Develop key concepts.
- Infuse key concepts into any revision of NSES and into state standards and assessments.
- Develop scope and sequence.
- ID high-quality materials and gaps.
- Aggressively pursue inclusion of concepts in state standards.
- Infuse concepts into new textbooks and teaching materials.

COSEE National Advisors' Recommendations

- Be aggressive about sharing the Ocean Literacy definition, essential principles, fundamental concepts and alignment matrix with developers of standardized assessments, teaching materials—including textbooks—and folks who influence policy decisions at state level.

Jay Labov, NRC Center for Education

- Reach out to science teachers and educators from other disciplines.
- Work with Earth Sciences community.
- Sell OS as an integrating context
- Focus on providing examples for existing standards.
- Focus on state level – provide the tools to help
- Develop a document that will make inland states converts to our cause.
- Be strategic about where we try to insert OS into assessment questions.

What's next for Ocean Literacy?

- Advertise, advertise, advertise
- Incorporation into national and state standards, curricula, and assessments
- Tools for educators for easy insertion in the classroom
- Outreach to the free-choice learning community

What do you think?