

Executive Summary

Four areas of development are converging together in society today: technology, education, science, and public policy. Science and education policy makers are developing innovative approaches to enhance the educational system. This author's view is that implementation of science learning strategies should take an integrated approach combining field studies with comfortable access to the knowledge base, while at the same time embracing technological innovation in the form of collaboration formed around the context of geographic spatial learning. Furthermore, the local ecosystem is an important starting point for building student and citizen knowledge as part of an open system of community cooperation to for the appropriate utilization of regional resources.

Seal web describes the framework for a College Now course that examines an often overlooked aspect of the local ecosystem, harbor seals. In doing so, it brightens the classroom with the exploration of a canine species that lives nearby in its natural habitat. Common themes of ecosystem science are presented in terms of the human perspective, as well as from that of the curriculum mascot, thereby bringing a new emotional component to the classroom setting. Similarly, by bringing students into the field to examine textbook topics and take science measurements, the abstract is anchored with the concrete. At the same time, a simplified technological model is compared with the complexity of the real world.

The goal of the Interactive Technology and Pedagogy Certificate program is to provide students with the skills to design and implement information technology tools for use in the classroom. Seal web is designed as a course of instruction based upon inquiry-based collaborative practices with the goal of promoting ocean literacy through the integration of a geographic topic (Seals) in a specific region (NYC). Since personal access to the highly interactive tool known as a Geographic Information System (GIS) is most easily achieved by using free and online versions, labs using Google Earth were created as part of ongoing course work in the high school science curriculum. In addition, since students needed additional interactive technological alternatives to increase their capacity to perform, online study tools were designed and implemented. Finally, since multi-step processes might benefit from step-by-step visual demonstration, a slideshow, "Finding the Epicenter of an Earthquake", was created to give students an alternative to classroom lecture on the topic.

The overall Seal Web design is to have the main topics of documentation on the left hand side of the web page, with sub topics, where appropriate, on the right hand side. As one moves between topics, the left-hand side provides navigational consistency, while the right-hand side highlights the subtopics or tangential materials.

Since Seal Web is publicly available, it is necessary to withhold information pertaining to high school classroom specifics, so the reflective analysis is not included herein.