

Teach Science in an Ocean Context

Track LIVE Marine Animals in your Classroom!

The goal of NOAA-sponsored Signals of Spring -- "ACES" [Animals in Curriculum-based Ecosystem Studies] is to improve environmental and ocean literacy and to capture the interest of your middle and high school students, **grade 7 and higher**. Students will learn science within the context of the ocean, with high-quality curriculum-based activities, as they use NOAA remote sensing data to develop authentic inquiry skills.

ACES is an important, necessary expansion of Signals of Spring, an award-winning, classroom-based curriculum-program in its 10th year, where in addition to learning formal science concepts, students use Earth imagery to explain the movement of animals that are tracked by satellites. The ACES curriculum also introduces the environmental issues the animals face, and the environments of NOAA's National Marine Sanctuaries (NMS).

Additional ACES 1-week modules each focus on a particular marine animal, with specific curricular activities around the animal and issues facing them. Students study aspects of the animal's life history, conservation status, food web, and connections to ocean processes and remote sensing data. Modules include investigations of sea turtles, polar bears, albatrosses, and seals.

What do I get?

- ✓ Standards-based, comprehensive Signals of Spring ocean science and ACES investigations curriculum with assessments, rubrics, concept maps
- ✓ A way to incorporate technology as a tool to do science

Sponsored by:



National Oceanic & Atmospheric Administration
(NOAA Award: NA06SEC4690006)



What will students learn?

Selected topic areas in the curriculum include:

Life Science:

Cell Structures • Photosynthesis • Needs of Living Things • Food Webs • Biodiversity & Classification • Human Impacts on Environments • Conservation and Stewardship

Earth Science:

Water on Earth • Seasons • Landforms/Bathymetry • Density • Ocean Currents • Tides • Isolines • Air-Sea Interaction • Watersheds • Climate Change

Science Process Skills:

Forming Research Questions & Hypotheses • Collecting & Organizing Data • Analyzing & Interpreting Data & Imagery • How to Research • Using Tools & Models • Measurement

Current ACES collaborators include:

- U.S. Satellite Laboratory, Inc.
- Oikonos - Ecosystem Knowledge
- Cordell Bank National Marine Sanctuary
- Stanford University's School of Education
- Teachers College, Columbia University
- WhaleNet
- NOAA's National Marine Sanctuary Program

How do I get involved?

1. Visit www.signalsofspring.net/ACES for the schedule.
2. Complete the online registration, including the personal statement.
3. FAX the Principal Sign-Off Form to: (888) 365-3414

Teachers receive 3-graduate credits, continuing ed hours or a \$300.00 stipend with implementation.

Preference is given to teacher teams of 2-3.

Questions, email: mmarrero@us-satellite.net