



NOAA Ship *Okeanos Explorer* Suggested Pre- and Post- Visit Activities

To ensure the highest quality educational experience from your tour onboard the NOAA Ship *Okeanos Explorer*, we encourage you to explore some of the pre-and post- visit activities listed below.

Pre-Visit Activities

Why Do We Explore? Keynote Address

Share this 10-minute video with your students during which three premier ocean scientists share their personal and professional perspectives on why we explore our ocean.

http://oceanexplorer.noaa.gov/okeanos/explorations/10index/background/edu/media/keynote_wdwe_video.html

***Okeanos Explorer* – Meet the Ship**

In preparation for your tour please review the information provided online to introduce your students to the NOAA Ship *Okeanos Explorer*.

<http://oceanexplorer.noaa.gov/okeanos/about.html>

Ocean Explorer Lesson: Earth's Ocean is 95% Unexplored – So What?

http://oceanexplorer.noaa.gov/okeanos/explorations/10index/background/edu/media/so_what.pdf

Grade Level: 5-6, adaptable to older students

Focus: Importance of deep ocean exploration (Life Science/Earth Science)

Students will describe at least three different deep ocean ecosystems, explain the reasons for exploring Earth's deep ocean, and explain how deep ocean ecosystems may benefit humans.

Exploring LIVE with the NOAA Ship *Okeanos Explorer* (pdf, 169 kb)

<http://oceanexplorer.noaa.gov/okeanos/edu/exploringlive2013lesson.pdf>

Grades 5-12

Focus: How students can become active ocean explorers while viewing live video feeds during *Okeanos Explorer* expeditions (Physical Science/Earth Science)

Students learn how to access the Ocean Explorer website and access a live video feed of an *Okeanos Explorer* expedition; explore along with the ocean science community via live feeds during *Okeanos Explorer* expeditions; and learn how to track an expedition using the *Okeanos Atlas*.

***Okeanos Explorer* Maiden Voyage, Indonesia**

Learn why the depths of the Indonesian Sangihe-Talaud Region are considered one of the most biologically diverse areas of the world's ocean. The expedition represents a number of firsts including: the maiden voyage of NOAA Ship *Okeanos Explorer*; the first joint Indonesia-USA ocean exploration expedition; and the first joint international mission with two ships sending live video to scientists in Exploration Command Centers ashore.

Indonesia-USA Deep-Sea Exploration of the Sangihe-Talaud Region (INDEX-SATAL 2010)

<http://oceanexplorer.noaa.gov/okeanos/explorations/10index/background/edu/edu.html>

OceanAGE Careers

From underwater pilots to ocean explorers, these marine mentors provide students with first-hand knowledge of exciting careers through video interviews and career profiles. An *Explorers in Training* section provides first-hand information on the experiences of young explorers.

<http://oceanexplorer.noaa.gov/edu/oceanage/welcome.html>



Post-visit Activities

NOAA Ship *Okeanos Explorer* Education Materials Collection

This Collection includes standards-based lessons for grades 5-12 and many hands-on activities.

Volume 1: Why Do We Explore? guides student investigations into modern reasons for ocean exploration.

Volume 2: How Do We Explore? guides additional investigations into exploration strategies and technologies used aboard the *Okeanos Explorer*.

<http://oceanexplorer.noaa.gov/okeanos/edu/welcome.html>

***Okeanos Explorer* Expeditions and Expedition Education Modules**

These modules are designed to share the excitement of daily at-sea discoveries and the science behind NOAA's major ocean exploration expeditions. Each module contains an Expedition Purpose, Lessons, Multimedia Discovery Missions, OceanAGE Career Connections, and Other Resources and Links. Content essays, mission logs, and daily updates are also provided on the main expedition page to bring the day to day experience of ocean exploration alive and into the classroom.

Northeast U.S. Canyons Expedition 2013

<http://oceanexplorer.noaa.gov/okeanos/explorations/ex1304/background/edu/edu.html>

Gulf of Mexico Expedition 2012

<http://oceanexplorer.noaa.gov/okeanos/explorations/ex1202/background/edu/edu.html>

Mid-Cayman Rise 2011 <http://oceanexplorer.noaa.gov/okeanos/explorations/ex1104/background/edu/edu.html>

Galapagos Rift 2011 <http://oceanexplorer.noaa.gov/okeanos/explorations/ex1103/background/edu/edu.html>

Indonesia-USA Deep-Sea Exploration of the Sangihe-Talaud Region (INDEX-SATAL 2010)

<http://oceanexplorer.noaa.gov/okeanos/explorations/10index/background/edu/edu.html>

NOAA *Okeanos Explorer* Multimedia

View live feeds during active expedition and a video playlist and photo logs of past expeditions to the Northeast U.S., Atlantic Canyons, Gulf of Mexico, Mid-Cayman Rise, Galapagos Rift, Indonesia and more.

<http://oceanexplorer.noaa.gov/okeanos/multimedia.html>

Exploratorium

In these 2010 live webcasts, staff at the Exploratorium, San Francisco's most prominent science museum, marine scientists at the *Okeanos Explorer*'s Exploration Command Center in Seattle, Washington, and explorers at sea in the control room of the ship discuss the Indonesia-USA mission discoveries and view video of some of the amazing animals they encountered. Look over the shoulders of ocean explorers as they map and send their ROV into the little-known and unknown regions of the deep sea.

<http://www.exploratorium.edu/tv/index.php?project=94&program=1117>

Ocean Explorer Lesson: The *Okeanos Explorer* Atlas (Galapagos Rift Expedition 2011)

http://oceanexplorer.noaa.gov/okeanos/explorations/ex1103/background/edu/media/ex1103_exatlas.pdf

Grade Level: 5-6, adaptable to older students

Focus: Time, speed, distance, and velocity (Physical Science)

Students define velocity, and explain why this is a vector quantity; use the *Okeanos* Atlas to obtain information about position and movement of NOAA Ship *Okeanos Explorer*; and calculate velocity from information about geographic position at two different times. Use this lesson to guide your students in following along with the ship during expeditions.

For information on onsite and online teacher professional development opportunities visit: <http://oceanexplorer.noaa.gov/edu/welcome.html#develop>