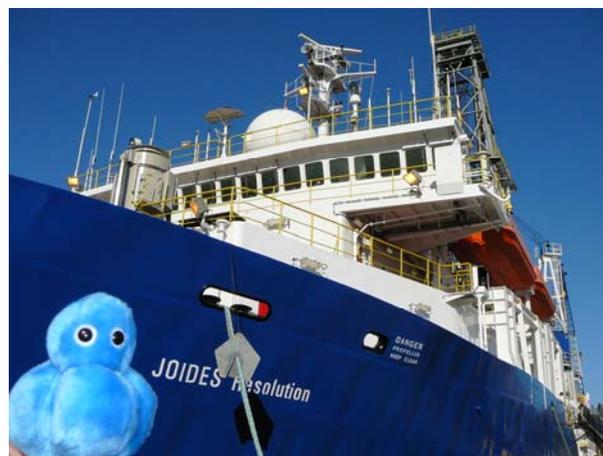




Theme 1: Meet a Marine Scientist & Learn How Science Works

Overview

In this theme, students will learn about the process of science through introduction to a marine scientist that studies microbes living at the bottom of the ocean. After reading or watching a video about this scientist, and using online resources about other scientists, students will apply this knowledge through a poster activity called Discovering Life Below the Seafloor.



The first theme of the Adopt A Microbe curriculum package opens by introducing the students to the idea of exploring for life at the bottom of the ocean through the lens of a marine scientist that is involved in this kind of research. First, the students will read the main text about one marine scientist, then they will watch a short video about other marine scientists. They will also examine the website for the Center for Dark Energy Biosphere Investigations to learn that microbial scientists are found all over the globe. Finally, the students will learn more about the process of science by working through the How Science Works poster activity. Throughout, the students will write down their thoughts and observations on the Student Pages.

Learning Objectives

Students will be able to:

- Explain what a marine scientist is and does
- Explain the process of science
- Explain what a hypothesis is, and how it is tested

Science Standards:

- Next Generation Science Standards
 - Science & Engineering Practices - Planning & Carrying Out Investigations
- National Science Education Standards
 - Science in Personal and Social Perspectives
 - History and Nature of Science
 - Life Science – Diversity and Adaptation of Organisms
 - Earth Science – Structure of the Earth System
- Ocean Literacy Principles
 - the ocean supports a great diversity of life and ecosystems
 - the ocean is largely unexplored



- Earth Science Literacy – Big Ideas
 - Earth scientists use repeatable observations
 - Earth is the water planet
 - life evolves on a dynamic Earth

Target Ages

Grades 6-8

Time

Activity A: Meet a Scientist - 30 minutes

Activity B: Discovering Life Below the Seafloor - 90 minutes

Materials

- **Meet a Marine Scientist & Learn How Science Works Student Page**
- *Activity A: Meet a Scientist*
 - Access to "What Is It Like to Be A Marine Scientist" Youtube video: http://youtu.be/QS_d55k-m5l
 - Access to website for the Center for Dark Energy Biosphere Investigations (C-DEBI) to see the international community of scientists looking for life below the seafloor:
 - <http://www.darkenergybiosphere.org/about/community.html>
- *Activity B: How Science Works*
 - Discovering Life Below the Seafloor (<http://joidesresolution.org/node/3129>)
 - [Teacher Directions](#)
 - [Reading Discovering Life Below the Sea Floor](#)
 - [Simple How Science Works Flow Chart](#)
 - [Detailed How Science Works Flow Chart](#)
 - Supplemental resources:
 - [How Science Works – Discovering Life Below the Sea Floor Poster](#) contact <mailto:deepearthacademy@oceanleadership.org> or download your own at www.joidesresolution.org/node/3282
 - Sticky notes or scraps of paper for recording ideas

Background for the Educator: See Student Page

Directions

Activity A: Meet A Marine Scientist

1. Provide the students with the *Student Pages*
2. Ask the students to read the background information and fill out Question 1.
3. Have students watch "What is it like to be a marine scientist?" and visit the C-DEBI website community page to see the international distribution of scientists involved in studying life in at the bottom of the ocean.
4. Have students finish answering the questions #2-4.

Activity B: How Science Works

1. Hand out the *How Science Works* poster to the students and have them complete *Discovering Life Below the Seafloor* activity
2. Ask students to finish answering questions 5-6 on the *Reflection Page*.
3. Discuss responses with the students.

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