Jean-Michel Cousteau OCEAN ADVENTURES

PBS

Ocean Careers Investigation

In this lesson, groups of students will gather information about the various careers of the members of the *Ocean Adventures* expedition team as well as learn about the strengths of having a team of diverse individuals working on a task.

SUBJECTS
Science, career studies

GRADE LEVEL
Grades 6 through 10

TIME
Two to three class periods

OBJECTIVES
Students will be able to
- understand the importance of working in diverse teams.
- read an interview with an *Ocean Adventures* team member and record particular aspects of the team member's career.
- creatively present an *Ocean Adventures* team member's career to the class.

MATERIALS
(note: scroll down for handouts)
- Ocean Careers Organizer student handout
- Access to the Internet (optional)

WEB LINKS
- Ocean Adventures Team Information, found at pbs.org/oceanadventures/episodes/kure

Using state-of-the-art technology and accompanied by marine scientists and ecologists, Jean-Michel Cousteau and his acclaimed diving teams explore a thrilling array of natural phenomena, investigate little-known territories and ecosystems hundreds of feet beneath the ocean's surface, and come face to face with the friendly and ferocious inhabitants of the deep in each episode of ***Jean-Michel Cousteau: Ocean Adventures.***

"We know more about the dead seas of Mars than our own ocean," says Jean-Michel, exemplifying the importance of ocean study. But no one can investigate this great frontier on his or her own; it takes a talented group of experts to support expeditions such as those Jean-Michel has embarked upon.

PROCEDURE

1. **Team Discussion:** Engage students in a discussion about the importance of having a diverse team when working to accomplish a task. There are many examples to draw on, including: sports teams -- to win games, a team needs to have different players with different areas of expertise; schools -- keeping a school running smoothly requires many different people in many different positions; musical groups -- to produce a rich sound, a musical group needs to have different musicians playing different instruments.

2. **Ocean Discussion:** Talk with students about the importance of studying the ocean. You can discuss that many resources come from the ocean, that many species are still being discovered in the ocean, that the ocean covers 70 percent of the earth, that the ocean is largely unexplored and so on.

3. **Ocean Careers Brainstorm:** Help students brainstorm all the jobs they can think of that are associated with the ocean and with ocean research and write them on the board. Emphasize the various types of jobs that might make up a successful ocean expedition team. Categories include the various research jobs, the various technical jobs and so on.

STANDARDS
National Science Education Standards
http://www.nap.edu/catalog/4962.html

History and Nature of Science Content Standard G: Science As a Human Endeavor
- Grades 5-8: Women and men of various social and ethnic backgrounds engage in the activities of science; science requires different abilities.
- Grades 9-12: Individuals and teams have contributed and will continue to contribute to the scientific enterprise; scientists have ethical traditions.

4. **Group Formation:** Divide the class into groups of three to five students and assign each group one of the following *Ocean Adventures* team members to research: Don Santee, expedition leader; Paul Atkins, director of photography; Blair Mott, chief diver; Holly Lohuis, education associate; Matt Ferraro, marine operations; Tove Petterson, marine operations; Dr. Elizabeth Flint, supervisory wildlife biologist and seabird coordinator; Dr. Jim Maragos, coral reef biologist, U.S. Fish and Wildlife Service, Refuges Division.

5. **Information Gathering:** Have students read the biography and interview of their assigned team member by clicking on the team member's picture on the Ocean Adventures Team page. The members of each group will record on the Ocean Careers Organizer the information they find.

6. **Presentations:** Each group will present information about its assigned *Ocean Adventures* team member to the class. Presentations can take many forms. Encourage students to be creative -- suggest that they perform mock interviews with their team member; act out a day in the life of their team member; or perform a short skit of a news story about their team member.

7. **Reflection:** After all groups have presented their information about the *Ocean Adventures* team members, assign a short reflective writing assignment for each student to do. Ask them to address these questions: "How are the *Ocean Adventures* team members a good example of a diverse team?" "Why is it important to have all of these different skills on an ocean expedition?" "Is this a job you think you would like?" "Were you surprised by anything you learned about any of the careers?" "What questions would you like to ask the expedition team?"

TEACHER NOTES

- Depending on the number of computers available, you may want to print team member bios and distribute them to groups or set up a schedule for using the computers, such as having students work on alternate days.
- When students are working in groups, it may be advantageous for each group member to collect different information for the Ocean Careers Organizer, then share it with the rest of the group.

Ocean Literacy: Essential Principles and Fundamental Concepts
http://coexploration.org/oceanliteracy/

Essential Principle #7:
The ocean is largely unexplored.

a. The ocean is the last and largest unexplored place on Earth –– less than 5 percent of it has been explored. This is the great frontier for the next generation of explorers and researchers, where they will find tremendous opportunities for inquiry and investigation.
b. Understanding the ocean is more than a matter of curiosity. Exploration, inquiry and study are required to better understand ocean systems and processes.
d. New technologies, sensors and tools are expanding our ability to explore the ocean. Ocean scientists are relying more and more on satellites, drifters, buoys, subsea observatories and unmanned submersibles.
f. Ocean exploration is truly interdisciplinary. It requires new ways of thinking and close collaboration among biologists, chemists, climatologists, computer programmers, engineers, geologists, meteorologists and physicists.

EXTENSIONS

- Invite a guest speaker who works in an ocean career to visit your class.
- Have students investigate an ocean career of their choice and record information on a blank Ocean Careers Organizer; students can present their career at a career symposium. They can create small displays and set up booths, then they can invite students from other classes to the symposium to learn about ocean careers.
- Introduce students to additional science and nature careers through biographies such as *Girl Who Looked Under Rocks: The Lives of Six Pioneering Naturalists,* by Jeannine Atkins.

FURTHER REFERENCES

Additional educator resources for ***Jean-Michel Cousteau: Ocean Adventures*** can be found at **pbs.org/oceanadventures.**

Also try:

- www.oceancareers.com - Investigate a wide variety of careers alphabetically, by category or by taking a simple survey.
- www.marinecareers.net - Read interviews of more than 50 people who are working in marine career fields.
- www.marine-ed.org/bridge - Click on Guiding Students, then on Careers to find additional Web sites with information on marine careers.

CREDITS

Jean-Michel Cousteau: Ocean Adventures is produced by KQED Public Broadcasting and the Ocean Futures Society.

The exclusive corporate sponsor is The Dow Chemical Company.

Additional major support comes from: the William K. Bowes Jr. Foundation, Ann Bowers and The Robert Noyce Trust, the William and Gretchen Kimball Fund, the Harold K.L. Castle Foundation, and the National Marine Sanctuary Foundation.

Ocean Careers Organizer