

EXPLORING CAREERS IN THE MARINE SCIENCES

LEADERSHIP DEVELOPMENT

Designed For Students:
 Grades 7th-12th
 Ages 13-18

Program Length:
 3 hours

Park:
 Epcot®
 (Morning) Meet at the flagpole outside the Main Entrance
 (Afternoon) Meet outside The Seas with Nemo & Friends

Physical Science (12BPS)

Chemical Reactions

12BPS3.1 Chemical reactions occur all around us, for example in health care, cooking, cosmetics, and automobiles. Complex chemical reactions involving carbon-based molecules take place constantly in every cell in our bodies.

Life Science (12CLS)

The Interdependence of Organisms

12CLS4.5 Human beings live within the world's ecosystems. Increasingly, humans modify ecosystems as a result of population growth, technology, and consumption. Human destruction of habitats through direct harvesting, pollution, atmospheric changes, and other factors is threatening current global stability, and if not addressed, ecosystems will be irreversibly affected. Matter, energy, and organization in living systems

12CLS5.1 All matter tends toward more disorganized states. Living systems require a continuous input of energy to maintain their chemical and physical organizations. With death, and the cessation of energy input, living systems rapidly disintegrate.

12CLS5.4 The complexity and organization of organisms accommodates the need for obtaining, transforming, transporting, releasing, and eliminating the matter and energy used to sustain the organism. The behavior of organisms

12CLS6.2 Organisms have behavioral responses to internal changes and to external stimuli. Responses to external stimuli can result from interactions with the organism's own species and others, as well as environmental changes; these responses either can be innate or learned. The broad patterns of behavior exhibited by animals have evolved to ensure reproductive success. Animals often live in unpredictable environments, and so their behavior must be flexible enough to deal with uncertainty and change. Plants also respond to stimuli.

12CLS6.4 Behavioral biology has implications for humans, as it provides links to psychology, sociology, and anthropology

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Science and Technology (12EST)

Abilities of technological design

12EST1.1 Identify a problem or design an opportunity. Students should be able to identify new problems or needs and to change and improve current technological designs.

12EST1.2 Propose designs and choose between alternative solutions. Students should demonstrate thoughtful planning for a piece of technology or technique. Students should be introduced to the roles of models and simulations in these processes.

12EST1.5 Communicate the problem, process, and solution. Students should present their results to students, teachers, and others in a variety of ways, such as orally, in writing, and in other forms - including models, diagrams, and demonstrations. Understandings about science and technology

12EST2.1 Scientists in different disciplines ask different questions, use different methods of investigation, and accept different types of evidence to support their explanations. Many scientific investigations require the contributions of individuals from different disciplines, including engineering. New disciplines of science, such as geophysics and biochemistry often emerge at the interface of two older disciplines.

12EST2.2 Science often advances with the introduction of new technologies. Solving technological problems often results in new scientific knowledge. New technologies often extend the current levels of scientific understanding and introduce new areas of research.

12EST2.3 Creativity, imagination, and a good knowledge base are all required in the work of science and engineering.

12EST2.4 Science and technology are pursued for different purposes. Scientific inquiry is driven by the desire to understand the natural world, and technological design is driven by the need to meet human needs and solve human problems. Technology, by its nature, has a more direct effect on society than science because its purpose is to solve human problems, help humans adapt, and fulfill human inspirations. Technological solutions may create new problems. Science, by its nature, answers questions that may or may not directly influence humans. Sometimes scientific advances challenge people's beliefs and practical explanations concerning various aspects of the world.

12EST2.5 Technological knowledge is often not made public because of patents and the financial potential of the idea or invention. Scientific knowledge is made public through presentations at professional meetings and publications in scientific journals.

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Science in Personal and Social Perspectives (12FSPSP)

Personal and community health

12FSPSP1.5 Selection of foods and eating patterns determine nutritional balance. Nutritional balance has a direct effect on growth and development and personal well-being. Personal and social factors - such as habits, family income, ethnic heritage, body size, advertising, and peer pressure - influence nutritional choices.

Natural resources

12FSPSP3.1 Human populations use resources in the environment in order to maintain and improve their existence. Natural resources have been and will continue to be used to maintain human populations.

12FSPSP3.2 The earth does not have infinite resources; increasing human consumption places severe stress on the natural processes that renew some resources, and it depletes those resources that cannot be renewed.

12FSPSP3.3 Humans use many natural systems as resources. Natural systems have the capacity to reuse waste, but that capacity is limited. Natural systems can change to an extent that exceeds the limits of organisms to adapt naturally or humans to adapt technologically.

Natural and human-induced hazards

12FSPSP5.2 Human activities can enhance potential for hazards. Acquisition of resources, urban growth, and waste disposal can accelerate rates of natural change.
Science and technology in local, national, and global challenges

12FSPSP6.1 Science and technology are essential social enterprises, but alone they can only indicate what can happen, not what should happen. The latter involves human decisions about the use of knowledge.

12FSPSP6.5 Humans have a major effect on other species. For example, the influence of humans on other organisms occurs through land use - which decreases space available to other species - and pollution - which changes the chemical composition of air, soil, and water.