

# Oceanography / Marine Biology

## *DESK Standards*

**Strand 1: Students will understand that the Earth has one Big Ocean with Many Features**

- 1.1 The ocean is the defining physical feature of planet Earth. There is one ocean with many ocean basins.
- 1.2 Ocean basins vary in shape, size and features due to the movement of Earth's crust. Earth's highest valleys and flattest plains are in the ocean.

**Strand 2: Students will understand that the ocean supports a great diversity of life and ecosystems.**

- 1.1 The ocean is the cradle of life; the earliest evidence of life is found in the ocean. The millions of different species of organisms on Earth today are related by descent from common ancestors that evolved in the ocean and continue to evolve today.
- 2.2 Most of the major groups that exist on Earth are found exclusively in the ocean and the diversity of major groups of organisms is much greater in the ocean than on land.
- 2.3 Ocean biology provides many unique examples of life cycles, adaptations and important relationships among organisms.
- 2.4 The ocean contains unique and diverse ecosystems that are defined by environmental factors and the community of organisms living there.

**Strand 3: Students will understand that the ocean and humans are inextricably interconnected.**

- 3.1 The ocean provides essential resources including oxygen, food, medicines, minerals and energy.
- 3.2 Humans affect the ocean in a variety of ways. Human activity leads to pollution, changes in ocean chemistry and the removal of marine life.
- 3.3 The ocean sustains life on earth and humans must live in ways that sustain the ocean. Individual and collective actions are needed to effectively manage resources for all.

**Strand 4: Students will understand that the ocean is largely unexplored.**

- 4.1 New Technologies, sensors and tools are expanding our ability to explore the ocean.
- 4.2 The ocean is the largest unexplored place on Earth. Exploration, experimentation and discovery are required to better understand ocean systems and processes.
- 4.3 Ocean Exploration is interdisciplinary. It requires collaboration among scientists in many different fields.