Plankton Concepts Related to the National Science Standards

Grades K-4

THE CHARACTERISTICS OF ORGANISMS

Each plant or animal has different structures that serve different functions in growth, survival, and reproduction. For example, humans have distinct body structures for walking, holding, seeing, and talking.

LIFE CYCLES OF ORGANISMS

Plants and animals have life cycles that include being born, developing into adults, reproducing, and eventually dying. The details of this life cycle are different for different organisms.

Grades 5 - 8

POPULATIONS AND ECOSYSTEMS

For ecosystems, the major source of energy is sunlight. Energy entering ecosystems as sunlight is transferred by producers into chemical energy through photosynthesis. That energy then passes from organism to organism in food webs.

DIVERSITY AND ADAPTATIONS OF ORGANISMS

Millions of species of animals, plants, and microorganisms are alive today. Although different species might look dissimilar, the unity among organisms becomes apparent from an analysis of internal structures, the similarity of their chemical processes, and the evidence of common ancestry.

STRUCTURE OF THE EARTH SYSTEM

Living organisms have played many roles in the earth system, including affecting the composition of the atmosphere

Grades 9 - 12

THE INTERDEPENDENCE OF ORGANISMS

Energy flows through ecosystems in one direction, from photosynthetic organisms to herbivores to carnivores and decomposers.

Living organisms have the capacity to produce populations of infinite size, but environments and resources are finite. This fundamental tension has profound effects on the interactions between organisms.

MATTER, ENERGY, AND ORGANIZATION IN LIVING SYSTEMS

The energy for life primarily derives from the sun. Plants capture energy by absorbing light and using it to form strong (covalent) chemical bonds between the atoms of carbon-containing (organic) molecules.

ref: http://www.nap.edu/readingroom/books/nses/html/