

LINKS TO CONTENT STANDARDS

ADVANCED FLOATING LABORATORY

Earth Sciences

Energy in the Earth System

- 5.d. Students know properties of ocean water, such as temperature and salinity, can be used to explain the layered structure of the oceans, the generation of horizontal and vertical ocean currents, and the geographical distribution of marine organisms.
- 5.g. Students know features of ENSO (El Niño southern oscillation) cycle in terms of sea-surface and air temperature variations across the Pacific and some climatic results of this cycle.

Chemistry

Acids and Bases

- 5.b. Students know acids are hydrogen-ion-donating and bases are hydrogen-ion-accepting substances.
- 5.d. Students know how to use the pH scale to characterize acid and base solutions.
- 5.g. Students know buffers stabilize pH in acid-base reactions.

Biology/Life Sciences

Ecology

- 6.a. Students know biodiversity is the sum total of different kinds of organisms and is affected by alterations of habitats.
- 6.b. Students know how to analyze changes in an ecosystem resulting from changes in climate, human activity, introduction of nonnative species, or changes in population size.
- 6.e. Students know a vital part of an ecosystem is the stability of its producers and decomposers.

Investigation and Experimentation

- 1.a. Students select appropriate tools and technology to perform tests, collect data, analyze relationships, and display data.
- 1.c. Students identify possible reasons for inconsistent results, such as sources of error or uncontrolled conditions.
- 1.d. Students formulate explanations by using logic and evidence.
- 1.k. Students recognize the cumulative nature of scientific evidence.
- 1.l. Students analyze situations and solve problems that require combining and applying concepts from more than one area of science.
- 1.n. Students know when an observation does not agree with an accepted scientific theory, the observation is sometimes mistaken or fraudulent and that the theory is sometimes wrong.



**LINKS TO CONTENT STANDARDS
HIGH SCHOOL CERTIFICATION PROGRAM****Chemistry****Acids and Bases**

5.d. Students know how to use the pH scale to characterize acid and base solutions.

Biology/Life Sciences**Genetics**

2.a. Students know meiosis is an early step in sexual reproduction in which the pairs of chromosomes separate and segregate randomly during cell division to produce gametes containing one chromosome of each type.

2.d. Students know new combinations of alleles may be generated in a zygote through the fusion of male and female gametes (fertilization).

Ecology

6.a. Students know biodiversity is the sum total of different kinds of organisms and is affected by alterations of habitats.

6.b. Students know how to analyze changes in an ecosystem resulting from changes in climate, human activity, introduction of nonnative species, or changes in population size.

6.c. Students know how fluctuations in population size in an ecosystem are determined by the relative rates of birth, immigration, emigration, and death.

6.e. Students know a vital part of an ecosystem is the stability of its producers and decomposers.

6.g. Students know how to distinguish between the accommodation of an individual organism to its environment and the gradual adaptation of a lineage of organisms through genetic change.

Evolution

7.d. Students know variation within a species increases the likelihood that at least some members of a species will survive under changes environmental conditions.

8.a. Students know how natural selection determines the differential survival of groups of organisms.

8.b. Students know the effects of genetic drift on the diversity of organisms in a population.

8.d. Students know reproductive or geographic isolation affects speciation.

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