

# California Science Standards

## Kindergarten

### *Life Sciences*

- 2. Different types of plants and animals inhabit the earth. As a basis for understanding this concept:
  - a. *Students know* how to observe and describe similarities and differences in the appearance and behavior of plants and animals (e.g., seed-bearing plants, birds, fish, insects).
  - c. *Students know* how to identify major structures of common plants and animals (e.g., stems, leaves, roots, arms, wings, legs).

### *Investigation and Experimentation*

- 4. Scientific progress is made by asking meaningful questions and conducting careful investigations. As a basis for understanding this concept and addressing the content in the other three strands, students should develop their own questions and perform investigations. Students will:
  - a. Observe common objects by using the five senses.
  - b. Describe the properties of common objects.
  - c. Describe the relative position of objects by using one reference (e.g., above or below).
  - d. Compare and sort common objects by one physical attribute (e.g., color, shape, texture, size, weight).
  - e. Communicate observations orally and through drawings.

## 1st Grade

### *Life Sciences*

- 2. Plants and animals meet their needs in different ways. As a basis for understanding this concept:
  - a. *Students know* different plants and animals inhabit different kinds of environments and have external features that help them thrive in different kinds of places.
  - b. *Students know* both plants and animals need water, animals need food, and plants need light.
  - c. *Students know* animals eat plants or other animals for food and may also use plants or even other animals for shelter and nesting.

### *Investigation and Experimentation*

- 4. Scientific progress is made by asking meaningful questions and conducting careful investigations. Students will:
  - a. Draw pictures that portray some features of the thing being described
  - b. Record observations and data with pictures, numbers, or written statements.
  - d. Describe the relative position of objects by using two references (e. g., above and next to, below and left of).
  - e. Make new observations when discrepancies exist between two descriptions of the same object or phenomenon.

## 2nd Grade

### *Life Sciences*

- 2. Plants and animals have predictable life cycles. As a basis for understanding this concept:
  - c. *Students know* many characteristics of an organism are inherited from the parents. Some characteristics are caused or influenced by the environment.
  - d. *Students know* there is variation among individuals of one kind within a population.

### *Investigation and Experimentation*

- 4. Scientific progress is made by asking meaningful questions and conducting careful investigations. Students will:
  - a. Make predictions based on observed patterns and not random guessing.
  - d. Write or draw descriptions of a sequence of steps, events, and observations.

### 3rd Grade

#### *Life Sciences*

- 3. Adaptations in physical structure or behavior may improve an organism's chance for survival. As a basis for understanding this concept:
  - a. *Students know* plants and animals have structures that serve different functions in growth, survival, and reproduction.
  - b. *Students know* examples of diverse life forms in different environments, such as oceans, deserts, tundra, forests, grasslands, and wetlands.
  - c. *Students know* living things cause changes in the environment in which they live: some of these changes are detrimental to the organism or other organisms, and some are beneficial.
  - d. *Students know* when the environment changes, some plants and animals survive and reproduce; others die or move to new locations.

#### *Investigation and Experimentation*

- 5. Scientific progress is made by asking meaningful questions and conducting careful investigations. Students will:
  - b. Differentiate evidence from opinion and know that scientists do not rely on claims or conclusions unless they are backed by observations that can be confirmed.
  - d. Predict the outcome of a simple investigation and compare the result with the prediction.
  - e. Collect data in an investigation and analyze those data to develop a logical conclusion.

### 4th Grade

#### *Life Sciences*

- 2. All organisms need energy and matter to live and grow. As a basis for understanding this concept:
  - a. *Students know* plants are the primary source of matter and energy entering most food chains.
  - b. *Students know* producers and consumers (herbivores, carnivores, omnivores, and decomposers) are related in food chains and food webs and may compete with each other for resources in an ecosystem.
- 3. Living organisms depend on one another and on their environment for survival. As a basis for understanding this concept:
  - a. *Students know* ecosystems can be characterized by their living and nonliving components.
  - b. *Students know* that in any particular environment, some kinds of plants and animals survive well, some survive less well, and some cannot survive at all.

#### *Investigation and Experimentation*

- 6. Scientific progress is made by asking meaningful questions and conducting careful investigations. Students will:
  - f. Follow a set of written instructions for a scientific investigation.

### 5th Grade

*Grade 5 science concentrates on microsystems (body systems), matter and water movement. Many of the standards can be accomplished by developing a testable question with the class before your trip and recording data at the tidepools.*

## 6th Grade

### *Ecology (Life Sciences)*

- 5. Organisms in ecosystems exchange energy and nutrients among themselves and with the environment. As a basis for understanding this concept:
  - b. *Students know* matter is transferred over time from one organism to others in the food web and between organisms and the physical environment.
  - d. *Students know* different kinds of organisms may play similar ecological roles in similar biomes.
  - e. *Students know* the number and types of organisms an ecosystem can support depends on the resources available and on abiotic factors, such as quantities of light and water, a range of temperatures, and soil composition.