

CONCEPTS RELATED TO THE CALIFORNIA STATE SCIENCE STANDARDS

Grade 4 - Life Sciences

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.
- c. Students know decomposers, including many fungi, insects, and microorganisms, recycle matter from dead plants and animals.

Grade 6 - Life Sciences

Organisms in ecosystems exchange energy and nutrients among themselves and with the environment. As a basis for understanding this concept:

- a. Students know energy entering ecosystems as sunlight is transferred by producers into chemical energy through photosynthesis and then from organism to organism through food webs.
- 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

All Grades:

Investigation and Experimentation

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:

1. Develop a hypothesis.
2. Select and use appropriate tools and technology (including calculators, computers, balances, spring scales, microscopes, and binoculars) to perform tests, collect data, and display data.
3. Construct appropriate graphs from data and develop qualitative statements about the relationships between variables.
4. Communicate the steps and results from an investigation in written reports and oral presentations.
5. Recognize whether evidence is consistent with a proposed explanation.
6. Interpret events by sequence and time from natural phenomena.
7. Identify changes in natural phenomena over time without manipulating the phenomena.