

MS-LS2-1 Ecosystems: Interactions, Energy, and Dynamics

California Alternate Assessment for Science—Item Content Specifications

# MS-LS2-1 Ecosystems: Interactions, Energy, and Dynamics

| California Science Connector | Focal Knowledge, Skills, and Abilities | Essential Understanding |
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| Identify factors in a graph (including resources, climate or competition) in an ecosystem that influence growth in populations of organisms. | 1. Ability to identify resources in an ecosystem that influence growth in populations of organisms. 2. Ability to identify climate in an ecosystem that influences growth in populations of organisms. 3. Ability to identify competition in an ecosystem that influences growth in populations of organisms. | Match organisms to their habitats. |

## **CA NGSS Performance Expectation**

Students who demonstrate understanding can:

**Analyze and interpret data to provide evidence for the effects of resource availability on organisms and populations of organisms in an ecosystem.** [Clarification Statement: Emphasis is on cause and effect relationships between resources and growth of individual organisms and the numbers of organisms in ecosystems during periods of abundant and scarce resources.]

## Mastery Statements

Students will be able to:

* Recognize the appropriate habitat for a plant or animal based on structures of the plant or animal
* Match a resource to the plants or animals that require the resource to survive
* Match temperature or rainfall values to plants or animals that require a specific range of temperature or rainfall to survive
* Use provided information to identify plants or animals that compete for the same resource
* Identify a change in a resource when provided information in a table or graph
* Identify the effect of a change in a resource on a population of plants or animals
* Identify a change in climate when provided information in a table or graph
* Identify the effect of a change in climate on a population of plants or animals
* Identify a change in the competition between a population of plants or animals when provided information in a table or graph
* Identify the effect of a change in competition on a population of plants or animals

## California Environmental Principles and Concepts

Principle 1—The continuation and health of individual human lives and of human communities and societies depend on the health of the natural systems that provide essential goods and ecosystem services.

Principle 2—The long-term functioning and health of terrestrial, freshwater, coastal and marine ecosystems are influenced by their relationships with human societies.

Principle 3—Natural systems proceed through cycles that humans depend upon, benefit from, and can alter.

Principle 4—The exchange of matter between natural systems and human societies affects the long-term functioning of both.

Principle 5—Decisions affecting resources and natural systems are based on a wide range of considerations and decision-making processes.

## Possible Phenomena or Contexts

*Note that the list in this section is not exhaustive or prescriptive.*

**Possible contexts include the following:**

* Habitats with highly limited resources that are easy to see and describe
* Habitats that require very obvious adaptations for survival
* Seasonal changes to resource availability
* Introduction of a new species to an existing community
* An environmental change that alters resource availability
* Increased competition

## Additional Assessment Boundaries

* None listed at this time

## Additional References

California Science Test Item Specification for MS-LS2-1

<https://www.cde.ca.gov/ta/tg/ca/documents/itemspecs-ms-ls2-1.docx>

California Environmental Principles and Concepts <http://californiaeei.org/abouteei/epc/>

The *2016 Science Framework for California Public Schools Kindergarten through Grade Twelve* <https://www.cde.ca.gov/ci/sc/cf/cascienceframework2016.asp>

Appendix 1: Progression of the Science and Engineering Practices, Disciplinary Core Ideas, and Crosscutting Concepts in Kindergarten through Grade Twelve

<https://www.cde.ca.gov/ci/sc/cf/documents/scifwappendix1.pdf>

Appendix 2: Connections to Environmental Principles and Concepts

<https://www.cde.ca.gov/ci/sc/cf/documents/scifwappendix2.pdf>

Posted by the California Department of Education, July 2025