
Appendix C

Science Standard Descriptions

California

Kindergarten

2.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).

Grade One

2.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.

2.b.- Students know both plants and animals need water, animals need food, and plants need light.

2.c.- Students know animals eat plants or other animals for food and may also use plants or even other animals for shelter and nesting.

4.a- Draw pictures that portray some features of the thing being described.

Grade Two

2.b.-Students know the sequential stages of life cycles are different for different animals, such as butterflies, frogs, and mice.

2.c.- Students know many characteristics of an organism are inherited from the parents. Some characteristics are caused or influenced by the environment.

3.b.- Students know examples of diverse life forms in different environments, such as oceans, deserts, tundra, forests, grasslands, and wetlands.

4.c.-Compare and sort common objects according to two or more physical attributes (e. g., color, shape, texture, size, weight).

Grade Three

3.a.- Students know plants and animals have structures that serve different functions in growth, survival, and reproduction.

3.b.- Students know examples of diverse life forms in different environments, such as oceans, deserts, tundra, forests, grasslands, and wetlands.

3.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.

3.d.- Students know when the environment changes, some plants and animals survive and reproduce; others die or move to new locations.

5.a.- Repeat observations to improve accuracy and know that the results of similar scientific investigations seldom turn out exactly the same because of differences in the things being investigated, methods being used, or uncertainty in the observation.

Grade Four

3.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.

Grade Five

- 6.a.- Classify objects (e.g., rocks, plants, leaves) in accordance with appropriate criteria.
- 6.c.- Plan and conduct a simple investigation based on a student-developed question and write instructions others can follow to carry out the procedure.
- 6.g- Record data by using appropriate graphic representations (including charts, graphs, and labeled diagrams) and make inferences based on those data.

Grade Six

- 7.a.- Develop a hypothesis.
- 7.b.- Select and use appropriate tools and technology (including calculators, computers, balances, spring scales, microscopes, and binoculars) to perform tests, collect data, and display data.

Grade Seven

- 3.a.- Students know both genetic variation and environmental factors are causes of evolution and diversity of organisms.
- 7.a.- Select and use appropriate tools and technology (including calculators, computers, balances, spring scales, microscopes, and binoculars) to perform tests, collect data, and display data.
- 7.b.- Use a variety of print and electronic resources (including the World Wide Web) to collect information and evidence as part of a research project.
- 7.c.- Construct scale models, maps, and appropriately labeled diagrams to communicate scientific knowledge (e.g., motion of Earth's plates and cell structure). (Binoculars)

Grade Eight

- 9.a.- Plan and conduct a scientific investigation to test a hypothesis.
- 9.e.- Construct appropriate graphs from data and develop quantitative statements about the relationships between variables.

Oregon

Grade Three

- L.S. 03.01- Recognize characteristics that are similar and different between organisms.
- L.S. 03.02- Describe the basic needs of living things.
- L.S. 03.04- Describe a habitat and the organism that live there.
- L.S. 03.05- Identify how some animals gather and store food, defend themselves and find shelter.
- S.I. 03.01- Make observations. Based on these observations, ask questions or form hypotheses, which can be explored through simple investigations.
- S.I. 03.02- Plan a simple investigation.
- S.I. 03.03- Collect data from an investigation.
- S.I. 03.04- Use the data collected from an investigation to explain the results.

Grade Five

- L.S. 05.01- Group or classify organisms based on a variety of characteristics.
- L.S. 05.02- Describe the function of organ systems.
- L.S. 05.03- Describe basic plant and animal structures and their functions.
- L.S. 05.05- Describe the relationship between characteristics of specific habitats and the organisms that live there.

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- L.S. 05.06- Describe how adaptations help a species survive.
S.I. 05.01- Make observations. Ask questions or form hypotheses, based on those observations, which can be explored through scientific investigations.
S.I. 05.02- Design a simple scientific investigation to answer questions or test hypotheses.
S.I. 05.03- Collect, organize, and summarize data from investigations.
S.I. 05.04- Summarize, analyze, and interpret data from investigations.

Grade Eight

- L.S. 08.01- Describe and explain the relationship and interaction of organ system.
L.S. 08.02- Describe and explain the structure and functions of an organism in terms of cells, tissues, and organs.
L.S. 08.04- Identify and describe the factors that influence or change the balance of populations in their environment.
L.S. 08.05- Describe and explain the theory of natural selection as a mechanism for evolution.
S.I. 08.01- Based on observations and scientific concepts, ask questions or form hypotheses that can be explored through scientific investigations.
S.I. 08.02- Design a scientific investigation to answer questions or test hypotheses.
S.I. 08.03- Collect, organize, and display sufficient data to support analysis.
S.I. 08.04- Summarize and analyze data including possible sources of error. Explain results and offer reasonable and accurate interpretations and implications.

Grade Twelve

- S.I. 12.01- Based on observations and scientific concepts, ask questions or form hypotheses that can be answered or tested through scientific investigations.
S.I. 12.02- Design a scientific investigation that provides sufficient data to answer a question or test a hypothesis.
S.I. 12.03- Collect, organize, and display sufficient data to facilitate scientific analysis and interpretation.
S.I. 12.04- Summarize and analyze data, evaluating sources of error or bias. Propose explanations that are supported by data and knowledge of scientific terminology.

National Standards

Standard A- Inquiry

Standard C- Life Science