
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

Life Science Content Standards

- 1.1L.1 - Compare and contrast characteristics among individuals within one plant or animal group.
- 2.2L.1 - Describe the life cycles of living things.
- 3.2L.1 - Compare and contrast the life cycles of plants and animals.
- 4.2L.1 - Describe the interactions of organisms and the environment of where they live.
- 5.1L.1 - Explain that organisms are composed of parts that function together to form a living system.
- 5.2L.1 - Explain the interdependence of plants, animals, and environment, and how adaptation influences survival.
- 6.2L.2 - Explain how individual organisms and populations in an ecosystem interact and how changes in populations are related to resources.
- 8.1L.1 - Explain how genetics and anatomical characteristics are used to classify organisms and infer evolutionary relationships.
- 8.2L.1 - Explain how species change through the process of natural selection. Describe evidence for evolution.
- H.2L.2 - Explain how ecosystems change in response to disturbances and interactions. Analyze the relationships among biotic and abiotic factors in ecosystems.

Scientific Inquiry Content Standard

- 1.3S.1 - Identify and use tools to make careful observations and answer questions about the natural

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- world.
- 2.3S.2 - Make predictions about living and non-living things and events in the environment based on observed patterns.
 - 2.3S.3 - Make, describe, and compare observations, and organize recorded data.
 - 3.3S.2 - Use the data collected from a scientific investigation to explain the results and draw conclusions.
 - 4.3S.1 - Based on observations identify testable questions, design a scientific investigation, and collect and record data consistent with a planned scientific investigation.
 - 4.3S.2 - Summarize the results from a scientific investigation and use the results to respond to the question being tested.
 - 4.3S.3 - Explain that scientific claims about the natural world use evidence that can be confirmed and support a logical argument.
 - 5.3S.1 - Based on observations and science principles, identify questions that can be tested, design an experiment and communicate findings using graphs, charts, maps, models, and oral and written reports.
 - 6.3S.2 - Organize and display relevant data, construct an evidence-based explanation of results of an investigation, and communicate the conclusions.
 - 7.3S.1 - Based on observations and science principles propose questions or hypotheses that can be examined through scientific investigation. Design and conduct a scientific investigation that uses the appropriate tools and techniques to collect relevant data.
 - 7.3S.3 - Evaluate the validity of scientific explanations and conclusions based on the amount and quality of the evidence cited.
 - 8.3S.2 - Organize, display, and analyze relevant data, construct an evidence-based explanation of the results of a scientific investigation, and communicate the conclusions including possible sources of error. Suggest new investigations based on analysis of results.
 - H.3S.1 - Based on observations and scientific principles formulate a question or hypothesis that can be investigated through the collection and analysis of relevant information.
 - H3S.2 - Design and conduct a controlled experiment, field study, or other investigation to make systematic observations about the natural world, including the collection of sufficient and appropriate data.
 - H.3S.4 - Identify examples from the history of science that illustrate modification of scientific knowledge in light of challenges to prevailing explanations.

Engineering and Design Content Standards

- 2.4D.1 - Use tools to construct a simple designed structure out of common objects and materials.
- 3.4D.3 - Give examples of inventions that enable scientists to observe things that are too small or too far away.
- 6.4D.1 - Define a problem that addresses a need and identify science principles that may be related to possible solutions.

National Standards

Standard A- Inquiry

Standard C- Life Science