

Nature Rangers Standards

The Museum's Education Department actively works on developing our curriculum and helping teachers to identify ways in which our programs support and relate to Common Core, CA History-Social Science Frameworks, and Next Generation Science Standards.

How to read this document: Below are charts that show the various standards that this program supports. This is by no means an exhaustive representation of the connections that can be drawn from our programs, but shows some of the strongest connections that teachers who use our programs make. After each standard is a brief description of what occurs within the program that supports the standard. At the bottom you'll find links to resources for understanding the standards.

Program: Nature Rangers

Grade: 4th

Topic: Students practice being naturalists by making observations and comparing natural communities and different ecosystems as they go on a 2-mile hike through Pogonip Open Space Preserve. Thinking about nature as a system, physically connecting these ecosystems by walking through them and collecting data to compare them, help students better understand the environment and begin to realize they too are part of natural systems.

Potential Pathways / Themes: *Adaptations and/or Biogeology*

Next Generation Science Standards		
Theme: Adaptations		
<p>Performance Expectations</p> <p>4-LS1-1: Construct an argument that plants and animals have internal and external structures that function to support survival, growth, behavior, and reproduction.</p> <ul style="list-style-type: none"> Students compare and contrast skulls from predator and prey animals to determine adaptations that these animals have to help them acquire food and defend themselves. 		
<p>Science and Engineering Practices</p> <p>Engaging in Argument from Evidence Engaging in argument from evidence in 3–5 builds on K–2 experiences and progresses to critiquing the scientific explanations or solutions proposed by peers by citing relevant evidence about the natural and designed world(s).</p> <ul style="list-style-type: none"> Students construct an argument that animals have different physical adaptations using skulls as a model to provide evidence for their claims. 	<p>Disciplinary Core Ideas</p> <p>LS1.A: Structure and Function Plants and animals have both internal and external structures that serve various functions in growth, survival, behavior, and reproduction.</p> <ul style="list-style-type: none"> Students study skulls to compare physical adaptations of two different species. 	<p>Crosscutting Concepts</p> <p>Systems and System Models A system can be described in terms of its components and their interactions.</p> <ul style="list-style-type: none"> Students learn about the biotic and abiotic factors that shape habitats. They compare and contrast conditions found in different locations and discuss how animals are able to survive in different habitats.
History-Social Science Standards		
<p>HSS4.1.5: Use maps, charts, and pictures to describe how communities in California vary in land use, vegetation, wildlife, climate, population density, architecture, services, and transportation.</p> <ul style="list-style-type: none"> Students use a map to determine their location and compare and contrast the surrounding natural communities. <p>HSS4.2.1: Discuss the major nations of California Indians, including their geographic distribution, economic activities, legends, and religious beliefs; and describe how they depended on, adapted to, and modified the physical environment by cultivation of land and use of sea resources.</p> <ul style="list-style-type: none"> Students learn how the Ohlone people survived in the area of Pogonip and how practices such as controlled burning affected the types of habitats that are found there. They also learn how historical changes such as the beginning of the Mission period changed their interactions with the environment and how that lead to visible effects that we can see in Pogonip today. 		

Next Generation Science Standards		
Theme: Biogeology		
<p>Performance Expectations</p> <p>4-ESS2-1: Make observations and/or measurements to provide evidence of the effects of weathering or the rate of erosion by water, ice, wind, or vegetation.</p> <ul style="list-style-type: none"> Students measure temperature, canopy cover, and ground cover to assess the qualities of different habitats and learn how this affects the species that live there. 		
<p>Science and Engineering Practices</p> <p>Planning and Carrying Out Investigations Planning and carrying out investigations to answer questions or test solutions to problems in 3–5 builds on K–2 experiences and progresses to include investigations that control variables and provide evidence to support explanations or design solutions.</p> <ul style="list-style-type: none"> Students make measurements of temperature, canopy cover, and ground cover to describe three different habitats and make predictions about how these factors differ between environments. 	<p>Disciplinary Core Ideas</p> <p>ESS2.A: Earth Materials and Systems Rainfall helps to shape the land and affects the types of living things found in a region. Water, ice, wind, living organisms, and gravity break rocks, soils, and sediments into smaller particles and move them around.</p> <ul style="list-style-type: none"> Students explore the impacts of logging on rates of erosion and witness water erosion by exploring a creek <p>ESS2.E: Biogeology Living things affect the physical characteristics of their regions.</p> <ul style="list-style-type: none"> Students learn how plant communities shape the characteristics of different habitats and how this influences the types of animals that can be found there. 	<p>Crosscutting Concepts</p> <p>Cause and Effect Cause and effect relationships are routinely identified, tested, and used to explain change.</p> <ul style="list-style-type: none"> Students learn how plant communities change over time and how many of the differences observed between habitats have been caused by the activity of humans in the past.
Other Standards		
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Resources

Next Generation Science Standards

[Understanding the Standards](#)

[How to Read the Standards](#)

[Topic Arrangements of the NGSS](#)

[Common Acronyms used in NGSS](#)

History-Social Science

[HSS Framework](#)

- [Kindergarten](#)
- [1st Grade](#)
- [2nd Grade](#)
- [3rd Grade](#)
- [4th Grade](#)
- [5th Grade](#)

English Language Arts

[ELA Standards](#)

[CCSS English Language Arts Resources](#)

[ELA/ELD Framework](#)

Mathematics

[Kindergarten Standards](#)

[1st Grade Standards](#)

[2nd Grade Standards](#)

[3rd Grade Standards](#)

[4th Grade Standards](#)

[5th Grade Standards](#)