

Point Bonita YMCA - Residential Outdoor Education Program

PROGRAM DESCRIPTIONS

Our Outdoor Environmental Education program involves group members in the world around them, teaching natural history and community issues in a safe, interactive and cooperative way. Our program challenges the spirits, minds, and bodies of thousands each year by emphasizing the connections between humans and their environment. Our primary goal is to get participants out into nature, to embrace the sun, wind, rain, and fog. In addition to addressing each group's preferred topics, our naturalists embrace the moment, tuning in to each member's interests and needs. We want each group's time with naturalists to be dynamic, interesting, enjoyable, and most of all, fun! Weather, season, length of stay, safety, and other factors also determine which opportunities are available.

As a YMCA, we interweave **wellness** components throughout the program: **physical** (e.g. nutrition, exercise), **social** (e.g. team building), **emotional** (e.g. independence), **environmental** (e.g. stewardship), and **intellectual** (e.g. academic content).

We have organized our program topics into three main categories which include: **Earth Systems**, **Life on Earth**, and **Change Over Time**. Our program supports the Next Generation Science Standards including most of the *Crosscutting Concepts* and *Science & Engineering Processes*. NGSS *Disciplinary Core Ideas* that can be addressed are listed within each theme below.

Earth Systems: Our Abiotic World

Students will explore primarily *abiotic* (non-living) components of our Earth, focusing on rocks, and water. Students will learn hands-on geology through various activities involving weather- and human-caused erosion, the formation of the Marin Headlands, plate tectonics, local rock types and the ways that they are formed and shaped. The connection between geology and hydrology will be forged through exploration of watersheds and examining our local Headlands watershed, Rodeo Lagoon. This program topic also includes hands-on, interactive water cycle activities, the formation of waves, tides, and currents, and discussion and examination of renewable (e.g. solar, wind) and non-renewable resources (e.g. fossil fuels). Students will gain an understanding of the importance of *abiotic* elements to the survival of all living things.

Earth Systems also correlates with the following Disciplinary Core Ideas:

LS2.A Interdependent Relationships in Ecosystems
LS2.B Cycles of Matter & Energy Transfer in Ecosystems

ESS1.B Earth & the Solar System
ESS1.C The History of Planet Earth

ESS2.A Earth Materials & Systems
ESS2.B Plate Tectonics & Large-Scale System Interactions

ESS2.C The Role of Water in Earth's Surface Processes
ESS2.D Weather & Climate

ESS2.E Biogeology

ESS3.A Natural Resources
ESS3.C Human Impacts on Earth Systems

Life on Earth: Our Biotic World

This program theme focuses on *biotic* (living) organisms and their relationships. Through close examination of local plant and animal communities, students will gain an understanding of Marin Headlands ecology. In exploring local habitats such as coastal scrub, tide pools, beach, and pond, students will learn about predator-prey relationships, plant and animal adaptations, food webs, life cycles, and interdependence. Students will also learn how they are connected to and impact the Earth through activities such as gardening and beach clean-ups, as well as discussions of human impact on our fragile environment.

Life on Earth also correlates with the following NGSS Life Sciences Disciplinary Core Ideas:

LS1.A: Structure & Function
LS1.B: Growth & Development of Organisms
LS1.C: Organization for Matter & Energy Flow in Organisms
LS1.D: Information Processing

LS2.D: Social Interactions & Group Behavior
LS3.A: Inheritance of Traits

LS2.A: Interdependent Relationships in Ecosystems
LS2.B: Cycles of Matter & Energy Transfer in Ecosystems
LS2.C: Ecosystem Dynamics, Functioning, & Resilience

LS4.A: Evidence of Common Ancestry & Diversity
LS4.C: Adaptation
LS4.D: Biodiversity & Humans

Change Over Time: Cultural & Natural History

Headlands human, geologic, and local plant and animal species histories comprise the main components of this theme. Through visiting historic sites, such as military batteries, and learning how the Miwok people relied on the native plants and animals, students will view the Headlands through a historic lens. Geologic history, including the formation and erosion of the Marin Headlands, as well as plant and animal adaptations and the history and impact of invasive species in the area will be studied.

Change Over Time also correlates with the following Disciplinary Core Ideas:

LS1.A Structure & Function
LS1.D Information Processing
LS2.A Interdependent Relationships in Ecosystems
LS2.C Ecosystem Dynamics, Functioning, & Resilience
LS2.D Social Interactions & Group Behavior

ESS1.C The History of Planet Earth
ESS2.A Earth Materials & Systems
ESS2.B Plate Tectonics & Large-Scale System Interactions
ESS3.A Natural Resources
ESS2.E Biogeology

LS4.C Adaptation
LS4.D Biodiversity & Humans

ESS3.C Human Impacts on Earth Systems

Evening Programs

In addition to the night hike, which usually takes place on the first night, you may choose one program for each of the remaining nights you are staying with us.

Night Hike/Sunset Stroll: Every student is given the opportunity to experience a nature hike under sparkling stars or the glow of the setting sun! Learning opportunities include lessons on nocturnal animals and their adaptations, myths and facts about stars and the moon, and sensory experiences. Barring extremely foul weather, night hikes occur rain or shine on the first evening of your program.

Skits & Stories: Create a magical skit that demonstrates one of the many adaptations native animals use to survive in their environment. Students work together to make up stories that evoke the feel of native legends and tap into students' sense of imagination, and then perform them for the whole group. This is a creative and fun group challenge. Skits can be performed in the meeting room or at the campfire circle (dependent on weather). **This activity requires a medium level of chaperone participation as they will each help of the groups with preparing their skits.*

Campfire: The campfire program will include hilarious skits, sing-along songs with musical instruments, opportunities for students to showcase their talents and be involved in the skits, and more! Please note that we may not be able to have an actual fire due to weather conditions.

Life on the Coast: Learn about the different species, characteristics and adaptations of life on our coast through hands-on fun! Students move through a variety of learning stations* where they engage in activities designed to help them further understand the intertidal zones, marine mammal adaptations, tides, and more. Then journey through a naturalist-led slideshow presentation on our section of the California coast and the marine mammals that call this area home.

**This activity requires a high level of chaperone participation as at least one chaperone will run each of the 4-6 stations.*

Adaptation Auction: Students are divided into groups of 5-10 with one chaperone assigned to each group. Each group chooses an animal that lives in the Marin Headlands and then participates in a naturalist led 'auction' to purchase adaptations (including everything from real-life adaptations like 'regenerative limbs' to more creative options, such as 'x-ray vision'). After the auction ends, each group has 15-20 minutes to design a poster of their animal with its new adaptations and write up an evolutionary history of how their species evolved over time to acquire these new adaptations.

**This activity requires a medium level of chaperone participation as they will each help one of the groups and be the designated bidder for their group.*

Town Hall: Through an interactive theatrical performance, reenact the real-life 1960s debate on the proposed development of the Marin Headlands! During a town hall meeting, students experience how competing and conflicting interests affect public policy. Representing various local agencies, companies, and non-profits, students defend and advocate for their "character" position, asking critical questions of students representing other positions. At the end of the night, an in-character vote determines the fate of our National Park!

**This activity requires a medium level of chaperone participation as they will each help one of the groups with preparing their position.*

Park Partner Resources

To supplement your visit to the Headlands, we have access to several experiences made available through our Park Partners. In the Pre-Trip Questionnaire, Resources are offered based on the three main topics - if an experience you would like is not listed for your chosen topic, please request it in the open answer box on your chosen topic's page.

Point Bonita Lighthouse: The Point Bonita Lighthouse, built in 1855, was the third lighthouse built on the West Coast and helped shepherd ships through the treacherous Golden Gate straits. Today, the lighthouse is still active and is maintained by the U.S. Coast Guard. Trail groups can see seals from the lighthouse trail, go through the hand-carved tunnel that is locked to the public, and over a suspension bridge to the lighthouse proper.

We cannot guarantee access to the Lighthouse as it is a shared park resource ran by the National Park Service, but will do our best to accommodate your request. ****The Point Bonita Lighthouse is not available during government shutdowns.****

The Marine Mammal Center: Groups hike to the Marine Mammal Center and go on a 30 minute Naturalist-led tour to learn about human impact, marine mammals, and the work being done to help rehabilitate and protect our native species

We cannot guarantee access to the TMMC as it is a shared park resource, but will do our best to accommodate your request. To guarantee a tour for your school you can book directly with TMMC for an additional fee.

Sand Crab Monitoring (6th grade and up): Students will learn about and conduct a citizen science monitoring study of the Pacific Mole Crab. This activity requires a low tide during program hours and a some in-class pre-trip preparation on the part of students and teachers. If this is a high priority for your school contact the [Outdoor Education Coordinator](#) to receive the preparation information.

Hill 88 or Hawk Hill Challenge Hike: These are day-long, 6+ mile hikes with decent elevation gain. Please note that curriculum time will be limited (especially for three-day programs) if this option is chosen due to a full day being dedicated to the hike. We recommend these hikes for 4 and 5 day programs.

Battery Townsley: About halfway to Hill 88, this is a great option for a shorter day hike. Students may be able to see newts and other aquatic animals in the 'ponds' left behind by the old military battery. Schools who select the Change Over Time topic and express interest may get the opportunity to enter the actual battery building (open to the public only 4 hours a month)

Battery Townsley is only available during middle program days (generally Tuesday and Thursday). *Entering the battery is only available on Thursdays, and not available during government shutdowns.*

Nike Missile Site: A guided tour of the Nike Missile Site is available during school programs. The tour is a 1.5 mile hike through the site, which was built during the Cold War. The site is a great example of the military's response to the threat of nuclear attack. The tour is a great opportunity for students to learn about the history of the site and the role of the Nike missile in the defense of the United States.

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