

Pathfinder Ranch

Outdoor Education Class Overview

Quick Facts:

- Average Class Size: 15 (20 student maximum)
- Class Length: 3.5 hours (Evening Programs are roughly 1.5 hours)
- Capacity: 160 students, plus up to 30 adults
- Curriculum correlated to the Common Core State Standards
- Curriculum currently being adjusted to integrate the Next Generation Science Standards

Our diverse curriculum offers teachers a variety of options to select from based on their needs and expectations for their students. Classes are divided into overarching **themes** (e.g. Ascent, Ecology), and from there each academic theme can include two **concepts** that help narrow the class to certain content and activities. CCSS and NGSS performance expectations will be included in these descriptions in the future. The adventure themes can include anywhere from one to three **activities** depending on the chosen theme. Refer to the Curriculum Request in the Registration Packet for those specific options. On the Final Info sheet of the Attendance Rosters, teachers can request specific topics, scientific processes, and activities for each selected theme. Our instructors will create a **focus** for the class based on these teacher requests. Instructors will do their best to accommodate teacher requests. Each study group's experience will vary somewhat based on the students' background knowledge, group dynamic, adult chaperone assistance, class size, and instructor's teaching style. However, our instructors ensure their students are learning similar content, having fun, and staying safe. More resources and information will be posted to our website in the future so that teachers can better incorporate our curriculum with their own classroom instruction. We hope you're able to connect what the students are learning and doing up here back to their lives at school and at home!

Curriculum List

Theme Descriptions

Ascent
Cultural History
Earth's Resources
Ecology
Hikes
Permaculture
Recreation
Wilderness Skills
Wildlife

All-Group Activities & Evening Programs

Astronomy
Catapults
Electives
Lorax & Town Hall Meeting
Mad Science Fair
Night Hike
Predator & Prey
Skit Night

Theme Descriptions

Ascent

Ascent will challenge students individually while bringing them together to build a cohesive community. This class employs both kinesthetic and cognitive challenges to engage students in communication, cooperation, and problem solving. Our instructors guide students through all activities and debriefs, while allowing students to develop their own solutions and conclusions. During **Rock Climbing**, the **Climbing Wall**, and the **Alpine Tower** students will learn about the safety equipment, and discover that climbing is one of the safest activities at Pathfinder. Before climbing, students will create their own goal to work towards. Fellow classmates will respect and encourage each other to meet or exceed their goals, but it is always up to the individual student when they are ready to come down. One of the above climbing options is combined with **Team Challenge** or **ExCEED (Equine Centered Experiential Education)**. **Team Challenge** involves a myriad of challenge and team building activities. **ExCEED** is a variation of **Team Challenge** that involves a horse as a team member causing students to work harder to develop leadership, communication, and problem solving skills to reach their goal. During this theme, students will learn about working through challenges and how they can apply that perseverance back at home and school.

Based on the teacher's activity selections, each class will include the following...

- **Climbing**- Equipment, safety, commands, and ascending one of our climbing structures or an actual rock formation.
- **Team Challenge or ExCEED**- Elements of effective communication, cooperation, problem solving, and leadership.
- **Every Ascent Activity**- Trying new things, perseverance, and setting personal goals.

Cultural History

There is a unique history of multiple cultures that has helped shape Garner Valley and the local San Jacinto Mountains. This theme will explore the history of the Cahuilla Band of Indians and their connection to the local landscape. In the **Ethnobotany** concept, students will explore the local environment while identifying modern and traditional uses of local plants. Traditional hunting tools and safety precautions will be covered before students practice shooting skills such as precision in the hands-on **Archery** concept. Students will investigate the local history of the Cahuilla, gold miners, and cattle ranchers, differentiate between artifacts, eco-facts, and features, and develop inferences in **Archaeology**. In the **Fire Ecology** concept, students will learn about the local chaparral ecosystem, plant adaptations to fire, and how these factors related to the local inhabitants. Every concept in this theme will help students gain a better understanding of Garner Valley's unique cultural history, and how the environment played a large factor in people's life styles and their survival.

Based on the teacher's concept selections, each class will include the following...

- **Ethnobotany**- Introduction to the Cahuilla people, the importance of plants in traditional and contemporary societies, and a hands-on activity demonstrating traditional uses of local plants.
- **Archaeology**- Making inferences and observations during a scientific investigation into past cultures, and participating in a simulated archeological dig.
- **Archery**- Learn about traditional hunting tools, and practice shooting skills.
- **Fire Ecology**- Investigate the flammability of local plants, the importance of fire to traditional and contemporary societies, and how fire has influenced the local chaparral ecosystem.

Earth's Resources

Conservation is the careful management and preservation of natural resources and the environment. This idea is discussed in many of the concepts offered at Pathfinder Ranch. The **Earth's Resources** theme is a collection of concepts that specifically touches on the means and resources needed for traditional and/or modern lifestyles. This includes taking a closer look during **Ethnobotany** at local plants, their uses, and the resourcefulness of the Cahuilla Band of Indians in this area. Water is another significant resource, and its rarity, importance to all living things, conservation, and preservation are addressed in **Freshwater Ecology**. The importance of energy to human society, applications of energy in our everyday lives, and an evaluation of renewable versus non-renewable energy resources occurs in the **Energy** concept. During **Geology**, students will address geological processes with a connection to conserving Earth's mineral resources (e.g. aluminum, copper, iron). Conservation and responsible resource use are brought up in the **Earth's Resources** theme, and mentioned throughout the week with the hope that students will apply what they've learned back in their home communities.

Based on the teacher's concept selections, each class will include the following...

- **Ethnobotany**- Introduction to the Cahuilla people, the importance of plants as a resource in every society, and a hands-on activity demonstrating traditional uses of local plants.
- **Freshwater Ecology**- Water conservation practices, water quality investigation, and preserving freshwater resources.
- **Energy**- Energy conservation, use in human society, differences between renewable and non-renewable resources, and a hands-on activity demonstrating solar or wind energy.
- **Geology**- Geological processes, their impact on the surrounding environment, and awareness of mineral resources.

Ecology

Ecology is the scientific study of the relationships that living organisms have with each other and their natural environments. In **Animal Ecology** and **Forest Ecology**, topics such as interdependence between local species and their surroundings as well as adaptations for survival are discussed. Local biotic and abiotic factors along with the characteristics of our local pine forest and chaparral ecosystem are discussed in the **Forest Ecology** and **Fire Ecology** concepts. Water as a limiting factor, the water cycle, and water quality can be connected from the **Freshwater Ecology** concept to these other concepts. The **Ecology** theme can address a wide variety of topics depending on the concepts chosen, but no matter the selection, students will get a better sense of how living things interact with each other and survive in our local environment.

Based on the teacher's concept selections, each class will include the following...

- **Animal**- Interdependence between animals and their environment plus visit the Nature Center and discuss animal adaptations.
- **Forest**- Photosynthesis, plus systems and cycles within a forest.
- **Fire Ecology**- Investigate the flammability of local plants, plant adaptations to fire, and how fire has influenced the local chaparral ecosystem.
- **Freshwater**- Investigate freshwater habitats, aquatic insects, water cycle, water quality testing, and water conservation.

Hikes

Each hike has a different spin, focus, or destination. They also have different distances, elevation gain, and overall difficulty. Throughout the **Gold Mine Hike**, instructors will discuss the gold mining history of this area. The hike culminates in the opportunity to visit a gold mining archaeological site, and investigate gold mining artifacts. During the **Rock Point Hike**, instructors usually discuss the local natural and cultural history of Garner Valley. Some of the breaks, including the top of Rock Point, provide gorgeous views of the valley where Pathfinder sits. Our other option of the **Land Bridge Hike** is the easiest in terms of difficulty, but still provides a good challenge and just as amazing views. Instructors plan engaging activities such as guided explorations, time to reflect and record their thoughts, or even observation games during breaks. No matter the hike, they are amazing opportunities for students to explore our local mountains and the beautiful scenery. Instructors take note of interesting things along the way from yucca blooming to the surrounding mountain ranges. Instructors will take breaks frequently for hikers to rest, refill water bottles, and use the “facilitrees” (a.k.a. outdoor bathroom). Hikes can reinforce what students have already learned and what they will learn while at Pathfinder Ranch.

Each hike will include the following...

- Appreciation of the natural world through sensory awareness activities.
- Time for unstructured exploration and reflection.

Permaculture

Permaculture guides all aspects of human society to mimic natural processes, thereby building a stronger and more sustainable cohesion between man-made and natural environments. Depending on the chosen concepts, the **Permaculture** theme could focus on topics such as animal interactions, sustainability, energy flow through systems, gardening, and human interaction with the natural environment. During **Horseback Riding**, students are given an introduction to our horse program before riding through the local forest, and observing the differences between natural and human-made landscapes. **Horseback Riding** is paired with another concept such as **Farm**, which allows students an opportunity to interact with our farm animals, and potentially learn about animal food products, wild versus domestic animals, and resource (e.g. energy, soil) use at farms. **Farm Energetics** applies energy topics to our farm, and allows students to investigate energy transfer and energy resources needed to run a farm. At the **Garden**, students will look at the process and energy transfer of farm to plate, photosynthesis, and sustainable gardening practices. The **Permaculture** theme provides hands-on experiences with our horses, farm, and/or garden that promotes investigation into plants, animals, sustainability, and energy cycles.

Based on the teacher’s concept selections, each class will include the following...

- **Horseback Riding**- Riding safety, general horse information, and trail ride.
- **Farm**- Interactions with Pathfinder Ranch’s domesticated animals, and an introduction to animal husbandry and food products.
- **Garden**- Hands-on learning activities in the garden, the importance of plants for survival, and potentially a sampling of seasonal produce.
- **Farm Energetics**- Interactive energy activities that help a farm and/or garden operate sustainably.

Recreation

The **Recreation** theme employs kinesthetic and cognitive challenges to engage students in communication, cooperation, and decision-making. This theme is meant to provide students with new and fun activities that they may not experience anywhere else. Trying new things is an important goal at Pathfinder Ranch. During **Horseback Riding** students develop responsibility for themselves and their horse while enjoying a beautiful ride through our forest and meadow. **Riding** must be paired with **Canoeing** or **Horsemanship**. During **Canoeing** students will learn about water safety and paddling techniques before heading out on the water to build communication skills as they work with a classmate to navigate their canoe. During **Horsemanship**, students get to interact with our horses through ground-based activities such as grooming, feeding, anatomy, and other interesting facts about horses. **Archery** helps students develop a sense of sportsmanship and camaraderie within the group as they cheer each other on. Students learn about traditional hunting tools, archery background and equipment, proper shooting technique, and concentration. Throughout **Team Challenge** students develop problem-solving skills and learn how to overcome obstacles in order to successfully reach their goals. **ExCEED** is a variation of **Team Challenge** that involves a horse as a team member causing students to work harder to develop leadership, communication, and problem solving skills. Students leave this theme with a sense of satisfaction in trying something new, camaraderie with their classmates, and confidence after reaching their goals.

Based on the teacher's activity selections, each class will include the following...

- **Horseback Riding**- Riding safety, general horse information, and trail ride.
- **Canoeing**- Paddling directions, water safety, and communication skills.
- **Horsemanship**- Interact with our horses while doing ground-based animal care activities.
- **Archery**- Archery background, shooting technique, commands, and practice shooting skills.
- **Team Challenge**- Importance of cooperation, communication, creative problem solving, and team work.
- **ExCEED**- Ground-based horse interactions and challenge activities.
- **Every Activity**- Trying new things, developing important skills, and setting personal goals.

Wilderness Skills

From building shelters in **Survival Skills** to learning which fuel will quickly start a fire in **Fire Ecology**, learning to use the land wisely is a valuable lesson and one of the most fascinating topics to learn about. The **Wilderness Skills** theme encourages an understanding of using available resources in the local environment. Beyond that, students will learn how to read maps and use a compass in **Orienteering**. Students can learn about hunting materials, shooting techniques, safety, and precision skills in **Archery**. This theme helps students become better aware of their surroundings, and understand some important skills to safely participate in many outdoor activities.

Based on the teacher's concept selections, each class will include the following...

- **Survival Skills**- Outdoor activity safety, preparation, and equipment, plus practicing survival techniques such as shelter building.
- **Fire Ecology**- Investigate the flammability of local plants, demonstrate or discuss different ways to build and start a fire, and the importance of fire to traditional and contemporary societies.
- **Orienteering**- Basic map reading and use of a compass on a compass course.
- **Archery**- Learn about traditional hunting tools, and practice shooting skills.

Wildlife

Being adjacent to the San Bernardino National Forest and plenty of open space, Pathfinder Ranch has neighbors of all sorts. The wildlife we see in our local environment varies from gray squirrels to woodpeckers. Every kingdom is represented and well accounted for. The **Animal Ecology** and **Forest Ecology** concepts assess relationships between animals and their environments. Students will also learn about some adaptations that these animals use to survive in the local environment. **Herpetology** takes a closer look at the reptiles and amphibians that live in the chaparral environment around Pathfinder Ranch. In the **Nature Center/Farm** concept, students get a lot of quality time exploring and learning about our live animals, preserved specimens, and interactive displays in both locations. The **Wildlife** theme allows students an opportunity to explore our local environment for animals, the differences between wild and domestic animals, and their physical and behavioral adaptations.

Based on the teacher's concept selections, each class will include the following...

- **Animal-** Interdependence between animals and their environment, including the roles of producer and consumer.
- **Animal or Herpetology-** Visit the Nature Center and discuss animal adaptations.
- **Herpetology-** Characteristics of reptiles and amphibians, and their differences.
- **Forest-** Systems and cycles in our local pine forest, the interconnectedness of everything in the forest, and how living things survive in a forest.
- **Nature Center/Farm-** Interact with our animals in the Nature Center and at the Farm, learn about their adaptations, and assist with their daily care.

All-Group Activities & Evening Programs

Astronomy

Astronomy is an evening program that begins with a presentation covering moon, sun and stars. Students will learn about moon phases, nuclear fusion, stars facts and luminosity, and some information about exoplanets. Following the presentation, students will be split into groups to rotate through three stations. The following stations are great ways to explore our night sky: telescopes, constellations, and star stories. Please note that these stations may vary depending on the weather, and alternative activities are available if one or more of the above stations cannot be used. While at the telescope station students will investigate up to three unique celestial objects in our night sky. At the constellation station, instructors point out and discuss interesting facts or myths about prominent constellations and celestial objects in our night sky. During star stories the students will listen to star and constellation stories from Greek and Roman mythology, and Native American cultures. By the end of the **Astronomy** evening program, students will have a basic understanding of astronomy concepts of the moon and stars.

This evening program will include...

- A presentation about the stars and other celestial objects.
- An opportunity to view the night sky (weather permitting).
- Historic and/or cultural stories about stars and the night sky.

Catapults

Catapults evening program is an all-group activity that challenges students in the engineering process. Students will receive a presentation about the history and design of catapults, and will then be asked to work in small groups to design and build a catapult. The scientific method will be incorporated into designing and testing their catapults. At the end of the program, students will engage in a competition of accuracy, height, and distance with the goal of defending Pathfinder Ranch from a dragon.

This evening program will include...

- A presentation about the history and design of catapults.
- Scientific method and engineering process.
- Hands-on exploration of physics concepts.

Electives

Electives are designed to give the students a choice of classes that are of interest to them. The classes will vary depending on the interests and passions of the current instructors and what they think the students will enjoy the most. Schools that choose electives will not know the classes until they arrive at Pathfinder Ranch. Some examples of elective classes done at Pathfinder Ranch include: animal tracking and exploration, discovery hikes, nature art, advanced rock climbing, recreational classes, and extreme survival skills. To help the students decide on an elective the instructors act out commercials that describe their electives. Classes have different attendance capacities, and sometimes students get their second choice, but it's always an enjoyable experience no matter the choice they make!

Lorax & Town Meeting

Lorax & Town Meeting begins with the Pathfinder thespians performing the classic environmental fable of the Once-ler and the Lorax. At the conclusion of the story, the students take part in a town meeting to determine the fate of the last truffula seed. Each study group represents different interest groups concerned about their town's future. Each group presents their arguments of what they'd do with the last seed, listen to the other groups' arguments, ask questions of various groups, and then give concluding statements that address the other groups' questions or issues regarding their plans. The students are challenged in this public debate setting to work together to present their arguments, explore different perspectives of environmental issues, use public speaking skills, and work within a local town meeting format. Even within the groups, there is a lot of discussion, compromise, and problem solving that occurs before each round of presentations. This is a great culminating day activity or as an evening program.

This class will include...

- Public speaking and debate.
- Discussion surrounding environmental ethics and human impact on the natural world.
- Demonstration of public policy and decision making processes.

Mad Science Fair

The **Mad Science Fair** reinforces the scientific method and encourages students to observe, analyze, and make conclusions on scientific processes. Students begin with a short presentation reviewing the scientific method, and observe an example experiment. Afterwards, the students are split into groups that rotate through two different experiments (larger groups of 120+ students will do one in-depth experiment). Each experiment involves a demonstration by the instructor, safety instructions, and then the students are able to work in small groups to conduct their own experiments. If there's time, students can introduce a different variable, or change something to the original experiment. A lot of questions are asked, and the students make a lot of observations as well as hypotheses. Students might learn about some of the following scientific principles: water cohesion, sound waves, the states of matter, and chemical reactions.

This class will include...

- Understanding and application of the scientific method.
- Conduct experiments demonstrating scientific principles.
- Observe, analyze, and make conclusions.

Night Hike

Night Hike is a unique opportunity for students to learn about nocturnal animals and various senses. Students will learn about the human senses such as how human eyes function at night. They will also learn about different adaptations nocturnal and crepuscular animals have that allow them to become masters of the night. If students aren't taking **Astronomy** as another evening program, students will investigate the night sky by learning about constellations and interesting astronomy facts. Students will leave the hike feeling more comfortable outside at night, have a better understanding of their senses, nocturnal animal adaptations, and the night sky.

This evening program will include...

- Sensory awareness activities.
- Nocturnal animal adaptations.
- Identification of constellations (...if **Astronomy** isn't chosen as another evening program).
- Student Personal Challenge: Gaining confidence in the dark.

Predatory & Prey

Predator & Prey is a large-scale food web game of chase and capture that is played with the entire school. Through this game, students achieve a better understanding of what it means to be a predator and/or prey animal. Students learn about what animals need to survive (limiting factors) and how food webs work.

Predator & Prey is a great way to start out the week for four and five day trips, because it allows the students to explore the campus, get to know new classmates, have fun, and learn about species interactions. It also introduces them to topics that are central to many of the academic subjects we cover. If selected by itself, besides the main chase and capture activity, **Predator & Prey** will also include several other activities that address ecological concepts such as carrying capacity and animal adaptations.

This class will include...

- The roles of predator and prey species.
- Energy transfer, simple food chains, and food webs.
- Limiting factors (food, water, and shelter) and basic carrying capacity principles.

Skit Night

Skit Night (Campfire) is an all-group evening program that occurs on the last night of a school's visit. Depending on the weather, the location of the campfire is either outside at our fort by a fire ring or inside near a cozy fireplace. This is a collaborative activity between the facilitating staff and the visiting school in which everyone is encouraged to share school-appropriate stories, songs, skits, jokes and dances. Students can sign up for just about anything as long as the teachers approve it. This evening program is a great way to have fun, act crazy, and be as silly as possible. Additionally, **Skit Night** can help to develop group camaraderie, get students out of their comfort zones, build confidence in public speaking, and overcome fears.

This evening program will include...

- Dramatic performances.
- Entertaining experience that promotes group camaraderie.
- Developing public speaking skills and overcome fears.