

# Educational Program Workshops and Activities

The Catalina Experience™ at White's Landing

## Day Activities

For three-day programs, three workshops are included. TCX recommends Island “-Ologies”, Marine Fish and Inverts, and Coastal Life/Structures for a solid marine science educational program, however you are welcome to customize your itinerary!

For five-day programs, seven workshops are included. Trip leaders can either choose which workshops they would like to include, or TCX program staff will be happy to create the program for you to get the most out of your educational experience.

## Island “-Ologies”

Main activities: Geology trek and Ecology hike

- Students create an outline of the island to learn about its major geographical and geological structures, as well as how the island was formed. They learn about the major rock types and the rock cycle. Using samples from our cove, they identify the types of rock present and hypothesize what the rocks might tell us about the island's natural history. Connections between geology and ecology are introduced.
- Students learn about Catalina's ecosystem and the adaptations of the island's flora and fauna. They learn the difference between endemic, native, non-native, and invasive species, and see examples of each. They continue to make connections between geology and ecology. Students use all senses on this hike as they see, feel, smell, and even taste many of the plants along the trail.

## Goals

To have students...

- Learn how Catalina Island was formed and its major geographical/geological features
- Understand how geology affects ecology, coming to some of those conclusions on their own
- Understand the basics of rock types and the rock cycle, and use this information to try to identify rocks around White's Landing
- Get some physical exercise
- Learn the difference between native, endemic, non-native, and invasive species
- Observe adaptations of native plants to Catalina's environment
- Learn about invasive species, and come to their own conclusions about why the Catalina Island Conservancy would want to eradicate them

## Marine Fish and Invertebrates

Main activities: Touch tank lab and Snorkeling

- Students learn what an invertebrate is and explore the major invertebrate phyla and their characteristics. They use the touch tank to observe animals in captivity and discover the wide variety of body plans and adaptations found in the animal kingdom.
- Snorkeling, students learn how to use snorkel equipment and how to snorkel safely (if it is their first snorkeling lesson) or continue to advance their snorkeling skill set (if it is their second snorkeling lesson). They learn the defining characteristics of fish and are introduced to common species around White's Cove. They use snorkeling as a tool to observe these species in their natural environment.

## Goals:

To have students...

- Learn what an invertebrate is and some common species around White's Cove
- Observe animal behavior in captivity (in the touch tank) and in natural habitat (while snorkeling)
- Participate in the animal collection process
- Make hypotheses on the purposes of an animal's form
- Learn the difference between bony fish and cartilaginous fish
- Understand why snorkeling is a good marine research tool and learn how to snorkel, or continue to build their snorkeling skill set
- Participate in snorkeling to the full extent that they are able and use the skill to observe fish behavior

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## Life in the Sand

Main activities: Sand structure building, Sand crab catching and Snorkeling

- Students construct sand structures to understand the difficulty of the sand as a habitat. They invent and create their own sand-dwelling creature as well as its home. As the students showcase their creations, the group discusses the feasibility of the creatures and the difficulties of the sandy bottom as a place to live.
- Students observe a representative sand-dwelling creature, the sand crab, up close. They observe and learn the adaptations that make this animal well suited for its sandy habitat.
- Students learn how to use snorkel equipment and how to snorkel safely (if it is their first snorkeling lesson), or they continue to advance their snorkeling abilities and learn new snorkeling skills (if it is their second snorkeling lesson). They learn what animals are found along the sandy bottom and discover what adaptations these animals have that help them to live in such a difficult environment. They snorkel over the sandy bottom, attempting to startle up any of these sand-dwelling creatures for observation.

### Goals:

To have students...

- Continue to learn about and explore different marine habitats
- Understand the difficulty of the sandy bottom as a place to live, and observe the adaptations of the animals living there
- Learn how to snorkel or continue to build their snorkeling skill set
- Participate in snorkeling to the full extent that they are able
- Participate in an animal collection process and observe animal behavior
- Learn about crustaceans and their anatomy
- Use some creativity and critical thinking skills to invent and build their own sand creature

## Coastal Structures

Main activities: Beach systems lab and Kayaking

- Students learn how beaches are constructed and how they change and rebuild themselves over time. They perform an experiment to better understand the structure of the beach. The experiment, a field survey that classifies the sand found on our beach, provides a review of the scientific method and helps demonstrate the different forces that act on a beach.
- Students learn how to use kayak equipment and how to kayak safely (if it is their first kayaking lesson) or continue to advance their kayaking skill set by learning new skills (if it is their second kayaking lesson). They use their kayaks as tools to explore and observe nearby coastal structures, including sandy and rocky beaches, small caves, fallen archways, and cliff sides.

### Goals:

To have students...

- Learn about the uniqueness of beaches as environments and geologic structures
- Participate in an experiment in which they help collect data themselves
- Review the scientific method
- Understand why a kayak is a good marine research tool and learn how to use it properly, or learn new kayaking skills
- Use the kayaks to observe geological structures up close

## Coastal Life

Main activities: Tide pooling and Kayaking

- Students learn about the uniqueness of the intertidal environment. First, they learn what causes tides. Then, they hypothesize on the inherent difficulties of living in the intertidal habitat, and observe intertidal animals to see the adaptations that allow them to survive.
- Students learn how to use kayaking equipment and how to kayak safely (if it is their first kayaking lesson) or continue to advance their kayaking skill set by learning new skills (if it is their second kayaking lesson). They use their kayaks as tools to look for and observe animals that live along the coast of the island, including marine birds and marine mammals.

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## Goals:

To have students...

- Determine the hardships involved in living in the intertidal zone
- Discover organisms' adaptations for surviving these hardships
- Understand why a kayak is a good marine research tool and learn how to use it properly, or learn new kayaking skills
- Use the kayaks to find coastal animals to observe
- Learn some common marine bird species and their adaptations to being marine
- Learn the characteristics of marine mammals and the difference between seals and sea lions

## GPS Treasure Hunt

- As part of the GPS treasure hunt, students learn about latitude and longitude and how GPS devices work. They gain experience with GPS devices by using them to complete a treasure hunt. The students must work as teams to find different stations, where they have to use intellectual or physical means to obtain a clue, and then use the clues to find a hidden treasure chest.

## Goals:

To have students...

- Learn what a GPS device is and how it works
- Learn about latitude and longitude and the basics of navigation
- Gain experience using a GPS device
- Work as a team to complete a task
- Apply their own personal strengths to help their team

## Mapping

Main activities: Steep hike with map making and Map-based scavenger hunt

- Students hike up a steep hill in order to have an aerial view of the campground. Using compasses, graph paper, and colored pencils, students create their own maps of the campground. As they do so, they learn about basic map concepts, including direction and relative direction, scale, legends, latitude and longitude, and topography.
- After the hike, students use the maps they have created to make their own map-based scavenger hunt. In pairs, students hide rocks designated with a team symbol around the campground, then use both visual and verbal clues to convey where the rocks are hidden to other pairs.

## Goals:

To have students...

- Learn about different types of maps and basic mapping concepts
- Use visual skills to translate what they see into a map that others can read and use
- Interpret maps made by others to find items in real space
- Interpret verbal clues based on direction and relative direction
- Work with a partner to complete a task
- Get some physical exercise

## Team Building Skills

Main activities: Low ropes course and Survival skills

- Students must work together to navigate through a series of personal and team challenge elements. The ropes course is designed to foster trust, perseverance, cooperation, and encouragement.
- Students work together in teams to design and construct survival elements. After a lesson in basic survival skills, students have a chance to build their own debris shelters and working fires.

## Goals:

To have students...

- Practice communication, cooperation, and decision-making skills
- Create an environment of trust and positive encouragement
- Overcome personal physical challenges on the ropes course
- Learn and practice basic survival skills
- Gain experience working with others in order to complete a task

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## **Trekking**

Main activities: Challenge hike and GPS navigation lessons

- Students hike to Mt. Whitley. The hike is about 2 miles in length and involves an elevation gain of about 1300 feet. Prior to the hike, students learn how to prepare for long treks and how to trek safely.
- While on the hike, students complete a navigation project using GPS devices.
- Students use the devices along the way to take measurements such as distance traveled, time traveled, maximum speed, average speed, maximum elevation, and compass bearing. Students plot different elements of their course on a graph when they return from their hike.

### **Goals:**

To have students...

- Get some physical exercise
- Experience the enjoyment of being outdoors and personal satisfaction in completing a difficult hike
- Learn about trekking preparation and safety
- Learn how to use a GPS device
- Participate in GPS data collection and use the information to learn about their hike

## **Island Invaders**

Main activities: Nature hike and Invasive plant removal

- The focus of this simple hike is on Catalina natives versus invasives, and why we should care about removing invasive species. Students learn the difference between endemic, native, non-native, and invasive species, and what each of them mean for the island's ecosystem. Along the hike they are introduced to examples of each.
- Invasive plant removal occurs as a part of the Catalina Island Conservancy's "Stop the Spread Program". Students meet with a staff member of the Conservancy and learn about the Conservancy's history and work. After a more detailed introduction to Catalina's invasives, the students get to take part themselves in invasive plant removal, clearing a small area of one or more invasive plants using the Conservancy's tools. Students leave the workshop and the island knowing that they personally improved Catalina's ecosystem by making a small dent in invasive plant removal.

### **Goals:**

To have students...

- Learn the difference between endemic, native, non-native, and invasive species
- Understand why the Conservancy wants to remove invasives, coming to some of these conclusions on their own
- Get some physical exercise
- Learn about the Conservancy, its history, and its work
- Take part in invasive plant removal themselves, improving the island's ecosystem

# Educational Program Workshops and Activities

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## **Night Activities**

For three-day programs, two night activities are included. Depending on the size of your group, the students will either rotate through two activities, or be given several options each night.

For five-day programs, four night activities are included. Depending on the size of your group, the students will either rotate through four activities, or be given several options each night.

## **Night Hike**

The night hike teaches students about nocturnal animal adaptations through a short walk up the canyon (without flashlights!) and various demonstrations. Students practice their own night vision, and learn about the way nocturnal animals' senses of sight, hearing, smell, and touch are adapted to fit the nocturnal niche.

## **Star Gazing**

Students learn how to use a planisphere and practice using them to find constellations in the night sky. They learn star gazing essentials, like how to locate the North Star and how to best spot planets in the sky, and hear the stories and legends that different cultures have created about the stars.

## **Cove at Night**

Students will learn about the essential base of the marine food chain: plankton. They learn about the different types of plankton and their important role in the food chain. Underwater lights are set out at the end of the pier to attract plankton and, ultimately, other animals from higher up the food chain. Students sit on the float and observe the animals we can attract, gaining an understanding of this marine food chain as they watch.

## **Squid Dissection**

Students dissect a squid in order to investigate the unique adaptations of this mollusk. They observe the external and internal anatomy of the squid, and use their observations to hypothesize on the lifestyle of the animal. Following the dissection is a cooking demonstration, in which the students slice up and eat the squids they just dissected!

## **Native Peoples**

While sitting around a campfire, students learn about the history and culture of Catalina's native people, the Tongva. They see real evidence of a Tongvan village at White's Landing, and examine replicas of Tongvan artifacts. Then, they participate in Tongvan activities, including games and a craft project. Native Peoples is best suited for elementary to middle school students.

## **Fox Eye Scavenger Hunt**

In teams, students use their flashlights to locate reflective "fox eyes" around camp. The "fox eyes" are actually blocks of wood that contain riddles as to where to find the next pair of eyes. The teams must find and solve ten riddles to complete the hunt. The Fox Eye Scavenger Hunt is best suited for elementary to middle school students.

## **Night Snorkel**

The ocean can look so different at night! Armed with waterproof flashlights, leaders and students locate the nocturnal animals of the ocean, including lobsters and small species of sharks. Students participating in night snorkeling must be in eighth grade or older. \*\*Due to the nature of this activity, this program is scheduled on a conditional basis. TCX reserves the right to withdraw this option based on weather conditions, perceived student discipline or skill, or other factors.

## **Outdoor Movie**

If you'd like an activity that an entire large group can do together, we recommend an outdoor movie. You provide the film and we'll set you up in the amphitheater to enjoy a movie under the stars!

## **Campfire**

Campfires at our beachfront fire pits are a memorable experience for any group. If you would like for your students to have campfire time, we can schedule a campfire as the entire night activity, or for after a different night activity, depending on the length of your trip and the size of your group. Either prepare your own campfire activities for your group or let our program staff lead them in games, stories, or skits. Please bring s'mores supplies if you would like your students to have a campfire snack!