



## ***SANTA LUCIA CONSERVANCY EDUCATION PROGRAM***

### **Introduction**

Located on the edge of the Santa Lucia Mountains and along the Carmel River, your group can travel only a few miles yet feel like you've ventured far from civilization. The Santa Lucia Conservancy Education Program provides an opportunity for school and other groups to learn outdoors.

Educators have pointed to increasing disconnection between children and the world outside their homes and school. Ignoring outdoor education risks creating a generation uncomfortable and distrustful of the natural world. We seek to expose children to nature so that they see it as part of their home, and care enough to protect it.

The SLC Education Program has developed a program which is multi-sensory and developmentally appropriate. Our classes have evolved through our exploration of the Santa Lucia Preserve. We began 10 years ago with wide-ranging nature walks along Potrero Creek, and inspired by the diversity of the riparian environment, created specific classes focusing on mammals, birds, butterflies, salamanders and local history (among others), all of which emphasize the special qualities of this location.

Increasing emphasis on academic standards has moved children even further from the direct sensory experience of outdoor education. Our program supports and enhances the California State Science Curricula, especially for grades K through 5. We offer the opportunity to learn directly from nature in a fun and multifaceted manner. Many teachers have described our classes as, "the best field trip we have ever taken", and "the best way to learn about life science".

We invite your class or youth group to participate in one of our outdoor education experiences, conducted either at our "Nature's Classroom" or in our Potrero Creek study area.

Appropriate art projects can be included in every class.

**Visits are scheduled on a "first come, first serve" basis.**

### **FOR ALL AGES**

#### **Guided Nature Walk**

Potrero Creek is an ideal outdoor classroom. We gather for instruction at our tables placed in a large clearing, then explore the beautiful riparian environment. The diversity of plants and animals ensures an enjoyable and educational experience. We find tracks, scat, birds, reptiles, amphibians, butterflies and always an amazing array of interesting plants (from huge redwoods to tiny wildflowers). We talk about the native American lifestyle and use of plants, the interactions between all the living things and do lots of hands-on discovery. We customize the class to the age and particular interests of each group.

#### **Spring Wildflowers**

In addition to finding and identifying wildflowers, we often add age appropriate lessons about pollinators and plant anatomy. Art projects can include sketching and crafts with pressed flowers.

### **Field Mammals Class**

Combine an introduction to our local mammals and their unique feet adaptations with an exploration of trails along Potrero Creek or the Carmel River to find signs of animals.

### **Ladybugs in Hibernation**

Hundreds of thousands of ladybird beetles (more commonly known as ladybugs) mass together in Williams Canyon during the winter months. This spectacle provides a wonderful opportunity to learn about the world of insects, the life cycle and natural history of the convergent ladybug and view a fascinating natural event in a beautiful redwood canyon.

### **FOR OUR YOUNGEST VISITORS (Pre-K through 2nd grade)**

#### **Seasonal Nature Walk**

Endless opportunities for discovery, highlighting the fall or spring changes in the landscape. We use a multi-sensory approach, guiding the children to the smells, feel, sounds and sights of nature. (Potrero Creek)

#### **Nature Walk With a Focus**

We're happy to incorporate special lessons on butterflies, mammals, owls, oaks, wildflowers or the subject of your choice into our nature walk. Many K-2 grade classes visit for a butterfly nature walk, complete with an age appropriate introduction to the butterfly life cycle and natural history. On the walk we catch and inspect butterflies and watch them in their native habitat. (Potrero Creek)

#### **Bird Habitats**

An introduction to the unique qualities of birds and the specific birds that live around our Visitor Center and their habitat needs. We focus on the bird life cycle, bird identification (including bird song) and do a bird art project to be taken home. (Outdoor classroom, spring only)

### **THIRD GRADE AND ABOVE**

#### **Seasonal Nature Walk**

For older children we focus on the interactions between all the living things, or single out one particular subject for a "focused" nature walk. The experience can be customized for special interests of a group. (Potrero Creek)

#### **All About Butterflies**

Most butterflies complete their life cycle in the riparian ecosystem; warm fall and spring days bring out many of these colorful insects. We introduce butterfly natural history, behavior and field identification tips, and then go on a walk to observe butterflies and identify the plants used for nectar and larval food. (Potrero Creek, dry season)

#### **The Santa Lucia Preserve and California History**

We do more than nature study! A walk in Potrero Canyon offers a glimpse of our past. It is an inspiring place to present our fascinating local history and supports 3rd and 4th grade history curriculum standards. Native Americans, Spanish explorers and missionaries, and Mexican and early American ranchers have all resided on the land that is now the Santa Lucia Preserve. On our walk we do leaf rubbings of historically significant plants to tie the landscape with history. (Potrero Creek)

#### **Mammals and Their Tracks**

One of our most popular classes, each child makes a plaster cast of one of the local wild animals. They then learn about the natural history of that animal and how its foot aids in survival (an example of adaptation). A "nature detective" walk follows, during which we discover tracks, scat, animal homes and other signs of animal presence. (Visitor Center; anytime but BEST for tracks during rainy season)

**Natural History of Cavity Nesting Birds**

We introduce our local cavity nesters and their unique natural history, and go for a bird walk around our Visitor Center along the Carmel River. An age appropriate project will follow. Groups are encouraged to create their own bird box kits for construction with us. Contact us in advance for more information. (Visitor Center; anytime)

**Owls in the Redwoods**

Many species of owls live in the Preserve, and we often see Barn Owls. We introduce the natural history of raptors and owls in particular. We use feathers, owl calls and pellets, then explore their world in the Potrero focusing on the owl food web and habitat. (Potrero Canon)

**Salamanders in the Santa Lucia Preserve**

We introduce our local amphibians and explain their fascinating adaptations and evolution. On the walk we look for the elusive creatures and explore their habitat needs. The fascinating evolutionary history of two of our resident salamanders is especially interesting for older children. (Potrero Canyon, best in cool weather)

**Art and Poetry in Nature**

We begin with a walk to awaken the creative spirit and collect materials for an art project, followed by nature-inspired creative writing. (Potrero Canyon)

**FOURTH GRADE AND ABOVE****The Riparian Ecosystem**

The highest diversity of plant and animals is found where water is available year round. The wealth of life along Potrero Creek provides an opportunity for learning about ecosystems.

**All About Oaks**

The Oak ecosystem is very complex. In this very interactive, hands-on class we look at the many living things that depend on oaks and their interrelationships. We can plant acorns to be taken to school for a restoration project. (Fall only)

*All of our programs are free of charge and are scheduled on a "first come, first serve" basis.*

## **CALIFORNIA SCIENCE AND HISTORY CONTENT STANDARDS ADDRESSED IN SANTA LUCIA CONSERVANCY'S EDUCATION PROGRAMS**

### **Kindergarten**

#### Life Sciences

Observe similarities and differences in the appearance and behavior of plants and animals.

Identify major structures of common plants and animals.

#### Investigation and Experimentation

Observe common objects by using the five senses.

Compare objects by one physical attribute (color, shape, texture, size, weight).

Communicate observations orally and through drawings.

#### History Content Standards, "Learning and Working Now and Long Ago"

Students understand that history relates to events, people and places of other times.

Understand how people lived in earlier times and how their lives would be different today.

#### *Santa Lucia Conservancy Programs for Kindergarten*

A nature walk along Potrero Canyon is the activity most appropriate for kindergartners. The Preserve naturalists lead the children on a sensory exploration of the beautiful riparian area. All our programs expose the children to the plants and animals living alongside Potrero Creek and the Carmel River.

They see, touch, smell, listen and observe seasonal changes.

We talk about the Native American residents of Carmel Valley, the Rumsens, and how they lived in the area. We relate it to the children's own lives with respect to how the Native American children contributed to the tribe's livelihood, what they ate, wore, believed, etc.

We usually include an appropriate art project which reinforces that which was observed on the walk.

### **First Grade**

#### Life Sciences

Knowledge about plants and animals which includes environmental differences and relevant external features.

Needs of living things for survival.

#### Investigation and Experimentation

Draw pictures

#### History Content Standards, "A Child's Place in Time and Space"

Understand the ways in which American Indians and immigrants have helped define California and American culture.

#### *Santa Lucia Conservancy Programs for First Grade*

Ample opportunity for learning about plants and animals residing in the riparian areas of Carmel Valley is provided on our nature walks and bird habitat class. We talk about the needs of the living things, and how they survive in the habitat.

Throughout all of our classes, we make reference to the livelihood of the Rumsen Indians in Carmel Valley with respect to their use of native plants, their clothing, houses, weapons, and other details about their lives.

We also share information about the Mission period and the grazing that took place of the Preserve, and the Rancho period when the Preserve was a Mexican Land grant.

Art projects include leaf rubbings, nature printing, collages, making bird feeders and creating a bird book.

## **Second Grade**

### Life Sciences

Life cycles of plants and animals

### Investigation and Experimentation

Use magnifiers or microscopes to observe and draw descriptions of small objects or small features of objects.

### History Content Standards, "People Who Make a Difference"

Students differentiate between things that happened long ago and things that happened yesterday.

### *Santa Lucia Conservancy Programs for Second Grade*

General or focused-subject nature walks are ideal for second graders. There is ample opportunity to talk about and observe the many plants and animals and their unique features. For example, redwoods reproduce primarily by sprouts instead of seeds, oaks grow from acorns, butterflies start from eggs (which we see under leaves), turn into caterpillars (which chew large holes in leaves), and fly in sunny clearings as adults.

We can use hand lenses to observe plant features and tiny eggs, patterns on butterfly wings or an endless possibility of other things. We have also created classes which focus on one particular group of animals, incorporating a thorough introduction to their unique features and an exploratory walk in the habitat of the animal. Our butterfly, owl, salamander, mammals and wildflower classes all are highly educational and fun in age appropriate way.

We make reference to the historical use of the Preserve during our programs in Potrero Canyon, especially in reference to Native American use of the plants and animals for their livelihood.

## **Third Grade**

### Life Sciences

Focus on adaptations in physical structure or behavior which improves an organisms chance for survival. Disappearance of organisms that once lived on Earth, and resemblance to others alive today.

### History Content Standards, "Continuity and Change"

Identify geographical features in their local region.

Trace the ways people have used the resources of the local region and modified the physical environment.

Describe the American Indian nations in their local region.

Discuss ways in which physical geography influenced how the local Indians adapted to their natural environment.

Describe economy and systems of government.

Describe the interactions of new settlers with already established Indians in the region.

Organize the sequence of local historical events and how each period of settlement left its mark on the land.

    Research explorers who visited

    Describe economies established by settlers

Trace why their community was established and how it has changed over time using maps, photographs and histories

### *Santa Lucia Conservancy Programs for Third Grade*

Our classes are a perfect fit for the developmental abilities and curriculum guidelines for third graders. Our nature walks provide an introduction to the unique and diverse riparian ecosystem and numerous examples of the adaptations and inter-relationships of the plants and animals which reside here. We can incorporate activities and discussion about food webs, food chains, adaptations and other ecology concepts.

The cavity nesting bird class focuses on the specific needs and adaptations of our local cavity nesting birds, and gives the children an opportunity to practice basic carpentry skills.

Our focused nature walks are perfect for the abilities of third graders: mammals, salamanders, butterfly and wildflowers.

We use the redwoods as an example of “living fossils”, and salamanders to introduce speciation. Our history walk covers all of the history objectives described above; we see great value in teaching local history in a setting where all local historical periods come alive; we utilize maps and pictures in our introduction, for example we show where the Rumsen villages were located in relation to Potrero Canyon, and the distribution of other Ohlone tribelets in the region. After a thorough description of the Native American history, we show pictures and introduce the Mission, Rancho and American periods. We talk about the drastic and lasting impacts of the Missionaries on the local Native Americans. On the walk, we do leaf rubbings of historically significant plants, share information of the origin of such names as “Santa Lucia”, and the changes in the landscape that have occurred as a result of uses of the land.

## **Fourth Grade**

### Life Sciences

All organisms need energy and matter to live and grow. As a basis for understanding this concept:

Plants are the primary source of matter and energy entering food chains.

Producers and consumers are related in food chains and webs.

Decomposers recycle matter.

Living organisms depend on one another for survival.

Ecosystems include living and non-living components.

### History Content Standards, “California: A Changing State”

Students describe the social, political, cultural and economic life and interactions among people of California from the pre-Columbian societies and Spanish missions and Mexican rancho periods. As a basis for understanding these concepts:

Students know 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 the land and use of sea resources.

### *Santa Lucia Conservancy Programs for Fourth Grade*

Nature walks are perfect for displaying the relationships between the environment and living things in the riparian ecosystem. Our focused nature walks are ideal if a group prefers to choose a particular subject; cavity nesting birds, mammals, owls, salamanders, oaks, butterflies and wildflowers. We are also able to customize field experiences to the interests of a group.

Our history walk is the perfect hands-on introduction to California History, in a setting where it comes alive. We use visual information and a history-oriented nature walk to take history out of the classroom and into an area where many significant events took place. The Rumsen Indians lived here, and the Carmel Mission grazed their livestock, after which the Preserve became a Mexican Land grant owned by a Mission neophyte, and finally a large ranch during the American period.

## **Fifth Grade**

### Life Sciences

Plants and animals have structures for respiration, digestion, waste disposal, and transport of materials. As a basis for understanding this concept:

Students know how sugar, water, and minerals are transported in a vascular plant.

Students know plants use carbon dioxide (CO<sub>2</sub>) and energy from sunlight to build molecules of sugar and release oxygen.

Students know plant and animal cells break down sugar to obtain energy, a process resulting in carbon dioxide (CO<sub>2</sub>) and water (respiration).

### History Content Standards, U.S History and Geography: Making a New Nation

Students describe the major pre-Columbian settlements in the U.S.

How geography and climate influenced the way various nations lived and adjusted to the natural environment . . . including the location of villages, . . . structures they built, and how they obtained food, clothing, tools and utensils.

Describe their varied customs and folklore traditions.

Explain their varied economies and government.

Students know routes of early explorers, including why they chose to explore here.

Understand the cooperation and conflict between Indian nations and new settlers.

### *Santa Lucia Conservancy Programs for Fifth Grade*

Nature walks in the Santa Lucia Preserve for fifth grade classes provide an opportunity for an ecosystem approach to the Potrero Canyon riparian area. During subject classes on oaks, butterflies, wildflowers, mammals, salamander and owls, we include species specific information on physiology and natural history for each animal.

The history walk in Potrero Canyon provides an overview of Monterey Peninsula and California history, with an emphasis on the Indian tribe which resided in Carmel Valley, the Rumsens, and the nearby Esselen and Salinan tribes. We visit a riparian area where the Indians lived and gathered their food, and present all aspects of their lifestyle. We focus on the impacts on the local Indians upon the arrival of the Spanish during the Mission period; the Rumsen Indians made first contact with the Spanish of all California Indians, and suffered the largest losses in their numbers and culture as a result. When talking about the Mission and Rancho periods, we emphasize the specific aspects of California history which took place locally and talk about why and how these events took place.

### **ACADEMIC CONTENT STANDARDS: KINDERGARTEN THROUGH FIFTH GRADE HISTORY AND SOCIAL SCIENCE ANALYSIS SKILLS**

The intellectual skills which are supported by the Santa Lucia Conservancy Education Program include:

#### Chronological and Spatial Thinking

Students place key events and people of the historical era they are studying in a chronological sequence, including interpreting time lines.

Students explain how the present is connected to the past, how some things change over time, and some things stay the same.

Students judge the significance of the relative location of a place, of trade routes and analyze how relative advantages or disadvantages can change over time.

#### Historical Interpretation

Students summarize the key events of the era they are studying and explain the historical context of those events.

Students identify the human and physical characteristics of the places they are studying and explain how those features form the unique character of those places.

Students identify and interpret the multiple causes and effects of historical events.