Our Animal Neighbors

Field Trip and Educational Kit Overviews

Plus Supplemental Activities

A collaboration between the Santa Cruz Museum of Natural History and the UCSC Ken Norris Center for Natural History

Kenneth S. Norris Center for Natural History

SANTA CRUZ MUSEUM of natural history

About the Museum

The Santa Cruz Museum of Natural History is a leader in environmental education in Santa Cruz County, serving more than 30,000 children and adults each year.

Our school programs connect youth with nature, engage them in scientific exploration and discovery, and cultivate the next generation of environmental stewards. We cover a wide variety of natural history topics such as watershed science, animal adaptations and habitats, and the history and culture of Native Peoples. All of our offerings aim to create a personal understanding of the natural world around us and our role in it.

All of our programs support state standards and diverse learning styles. Click here for in-depth NGSS, CCSS, and HSS alignment.

Transportation Scholarships

The Museum is happy to offer transportation scholarships to classes who request assistance, but cannot guarantee the availability of funds. Please let us know if you are interested in a scholarship to help either fully or partially cover the cost of a bus.

Sponsors

Thanks to our school program supporters: Captain Planet Foundation · City of Santa Cruz · Community Foundation Santa Cruz County · David & Lucile Packard Foundation · Helen and Will Webster Foundation · Monterey Peninsula Foundation, host of the AT&T Pebble Beach Pro-Am · Project Learning Tree, a program of the Sustainable Forestry Initiative, Inc. · Santa Cruz Beach Boardwalk · Save the Redwoods League

Part I: Our Animal Neighbors Program Overview

Title: Our Animal Neighbors

Grades: K-2nd

Topic: Through an interactive, inquiry-driven program using animal specimens and games, students learn how to identify native animals and discuss structures/forms that help them to survive in their habitats. By focusing on common native animals and accessible habitats, this program encourages students to connect with wildlife and builds awareness of the animals that live around us.

Why is this a relevant and interesting topic? Being able to identify local species and their specific adaptations for their habitats brings people closer to their native environment. It also helps children to make connections to the natural world and inspire them to care about their wild animal counterparts. Native animals are a critical aspect of ecosystems, their adaptations are indicative of how they live successfully in their environment.

Stewardship Goal: Visitors should create a concrete connection to the natural world through observation and identification, this will inspire interest in the conservation of fauna and their habitats.

Objectives:

1. Be able to correctly identify three native animal species.
2. Understand the broad concept of predator/prey relationships, specifically in the context of the relationship between a Bobcat, Black-Tailed Jackrabbit, and Red-Tailed Hawk.
3. Identify two different adaptations for specific animals and explain why they help the animal survive in their particular habitats.

Standards

We are actively working on developing our curriculum and helping teachers to identify ways in which our program supports and relates to Common Core, CA History-Social Science Frameworks, and Next Generation Science Standards. **Click here** for a more detailed look at the standards and how this program supports them.

<table>
<tr><th colspan="3">Next Generation Science Standards</th></tr>
<tr><td colspan="3">Performance Expectations
K-LS1-1: Use observations to describe patterns of what plants and animals (including humans) need to survive.

2-LS4-1: Make observations of plants and animals to compare the diversity of life in different habitats</td></tr>
<tr><td>Science and Engineering Practices

Analyzing and Interpreting Data

Planning and Carrying Out Investigations</td><td>Disciplinary Core Ideas

LS1.C: Organization for Matter and Energy Flow in Organisms

LS4.D: Biodiversity and Humans</td><td>Crosscutting Concepts

Patterns</td></tr>
<tr><th colspan="3">English Language Arts Standards</th></tr>
<tr><td colspan="3">W.1.8: With guidance and support from adults, recall information from experiences or gather information from provided sources to answer a question.</td></tr>
<tr><th colspan="3">Mathematics Standards</th></tr>
<tr><td colspan="3">K.MD.A.2: Directly compare two objects with a measurable attribute in common, to see which object has “more of”/”less of” the attribute, and describe the difference</td></tr>
</table>

Part II: Our Animal Neighbors Field Trip Content

Outline

We will do our best to adhere to the following outline. Please let our staff know as soon as possible if your class has specific needs with respect to timing, such as an early departure time or wanting to include “free time” in the program hour. Late arrivals or early departures may result in the exclusion of some parts of the program.

Introduction: 5 minutes
Station 1: 20 minutes
Station 2: 20 minutes
Games: 15 minutes
Free Time: Up to 30 minutes

Total program time: 1.5 hour

Introduction

Time: 5 minutes
Location: Entrance to Museum
Objective: Students will understand that a habitat is a place where an animal lives and animals that live in different habitats have adaptations that help them survive in their particular habitat

Venn Diagram Station

Time: 20 minutes
Location: Back room
Objective: Students will learn what adaptations are shared between the three native animals, and which are unique. Children will also know what a habitat is and the three habitats the three native animals live in.
Materials: Velcro board with adaptations, adaptation cards, question cards, specimens (both permanent Museum exhibits and interactive specimens from program supplies)
Vocabulary: adaptation, habitat, camouflage, nocturnal, specimen, “science-hands”

Skull and Skeleton Station

Time: 20 minutes
Location: Front room
Objective: Students will discover how animals' skulls reflect their unique form and function, and how skeletal structures affect how animals move
Materials: Skulls, skeletons, laminated animal pictures
Vocabulary: omnivore, carnivore, herbivore, locomotion/movement, skull, skeleton, predator, prey

Games Station

Time: 15 minutes
Location: Grassy area near Pilkington Avenue (or inside in the backroom if it is raining)
Objective: Students will explore how certain adaptations can help animals be more successful at avoiding predation or at securing food
Materials: pipe cleaners, "rabbit baby" jar(s) with marbles, spray bottle
Vocabulary: Predator, prey, adaptations, senses, animal locomotion

Free Time

Time: Up to 30 minutes
Location: Whole Museum
Objectives: Students are invited to further explore the the specimens from the program and explore the rest of the Museum, including the Intertidal Touch Pool with live sea animals.

Part III: Our Animal Neighbors Educational Kit Outline and Supplemental Activities

Why do we provide the Our Animal Neighbors Kit?

This activity kit is designed to familiarize your students with topics presented in the "Our Animal Neighbors" field trip, and to provide a depth of experience and opportunity to apply knowledge after the trip. The activities within this kit will give your students a better understanding of such topics as **adaptations, habitat,** and **predator-prey relationships** using unique artifacts and hands-on exploration.

How does it work?

We recommend that these activities are done in the order that they are presented, for a more comprehensive understanding of relevant concepts. These activities can be adjusted to different age or learning groups by adjusting the level and amount of reading and writing, and choosing appropriate vocabulary. For example, if you feel that there are too many words for a younger age group, focus more on observational learning; included worksheets can be omitted. Conversely, if you feel as though your students could benefit from more written analyses, feel free to assign the extensional writing prompts provided with particular activities, which help to further understanding and scientific observational skills.

Our Animal Neighbors Kit Contents

1. Supplemental Activity Curriculum Descriptions
2. Visual Aids to support curriculum, including habitat photos, diagrams, and worksheets
3. Skulls and animal footprint molds to support curriculum, including examples of carnivores, herbivores, and omnivores.

List of Activities and Key Concepts Covered

1. **Animals In Their Habitat** - Habitats and adaptations
2. **Hunt Like a Hawk Game*** - Adaptations, food webs, animal interactions, camouflage
3. **Create A Creature*** - Adaptations, survival, habitats
4. **Track Detectives** - Tracks, making observations and comparisons, identifying patterns
5. **Skull Discovery** - Skulls, diet (herbivore, omnivore, carnivore), form and function

* These activities are described below. The Educational Kit includes the visual aids and materials for all activities, but many can be recreated with materials in most classrooms.

Hunt Like a Hawk Game

Learning Objectives

By the end of the activity, students will understand:

- The essential components to a food web, namely in predator-prey relationships
- Animals use adaptations to help them survive, especially in the way they hunt or avoid being hunted
- What camouflage is, and how it is used by prey to avoid being hunted
- That hawks are excellent predators, who use their adaptation of keen eyesight to effectively locate and kill prey

Key Terms

Predator: an animal that kills and eats other animals.
Prey: An animal that a predator eats.
Adaptation: something an animal *has* or *does* that helps them survive in their environment
Population: total number of animals in a certain place
Habitat: the natural home or environment of an animal, plant, or other organism. A habitat must include food, water, and shelter to help the animal or plant survive
Camouflage: the way an animal can hide by blending into their environment

Background Information

A hawk is a **predator**, who hunts and eats various animals to survive. An animal like a mouse, rabbit, or snake, is considered typical **prey** for a hawk. In order to survive, many prey have **adapted** to be able to escape from predators using **camouflage.** Camouflage can help prey, like mice, insects, and rabbits, to remain hidden from their predators. Since many animals that are highly predated often have many offspring, predators help the environment by keeping populations low.

Materials

- 5 laminated hawk pictures with string

Procedure

1. *Hunting Like a Hawk:* Even the best camouflage can fail if a hidden animal suddenly moves and catches the predator's eye. In this game, we will demonstrate how movement can attract predator's attention.
2. Distribute 5 of the laminated hawk pictures with strings to random students. These 5 students will wear these pictures around their neck, and be the "predators" in this game.

3. The rest of the students will be the prey: have these students move about the room pretending to be small animals, such as a rabbit, mouse, squirrel, or snake.
4. When you call out “Hawk!” the prey must freeze. The hawks will then visually search for movement or sound; any student that moves even slightly must take his or her seat.
5. Afterwards, discuss with the class what would really happen in the wild. Why is camouflage alone not enough protection? What other **adaptation** must prey use to help protect themselves from predators? (Running/hopping, hiding, etc.)

Extensional writing prompt: Would you rather be a predator or prey? Why? Write about the good and bad things about being either a predator and prey. Be creative, you can think about a specific animal if you’d like!

Adapted from: Critter Camouflage Lesson Plan (www.scholastic.com); Predator-Prey Game (www.birdday.org)

Create a Creature

Learning Objectives

By the end of the activity, students will understand:

- There can be many types of animals in a habitat.
- There are many adaptations/ ways to survive in a habitat.
- How adaptations are specific to the habitat an animal lives in
- How some adaptations may work in some habitats, but not others
- That individual animals have traits that are recognizable as similar but can also vary in many ways.

Key Terms

Adaptation: something an animal *has* or *does* that helps them survive in their environment

Habitat: the natural home or environment of an animal, plant, or other organism. A habitat must include food, water, and shelter to help the animal or plant survive

Background Information

An **adaptation** is something an animal or plant *has* or *does* that helps them live in their **habitat** (a place where an animal lives). Many animals use adaptations to live in certain places, like the fur that polar bears have in order to live in cold places. Adaptations evolve over *long periods of time and many generations.* Animals are born with these adaptations, and pass it down to their offspring.

Preparations

Materials:

- Assorted recycled materials to build creatures (corks, pen caps, pipe cleaners, straws, bottle caps, film canisters, yarn, etc) and/or clay
- (optional) 5 habitat placards: desert, ocean, forest, grassland, arctic
- Create a Creature Challenge Card

Directions for Create a Creature game:

1. Ask students: What do animals need to survive? (food, shelter, water, space)
2. Ask: How do animals get these things? (Accept a few answers to start)
3. Discuss how animals use adaptations to survive in different ways and in different habitats. Ask students to share examples of adaptations that help animals find food, protect themselves from predators, and survive in a particular habitat.
4. Distribute one craft kit to each of 5 groups.

5. (Optional) Give each group a habitat card. If students are unfamiliar with their habitat, help them study the picture for clues about conditions and potential food: Are there places to hide? Are there a lot of plants? Are there things that might be challenging, like hot sun or battering waves? Alternately, review one habitat with the whole class, and have everyone create a creature for the same habitat.
6. Tell the students that they will try to create their own creature using the crafts they are given.
7. Their special task is to create an animal with adaptations that help them survive in their assigned habitat (or the one habitat for the whole class). Their animal must have adaptations to help it get food, protect itself, and survive the specific challenges and conditions in their habitats. Display the Challenge Card for students to refer to as they create their creatures. Each of the craft materials can be used as different adaptations, so they can be creative in their creature creations.
8. After each of the groups have made their own creature, have the students present their animal to the class. What adaptations did they use for their animal? How does this help them live in their habitat? What will the animal do if their habitat changes?

Extensional writing prompt: Create a poem about an animal: For the first line write an animal's name, on the second line include 2 adjectives describing the animal, then 3 verbs, then 2 more adjectives, then finally one more noun that represents the animal.

Extensional activity: Students should keep their animals, but pass their habitats to a different group. How well would their animal survive in this new habitat? Allow students to argue their case: my animal would die..., my animal would still be able to find food..., my animal would do better, because….