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To the Educator

San Diego's Native Habitats: Shrublands Teacher's Guide was developed by the San Diego Children and Nature Collaborative to integrate native habitat content into your existing classroom curriculum. Utilizing local habitats and outdoor activities brings your classroom content to life in an authentic and engaging way.

This curriculum is tailored for students in grade four, supporting interdisciplinary 4th grade California State Content Standards. Activities may be completed individually, yet student learning is most effective when all of the lessons are completed. To assist you in integrating this into your existing curriculum, we have identified the most common textbooks section that each lesson can supplement or replace. While these activities are designed for grade four, they can be modified for other elementary grades.

Do you have comments or suggestions regarding the activities in this Teacher's Guide? We'd love to hear your opinion. Write the San Diego Children and Nature Collaborative at fege@sandiegoaudubon.org.

The San Diego Children and Nature Collaborative is a regional collaborative of organizations, individuals and companies with the mission to inspire communities to nurture, empower, and engage youth in cultivating their relationship with nature.

Unit at a Glance

	Lesson 1 <i>Introduction to Native Habitat</i>	Lesson 2 <i>Native Habitat Hunt</i>	Lesson 3 <i>Shrubland Food Chains</i>	Lesson 4 <i>Shrubland Survivors</i>	Lesson 5 <i>Helping Native Habitats</i>
Pages	Pages: 1- 6	Pages: 7-8	Pages: 9-11	Pages: 12-13	Pages: 14-17
Objectives	<ul style="list-style-type: none"> Compare writing samples looking for evidence of opinions and scientific facts. Make scientific observations. Write a scientific (factual) description of a plant. 	<ul style="list-style-type: none"> Observe the habitats near their school. Explain what the shrubland habitat is and what it provides. Describe how the needs of different plants and animals are met. Observe plant and animal adaptations. Understand what happens to an animal if it is not able to meet its needs. 	<ul style="list-style-type: none"> Classify organisms as producers, consumers, or decomposers. Demonstrate how energy flows through a shrubland food chain Recognize that plants are the primary source of energy for living things in an ecosystem. Explain how living things meet their needs and survive. 	<ul style="list-style-type: none"> Review the environmental conditions of native habitats. Identify the adaptations of shrubland species. Apply their understanding shrubland adaptations by designing an imaginary species. 	<ul style="list-style-type: none"> Participate in a project to improve shrubland habitat. Analyze and creatively solve authentic public problems. Plan, collaborate, and take responsibility for project tasks.
Time Required	Prep: 20 min. Lesson: 60-90 min.	Prep: 30 min. Lesson: 90 min.	Prep: 15 min. Lesson: 50 min.	Prep: 10 min. Lesson: 60 min.	Varies by project <i>*Start preparation during Lesson 1</i>
CA Standards	4 LS 3.a 4 IE 6.a, 6.c 4 ELA R 2.1, 2.2, 2.5, 2.6 4 ELA W 2.1a, c	4 LS 3.c 4 IE 6.a, 6.c 4 ELA LS 1.1, 2.4	4 LS 2.a, 2.b, 2.c 4 IE 6.c, 6.d 4 ELA R 2.5, 2.7	4 LS 2.b, 3.a, 3.b 4 IE 6.c, 6.f 4 ELA R 2.2, 2.6 4 ELA W 2.3b, c	4 LS 3.b 4 IE 6.a, 6.c, 6.f 4 ELA LS 1.1 4 ELA R 2.4
Text: Harcourt	p. 206-207, 208-223,	p. 240-253	p. 150-151, 152-179	p. 208-223, 224-239	p. 224-239
Text: MacMillan/McGraw Hill	p. 82-91	p. 94-101	p. 36-47, p. 50-59	p. 50-59, p. 82-91, p. 104-111	p. 104-111, p. 114-123
Text: Pearson Scott Foresman	p. 120-139	p. 160-168	p. 90-106	p. 90-106, p. 151-159	p. 151-159
Text: Delta Education	Investigations 1,2,4	Investigation 2	Investigation 3,4	All Investigations	Investigations 2,3,4,5
Text: Houghton Mifflin	p. 6-36	p. 46-49	p. 66-72, 86-100	p. 54-64, 86-100	p. 20-28
Vocabulary	Adaptation Conservation Decomposers Energy Food chain Habitat Native Naturalist Shrublands Species	Habitat Native Predator Prey Scat Shrublands	Consumer Decomposer Energy Food chain Habitat Predator Prey Producer	Adaptation Energy Habitat Native Predators Prey Shrublands Species	Conservation Habitat Native Naturalist Species Wildlife

Lesson 4 Shrubland Survivors

Time

Preparation 10 min

Lesson 60 min

CA Standards


4 LS 2.b, 3.a, 3.b

4 IE 6.c, 6.f


4 ELA R 2.2, 2.6

4 ELA W 2.3b, c

Materials

 *Adaptations to Shrubland Habitats*

 Art paper

 Colored pencils or markers

 *Species ID Cards*

 *Student Worksheet*

 Vocabulary List

Vocabulary

Adaptation

Energy

Habitat

Native

Predators

Prey

Shrublands

Species

Textbook Alignment

California Science,

MacMillan/McGraw-Hill

Ch. 2 L 4

Hint

For this activity focus on physical and behavioral adaptations since internal physiological adaptations cannot be observed.

Overview

Native plants and animals can be distinguished by their specialized adaptations for living in shrubland habitat. Students will explore native adaptations and design their own shrubland species.

Objective

Students will:

- Review the environmental conditions of native habitats.
- Identify the adaptations of shrubland species.
- Apply their understanding shrubland adaptations by designing an imaginary species.

Preparation

Prepare copies of *Adaptations to Shrubland Habitats* (p. 7) and *Student Worksheet* (p. 16).

Engage

Individually or in pairs, students will list the characteristics of shrubland habitats. As a class, share out these key features and record on the board. In pairs or small groups, brainstorm ways that plants and animals could adapt to survive in a shrubland habitat.

Explore

Students will skim *Adaptations to Shrubland Habitats* (p. 7) searching for three adaptations plants or animals use to survive in shrublands. Students list these features on the worksheet and further describe how that adaptation helps the species survive.

Explain

Discuss the three ways that species can adapt to survive in their environment. Write on the board: In a body (physiological), on a body (physical), what a body does (behavioral). Elicit several examples from students for each category. Physiological examples include kidney function of lizards to save water or lungs for breathing. Physical adaptations include body shape, color, waxy leaves, or leaf size. Behavioral adaptations include being nocturnal or living underground.

In small groups, students will use the *Species ID Cards* to find examples of other plants or animals that use their selected adaptations from the worksheet. Are the adaptations they chose common for other shrubland species?

Elaborate

Using their imagination, students will design a shrubland plant or animal. In pairs, have students recall some of the features their imaginary shrubland creature might have. Next, design the shrubland species to include at least three adaptations. The species should have a special name and a brief explanation of how the adaptations help it survive.

Evaluate

Students share their species and explain its adaptations with a partner, in small groups, or with the whole class (depending on time available).

Extension

Share student species on bulletin board or publish in a book. Encourage research into adaptations of species on Species ID Cards or on other species that students may have mentioned during class review.

Student Worksheet

Shrubland Survivors

A. Read *Adaptations to Shrubland Habitats*. Choose three **adaptations** plants or animals use to survive in the shrubland **habitat** and list them below. Describe how the **adaptation** helps the **species** survive. List several **species** that use the **adaptations** you selected.

Adaptation (including names of species that use it)	How does this adaptation help species survive?
1	
2	
3	

B. Using a separate sheet of paper or the back of this page, think creatively to design a plant or animal that is adapted to live in the local **shrublands**. Your **species** should have at least three **adaptations**. Name it and include a brief explanation of the **adaptations** your **species** uses to survive.