



GRADE K



COAST ^{TO} CACTUS

IN SOUTHERN CALIFORNIA

Curriculum and Lesson Plan Resource Guide



theNAT
SAN DIEGO NATURAL HISTORY MUSEUM



Kindergarten Comparing Coastal Animals

Essential Question

How are the animals that live in Los Peñasquitos Lagoon different than animals that live in Torrey Pines State Natural Reserve?

Life is hard in southern California's intertidal mudflats. Sometimes there's a lot of water, sometimes there's none. The animals that live in the mud have developed adaptations to help them survive the constantly changing conditions in their habitat. Most of these animals are too tiny to be seen with the naked eye, but each animal has its own set of adaptations based on its needs and how deep it lives in the mud.

The Torrey Pines State Natural Reserve is one of the last places where you can find coastal sage scrub habitat, which is disappearing due to real estate development. The reserve is located a mere 17 miles from the San Diego Natural History Museum. Animals that can be found in the reserve include rabbits, weasels, gophers, bats, hawks, hummingbirds, snakes, and lizards.



Activity: Coloring Comparisons

Students will use observation skills to find and identify some of the different animals that can be found in two coastal southern California habitats.

Materials

- 1 set of coloring pages for each student
- Crayons or other coloring tools

This activity can be done by individual students with guidance from a teacher, and can be done before or after visiting the *Coast to Cactus in Southern California* exhibition. (See Page 2 for activity instructions.)

Coloring Comparisons

Before the activity

- Print one set of coloring pages for each student.
- Visit the *Explore the Region from Coast to Cactus* website at coasttocactus.sdnhm.org to learn more about the different types of animals found in Los Peñasquitos Lagoon and at Torrey Pines State Natural Reserve.

Activity

1. Using the coloring sheets or images from the *Explore the Region from Coast to Cactus* website, explain to your students the difference between mudflats and Torrey Pines State Natural Reserve.

What is a habitat? A habitat is where an animal or plant makes its home.

Today we are looking at two different habitats in San Diego, the mudflat and the Torrey Pines State Natural Reserve. Mudflats occur near the coast where stretches of muddy land are left uncovered at low tide. Mudflats are home to many different animals including fish, crabs, shrimp, clams, snails, and worms. All of these animals attract birds that feed on them. Torrey Pines State Natural Reserve is one of the last places where you can find coastal sage scrub habitat. The reserve is located 17 miles from the San Diego Natural History Museum. Many different kinds of wildlife and flora are found within the reserve, including bobcats, foxes, skunks, raccoons, coyotes, rabbits, cacti, and the rare Torrey Pine tree.

2. Ask your students to compare and contrast the animals in the two habitats.

There are a lot of different animals in these two places. These animals look very different.

What are some of the ways they look different? Color? Shape? Which ones have shells or feathers? How big do you

NGSS Alignment for Kindergarten

Performance expectation: K-LS1-11

Science & Engineering Practices	Disciplinary Core Ideas	Crosscutting Concepts
Developing and Using Models	ESS3.A: Natural Resources	Systems and System Models

Interdisciplinary Common Core Connections: W.K.2, SL.K.3, SL.K.5



think the animals in the mudflat are? Which animals in the mudflat live above the mud? Which live below? Which animals can breathe underwater?

3. Have your students fill in their coloring sheets.
4. Ask your students what kinds of animals they noticed on each of the coloring pages.

Did anyone find the tiny Pea Crab (#6 on the mudflat coloring sheet)?

5. Wrap up. Ask the students questions to revisit the major concepts.

What were the two places we looked at today? The mudflats and Torrey Pines State Natural Reserve.

Are these two places the same or very different? They are different.

How are these two places different? The animals that live in these two places are different.

Extensions

- Ask your students to think about what each animal might like to eat. Have them draw a picture of its food.
- Schedule a visit to theNAT and visit the *Coast to Cactus in Southern California* exhibition. Have your students explore the different habitats and compare the plants or animals. Choose to focus on

Key words

Mudflats

Also known as tidal flats; coastal wetlands that form when mud is deposited by tides or rivers.

Reserve

An area of land where animals and plants are given special protection.

Environment

The conditions that surround someone or something; the natural world.

Animal

A living thing that is not a plant.

Habitat

A place where a plant or animal lives or grows.

Survive

To remain alive; to continue to live.

Adaptation

A change in a plant or animal that makes it better able to live in a particular place.

one type of animal, such as birds. Have your students compare beak shapes and body sizes and find out what different animals might like to eat.

What will they learn?

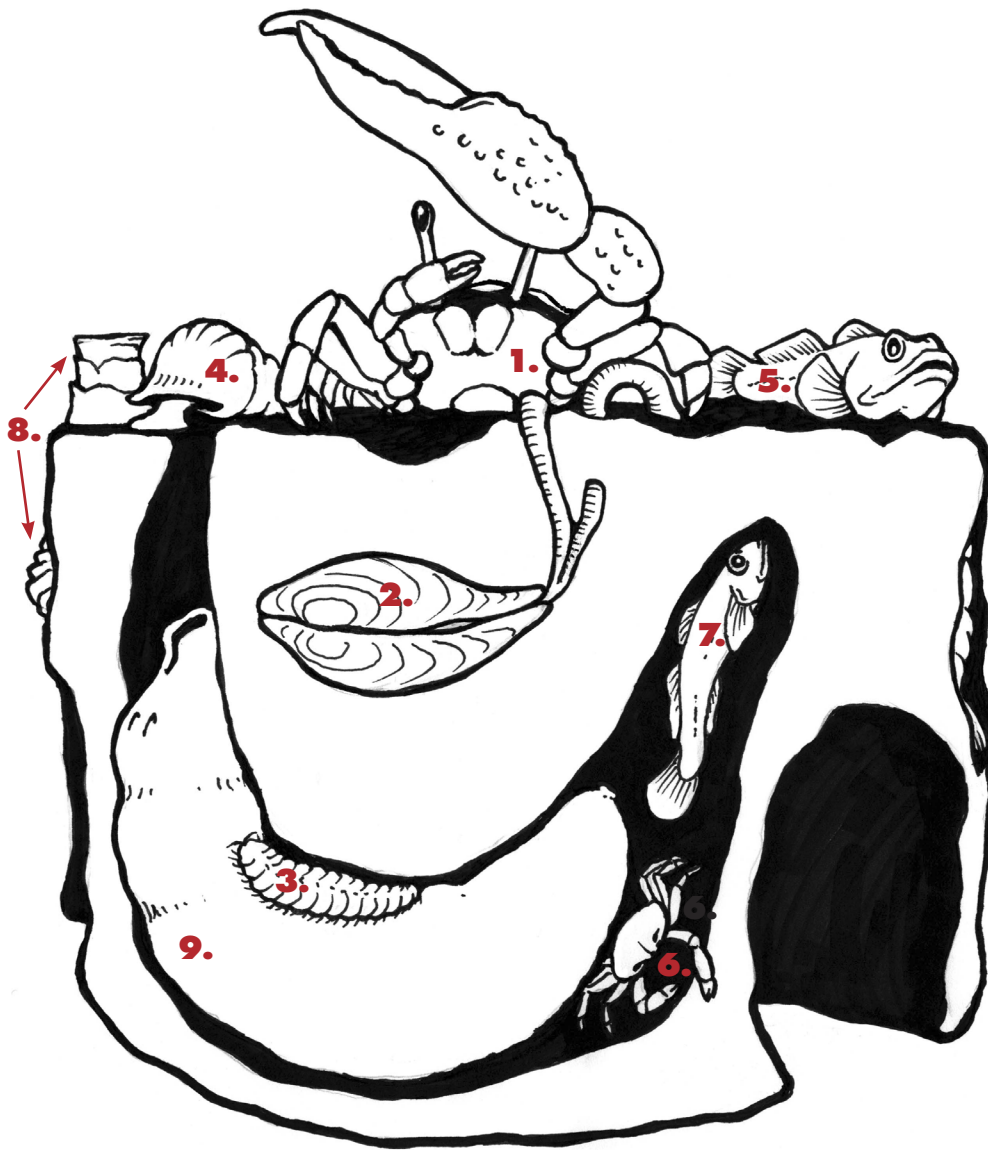
Students will develop an understanding that different types of habitats on the coast of southern California are home to many different types of animals. The animals that live in the mudflat are different from the animals that live in the Torrey Pines State Natural Reserve. Each of these animals has its own set of features (adaptations) to help it survive. In the wetlands, tiny animals live on or below the mud. These animals include worms, crabs, shrimp, fish, snails, and clams. Birds feed on these small animals. At Torrey Pines, the coastal sage scrub habitat serves as a home to animals and plants that are different from the ones found in the mudflat. These animals and plants include bobcats, foxes, skunks, raccoons, coyotes, rabbits, cacti, and the rare Torrey Pine tree.

Additional Resources

- Check out a specimen from our Nature to You Loan Library. Specimens related to this lesson include: Bobcat, California Quail, Coast Horned Lizard, Willet, Great Blue Heron, Egret, Gray Fox, Brown Pelican, and Velvet Ant. For more information visit sdnat.org/specimenssearch or contact the Loan Library at loanprogram@sdnhm.org or 619.255.0236.
- Use the *Explore the Region from Coast to Cactus* website to learn more about the different habitats in the southern California region. Visit coasttocactus.sdnhm.org to journey through coastal areas, mountains, and deserts, and to learn more about San Diego's amazing diversity of plant and animal life.
- Visit the San Diego Natural History Museum and explore our *Coast to Cactus in Southern California* exhibition. San Diego is known for its incredibly diverse terrain, ranging from the beaches and chaparral near the coast, to the mountains and the desert farther afield. Using specimens from the Museum's scientific collections, alongside immersive environments, hands-on exhibits, live animals, and innovative media, *Coast to Cactus in Southern California* illustrates that richness by taking visitors on a journey through these habitats to explore the plants and animals that live in them.

Mudflat Animals

Name: _____



Color the animals:

- | | | |
|-------------------|--------------------------|------------------------|
| 1. Fiddler Crab | 4. California Horn Snail | 7. Arrow Goby |
| 2. Bent-nose Clam | 5. Longjaw Mudsucker | 8. Parchment Tube Worm |
| 3. Scale Worm | 6. Pea Crab | 9. Fat Innkeeper Worm |

Torrey Pines Animals

