

Kelp Forest Families



Teacher's Guide

Topic: Kelp Forest

Grade level: 1-2

Aligned Standards

Next Generation Science Standards (NGSS) Performance Expectations:

1-LS1-2. Read texts and use media to determine patterns in behavior of parents and offspring that help offspring survive.

2-LS4-1. Make observations of plants and animals to compare the diversity of life in different habitats.

NGSS Science and Engineering Practices:

Obtaining, evaluating, and communicating information

NGSS Cross-Cutting Concepts:

Patterns

Ocean Literacy Principles:

Principle #5. The ocean supports a great diversity of life and ecosystems.

c. Most of the major groups that exist on Earth are found exclusively in the ocean and the diversity of major groups of organisms is much greater in the ocean than on land.

What do otter pups, urchin larvae, and kelp spores have in common? Find out as we investigate one of the ocean's most diverse habitats—a kelp forest! Study the similarities and differences between the incredible organisms that call this place home.



Program at a glance

Students will explore the diversity of a kelp forest habitat and compare how different animals care for their offspring.

Objectives

Students will be able to:

- Identify similarities and differences between species
- Communicate scientific observations
- Describe how urchin and sea otter parents care for their offspring

Skills

Students will gain expertise in:

- Comparing and contrasting animal characteristics
- Recording observations in a lab notebook
- Participating in collaborative conversations

Program features

- Interactive sorting game
- Student booklets to write and draw observations
- Biofacts (furs, skeletons, replicas, etc.) of sea otters, sea urchins, and kelp

Extension activities

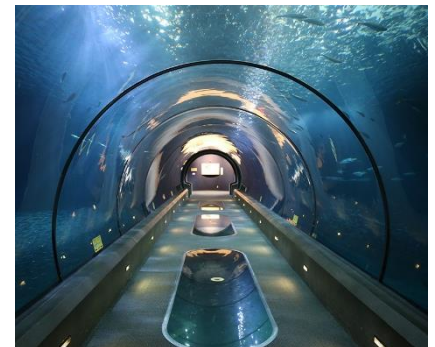
Use these prompts to facilitate further discovery before or after your Aquarium program.

In the Classroom

- Make a sea otter puppet (template included). Learn about sea otter body parts as you build and decorate your otters.
- Try some kelp or other seaweed. Dried seaweed is a healthy snack available at many grocery stores. Seaweed is also a common food additive. Look for the ingredient “alginate” which comes from kelp or “carrageenan” which comes from red seaweed. These ingredients are often used in pudding, milk, and ice cream to make them smooth and creamy.

At Oregon Coast Aquarium

- Have students choose a kelp forest animal to learn more about. What do the adults look like? What do the babies look like? What does this animal eat? How does it care for its young? Students can look for information on Aquarium signs, ask a volunteer, or do independent research.
 - Kelp forest animals: Harbor seal, California sea lion, leopard shark, kelp bass, hermit crab, copper rockfish, kelp crab, bristle worm, bat star, sea urchin, abalone, wolf eel, giant pacific octopus, sea otter, pigeon guillemot, sunflower star, pacific sea nettle, kelp rockfish, giant green anemone, sardine, bat ray, western gull
- Choose an exhibit or habitat to explore as a class. Who lives there? How do they interact? Compare the habitat you chose with a kelp forest habitat.
 - Nature Play Area (coastal forest)
 - Sandy Shores (estuary)
 - Rocky Shores (tide pool)
 - Coastal Waters (coral reef)
 - Passages of the Deep (open sea)



Get Outside

- Evaluate the biodiversity of your school yard. Pick a spot by tossing a hula hoop. Look closely at the area inside and record all of the different kinds of life you notice. Choose a new spot and compare the results.

Sea Otter Puppet

Materials

Paper lunch bag

Sea otter puppet template

Scissors

Glue

Markers or crayons

Instructions

1. Color and cut out the body parts and clam shell.
2. Glue the face piece to the bottom of the paper bag.
3. Glue the chin piece under the flap, tucked up against the fold.
4. Glue the nose and ears onto the face piece.
5. Draw whiskers and eyes.
6. Glue the tongue on top of the chin piece so that it hangs down below the flap.
7. Glue on the front paws, back flippers, tail, and clam shell.



Sea Otter Body Parts

Nose: Sea otters have a good sense of smell, but this doesn't help them to find their food since they can't smell underwater.

Ears: Sea otters can close off their ears and nose to keep water out while they are diving.

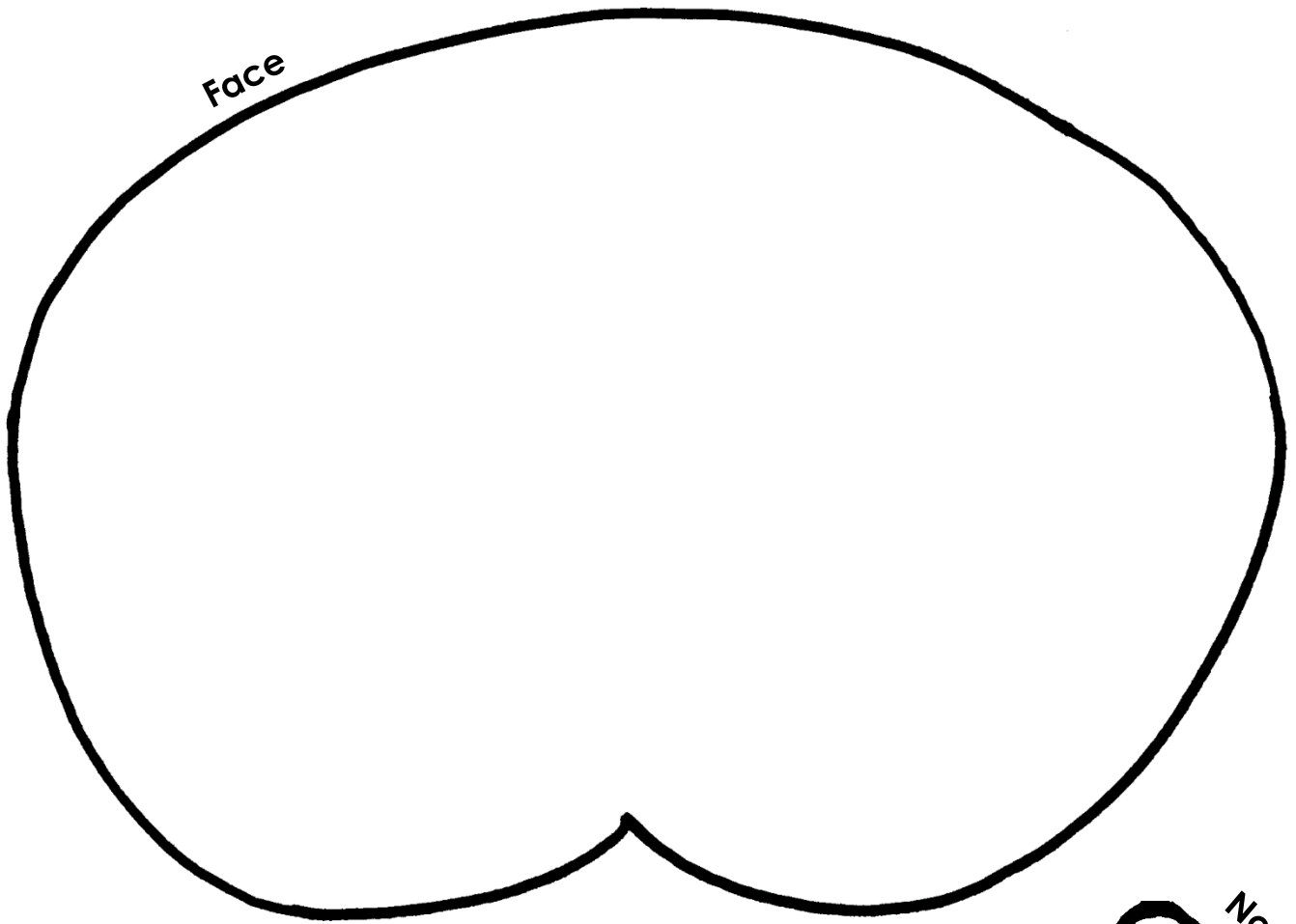
Whiskers: Whiskers help sea otters find their food.

Mouth: Sea otters have different kinds of teeth to help them eat. In the front of their mouth are the incisors. These are used for scooping food from shells. Their canine teeth are used for tearing flesh and for opening shells. Their molars are used for chewing up their food.

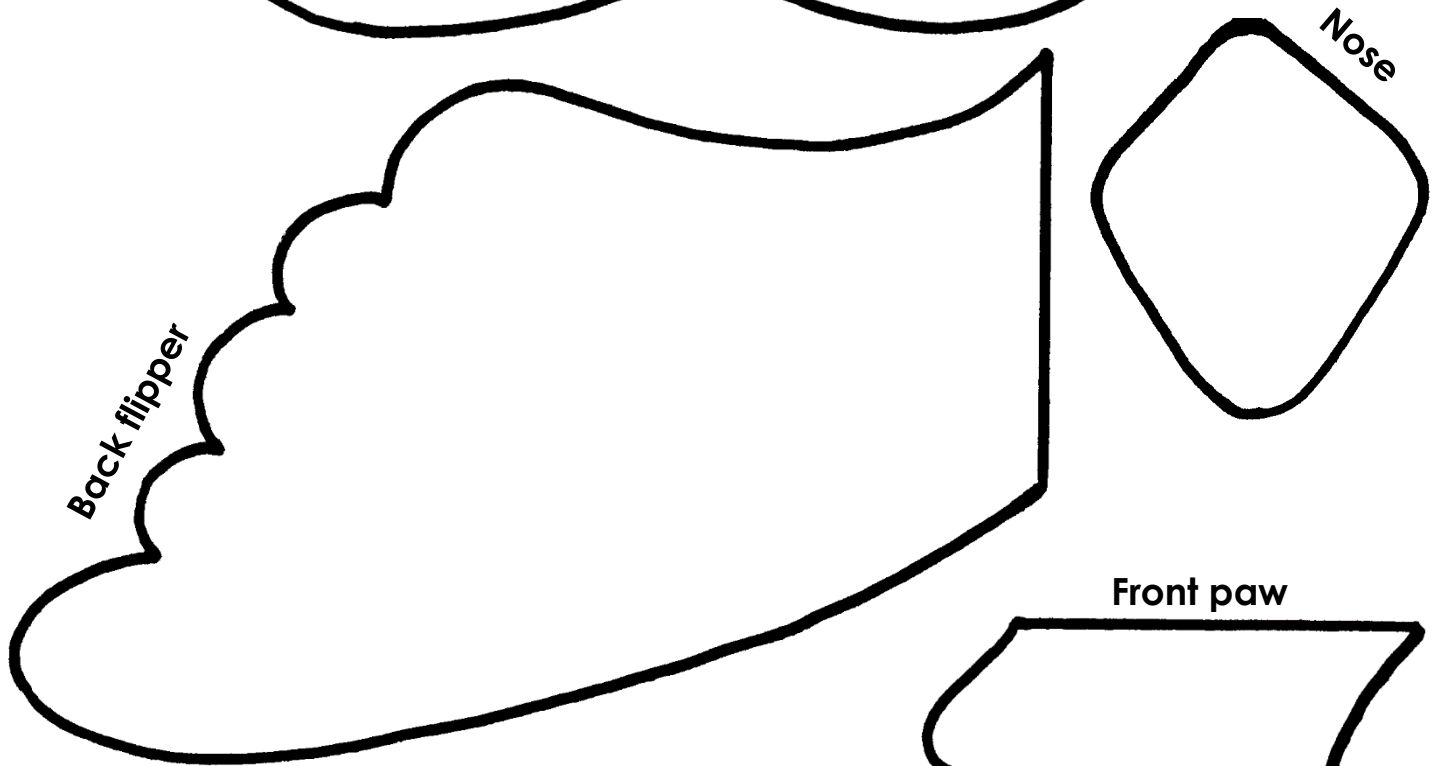
Front paws: Unlike seals and sea lions, sea otters don't have front flippers. Instead their sensitive paws help them to find and grab their prey. They also use their paws for grooming.

Back flippers: Having powerful webbed back flippers helps sea otters dive.

Tail: Otters use their tail like a rudder while floating on their backs on the ocean's surface.



Face

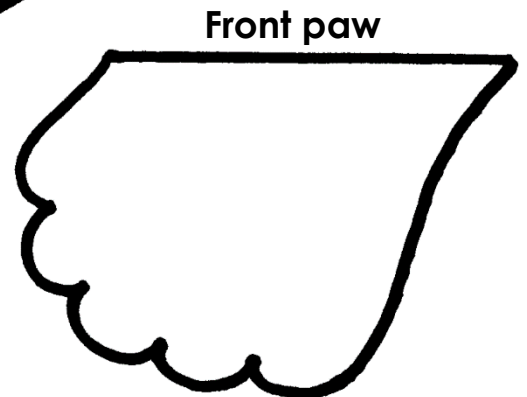


Back flipper

Nose



Ears



Front paw

