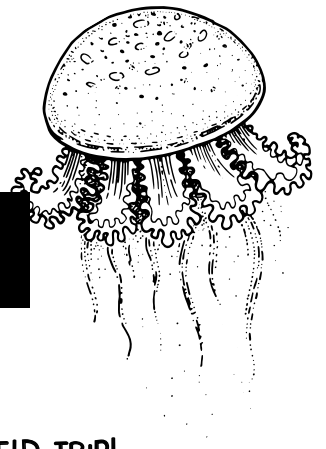


TEACHER GUIDE: GRADES K-2



THANK YOU FOR CHOOSING BIRCH AQUARIUM AT SCRIPPS FOR YOUR FIELD TRIP!

We hope these resources will help you and your students make the most of your time at the aquarium.

Each activity sheet aligns with a different exhibit in the aquarium, and all the answers can be found within that exhibit. You can find the answer key and more exhibit information below.

TIPS & TRICKS

- Print these activity sheets for your students before you arrive. They are not available for printing or pick up at the aquarium.
- Bring your own clipboards and writing instruments for each student. Exhibit windows **cannot** be used as writing surfaces.
- Give a copy of this guide to each chaperone so that they can best support their group of students.

There is no activity sheet for Tide Pool Plaza, as your students can touch local animals here! Be sure to put away all materials that could fall into the open water. Follow directions of aquarium staff and volunteers at all times.

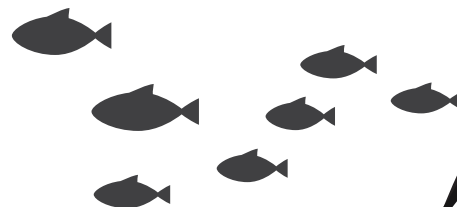
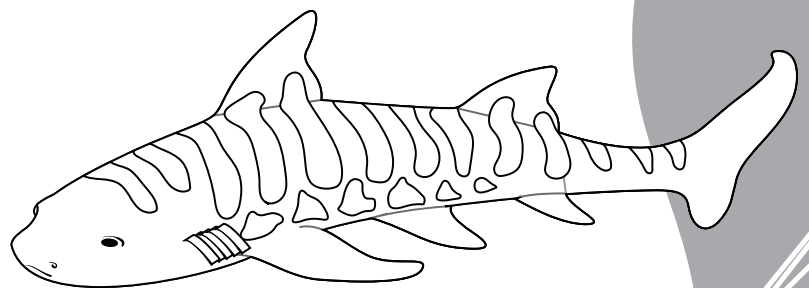
QUESTIONS YOU CAN ASK YOUR STUDENTS:

- Have you ever seen this animal before?
- What body parts help it survive in our local environment?
- What do you think the animal will feel like?
What does it actually feel like?

HAVE YOU BEEN ON YOUR FREE PRE-VISIT YET?

Teachers receive a **FREE** pre-visit prior to your program to help you in the planning process.

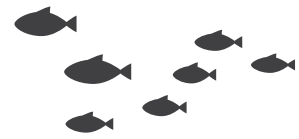
Call (858) 534-7336 to make a reservation in advance.



BIRCH
AQUARIUM

UC San Diego
SCRIPPS INSTITUTION OF OCEANOGRAPHY

EXHIBIT INFORMATION

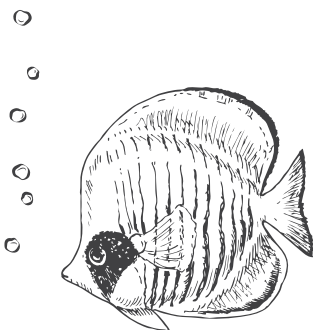


SHELIA MARIE DAVIS GALLERY

- Don't forget to look up when you walk through the aquarium doors!
- Check out life size models of local shark species.

LIVING SEAS

- The *Adam R. Scripps Living Seas* Gallery takes you on a journey through the vibrant ecosystems of the Pacific. Begin with the cold waters of the Pacific Northwest to the beauty of Coastal California and on to the colorful reefs of the Tropical Pacific! Ask students what similarities and differences they notice between the animals as they work their way through the different ecosystems.
- Our Kelp Forest Exhibit holds 70,000 gallons of water! Fresh seawater for our exhibits is pumped up the hill from La Jolla Shores thanks to equipment on Scripps Pier.
- The giant kelp that makes up our Kelp Forest Exhibit provides a home for many animals. It can grow up to 150 feet tall at a rate of up to 18 inches per day!
- Sea anemones can be found in many exhibits throughout the *Living Seas*. Their stinging tentacles stun small prey that swims, crawls, or drifts by.
- The sting of moon jellies is mild to humans.
- Garibaldi can be found in many exhibits, including the Kelp Forest. Juveniles are smaller and covered in bright blue spots, which signals to territorial adults that they are still young.



HEALTHY VS. BLEACHED REEF

- Coral reefs are home to more species than any other ocean ecosystem.
- Warming waters caused by climate change cause the algae that live within coral tissues to leave, resulting in coral bleaching. This impacts all the species that depend on the coral as their habitat or food source.
- Scripps scientists are always researching new ways to reduce the impact of climate change on our planet.

SHARK SHORES / SEADRAGONS & SEAHORSES

- Sharks and rays are both cartilaginous fishes. This means their skeletons are made of cartilage as opposed to bones.
- Seadragons and seahorses are bony fishes. All fishes have fins, gills, a backbone, and a two-chambered heart.
- Seahorses have prehensile tails, meaning they can grasp onto objects. Since they are not the best swimmers, this helps them stay in place.
- Some relatives of Seahorses and Seadragons are the Seamothers, Cornetfish, Trumpetfish, Pipefish, Shrimpfish and Snipefish. Some of these relatives can also be found in the exhibit!

BEYSTER FAMILY LITTLE BLUE PENGUINS

- Little Blue Penguins are native to Southern Australia, New Zealand, and Tasmania.
- Their climate is actually very similar to our own here in San Diego!
- There is always an education naturalist in the Research Station who can answer any questions you or your students may have.

NAME _____

LIVING SEAS

FIND THESE ORGANISMS IN THE AQUARIUM!

SEA ANEMONES



FUN FACT: These are animals, not plants! You can touch one on Tide Pool Plaza!

GIANT PACIFIC OCTOPUS



How many arms can you count on the octopus?

Circle the correct answer:

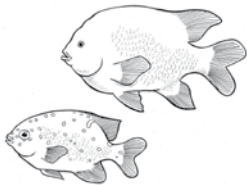
4 6 8

MOON JELLIES



Watch to see how they swim.
Can you move like a jelly for 10 seconds?

GARIBALDI



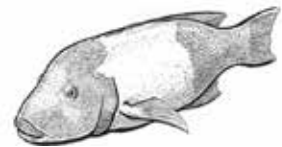
Find the bright orange fish!
Garibaldi is the California State Marine Fish.

GIANT KELP



How many pieces of kelp can you count in the Kelp Forest?

SHEEPHEAD



This fish has a big stripe down the middle. What color is it?

Circle the correct answer.

Pink Red Blue

SHARKS



How many sharks can you count in the Kelp Forest Exhibit?

LOGGERHEAD SEA TURTLE



Our sea turtle was rescued from New Jersey. Even though her back flippers can't move, she can still swim great!

ORANGE CLOWNFISH



Can you find Nemo?
TIP: Try looking in the Tropical Pacific Habitats.

SHARK SHORES, SEADRAPONS + SEAHORSES

Did you know that sharks, rays, seadrapons, and seahorses are all fish? One thing fish have in common is they all have fins!

CIRCLE ALL THE FINS ON EACH ANIMAL.

EXAMPLE

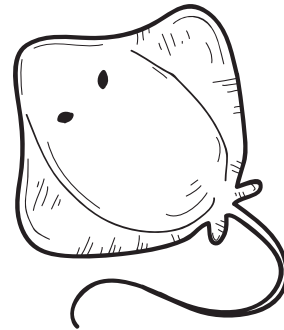


HOW DO THE FINS HELP EACH ANIMAL SURVIVE?

CIRCLE THE ANSWER.



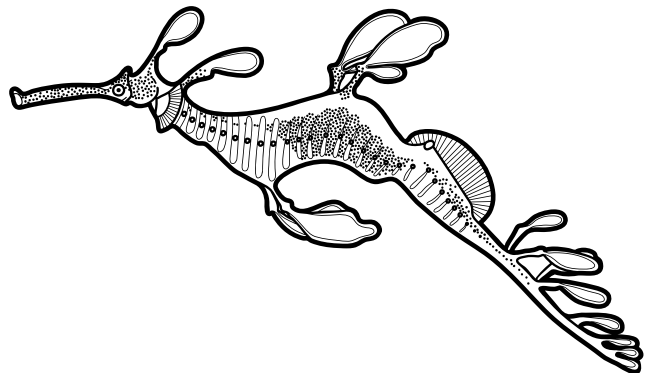
Shark fins help them swim through the **water** OR **sand**.



Ray fins are flat and help them rest in the **water** OR **sand**.



Seahorse tails wrap around coral and seaweed so they can **swim** OR **rest**.



Seadragon fins help them blend in with **seaweed** OR **rocks**.

WATCH YOUR PENGUIN FOR 10 SECONDS.

Laying

Pink
Red
Orange
Yellow
Green
Blue
Purple
White
Brown

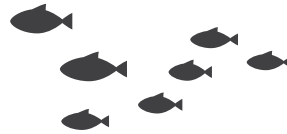
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A black and white line drawing of a cartoon penguin. The penguin has a large, rounded body, a small head, and a friendly expression with large, dark eyes and a simple curved line for a smile. Its wings are spread wide to the sides, and its feet are visible at the bottom. The penguin is standing on a plain white background.

ANSWER KEY

LIVING SEAS

- The giant pacific octopus has 8 arms lined with suction cups. These are for more than movement - they use them to taste as well!
- The California Sheephead Wrasse are known for their strong jaws, which they use to crush prey like sea urchins. Males often sport vibrant red or pink colored stripe down their middle, while females are more subdued.



SHARK SHORES / SEADRAGONS & SEAHORSES

- Shark fins help them swim through the water.
- Ray fins are flat and help them rest in the sand.
- Seahorses tails wrap around coral and seaweed so they can rest.
- Seadragon fins help them blend in with seaweed.

BEYSTER FAMILY LITTLE BLUE PENGUINS

- There may be more than one body part the penguins use for their behavior.
- Encourage students to explain to you how they use that particular body part.
- After the activity, they can go to the Research Station to find out the name of the penguin they observed!

