Scavenger Hunt

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Teacher Page

Thank you for choosing the Aquarium of the Pacific as your field trip destination. We are excited to share the wonders of the Pacific with you and your class!

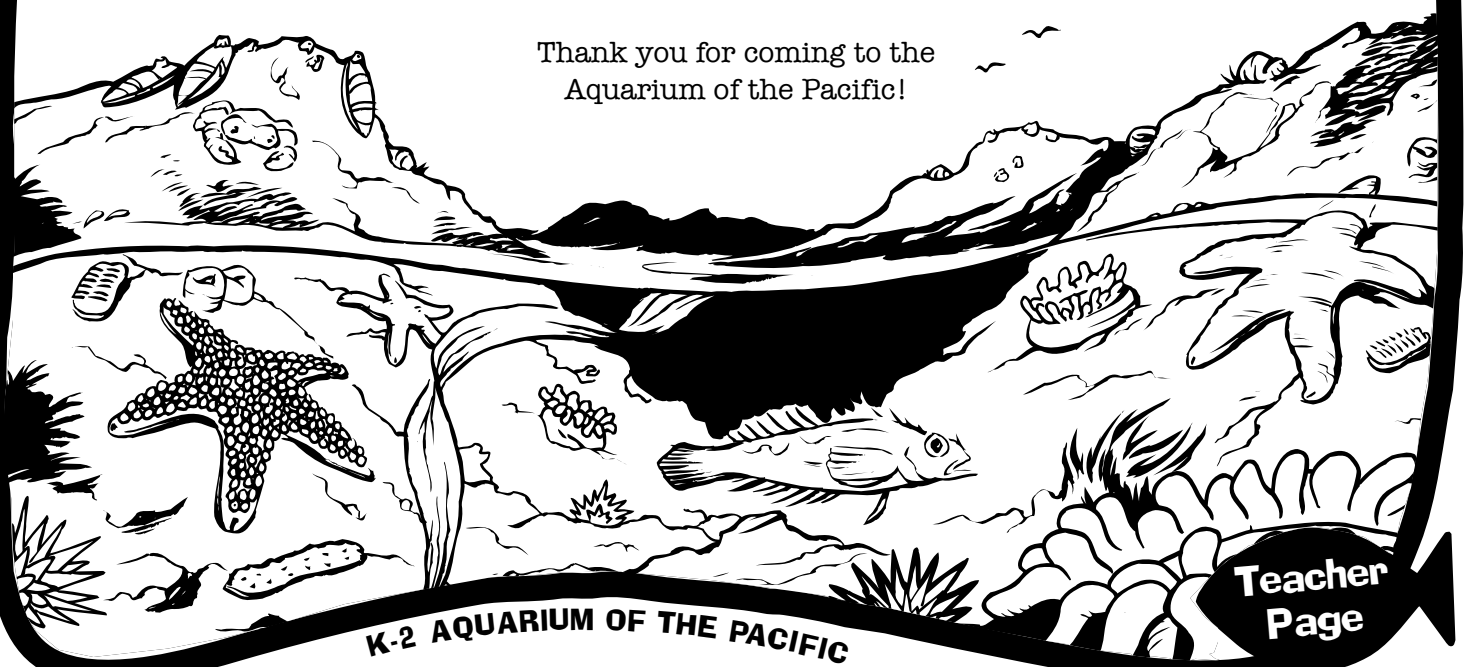
Use this scavenger hunt to make the most of your visit to the Aquarium. Inside this packet are chaperone pages, vocabulary words, activities, and background information to make your field trip a fun and educational experience for your students. Make a copy (double-sided please) of the chaperone pages for each of your chaperones. These pages will guide them through each gallery with leading questions to ask the students. When you are back in the classroom make a copy of the student pages (labeled pages 1- 5). These pages will reinforce what the students learned on their trip to the Aquarium. We also have a helpful answer key available on our website at www.aquariumofpacific.org. Here are a few hints to keep in mind before your visit.

- You may want to review the vocabulary page (page 1) before your Aquarium visit. This activity will be a fun way to introduce your students to the Aquarium and prepare them for all that they will experience.

- The tile rubbing page is for the brass tiles that you will find in front of the preview exhibits in the Great Hall. Give each chaperone a page for each student in their group. Let the students choose a favorite tile and make a rubbing with a crayon or pencil. Give each chaperone a few old crayons without the wrappers to make the rubbings.

- The final page in this packet contains some pre-post visit activities for your students. These California Science standards-abased activities are a great way to prepare your students before they arrive at the Aquarium and to reinforce what they learned while at the Aquarium.

Thank you for coming to the Aquarium of the Pacific!



Teacher Page

Blue Whale

Inquiry Questions: Blue Whale Adaptations

What adaptation do you think these warm-blooded whales have to help them to stay warm in cold water? (Blubber, a fat-like substance)

Each year blue whales migrate between a cold area where they love to eat and a warm area where they have babies. Why do you think the blue whale would rather have their babies in warm tropical waters than in the cold, food-rich waters of the polar seas? (The babies do not have a thick layer of blubber yet, so they need to be born in warm water to stay healthy. As they grow older and gain a blubber layer, they are able to migrate to colder waters)

Whales swim by pushing through the water with their tail fin, or fluke. Look at the fluke. What direction do you think it will move to push the whale through the water? (Up and down)

Now look at the whales flippers, hanging from either side of the whale. How do they help the whale to swim? (Steering left or right)

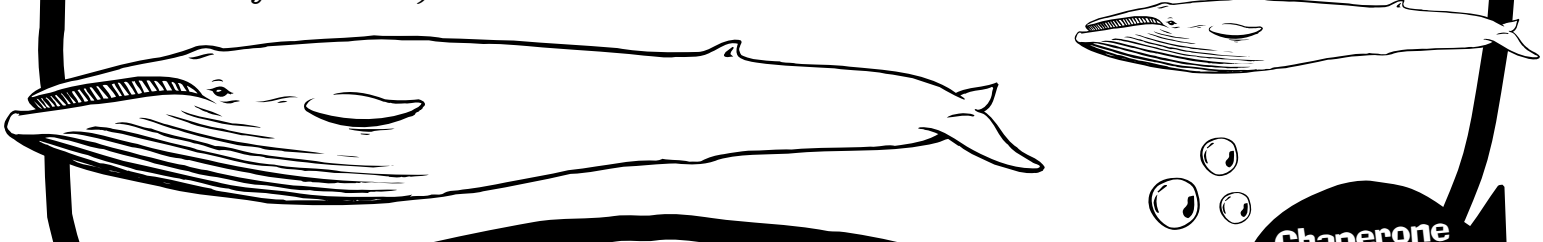
Fun Facts

Blue whales are the largest animal on the planet! Our model is 88 feet long, but they can reach lengths of up to 110 feet (about the size of 3 school buses) and weigh up to 300,000 pounds. That is even larger than dinosaurs were! This is just the beginning of the huge proportions of the blue whale...

- The African elephant is the largest animal that lives on land and weighs about 6 tons (over 12,000 pounds). Just the tongue of the blue whale weighs that much!
- Look at your fist; it is about the same size as your heart. The heart of the blue whale is about the size of a small car!
- Now look at the size of your pinky finger; it is about the same size of the main artery in your body called the aorta. The aorta of the blue whale is about the same diameter of a large trash can! You could fit inside!

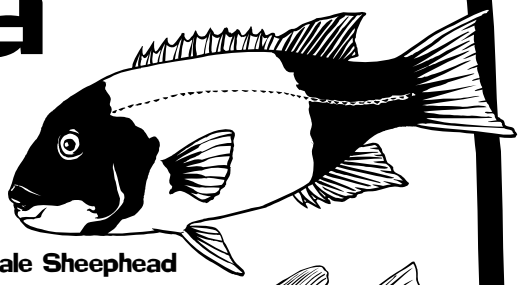
Try This!

This model of a blue whale is 88 feet long. Hold hands in a line under the blue whale, stretching out from the mouth to the tail. **How many children does it take to equal the length of one blue whale?** (Stretch out under the whale and count how many it will take)

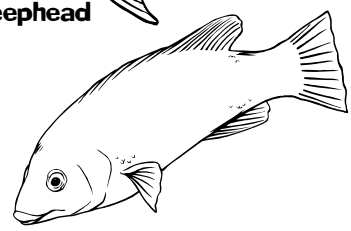


Southern California Baja

Inquiry Questions: Fish Movement



Male Sheephead



Female Sheephead

Do you remember how a whale's tail moves? (Up and down)
Now watch a fish swim. How does a fish's tail move? (Side to side)

Try This!

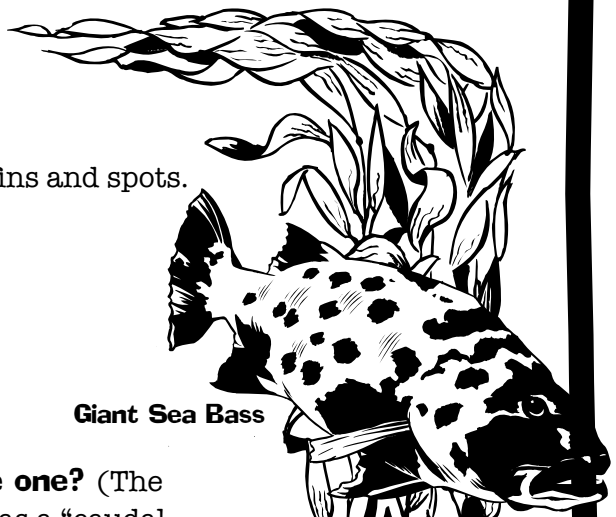
Different fish move in different ways. Look for the fish with the bright pink belly in the Blue Cavern. That's a California Sheephead. Watch how it moves. It uses its pectoral fins (the fins on the sides of their bodies) to push through the water.

Can you pretend to be a sheephead and swim like one? (The students should pretend to swim using their folded arms as their "pectoral fins" to pull through the water)

Now search the Blue Cavern for a big fish with dark fins and spots. This is the giant sea bass.

Is it a fast swimmer? (No)

Does it swim like a sheephead? (No, they push through the water with their tails or caudal fins and steer with their pectoral fins)

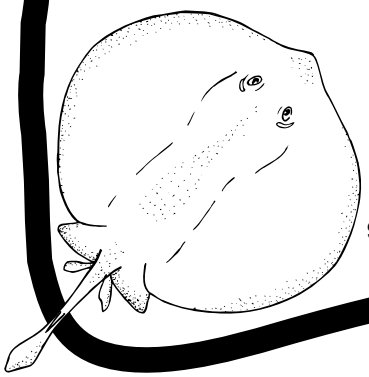


Giant Sea Bass

Can you pretend to be a sea bass and swim like one? (The students should pretend to swim using their bottom as a "caudal fin" to push through the water and "pectoral fins" to steer)

There is a ray in this same exhibit. Watch how it swims.

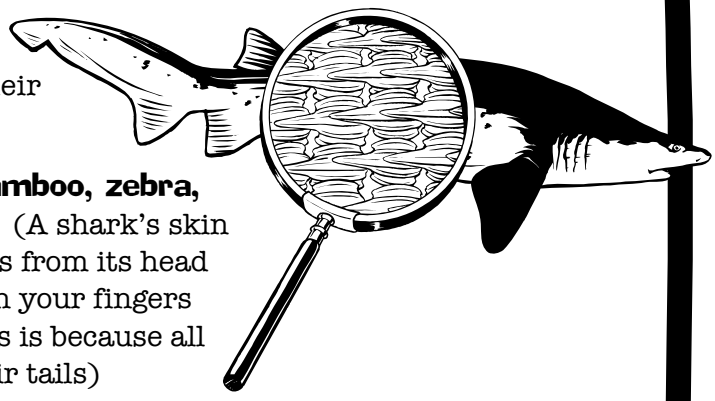
Can you pretend to be a ray and swim like one? (The students should flap their "pectoral fins" and swim like a ray)



Stingray

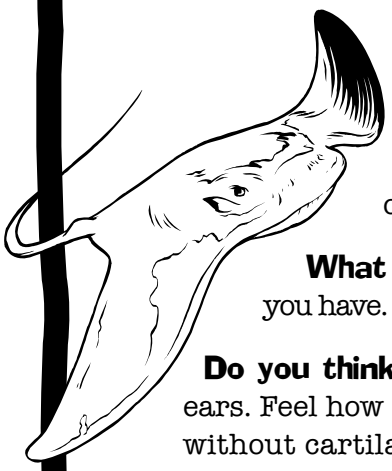
Shark Lagoon

Inquiry Questions: Shark Skin and Skeletons



Sharks are known for their rows and rows of teeth. They not only have teeth in their mouths, but they also have teeth all over their bodies! Sharks scales are teeth!

Reach inside the touch pool to touch a bamboo, zebra, or nurse shark. How does their skin feel? (A shark's skin should feel smooth if you run your two fingers from its head to its tail, and rough if you run your fingers in the opposite direction. This is because all their skin teeth point to their tails)



Now touch a ray. Does it feel the same? (No, rays feel slippery. They have a coating on their bodies for protection called mucous)

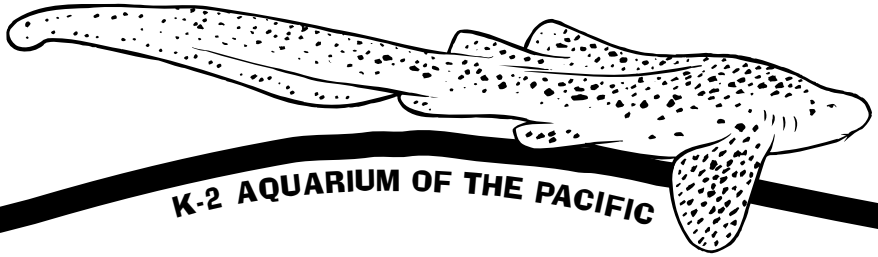
What is your skeleton made of? (Bone) Sharks don't have a skeleton like you have. Their skeletons are made out a movable material called cartilage**.**

Do you think that you have any cartilage in your body? (Your nose and ears. Feel how easily they move?) Hint: it would be tough for us to smell or hear without cartilage!

Try This!

Watch the sharks swim through the water. Their tails move differently than that of a whale. **What direction does the shark's tail move?** (Side to side like the fish that we saw in Blue Cavern) Can you pretend to be a shark and swim like one? Wiggle your "tail" back and forth and fold your arms in the shape of pectoral fins to steer! (Have the students pretend to swim like a shark, moving their "tails " from side to side and steering with their "pectoral fins")

Now watch the rays swim in the water. They have wing-shaped fins that help them to "fly" through the water. Can you pretend to be a ray and swim like one? Flap your arms like a ray! (The students should flap their "pectoral fins" and swim like a ray)



Northern Pacific

Inquiry Questions: Amazing Adaptions

An adaptation is something that a plant or animal has on its body that helps it to survive. Animals that live in the ocean have lots of adaptations. You have many adaptations too, like your nose, ears, eyes, bones, brain, heart, etc.

Can you think of some more adaptations that you have? (Heart to pump blood, hands to hold things, mouth to talk and eat, teeth to chew, tongue to taste, legs to walk, etc.)

Can you identify some adaptations of the animals that you see in this gallery? (Wings on the birds, fins on the fish, arms on an octopus, fur on a sea otter, legs on a crab, etc.)

Inquiry Questions: Diving Birds

Watch our diving birds in their exhibit. They are always busy doing something.

What do you see them doing? (Answers will vary: eating, swimming, floating, flying, fluffing up their feathers, walking, etc.)

Look at how the birds use their wings.

What are two ways you see the birds using their wings? (To swim and to fly)

Try This!

Flap your wings like the birds do.

Pretend to fly above the water and swim below. Watch how they walk on land.

Pretend to walk like a puffin.

Tropical Pacific

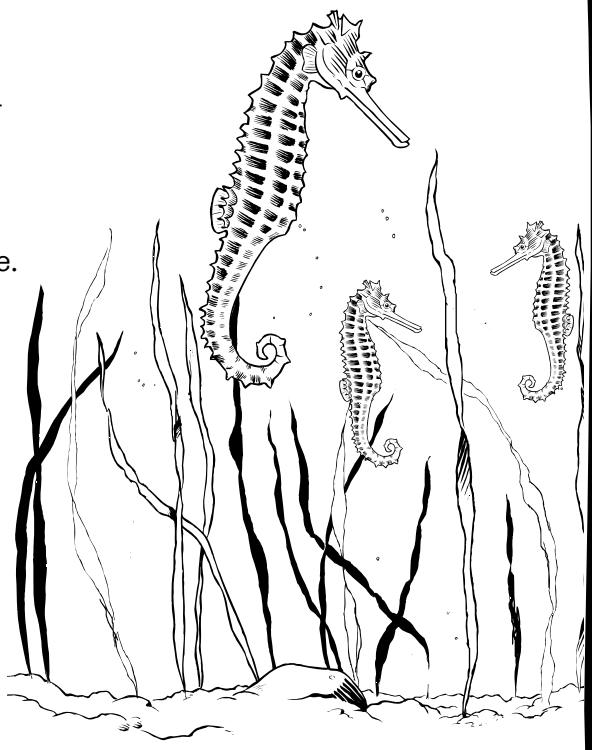
Inquiry Questions: Seahorses

Did you know that seahorses are fish? They sure don't look like other fish do! They have a funny-shaped mouth, a curly tail, and tiny fins. Watch them move around the exhibit.

Are they fast swimmers? (No)

Seahorses have their curly tails for a specific purpose.

What do you see them using their tails for? (Since they are not good swimmers, they wrap their tail around a rock, a weed, or even another seahorse to stay put!



Fun Facts

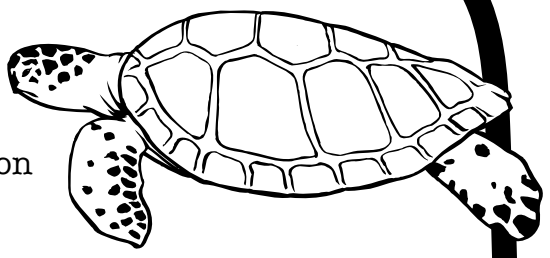
Look at the live corals. They may look like a beautiful plant, but they are actually animals! Corals are relatives of sea anemones and sea jellies. Like their relatives, corals can sting with their tentacles to catch food that drifts over them. Each tiny animal is called a polyp and grows inside an exoskeleton that they create. The polyps live like neighbors right next to each other. A coral reef is made up of millions of these animals living together.

Try This!

Make your hands into an individual coral polyp. With your left hand, hold your right wrist. Your left hand is like the polyps exoskeleton. Your fingers on your right hand are like the polyp's tentacles for catching food. Wiggle your fingers and pretend to catch food in the water. Polyps don't like to live alone. They like to form reefs. Put your polyp with all the other polyps in your group to form a coral reef.

Tile Rubbing Page

Vocabulary



Match the vocabulary word with the correct definition and then find the word in the search below.

ADAPTATION	A pool of water left along the shore as the tide level falls
BLUBBER	An animal that is captured and eaten by other animals
CAMOUFLAGE	An animal that does not have a spinal column or backbone
HABITAT	A fat-like tissue that helps marine mammals stay warm
INVERTEBRATE	Something that helps an organism survive
MAMMAL	An animal with a spinal column or backbone
PREDATOR	An animal that captures and eats other animals
PREY	A color, shape, or pattern that helps an animal blend in
TIDEPOOL	The place that an animal lives, its home
VERTEBRATE	An animal that is warm-blooded, breathes air, has hair, and gives live birth.

A	I	U	K	F	X	H	N	E	K	N	A	K	B	N
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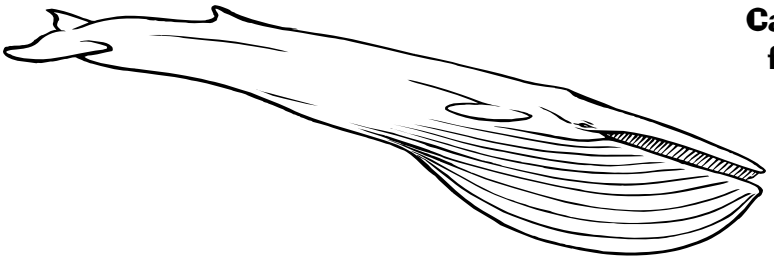
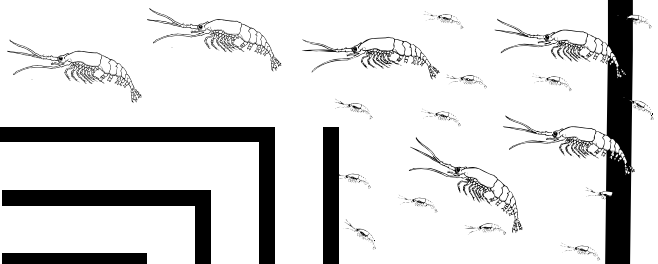
H	J	U	L	A	G	I	Q	J	W	V	K	Y	C	L

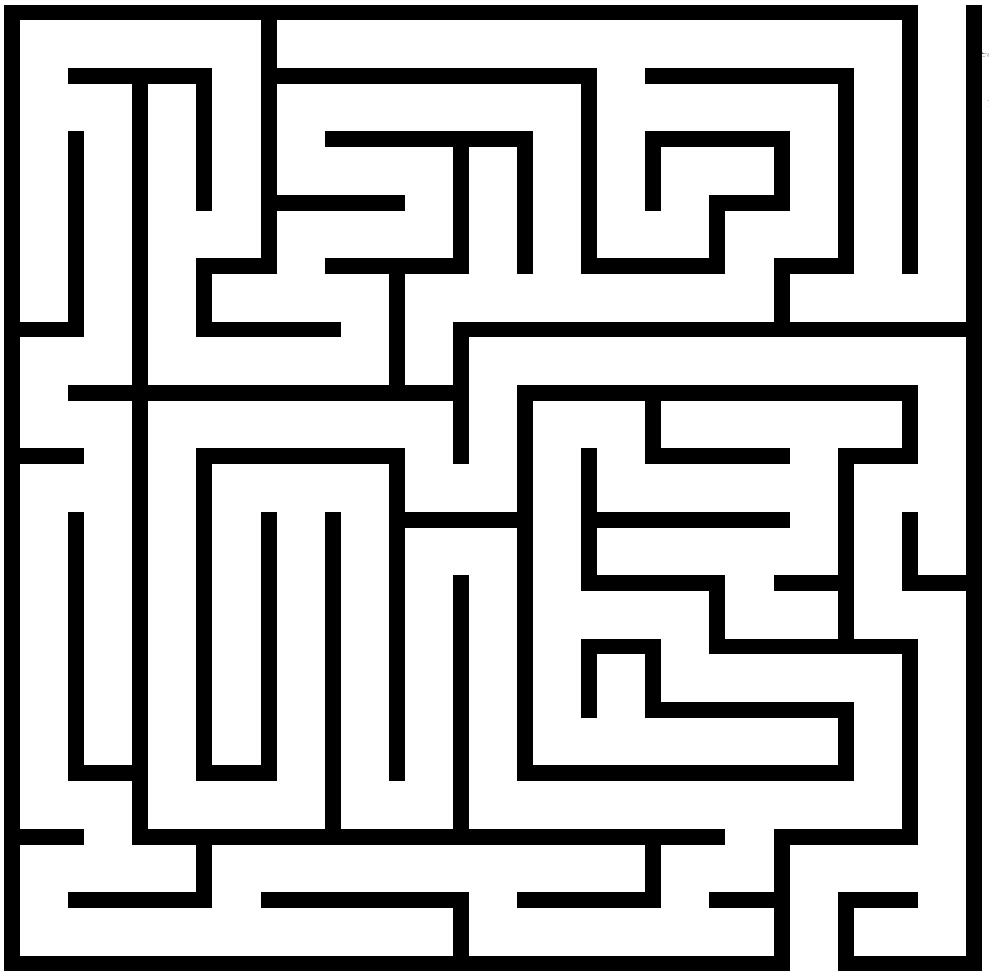
Blue Whale

Each year many marine mammals go on a long migration. A migration is sort of like a vacation for animals. They have certain areas where they love to eat, and certain areas where they love to have babies. Each year they travel back and forth between these two favorite spots.



Can you help the blue whale migrate from its winter feeding grounds to its summer breeding spot?





Southern California Baja

Shark Eggs

Some sharks, like horn and swell sharks, lay eggs. Take a good look at the eggs below. The curly threads on the swell shark egg attach to kelp and blend in. The corkscrew shape of the horn shark egg helps it wedge into cracks between rocks. The brown color of the egg cases help them to camouflage in the brown kelp and rocks making it difficult for predators to find them.

Can you find all 8 egg cases in the picture?

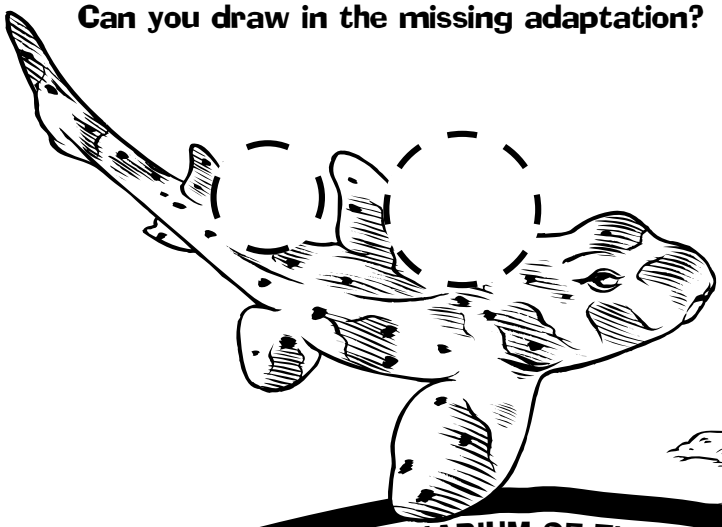
Horn Shark egg case

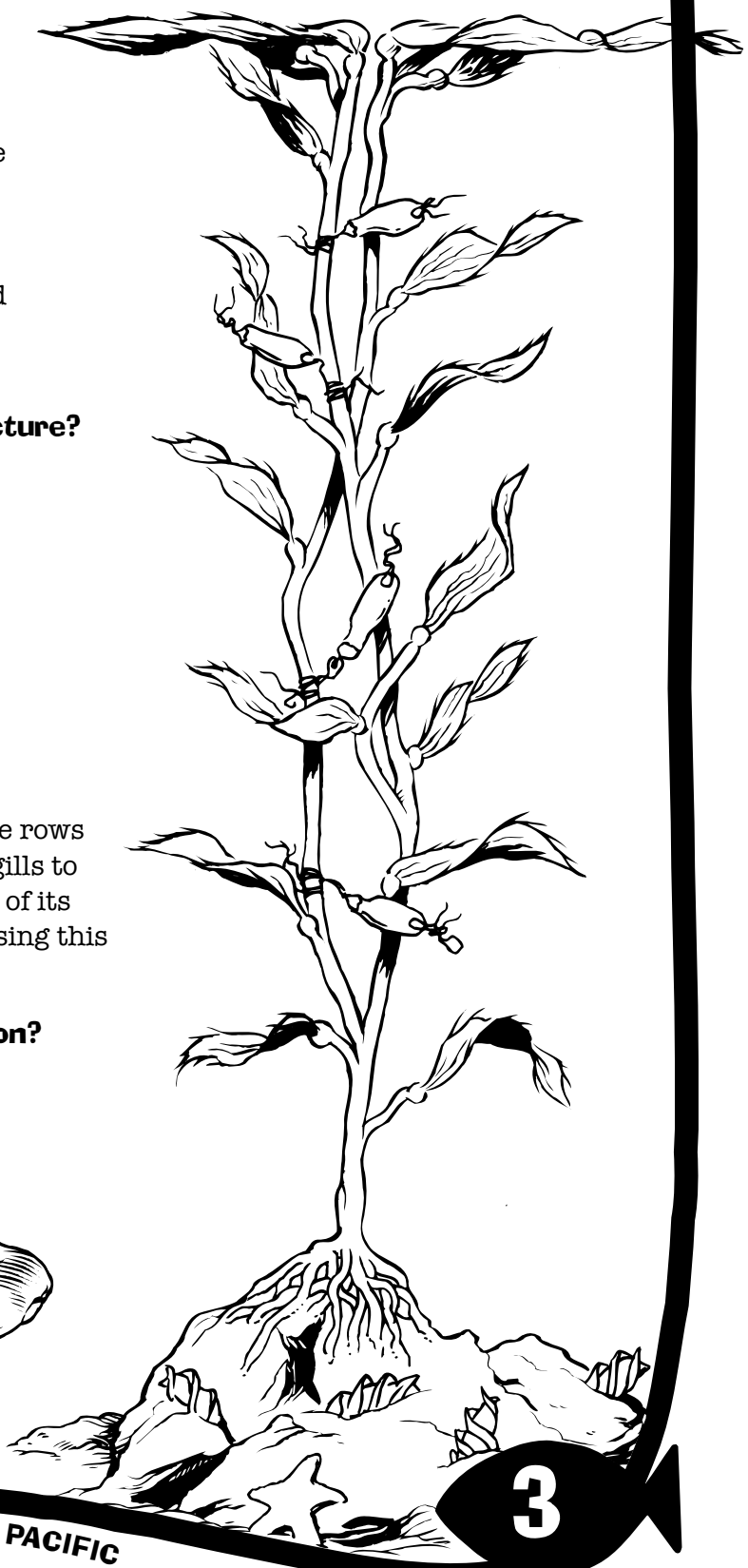
Swell shark egg case

Sharks

Sharks have many adaptations. They have rows of teeth, good eyesight, fins to swim, and gills to breathe. The horn shark is named for one of its adaptations. The horn shark below is missing this adaptation.

Can you draw in the missing adaptation?





Northern Pacific

Happy Habitats

A habitat is a home for an animal. Birds can live in trees, frogs may live in a pond, and spiders live in a web. There are lots of animals that live in a tidepool. A tidepool is a rocky place by the sea shore that is filled and emptied with the rise and fall of the ocean tides. Waves crash on the animals that live there and they need to have adaptations that allow them to hold onto the rocks so that they don't get washed out to sea.

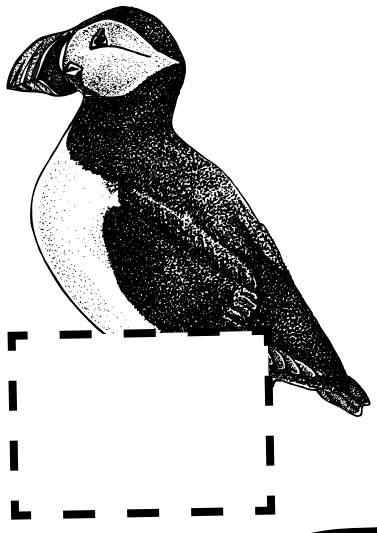
Look at the pictures of the animals below. Can you match the picture of the animal to its adaptation?

Glue	Suction cups	Sticky foot	Byssal threads	Tube feet

Diving Birds

Puffins have feet adapted for swimming in water. This puffin is missing its feet.

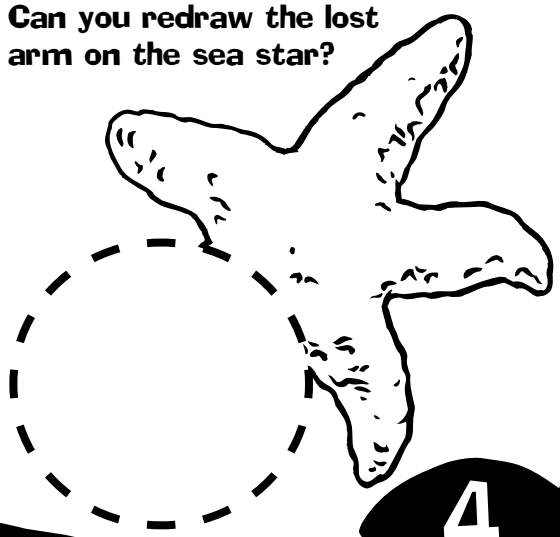
Draw the missing feet on the bird.



Sea Stars

Sea stars have the ability to grow back lost arms! If a predator eats part of an arm, the sea star can re-grow that lost arm.

Can you redraw the lost arm on the sea star?

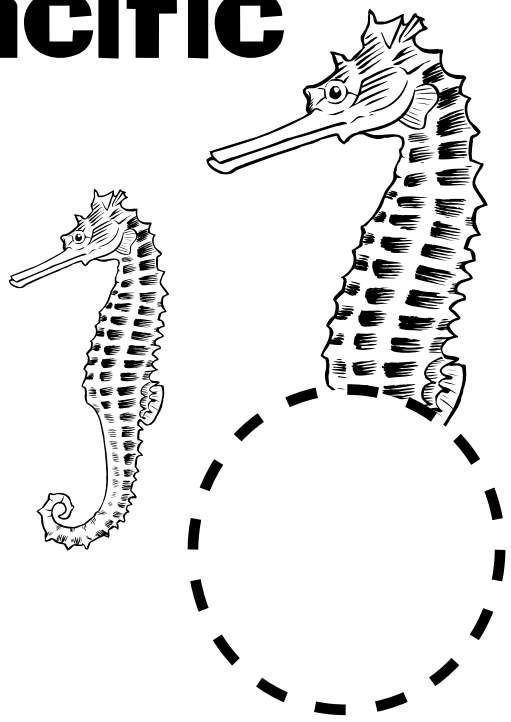


Tropical Pacific

Seahorse Corral

Did you know that seahorses are fish? They sure don't look like other fish do! They have a funny shaped mouth, a curly tail, and tiny fins. Seahorses use their tails to hold onto the weeds or rocks in their habitat.

This sea horse is missing its tail. Can you draw it in?



Coral Communities

Coral reefs are not only made up of animals, but they are home to many other animals as well. These animals depend on the reef for food and shelter.

Can you find all the animals that are hiding in the reef below?

Pre-Post Activities

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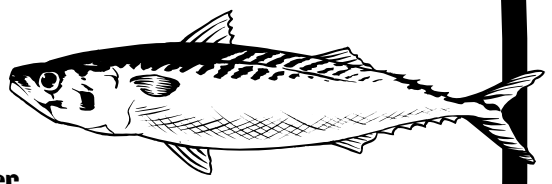
Amazing Adaptations

Explain the concept of adaptations to the class, reminding students that even people have adaptations (fingers, nose, eyes, etc.). Then practice living without an adaptation we all take for granted-fingers! Have your students spend a portion of the day with socks on their hands. At the end of the experiment encourage a class discussion. Is it easy to live without fingers? What is different? What are some adaptations animals have instead of fingers?



Create a Critter

Materials

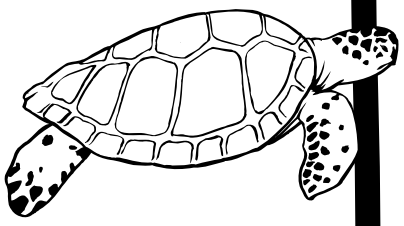
- **Paper bowls and plates**
- **Ribbon**
- **Streamers**
- **Scissors**
- **Hole punch**
- **Construction paper**
- **Glue**
- **Glitter**
- **Pipe cleaners**
- **Tissue paper**
- **Googlie eyes**
- **Various other craft items**

Procedure

1. Tell the students that they get to create their own ocean animal. They may make an animal that has a combination of their favorite adaptations (you may want to brainstorm as a class many of the adaptations that ocean animals have and write it on the board for inspiration). They can utilize all of the craft items that they see.
2. Before they are set free to be creative, have them consider how large the animal is, where it lives, what it eats, and who its predators are. As the students create the critter, have them keep these things in mind.
3. Once the critters are finished, have them write a short paragraph about their animal. This paragraph should include the critter's adaptations, where it lives, what it eats, how it moves, how it captures its food, etc. Then have a show and tell where the students can share their creative critters with the class.

What is a Mammal?

Materials



- **Chalk board**
- **Chalk**
- **Paper**
- **Crayons**
- **Tape**

Procedure

1. Review the characteristics of a mammal with the class. Mammals have hair, are warm-blooded, breathe air, nurse their young with milk, and give live birth.
2. Have the students draw their favorite animal and label the picture with the name of the animal that they drew. (Another option is to collect pictures of animals from magazines and old calendars)
3. On the chalk board, make 2 columns, one labeled "mammals" and one labeled "non-mammals."
4. Have the students study their picture and decide whether or not their animal is a mammal. Once they decide, have them make their way to the board and tape their animal in the appropriate column.
5. If there are any animals in the incorrect column, review the mammal characteristics and place the animal in the correct column.