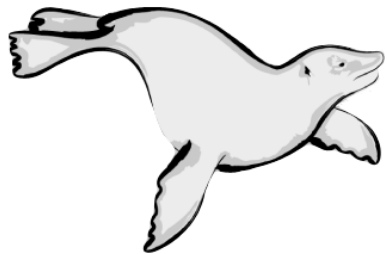


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FIELD TRIP GUIDE



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NATIONAL SCIENCE EDUCATION STANDARDS
CONNECTIONS IN THIS GUIDE

Unifying Concepts and Processes

- ✦ Systems, order, and organization
- ✦ Evidence, models, and explanation
- ✦ Constancy, change, and measurement
- ✦ Form and function

Science as Inquiry

- ✦ Abilities necessary to do scientific inquiry
- ✦ Understanding about scientific inquiry

Physical Science

- ✦ Properties of objects and materials
- ✦ Position and motion of objects
- ✦ Light, heat, electricity, and magnetism

Life Science

- ✦ Characteristics of organisms
- ✦ Life cycles of organisms
- ✦ Organisms and their environment

Earth and Space Science

- ✦ Properties of earth minerals
- ✦ Objects in the sky
- ✦ Changes in the earth and sky

Science and Technology

- ✦ Understanding about science and technology
- ✦ Abilities to distinguish between natural objects and objects made by humans
- ✦ Abilities of technological design

Science in Personal and Social Perspectives

- ✦ Personal health
- ✦ Changes in environments
- ✦ Characteristics and changes in population
- ✦ Science and technology in local challenges
- ✦ Types of resources

History and Nature of Science

- ✦ Science as a human endeavor

*National Research Council. National Science Education Standards.
Washington, D.C.: National Academy Press, 1996.*

SEAWORLD

FIELD TRIP GUIDE

WELCOME TO SEAWORLD!

Why are beluga whales called sea canaries? What is an endangered animal? What is a pinniped? Discover the answers to these questions and more by visiting as many animal attractions as possible.

Ask the questions from this exhibit booklet about ocean animals, their adaptations, their habitats, and conservation issues. Encourage your students to discover the answers by using observation skills, reading park graphics, and interacting with the exhibit Educators. We have provided the answers in parentheses. By the end of your visit, your students will be junior marine scientists.

The learning doesn't stop at SeaWorld. Back at school, use the "DIVE DEEPER" conservation challenge at the bottom of each page to support the Reading/Language Arts Framework. Encourage students to research the answers at school, at home, at the library, or on the Internet and share their results with the class.

This field trip guide supports the National Science Education Standards. See the final page of this booklet for a comprehensive listing of connections to these standards.

Enjoy your SeaWorld Education Program!

PENGUIN ENCOUNTER

INSIDE PENGUIN ENCOUNTER

- ✦ Penguins are birds—they can't fly in the air, but they can “fly” through the water! Watch penguins swim. What body part do they use for swimming? (*flippers*)
- ✦ Brrrr. The penguin habitat is a cold -2°C (28°F). How do penguins stay warm? (*Waterproof feathers overlap to cover a penguin's skin. Penguins have more feathers than most birds—about 70 feathers per square inch.*)
- ✦ Emperor penguins, the largest of all penguins, are up to 1.1 m (3.7 ft) tall and weigh up to 41 kg (90 lb.). Can you find an emperor penguin?

OUTSIDE PENGUIN ENCOUNTER

- ✦ Magellanic penguins, named after explorer Ferdinand Magellan, are adapted to a warm climate. Name four continents where penguins live. (*Africa, Australia, South America, and Antarctica.*)

SHAMU'S SECRET

Inside the Penguin Encounter, SeaWorld penguin keepers simulate the seasonal light changes in the southern hemisphere, where these birds are from. When it is summer in San Diego, the lights are dimmed because it is winter in Antarctica and dark nearly 24 hours a day.

DIVE DEEPER

Global climate change, from excess carbon dioxide in the Earth's atmosphere, may negatively impact several penguin species. As a class, research potential climate change effects on different penguin species and discuss which are most at risk. Brainstorm ways to decrease your carbon dioxide emissions.

JUST FOR TEACHERS

Did you know that SeaWorld has a Web site which offers a wide variety of online resources for teachers and other educators? Visit SeaWorld.org and click on *Just for Teachers* to find free curriculum guides, classroom activities, and links to the following teacher resources.

Land, Sea, & Air Mail.

Looking for current animal and conservation related information to bring into your classroom? Sign up for *Land, Sea, & Air Mail* — the SeaWorld/Busch Gardens monthly e-newsletter designed for teachers. It brings in-depth animal information, classroom activities, teaching tools, and animal news right into your classroom. Subscribe by clicking on *Land, Sea, & Air Mail*.

Shamu TV.

Bring SeaWorld, Busch Gardens, and Discovery Coves' award-winning environmental education series, ***Saving a Species***, right into your classroom. Find out the Shamu TV broadcast schedule, show descriptions, satellite links, and more by clicking on the *Shamu TV* link.

SeaWorld & Busch Gardens Environmental Excellence Awards.

Each year, the SeaWorld & Busch Gardens Environmental Excellence Awards recognizes the outstanding efforts of K-12 students and teachers across the country who are working at the grassroots level to protect and preserve the environment. Discover how your group can win \$5,000 by clicking on the link for the *Environmental Excellence Awards*.

WALRUSES AT WILD ARCTIC

- ✧ Male walrus can weigh more than 1,500 kg (3,300 lb.). How many 100-lb. students would it take to equal the weight of one 3,300-lb. walrus? (*It would take 33, 100-lb. students.*
 $33 \times 100 = 3,300$)
- ✧ Walrus are related to seals and sea lions; these animals are classified as *pinnipeds*. What adaptations, or body parts, help a pinniped survive in the ocean? (*Pinnipeds have four flippers for swimming. They have whiskers, or vibrissae to help search for food. They have blubber for warmth and as an energy reserve when fasting.*)
- ✧ You may see a walrus with tusks. Tusks are long, canine teeth. Do you think a walrus uses its tusks for chewing food? (*No. Tusks help a walrus climb onto ice floes. Walrus also use their tusks for defense. Male walrus use their tusks for establishing dominance over other males.*)

SHAMU'S SECRET

SeaWorld has occasionally received and cared for orphaned walrus calves. They calves were rescued by the U.S. Fish & Wildlife Service in Alaska and would not have been able to survive on their own.

DIVE DEEPER

The United States has laws that protect different animals. Walrus are protected by the Marine Mammal Protection Act of 1972, which bans commercial hunting of marine mammals, allowing only native subsistence hunting. In your school library or online, find out which animals are protected by law in your state.

MANATEE RESCUE

- ✧ The Florida manatee is an *endangered species*: there are not very many of them left, and they could become extinct, or disappear.
- ✧ Manatees are the only marine mammals that are *herbivores*—they only eat plants. What other animals only eat plants? (*Rabbits, horses, cows, and other grazing animals only eat plants.*)
- ✧ Adult Florida manatees typically weigh about 544 kg (1,200 lb.). Maximum weight is 1,588 kg (3,500 lb.). Use the scale in Manatee Rescue to find out how many of your friends weigh as much as one, average-sized manatee.
- ✧ About 10% of Florida manatees die each year. How? Look at the sign that illustrates dangers. (*In addition to natural causes of death, manatees die in collisions with motor-boats, entanglement in fishing gear, and other human-related causes.*)

SHAMU'S SECRET

SeaWorld Orlando rescues orphaned, ill, and injured manatees. When possible, the rescued manatees are returned to their natural habitat when they can survive on their own. SeaWorld has rescued nearly 400 manatees and has successfully rehabilitated and released more than half of them.

DIVE DEEPER

Learn more about protecting manatees by becoming pen pals with students from a classroom in Florida. What are some endangered animals that live in the your part of the U.S.? What are some things that you can do to help protect these animals? Exchange information with your pen pals on how you help protect endangered species.

SHARK ENCOUNTER

- ✧ A shark is a type of fish that has no bone. Its skeleton is made of *cartilage*. We have cartilage in our bodies, too. Where? (*In our ears and noses.*)
- ✧ Of the more than 400 different species of sharks in the world, only 12 have ever attacked people. In fact, shark attacks are very rare. Can you think of two reasons a shark might attack a human? (*Sharks may attack to defend their territory or they may be investigating if a human is potential prey.*)
- ✧ Sharks are excellent hunters. Their senses guide them to their prey. What are our five senses? (*smell, touch, sight, hearing, taste*) What are a shark's other two senses? (*A lateral line system for sensing water movement and the ampullae of Lorenzini to sense weak electrical fields.*)

SHAMU'S SECRET

Sharks don't eat much. On average they consume 1% to 10% of their body weight in an entire week (an amount that a dolphin might eat in a single day!) Our fish department feeds some sharks just three times a week.

DIVE DEEPER

Each year, humans catch millions of sharks mostly for their valuable fins; the key ingredient in shark fin soup. Many people feel that this is not a problem since they believe that all sharks are dangerous. Yet, very few shark species are potentially dangerous to humans. Have your students find out why sharks are an important part of their ocean ecosystems and what is currently happening to shark populations. Then discuss whether sharks pose a larger threat to humans or humans to sharks.

POLAR BEARS AT WILD ARCTIC

- ✧ An *adaptation* is a body part that helps an animal survive in its environment. Name two ways that polar bears are adapted to the icy Arctic environment. (*They have a thick coat and fat layer for insulation, their white color provides camouflage in the snow and ice. Small bumps on their footpads keep them from slipping on ice. Their sharp claws help them catch seals.*)
- ✧ Polar bears mostly dine on ringed seals and bearded seals, but occasionally eat fishes, bird eggs, berries, and other plant materials. What senses do polar bears use to find their prey? (*Polar bears use their eyesight, hearing, and especially their sense of smell to find prey. A polar bear can smell a seal from more than 1 km (0.6 mi.) away and 1 m (3 ft.) under the snow.*)

SHAMU'S SECRET

Polar bears are great hunters. In the polar bear habitat at Wild Arctic, the Marine Mammal Team hides fish, fruits, vegetables, and bear biscuits in hidden feeder tubes. This encourages bears to hunt.

DIVE DEEPER

Polar bears and other arctic wildlife are vulnerable to changes in seasonal sea ice and other effects of global climate change. Divide the students into groups and have them research on the internet to discover which arctic animals may be affected by climate change. Have them present their findings to the class.

BELUGA WHALES AT WILD ARCTIC

- ✧ Beluga whales live in the Arctic Ocean and surrounding seas. During certain times of the year, they may swim into coldwater rivers like the St. Lawrence and the Yukon rivers of Canada. How do beluga whales keep warm in cold waters? (*Beluga whales have a thick layer of insulating blubber just underneath the skin, which can make up more than 40% of a beluga whale's weight.*)
- ✧ Watch the belugas swim. How do beluga whales differ from the bottlenose dolphins, killer whales, and other whales you've seen at SeaWorld? (*Belugas lack a dorsal fin and have unfused neck vertebrae making them more maneuverable. These body features let belugas easily swim beneath ice floes. Also, belugas are all white which helps them blend in with their icy environment.*)
- ✧ Belugas are so vocal that they are sometimes called "sea canaries." Find the sound box and listen to beluga vocalizations. Belugas don't have vocal cords. How do they make sound? (*They move air in the nasal sacs, below the blowhole.) Why do belugas make these sounds? (Communication with other belugas and navigation.)*)

SHAMU'S SECRET

To assist with the beluga whales' care at SeaWorld, a ledge surrounds the pool, making it easier for veterinarians to take blood and other samples during examinations.

DIVE DEEPER

At school, locate the Cook Inlet on a map of North America (hint: it's located on the coast of the only U.S. state that lies in the Arctic.) The Cook Inlet population of beluga whales was hunted to the brink of extinction. Even though hunting no longer occurs, this beluga population is not growing as much as it should be. Research online what factors may be keeping this beluga population from recovering.

FRESHWATER AQUARIUM

Freshwater fishes must both find food and avoid being food for predators. This scavenger hunt will help your students discover some of the adaptations fishes use to hunt and to hide.

✧ Mystery Animal A

This fish's name makes some people quiver in fear. Its razor-sharp teeth give it a bad reputation. It's not a shark, but people are still afraid to go in the water with it. What is it?

(A piranha! This small South American fish is a terrific hunter, but it rarely attacks people.)

✧ Mystery Animal B

Because of its poor eyesight, this long, snake-like fish uses electricity to find its food and defend itself. What is it?

(The electric eel produces up to 650 volts of electricity from an electric organ near its tail.)

✧ Mystery Animal C

You'll have to look closely to see these fishes. They're nearly invisible, with only their skeletons and internal organs showing. What are they?

(The ghost glass catfish and the Indian glassfish are transparent freshwater fishes.)

SHAMU'S SECRET

Does it feel warm inside this aquarium? It's more efficient to heat air than to heat water. So, to conserve energy and natural resources, SeaWorld helps keep the aquarium water warm by heating the air.

DIVE DEEPER

Can you find any frogs at Freshwater Aquarium? Frogs in the United States and across the world are at risk of extinction. Go online to yearofthefrog.org to discover what threats frogs face. Is there anything we can do to help frogs and other amphibians?

SEAL AND SEA LION

- ✧ Seals and sea lions are similar animals. They are both pinnipeds. What is a pinniped? (*Pinnipeds are a group of mammals that includes seals, sea lions, fur seals, and walruses.*) Seals and sea lions have many differences that help us distinguish between the two.
- ✧ Look at an animal's ears. Sea lions have small, pointed, external ear flaps. True seals have a tiny opening for the ear on each side of their head, but no ear flaps. Can you find the Guadalupe fur seal? Is it more like a true seal or a sea lion? (*It is an eared seal like a sea lion.*)
- ✧ Watch how seals and sea lions move on land. Seals inch forward in a caterpillarlike motion. How does a sea lion move on land? (*A sea lion walks using all four flippers.*)
- ✧ Watch the seals and sea lions swim. Do they swim differently? (*Yes. A sea lion swims using its front flippers like paddles. A seal swims by moving its hind flippers back and forth through the water.*)

SHAMU'S SECRET

Each year, SeaWorld's animal rescue team rescues dozens of ill or injured seals and sea lions from San Diego County beaches. They care for these animals in a behind-the-scenes area, with the goal of returning them to sea when they are able to survive on their own. If you're at the beach and spot a marine mammal you think needs to be rescued, let a lifeguard or park ranger know or contact the local marine mammal rescue organization (such as SeaWorld in San Diego County.)

DIVE DEEPER

What are some other types of wildlife that may need to be rescued? As a class, make a list of some of the reasons that these animals might need to be rescued and cared for. Which reasons are caused by humans? How we can protect wildlife from from these human-caused dangers?

FLAMINGO COVE

- ✧ These tall pink birds are Caribbean flamingos. Flamingos filter food like flies and brine shrimp out of the water by hanging their heads upside-down in the water, and then sweeping their heads from side-to-side. Can you spot any feeding flamingos?
- ✧ What color is a flamingo? (*Pink.*) Flamingos obtain their color from pigments in the food they eat. What do you think would happen to the flamingos' feathers if they didn't eat pinkish foods? (*Without their regular diet, flamingo feathers would grow in white or gray.*)
- ✧ Do you see a flamingo standing on one leg? Flamingos sometimes stand on one leg to keep warm. One leg keeps them standing, while the other leg is close to the body staying warm. Do you ever stand in a particular way to stay warm? (*People sometimes stand with arms crossed and legs together to maintain body heat.*)

SHAMU'S SECRET

To keep our flamingos healthy and looking their best, SeaWorld bird keepers feed these birds a flamingo diet developed to meet their nutritional needs and maintain their color.

DIVE DEEPER

These flamingos are pinioned—portions of their wings were removed—so they can't fly away. Why is that important? Flamingos are not native to California. If released here, flamingos could damage San Diego habitats and compete with native wildlife. Use the library or Internet to find out more about *exotic* versus *native* species.

TURTLE BEACH AT SHIPWRECK RAPIDS

- ✦ A sea turtle is a type of reptile that spends nearly its entire life in the ocean. Like reptiles that live on land, sea turtles need to breathe air, but they can hold their breath for a very long time. A green sea turtle can hold its breath and stay under water for as long as five hours.
- ✦ A female sea turtle comes ashore to lay eggs. First, she digs a nest with her flippers then lays as many as 200 round eggs that are about the size of a golf ball. She covers the nest and eggs with sand and returns to sea. Two months later the baby turtles hatch, dig their way out of the sand, and crawl into the sea. Can you guess how big a baby sea turtle is when it hatches? (*Baby sea turtles are only a couple of inches long when they hatch.*)

SHAMU'S SECRET

The SeaWorld & Busch Gardens Conservation Fund provided a grant that helped fishermen replace the j-shaped hooks that they traditionally used with circle-hooks that are designed catch fish but not sea turtles. This simple change in fishing hooks dramatically reduced the numbers of sea turtles that were accidentally caught throughout the Atlantic and Pacific oceans.

DIVE DEEPER

Did you know that sea turtles may accidentally become entangled in trash that washes into their ocean home. Some sea turtles even eat floating plastic grocery bags, mistaking them for jellyfish. Have your class organize or participate in a local beach or waterway clean up. Visit www.oceanconservancy.org to learn how.

FORBIDDEN REEF

- ✦ Bat rays are a type of fish with a skeleton made of the same substance as a shark's. Do you remember what a shark's skeleton is made of? (*Sharks and rays have skeletons made of cartilage.*)
- ✦ Touch a bat ray. Why do they feel smooth? (*A thick layer of mucus covers their skin, which protects the rays from bacteria and other parasites.*) Do you have any similar defenses? (*Yes, you have mucous layers in your respiratory tract to protect your lungs from bacteria and dust that you inhale.*)
- ✦ Bat rays are *benthic* animals: they rest and feed on the bottom of the ocean. Where is a bat ray's mouth? (*On the underside of its body.*) Where are its gill slits? (*Rays have gills on the underside of their bodies, unlike sharks which have gill slits on the sides of their head.*)

SHAMU'S SECRET

Bat rays are a kind of sting ray; they are born with sharp, venomous spines on their tails. They use these to defend themselves from animals that might try to eat them. But don't worry! Here, the SeaWorld aquarists clip back the rays' spines to protect us from being stung. Ask a SeaWorld Educator how to avoid being stung by a stingray when at the beach.

DIVE DEEPER

We enjoy some of the same foods that marine animals, like bat rays, need to survive (clams, fish, etc). Overfishing and irresponsible harvesting can damage fish and shellfish populations and even entire ecosystems. Research online about how choosing to eat only sustainable seafood protects various species of aquatic animals and their habitats.

DOLPHIN BAY AT ROCKY POINT PRESERVE

- ✧ Bottlenose dolphins are social animals that live in groups. Though they may look a bit like fish, they are in every way mammals. What are the five main characteristics that dolphins share with other mammals? (*They give live birth, nurse their young, have hair around the snout when in the womb, breathe air, and are warm-blooded.*)
- ✧ A dolphin finds food and navigates with the help of *echolocation*. It produces sound in its nasal sacs and transmits the sound waves through its melon (forehead). The sound waves bounce off objects around the dolphin and echo back. By interpreting the echo, the dolphin explores its surroundings. What other animals use echolocation? (*Bats use echolocation.*)
- ✧ Explore the dolphin graphics and the kind of animals that dolphins eat. What shape are a dolphin's teeth? How do dolphins use their teeth? Do they chew their food? (*Dolphins have cone-shaped teeth that they use to catch their fishes and squids. Dolphins do not have any flattened teeth to chew their food with, instead they swallow their food whole.*)

SHAMU'S SECRET

More than 70 bottlenose dolphins have been born at SeaWorld San Diego since the 1970s. Many of the dolphins you see in this pool were born here.

DIVE DEEPER

Many people think it would be fun to interact with dolphins in the wild. But it's not a good idea—for the people or the dolphins. As a class, list the reasons. Visit this Web site for more information: www.nmfs.noaa.gov/prot_res/MMWatch/protectdolphcamp.html

CALIFORNIA TIDE POOL

- ✧ Have you been to the beach and watched the waves? Because of the gravitational pull of the sun and the moon, the earth's oceans are in constant tidal motion. This tidal motion causes low tides and high tides. When the water from high tides becomes trapped by rocks, it forms tide pools. Tide pools are the habitat, or home, for many different types of animals.
- ✧ Pick up a sea star. Many people call these animals starfish, but they are not fish at all. What are some of the differences between a sea star and a fish? (*Sea stars lack a backbone, fins, jaws, and other body parts you might see on a fish.*)
- ✧ The tide pool is a tough place to live. Waves pound these animals. Look at the underside of the sea star while holding it beneath the water. What body parts do you see that might help the sea star cling to rocks? (*Sea stars have rows of tube feet that help them stay attached to rocks.*) Be sure to turn your sea star right-side-up before putting it back.
- ✧ What other tide pool animals can you find? Ask the tide pool Educator to tell you more about them.

SHAMU'S SECRET

The water in the tide pool is 11° to 13°C (51°F–55°F). No wonder your hands feel so cold when you reach into the water!

DIVE DEEPER

There are tide pools along the San Diego coastline. The best time to visit a tide pool is when the tide is at its lowest. Use a newspaper, almanac, or tide table to figure out what time would be the best time to go tide pooling. When tide pooling, its best to leave rocks and animals where they are, and and just quietly watch and wait to see what happens in these miniature oceans.

WORLD OF THE SEA AQUARIUM

CORAL REEF COMMUNITY.

- ✧ Coral reefs are home to many different fishes. Reef-building corals grow in warmer waters than we have here in San Diego.
- ✧ Are corals plants or animals? (*A coral is actually a tiny animal related to jellyfish and sea anemones.*) Coral reefs are composed of colonies of different coral species which secrete protective calcium carbonate skeletons.
- ✧ Coral reefs are vital habitats for many different kinds of marine plants and animals. How many different fish shapes can you spot in this aquarium? Guess which ones can easily slip in and out of coral crevices.

KELP FOREST COMMUNITY.

- ✧ The animals and plants in this aquarium are found just off the coast of San Diego.
- ✧ Kelp is the fastest growing plant on the planet. It can grow up to 2 ft. (0.6 m) in one day.
- ✧ Like coral reefs, kelp forests provide food and shelter for hundreds of marine animals.

SHAMU'S SECRET

Some of the animals in the coral reef community are herbivores (plant eaters). SeaWorld aquarists feed the herbivores in the coral reef aquarium four heads of romaine lettuce every day.

DIVE DEEPER

One threat that coral reefs face is called ocean acidification caused by too much carbon dioxide in the Earth's atmosphere. Research online to find out how ocean acidification puts corals and the ocean's shell-building animals at risk. Discuss, as a class, simple ways to reduce this build-up of atmospheric carbon dioxide.

OTTER OUTLOOK AT ROCKY POINT PRESERVE

- ✧ Sea otters are the furiest animals on the planet. How dense is their fur? (*It averages 650,000 hairs per square inch.*) Unlike most other marine mammals, sea otters don't have blubber. Their dense fur keeps them warm in the cold waters they inhabit in central California and in Alaska.
- ✧ Watch the sea otters swim. Do you see bubbles coming out from underneath their fur? Sea otter fur keeps the animal warm by trapping a layer of air close to the skin. If its fur isn't clean, an otter can't stay warm. What body parts do the otters use to groom their fur? (*Sea otters use their paws to keep their dense fur clean.*)
- ✧ Sea otters are among the few animal species that use tools, specifically rocks. What do you think they use rocks for? (*Sea otters use rocks to crack open the shells of abalone and other hard shelled animals that they eat.*)

SHAMU'S SECRET

In 1989, an oil spill in Alaska covered thousands of sea otters in crude oil. Scientists at the Hubbs-SeaWorld Research Institute discovered the best way to clean those otters. They used dishwashing detergent to remove the oil from the otter's fur without hurting the otter. If there is an oil spill, dishwashing detergent is still used to clean the fur or feathers of oiled animals.

DIVE DEEPER

The California sea otter population is not recovering as much as it should. Research on the Internet to find out what's keeping their population low and how people can help sea otters recover.

SHAMU CLOSE UP

- ✦ Killer whales are the largest dolphin species. How do they resemble the bottlenose dolphins you've seen here? How are they different? (*Bottlenose dolphins and killer whales share a similar body shape; flippers, flukes, and fins; a blowhole; etc. They differ in color; in the length of their rostrum (snout), and in size.*)
- ✦ Killer whales earned their name because they hunt other types of whales. They also eat fishes, seals, sea lions, and penguins. Killer whales often hunt cooperatively. What is a social group of killer whales called? (*a pod*)
- ✦ Can you hear the killer whales making any noises? Where on your body does your voice come from? (*vocal cords in your throat.*) Killer whales do not have vocal cords like we do. They produce all the sounds that they make under their blowhole area.

SHAMU'S SECRET

Just like people, Shamu has doctors too. SeaWorld has several veterinarians on staff to keep Shamu and the other animals healthy. A whale check-up is similar to the way a human doctor checks patients. A vet weighs the whale; examines its eyes, ears, and nose (blowhole); and takes a small blood or urine sample to examine in the lab.

DIVE DEEPER

If fishes swim and feed in polluted waters, certain contaminants build up in their bodies. A killer whale who eats these fish may build up an even greater load of contaminants. Because they feed at the top of the ocean food chain, killer whales are very susceptible to pollution. How can we keep our oceans clean?

AQUARIUM DE LA MER

Scavenger hunt time! Divide into small groups, then use these clues to find the animal that matches each clue. Learn two facts about the animal and share that information with the rest of the group.

✦ Mystery Animal A

This "fish" (actually an invertebrate) sounds like it would go well with a peanut butter sandwich.

(*moon jelly*)

✦ Mystery Animal B

This fish is named after the king of the jungle.

(*lionfish*)

✦ Mystery Animal C

This fish looks just like the rocks in its habitat.

(*stonefish*)

SHAMU'S SECRET

All the animals in the Aquarium de la Mer live in salt water. Ocean water comes from Mission Bay and travels through a system of filters, then goes in to the aquariums. (It's filtered again before it goes back into Mission Bay— even cleaner than it was before.)

DIVE DEEPER

Many of the animals that you see in this aquarium are also found in one or more National Marine Sanctuaries, which are found along the coasts of the United States. Visit the National Marine Sanctuary Web site at <http://sanctuaries.noaa.gov/>. Which marine sanctuary do you live the closest to? Why is it important to have sanctuaries for wildlife?