Pre/Post Assessment

Use this assessment to discover how much your students already know about animal behavior and training before you begin this unit, and later as a conclusion to your study.

◆ Name some animals that can be trained to perform in marine life shows. Describe the kinds of things they do in a show.

◆ What does *behavior* mean? Give some examples of human behavior.

◆ Choose an ocean animal and role-play its behavior for avoiding predators. Role-play its behavior for finding food.

◆ Describe how you might be able to communicate with someone who doesn't speak your language.

◆ Show how you might get a friend to touch a particular object using only the words "hot" and "cold."

◆ Draw or paint a picture that shows what an animal trainer might do in a typical work day.

◆ Explain how you think a trainer might teach a sea lion to do a backflip in the air.

NATIONAL SCIENCE EDUCATION STANDARDS

SeaWorld and Busch Gardens education programs and publications support the National Science Education Standards. **The Animal Behavior and Training** *Teacher's Guide for grades K–3 includes connections to the following standards:*

Life Sciences
◆ Characteristics of organisms
◆ Life cycles of organisms
◆ Organisms and environments

Personal and Social Perspectives
◆ Types of resources
◆ Changes in environments
◆ Science and technology in local challenges

History and Nature of Science
◆ Science as a human endeavor

Science as Inquiry
◆ Abilities necessary to do scientific inquiry
◆ Understanding about scientific inquiry

Unifying Concepts and Processes
◆ Systems, order, and organization
◆ Evidence, models, and explanation
◆ Change, constancy, and measurement
◆ Evolution and equilibrium
◆ Form and function

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

SeaWorld
ADVENTURE PARKS

Covers

Front (clockwise from upper left): bottlenose dolphin *(Tursiops truncatus),* beluga whale *(Delphinapterus leucas)* and friend, Asian small-clawed otter *(Aonyx cinerea),* California sea lion *(Zalophus californianus).*

Back (clockwise from upper left): California sea lion, bottlenose dolphin, killer whales and trainer, SeaWorld Adventure Campers and a performer in the "Pets Rule" show at SeaWorld San Diego.

Animal Behavior and Training

K–3 Teacher's Guide

A SEAWORLD PUBLICATION

CONTENTS

To the Teacher

The *Animal Behavior and Training* Teacher's Guide for grades K–3 was developed at SeaWorld to help you teach your students—in an active, hands-on way—about animal behavior and how we train animals. Our goal is to integrate science, mathematics, art, and language. SeaWorld curriculum supports the National Science Education Standards.

The brief background information in this Guide was written for you, the teacher. It will help you do these activities with your students. We suggest you also refer to some of the materials listed on page 24 for more in-depth information. SeaWorld strives to provide teachers with up-to-date information and activities that motivate students to appreciate and conserve wildlife, the oceans, and the natural world.

Do you have comments or suggestions regarding the activities in this Teacher's Guide? We'd love to hear your opinion. Write the SeaWorld San Diego Education Department, email us at *SWC.Education@seaworld.com,* or call 1-800-23-SHAMU.

Goals of the Animal Behavior and Training Unit

Students will observe and recognize behavior patterns of humans and marine animals. They will become aware of how animals can be trained through reinforcing desired behavior.

Objectives

After completing the unit, the student will be able to ...

1. Define the word *behavior.*

2. Observe and document an animal's behavior.

3. Demonstrate several examples of typical behaviors of some marine mammals and explain how those behaviors help the animal survive.

4. Demonstrate ways to communicate with another individual without using words.

5. Use positive reinforcement to shape a classmate's behavior.

6. Describe some possible rewards for marine mammals.

7. Show and explain how a trainer uses a target as a training tool.

8. Describe an example of the steps that a SeaWorld trainer would use to train an animal to do a simple behavior.

9. Relate what spending a day as a SeaWorld trainer might be like.

10. Share his or her learning experience with family and friends.

Vocabulary

anthropomorphize (an-thruh-puh-MOR-fize) — to attribute human characteristics or emotions to animals.

behavior — the way an animal acts.

bow — a leap out of the water by an animal such as a dolphin, penguin, or sea lion. The animal enters the water again head-first as in a dive.

breach — a behavior in which a whale, dolphin, or sea lion jumps out of the water and lands on its side or back.

environment — the total surroundings and forces that act upon an organism, including other plants and animals as well as physical factors such as light, heat, weather, and soil.

ethology (ee-THAHL-uh-jee) — the study of animal behavior.

flukes — the horizontal lobes of the tail of a whale, dolphin, or porpoise, made of connective tissue (not bone).

genetic — having to do with the science of heredity and how characteristics are passed from one generation to the next.

husbandry behaviors — behaviors that an animal is trained to do in order to facilitate caring for that animal.

learned behavior — behavior that results from experience.

learning — the process by which a change in behavior occurs as a result of experience.

Least Reinforcing Scenario (LRS) — at SeaWorld, the consequence that follows undesired behavior, combined with the trainer's signal for the animal to emit calm behavior. The scenario has two parts: (1) no reinforcement of the undesired behavior, and (2) the trainer's relaxed signal for the animal's calm behavior. Following an LRS, the animal is reinforced for calm, attentive behavior.

lobtail — to slap the tail flukes on the surface of the water.

marine mammal — a mammal adapted to live in the marine environment and dependent on the ocean for food.

pod — a social group of whales or dolphins.

predator — an animal that eats other animals.

prey — *v:* to hunt and eat other animals. *n:* an animal eaten by another animal.

reinforce — to strengthen the occurrence of a behavior by delivering a positive stimulus or consequence.

reinforcer — a stimulus that strengthens behavior.

response — an activity of an animal that results from a change in the environment.

reward — a reinforcer.

shaping — the step-by-step process of training complex behavior.

signal — a motion, sound, or circumstance that communicates to an animal a request to perform a particular behavior.

social — living together in an organized group, preferring to be among others.

spyhop — to rise vertically out of the water so that the eye is above the surface.

stimulus — environmental change that brings about a response from an animal.

target — a focal point that directs an animal toward a position or direction.

About Animal Behavior

What is behavior?

Behavior is the way an animal acts. Any action an animal does, or any *response* to a *stimulus* is a behavior. Walking, swimming, flying, eating, blinking, and breathing all are examples of behavior. Animals behave in certain ways for four basic reasons:

♦ to find food and water
♦ to avoid *predators*
♦ to reproduce
♦ to interact in *social* groups

Behaviors help animals survive.

Animal behaviors mostly are strategies for survival. Some behaviors, such as eating, or escaping predators, are obvious survival strategies. But other behaviors, which also are important for survival, may not be as easily understood. For example, why does a flamingo stand on one leg? By tucking the other leg close to its body, the bird conserves heat that would otherwise escape.

An animal survives by responding and adapting to a changing environment. In some cases, the animal learns which responses get desired results, and changes its behavior accordingly.

What is *learned behavior*?

Animals learn some behavior through experience. In fact, scientists define *learning* as a change in behavior as a result of experience. For the most part, learning occurs gradually and in steps.

An animal's *genetic* makeup and body structure determine what behaviors are possible for it to learn. An animal can learn to do only what it is physically capable of doing. A dolphin can't learn to ride a bike because it it has no legs to work the pedals, and no fingers to grasp the handlebars.

Animals aren't human.

Ethology is the scientific study of an animal's behavior in the wild. It is easier to observe and record behavior than it is to interpret it. When studying animal behavior, observers must take care not to *anthropomorphize* (attribute human characteristics or motivations to animals).

Are marine mammals intelligent?

Sometimes people think that an animal is intelligent if it can be trained to do certain behaviors. But accurately rating the intelligence of animals is difficult. Trying to measure animal intelligence using human guidelines would be inappropriate. In fact, a reliable and consistent intelligence test for humans has yet to be developed.

For a flamingo (Family Phoenicopteridae) standing on one leg conserves body heat.

About Animal Training

People have trained animals for thousands of years.

Falconers have trained hawks. Dogs have been trained for hunting, for herding livestock, and for pulling sleds. Elephants have been trained to pull and carry logs. Horses and camels have been trained for riding and hauling. Today, people still train animals.

Marine mammal training is a relatively new field. SeaWorld animal trainers began training bottlenose dolphins *(Tursiops truncatus)* in 1963, before the first park opened.

At SeaWorld, a killer whale presents its pectoral flipper for examination and measurement. Such *husbandry behaviors* help trainers and veterinarians care for animals.

Why do we train animals?

Through the years, millions of people have visited zoological parks to see animals. Most people do not have the opportunity to observe these animals in the wild. Visitors are not only entertained, but also educated. The unique opportunity to observe and learn directly from live animals increases public awareness and appreciation of wildlife.

Marine mammals at SeaWorld are trained to hold still and remain calm and to present body parts for examination, measurement, and blood sampling. They get on a scale, and even urinate when signaled to do so for routine health checks.

Animal training has benefitted research for many years. By training animals to respond to various stimuli in their *environment*, researchers can gather scientific information that would not otherwise be available. The information gathered at SeaWorld, combined with the results of field observations, has contributed to the body of knowledge about many types of animals. For four decades, SeaWorld parks have led the way in marine mammal training and research.

A trained killer whale *(Orcinus orca)* presents its tail *flukes* for a blood draw at SeaWorld.

Marine Mammal Training at SeaWorld

Trainers *reinforce* desirable behavior.

When an animal performs a behavior that produces a positive result, the animal is likely to repeat that behavior. The positive result is termed a positive *reinforcer* because it reinforces, or strengthens, the behavior.

Humans learn by the same principles. Consider the behavior of students answering questions in a classroom. If the behavior is reinforced by attention and praise, students are likely to repeat the behavior (even if the answer is not correct). If no reinforcement (positive attention) were to follow, repeating that behavior would be less likely.

Marine mammal training at SeaWorld is based on reinforcing desired behaviors with a variety of *rewards.* Such rewards are one way for SeaWorld trainers to communicate with animals. They let an animal know when it has performed a desired behavior.

What rewards are given to animals?

For animals, one of the most common rewards is food. Food is an example of a primary reinforcer: it's inherently favorable, so an animal doesn't have to learn to "like" it. But to keep training sessions interesting and rewarding for the animals, SeaWorld trainers use a variety of different reinforcers. Many animals seem to enjoy having their skin or fur stroked. Other rewards include squirts from a water hose, chunks of ice, and lots of positive attention.

Learning occurs in steps.

Most behaviors cannot be learned all at once, but develop in steps. This step-by-step learning process is called *shaping*. Many human behaviors are learned through shaping. For example, when children learn to ride a bicycle, most begin on a tricycle, go on to ride a two-wheeler with training wheels, and eventually master a larger bicycle. Each step toward the final goal of riding a bicycle is reinforcing. To train an animal to do a behavior, trainers usually break down the behavior into small steps.

Signals communicate desired behavior.

At SeaWorld, animals are trained to associate a *signal* with each behavior they learn. The signal—which may be visual, auditory, or tactile—is the stimulus for the animal to do a particular behavior.

A SeaWorld trainer asks Shamu to slide out.

Marine Mammal Training at SeaWorld

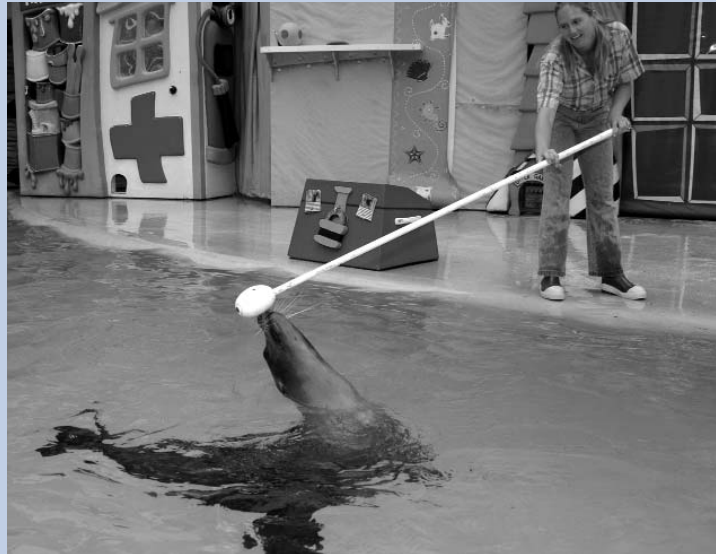**Trainers teach animals to "target."**

Trainers use their hands as a focal point: animals are trained to come to the trainer's hand, touch it, and await the next signal. When a behavior takes place farther away, a tool called a *target* is used as an extension of the hand.

Just a a flagstick is a target that directs a golfer toward a golf hole, a target directs an animal toward a position or direction. For most animals, trainers use a target that is a long pole with a foam ball on one end. Other targets include a tap on the glass at the side of the pool or an ice cube tossed into the water.

This California sea lion has learned to follow a target.

A trainers gently touches the target to the animal, then reinforces the animal. The trainer repeats this several times. The animal learns that when it touches the target, it gets reinforced. The next step is to position the the target a few inches away from the animal and wait for the animal to touch the target. When the animal moves toward the target and touches it, the trainer immediately reinforces the animal. After several repetitions, the target is moved still farther away. Each time the animal touches it, the trainer reinforces the animal. Eventually the animal will follow the target.

Here's an example of how a sea lion might be trained to do a jump:

First, the sea lion is reinforced for touching a target on the water surface. Next, the trainer raises the target a few inches above the water. The sea lion must rise up to touch it, and is reinforced by the trainer. As the sea lion successfully masters each step, the trainer continues to raise the target higher and higher above the water. Eventually the sea lion jumps entirely out of the water.

What about unwanted behavior?

If a trainer requests a particular behavior and the animal does not respond, or the animal responds with undesired behavior, the trainer uses uses a technique called the *Least Reinforcing Scenario* (LRS).

The LRS has two parts. The first part is a consequence for incorrect behavior: the trainer does not reinforce the animal. The second part is a stimulus providing an opportunity for reward: for two or three seconds the trainer is relaxed and attempts no change in the environment. (Changes in the environment may accidentally reinforce the behavior.) This brief time period is a stimulus to the animal to remain calm and attentive. Following an LRS the animal is reinforced for calm, attentive behavior.

SeaWorld Stars

Use these cards to help your students get started exploring the behavior of some marine mammals. Here are ideas for ways to use these cards in your classroom:
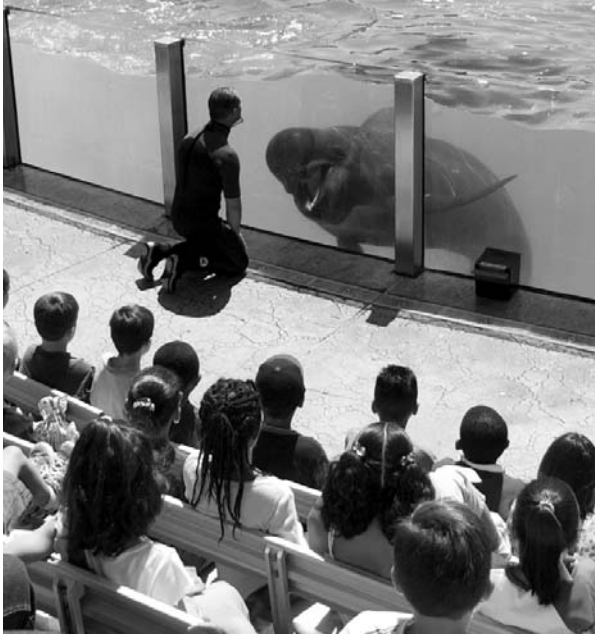
- Use the facts to help you prepare lesson plans and lead discussions in class.

- Copy and cut apart the cards. Distribute a different card to each cooperative learning group or to each student. Learn more about the animals by visiting the school library or go to the SeaWorld/Busch Gardens ANIMALS Web site at *seaworld.org*. Groups may even adopt their animal as a "mascot" while working on the Animal Behavior and Training Unit.

- Copy and cut apart the cards. Distribute a complete set to each student or group of students. Students compare similarities and differences among various animals and determine which animals can do similar behaviors.
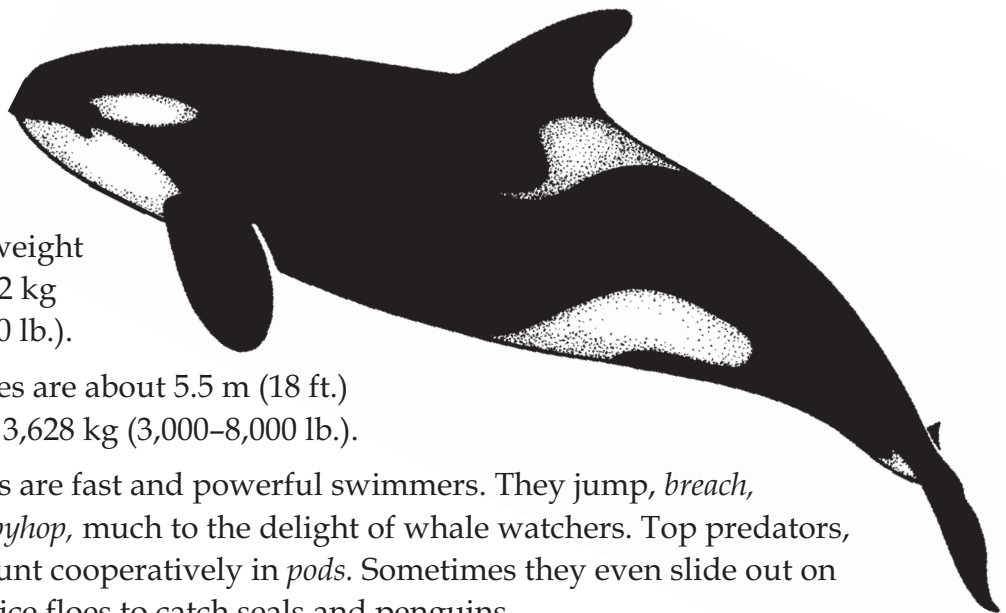
killer whale

Orcinus orca

size*: Males reach about 6.1 m (20 ft.) and weight 3,628 to 5,442 kg (8,000–12,000 lb.).

Adult females are about 5.5 m (18 ft.) and 1,361 to 3,628 kg (3,000–8,000 lb.).

behavior: Killer whales are fast and powerful swimmers. They jump, *breach, lobtail* and *spyhop,* much to the delight of whale watchers. Top predators, they often hunt cooperatively in *pods.* Sometimes they even slide out on sandbars or ice floes to catch seals and penguins.

At SeaWorld, Shamu and friends inspire awe and thrill crowds as they demonstrate their adaptations for living in the sea. Their powerful jumps and breaches soak enthusiastic audiences.
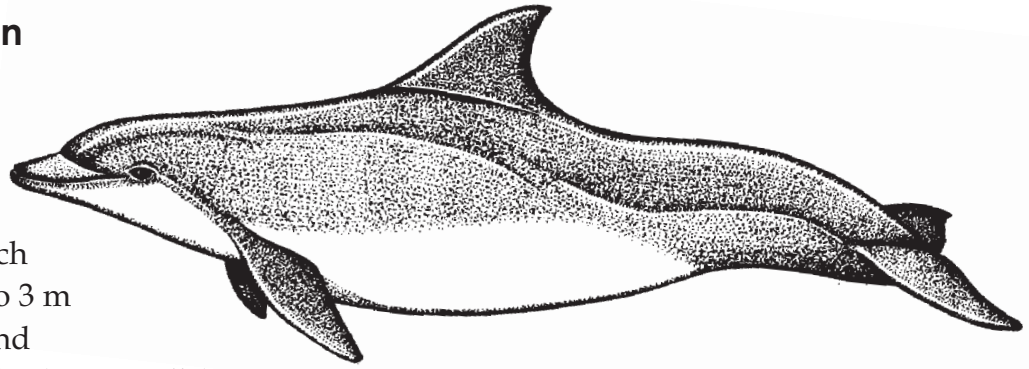
* killer whales in the North Atlantic

bottlenose dolphin

Tursiops truncatus

size: Adults reach about 2.5 to 3 m (8–10 ft.) and 136 to 295 kg (300–650 lb.). Males are usually larger than females.

behavior: Dolphins are social mammals that live in groups called pods. Dolphins in a pod interact and communicate with each other. Several pods may temporarily form larger groups that travel together. At sea, bottlenose dolphins chase one another, toss seaweed, jump, and "surf" ocean swells. Sometimes they ride the bow and stern wakes of boats.

At SeaWorld, bottlenose dolphins perform in the Dolphin Show, where they jump, splash, and interact with each other and their trainers.

short-finned pilot whale

Globicephala macrorhynchus
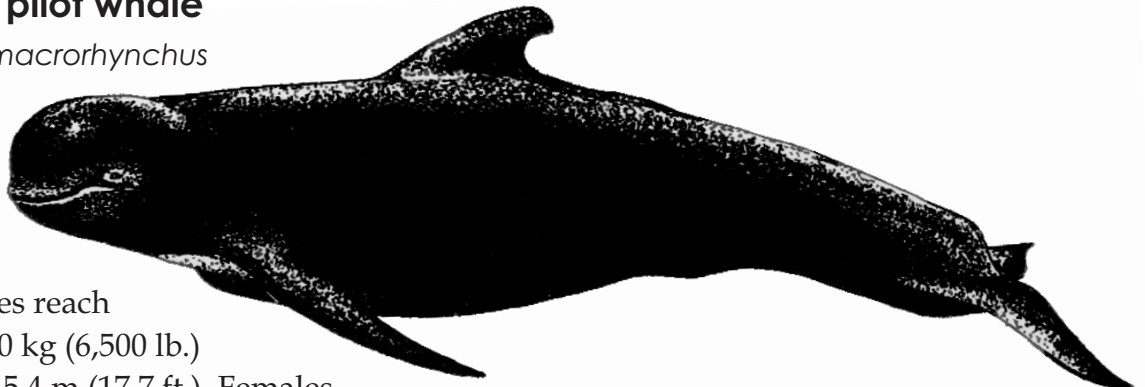
size: Males reach 3,000 kg (6,500 lb.) and 5.4 m (17.7 ft.). Females reach 1,200 kg (2,600 lb.) and 4 m (13.1 ft.)

behavior: Short-finned pilot whales are found throughout temperate and tropical oceans, where they live and travel in groups of a few to several hundred. At sea they often associate with bottlenose dolphins. Their seasonal movements probably coincide largely with the movement of their primary prey: squid.

SeaWorld San Diego is the only place in the world where pilot whales are trained to perform. They are featured in the Dolphin Show, where they perform alongside their natural companions, the bottlenose dolphins.

Asian small-clawed river otter

Aonyx cinerea

size: The smallest of all the otters species, these otters reach about 65 to 94 cm (26–37 in.) and 1 to 5 kg (2.2–11 lb.).

behavior: Some river otter behaviors look like "play." River otters chase one another in the water, tackle each other on shore, and slide down muddy or snowy banks. These actually are adaptive behaviors that reinforce social bonds and encourage young animals to practice hunting and fighting skills.

They're small, furry, and adorable! River otters entertain SeaWorld guests in the Sea Lion and Otter Show. They run, climb, wave, and carry show props with their dextrous front paws.
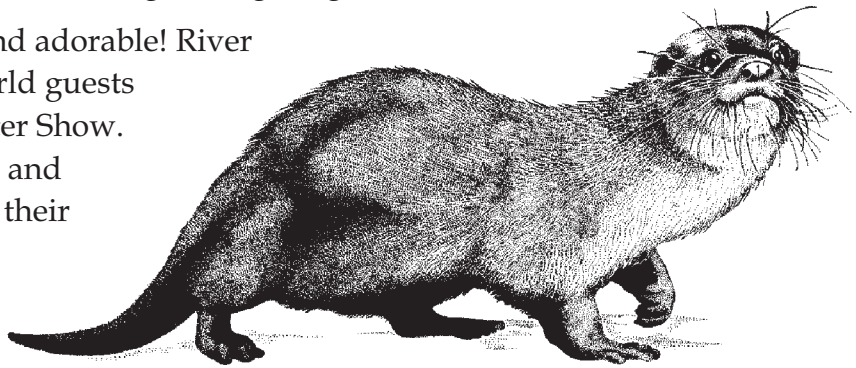
California sea lion

Zalophus californianus californianus

size: Adult males are about 2 to 2.5 m (6.5–8 ft.) and 200 to 400 kg (440–880 lb.).

Adult females are about 1.5 to 2 m (5–6.5 ft.) and 50 to 110 kg (110–240 lb.)

behavior: California sea lions are quick and agile in the water, abilities that help them catch prey and escape predators. Their large, winglike foreflippers and their hind flippers provide power for swimming, diving, and jumping onto shore. On land, a sea lion can rotate its hind flippers under its body and walk on all fours. Sea lion colonies are noisy places. Sea lions often call loudly to each other.

At SeaWorld, sea lions are the hilarious performers in the Sea Lion and Otter Show. They swim, dive, jump, "bark," and clamber about with their trainers.
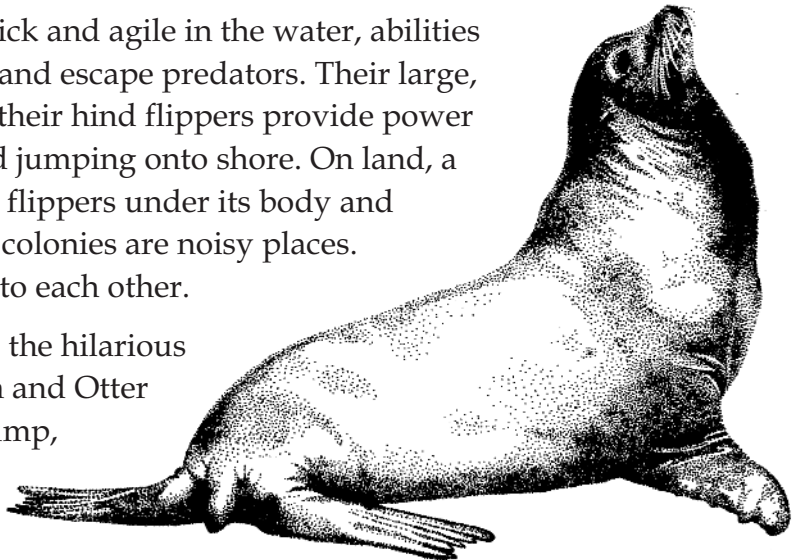
Marine Mammal Mimics

OBJECTIVES

Students will demonstrate examples of the typical behavior of various sea animals living in different habitats.

MATERIALS

- ❑ *SeaWorld Stars* cards on pages 8–10
- ❑ reference materials about marine mammals. *(See Bibliography on page 24 or go to the SeaWorld ANIMALS Web site at* **seaworld.org***)*

ACTION

1. Role-play each of the animals on pages 8–10. First describe an animal's home. *(For example: the ocean for a dolphin, an island for a sea lion, or river bank for an otter.)*

2. Next, ask your students to imagine they are the animal. Begin by having them "put on" appropriate body parts. For example, sea lions need front and back flippers, whiskers, a fur coat, and large eyes.

3. Lead your students through some active role-play behaviors such as swimming, diving, catching food, and jumping out of the water onto a rocky shoreline. As you role-play, ask students what they "see" in the water. What do they see on land? Ask them to to suggest role-play behaviors that will—

   - ♦ help them avoid predators
   - ♦ help them find and eat prey
   - ♦ help them locate others of their own kind

4. Finally, role-play trained behaviors that you might see at SeaWorld. Include trained show behaviors as well as trained husbandry behaviors (behaviors that an animal is trained to do to facilitate caring for that animal).

DEEPER DEPTHS

Play animal charades. A student chooses an animal and acts it out while classmates guess the correct animal. Or try this game: after one student chooses an animals, class-mates ask "yes" or "no" questions about the animal's behavior until they correctly guess the animal.

A dolphin moves its tail flukes up and down to swim.

Hold Your Breath

OBJECTIVES

Given pictures of animals at their maximum diving depths, students identify the deepest diver, the shallowest diver, and the two animals that can dive to equal depths.

Students in grades 2–3 create and solve story problems involving subtraction.

MATERIALS

❑ copies of the *Hold Your Breath!* Funsheet on page 13

❑ blue, green, and red crayons

❑ pencils and paper

ACTION

1. Distribute copies of the *Hold Your Breath!* Funsheet. Read the instructions aloud for nonreaders.

2. Students determine which animal dives deepest, which dives shallowest, and which two animals dive to equal depths. They color these animals according to the directions.

3. *For grades 2–3,* students construct a bar graph to illustrate the information on their Funsheet. They can also create and solve story problems using this information.
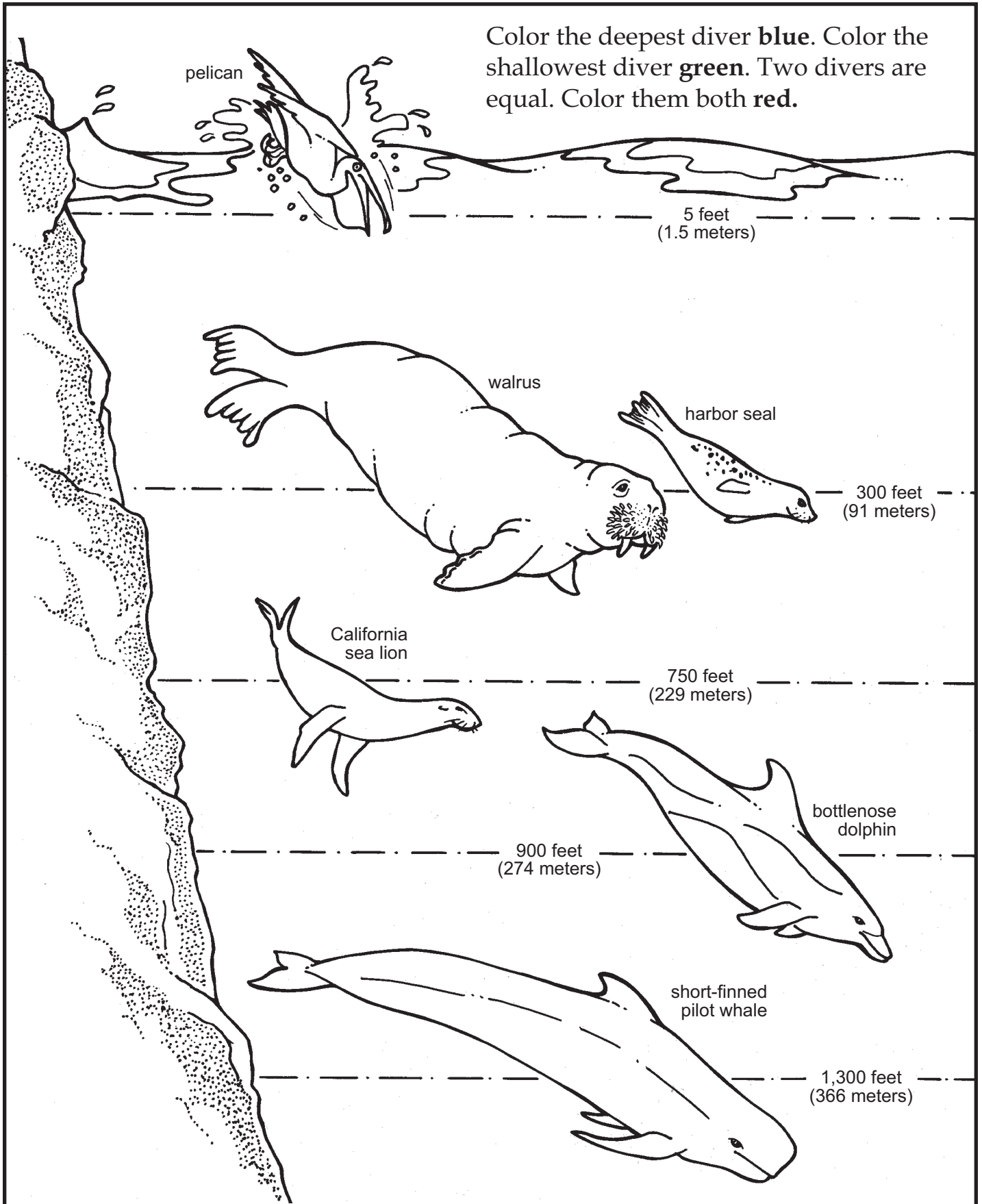
Harbor seals can dive to 90 m (295 ft.). However, they probably don't routinely dive this deep because most of their food—fish and shellfish—lives in shallow water.

Hold Your Breath!

Color the deepest diver **blue**. Color the shallowest diver **green**. Two divers are equal. Color them both **red**.

pelican

5 feet
(1.5 meters)

walrus

harbor seal

300 feet
(91 meters)

California
sea lion

750 feet
(229 meters)

bottlenose
dolphin

900 feet
(274 meters)

short-finned
pilot whale

1,300 feet
(366 meters)

Communication: Sights and Sounds

OBJECTIVES

Students find ways to communicate with each other individual without talking. They demonstrate sounds and gestures they can use to communicate.

MATERIALS

❑ American Sign Language (ASL) alphabet on page 15

BACKGROUND

People use a variety of silent gestures to communicate. Such gestures can be an important type of communication.

One way hearing-impaired people can communicate is by using sign language. Here in the United States, American Sign Language (ASL) is a common language.

At SeaWorld, trainers communicate with trained animals by using rewards, targets, and signals.

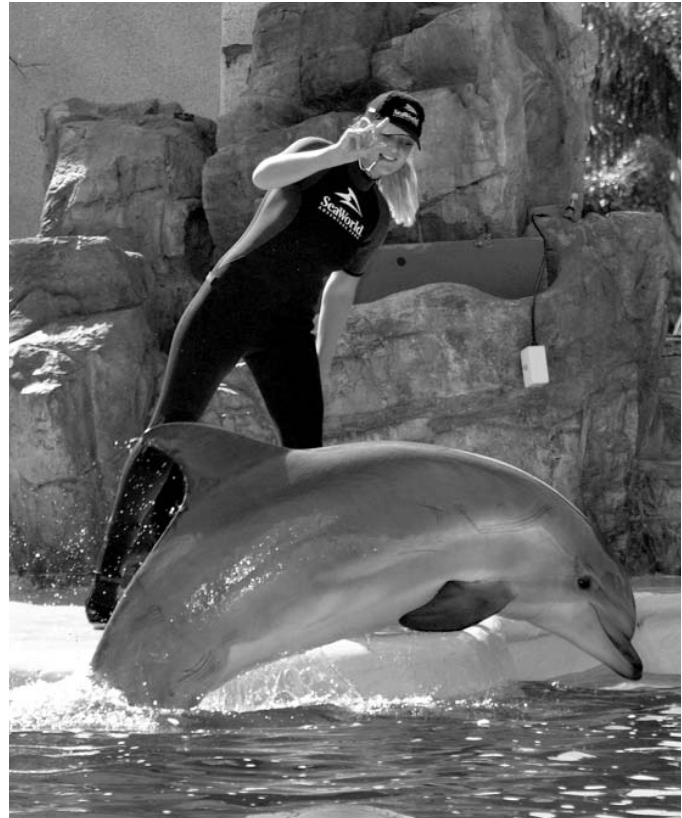A SeaWorld trainer communicates with a trained Asian small-clawed river otter.

ACTION

1. Have students think of sounds (other than words) that have a meaning associated with them. On the board, make a list of the sounds they name. *(Examples: The doorbell means someone is at the door. The phone ringing means someone wants to talk to you. A gunshot starts a horserace. A whistle stops action in a basketball game. A fire alarm tells people to go outside. A bell tells students to line up after recess.)*

2. Next, ask students to think of gestures that have a meaning associated with them. On the board, make a list of the gestures they name. *(Examples: a wave, an "okay" gesture, a "shush" gesture, a thumbs-up, football signals such as "touchdown," baseball signals such as "out" and "safe," and scuba-diving signals such as "out of air.")*

3. Discuss ways that people who don't speak the same language can communicate with each other.

4. Explain that ASL is a non-verbal language that's used by many hearing imparied people (and others). Teach students the ASL alphabet. Help them learn to finger-spell their names and other words.

5. As a class, make up your own signs for some of the things that you frequently need to communicate to each other. *(For example, students can make up signs for you to tell them to line up, to sit down, or to wash their hands. They can make up signs for telling you that they are finished with a project, that they have a question, or that they need an object.)* Try using the signs instead of talking.

DEEPER DEPTHS

Find out if any of your students (or other teachers, staff, or volunteers at your school) know sign language. If so, have them teach the class some signs.

Find a sign language book at the library. Teach students some signs.

This trained bottlenose dolphin knows what the trainer's hand signals mean.

ASL FINGER-SPELLING ALPHABET
(Signs show the receiver's view on the left and the signer's view on the right.)

a	b	c	d	e	f	g
h	**i**	**j**	**k**	**l**	**m**	**n**
o	**p**	**q**	**r**	**s**	**t**	**u**
v	**w**	**x**	**y**	**z**		

Hot and Cold

OBJECTIVES

Student illustrate training techniques by "training" each other.

BACKGROUND

Human behavior can be shaped by communication and reward.

ACTION

1. Choose one student (the "performer") to be "trained." Have that student stand outside the classroom.

2. Ask the remaining students to choose any object in the room. Their goal will be to get the "performer" to touch the object. Instruct them to call out the words "warm," "warmer," or "hot" as the performer gets close to the object. They will call out "cold" or "colder," when he or she moves away from the object.

3. Invite the performer back into the room. For K–1 students, explain the game. For 2–3 students (depending on their level) you may wish to remain silent and have them figure out what is expected of them.

4. Allow several students to try being the performer. (For fun, try being the performer yourself!)

5. Pair students into partners and have them take turns being the trainer and the performer.

6. Discuss how the trainers communicated with the performers. Did the words, "warm," and "hot" become reinforcers?

DEEPER DEPTHS

For more advanced students, substitute a behavior instead of simply touching an object. You might try waving, sitting, turning in a circle, or jumping.

Can students train each other to wave?

A Story Without Words

OBJECTIVES

Student will be describe the animals that are trained at SeaWorld, the ways trainers communicate with those animals, and the rewards they use to reinforce trained behavior.

BACKGROUND

Review pages 5–7. You may also want to look on the Web for more in-depth information about animal training at SeaWorld. Go to *seaworld.org* and click on the "ANIMAL INFO" and "CAREER RESOURCES" buttons.

MATERIALS

❑ long butcher paper

some or all of the following:

❑ pencils

❑ crayons,markers, or paints

❑ glue or paste

❑ construction paper

❑ pictures cut from magazines

What would it be like to be a SeaWorld trainer? In this activity, students imagine it, then represent it through art.

ACTION

(Do this activity as a class or in cooperative learning groups.)

1. Discuss what a SeaWorld trainer's job is like. What kinds of animals do they train? How do they communicate with the animals? What kinds of rewards do they use?

2. Students work cooperatively to make a classroom mural depicting a day in the life of a SeaWorld trainer. Remind them to include the animals trained at SeaWorld, the ways trainers communicate with the animals, and the rewards they use.
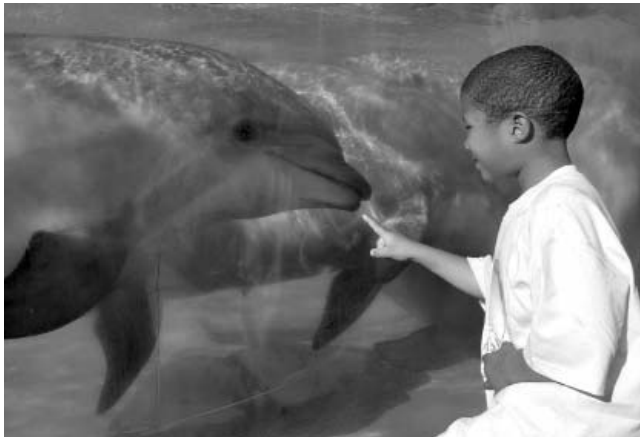
Watch and Learn

OBJECTIVES

Students practice observation skills as they document an animal's behavior.

BACKGROUND

Ethology is the study of an animal's behavior. The first step in learning about animal behavior is to observe and document the behavior. Observers must be careful not to attribute human characteristics or motivations to the animals they study.

MATERIALS

- ☐ animal(s) to observe *(Examples: fish, tadpole, ladybug, rabbit, hermit crab, lizard, snake, hamster, caterpillar, snail, turtle, bird)*
- ☐ paper and pencil
- ☐ (optional) hand lens

Student observe animal behavior at SeaWorld *(left)* and in the classroom *(right)*.

ACTION

1. Introduce students to the animal(s). Find out how much they already know about that animal and make a list on the board.

2. Schedule students one at a time or in small groups of two or three to observe the animal for a specified period of time.

3. Students draw or write what they see the animal do during the observation period.

4. When all students have observed the animal, make a list of all the behaviors they saw the animal do. Keep track of how many students (or student groups) observed each behavior.

5. Ask students to formulate questions about the animal's behavior. After observing the animal, what are they curious about? Write all the questions on the board.

6. As a group, see if you can answer any of the questions by further observation or by using reference materials such as publications or the Internet.

Dolphin Book

OBJECTIVES

Students order a sequence of events for training an animal and number pages to create a book. They gain practice reading simple sentences.

MATERIALS

- ❏ copies of *I Train the Dolphin* book on pages 20–21 *(one per student)*
- ❏ scissors
- ❏ stapler
- ❏ crayons or markers

ACTION

1. Distribute a set of *I Train the Dolphin* book pages to each student. Practice reading the sentences on each page. Talk about the pictures.

2. Pages 1 (the cover) and 8 (the last page) are already numbered. The others are out of order, and they are not numbered. Students cut apart the book pages and order them in the right sequence to show the steps used to train a dolphin at SeaWorld. They write page numbers on the un-numbered pages and assemble their books by stapling them.

3. Students color the drawings. On page 8, each student draws himself or herself with a dolphin.

4. Students practice reading their books. They take them home and read them with their families.

ANSWER

Students order and number their pages:

page 2*   I make friends with the dolphin.

page 3*   I feed the dolphin.

page 4   The dolphin touches the target.

page 5   The dolphin reaches higher.

page 6   The dolphin jumps up.

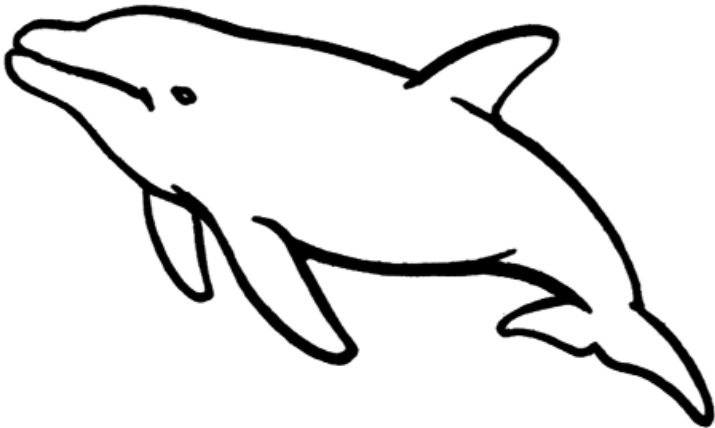page 7   I teach a signal to the dolphin.

Pages 2 and 3 are also correct if switched.
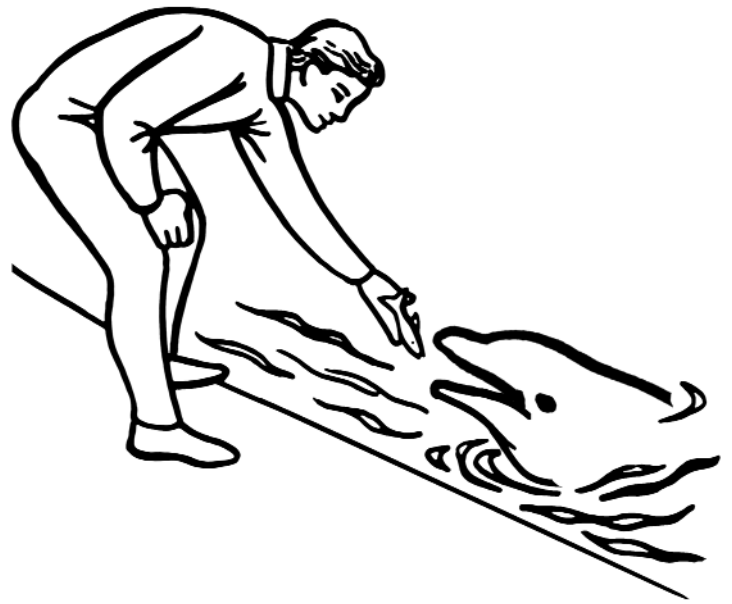
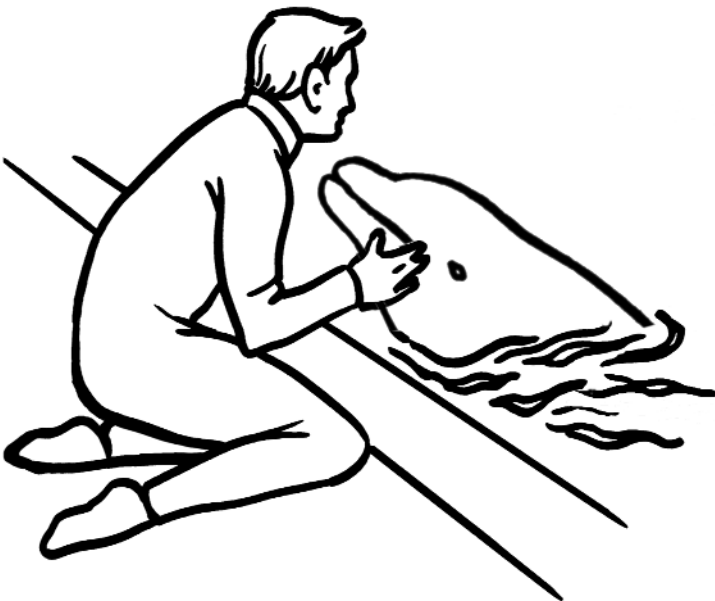This trained dolphin follows a target.

I Train the Dolphin

1

I feed
the dolphin.

I make friends
with the dolphin.

The dolphin
jumps up.

The dolphin
reaches higher.

The dolphin
touches the target.

I teach a signal to
the dolphin.

I train the dolphin.

8
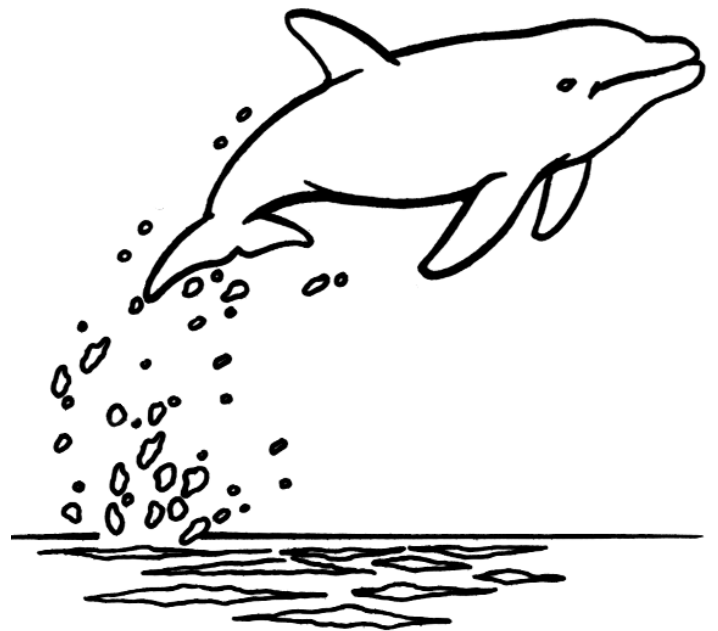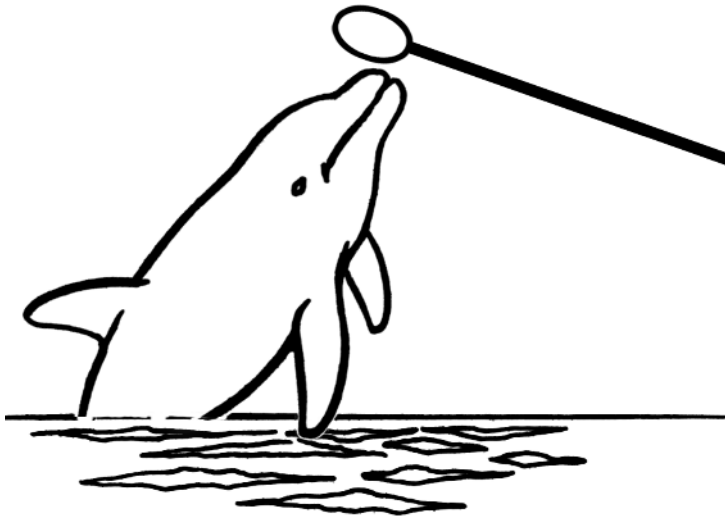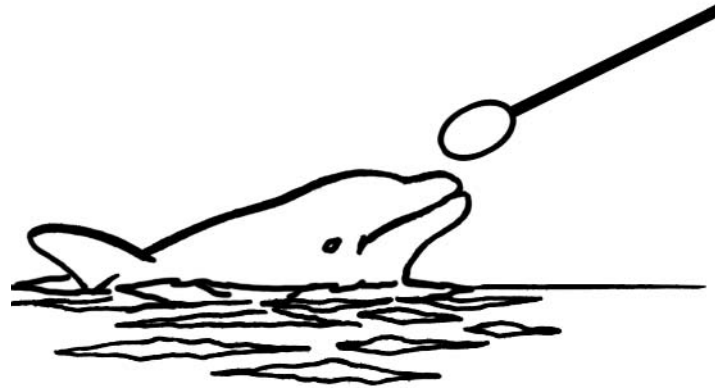
Survivor!

OBJECTIVES

Students investigate how a sea lion pup's behavior is important for its survival.

BACKGROUND

The first years of an animal's life are often the most difficult. Only 40% to 60% of California sea lion pups survive their first year. Predators, weather, and prey availability all play a role in sea lion life. A sea lion learns behaviors for avoiding predators, finding prey, and navigating at sea to help it survive.

MATERIALS

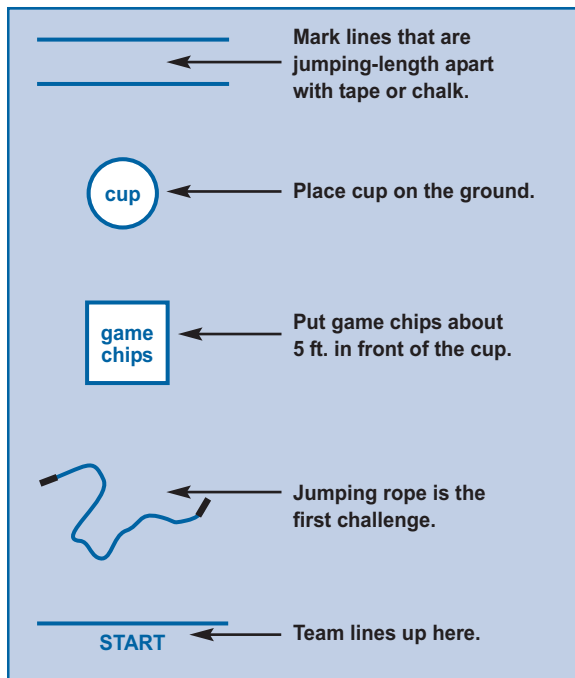❑ large outdoor play area

per student group:

❑ one jump rope

❑ plastic game chips
   (at least one per student)

❑ drinking cup

❑ chalk or masking tape

❑ eight index cards
   (optional, for grades 2–3)

ACTION

BEFORE YOU BEGIN

Set up two identical obstacle courses on the playground as indicated here.

Mark lines that are jumping-length apart with tape or chalk.

cup — Place cup on the ground.

game chips — Put game chips about 5 ft. in front of the cup.

Jumping rope is the first challenge.

START — Team lines up here.

IN CLASS

1. Ask students what they think a sea lion pup's life is like and what behaviors it does. Explain that many sea lions don't survive the first few years of live. They succumb to predators or aren't successful at foraging for prey.

   ♦ Ask students to think of dangers a seal lion pup might encounter. List their ideas on the board.

   ♦ With the students' help, list on the board behavior that help a sea lion avoid being eaten by a predator. *(Examples: swim fast, jump out of the water, turn quickly, bite a would-be attacker.)*

   ♦ Next have students name behavior that will help a sea lion reproduce. *(Examples: live in groups, call to one another, males establish territories.)*

♦ Finally, ask students to list behavior for finding prey. *(Examples: hearing, seeing, fast swimming, agility in the water.)*

2. Divide students into two teams. Explain that the teams will compete in an obstacle-course relay that symbolizes the dangers of a sea lion's first year at sea. Each student will have a turn to complete the obstacle course.

3. Demonstrate the behaviors that students have do to successfully get through the obstacle course. These represent sea lion behaviors:

   ♦ **Jumping rope** represents avoiding predators. A student must jump rope four times without mistake to successfully avoid a predator. (If a student messes up, he or she is symbolically "eaten" and is out of the game.)

   ♦ **Dropping a game chip into the drinking cup** represents finding and eating prey. A student must place a game chip between his or her knees, carefully "walk" to the cup, and drop the chip into the cup. (If a student drops his or her chip before reaching the cup or misses the cup, he or she symbolically "starves" and is out of the game.)

   ♦ **Jumping over the chalk marks or tape** represents hauling out on land to rest. (If a student isn't able to clear the mark, they symbolically "die" at sea, and they are out of the game.)

4. Begin play with teams lined up behind the starting line of each playing lane. At your signal, the first team member in each group completes the obstacle course, then returns and tags the next person in line. A waiting team member begins

the obstacle course when tagged. If a student is out of the game, they immediately return and tag the next team member. The team with the most survivors at the end of the game is the winning team.

5. Repeat the simulation several times to give everyone a chance to complete the entire obstacle course.

6. *Optional, for grades 2–3:* Add an element of chance to the game. Give each team a set of "Survivor Chance Cards." Each team member draws a card before starting the obstacle course. Make the "Survivor Chance Cards" ahead of time by writing each of the following statements on a separate index card:

   ♦ You are caught in a storm. Do all of the challenges twice.

   ♦ You become a snack for a killer whale. You are out.

   ♦ A shark is chasing you! Keep an eye out for it—walk backward through each challenge.

   ♦ The SeaWorld Animal Rescue Team cuts you loose from a net. Go directly to the haul-out (jump) challenge.

   ♦ You feast on a large school of slow-moving fish. Skip the food (game chip) challenge.

   ♦ You are tangled in trash! Hop on one foot through all the challenges.

   ♦ A beach clean-up team has improved your habitat. Skip a turn and take a rest.

   ♦ You are too fast for a predator to catch. Go directly to the food (game chip) challenge.

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K–3 Teacher's Guide

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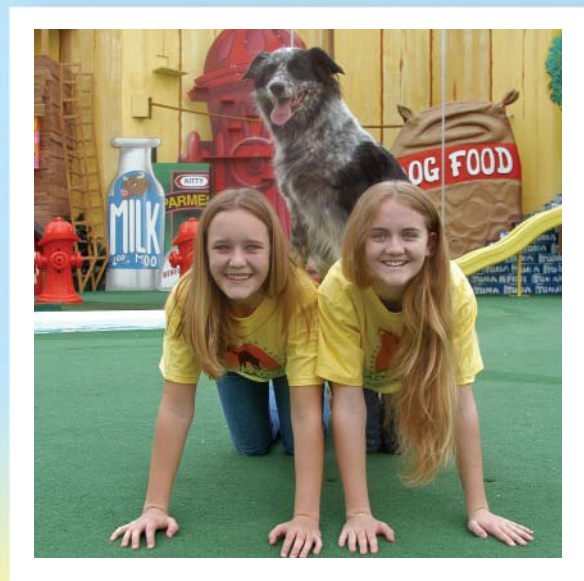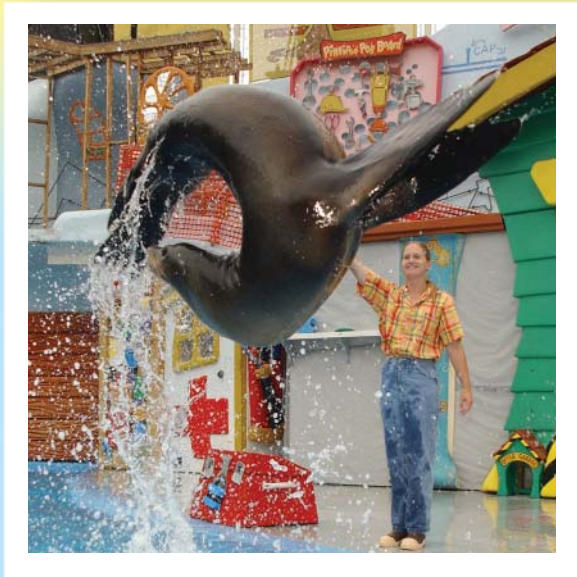
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