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PICTURES PRESENTS

THE WILD

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EDUCATOR'S RESOURCE GUIDE

DEAR EDUCATOR:

Disney's all-new computer-animated comedy "The Wild" follows the outrageous adventures of an eclectic group of animals at the New York Zoo – including a lion, a giraffe, an anaconda, a koala, and a squirrel – who discover what a jungle the city can be when one of their own is mistakenly transported to the wild, and must embark on a dangerous mission to rescue him. This story of teamwork and adventure mirrors the ways in which members of the Association of Zoos and Aquariums (AZA) work together every day to ensure a positive future for people, wildlife, and wild places.

The Association of Zoos and Aquariums (AZA) is comprised of 210 member zoos and aquariums from the United States, Canada, Bermuda and even Hong Kong which have earned a "seal of approval" for their commitment to animal care and conservation. Together, these institutions are building North America's largest wildlife conservation movement by inspiring and engaging our 143 million annual visitors to care about and take action to help protect wildlife.

The Conservation Education Committee of the Association of Zoos and Aquariums (AZA) has created all of the activities in this educator's guide to be in alignment with National Science Standards. These activities reflect the wonderful and engaging programs being taught each and every day at AZA zoos and aquariums. We are proud to offer this guide to you and your class and hope you will make plans to visit your local accredited zoo or aquarium soon after seeing "The Wild"!

Sincerely,



Beth Stevens, PhD

**Vice President,
Disney's Animal Kingdom
and Animal Programs**

President, AZA



Dave Parsons, Denver Zoo

African Lion

Panthera leo

African lion populations are declining, mostly due to conflicts from humans and their domestic livestock. Today, most lions are found only in protected reserves. AZA zoos support projects in Africa to find realistic ways for lions and humans to peacefully coexist.



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THE ASSOCIATION OF ZOOS AND AQUARIUMS (AZA) IS HELPING TO SAVE WILD ANIMALS!



Riverbanks Zoo and Garden

Green Anaconda

Eunectes murinus

The anaconda's greatest threat is from humans. They are hunted for meat and skin and are killed outright through fear. AZA zoos and aquariums teach people that snakes are not to be feared but rather respected and protected for their important role as unique predators.



Riverbanks Zoo and Garden

Koala

Phascolarctos cinereus

Due to their charismatic and endearing appearance, koalas are animal ambassadors for all Australian species. The AZA zoos that exhibit koalas support koala conservation projects through their work in education and field studies.



William R. Konstant

Giraffe

Giraffa camelopardalis

There are currently nine different subspecies of giraffe, but it isn't always easy to tell two different ones apart. AZA zoos have participated in several different genetic studies to help identify the different subspecies of giraffe and determine where they occur throughout Africa.



Tom Brakefield

Chameleon

Chamaeleo sp.

Chameleons can move each one of their eyes independently to take in their surroundings. When they lock in food such as an insect, they will flick out their long sticky tongue and reel it in. Chameleons also have special cells under their skin that allow them to change colors to blend into their surroundings. In only a few seconds, they can change from brown, to green, to yellow!



Carol Kriegel, Houston Zoo

Eastern Gray Squirrel

Sciurus carolinensis

Eastern Gray Squirrels are abundant throughout much of eastern North America, but some of their relatives in other parts of the world aren't as common. For example, Prevost's Squirrel from Southeast Asia is just one species that is rapidly losing its native habitat due to deforestation.



Riverbanks Zoo and Garden

American Alligator

Alligator mississippiensis

Of the 23 species of alligators and crocodiles alive today, most are listed as endangered species. AZA zoos and aquariums have helped to save many of these species from extinction through population management programs and education initiatives. Species such as the Tomistoma from Southeast Asia and the Cuban Crocodile from Cuba are two success stories.





WHO'S WHO IN ZOOS AND AQUARIUMS?

Who Runs the Zoo or Aquarium?

OBJECTIVE

Students will have an understanding of how zoos and aquariums operate and be able to identify many career possibilities that are available in the zoo and aquarium field.

METHOD

Students will use the information provided on page 5 to learn about people who hold various positions in zoos and aquariums.

GRADE LEVEL

3rd - 5th

MATERIALS

Zoo & Aquarium Biography information on page 5.

NATIONAL SCIENCE EDUCATION STANDARDS (NSES) "Science Content" Links

- History and Nature of Science
- Science as a Human Endeavor

Zoos and Aquariums, like the New York Zoo, are interesting and exciting places. They are different than other museums or public attractions because they present a collection of living things that have special needs. It takes people with different skills and backgrounds to run an institution that cares for animals. The Association of Zoos and Aquariums (AZA) helps employees run their institutions in the best possible way by providing high standards to follow that allow great animal care and a safe and fun learning environment for visitors. Let's take a look at some of the people that make this possible. Hey, who is supposed to check on the New York City Zoo animals each night? I think they might need to be spoken to!

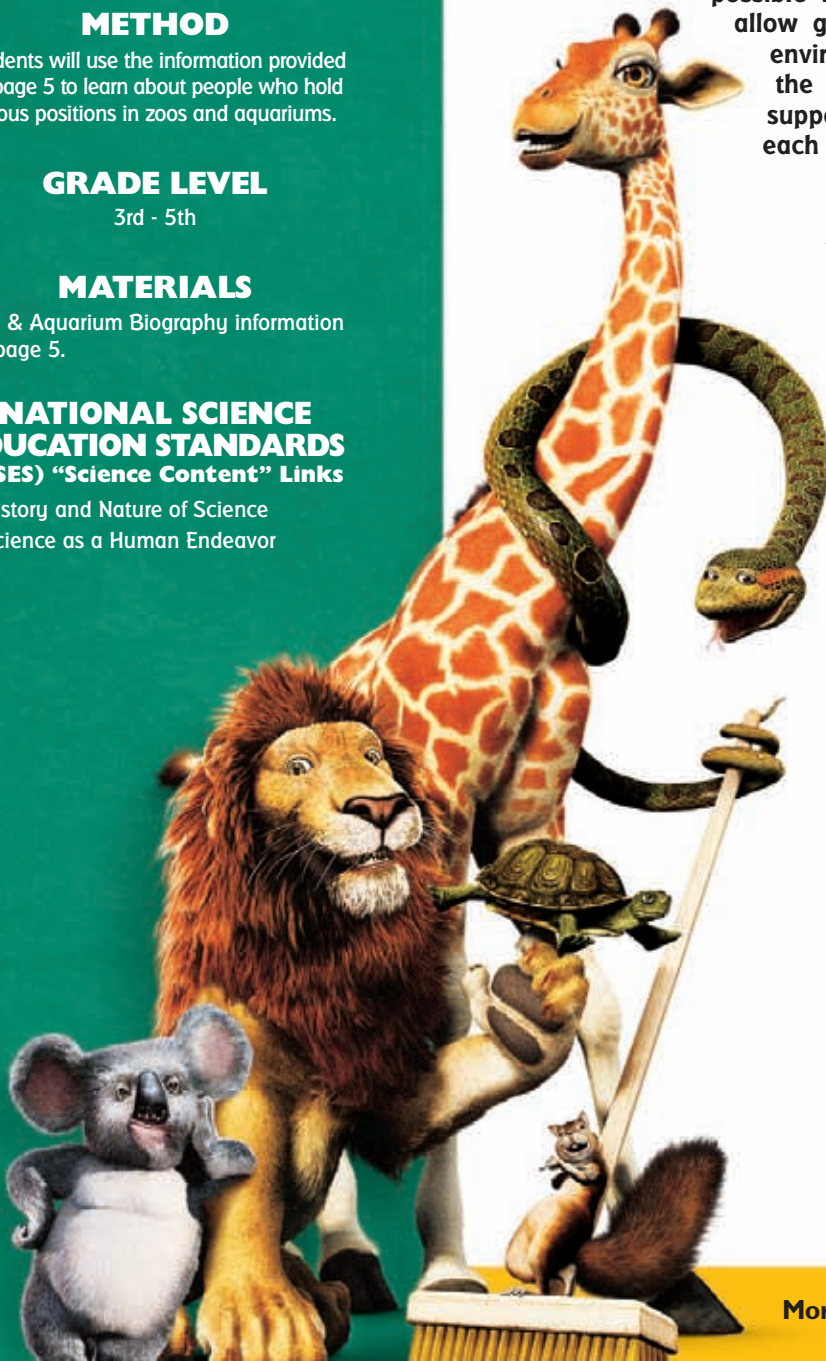


NOW IT'S YOUR TURN

Procedure:

It is ideal to first visit to a local AZA accredited zoo or aquarium, but it is not necessary to complete this activity. On your trip there, observe people working with animals, exhibits, concession stands, gift shops, tour groups, etc.

1. Hand out (or read) the descriptions on page 5 depicting people who hold various positions at zoos and aquariums. Discuss which roles students might like to imagine pursuing.
2. Ask students to write a short description or draw a picture of themselves working in a zoo or aquarium. What would their zoo or aquarium look like? What would they do there? What other people would work there? Ask each student to explain or read his/her picture or story.
3. Divide students into small groups and assign each student a job title taken from the information on the next page. Have students role play within their group to explore how employees interact with one another. Does one person's job affect another's and how? Are their goals the same or different?
4. Have students list each of the jobs shown on the next page with their corresponding skills. For example, next to "Finance Director" they may write "good at math", "organized", and "likes computers".



MEET THE PEOPLE WHO MAKE IT HAPPEN



NANCY FALASCO Executive Director

"Welcome, I'm the Director of the Brandywine Zoo in Delaware and running the zoo or aquarium is my job! I

constantly look for ways to improve our institution. I have to be knowledgeable in a wide variety of subjects such as Biology, Conservation, Communications and Business Administration.

"I regularly work with my staff to make big decisions about how to change and build exhibits. I help raise money to make these changes and decide what new animals should come to the zoo or aquarium. I also work with designers and architects to plan new buildings and exhibits.

"Another big part of my job is to encourage everyone in our community to visit us. I work with advertisers and reporters to let people know what is going on at the zoo so they will come to visit us.

"I like my job because it is unique and involves so many different aspects. I like seeing things change and grow and know that I had a lot to do with it. One of the challenges of being a Director is trying to help people understand what the animals need so that we can take care of them better. The best part is when I see visitors enjoying their experience here!"



CHRISTIAN GREER Education Director

"Hi there! I'm the Education Director at the John G. Shedd Aquarium in Chicago and I teach visitors about

the animals here and how important they are to our earth. I oversee a wide variety of education programs including: summer camps, school programs, volunteer programs, teacher workshops, special events, and informal learning opportunities such as story times, cart programs, and animal talks. You will often see me around leading groups of people and teaching them about the animals.

"My college classes in Education, Biology, and Animal Science really helped me prepare for this unique career. Also, as a friendly and sociable person who loves to work with animals and people, this job suits me well.

"When your class comes to visit, you see me teaching part of your program. I helped think of the neat things that your class will do while you visit. My work schedule can be unpredictable, but I love that something new happens everyday. The best part of my job is in knowing that when people leave our programs, they have learned more about animals!"



STEVE MARSHALL Chief Operating Officer

"If it is broken, I'll fix it! As Chief Operating Officer at ZooAtlanta I make sure all zoo equipment is clean and working properly.

I also help design and build new exhibits and accessories for the animals. I lead a maintenance crew and I ensure they do a great job and perform their work in a safe manner.

"At 16, I began working part-time for a grounds maintenance company and in a few years moved on to a trade school where I learned welding, electrical work, plumbing, and many other things. I am really glad I paid attention in Math classes before I went to trade school, because knowing how to work with measurements is essential in my job!"

"My days are varied and include painting, plastering, concrete work or plumbing. It is great to work so close to the animals, especially in the behind-the-scenes areas. Being outside most of the time can be challenging when it is really hot or really cold, but I enjoy the variety of my work.

"Plus, our visitors appreciate the cleanliness of the facilities...and so do the animals!"



JUDY TRIENEN Finance Director

"Hello! I'm the Finance Director for the Milwaukee Zoo Society, and I manage the business part of running an institution. This job

is perfect for me because I love to crunch numbers. Math is fascinating to me! I am also great with computers and don't mind working under tight deadlines.

"I make sure all of the departments spend their portion of funds. I also pay the bills, which include: electricity, food for the animals, brochures, office equipment, food for concessions, and more. I am responsible for tracking the money earned by the institution, including: admission fees, membership funds, animal adoption funds, camp fees, concession funds and more!"

"I enjoy my job because I know that what I do is important. This place can't run without money, and it's my job to make sure that I keep the Director informed of the institution's financial condition. My behind-the-scenes efforts contribute to the well-being of the zoo and aquarium and all the animals that live here."



KELLY MURPHY Animal Keeper

"Whew! It's hot! Let me put down my rake for a minute and tell you about my job. I am an animal keeper at the Santa Barbara Zoo

in California and I take care of the animals. This is what I have wanted to do ever since I got my first pet when I was four years old. As a teen-ager, I worked part-time in a veterinarian's office and in college I took many science-related courses such as Biology, Zoology and Animal Behavior.

"Each day I feed the animals and clean up after them. I work with a certain group of animals and get to know them very well. I can tell if an animal is sick, tired, or going to have a baby.

"If I'm not working with an animal nutritionist to make diets, I'm enhancing our exhibits to make them pretty for our visitors and useful and safe for our animals. I might be planting flowers or other plants, rewiring fencing, or bringing in enrichment items (toys) for the animals to play with."



DIXIE ALLAN Art Director

"I'm the Art Director for Riverbanks Zoo and Garden in South Carolina and I photograph and create

educational graphics for exhibits and special events. The photographs are used for publications, newsletters, public displays, and for research to keep everyone here updated on what is happening with our animal and plant collections. I also edit the newsletter and web site.

"I have always been creative and inquisitive. I received my first camera on my eighth birthday and in college, I took courses in Journalism, Photography, Visual Arts and even some science courses to balance out my curiosity of nature. It was my love of animals and the environment that led me here.

"Everyday, I learn new and interesting things about animals and their behavior. The best part is in knowing my work influences how people think about animals. A great photo can encourage someone to care about an animal and through appreciation, learn to protect the world around us."



ERIN SEAMAN Gift Shop Manager

"I love to shop! Who knew I could make a career out of it and support wildlife conservation all at the same time? This is what

makes being the Gift Shop Manager at the New York State Zoo in Watertown the greatest job for me! I gained a lot of sales experience by working at a few retail stores while I attended high school and then in college. I took courses in Business and Communications. Knowing how to talk to and relate to people is also really important.

"The majority of my time is spent helping customers decide on purchases, which isn't easy. I make sure each customer has the best experience possible. In addition to helping customers, I also get to select new animal-themed merchandise for the Gift Shop.

"Even though I don't work directly with the animals, my job plays a very important role in their lives. Some of the money that we earn by selling items in the Gift Shop is used to help support and feed the animals and also for the construction of exhibits. And every customer can leave with a great souvenir of their visit to remind them of how important it is to protect these unique and wonderful creatures."



ACTIVITY
2

OBJECTIVE

The institutions of the Association of Zoos and Aquariums (AZA) are experts at caring for their animals. Students will learn how they can create more wildlife friendly habitats for native animals and plants in their schoolyard.

METHOD

By learning more about local flora and fauna and what they need to survive in their natural habitats, students will help create wildlife friendly areas throughout their schoolyards. By first conducting an assessment of the wildlife currently using the schoolyard, students can see if their work has created an increase in the diversity of species.

GRADE LEVEL

2nd - 6th

NATIONAL SCIENCE EDUCATION STANDARDS (NSES) "Science Content" Links

- Science as Inquiry
- Life Science
- Science and Technology
- Science in Personal and Social Perspectives
- Science as a Human Endeavor

BECOME A WILDLIFE FRIENDLY CLASS



Do You Have a Wildlife Friendly Schoolyard?

Even in "the concrete jungle" of New York, wildlife friendly areas can be easily set-up to help out local wildlife. Next time you go out for recess, take the time to look at your schoolyard. Do you see animals like Benny the squirrel, or his habitat mates like robins and butterflies going about their daily business in native grasses and bushes, or do you see mostly concrete and dirt? Do you smell fragrant flowers and trees and hear the sounds of finches and sparrows, or is your schoolyard devoid of most all life? AZA zoos and aquariums have learned the best possible things to add to an animal's habitat to make it top-notch; now it's time for you to learn the things that your local denizens need to be able to survive! While different areas of the country will attract different species, all wildlife needs the same basic things...



American Robin

John Kiseda, El Paso Zoo



Eastern Gray Squirrel

Carol Kriegel, Houston Zoo



Food – Make sure to add native shrubs, trees and plants that produce food for wildlife (nuts, berries, seeds, nectar, etc.) to your schoolyard habitat. Bird, squirrel or butterfly feeders can also be added to supplement these natural food sources.



Water – Don't forget to provide a constant and reliable source of water. If you don't have a pond or river running through your schoolyard, add a birdbath or shallow dish of water. All wildlife needs water for drinking and many species also use it for bathing.



Shelter – Add shelter for wildlife by adding densely branched shrubs, hollow logs, rock or brush piles. You can also add bird, bat houses or toad abodes. These shelters will protect wildlife against the weather and predators.



Poison Free Areas – Fertilizer and pesticides are often applied to yards in massive doses. Every time it rains, dangerous chemicals and fertilizers can wash off and lead to pollution of nearby streams, rivers, lakes, wetlands, and coastal waters. Many chemicals used on lawns can also directly harm native wildlife. Check to see if your school is using harmful chemicals in or around the natural area you are planning.





NOW IT'S YOUR TURN

Take Note!

The first step in creating a wildlife friendly schoolyard is to generate a list of the species that currently live there. Using local field guides write down as many of the organisms that you can identify (mammals, birds, reptiles and amphibians, flowers, trees, etc.). The National Audubon Society has produced a series of guides to different regions of the United States that include most of the native wildlife to be found in a region in one handy guide. Make note of the time of day, season and temperature as you record your observations. Remember that a cold winter's day probably will yield far fewer species than a warm spring day. Also remember that many trees will be harder to identify without their leaves. This is also a good time to take pictures of your schoolyard habitat before you make any improvements. Remember, alligators in the sewers of New York do not necessarily count as "native" wildlife!

After your class has created an inventory of wildlife (or lack there of) in your schoolyard, discuss the basic things that wildlife needs and decide if all of these things are currently available and in great enough supply. For those items that seem to be lacking, discuss things that can be added to enhance the current conditions. If not enough natural food sources exist, have the students build or purchase feeders. If shelter is lacking, consider planting trees or adding brush piles. Most importantly, make sure enough water is available for drinking and bathing.

Keep a record of the ideas that your students come up with. Consult local field guides to see which foods certain animals prefer. For example, different birds like different kinds of seeds and different insects favor certain types of flowers and bushes. After you've generated your list of enhancements to the habitat, have the class make a sketch of the existing playground. Have small groups work on certain sections of the playground, or perhaps work on attracting different groups of organisms (birds, mammals, insects, amphibians, etc.). Have each group add their "plan" to the schoolyard sketch.

Plan a Wildlife Friendly Day!

All of your wonderful ideas are down on paper and now it's time to make your new wildlife friendly habitat come to life. Plan a day to plant and install all of your elements. Take pictures of your newly spruced up area and compare them with your "before" pictures. After the work is done, you might want to have students start to familiarize themselves with some of the new species that might be coming to their schoolyard by looking through the field guides. Be sure to assemble all of your photos and plans in a scrapbook and add any new photos or descriptions to this as your habitat grows.

Each week, have students record the animals they see in their wildlife friendly habitat. Make sure they note any new species that have been attracted.



TAKE IT TO THE NEXT LEVEL

By now you've really increased the diversity of wildlife visiting your schoolyard. If you want to be a real wildlife friendly hero, try these extension activities.

- Join Project Feeder Watch – Cornell University in Ithaca New York has developed a wonderful program called Project Feeder Watch (www.birds.cornell.edu/pfw/). Here, people from all over the United States can enter bird sightings from their backyard feeders. Cornell compiles all of the data and is able to determine the abundance and movement of certain species of birds.
- Adopt an animal from your local AZA zoo or aquarium – Many new animals are using your habitat, but have you ever thought about "adopting" an animal from another region of the world? You can! Most all AZA zoos and aquariums have programs that allow you to adopt an animal. Through adoption, you are helping to support the care that the animal needs to survive. In return, you will receive detailed information on your animal and maybe even the chance to visit your local AZA zoo or aquarium for an up-close encounter. To find the AZA institution nearest to you log on to www.aza.org.

Other Helpful Resources

- National Wildlife Federation's "Backyard Habitat" Program www.nwf.org/backyardwildlifehabitat/createhabitat.cfm
- National Audubon Society's "Audubon at Home" Program www.audubon.org/bird/at_home/HealthyYard_Create.html





OBJECTIVE

Students will be able to describe the purpose, methods and applications for animal training in zoos and aquariums. In addition, they will be able to demonstrate basic animal training techniques.

METHOD

Students are introduced to basic animal training theory and techniques such as operant conditioning, bridging, targeting and positive reinforcement. Through observation and role-playing, students will practice, hone and demonstrate their newly acquired animal training skills. These practices are used throughout the institutions of the Association of Zoos and Aquariums (AZA).

GRADE LEVEL

4th - 5th

MATERIALS

Animal training whistle or clicker (available at pet retail stores), object such as a yardstick or dowel rod that can be used as a target (your hand will work too), treats or other positive reinforcement devices (i.e., stickers, homework passes, extra credit points or free time).

NATIONAL SCIENCE EDUCATION STANDARDS (NSES) "Science Content" Links

- Science as Inquiry
- Life Science
- Science in Personal and Social Perspectives
- History and Nature of Science

ANIMAL TRAINING BASICS



So, What is Animal Training Anyway?

Is it animals getting together for a rousing game of turtle curling after the zoo has closed? Probably not! Simply put, training is teaching. Pets and other animals in human care, such as in AZA zoos and aquariums, look to us for many of their needs. As animal caretakers, we must learn to provide for those needs. One way to do that is to teach the animals, or train them, to cooperate in that process. Imagine trying to give Kazar the wildebeest a pedicure or taking the temperature of Bridget the giraffe, and you'll soon understand why training for animal cooperation is so important!



William R. Konstant

Why do we train?

As teachers or trainers, we must know why we are training. There must be a purpose behind what we do. There are primary and secondary reasons for training. Primary reasons are those that directly benefit the individual animal that is being trained, such as providing physical exercise, mental stimulation, or cooperative behavior for health care. Secondary reasons serve some other function such as enhancing our knowledge of the species, supporting scientific research or providing behavioral displays for education and entertainment purposes. Oh, if only the animals in the New York Zoo were better trained. There might not have been so much confusion!

What is a trainer?

A trainer must know much more than just behavioral theory. A good trainer understands the natural history and biology of the animals in his or her care. Trainers must also have an understanding of veterinary care, nutritional and dietary needs, water quality and all aspects of animal care. In essence, a trainer must be a complete animal care professional. AZA zoos and aquariums require members of their animal training staff to have a significant amount of background education and experience, as well as rigorous training and ongoing professional development. Animal trainers in AZA zoos and aquariums are among the best in the world.

How do we train?

To start with, we must know as much about our animals as possible, such as their likes and dislikes, temperament, individual medical history as well as the natural history of the species. The many complex principles that we use to teach animals are collectively referred to as operant conditioning. Operant conditioning is the type of learning in which behaviors are altered by the consequences that follow them.



The first step to positive interactions with any animal is to gain the animal's trust. Trust is a two-way street that can strengthen over time. Trust can be accomplished through daily interactions such as feeding, playing and caring for the animal. Once trust has been established, you can begin to teach an animal the tools of training and the "rules of the game."

But, how do we let the animal know that it is doing well and playing the game correctly? Many AZA trainers use a whistle or clicker as a way of saying, "Good" or "You did well". Though, depending on the trainer and the animal being trained, a variety of signals can be used, including verbal or visual clues.

So, how does the animal know that the whistle or click means "Good"? We teach them the meaning of the whistle by pairing it with something positive, like a fish for a dolphin. If every whistle blow is followed by a fish, it won't be long before a dolphin knows that every time he hears a whistle, something good is going to happen. We call this whistle a bridging stimulus or a bridge. The whistle "bridges" the animal's behavior with a positive outcome.

Once the animal understands the meaning of the whistle, a trainer can begin teaching a variety of behaviors. We use the word "behavior" and not "trick", because a trick is something a magician does with a deck of cards and there is nothing magical about what dolphins can do. In fact, most behaviors that are trained are extensions of very natural behaviors. When dolphins jump, spin, breach, lob their tail, or make noise, they are exhibiting their natural behaviors. Their trainer has simply asked them to do those behaviors on cue, or at a certain time.

One of the most useful training techniques used to encourage certain behaviors is called targeting. Targeting means teaching an animal to touch some part of his body to another object. Targeting is the basis for teaching many, many behaviors. The target is a very valuable training tool that can be used to guide the animal into many different behaviors. Targeting can be done with any part of the animal's body and the target may be any object or prop. With a little imagination on the part of the trainer and the animal, the training possibilities are endless.



NOW IT'S YOUR TURN

Procedure

Ready to try your hand at animal training using targeting?

1. Demonstrate for the class how the targeting method works by training a student as you would train a dolphin. Have the student stand a few feet in front of you. Gently touch the student's head with the tip of your hand (or another target), blow the whistle (or click the clicker) and give the student a small reward, such as piece of candy or a verbal response like "Good job!" Repeat this exact sequence a few times.
2. Now, repeat the actions a few more times, but each time, back away slightly, so that you have to reach to touch the student's head with your hand.
3. Next, back further away and allow time for the student to realize that he or she must move forward to be within reach of your hand to get the reward. Repeat this action a few times.
4. Finally, hold your hand about 6 inches above the student's head. Now the student must jump to get the reward. Congratulate the student on being a good dolphin and learning through targeting how to jump!
5. Now let the students pair up to train each other. Encourage them to work on simple movements. Reinforce the idea that the dolphin is to follow the movement of the hand by trying to touch it, not just by watching it move and copying the hand's motion.
6. Have students demonstrate to the class the movements they have trained each other to do.

Now try another training method called "scanning", which can be used to train animals to repeat their own natural behaviors.

1. Let the class pretend that you are the dolphin. Choose a student to be the trainer, and tell the student to blow the whistle and reward you by saying "Great!" whenever you perform a simple action that he or she wants you to repeat, such as standing up, sitting down, smiling, making a sound, etc...
2. Move around the room, talk, sing or perform other actions and try to figure out what the trainer is telling you to do.
3. Repeat the action to show that you've understood. Your trainer should reward your good behavior.

WRAP UP AND EXTENSIONS

Conclude the activity by reminding the students that dolphins and people can't talk to each other, so these training methods can't use spoken language to communicate. Stress how important a training program is for the well-being of animals in zoos and aquariums.

Ask students to think of other jobs that people have that might involve animal training besides those in zoos and aquariums. Student responses might include training police dogs for crime fighting and investigations, service animals for the sight and hearing impaired, rescue animals

for recovery efforts during disasters, and animal performers for movies and TV. Many people have careers that involve training family pets during training classes or one-on-one training sessions.

Invite students to share their experiences with training a family pet or other animal. Ask them if their training methods were similar to those used by professional animal trainers in zoos and aquariums.

Suggested Reading

Animal Training: Successful Animal Management Through Positive Reinforcement, Ken Ramirez, John G. Shedd
Aquarium Society, 1999

Don't Shoot the Dog!: The New Art of Teaching and Training, Karen Pryor, Bantam Publishers, 1999



OBJECTIVE

Students will use their observation and recording skills to document the behaviors of the animals at their local Association of Zoos and Aquariums (AZA) facility.

METHOD

Students are introduced to basic methods used by AZA Field Scientists to observe animal behavior. During their visit to their local AZA zoo or aquarium, students will practice their newly acquired animal observation skills by working in teams to chart animal activity. Students will compare their data with data collected by AZA field researchers.

GRADE LEVEL

4th - 5th

MATERIALS

Clipboard, pencil, paper, camera (optional)

NATIONAL SCIENCE EDUCATION STANDARDS (NSES) "Science Content" Links

- Science as Inquiry
- Life Science
- Science in Personal and Social Perspectives
- History and Nature of Science
- Science and Technology

WATCHING THE WILD WORLD



The Importance of Good Science!

The New York Zoo is really a WILD place where all of the animals are very well cared for. Just like its real life counterparts, AZA zoos and aquariums are more than just home to animals, they're also home to many kinds of scientists. In fact, AZA zoos and aquariums supported over 1,800 conservation, research, and education projects in 125 countries worldwide in 2004 alone. AZA zoo and aquarium scientists focus on wildlife health, captive breeding, habitat restoration and animal behavior. Some of these researchers study animals at zoos and aquariums, while others work with animals in the wild. Many are lucky enough to do both, first studying animals in zoos and aquariums to learn basic natural history, perfect veterinary techniques, or test new equipment, then traveling into wild habitats to apply the lessons they learned.



Jaguar Cub

William R. Konstant



Rockhopper Penguin

Riverbanks Zoo and Garden

For Example...

The animal care staff at the Reid Park Zoo in Tucson Arizona is helping US Fish and Wildlife Biologists track wild jaguars living on the Mexican/United States Border. Until recently, jaguars were thought to be extinct in this region, but photographs have revealed that the cats do indeed still exist. Because of its secretive nature, the jaguar is one of the most difficult animals to study in the wild.

Predators, especially big cats, love things that have a strong odor! At Reid Park, the zoo staff is using a number of different perfumes and spices to see which ones their jaguars prefer. Biologists studying wild jaguars also use the odors to lure them closer to camera areas where their pictures can be taken. Through the work done at Reid Park, a whole new set of "preferred scents" can be found and used in the field by camera crews, thus increasing the chances of getting more detailed photographs. Work such as this can lead to conservation of the jaguar in this region.

For the following activity, students will play the role of a field biologist employed by the New York Zoo and note the animal behaviors they observe.





NOW IT'S YOUR TURN

Animal Behavior Observation Made Simple!

- First, plan your visit and identify a set of observable animals for your students to choose from. Your local AZA zoo or aquarium's education department can help you pick appropriate species for the institution you're visiting. They can also provide fact sheets that will give your students background information on the animals they'll be observing.
- Have students record the behaviors of their selected animal during the visit. Remember to pick one specific individual (like Bridget if you happen to be looking at giraffes) to observe. The animal should be active, easily discernable, and in plain sight. Students should find an appropriate viewing location and observe the animal for up to 30 minutes. If possible, have students photograph various behaviors as well. Examples of behaviors to watch for include eating, grooming, sleeping, or interacting with other animals. Be as specific as possible when writing your observations. You'll want to note details as specific as ear position and facial expressions! Every behavior is a clue into the animal's world – how they are feeling, what they are thinking, etc.
- After completing their observations, have students calculate the amount of time the animal spent doing each of the observed behaviors. Also have students also calculate the amount of time the animal spent in different parts of its environment.
- Back at school, have students write reports summarizing their findings and present them in class for discussion. Talk about what they observed and if there are any conclusions the students can draw from their data. What does their animal spend most of their time doing? Where do they spend most of their time?
- The Association of Zoos and Aquariums's has developed a web site as a central source for ethograms (animal behavior studies) to promote a better understanding of animals and their behavior. It can be found at www.ipzoo.com/ethograms/. Encourage students to read these reports from others and see if they can determine what each specific behavior they have observed means. They can further their study by looking at other resources as well!



KEEP ON WATCHIN'

If you'd like, plan a return trip to the institution during another season. See if any behaviors have changed with the time of year. Also note if anything has changed in the exhibit and if so, how has this affected the behavior.

Other Resources

Beastly Behaviors - A Zoo Lover's Companion by Janine Benyus. Addison-Wesley Publishing Company, 1992.





OBJECTIVE

Students will create a zoo or aquarium exhibit for their chosen animal.

METHOD

Students use various building materials to create suitable exhibits for their chosen animals. They will incorporate current standards of the Association of Zoos and Aquariums (AZA) into their design, such as animal enrichment, appropriate shelter and interpretation. Upon completion of their exhibit, students will tour the rest of the class through their creation!

GRADE LEVEL

2nd - 5th

MATERIALS

Various art supplies, including construction paper, papier-mâché, cardboard boxes, etc.

NATIONAL SCIENCE EDUCATION STANDARDS (NSES) "Science Content" Links

- Science as Inquiry
- Life Science
- Science and Technology
- Science in Personal and Social Perspectives

OH, GIVE ME A HOME!



Feeding and Cleaning are Just the Beginning!

So you think it is hard to take care of a dog or cat, huh? Always having to take them out for a walk, clean their litter box, feed them, play with them, take them to the vet – it never ends! Imagine what it takes to care for hundreds of animals each day from koalas like Nigel to giant giraffes like Bridget. Zoos and aquariums that take care of their animals really well earn a special seal of approval from AZA called "accreditation". In order to earn accreditation, zoo and aquarium designers need to ensure that the exhibits they create provide many of the things found in the animal's natural habitat. These are just some of the criteria that need to be considered.



The Bird House

Riverbanks Zoo & garden



Japanese Spider Crab

Todd Stailey, Tennessee Aquarium



Enrichment is any item, smell, sound, etc. that engages an animal. For example, a box with food hidden inside can be added to a lion's habitat causing him/her to work harder to get to the treat inside. Think about the games you and your friends play for enrichment.



Space - Some animals need a lot of room to swim, fly, or climb, while others feel more at home in a tighter, more secure space. A good architect does a lot of research on the natural habitat of the animal and tries to give them the appropriate space to "do their thing". Many animals are endangered in the wild due to lack of space.



Shelter and Hiding Spaces - Many animals welcome a place to go during the heat of summer or cold of the winter. It is very important to add adequate shelter in an exhibit!



Safety – Safety is important not only for the animals but the animal care staff and visitors as well! Care staff needs a safe way to give the animals medical care and clean their exhibits. This is especially important for potentially dangerous animals like tigers, bears or venomous snakes. Designers always include temporary areas for animals to go while animal care staff performs their caretaking duties.



Education – It is fun to learn more about the animals seen in AZA zoos and aquariums. To make it easy for guests to learn about the animals they see, designers add signs, videos or other interactive elements to the animal exhibits. By learning more about animals in zoos, guests can preserve the animals' natural habitats in the wild.



The Sky's the Limit! – There are many other elements to consider besides the ones listed above. Designers work closely with zoo and aquarium staff to make sure that any new and creative ideas are safe, exciting, and enriching for guests, staff and animals alike!

If the New York Zoo was a real zoo, maybe they could try for AZA accreditation. They would have to solve their after-hours escape problems first though!



NOW IT'S YOUR TURN

Time to Design!

1. Divide students up into small working groups of 3-4 each. Have each group decide which animal they would like to exhibit.
2. Once the group decides on an animal, have them do some research on the species. What is its habitat like in the wild? Are there any special requirements that the animal might need, like a heat source or climbing structure? Have the group record any important facts that would help in the design of their exhibit. This is also a good time to think about what educational interpretive message they would like to deliver to the guests that will view this exhibit.
3. Now it's time to begin construction of the exhibit. Using the art supplies, allow students ample time to build their exhibit. Suggest that each member of the team assume a different role in the building process. One might build the structure while another works on the educational interpretives, etc. Remind them about adding enrichment, shelter, etc.
4. Once all construction is complete, assemble all of the exhibits into one big zoo or aquarium.
5. Have each group lead a tour of their exhibit, explaining all of the items that have been incorporated.
6. Have the rest of the students decide if each exhibit would receive AZA accreditation based on the elements included in its design. Remember that the zoos and aquariums that earn AZA accreditation are those that create exhibits that meet the needs of the animals, staff and guests.

GO THE EXTRA MILE

After the projects are completed, you and your students may wish to visit your local AZA zoo or aquarium (find yours at www.aza.org) and see how they've designed their exhibits. Consider setting up a time to chat with a zoo/aquarium staff person about the exhibits at their facility. Ask them what works well or what could be improved with the displays. See if they have any exhibit plans in the works that they might want to share. Chances are they have old (or new!) blueprints lying around that will show the layout and design of an exhibit.

Other Resources

- Polar Bears in Phoenix? Project WILD K-12 Curriculum and Activity Guide 2005 The Council for Environmental Education pp 125-127. See www.projectwild.org
- Designing a Habitat. Project WILD Aquatic K-12 Curriculum and Activity Guide. 2005 The Council for Environmental Education pp 19-20. See www.projectwild.org
- Designing a Zoo Tiger Exhibit. Save the Tiger Fund. www.savethetigerfund.org/AllAboutTigers/Adventures/handbook/c1a1.htm





ASSOCIATION OF ZOOS & AQUARIUMS

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**SPECIAL
BONUS
ACTIVITY**

available online at
www.aza.org

Only 210 zoos and aquariums have met the high standards set by the Association of Zoos and Aquariums (AZA), the North American leader in establishing and maintaining high standards for zoos and aquariums through the accreditation process. Because you love wildlife, we wanted you to know more about the importance of this honor and what it means for your favorite accredited zoo or aquarium, and the thousands of guests who visit every year.

Becoming Accredited

AZA-accredited zoos and aquariums undergo a thorough review through the submission of a detailed accreditation application as well as a multiple day on-site inspection by a team of experts from around the country. These experts, including a veterinarian, examine and evaluate our animal collection, operations, medical care, exhibits and physical facilities, safety, security, finances, staffing, and involvement in education, conservation, and research.

Staying Accredited

Once awarded, accreditation must be renewed every five years. Accreditation is mandatory for any organization caring for wildlife that desires membership in AZA. Once granted, there is no guarantee that the credential will be renewed during subsequent inspections unless the facility continues to meet AZA's high standards.

Standards are subject to continuous review and enhancement, requiring increased levels of professional commitment to achieve and maintain accreditation. Once accredited, an organization is expected to continuously advance its professional operation and constantly attain, or surpass, all the professional standards, policies, guidelines, or resolutions adopted by the AZA. Accreditation also requires that institutions follow the guidelines of the American Association of Zoo Veterinarians regarding medical programs and zoo hospitals.

Benefits of Membership

Being an accredited member of the AZA promotes professional recognition from the top zoos and aquariums in the world. Because of accreditation, members can recruit and retain high quality staff. The top professionals in the field know that the

AZA logo separates us from other institutions. And because AZA members maintain high standards, they can exchange animals with other accredited facilities, knowing that the animals will be in a top facility.

Similarly, AZA membership allows for the easiest flow of the best information and knowledge in the field. Membership enables staff to quickly access top experts and colleagues within the zoo and aquarium community. All of this benefits the animals in each facility.

Accreditation also helps make zoos and aquariums eligible for consideration for funding and grants from certain foundations, corporations and other sources. Beyond all this, the rigorous impartial evaluation received from professional colleagues promotes excellence in all aspects of each facility.

Advocating for Animals

AZA works cooperatively with Congress, Federal and State government agencies, and international conservation organizations on legislative and regulatory matters pertaining to animal welfare, wildlife conservation field programs, conservation research/education initiatives, and the public display of wildlife, including animal care and husbandry, transport, and captive breeding. AZA also participates in a number of international treaties and conventions impacting wildlife, including the Convention on International Trade in Endangered Species (CITES), the International Whaling Commission, and the Convention on Biological Diversity.

With more than 200 accredited members, AZA's a leader in global conservation and a link for guests to help animals in their native habitats. Collectively, AZA-accredited zoos and aquariums are helping to preserve thousands of animals regionally and around the world through wildlife conservation programs, with an annual average of 1,000 conservation projects in dozens of countries, along with hundreds of publications.

Benefits to Visitors

The public is becoming increasingly interested in important issues like animal welfare and educating youth about nature. As they continue to demand family leisure destinations that are both fun and educational, the AZA accreditation seal is the easiest, most reliable way for people to choose zoos and aquariums where high-quality animal care is the first priority, and where there are conservation education programs for youth based on solid science and educational curricula.

If you have any questions,
you can learn more on the AZA website at
www.aza.org



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More about the movie at www.disney.com/thewild