

ART TO ZOO

News for Schools from the Smithsonian Institution, Office of Elementary and Secondary Education, Washington, D.C. 20560

December 1992

Reviled and Revered: Toads, Turtles, Snakes, Salamanders, and Other Creepers and Crawlers

Imagine you're standing in the reptile and amphibian house at the zoo, surrounded by exhibits containing snakes, frogs, crocodiles, and other *herps* (the collective name given to reptiles and amphibians). Which of the following sounds like a reaction you'd have?

- You're disgusted. Everywhere you look, there's something slimy or slithery.
- You're fascinated. Some of those snakes are *huge*!
- You admire the beauty, power, and strength of many of the animals.
- You're...well, you're a little bit nervous—even though you know the animals can't possibly escape (right?!).

Chances are, more than one of these reactions applies to you. Maybe even all of them. When it comes to herps, people often have mixed emotions.

And that's the way it's always been. Throughout history, people have viewed reptiles and amphibians with a combination of fear, fascination, admiration, revulsion, and respect. In this issue of ART TO ZOO we'll look at this "love/hate relationship"—a long, colorful relationship that has elevated some herps to the status of gods and doomed others to near-extinction. But first we'll review some general information about the animals themselves.

Teacher Background

Who's a Herp?

When people talk about herps as a group, they're referring to thousands of species of animals. All of those animals belong to either the three major groups of amphibians or the four major groups of reptiles. Here's the breakdown:

Amphibians

- frogs (including toads)
- salamanders
- caecilians (little-known animals that look like worms)

Reptiles

- snakes, lizards, and worm-lizards
- crocodiles
- turtles (including tortoises)
- tuataras (little-known reptiles that live on islets off the coast of New Zealand)

A Distant Connection: At one time, naturalists thought reptiles and amphibians were close "cousins," which is one reason the two groups were originally put together under the zoological umbrella of *herpetology*. ("Herpetology" is derived from the Greek word "herpeton," meaning "crawling things".) But although there's a definite connection—reptiles and amphibians evolved from a common ancestor millions of years ago—the two groups aren't closely related.

Still, reptiles and amphibians have several things in common. For example, both are ectothermic (externally heated), and both usually shed their skin several times a year. Many herps also have special cells that cause the color of their skin to lighten, darken, or change altogether. And many have an organ in the roof of the mouth, called the Jacobson's organ, that allows them to sense odor particles.

Points of Departure: So what's the difference between reptiles and amphibians? Actually, there are quite a few differences. For example, unlike reptiles, amphibians usually lay unshelled eggs in water. (Reptiles lay shelled eggs on land.) And many young amphibians, equipped with gills, live in water for quite a while after hatching. Whereas baby reptiles are often miniature versions of the adults, baby amphibians often don't look much like their parents. They gradually change into their adult forms through the process of metamorphosis.

Even though some adult amphibians live on land, their skin must remain moist at all times. A coating of mucus, produced by the skin, keeps the animals

from drying out.

Reptiles, in contrast, have dry skin covered with scales. So despite what a lot of people grow up believing, snakes, lizards, and other reptiles aren't the least bit slimy. *That* distinction belongs to frogs, salamanders, and some of the other amphibians.

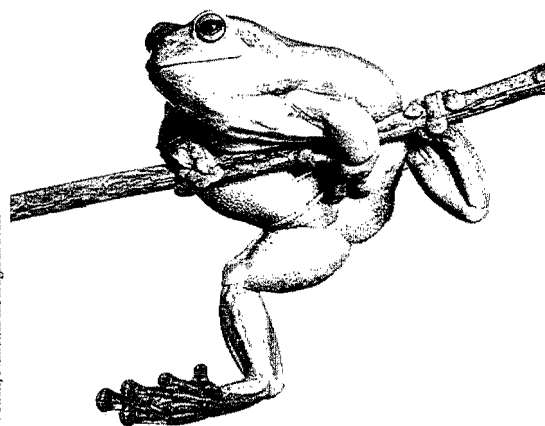
Our View of Herps—Present and Past

Remember when Indiana Jones found himself in a room full of writhing snakes? It was a memorable scene from the movie *Raiders of the Lost Ark*, one that was designed to elicit visceral gasps of fear and revulsion. And it's one of the best examples of something screenplay writers and others have known for a long time: Snakes and certain other herps have lots of "horror appeal." And the more movies and other media portray herps as creepy creatures, the more people think of them that way.

Creature Features: But even before herps became typecast as horror flick villains, they suffered from a

fundamental image problem. Most reptiles and amphibians just don't have the cute and cuddly quality of mammals or the graceful beauty of birds. In fact, many herps seem almost alien, and therefore difficult for people to relate to. We tend to dislike and fear that which is different from ourselves—and even though herps have much more in common with us than most people realize (see "Herps and Humans" in the lesson plan), they certainly look different. Picture a snake with its long, limbless body and glassy eyes; a toad with its warty skin; an alligator with its huge, gaping jaws. Remind you of any sci-fi films about creatures from other planets?

The Threat of Danger: Another thing working against herps is the fact that some of them are venomous. True, certain herps produce some of the most toxic substances found in nature. But only a



White's Tree Frog

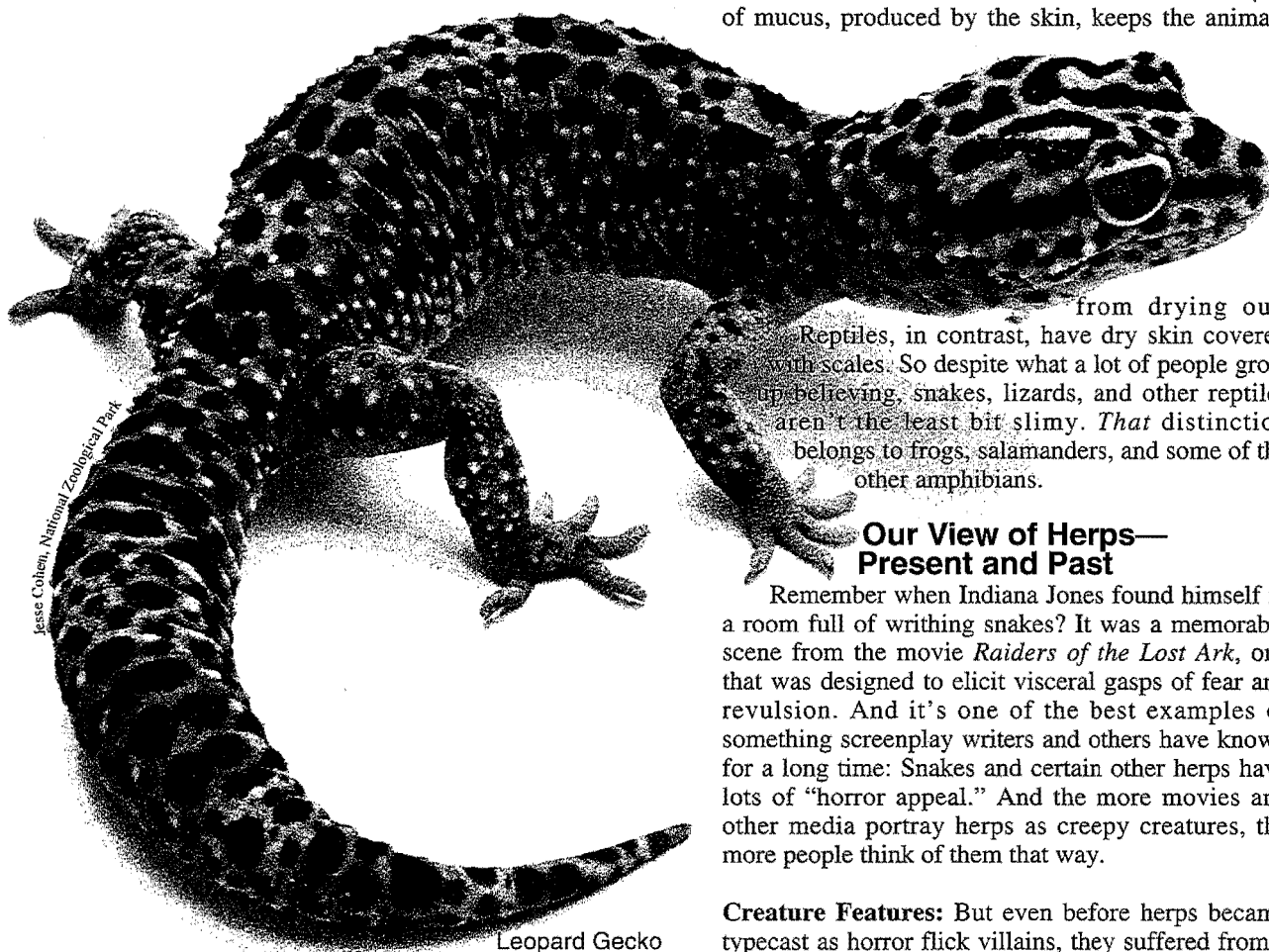
relatively small number of herps pose a threat to people. For example, less than 10 percent of snakes have venom that can hurt a human. Still, many people are afraid of all herps and assume that anything slithery, slimy, or scaly is either venomous or dangerous in some other way.

Crocodile Mummies and Sacred Snakes:

Ironically, this basic fear of herps may have a lot to do with the positions of honor they've held in different cultures around the world. Throughout history, people have deified herps they've viewed as a threat—probably in an effort to appease the animals. Crocodiles, powerful predators that have been known to claim the lives of careless swimmers and bathers, were sacred animals in ancient Egypt. Their mummified remains are evidence of the respect Egyptians paid these animals. Cobras were also deified in Egypt. And in India and other Hindu cultures, these snakes are still sacred.

Living Symbols: Some herps, including many "benign" species, have been valued for their symbolic significance. Consider the tortoise, an animal with a reputation for longevity. In ancient Japan, wedding gifts portraying tortoises—some of which can live upwards of 100 years—were the gift givers' way of wishing the newlyweds a long and happy life together.

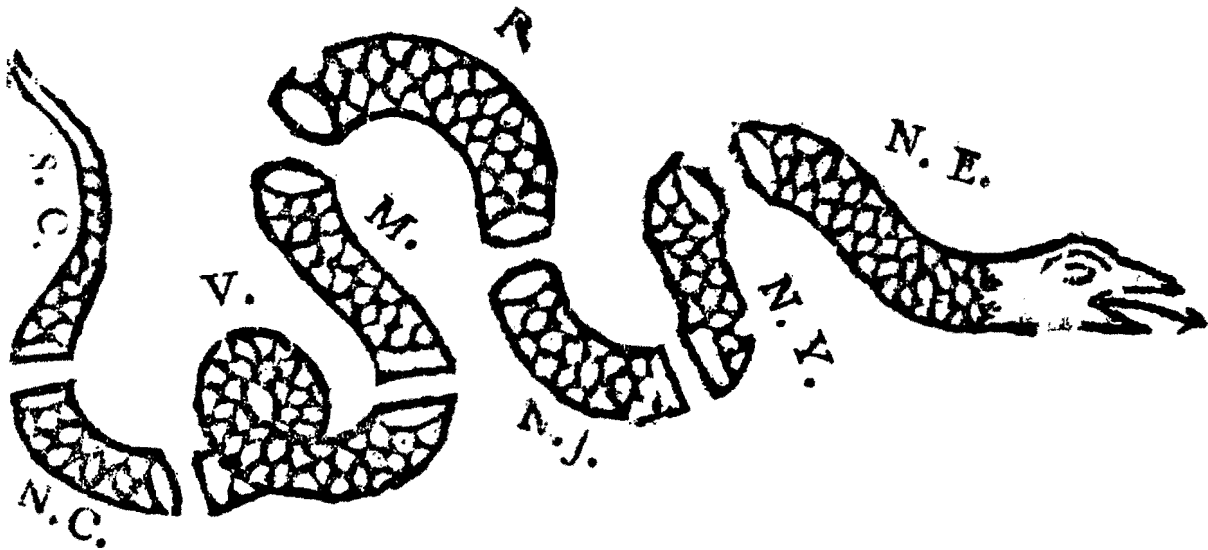
Continued on page 2



Leopard Gecko

Jesse Cohen, National Zoological Park

Jesse Cohen, National Zoological Park



JOIN, or DIE.

Benjamin Franklin published this symbol in the Pennsylvania Gazette, May 9, 1754, on the eve of the French and Indian War.

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The perception of what an animal represents isn't necessarily universal, though. For example, what comes to mind when you think of a frog? To many people, frogs are just lowly little creatures that live in swamps. But others have viewed them differently. Because of their close ties to life-giving water, frogs have been seen as symbols of fertility, birth, and crop growth. The Mayans believed that a frog was responsible for the coming of rain. When the rain god heard the frog's calls, he would sprinkle water from his gourd onto the Earth.

Links with the Underworld: Opinions of herps took a turn for the worse in Judeo-Christian traditions. The Bible tells of a plague of frogs that overtook the city of Ramses, for example. But the Bible's most sinister portrayal of herps is the serpent in the garden of Eden—a scaly manifestation of evil from the underworld.

Actually, snakes had been associated with the underworld in nonJudeo-Christian traditions for eons. But this association wasn't necessarily considered evil. The world beneath the Earth's surface was the realm of Earth deities, and snakes, with their underground dens and ground-hugging locomotion, were thought to have connections to these powerful beings. Their link to the gods and goddesses of the Earth meant that snakes were creatures deserving of humans' respect.

Herps Need Our Help

Sorting through the history of herps and humans can be confusing. On the one hand, we've feared them, been repulsed by them, and viewed them as the very incarnation of evil. At the same time, we've worshipped the ground they've crept, crawled, and slithered on. But no matter what our attitude toward them, one thing's certain: Herps are chronically misunderstood. And this lack of understanding—especially when it's combined with fear—is at least partly responsible for many of the problems herps face today.

Uses and Abuses: One of these problems is over-exploitation. When it comes to figuring out ways to make use of herps, humans certainly haven't had any shortage of ideas. We've served them up in gourmet restaurants; trapped them in the wild to sell as pets, attractions in roadside exhibits, and specimens for school science classes; and turned them into a vast array of products—from combs, jewelry, and other

trinkets fashioned from sea turtle scutes to shoes, belts, and handbags made from lizard, snake, and alligator skin. In some cases, unregulated and illegal trade has caused herp populations to fall dramatically.

As the Environment Goes, So Go Herps:

Add to over-exploitation the problem of worldwide environmental degradation and you get a barrage of troubles that are taking a serious toll on reptiles and amphibians all around the world. Many scientists think this degradation is the likely culprit in the recent worldwide decline of frogs and other amphibians. Some point to acid rain as a possible cause, while others theorize that the depletion of the ozone layer may be letting in too much damaging ultraviolet light. Amphibians may well be like canaries in a mine—warning us, through their sensitivity, of a general deterioration in the condition of the planet.

Educate and Legislate:

Fortunately, there's some good news too. The American alligator, for example, is a herp success story. Because of a high demand for their hides, gator populations dropped to precariously low numbers in the 1960s. But thanks to the Endangered Species Act of 1973, which prohibited the harvesting of alligators, the reptiles were able to recover.

People are helping reptiles and amphibians in other ways, too—from building tunnels so frogs can travel under (rather than across) busy roadways, to setting up preserves where endangered herps live, to cracking down on wildlife smugglers. But one of the most important ways to help herps is through education. The more people understand these fascinating animals—and the less they fear them—the better chance herps will have of surviving.

It's All Happening at the Zoo: At the Smithsonian's National Zoological Park in Washington, D.C., and at Zoo Atlanta in Georgia and the Dallas Zoo in Texas, a new kind of exhibit is not only educating visitors about herp natural history and ecology, but also challenging commonly held misconceptions and negative attitudes. A series of twelve interactive modules encourages visitors to compare the bodies of herps and humans, examine the reasons that people often dislike

snakes and other herps, and discover some fascinating facts about all kinds of reptiles and amphibians.

Hands-on activities are an important part of the new zoo exhibits. For example, visitors can move a plastic lizard from place to place to control the animal's temperature—just as a real reptile moves from place to place to keep its temperature within a certain range. And they can find a mate for a female frog by listening to recorded "sound bites" of male frog calls. Of course, there are live herps to look at, too—plenty of huge snakes, skittering lizards, slippery salamanders, and other creatures guaranteed to evoke a wide range of reactions!

Lesson Plan

The following activities build on the information provided in the teacher background. We've designed the lesson plan as a complete unit, but each activity can stand on its own, too. So feel free to pick and choose!

Part 1:

Examine Your Attitudes

Objectives:

- discuss some of the misconceptions people have about herps
- describe ways to improve the image of herps

Materials:

- survey provided on Pull-Out Page
- poster boards, markers, and other art supplies

Subjects:

- Social studies, Science, Math

One of the best ways to help kids dispel misconceptions about herps is to have them examine their own feelings about the animals. In this part of the lesson, your group can do just that by completing a survey. Afterward, they can help educate others about herps by creating posters and displays.

Procedure:

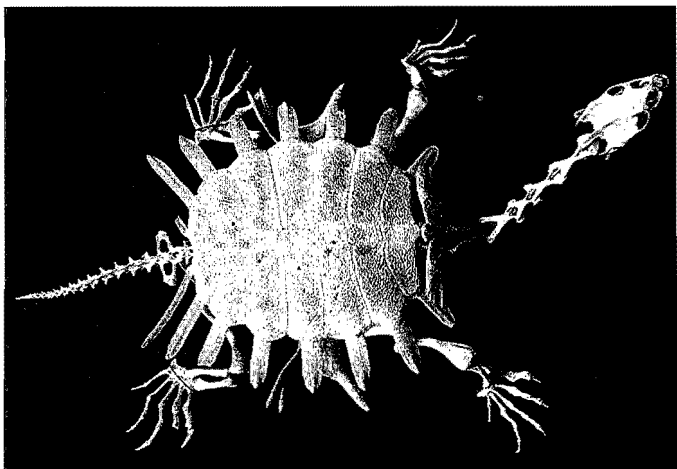
1. Before the activity, make copies of the survey on the Pull-Out Page entitled "Examine Your Attitudes." (Make at least two copies per student—the kids will be having parents or friends



This exhibit at the National Zoo in Washington, D.C. shows many of the characteristics herps and humans share.



Visitors at the National Zoo are challenged to keep a plastic lizard's body temperature within a "comfortable" range.



Turtle Skeleton

complete the survey after they've completed it themselves.)

2. Start the activity by defining the word "herp" and leading a discussion about the different kinds of herps. (See the background information under "Who's a Herp?" on page 1.)

3. Have the kids complete the Pull-Out Page survey, then collect the surveys. (Tell the kids to put their names on their Pull-Outs so you can give them back later.)

4. Assign the students into small groups. Give the surveys to each group, in turn. Have the groups tally the responses to each question.

5. Discuss the kids' answers, using the information under "Survey Discussion Points."

6. Have the groups use the numbers they tallied earlier to create bar graphs of responses for questions 1—4. For questions 5—7, they can calculate percentages.

7. Pass out the extra copies of the survey and have each person ask a parent, neighbor, or friend to complete it.

8. The next day, have the students again work in groups to create bar graphs and calculate percentages based on the new survey responses.

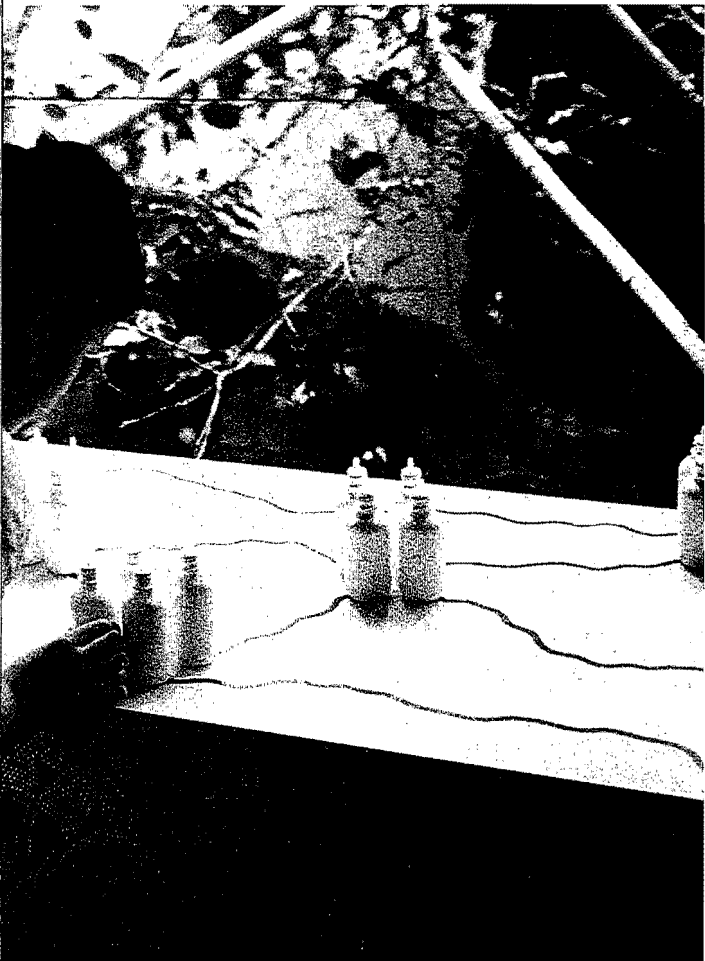
9. Tell the kids that they'll be participating in an "education campaign" to help improve the image of herps. To do this, each group should examine their calculations and graphs to decide what area or areas to focus on. Then they can create posters, buttons, and other materials to help dispel myths and negative opinions about herps.

10. Get permission to display the kids' creations in a nature center, library, or other public facility.

Survey Discussion Points

1. It's important for kids to understand that snakes, like other animals, exhibit a wide range of behaviors. Some species of snakes are quite docile, whereas others are more aggressive. Behavior that kids may label as "mean"—i.e., eating other animals or biting people—is merely a snake's way of surviving.

2. Some people think herps look ugly. But as with other animals, the way a herp looks has been honed by evolution into a "design" that helps the animal survive. For example, a snake's lean, streamlined body can slip into tunnels where mice and other prey animals live.



Courtesy of Photo Services, Smithsonian Institution

Up Close and Personal: A touchable exhibit in the Discovery Room of the Smithsonian's Museum of Natural History.

6. False. Less than 10 percent of snakes have venom that can hurt a human.

7. False. Reptiles have smooth, dry skin.

Part 2:

Toadstones, Snake Gods, and Divining Turtles

Objective:

—describe some ways herps have been viewed throughout history

Materials:

—"A History of Herps" on Pull-Out Page

—art supplies

Subjects:

—Social studies, Art

This part of the lesson, focusing on the rich history people share with herps, reveals the mixed feelings people have always had toward reptiles and amphibians.

Procedure:

1. Give the kids time to read through the information provided under "A History of Herps" on the Pull-Out Page.

2. Discuss the facts presented, using the background information under "Our View of Herps—Present and Past."

3. Have the kids choose one or more of the facts to illustrate.

4. Use the drawings to create a bulletin board or other display.

Extend the Activity!

Tell the students to imagine that they live during the time presented by the fact or facts they illustrated. Then have them write a journal entry portraying a day in their lives, incorporating the appropriate herp fact. For example, they could imagine themselves as a doctor using snakes to treat patients in ancient Greece, a druid in need of an adder stone, or a soldier during the American Revolution carrying a flag bearing the rattlesnake symbol of the 13 colonies. If necessary, give them time to do a little research on the time period so they can write a more accurate journal entry.

Part 3:

Which Herp Is Which?

Objectives:

—list several examples each of reptiles and amphibians

—describe how reptiles and amphibians are similar to and different from one another

Materials:

—books and other reference materials on herps

—index cards

—pencils and crayons or markers

Subjects:

—Social studies, Language arts

By writing to "pen pals" from the point of view of a reptile or amphibian, your kids can be creative while learning about how these animals are alike and different.

Procedure:

1. Before the activity, write the names of several types of herps on slips of paper (one for each person). Try to include an equal (or nearly equal) number of reptiles and amphibians. Depending on the level of your group, you can keep the names

general (i.e., frog, snake, etc.) or make them more specific (bull frog, garter snake, etc.). Write a number on each slip so you can keep track of who has which herp later on.

2. Hand out the slips of paper you made earlier, taking note of who has which herp. Tell the kids to keep their animals' identities a secret.

3. Assign each person a herp pen pal. Reptiles should get amphibian pen pals, and vice versa.

4. Give the kids time to find out about their herps. Then pass out index cards and have the students write "post cards" to their pen pals from the point of view of their particular herps. Explain to the kids that they shouldn't give away their herp's identity. But they *should* give clues that will help their pen pals figure out whether their herp is a reptile or an amphibian. The information should also be as accurate as possible. (If you're working with more advanced kids, you can also have them try to figure out what kind of reptile or amphibian their pen pal represents. You may want to provide a list of the herps you've assigned, to help the kids narrow down their choices.)

5. You may want to consider having the kids write a series of post cards, with each one revealing a new clue about their identities. Here's an example of one post card a frog or toad might write:

Dear Pen Pal:

Life is busy these days! I have been practicing very hard on my song. Spring will be here soon, and I have a lot of competition!

Signed, Me

6. On the other side of the post card, have the kids draw a picture of their herps' habitats (excluding the herps themselves!).

7. Collect the post cards and hand them out to the appropriate pen pals. Provide resources and give the kids time to figure out what kind of herp their pen pal is.

8. Have several of the kids read their post cards out loud, then ask for opinions on the kind of herp that "wrote" each card. Finally, have the various pen pals identify themselves.

9. Use the postcards to create a bulletin board display. The focus of the display could be similarities and differences between reptiles and amphibians. (See the background information under "Who's a Herp?")

Part 4:

Herps and Humans

Objectives:

—identify several internal organs

—describe several similarities and differences between the bodies of herps and humans

Materials:

—outline of human and lizard on Pull-Out Page

—posterboard and markers

Subject:

—Science

One reason people often fear or dislike herps is because they perceive the animals as being much different from themselves. But as this part of the lesson demonstrates, herps and humans are amazingly similar.

Procedure:

1. Begin by asking the kids to name some ways

By identifying and following a scent from one place to the next, National Zoo visitors can get a feeling for how some male snakes locate females during the breeding season.

3. People very often favor cute, cuddly, or intelligent animals over others. But it's important for kids to realize that all species have a role to play in their natural habitats. For example, snakes eat rodents—animals that can sometimes do a lot of damage to crops and other human interests.

4. This is a matter of personal opinion. But it's worth pointing out that, in some cases, harvesting lizards, snakes, and other herps for leather products has caused the animals' populations to plummet. For example, American alligators once bordered on extinction because of overharvesting. When hunting was halted, the animals made a comeback. They are being harvested once again, but the take is now carefully regulated.

5. False!

Jesse Cohen, National Zoological Park

continued from page 3

- herps' bodies are different from those of humans. Make two columns on the board (one for herps and one for humans) and list the kids' ideas.
2. Use the background information under "Who's a Herp?" to add points the kids might not have thought of. Then tell the kids that, despite the differences, herps and humans have a lot in common.
3. Have the kids complete the "Herps and Humans" activity on the Pull-Out Page (see answers—below right).
4. After they've completed the activity, have the kids look again at the comparative list you made earlier. Are there any additions or changes the students would like to make?

Extend the Activity!

Have the kids make "adaptation posters" with lines pointing to special herp features that humans don't have, along with brief explanations of the features' survival value. (You can assign the kids certain herps to work with, or have them choose their own.) For example, a poster of a tree frog could point out the frog's toe pads, along with a sentence explaining how the toe pads help the frog cling to branches high above the forest floor. The poster could also point out the frog's throat sac, moist skin, bright colors, and so on.

**Part 5:
Design an Exhibit**

Objectives:

- discuss ways to create an educational herp exhibit
- describe several interesting facts about herps

Materials:

- pictures of herps
- art supplies
- reference books (optional)

Subjects:

- Social studies, Science, Art

If you were designing a herp exhibit in a zoo or other facility, what would you want your audience to get out of it—and how would you facilitate their learning? By thinking about questions such as these, your kids can review what they know about herps and people's relationship to these animals.

Procedure:

1. Assign the kids into groups of four. Tell them to imagine that they're exhibit designers at a zoo. Then explain that each group's task is to design a new exhibit at the reptile and amphibian house. As with any zoo exhibit, one purpose of this new exhibit is to display herps and to present facts about the animals and how they live. But it must also help educate

people who have misconceptions about herps, such as the idea that toads give you warts or that all snakes are dangerous to people.

- The new exhibit must also present information in a way that gets people involved. In other words, the exhibit must have things for people to *do*—flaps to lift, puzzles to figure out, buttons to push, and any number of other interactive elements.
2. Tell the kids that they must first identify several concepts that they would like to get across in their exhibits. Ideas include thermoregulation (since herps are "cold-blooded," they must rely on external factors such as the sun to keep their temperatures within a comfortable range), how herps attract a mate, how they're affected by pollution, and so on.
3. Have the kids choose several herps to include in their exhibits. (The actual exhibits can have pictures of these herps.) They may want to choose herps that exemplify the concepts their exhibits cover, but they're not required to do so.
5. Give the groups time to gather their information and put together their exhibits. (Explain that it's up to them to decide how to divide up the work.) You may want to have the kids set up the exhibits in an area where the whole school can enjoy them.
4. Have the kids give interpretive "tours" of their exhibits.

Bibliography

Books for Teachers

- Animals in Archaeology*, edited by A. Houghton Brodrick (Praeger Publishers, 1972)
- The Encyclopedia of Reptiles and Amphibians*, edited by Tim Halliday and Kraig Adler (Facts on File, 1986)
- Venomous Reptiles of North America*, by Carl H. Ernst (Smithsonian Institution Press, 1992)
- The World of Amphibians and Reptiles*, by Milli Ubertazzi Tanara (Gallery, 1978)

Books for Children

- Esio Trot*, by Roald Dahl (Viking, 1990)
- Reptile* (An Eyewitness Book), by Colin McCarthy (Alfred A. Knopf, 1991)
- Slippery Babies: Young Frogs, Toads, and Salamanders*, by Ginny Johnston (Morrow Jr. Books, 1991)
- Snakes: The Facts and the Folklore*, by Hilda Simon (Viking, 1973)

Additional Resources

"Come with Me" Science Series has a herp unit containing a teacher's guide, lesson plans, a cassette tape with songs, a set of pictures, a game, and other

items. Available from S/S Publishing Co., 3550 Durock Rd., Shingle Springs, CA 95682.

Ranger Rick's NatureScope—Let's Hear It for Herps! is a 68-page activity guide for elementary teachers that includes background information, activities, craft ideas, reproducible pages, and an extensive bibliography. Available from the National Wildlife Federation, 1412 16th St., NW, Washington, DC 20036-2266.

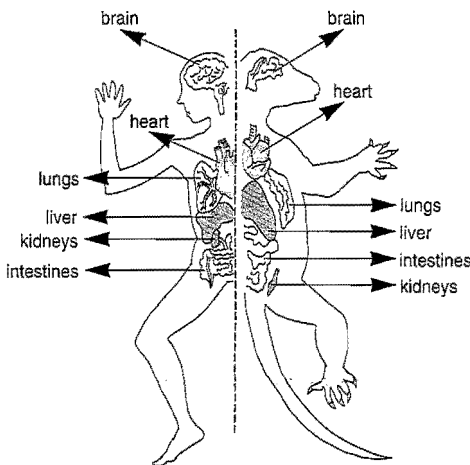
Collectible Cards

The Smithsonian Institution and Club Pro Set are jointly producing a series of trading cards on a variety of topics. Those currently available include "dinosaurs," "presidents," "air and space," and more. Upcoming topics include "reptiles," "endangered species," and "American heroes." Three reading levels are available. For a catalog, write to Club Pro Set, 17250 Dallas Parkway, Dallas, TX 75248.

Keep Those Cards and Letters Coming!

Thanks to all of you who have written to us with comments and suggestions. Your feedback helps us make ART TO ZOO as useful as possible—so keep up the correspondence! We're particularly interested in hearing about how you incorporate ART TO ZOO into your curriculum and how you adapt it to fit your needs. Send your correspondence to: ART TO ZOO, OESE, Smithsonian Institution, Washington, DC 20560.

**Answers to
"Herps and Humans"**



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ART TO ZOO brings news from the Smithsonian Institution to teachers of grades three through eight. The purpose is to help you use museums, parks, libraries, zoos, and many other resources within your community to open up learning opportunities for your students.

Our reason for producing a publication dedicated to promoting the use of community resources among students and teachers nationally stems from a fundamental belief, shared by all of us here at the Smithsonian, in the power of objects. Working as we do with a vast collection of national treasures that literally contain the spectrum from "art" to "zoo," we believe that objects (be they works of art, natural history specimens, historical artifacts, or live animals) have a tremendous power to educate. We maintain that it is equally important for students to learn to use objects as research tools as it is for them to learn to use words and numbers—and you can find objects close at hand, by drawing on the resources of your own community.

Our idea, then, in producing ART TO ZOO is to share with you—and you with us—methods of working with students and objects that Smithsonian staff members have found successful.

Special thanks to the following Smithsonian staff for their help in developing this issue of ART TO ZOO:

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- George Zug—National Museum of Natural History



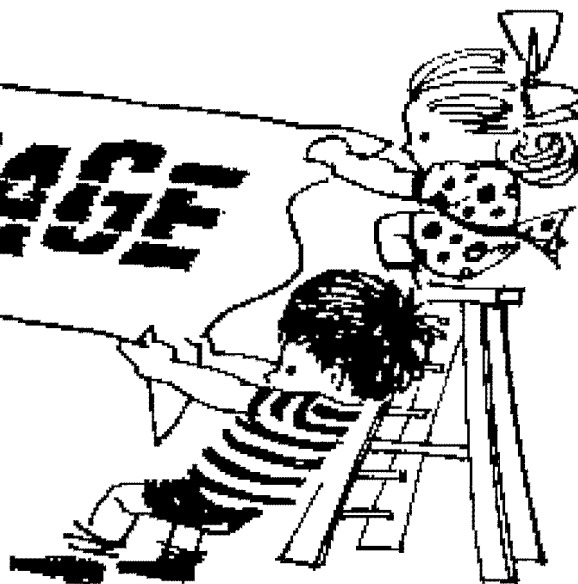
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ART TO Zoo December 1992
News for Schools from the Smithsonian Institution



Examine Your Attitudes

Circle the answer that best describes your feelings. Be honest! (Don't worry—you won't be graded. And remember: There's no right or wrong answer for many of these questions.)

key: somewhat agree=1, agree=2, disagree=3

1. Snakes are mean.

1 2 3

2. Most herps are ugly and gross.

1 2 3

3. Endangered species that are cute or intelligent, such as pandas and whales, should

be saved before endangered snakes, frogs, turtles, and other herps.

1 2 3

4. It's OK to use the skins of alligators, snakes, and other herps to make shoes, handbags, belts, and other products.

1 2 3

5. Touching a toads can give you warts.

True False

6. Most snakes are poisonous.

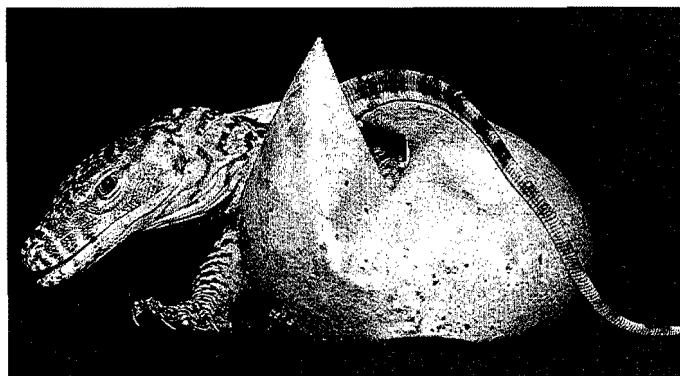
True False

7. Reptiles are slimy.

True False



Jerome Cohen, National Zoological Park



A Komodo dragon catches its first glimpse of the world at the National Zoo in Washington, D.C.

A History of Herps

People and herps go back a long way together! Draw a picture of one or more of the following facts:

- In ancient Greece, people believed snakes had healing powers. To cure illnesses, doctors would often allow snakes to crawl on the bodies of sick people.
- Ancient Chinese fortune tellers sometimes used tortoises to predict the future. They did this by reading the markings on the top of the tortoise's shell.
- According to Hindu legend, the powerful god called Vishnu rests on the coils of a giant cobra.
- In ancient Europe, people called druids believed that certain snakes, or adders, laid magic eggs. These eggs, called "adder stones," were supposed to bring good luck and ward off illness.
- There are no snakes in Ireland. According to legend, Saint Patrick drove them all away.
- In some parts of Egypt, crocodiles were worshipped. Crocodile mummies have been found in Egyptian tombs.
- Mayan Indian legend claims that a frog named Uo helps bring rain to the crops. When Uo sings, the rain god sprinkles water onto the Earth from his gourd.
- Some Native Americans worshipped a spirit called Frog Woman. Frog Woman was believed to be the creator of the Earth.
- During the Middle Ages, people believed that toads had a magic jewel inside their heads. Among other things, these "toadstones" were thought to cure stomach aches.
- Early American colonists pictured a rattlesnake on flags showing the 13 colonies.

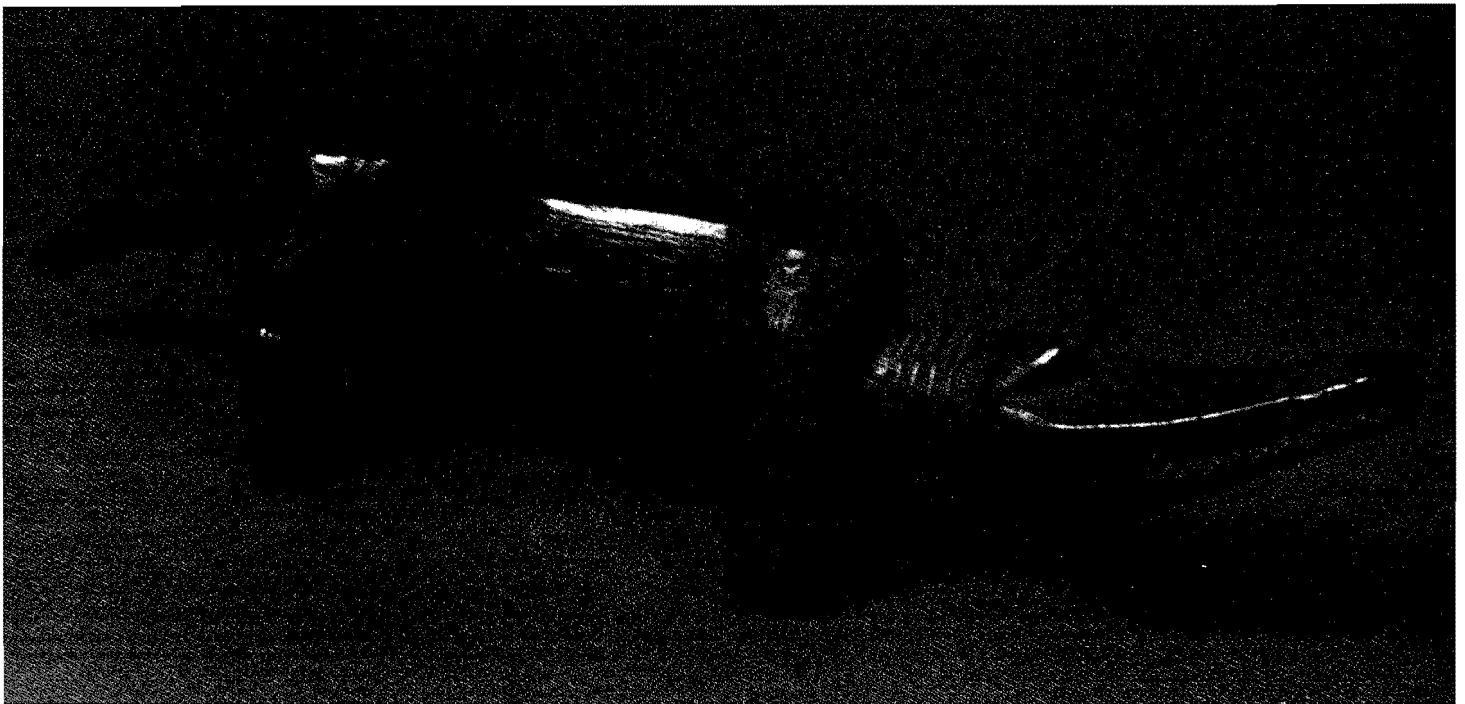
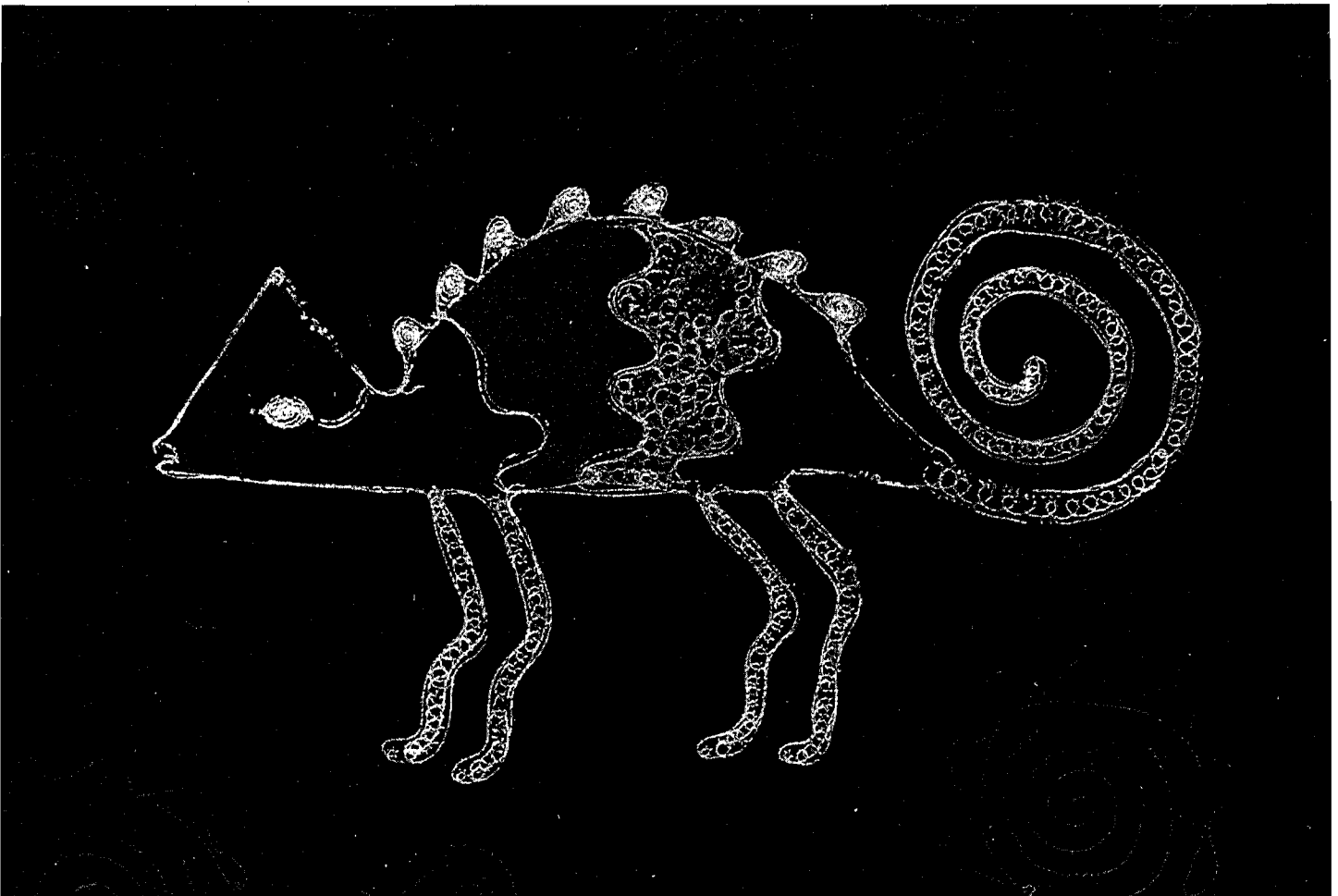


Photo by Elliot Elfröon, courtesy of the Smithsonian Institution's National Museum of American History

In Zaire, Africa, wooden figures such as this crocodile were used to solve problems. A respected member of the community, called a *diviner*, would rub another piece of wood along the figure. Then the diviner would ask a question and give a list of possible answers. If the wood became harder to rub when a certain answer was listed, this answer was considered to be the correct one.



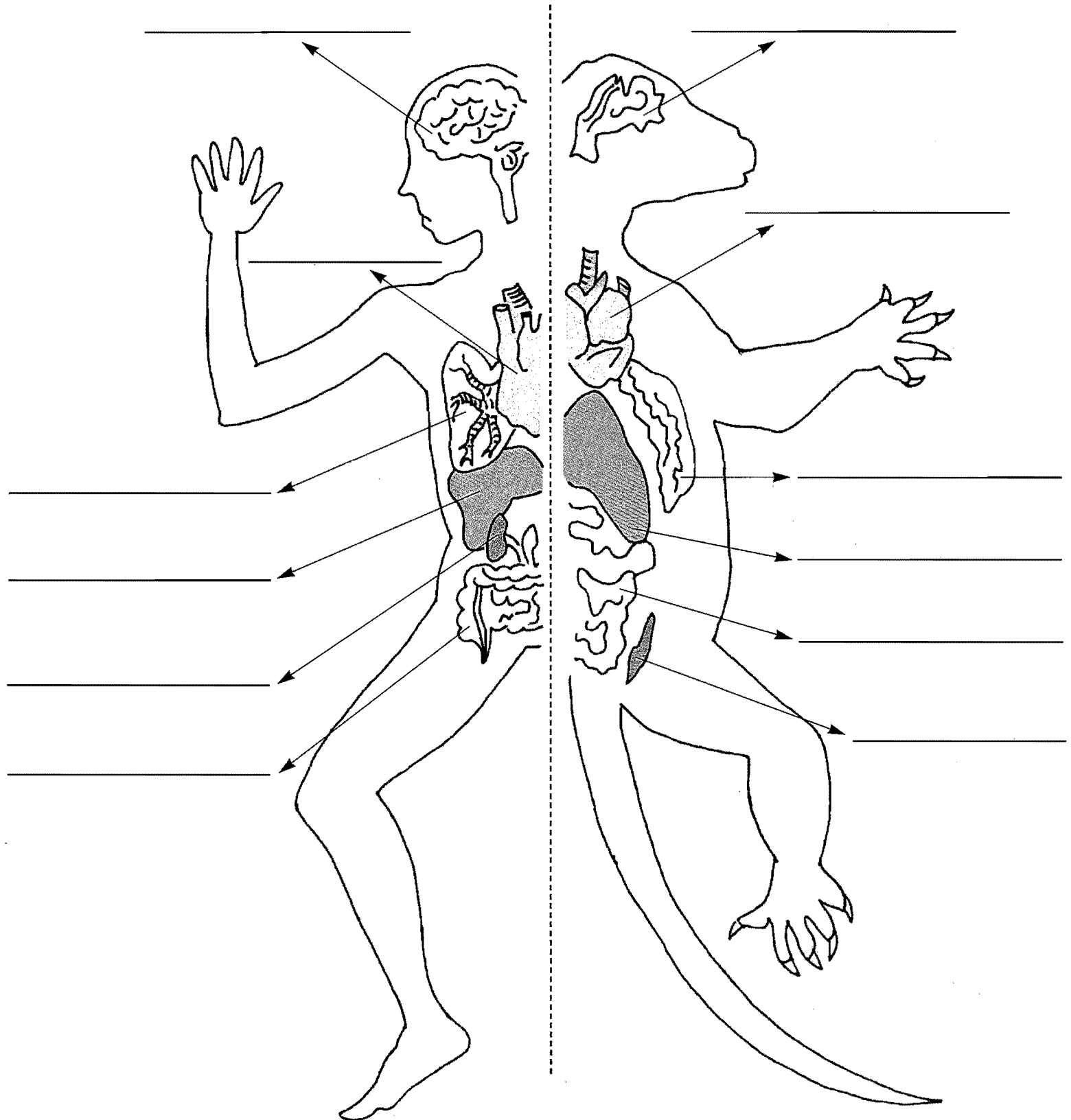
African chameleon



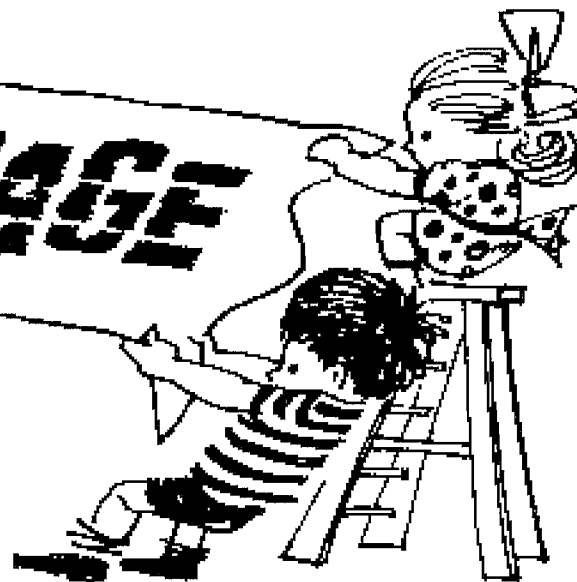
A colorful chameleon is one of many animals pictured on an African garment made in Ghana. Beautiful garments such as this were designed for chiefs and other important people.

Herps and Humans

Who says herps and humans are so different? Study the outlines of a person and a lizard, below. Then label the organs.



PULL-OUT PAGE



ARTE Y ZOOLOGICO Diciembre de 1992

Noticias de la Institución Smithsonian para las escuelas
Traducción de Orlando Lizama

Examina Tus Actitudes

Marca la respuesta que mejor describa tus opiniones.
¡Sé honesto!. (No te preocupes. No se te van a poner calificaciones. Recuerda: para muchas de estas preguntas no hay una respuesta que sea verdadera o falsa).

Código: de acuerdo=1, más o menos de acuerdo=2, en desacuerdo=3

1. Las serpientes son malas.

1 2 3

2. La mayoría de los reptiles y anfibios son feos y asquerosos

1 2 3

3. Se debería salvar primero a las especies en peligro que son simpáticas e inteligentes, como los pandas y las ballenas, antes que a las culebras, sapos, tortugas

y otros reptiles y anfibios que también están en extinción.

1 2 3

4. Es correcto usar la piel de caimanes, víboras y otros reptiles y anfibios para fabricar zapatos, carteras, cinturones y otros productos.

1 2 3

5. Los sapos te pueden causar verrugas si los tocas.

Verdadero Falso

6. La mayoría de las serpientes son venenosas

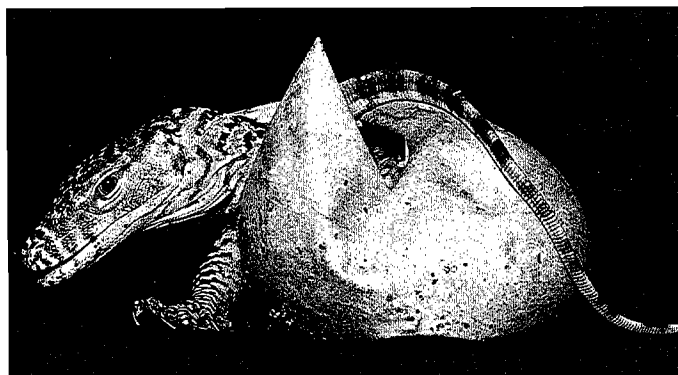
Verdadero Falso

7. Los reptiles son babosos.

Verdadero Falso



Jesse Cohen, Parque Zoológico Nacional



Un dragón Komodo echa su primer vistazo al mundo en el Zoológico Nacional en Washington, D.C.

Una Historia de Reptiles y Anfibios

¡La relación de personas, reptiles y anfibios es muy, muy antigua!. Dibuja un cuadro de uno o más de los hechos siguientes:

- En la antigua Grecia la gente creía que las serpientes tenían propiedades curativas. Para sanar enfermedades, los doctores a menudo hacían que las serpientes se arrastraran por el cuerpo de las personas enfermas.
- Los antiguos adivinos chinos a veces usaban tortugas para vaticinar el futuro. Lo hacían descifrando las marcas que hay en la caparazón de las tortugas.
- Según la leyenda hindú, el poderoso dios llamado Visnú descansa sobre una gigantesca cobra enroscada..
- En la antigua Europa, la gente a la que se conoce con el nombre de druidos creía que algunas serpientes, o víboras, ponían huevos mágicos. Se suponía que estos huevos, conocidos con el nombre de “piedras de víboras” traían buena suerte y que eran una defensa contra las enfermedades.
- No hay serpientes en Irlanda. Según la leyenda, San Patricio las echó a todas.
- En algunas partes de Egipto, los cocodrilos eran adorados como dioses. En las tumbas egipcias se han encontrado cocodrilos momificados.
- Las leyendas mayas afirman que un sapo llamado Uo ayuda a traer lluvia a los cultivos. Cuando Uo canta, desde una calabaza el dios de la lluvia riega agua sobre la Tierra.
- Algunos indios americanos adoraban a un espíritu llamado la Mujer Rana. Se cree que la Mujer Rana fue la creadora de la Tierra.
- Durante la Edad Media, la gente creía que los sapos tenían una joya mágica dentro de su cabeza. Entre otras cosas, se creía que estas “piedras de sapo” curaban los dolores de estómago.
- Los primeros colonos americanos pintaban una serpiente cascabel sobre las banderas en las que se mostraba a las 13 colonias.

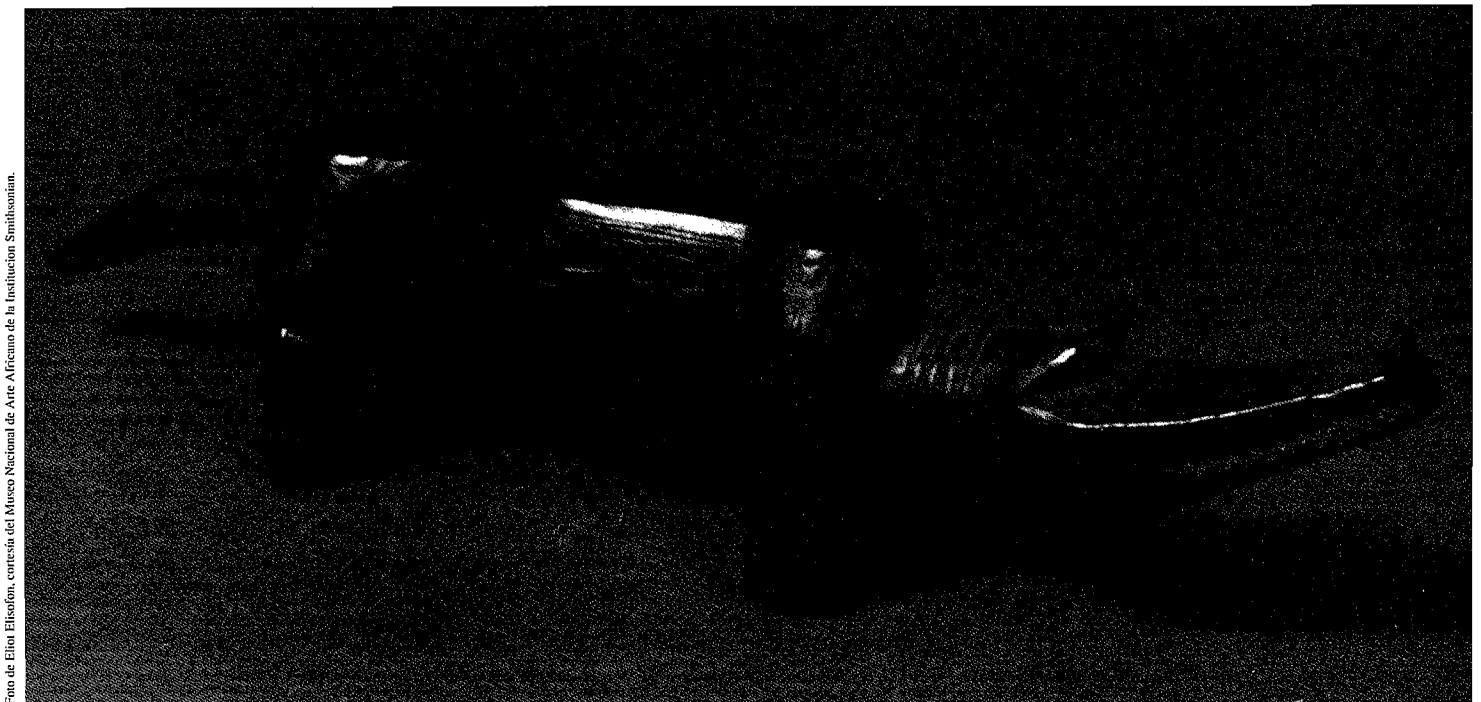


Foto de Elliot Elksaon, cortesía del Museo Nacional de Arte Africano de la Institución Smithsonian.

En Zaire, Africa, se utilizaban figuras de madera, como la de este cocodrilo, para resolver problemas. Un miembro respetable de la comunidad, llamado el *adivino*, frotaba un pedazo de madera contra la figura. Luego, el adivino hacía una pregunta y daba una lista de respuestas posibles. Si la madera era mas difícil de frotar al enunciarse una de las respuestas, se consideraba que esa era la correcta.



Camaleón africano



Este colorido camaleón es uno de los muchos animales representados en una vestimenta africana hecha en Gana. Hermosas vestimentas como estas fueron diseñadas para jefes y otras personas importantes.

Los Reptiles y Anfibios y los Humanos.

¿Quién dice que los reptiles y anfibios y los humanos son tan diferentes?. Estudia este dibujo de una persona y el de un lagarto. Luego ponle nombre a sus órganos.

