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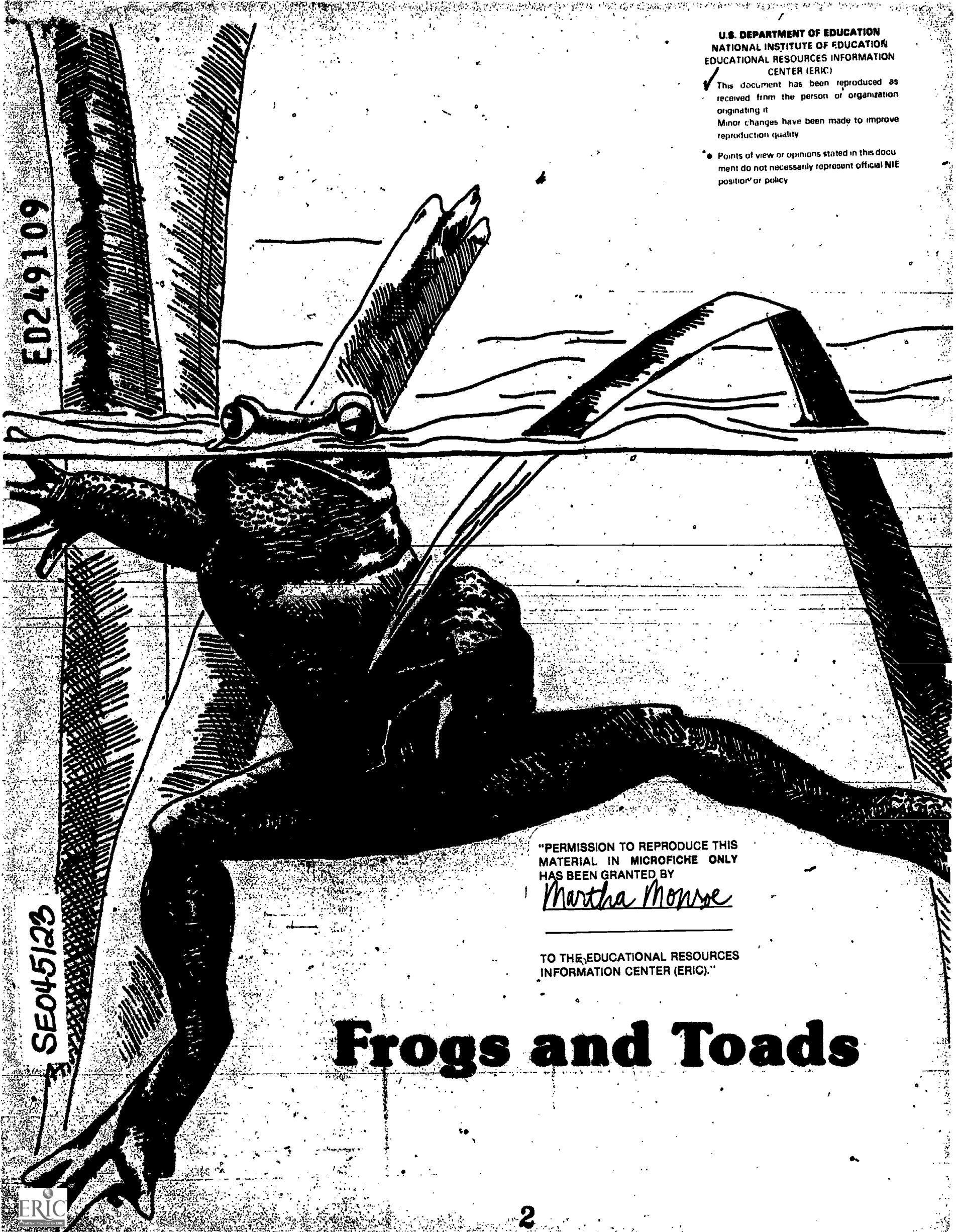
ABSTRACT

This instructional packet is one of 14 school environmental education programs developed for use in the classroom and at the Dahlem Environmental Education Center (DEEC) of the Jackson Community College (Michigan). Provided in the packet are pre-trip activities, field trip activities, and post-trip activities which focus on the characteristics and behavior of frogs and toads. Strategies for using these activities with second grade students are also provided. The pre-trip activities include differentiating between amphibians and other animals, identifying frogs and toads, investigating the frog's life cycle, and examining food chains. The indoor and outdoor field trip activities conducted at the DEEC are designed to reinforce the concepts examined in school. These activities (and lists of formal and non-formal field trip objectives) are provided in a separate field trip guide. The post-trip activities include raising tadpoles, investigating amphibian behavior, looking for amphibians near school and home, and completing art exercises. The activities (together with the related activity sheets) provide opportunities for students to practice such skills as sequencing, comparing, classifying, and working cooperatively during science, art, language arts, and social studies lessons. (JN)



Frogs and Toads

Dahlem Environmental Education Center

7117 S. Jackson Road
Jackson, MI 49201
(517) 787-0806, ext. 197

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Martha Monroe, Project Director
Jan Wolanin, Program Intern
Erica Salzman, Artist

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Mary Ellen Village, Teacher at Dibble School
Julie Garrison, Teacher at Lincoln School

Jackson Community College

2111 Emmons Road
Jackson, MI 49201
(517) 787-0800

Frogs and Toads

A Spring Activity Packet for Second Grade

Rribbitt! You and your class are about to embark on a journey to the exciting world of amphibians! Your trip will begin at school, continue at the Dahlem Environmental Education Center, and finish up back in the classroom.

Throughout the program your students will satisfy their curiosity about their amphibian friends, while gaining a truly educational experience. The major concepts--life cycle, food chain, adaptation, and habitat--were derived from a survey of elementary science curriculums and should fit right into your second grade curriculum.

Besides enhancing your science class, "Frogs and Toads" will make important contributions to other subject areas such as language arts, social science, and art. The activities included in this program will challenge your students to practice skills such as sequencing, comparing, classifying, and working cooperatively.

And that's not all! By heightening their awareness of frogs and toads, your students will begin to appreciate the forms of life with which they share this earth. In the years to come this appreciation may blossom into a concern about the environment which will motivate them to seek more information and to act as environmentally responsible citizens.

This packet contains pre-trip activities to help you introduce your students to their amphibian friends. During their trip to the Dahlem Environmental Education Center, your students will have the opportunity to see real frogs, and, if the weather is right, observe them croaking away in the pond! To help you review old concepts and introduce new ones upon your return to the classroom, this packet also provides post-trip activities and references.

Get ready...learning about amphibians is fun!

Contents

Goals and Objectives

Program Goal

Second graders will become more aware of amphibians and their characteristics.

Program Objectives

Students will:

-discriminate amphibians from other animals by sorting pictures

-differentiate between frogs and toads by orally stating the differences between them

-understand the life cycle of amphibians by ordering the different stages

-demonstrate an understanding of a food chain by connecting pictures of plants, wild animals, and humans in a proper sequence

-appreciate the dangers faced by amphibians during their life by role-playing frogs and toads

-learn common species of amphibians by identifying differences in their appearance and songs

-understand the value of wetlands by orally stating several benefits they provide

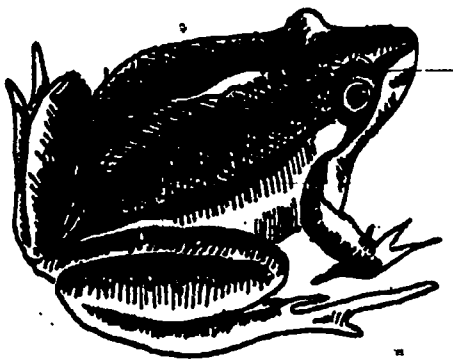
-demonstrate responsibility by working in a group to care for tadpoles

-demonstrate a respect for wildlife by originating a piece of creative expression and releasing captive animals after a short time

A Bit of Background

You've probably heard that cats are supposed to have nine lives, but you may not have heard that amphibians have two! (*Amphi* means double, and *bio* means life.) Frogs, toads, and salamanders spend the first portion of their lives in ponds as tadpoles. They absorb dissolved oxygen through fish-like gills. During the adult stage of their lives, amphibians breathe air with lungs. These two distinctly different life stages explain their interesting title: double-lived.

While lungs adapt them for life on land, they don't become landlubbers exclusively. Amphibians return to water to wet their thin, soft skins and to lay their eggs.



Each spring, after mating, female amphibians lay soft, jelly-like eggs in ponds. Frogs lay large masses of eggs which float. Toad eggs stick on vegetation near the bottom of the pond in long strings. The eggs hatch into tadpoles (pollywogs) within a few days. The fishlike tadpoles eat by scraping up small water plants such as algae. Tadpoles may spend from several weeks to two years in this life stage, eating aquatic plants.

When the time is right for the tadpoles to become frogs or toads, their tiny bodies undergo dramatic changes. Hind legs are the first to appear with front legs following quickly. The eyeballs move from the side to the top of their head, gills make room for legs and lungs, and the digestive systems transform to accommodate an insect diet. During these changes, the tadpoles stop eating; their bodies are supplied with nutrients from the storehouses in their shrinking tails.

Several types of amphibians in the tropics, however, have evolved to new patterns of existence. Some lay eggs that hatch directly into tiny frogs; some retain their eggs or tadpoles in or on their bodies. A few salamanders become sexually mature in the tadpole stage and remain in the water.

Amphibians can absorb oxygen through their moist skin. This is especially helpful during the winter when they bury themselves at the bottom of ponds or in the ground. Their heartbeats slow down and they live on food reserves stored

in their bodies. They get enough oxygen through their skin to stay alive.

Amphibians are often confused with other cold-blooded animals--the reptiles. Cold-blooded animals do not have internally regulated body temperatures. Their body temperature stays the same as that of the external environment. Unlike amphibians, reptiles lay leathery eggs, have dry scaley skin, and are adapted to live their entire lives on land. They have claws on their toes and their young resemble tiny versions of their parents. Alligators, crocodiles, snakes, lizards, and turtles are reptiles.

Frogs and toads are commonly seen amphibians. They are usually easy to tell apart. Frogs are green, smooth, and moist. Their color blends in with the plants that fringe ponds. Because of their longer back legs, they are great leapers. Toads are brown, bumpy, and dry. They are camouflaged for mud and leaf litter. Due to their shorter rear legs, they are better than frogs at walking. Toads have kidney-shaped glands on their heads which exude a milky white poisonous fluid when predators try to eat them. Several frogs can change the color of their skin, and may even look like toads, but their long legs and moist skin are still good clues to their identity.

Pre-Trip Activities

The following four lessons are important because they will prepare your class for their field trip.

1 Amphibians and Other Animals

Distribute copies of activity sheet 1 to your students. Ask them to:

- name each animal.
- discuss the differences between them: how they travel, feed, keep warm, are born, are covered, etc.
- color, cut apart, and group together similar animals: insect, fish, amphibian, reptile, bird, and mammal.

2 Telling Which is Which

Help your class to identify frogs and toads by their differences: frogs are smooth, wet, and usually green, while toads are bumpy, dry, and brown.

Prepare for this lesson by "making" a frog and a toad which you will pass around for the children to feel. Use activity sheet 2 to cut out a toad from brown sandpaper. Use a smooth material such as acetate, foil, oilcloth, or wrapping paper to cut out the frog.

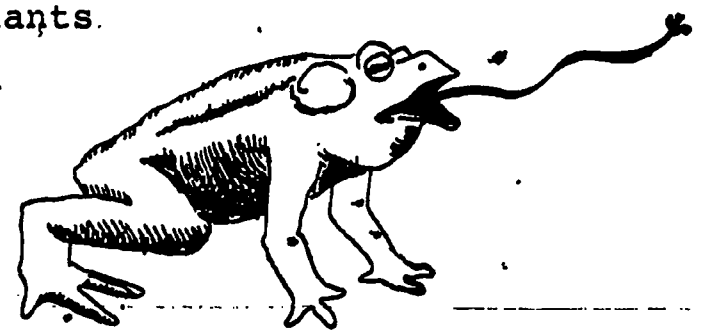
Ask students to make their own frogs and toads. Any art supplies will do, as long as students can explain which are the frogs and which are the toads. Ask them to name their amphibians or to create habitats (homes) for them. Your newly created amphibian family might be used in a math activity, too: count frogs and toads, add and subtract them, divide and multiply them!

3 Life Cycle Stages

Use activity sheet 3 to discuss a frog's life cycle with your students. It may make a nice bulletin board display. Then distribute copies of activity sheet 4. Students can sequence their frogs, either individually, or in small groups. They can even write their names on their favorite stages and create nametags for the field trip.

4 Linking Food Chains

All life must have energy. Animals get energy by eating, and plants get their energy from the sun. The sun is the only source of energy for all life on earth. The process by which energy is passed from the producer (plant) to the consumer (animal) is called a food chain.



Understanding this concept-- food chains-- is a key idea in this unit, for that is how we are like frogs--we eat! And like all other animals, we eat either plants or animals. Sometimes a food chain is long, sometimes it's short, but everytime we eat we are ingesting energy from the sun that's been incorporated into plants and animals. The very act of eating ties us to the rest of the earth.

Ask your class what they ate recently. Use an example (a chicken for supper) and ask "Where did the animal get the energy to live?" Trace the steps in the example on activity sheet 5 back through the plant to the sun. Ask them to draw in the arrows for the other two food chains, one for a tadpole and one for a frog.

As an extension of this activity you may ask students to actually make a chain by drawing animals and plants on strips of paper that can be fastened together.

Songs teach food chains, too. Sing "There Was An Old Lady Who Swallowed a Fly" with your class, and review the chain.

There was an old lady who swallowed a fly,
I don't know why, she swallowed a fly
I guess she'll die.

There was an old lady who swallowed a spider,
That wiggled and swiggled and tickled inside her.
She swallowed the spider to catch the fly,
But I don't know why she swallowed the fly,
I guess she'll die.

There was an old lady who swallowed a bird
How absurd to swallow a bird....

There was an old lady who swallowed a cat
Think of that, to swallow a cat....

There was an old lady who swallowed a dog
What a hog to swallow a dog....

There was an old lady who swallowed a goat
With a lump in her throat, she swallowed a goat....

There was an old lady who swallowed a cow
I don't know how she swallowed a cow....

There was an old lady who swallowed a horse
She died of course!

Another song that describes a food chain (a more accurate food chain!) is included below. You can have students sing along on the chorus, role play the story, stand when their assigned role is mentioned, count the number of plants or animals, etc. Many melodies can be used; choose the one you feel most comfortable with--Ten Little Indians, Up on the Rooftop, Six Little Duck, etc.--or make one up!

*A Simple Food Chain**

Chorus: A food chain is what everybody needs;
If you want to eat, then start with seeds.

1: One little girl that I once knew
Went to get the mail in the morning dew.

2: To get to the box she had to run
Through a field of grass drying in the sun.

3: There in the field chewing on the grass
Was an old milk cow with some time to pass.

4: There by the box was a piece of corn
Warming and growing in the sunny morn.

5: There by the box was a little corn plant
And chewing on its leaves were a worm and an ant.

6: There by the box was a great big hen
Pecking on the worm and far from her pen.

7: The girl took her home; it was time to be fed
With some sunflower seeds and a scrap of bread.

8: Dreaming of her dinner in a hungry way --
Corn on the cob and a cheese souffle.

* *modified from "A Simple Food Chain" (Environmental Education Activities Manual, 1978) and printed with the permission of William B. Stapp and Dorothy A. Cox, 32493 Shady Ridge Drive, Farmington, Michigan 48018.*

Discuss with your class:

- Why does the chorus say "start with seeds"?
  (Food chains start with plants that come from seeds.)
- Which characters are animals?
  (cow, girl, worm, hen, ant)
- What did the cow eat? *(grass)* The worm? *(corn)*
- What did the girl dream of eating?
  (corn, cheese, milk, eggs)
- Who ate plants? *(cow, girl, worm, ant)*
  Animals? *(girl, hen)*
  Both? *(girl)*
- What might happen to the ant?
  (It might get eaten by the hen, another bird, etc.)
- Find a chain with three steps. *(grass, cow, girl)*
  Find a chain with four steps. *(corn, worm, hen, girl)*
- What plants do you eat? Animals?
- Where does all food come from originally?
  (from plants which come from the earth and the sun)

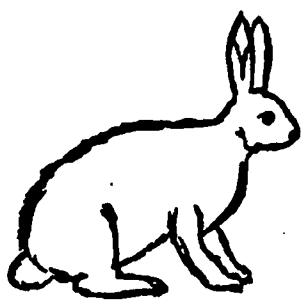
Vocabulary Words

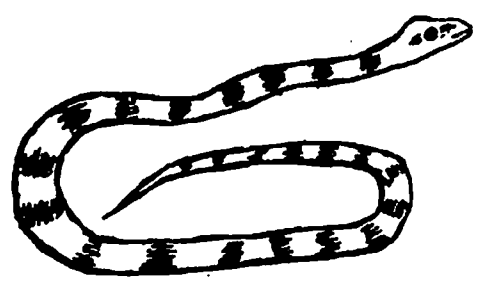
As a result of these pre-trip activities, your students probably became familiar with these words:

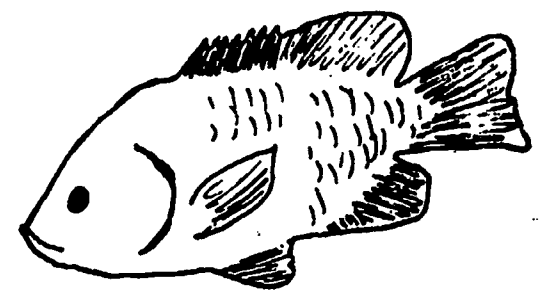
amphibian
camouflage
egg
fertilize
gill
lung
predator
prey
salamander
tadpole
toad

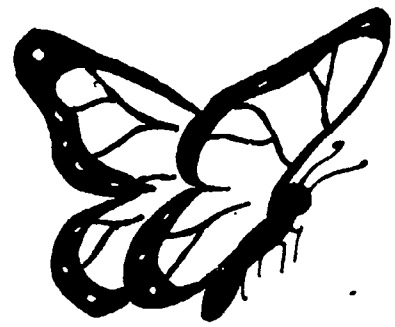
The following words will be used during the field trip. You may wish to remember them for a post-trip activity.

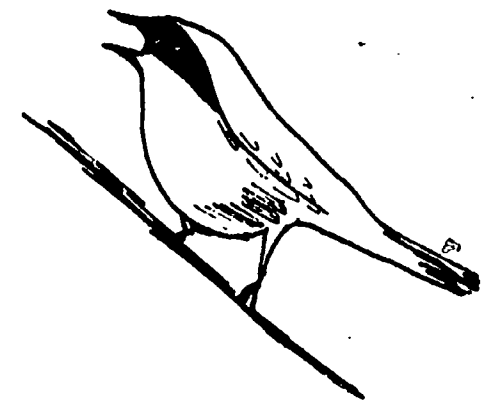
spring peeper
chorus frog
wood frog
leopard frog
bullfrog
American toad

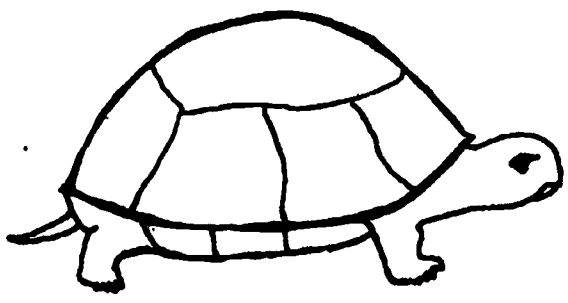


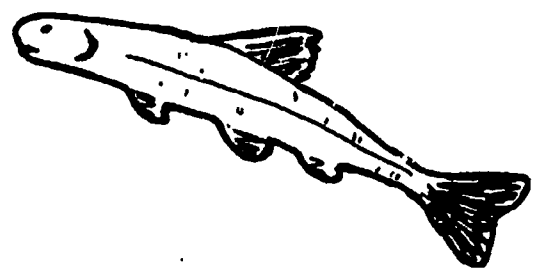


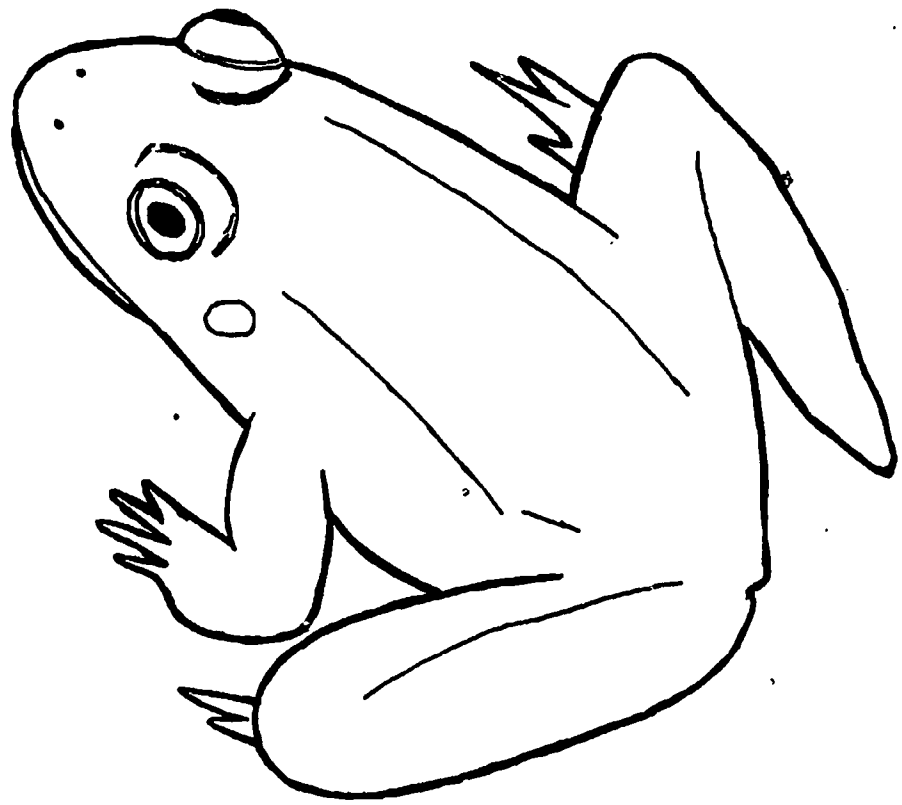


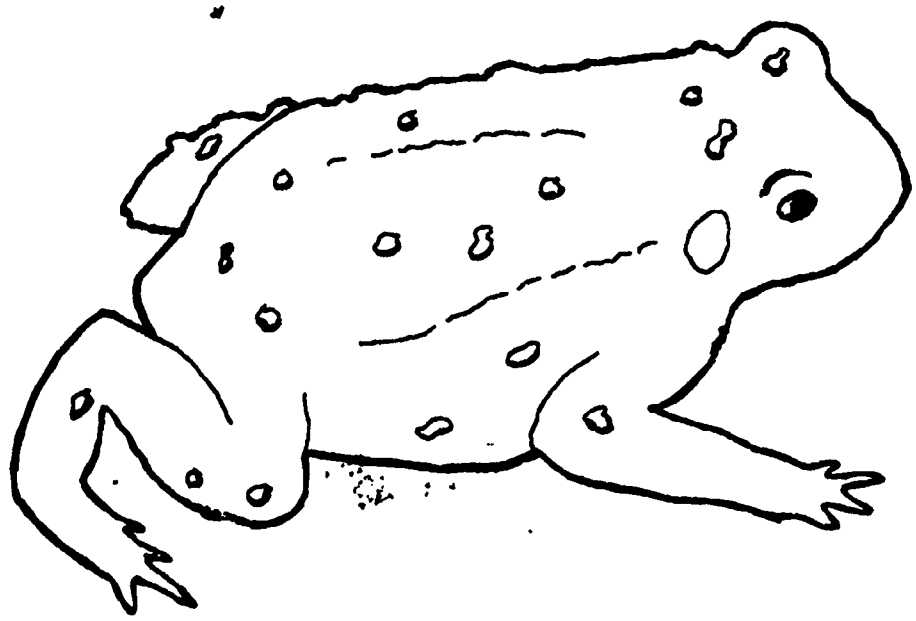




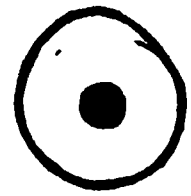


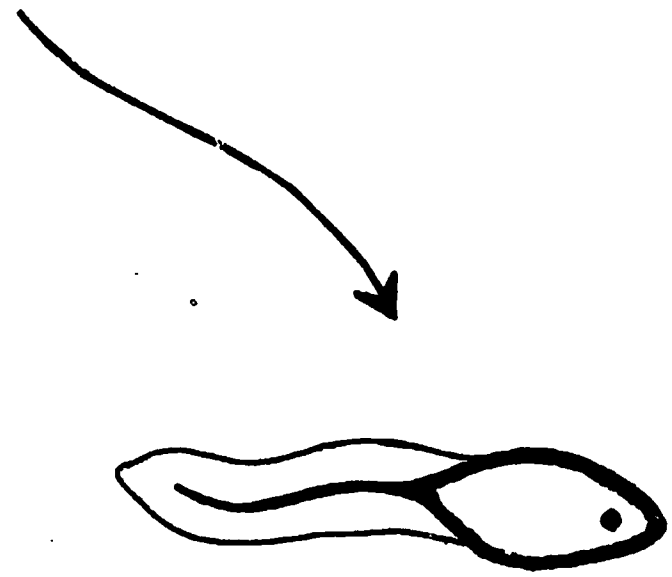


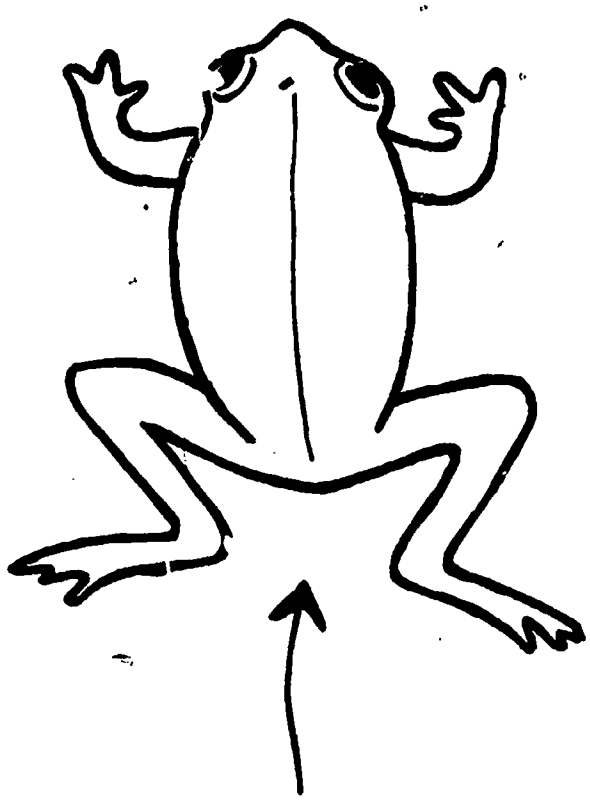




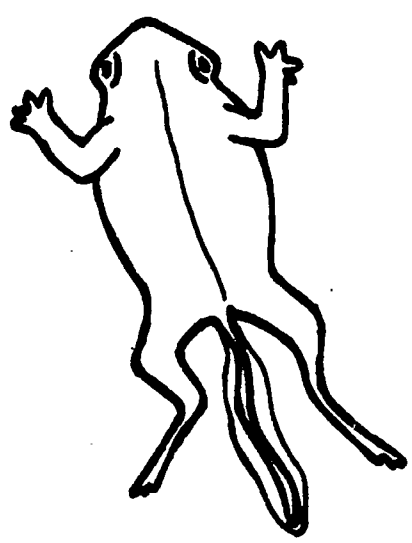
Activity Sheet 2
Telling Which is Which

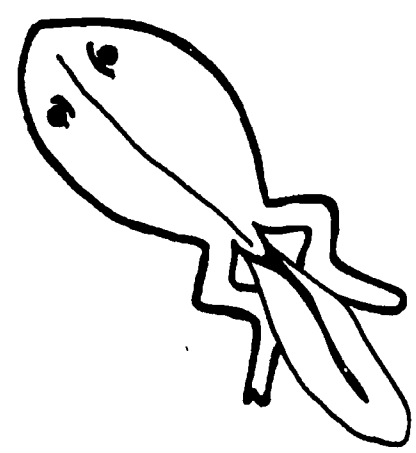






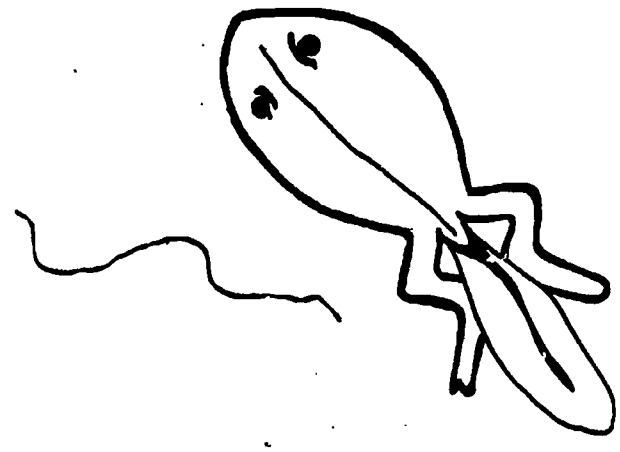
Salamanders, toads, and frogs
All begin as pollywogs.
Pollywogs begin as eggs,
First sprout tail and later legs.
Eggs are laid by mother frogs
Who began as pollywogs.

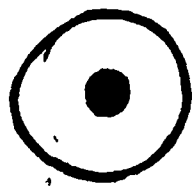


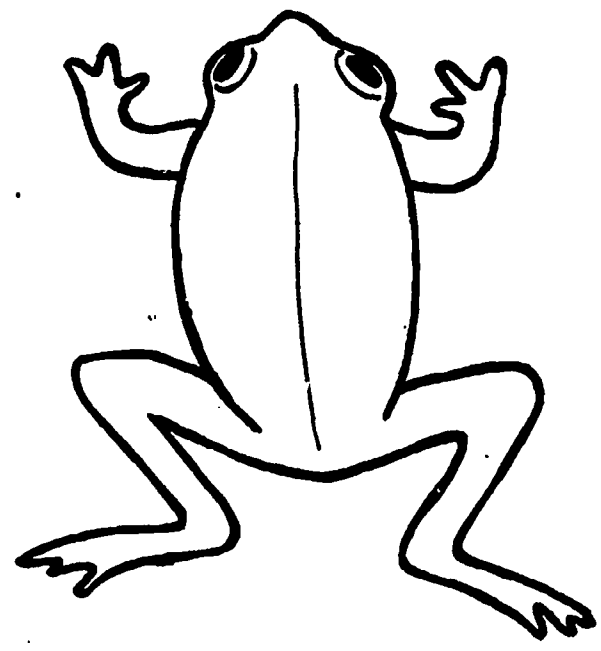


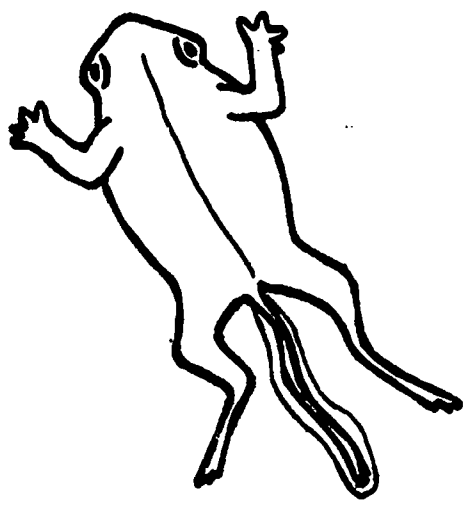
WHO CAME FIRST?

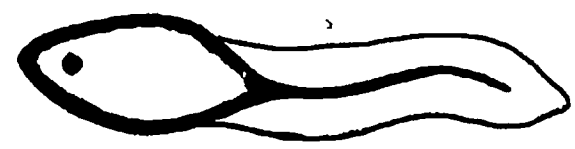
Cut out each piece of this frog puzzle and put the pieces in the right order.

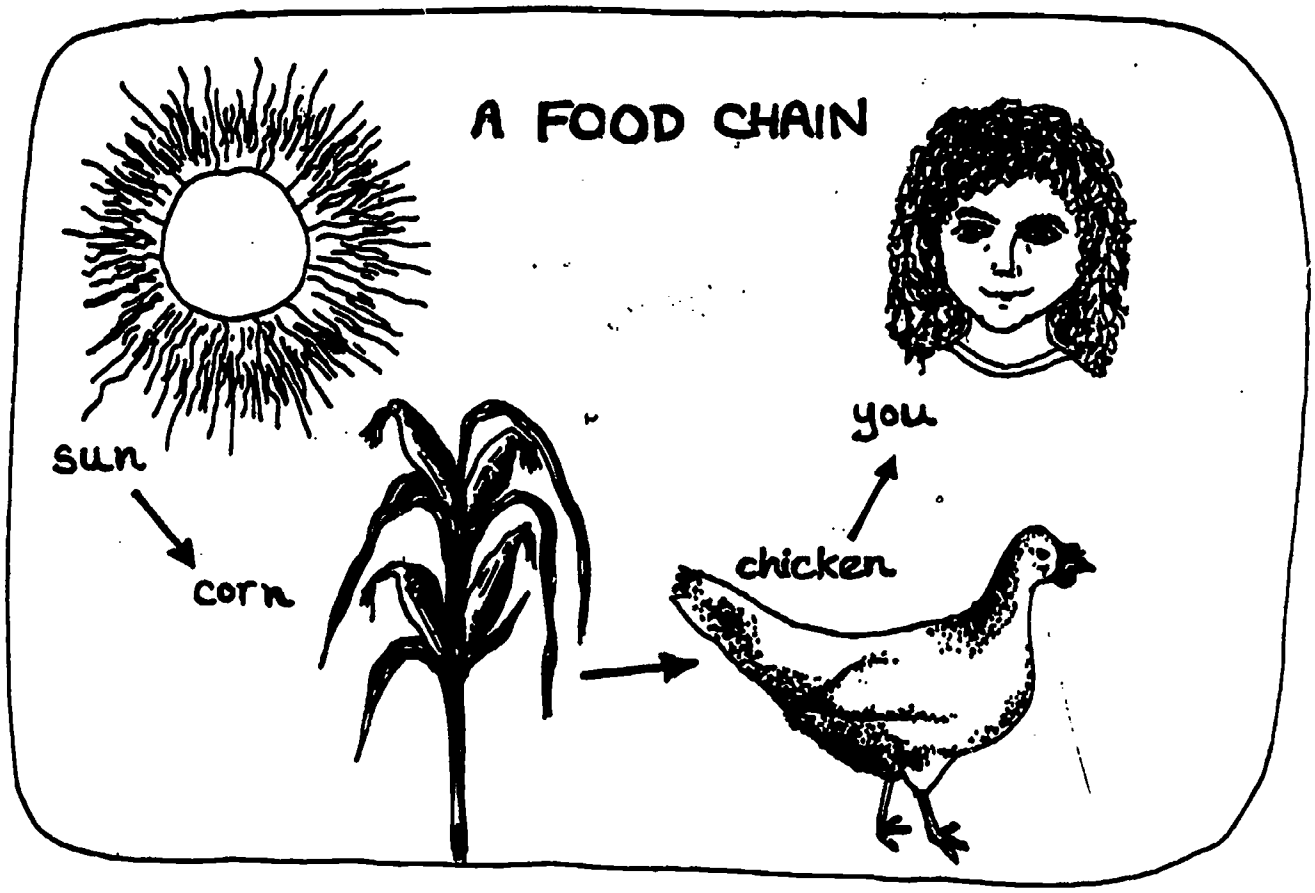


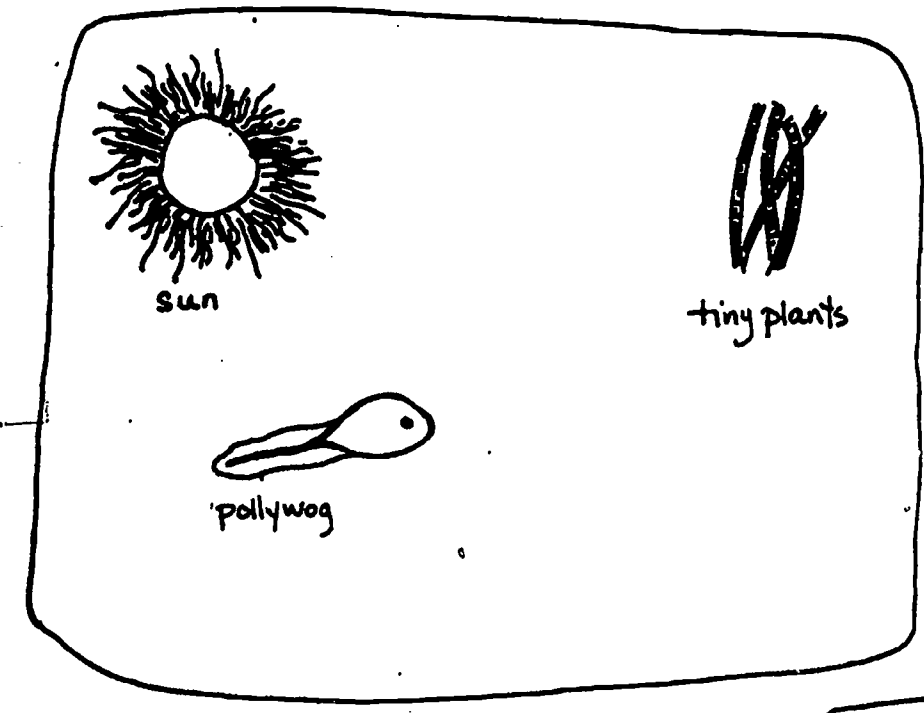








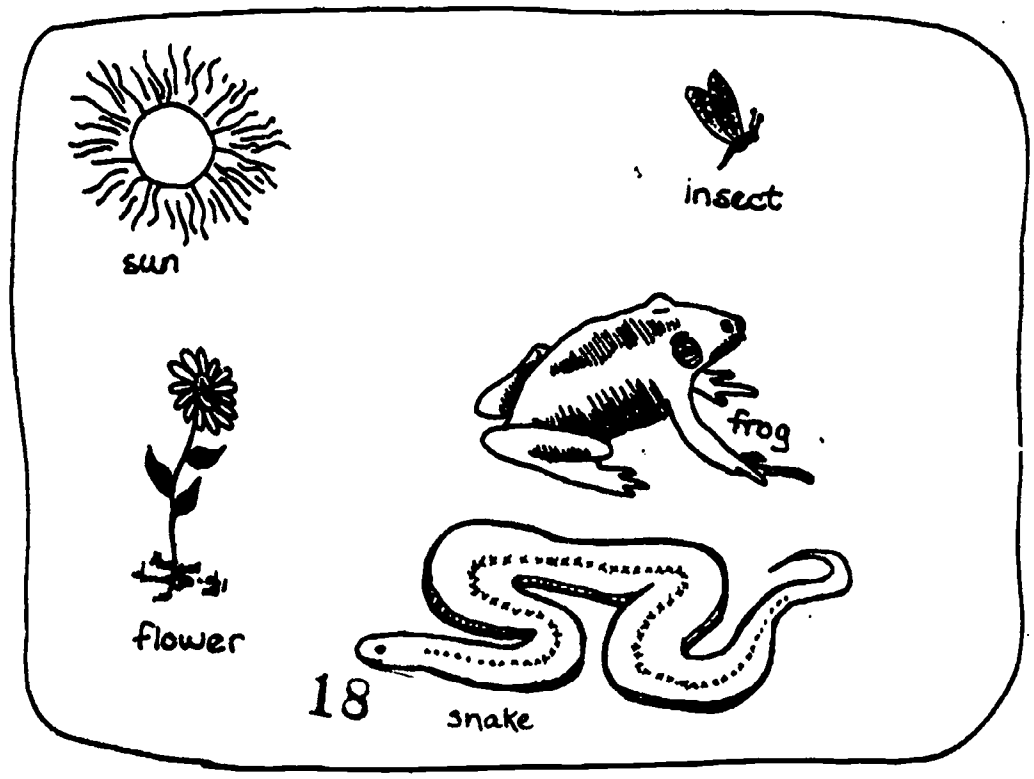




And two food chains for you to complete...

Now it's your turn to make up a food chain.

What do you eat?



Dear Parent,

Our second grade class is hopping into spring with frogs and toads this year! We have been learning about amphibians -- their life cycle, their characteristics, and their eating habits. A highlight of this unit will be our trip to the Dahlem Environmental Education Center. There we will see live frogs, learn their songs, and hike to their favorite ponds.

You can participate in your son's or daughter's experience by

- preparing him/her for the trip with clothes appropriate for the weather.
- asking about the trip upon his/her return.
- looking up amphibian books in the library.
- accommodating captive frogs and toads only for a few days in your home, and then making sure they are returned safely to a more suitable habitat.

Thank you!

Sincerely,

Second Grade Teacher

Field Trip

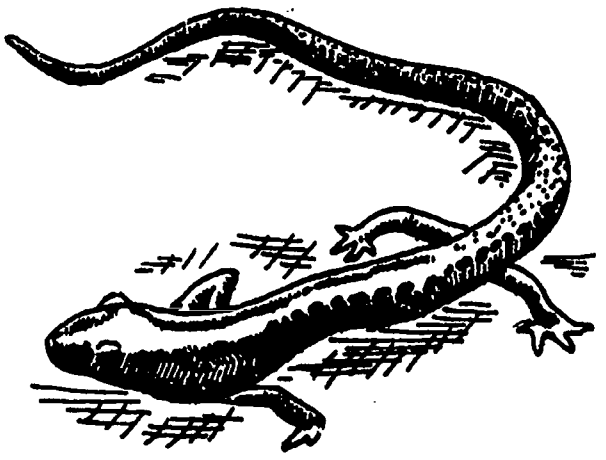
Now you are ready for your trip to the Dahlem Environmental Education Center! Thanks to the fine background you've provided for your students, that experience will be enriched.

During an indoor introduction at the Center, your students will be able to see real frogs. Their many adaptations will be pointed out and explained. We expect to have a spring peeper, chorus frog, leopard frog, and maybe even a toad. We'll teach your class the spring songs of each of these amphibians so they can identify who's singing.

On a quiet walk over the boardwalk at the Center's pond, you'll patiently listen for frogs and probably even see some! A visit to the wetlands will lend itself to a discussion of the habitat requirements of these amphibians.

In addition, your class will discover the importance of frog songs and some of the dangers amphibians face everyday through a game.

You will receive a plastic bag of frog eggs to take back to your classroom, so you may want to prepare a tank for their arrival. (See the following section for details.) If your trip occurs on a Friday, or just before spring break, the eggs can be stored in a refrigerator to postpone their hatching until your students are there to watch!



Post-Trip Activities

The following six activities review the major concepts in this program and help to extend the students' understanding to their home environment. Additional activity options are also provided.

1 Raising Tadpoles

Here are some guidelines for raising your tadpoles. Divide your class into small groups. Give each group some responsibility.

- Stock an aquarium with pond water. To replenish any water that evaporates, use either pond water or dechlorinated water that set for 24 hours.
- In large containers there will be enough surface exchange to give your tadpoles oxygen. If you have a small jar, add live aquatic plants.
- Leave tank uncovered in a light place but avoid direct sunlight because your tadpoles will die if the water gets too warm.
- Discard non-developing eggs and any that turn grey or white.
- Due to the enclosed space of the aquarium and the limited food supply, keep a dozen tadpoles or less. Return the rest to a pond.
- Feed your herbaceous tadpoles cornmeal, cooked spinach, boiled lettuce, or hard-boiled egg bits. Remove any leftover food after eating.
- It is highly unlikely that any of your tadpoles will complete the transition to adult. One critical and missing factor in an aquarium is the increasing concentration of nutrients normally found in an evaporating spring pond. Explain to your class that your tadpoles will have a better chance for survival if they are released to a neighborhood creek or pond.
- If your class decides to try to raise the tadpoles to adulthood and are successful in their attempt, or find an adult to keep for awhile, make sure they

supply a rock for the adult to crawl on. Or, better yet, transfer the frog to a shallow aquarium. Bank sand above the water level on one side. A third option is to depress a shallow dish of water into a terrarium.

- Feed the carnivorous adult amphibian live, moving insects, mealworms, earthworms, caterpillars, or slugs. Dangle a piece of lean meat or liver in front of its eyes and see if you're quick enough to catch a glimpse of its tongue!

- Have a naming contest!

- For more information consult: Concepts in Science (grade 5), p. 127; The New Field Book of Nature Activities and Hobbies, pp. 214-215; or Handbook of Nature Study, pp. 175-176.

- Extensions:
  -- Observe egg cell division with a lens.
  -- Find out how long it takes back legs to develop, front legs to develop, the tail to disappear, a tadpole to become a frog, etc.

2 Caring for Animals

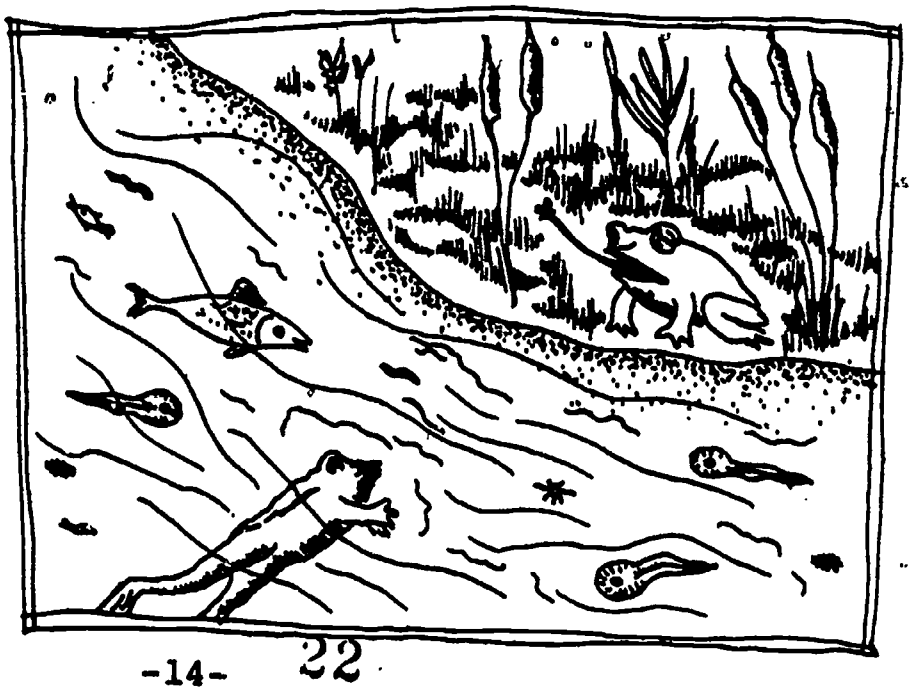
Make up a play, puppet show, poem, or story about respecting animals in the wild, properly caring for them in captivity, and releasing them after a short time.

You could invite a first grade class to watch the performance -- they could have a similar experience next year!

3 Frog Homes

Create a mural depicting a pond, complete with frogs and toads in every stage of life. Include some other pond critters and draw some animals eating!

Unleash your students' creativity and pass around activity sheet 6!



4 Amphibians at School

Explore the school site for signs of amphibians. Search puddles. Listen for croaking.

5 Amphibians at Home

Ask students to listen during the evening for the croaking of frogs and toads. Encourage parents to take their children out for a flashlight "hunt".

6 Escaping and Hiding

Discuss ways that frogs and toads protect themselves. (They urinate, blow themselves up to become difficult to swallow, exude a poisonous secretion through their glands, or sit quietly so they will be overlooked.)

We say that some animals are camouflaged when they are the same color as their surroundings. Explore this idea of protective coloration with your class by scattering a known number of a variety of colored toothpicks in a small area of your school yard. (You can also use pipecleaners or holes punched from construction paper on a rug or piece of fabric in your classroom.)

The toothpicks represent juicy insects that your class of frogs want to eat. One at a time, ask your students to hop into the game area and pick up the first toothpick/insect they see.

As they return, ask them to place their insects on a large piece of white paper in the order they were picked up. Continue hopping until all students have had at least one turn.

Then ask the students to consider the color sequence of the insects on the paper. Which colors were captured first? Last? Were all of the insects captured? Your frogs may want to return to search for certain colors they missed. If they were insects that lived in the grass, what color would your students want to be? Can they name some animals that are normally camouflaged in their surroundings? Try the activity in another area (blacktop or dirt), letting your frogs predict the outcome before they begin. *

Countershading is another type of camouflage that benefits frogs and toads. What color is their back? *(green)* their belly? *(white)* Each side camouflages the frog. Such a coloration pattern makes it difficult for predators above (e.g., herons or snakes) to see the frog against the green pond. Similarly, it's difficult for predators below (e.g., large mouth bass) to see frogs against the light surface of the pond.

To get this idea across, give each child sheets of white and green paper. Take them outdoors and ask them to hold the sheets above their heads. Which paper is more difficult to see against the bright sky?

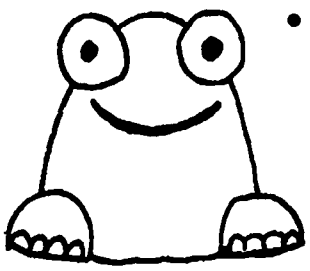
Then ask students to lay both sheets on the ground. Which paper is more difficult to see against the grass? What do you suppose would happen if a frog were to lay upside down?

* *modified from "Birds 'n' Worms", Activity 69 of Project Learning Tree ® Supplementary Activity Guide for Grades K-6 and printed with permission from the American Forest Institute, Inc.*

Want to Keep Going?

The following activities are extensions of the froggy ideas previously suggested. Use what will work well for you.

- Write short poems about the life of a frog or a toad -- perhaps from the viewpoint of the amphibian. Try reading pp. 9-30 of The Wild Season to your class first. (See the reference section.)



- Make frogs from egg cartons! Color one egg carton with paint mixed with glue. Felt tip markers work well too. Cut out and glue eyes and feet onto the body (the egg cup). Play with your frog as is. Or knot a heavy thread through the top and hang your frog. How about making a mobile?

- There's a lot more to be learned about toads. Construct a terrarium for them. How do they burrow into the soil? React to temperature changes? Can you catch a glimpse of their tongues as they feed? Measure their hops? Do toads hop differently uphill than down? What do you observe when you feed them lightening bugs?

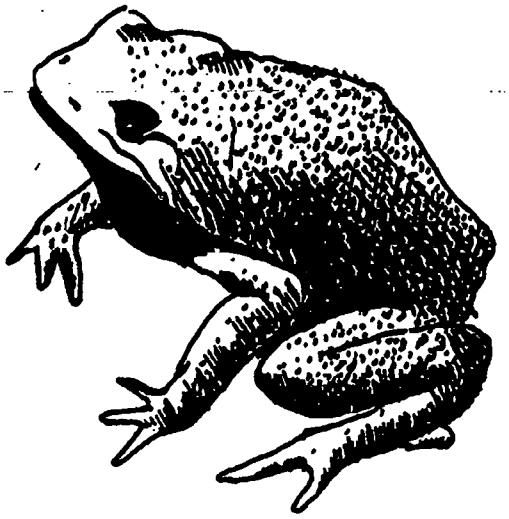
- Race two toads. Place each in the center of a circle and see which one reaches the edge first. Draw the courses that the toads took. Did they hop in a straight or a zig-zag line? Frogs are not recommended because they escape too easily and handling removes the protective mucous from their skin.

- Research the amphibians that were seen during the field trip.

- Make an amphibian book.

- Write a story about experiences that occurred during the field trip

- Make frog body parts and attach them with brads to create moveable lovable hoppers.



Congratulations! You have reached the end of your journey into the amphibian world. Whether it was long or short, you gave your students several exciting opportunities to learn more about their world. From frog calls and food chains to hatching eggs and art projects you added to your science curriculum and complimented other disciplines as well. Because of their study of frogs your students' awareness of the entire world has been heightened.

So give yourself a pat on the back! It took some extra time and energy to prepare for the field trip and continue the concepts back at school. You deserve a title--would you like to be The Prince, Princess, or Frog - of - The - Day?

In spring, frogs are in ponds and wetlands. Draw this frog's habitat.

References

Books For Kids. . .

J597.8 B *Billings, Charlene. Spring Peepers are Calling. New York: Dodd, Mead, 1978.

Chenery, Janet. The Toad Hunt. New York: Harper and Row. 1967.

J597.8 C *Cole, Joanna. Frog's Body. New York: William Morrow and Company, 1980.

Hawes, Judy. What I Like About Toads. New York: Thomas Crowell Co., 1969.

Hawes, Judy. Why Frogs are Wet. New York: Thomas Crowell Co., 1968.

J597.8 H *Hogan, Paula Z. Frog. Milwaukee, WI: Raintree, 1979.

JE *Lobel, Arnold. Frogs and Toads Together. New York: Harper and Row, 1972.

J597.8 M *McClung, Robert M. Bufo: The Story of a Toad. New York: William Morrow and Company, 1954.

Meeks, Esther. Jeff and Mr. Jones' Pond. New York: Lothrop, Lee, and Shepard, 1962.

J597.8 M *Morris, Dean. Frogs and Toads. Milwaukee, WI: Raintree, 1977.

Pomerantz, Charlotte. The Day They Parachuted Cats on Borneo. Reading, MA: Addison-Wesley Publishing, 1974.

*These books are available at the Jackson District Library. Similar titles may be found at the Library's 16 branches under the same Dewey Decimal numbers.

Books For Teachers

Barufaldi, James P., George T. Ladd, and Alice Johnson Moses. Heath Science (Levels K and 2). Lexington, MA: D.C. Heath and Company, 1981.

Berger, Carl F., Glenn D. Berkheimer, L.E. Lewis, Jr., Harold T. Neuberger. Science (Level 5). Boston, MA: Houghton Mifflin Company, 1979.

Brandwein, Paul K., Elizabeth K. Cooper, Paul E. Brackwood, Margaret Cottom - Winslow, John A. Boeschen, Morsley G. Giddings, Frank Romero, and Arthur A. Carin. Concepts in Science (levels 3-5). New York: Harcourt Brace Jovanovich, 1980.

Clemens, Samuel. The Celebrated Jumping Frog of Caliveras County. New York: Franklin, Watts, Inc., 1968.

Comstock, Anna B. Handbook of Nature Study. Ithaca: Comstock Publishing Associates, 1967.

Conant, Roger. A Field Guide to Reptiles and Amphibians of Eastern and Central North America. Boston: Houghton Mifflin Company, 1975.

Dickerson, Mary C. The Frog Book, volume 12 of the Nature Library. New York: Doubleday Page and Company, 1907.

Eckert, Allan W. The Wild Season. Boston: Little, Brown, and Company, 1967.

Fairwell, Kay, Editor. Outdoor Biology Instructional Strategies: Set #2. Berkeley, CA: The Regents of the University of California; Lawrence Hall of Science, 1975.

Hillcourt, William. The New Field Book of Nature Activities and Hobbies. New York: G.P. Putman's Sons, 1970.

Otto, James H. and Towle, Albert. Modern Biology. New York: Holt, Rinehart and Winston, Publishers, 1977.

Project Learning Tree - Supplementary Activity Guide for Grades K through 6. Washington, D.C.: The American Forest Institute, Inc., 1977.

Smith, Hobart M. Amphibians of North America. Racine, Wisconsin: Western Publishing Company, Inc. 1978.

Smyth, H. Rueker. Amphibians and Their Ways. New York: The MacMillan Company, 1971.

Stapp, William B. and Dorothy A. Cox. Environmental Education Activities Manual. Dexter, Michigan: Thomas-Shore, Inc., 1981.

Striker, Susan and Edward Kimmel. The Anti-Coloring Book. New York: Holt, Rinehart and Winston, 1978.

At REMC. . .

The Jackson County Intermediate School District's Regional Educational Media Center has the following:

Films:

"Looking at Amphibians"	MP 2209
"Frog"	MP 1831
"The Frog"	MP 1832
"The Pond - A First Film"	MP 1273
"Ecology of Ponds"	MP 347

Other:

"Read about Frogs and Toads: 2-3rd grade reading level 8 books and a cassette	SE 1850
"Bufo - The Story of a Toad" 4 books and a cassette	SE 0821
"Ecology Made Simple: The Chain of Life" Filmstrip	SE 455

And Elsewhere. . .

- "Living Things Depend on Each Other," Britannica film, color, grades 1-3, $9 rental

- "Birds and Other Animals," Audubon Nature Charts, includes forest food chains, one of a set of five, #73073, $2.40 per set, National Audubon Society, 950 Third Avenue, New York, New York, 10022.

FROGS AND TOADS

Second Grade Spring Field Trip

Formal Objectives

Identify different species of amphibians

Identify differences between frogs and toads

State the importance of communication among frogs and toads

Understand the value of a wetland

Informal Objectives

Learn more about frogs--see them, hear them, and touch them

Have fun!

Understand some of the challenges that animals must surmount in order to survive (singing, mating, eating, growing)

Indoor Portion

Welcome, name, and Dahlem introduction.

"Today we are going to explore the world of frogs and toads. You probably already know a lot about frogs. Can you tell me--what is a frog? How are frogs different from other animals?" They should already know the following. Review with them:

"amphi" = of both kinds, "bio" = life, amphibian = two kinds of life; in the water and on the land

examples = frog, toad, salamander, newt

life cycle = egg, tadpole (pollywog), adult

difference between a frog (smooth & moist) and a toad (brown, bumpy, and dry)

habitat - both live in spring ponds to lay eggs. Some frogs and toads move to the woods and fields when the ponds dry up. Some frogs can live in permanent ponds year-round

winter-- buried under soil or in pond bottom "breathing" through skin

food--Tadpoles scrape tiny vegetation. Adult "zaps" insects with long, sticky tongue.

Draw an oval on the board and ask them what it needs to make a frog. Continue discussing the adaptations with each body part they name. How do they compare to our bodies?

Compare the body of a frog to your body. Look at the frog eyeball to eyeball!

Compare the body of a frog to your body. Look at the frog eyeball to eyeball!

Where are your eyes located on your head? (front) a frog's? (top)
How many fingers do you have (5) A frog? (4)
How many toes do you have? (5) A frog? (5)
Feel your skin. Feel a frog's. Whose is warmer? drier? smoother?
Relatively speaking, who has a bigger mouth--you or a frog?
A frog's mouth stretches from ear to ear!
How many nostrils do you have? (2) A frog? (2)
Where is your tongue attached? (at the back) A frog's? (at the front)

> Pass around the frogs, eggs, and tadpoles during a moment when you don't need the group's full attention.

Other neat things to observe about frogs and toads:

Frogs and toads have long back legs for springing and short front legs for landing.
Frogs and toads shut their eyes when they swallow to help push their food down their throat.
Frogs have green backs and white bellies to protect themselves while swimming.
Toads have beautiful gold rims around their eyes.

Frogs are so well adapted for life in water that they've inspired several human inventions: periscope (eyes on top of head), swim goggles (clear 3rd eyelid), wet suit (slippery friction-reducing skin), and swim fins (webbed feet). Can you think of any others? (snorkel, submarine...)

Food Chains

"Where do frogs get their energy to hop? (insects, plants, and the sun) To whom might a frog give energy? (snake, fish, heron, etc.) Where do you get your energy? Do you have enough right now to go outdoors and try to find some frogs and toads?"

If the kids are obviously well-prepared, take a minute before you head outside to thank the teacher for doing such a fine job with the pre-trip activities. A little positive reinforcement never hurts!

Suggested Trail

Across the southeast end of the Arboretum to the new boardwalk. Look and listen for frogs and toads. Continue to the old boardwalk to do the same. Circle back on the other side of the loops.

Activities

As you approach the boardwalk, stop to quiet the group. In a moment of silence, ask them to listen real hard and count the different sounds they hear. (You car also have them close their eyes and count on the fingers of one hand raised in the air). Then slowly creep onto the boardwalk, pretending to be Indians, frog-stalkers, or something! Point out the algae--the tadpoles' food.

While in or near the marsh or pond, talk about the frog's habitat. During the year they need wet places to lay eggs and to hibernate. Have them name other animals that live there (ducks, fish, dragonflies, mosquitoes, but not people). In fact, if people want to live in a marsh, they'd have to fill it in first. "Can frogs live in filled in marshes?"

If the kids are with you, continue to mention other benefits of wetlands. They act as a sponge to hold water so creeks don't flood; replenish creeks and lakes when water is low; slow down the flow of surface water so that silt and sand fall out into the wetlands, keeping the creeks cleaner; and provide a home for lots of wildlife.

Reinforce the idea that wet, mushy places are valuable for lots of reasons!

Stop sometime along the trail and ask your kids to pretend that they're frogs in a pond. How do they sit? sing? swallow? Be a frog yourself!

Sound Off!

This activity helps kids understand why the frogs are out there making noise--they are looking for a mate!

With your kids in a circle, explain they are going to be frogs in a pond making frog noises! Each person will be given a frog sound and they'll have to find another "frog" that makes the same noise. If it sounds too easy, tell them one hitch is that they will be blindfolded! Many of the frogs sing at night and besides, most can't see very far away.

Pass out blindfolds to half the children and let the other half form the pond edge. Whisper to each kid the "song" they should sing. On cue, they'll make noise and search out a similar noise-maker. Usually, 3 frog sounds are plenty: peep-peep, chuckle-chuckle, and ribbit!

Once they find a mate, have them hold hands and stop singing.

If that was successful, add another hitch to the game--a raccoon! Raccoons love to eat frogs, and, of course, the loudest frog would get eaten first. So now the frogs have a problem. If they sing to get a mate, they may get eaten! Try it again with 1 or 2 raccoons and see how loud the frogs are and how long it takes them to find their mates!

If your kids are unwilling to play frogs, it may help to have them act like frogs together for a few minutes--jumping and singing in a giant frenzy in the pond. Then channel their energies toward finding a frog that sings the same way!

Food Chain

Use the aquatic food chain cards to reinforce the concept of food chain at a rest area along the trail. Start with the sun,

Food Chain (Continued)

and unwind the yarn from plant to animal as you demonstrate who gets eaten, up and down the chain. Use the kids' ideas to include everyone in the chain. Quickly point out that every living thing has a place in the chain, and if one link disappears, it is felt by other members of the chain.

Return to the Building

To review this field trip, ask the kids what neat adaptations frogs and toads have, why they communicate, and why we need wetlands. Tell them their experience with frogs isn't quite over yet, because their class will get a bag of eggs to take back to the classroom. If they all take good care of their eggs, they'll hatch into _____ and they can watch them grow and then release them!

5 inches

NORTHERN LEOPARD FROG

green or brown, sharply defined spot
moderate webbing
conspicuous ridges
slender body
dark spots with light border
gruff chuckling lasts 2/3-5 sec.

*thumb drag across wet balloon

WOOD FROG

dark face mask
color varies: light to brown,
plain to flecked
toes 1/2 webbed
toneless raspy quack

*motor starting "chuckle-chuckle - chuckle-chuckle"

2¾ inches

1⅜ inches

SPRING PEEPER

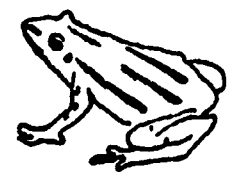
brownish
X on back
small toepads
whistle like tone, clear & shrill

*high "peep-peep"

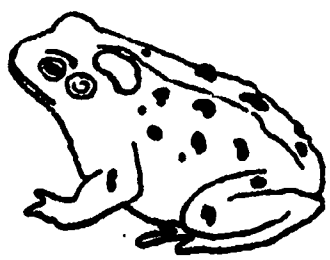
NORTHERN CHORUS FROG

3 stripes or rows of spots down back
very small toe pads

*drag of the teeth of a comb along your thumb or a piece of furniture



1½ inches



4⅝ inches

AMERICAN TOAD

brownish color
wart

*long melodious trill