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ABSTRACT

The handbook was developed to allow teachers to take advantage of the ideas of persons participating in the Zoo Project for Handicapped Children, in which educationally and mentally handicapped children received language arts instruction organized around the use of animals at the zoo site and in classrooms. The first section of the handbook lists ideas for activities such as having children describe photographs of themselves with zoo animals; having children observe and discuss the different smells, sounds, and appearances of animals; and allowing children to devise means of testing whether different animals react to sound. The second and third sections of the handbook contain materials which teachers might wish to duplicate and which are printed so that they may be used as master copies in a thermal process copying machine. (GW)

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USING ANIMALS AS TEACHING TOOLS

Prepared
by
Gerald Lamb

San Diego City Schools
San Diego, California
August, 1971

Revised June 1972

USING ANIMALS AS TEACHING TOOLS

A Handbook for the

ZOO PROJECT FOR HANDICAPPED CHILDREN - 1972-73

Prepared by
Gerald F. Lamb

This Handbook is unedited and will be evaluated and supplemented by teachers and revised as necessary.

ZOO PROJECT FOR HANDICAPPED CHILDREN

A Federally Funded Project under the
Provisions of Title III, Elementary
and Secondary Education Act of 1965.

San Diego City Schools
San Diego, California
1972

INTRODUCTION

PURPOSE

This handbook is not a curriculum guide. It has been developed to help you, as a teacher, take advantage of the creative ideas of many persons who have been participants in the ZOO PROJECT FOR HANDICAPPED CHILDREN. Many of the ideas you find here will fit right in with what you are doing in your classroom. Others, are good ideas that you will have to adapt to the interests or achievement level of your children. Some ideas will be very inappropriate for your group. Please feel that this handbook is a recipe box from which you can pick and choose to make up the menu that will be best for your class. You are NOT required to do any specific list of activities in order to participate in the ZOO PROJECT FOR HANDICAPPED CHILDREN.

EXPANSION

We hope that the loose-leaf format of this handbook will encourage all persons to suggest improvements. PLEASE let us know what is good and what is bad. What should be expanded; what should be changed; what should be thrown out. As the year continues we hope to add to the handbook with additional ideas and materials that you find successful in your classroom. Please let us have copies of ideas, materials and activities that you think others would like to try.

ORGANIZATION

The 1972 edition of the handbook is organized into three main sections:

Section I in the 1971 edition included evaluation procedures that were required in previous years. The procedures are no longer required by all teachers in the program. To avoid confusion, page numbers in all editions will remain the same in Sections II, III, and IV.

Section II is a Section of ideas and suggestions for activities that you might want to try with your group if appropriate.

Section III is a related section of materials that you might wish to duplicate for use in your classroom. Pages are printed so that they may be taken out of the handbook and used as master copies in a thermal process copying machine -- These pages probably would be most appropriate for the "In School" program but are not limited to that program.

Section IV is the same as Section III except these materials would probably be more appropriate for the "In Zoo" program but are not limited to that program.

S E C T I O N II

TEACHING SUGGESTIONS

- This section includes ideas and suggestions for activities that you might want to try with your group.

- These activities are only suggestions. Please pick, choose and adapt to develop a program that will be custom-made to fit the needs of your class.

- Many of the activities in this section relate to pupil work pages which you will find in Sections III and IV of this handbook.

- We earnestly solicit your suggestions and contributions to make this section or any other more useful to all teachers.

CODE PUZZLES

CODE PUZZLES are a language - reading - math activity. They include 3 written clues, 1 picture clue, a code, and the puzzle. They can be as complicated or as simple as you like.

Having once become familiar with CODE PUZZLES, children love to make their own.

1. They must study the animal to draw it (or they may trace the picture in a book if they can find a simple one).

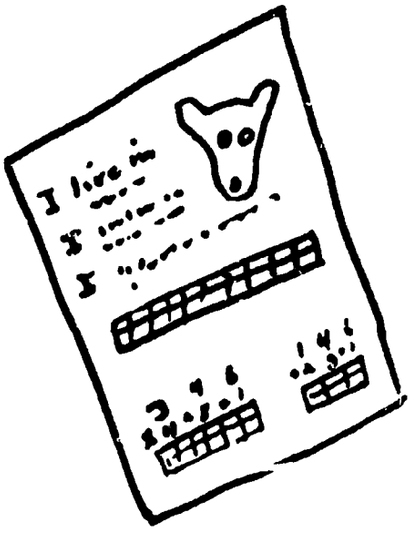
2. They must do research for writing their three simple clues.

3. They must plan the coded message and work out a code that will fit it.

4. They must plan the necessary math for the coded message and lay it out. (Graph paper helps with alignment.)

5. They should have someone else try the puzzle before they draw it on a ditto master.

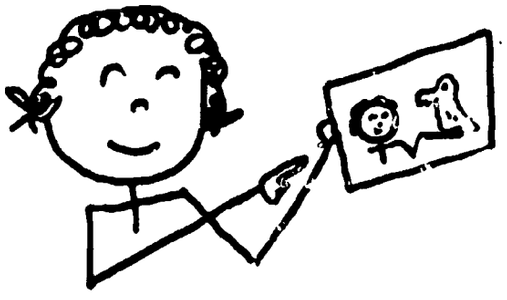
This all sounds complicated, but it isn't; CODE PUZZLES are a lot of fun.



See Activity Pages
for sample code puzzles
Sections III and IV.

POLAROID PICTURES

Photographs are a never failing motivation for oral and written language. They help you extend the experience long after it happened. In the ZOO PROJECT we have a Polaroid Camera available to take pictures of your children interacting with animals. We have budgeted money for at least one pack of film per class. There are eight pictures to a pack. If you would like more pictures and can provide the film, we will take as many pictures as you wish. You will need Polaroid Type 107 black and white film. If you have special instructional funds, this may be one way you and your principal would like to use them. Teachers in the San Diego City Schools may refer their principals to the Non-Stock Catalog under FIL-4327 on p. 039. If you buy your own, watch for specials or try a discount house.



Look! That's ME with the parrot! He sat on my finger! He was as green as [illegible]

SAN DIEGO CITY SCHOOLS PUBLICATIONS

The following publications are available to City Schools teachers. If you can't find them in your school, you might want to ask your principal to order them using the listed no-charge stock number.

For teachers not in the City Schools, the Zoo Project office has one copy of each of these publications that we would be glad to loan you for a short time.

Procedures No. 2780 - Pets in the Classroom - District policies concerning animals in school.

41-P-1200 - Care and Feeding of Pets and other Living Creatures. An 88 page Resource guide with useful facts and information. Some outdated policy statements and references (1955).

41-S-2400 - Our World of Living Things. A Social Studies guide originally prepared for combination grades 1 & 2. But there are many creative ideas you can adapt for any ability or interest level - particularly strong on oral and written language ideas.

41-S-4250 - Social Studies - Grade Two. The "Animals Around the World" section of this guide has many ideas that can be adapted to our programs.

41-S-3350 - Snakes, A Programmed Learning Sequence. An 88 page "programmed" book that develops background on snakes in short, single steps. Reading difficulty about 5-8th grade, but a child who is very interested in snakes will work with this book even though the reading level is hard for him.

Other Resources:

The Museum of Natural History has a vast supply of exhibits for loan to teachers. These include mounted birds, insects, reptiles, mammals, and marine specimens, mineral sets and an excellent slide set of San Diego County animals. These are available through the Educational Activities Department at the Museum every Thursday and Saturday from 10 - 4:00. These are the only days to borrow or return loans. You must do it in person as there is no delivery service. The borrower is financially responsible.

ANIMAL LANGUAGE LESSONS

Children can be easily motivated to write after seeing or holding an animal. A simple description is easy, especially if they have been led to observe details on the animal as they hold it. (Not just brown, but brown as a _____.) Awareness should be encouraged of the other senses, besides just sight.

- How did it feel?
- What did the sound remind you of?
- What did the parrot smell like?
- Also, How did it make you feel?

These observations will all give them ideas to help them when you give them a piece of paper to write on.

Verbalizing Touch

Too often, the easiest thing for our children to say is, "It feels funny." Encourage expanding vocabulary by describing how animals feel with descriptive words such as:

sharp	furry	soft	wet	cold	oily	heavy	light
feathery	dry	warm	smooth	rough	ridged	slippery	hot
damp	round	carved	scaly	flaky	mushy	rubbery	crisp

as smooth as a..... as round as a..... as soft as a.....

JUST-SO-STORIES:

Example: "The Elephant's Child" by **Rudyard Kipling** (tells how the elephant got his trunk). Read to the children and have them write their own. e.g. "How the Tortoise Got His Shell"; "Why the Tarantula Has Hair."

MYTHS

What might the Indians have told to explain the two-headed snake at the Zoo?

LISTENING TO SOLVE RIDDLES

Can you name the one I'm describing? Children describe a reptile on paper, then read the description to the class to see if they can name the reptile.

ASK CHILDREN TO LOOK AROUND THEM TO OBSERVE THE MANY TEXTURES OF THINGS

Name a texture such as rough, smooth, hairy, or fluffy and let children list everything they can see and feel that has that texture. The list can be compiled on the chalkboard and then copied on charts for future reference. Help children to find representations of different textures in paints and photographs.

Some textures to look for are:

carved	rocky	woolly
bumpy	sticky	sandy
busny	coarse	glassy
slick	fine	waxy
leathery	velvety	shaggy
furry	wrinkled	knotty
lumpy	curly	fuzzy

LET CHILDREN SCAN READING MATERIALS TO FIND WORDS DESCRIBING TEXTURE

They will find that there are many such words that help authors write about what they see and feel. Make a class chart to help in writing stories.

SELECT OBJECTS FOR DEVELOPING VOCABULARIES OF CONTRAST

From the collection in the classroom select something rough and ask a child to find an object with an opposite texture (or name a word with the opposite meaning.)

Some opposites:

rough - smooth	coarse - fine
slick - sticky	creamy - lumpy

SELECT OBJECTS FOR DEVELOPING VOCABULARIES OF COMPARISON

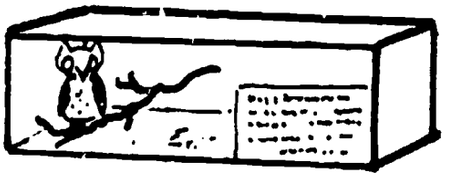
From the collection in the classroom select three or more items whose textures can be compared.

rough	rougher	roughest
smooth	smoother	smoothest
coarse	coarser	coarsest

Review the generalization that when we speak and write we give clues to the listener and reader about how many things are being compared. When we talk or write about one thing we use the root word; when two things are compared we say or write an er ending; and when three or more are compared we use an est ending.

ANIMAL LANGUAGE LESSONS

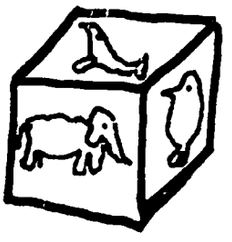
Try a "Zoo Fair"



Have the children study and model an animal in clay or other material.

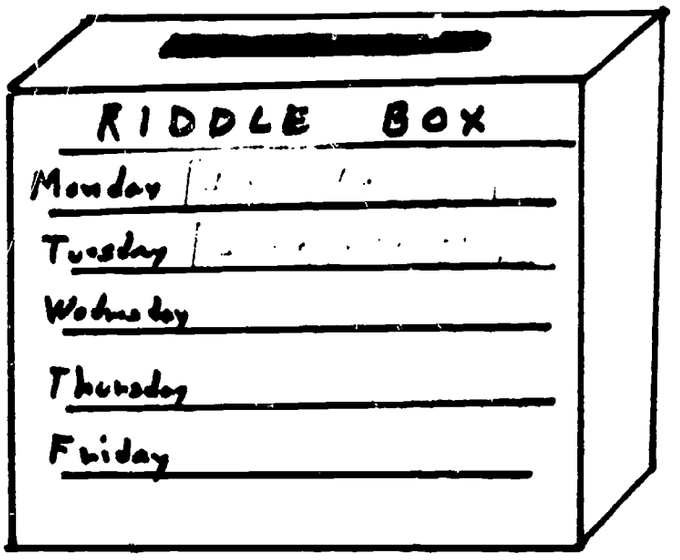
Design a naturalistic enclosure from a shoe box with plantings, etc. To enter the animal in the "Fair" the child must prepare an "exhibit sign" which may be typed on a 3 x 5 card and placed with his exhibit. Information should contain the kind of animal, where it is found, food, interesting habits, etc. For reference, he will consult the vocabulary chart, his zoo experience stories, magazines and class reference books.

Animal Dice



One group worked with a cube made of 9 inch squares of chipboard. On each face of the cube were fastened silhouettes of various animals for which oral and reading vocabulary were being taught. Children roll the cube and then match whichever picture comes up with the vocabulary word written on sentence strips. Animals in different colors can be used for color recognition and discussion about the children's recall of the true color. Another cube with different numbers of small silhouettes on each surface can be used for number recognition.

Make an Animal ABC Book from pictures cut out of old magazines.



Make an envelope or box with pockets or clips for holding five clues. Written clues are prepared that describe an animal. Each day a new clue is added to the riddle. The children make a daily written guess (or as many as they wish) putting them in the box. No one should tell his guess aloud. On the final day the box is opened to determine who has been a good scientific detective.

More sophisticated groups may date their guesses to see who worked the riddle out with the fewest clues.

Some classes may develop their own sets of clues. There is a possibility that two or more animals may fit the set of clues. Any answer that fits all five clues and can be defended should be accepted.

Some typical sets of clues might be:

- I come from Africa.
- I have stripes.
- I am very shy and rare.
- I am related to the giraffe.
- I have a long purple tongue.

- I am a mammal.
- I live in the sea.
- I have flippers.
- I have ears outside my head.
- I am not a seal.

- I live in the North.
- I live near water.
- I am a mammal.
- I am the largest American deer.
- I have large flat antlers.

VOCABULARY BUILDING

Group Work: - Each child tells an animal he knows and the teacher lists them on the board. Then have the children read the names of the animals and tell the beginning sound of each name.

Each child chooses one animal and tells three things about it. The other children will guess what it is.

Individual Work: - Draw a circle around the word which tells the answer to the question.

1. Who lives in a cage?
   bird, horse, baby, dress

2. Who builds a nest?
   sheep, cow, bird, frog

3. Who lives in a barn?
   fish, horse, children, squirrel

4. Who lives in water?
   bee, mouse, goat, fish

5. Who eats grass?
   bear, mouse, rooster, cow

6. Who lives in a house?
   children, sheep, goat, rabbit

7. Who climbs a tree?
   rabbit, squirrel, fish, cow

8. Who crows in the morning?
   duck, cat, rooster, pig

9. Who likes cheese.
   mouse, sheep, bird, dog

SUGGESTED ACTIVITIES

(1) BALANCE - Why does a kangaroo have such a large tail?

With clay, model a tailless kangaroo or dinosaur. Try to balance it in various running positions. Add a tail. How does the tail improve the balance?

(2) PRESSURE - Why does the elephant have a foot like a stump?

The answer is related to his weight. Flatten out some modeling clay on a desk. Push the end of a ruler into the clay. Then, using nearly as possible the same pressure, push a larger object, such as the bottom of a cup, or the side of a book, into the clay. In each case, how deep an indentation did you make? How could you regulate the pressure more accurately? How does this experiment relate to the size of an elephant's foot?

(3) TEMPERATURE BY THE CRICKETS - Did you know that you can tell the temperature by counting a cricket's chirps? Try this one on your friends.

Naturalists have discovered that the hotter the temperature the faster the crickets will sing away. On cold days crickets chirp much more slowly.

You'll need a watch with a second hand. Single out one cricket (from your cage or from outdoors) and for 15 seconds count each chirp he makes. Then add 38 to the total. You will find that the count you obtain is almost the same as the official temperature.

SUGGESTED ACTIVITIES - Cont'd

(4) CONDITIONING IN GOLDFISH - Goldfish, unlike earthworms, have a definite brain in the acknowledged sense of the term. If you feed the fish from one end of the aquarium regularly, and at the same time introduce another stimulus, the fish will associate the two stimuli. Flash a light each time the fish are fed, or tap on the tank. Students might take over this activity as a learning experience. It may take 3 weeks or more to condition the fish. After conditioning, the fish will rise to one end of the aquarium when the tank is tapped (or when a light is on), although food may not be given. The original stimulus, food, has been removed. The fish respond to a substitute stimulus (tapping or light) associated with the food stimulus.

We may consider the original response to food a reflex, an inborn behavior pattern. As a result of conditioning, a conditioned reflex has been established and the inborn response is now given to a substitute stimulus.

(5) STEREOSCOPIC VISION - Most primates have stereoscopic vision. Each eye sees a separate image. The two images are blended in the brain and give an impression of depth. To demonstrate your two images, hold your finger at arm's length and look at it with one eye closed. Quickly open the closed eye and close the other. Does the background or the finger seem to move? We also have stereoscopic hearing. How does this relate to a "stereo" set?

SUGGESTED BIRD ACTIVITIES

(1) Since birds use arms and hands for flying, they have been obliged to develop other organs to take their place. The beak and feet do their full share. To emphasize this point, have the children try to eat a cracker or apple slice with their arms tied behind them. Have someone demonstrate how he would put away his book and pencil. Such an experiment will demonstrate how naturally the teeth and feet come to the aid when the hands are useless.

(2) MAKE A BIRD'S NEST - How clever are you? Try to put together a nest, using materials you can find around the schoolyard, as a bird must do.

(3) Use a tape recorder to record the song or talk of the bird. (Try to eliminate long pauses.) Observe the reactions carefully as you play back to the bird his own voice.

Try playing to the bird the song of another bird.

(4) Using harmless food coloring, dye some finch food. When it is dry place it in the feeding dish. Is there a color preference? Do both birds react the same way to the same colored food. Try different colors. How could you determine whether the birds can distinguish all the colors we do?

(5) FLIGHT - Make folded paper airplanes. Have a contest outside on the schoolgrounds to see who can sail his airplane the greatest distance. Examine those airplanes which glided for the longest distances, and try to decide what features made them more successful than their competitors. Discuss adaptations in birds which provide these features. What habits or environmental factors would make these features useful?

SUGGESTED BIRD ACTIVITIES - Cont'd

(5) Take a wild bird census on the schoolground. (A visit to the lunch area after the noon bell has rung will frequently produce several kinds.)

- How do they differ? How are they similar to classroom bird?
- Note birds' preference of habitat - sparrows in bushes, blackbirds on lawn, mockingbirds on vantage point, gulls in the open.
- Set up watering or feeding station. Notice "pecking order" among wild birds. Sparrows will defer to the bush jays. Sometimes an individual will dominate.
- Try different foods to attract different birds -- bread crumbs - chick mash - fruit

Notice how wild birds fly --

- Do they go in a direct line?
- Do some have bouncy flight?
- Do some soar on rising currents?
- Notice how they use wings, tails and feet.

On a day when gulls have landed on the playground - have class observe as someone scares them:

- Notice how they run to take off.
- Compare with sparrows, jays, mockingbirds who jump into the air.

SUGGESTED BIRD ACTIVITIES - (Cont'd)

(7) Feathers are complex structures. With a hand lens (magnifying glass) the children can see how the tiny parts of the vane (flat part of the feather) hook together. When a bird's feathers get ruffled, the bird will usually preen them back into place with its beak. Pupils can simulate this by placing a feather between their fingers and then rubbing their fingers toward the base of the feather. This will separate the tiny parts of the vane. Look at the vane now with a hand lens. Then the pupils should move their fingers back toward the tip of the feather, preening the vane. The tiny parts will hook together as a smooth vane again, much like a zipper closes.

SUGGESTED ACTIVITIES

ARE YOU A SEED EATER:

Do you think that only birds eat seeds? You'd be surprised to know how many you yourself eat every single day! Here's a little game you can play with your friends.

Give each player a sheet of paper and a pencil. Then, allowing 10 minutes, ask the players to write down the names of as many seeds as they can think of, which people eat, raw or cooked. The player with the longest list of correct seeds wins. As a prize you can give the winner a package of seeds--peanuts!

Here are some seeds for the lists:

corn on the cob
all nuts
rice
cocoa
chocolate
coffee
peas
all beans
vanilla
coconut
popcorn
bread and cake (flour made from seeds of rye, wheat, oats, etc.)
all berries
mustard
pepper
tomatoes
margarine (cottonseed)
all cereals
caraway
poppy seeds
sesame seeds
dill seeds

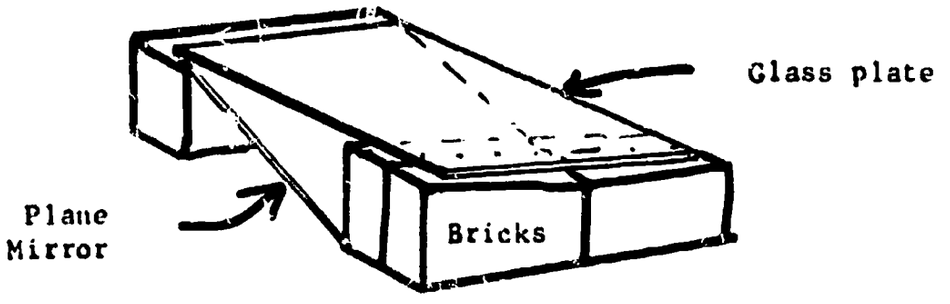
SUGGESTED REPTILE ACTIVITIES

(1) HEAT AND COLD - Reptiles cannot control their body temperature and so cannot endure extremes of heat and cold. Why does a reptile crawl under a rock? Even in the desert there is a difference between the temperature of the sun's rays and the temperature of the ground. How great is this difference? Lay a thermometer on the ground and record the temperature when the mercury stops rising. Then bury the thermometer bulb in the ground six inches deep for one minute and take a reading. How great is the difference? Record the temperature in the shade, also.

(2) INFRARED RAYS - One sense organ important to vipers in locating their prey is the detection of infrared rays. The infrared is part of the light spectrum which is invisible to the human eye. To show the presence of infrared rays, darken the schoolroom and shine a beam of sunlight into it with a mirror. Set a triangular glass prism in this beam of light. The light should break up into all the colors of the rainbow, and you can take a thermometer reading in each color. Take another reading in the space just outside the spectrum next to the red light. If you have done everything right, you will be able to record some heat in this infrared zone.

SUGGESTED REPTILE ACTIVITIES - Cont'd

(3) Movement of a snake can be effectively observed by using a simple, easily made piece of equipment. It consists of six bricks, a flat clear glass plate and a large plane mirror.



The students can place the snake (or sowbug or spider, etc.) on the glass plate and observe the animal's movements from above and below (reflected in the mirror). They may place objects in its path to see how the animal overcomes obstacles such as marbles, rulers, clay, thin layers of gravel or sand.

PLAY NATURE DETECTIVE

Take a short excursion on schoolground.

- Collect rocks, leaves, twigs, bugs, blossoms, feathers, etc.
- Bring back to classroom. Examine in detail.
- Describe favorite specimen in writing but without naming the object (e.g. a flat green thing with jagged edges and many lines on it.)
- Exchange papers - other children try to select described object or draw from the description.
- Try similar description of animal pets that have been in classroom.

DOES YOUR ANIMAL REACT TO SOUND?

- Let children devise means for testing.
  (Making loud noises from unobserved position -
  high sounds - low sounds - loud - soft, etc.)

SNAKES

Has your class ever kept a pet snake? If you touched it, you know that its skin feels hard and dry.

A snake has to crawl over sandy and rocky places. What would happen if a snake's skin were soft like yours?

Experiment - You will need some sand or sandpaper.
Rub your fingernail on some rough sand or sandpaper.
Then rub your fingertip across the sand or the sandpaper.
Which moved more easily, your fingernail or your fingertip?

A snake's skin is hard like your fingernail. How is a snake's skin good for crawling on sharp sand and rocks? Could a snake with smooth skin and no scales move quickly? It makes good protection against the rough sand.

A desert snake's skin helps in other ways. It is made of thick scales which help keep the snake from drying up in the hot sun.

ESTIMATING AND COMPARING WEIGHTS

One activity enjoyed by many classes is weighing animals. This activity can be conducted in many different ways. If you would like to include a weighing lesson in one of your visits, we will be glad to arrange a suitable group of animals.

One way in which other classes have conducted this activity is to:

(1) present an animal, have children identify it and write down its name on a form similar to the attached (if appropriate, have the children spell it for you).

(2) Pass the animal around. Let each child "heft" it, and write down his guess as to the weight. Estimating weights is a useful skill. It is good training for the senses.

(3) Have a child use the scales and weigh the animal to determine its real weight. Write down the real weight - don't let them erase their estimates, but have them compare their guesses to the real weight so that they may use this as a basis for making a judgment about the next animal.

We have a postage scale and a baby scale available for this activity. If you want broad differences in weights, we can bring you animals contrasting in weight such as a chick and a desert tortoise.

If you want to build a graph based on your findings, we can bring you animals fairly close in weight. We suggest that you record your findings only in ounces (particularly for slow groups).

On another day a graph can easily be developed from these findings. (Children should be told to cross out or disregard the estimate column.) This graph can be used as the basis for several different math and language activities. (See "Pictorial Representation" in Section II of this Handbook.)

Please do not feel limited to using the attached forms for this activity. Adapt to your own group using spacing appropriate to their abilities.

A N I M A L	E S T I M A T E (Guess)	R E A L W E I G H T

HOW DO ZOOS GET ANIMALS?

When you go to the Zoo you see kangaroos from Australia, elephants from India, giraffes from Africa, polar bears from the north and penguins from the south. How do these animals get to the Zoo? Who buys them? Who sells them? Who brings them? Who catches them? When you go to the Zoo you probably wonder.

The next time you go to the Zoo, look at the signs on the outside of the animal cages. They often tell how the animals came to be on the inside. Sometimes it will tell you who gave the animal to the Zoo or who brought it to the United States. Sometimes the signs tell the birthday of the animal if it was born in the Zoo. There are many ways animals get in Zoos.

A. Trading - the Zoo directors often send out long lists of animals. The list tells which animals they would like to trade for other animals. The Zoo director looks over the list and tries to see how he can trade animals with another Zoo. The first thing he has to find out is the cost of the animal if he bought it from an animal dealer. Some examples of trades made by Zoos are listed below.

Washington, D.C. Zoo	traded to	Baltimore, Maryland Zoo
1 young elephant from Asia		2 flat-tailed otters 2 beautiful jaguars 1 manatee (looks like a seal, but isn't)
Washington, D.C. Zoo	traded to	a Zoo in Australia
1 pygmy hippo 2 jaguars 2 gila monsters		12 kangaroos 2 frog-mouthed birds 25 other birds native to Australia

B. Buying Animals - Zoos sometimes buy animals from other Zoos and sometimes they buy from animal dealers. How much do you think a tiger or a black spider monkey would cost? How much could it cost for you to buy an elephant or a giraffe? Below is a price list that was sent out by one animal dealer. This price list was published about fifteen years ago.

Indian female elephant - up to 5' tall (two months delivery)	$3,500 each
Royal Bengal tigers (1 to 2 years of age)	2,000 each
Dwarf male hippo (gentle, good for children's Zoo)	3,500 each
Giraffes (spring delivery)	7,000 pair
Squirrel monkeys	35 each
Lion cubs (4 to 6 months old)	250 each
Kangaroos (male, tame, full grown)	400 each
Golden and black spider monkeys	35 each

HOW DO ZOOS GET ANIMALS - (Cont'd)

C. Raising Animals - When you go to the Zoo you often see baby animals in the cages with their mothers. Many babies are born or hatched every year in Zoos. Sometimes Zoos keep these animals and raise them. Sometimes they trade them to other Zoos or sell them.

Some baby animals are hard to raise. Zoo mothers sometimes do not take care of their babies and then the keepers try to raise them. When you go to the Zoo and see very young baby animals you are almost sure to see a Zoo keeper or his helper nearby, because keepers watch the mother and baby very closely to make sure that they are doing well.

D. Presenting Animals - You will be surprised at how many people give animals to the Zoo. Sometimes they give wild animals they have raised at home. Sometimes people find animals that are hurt and take them to the Zoo. When the Zoo keeper gets the animal well, he may want to keep it, or he may let it go. Sometimes other countries of the world give some of their native animals to Zoos in the United States.

E. Searching for Animals - Zoo directors often send out expeditions to other countries in search of animals. The natives who live in those countries help to catch the animals. Then the animals are put into big crates and put on ships or airplanes for the long trip to their new home. When they arrive in the United States they are loaded on trucks or trains and finally arrive at their new home in the Zoo.

ANIMALS FOR SAN DIEGO WILD ANIMAL PARK AT SAN PASQUAL

The following two pages are a price list distributed by the San Diego Zoo. An interesting activity is to give the children an imaginary budget amount and have them decide how to divide it up and purchase animals for San Pasqual. Will they buy many different kinds of animals in order to have variety in their Zoo, or will they buy pairs in order to have breeding stock?

- Use your thermal copier to make copies for the children.

- Animal "Thought Problems" based on the list are fun too.

  - How much more does a Yak cost than a lion?

  - How much would 3 Secretary birds cost?

EXOTIC ANIMALS

TO STOCK THE

SAN DIEGO WILD ANIMAL PARK AT SAN PASQUAL

(Cost delivered to the Park)

Mammals

Antelopes:

*Blackbuck	400
Impala	2,000
*White-tailed Gnu	2,400
Brindled Gnu	2,500
White-bearded Gnu	2,800
Southern Waterbuck	2,300
Angolan Springbok	2,000
Sitatunga	1,000
*Red Lechwe	2,000
*Nyala	2,700
*Cape Hartebeest	1,800
Jackson's Hartebeest	2,200
*Blesbok	2,000
*Addax	3,200
Fringe-eared Oryx	2,200
Gemsbok or So. African Oryx	2,000
*Scimitar-horned Oryx	4,000
Greater Kudu	2,400
Lesser Kudu	1,700
Topi	3,000
South African Sable	4,000
*Slender-horned Gazelle	2,400
*Persian Goitered Gazelle	2,100
Dorcas Gazelle	1,700
Roosevelt's Gazelle	2,100
*Dama Gazelle	3,200
Nilgai	1,000
East African Eland	1,800

Sheep and Goats:

Russian Saiga	2,500
*Turkomen Markhor	2,250
*Turkomen Urial	2,800

Cattle:

Indian Gaur	5,000
Yak	550
Cape Buffalo	4,000

Equines:

*Przewalski's Horse	2,800
Grant's Zebra	2,100
*Hartmann's Mountain Zebra	2,100
Grevy's Zebra	3,000
*Transcaspian Kulan	3,000
*Persian Onager	3,500

Deer:

Reeve's Muntjac	500
Indian Hog Deer	750
Indian Axis Deer	400
*Swamp Deer or Barasingha	950
*Burmese Thamin or Eld's Deer	2,800
*Pere David's Deer	2,250

Carnivores:

African Lion	350
*Tiger	2,500

Other Large Mammals:

Malayan Tapir	4,000
Giraffe	7,000
Elephant	5,000
*Black Rhinoceros	6,000

*Species in acute need of captive propagation

EXOTIC ANIMALS

TO STOCK THE

SAN DIEGO WILD ANIMAL PARK AT SAN PASQUAL

(continued)

Birds

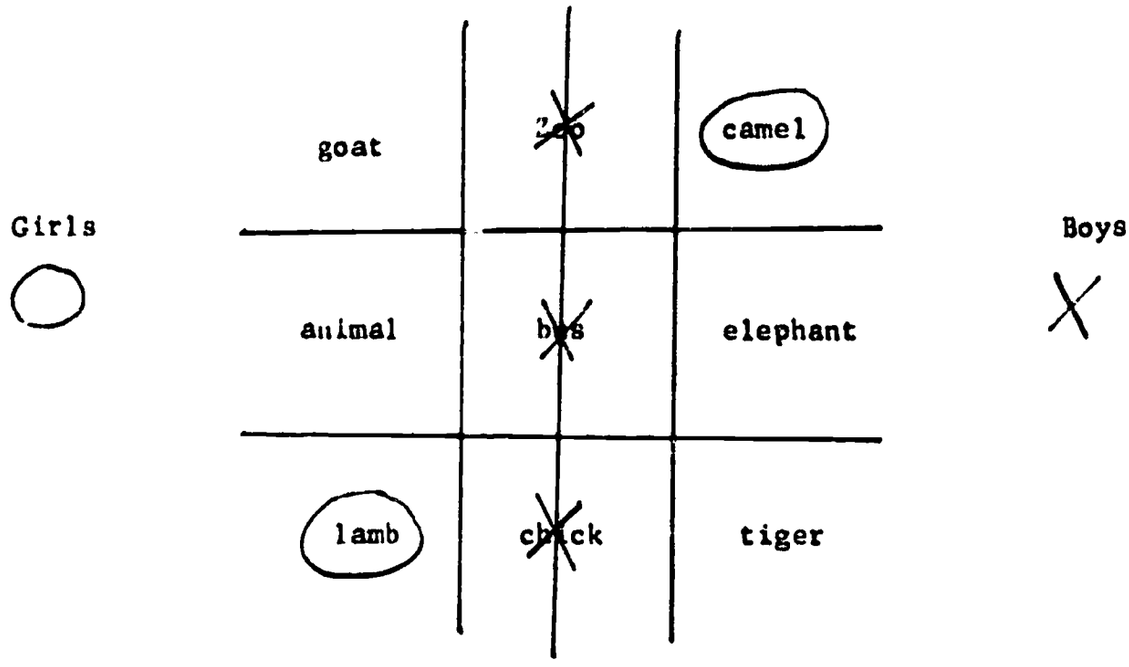
Marabou Stork	125	Ground Hornbill	350
American Jabiru Stork	125	Other Hornbills	300
Lilford's Crane	165	Sarus Crane	200
Flamingo	150	Paradise Crane	275
Demoiselle Crane	150	Kori Bustard	400
West African Crowned Crane	150	Secretary Bird	300
Saddle-billed Stork	425	Turoco	125
Black-necked Jabiru Stork	400		

For Information, Contact:

Dr. James M. Dolan, Jr.
Animal Coordinator,
San Diego Wild Animal Park
San Diego Zoological Garden
P. O. Box 551
San Diego, California 92112

Tel: (714) 234-5151, ext. 53

T I C T A C T O E - on blackboard using Animal Vocabulary



or use

SPELLING WORDS	- put a word in each square. Have 2 teams. Each team sends up one player to Say the word (only one) then put his team's mark on the word.
COLOR WORDS	- put a different color word in each square.
NEW WORDS IN READING CIRCLE	- put a new reading word in each square.
MATH PROBLEMS	- these can be put in the squares.

OBJECTIVES: Good sportsmanship

Motivate reading

Thinking ahead (to make a score)

OBSERVATION THROUGH ART TERMS

To help the student to become more aw e of the animals he will be viewing the following suggestions may be helpful.

The child will be using all his senses -- primarily the sense of sight and feeling. With the help of the teacher we can guide this observation.

Ask the child what is the OUTSTANDING CHARACTERISTIC of this animal. As the child begins to react we can add additional questions which will lead to better observation.

In art we analyze objects for 6 basic elements:

(1) SHAPE — What is the animal's shape? large, small, tall, etc.

(2) COLOR — What colors do you see? Where are the different colors found? How do they change? (Change sharply or gradually, etc.?)

(3) TEXTURE — If possible, have the child touch and feel the animal. Is it hard, soft, rough or smooth? Can you tell the texture by just looking? If so, how?

(4) PATTERN — How is the pattern created? Through color, texture, etc.

(5) LINE — What kind of lines can the child see? Do these lines divide or create textures and patterns? Are they long or short, thick or thin, light or dark?

(6) VALUE — The presence of light and dark - What is the value of the colors? What causes these dark or light areas?

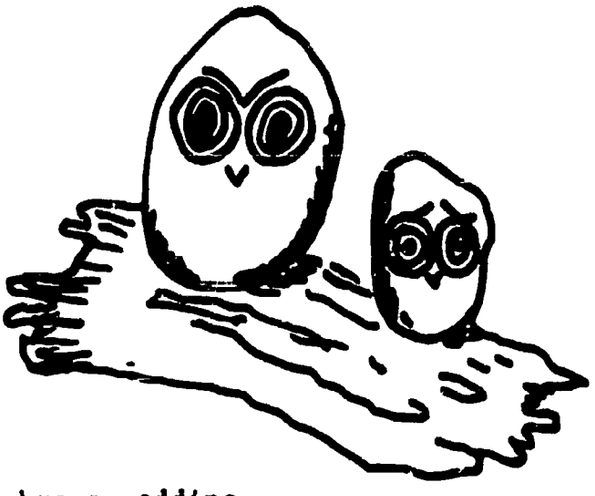
By discussing these elements as you view the characteristics of the animals, it is hoped that there will be a greater understanding of these animals. It should also provide a basis for further discussions and development of other activities.

ART

Klages, John W.. "How to Make Owl Stones," Design, Vol. 68, (January-February 1967), 18-19.

To produce sets of attractive "owl stones" you need:

1) smooth, round stones
2) pieces of driftwood or roots or distinctive parts of tree limbs
3) poster paints
4) glue
5) imagination



Procedure:

1) Clean the large, round pebbles thoroughly.
2) Outline eyes and beak with yellow poster paint.
3) Use white paint to circle the yellow eyes.
4) With black poster paint, outline the beak and eyebrows, adding pupils to the yellow eyes. White highlights may be added to the pupils to give them varied expressions.
5) Finally, mount the "owl stones" with contact or epoxy glue on driftwood, roots or tree branches, either singly or in groups.

5x8. IMCSE-USC, Los Angeles, 90007

P. E. GAMES

1. Play "Bring Home the Food" (like "Bring Home the Bacon)

   Give each child the name of an animal. Call, "birds." Children who are a type of bird run out to get the food (use base or eraser). Child who gets the food, and returns to his team before being tagged makes a point for his team. Use fish, birds, amphibians, reptiles and mammals.

2. Movement

   Study and discuss the different movements of selected animals. Have individual children demonstrate how they think each animal moves. Have small groups move in rhythm appropriate to each animal. Play the animal's rhythm on drum or tone bells.

3. Blindman's Cane

   The youngsters form a circle around "It" who is blindfolded and holds a cane or stick in his hand. They circle around until It calls "Stop!" He then points his cane toward where he thinks somebody may be standing. If he is right, that person must go up and take the end of It's cane. It then asks him to growl like a tiger or roar like a lion, or make some other animal sound, while It tries to identify him by that sound. If It guesses right, the other person takes his place. If It guesses wrong, the players circle around again and the game goes on. (NOTE: A paper bag makes an effective blindfold especially for children with a balance problem or those who need the security of being able to see a bit of the ground.)

4. Birds Fly

   Trains listening and quick response to hearing; vocabulary training. Good review for animals and birds observed. Everybody stands informally, at arm's length from one another. It tries to fool them by naming not only objects that fly, but also those that don't fly. Players must flap their arms every time a flying object is named, such as "Geese fly," "Planes fly," etc. They must NOT flap their arms when It calls "Elephants fly," "Tapirs fly," etc., even though It flaps his arms and tries to fool them into imitating him.

ANIMAL SLIDE ACTIVITIES

The ZOO PROJECT has several sets of animal slides that have been used creatively by teachers for various oral and written activities. If you would like to use a set, call the ZOO PROJECT office - 234-6194 - and ask for a set of animal slides.

Suggested Lesson Plan: (Adapt to ability and interest level.)

1. List with class some animals they saw at the Zoo.

bear	tortoise
lion	sea lion
tiger	penguin
elephant	peacock
giraffe	

2. Ask class, "What can YOU do like one of these animals? Can you make up a sentence telling what you can do that the animal can do?"

   I can _____ like a _____.

   e.g. I can growl like a bear.
   I can jump like a kangaroo.
   I can strut like a peacock. *

3. Explain "Sometimes when we write we say we act or sound like a particular animal to help listeners or readers know what we mean. Can you compare something to these animals by saying that something is as _____ as a _____?"

   e.g. as tall as a giraffe.
   as wrinkled as a tortoise.
   as sly as a fox. *

4. Show slides. Elicit from children appropriate comparisons.

   e.g. as strong as a tortoise.
   as old as a tortoise.
   as slow as a tortoise.
   as heavy as a tortoise.
   as silent as a tortoise.

   or The tortoise is as _____ as a _____.

   fast as a snail
   gray as a stormy sky
   wrinkled as a prune

   - Use several slides as above, drawing responses from the children.

- Colors are particularly easy for them to do.

e.g. The swan is as white as milk.
The bear was as black as tar.
The camel was coffee colored. *

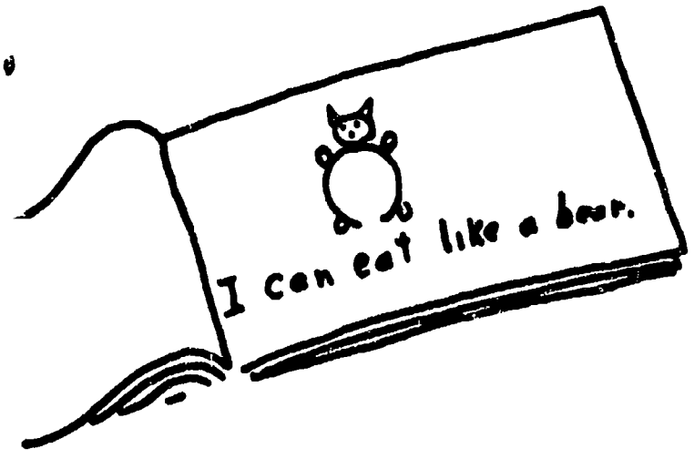
5. Primary or less able classes may enjoy illustrating and completing one or two sheets similar to the attached sheets. More able classes may enjoy writing a more involved description of "an animal I saw in the jungle" or the "animal that escaped from the Zoo."

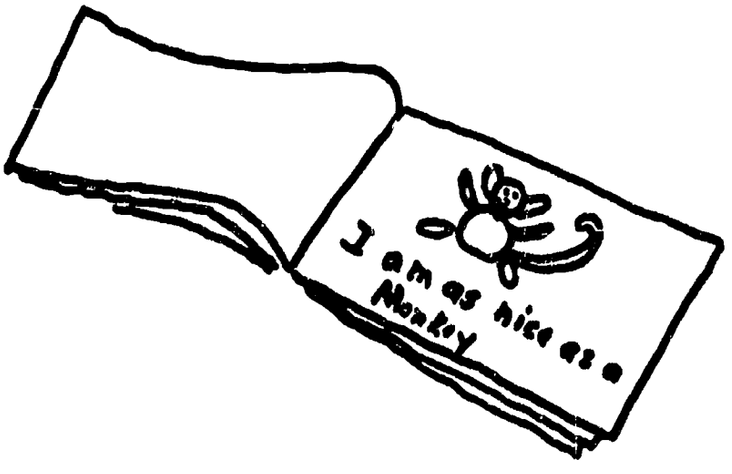
* At this point with younger or less able children, you may want to stop and have them illustrate an animal with cutout or drawing.

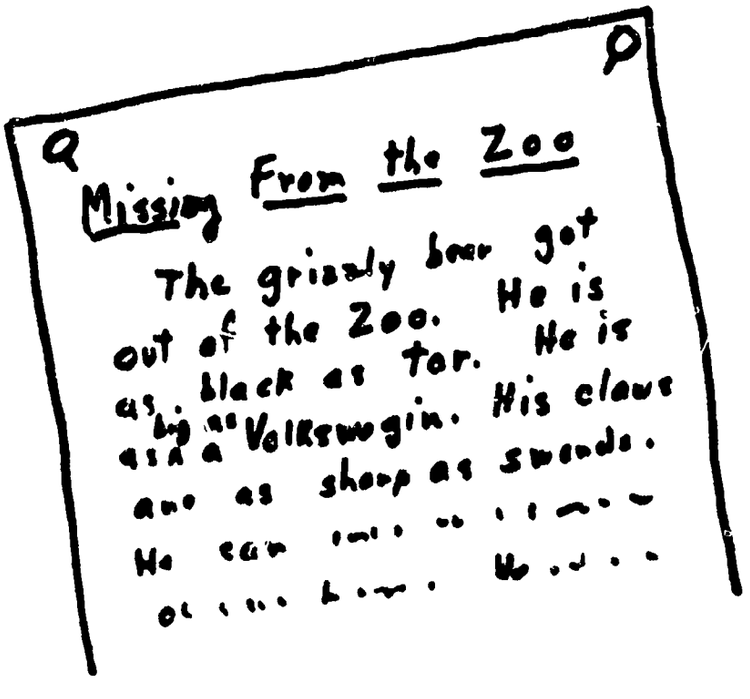
Have them write or dictate an appropriate comparison at the bottom.

Bind into a book. They make good readers.

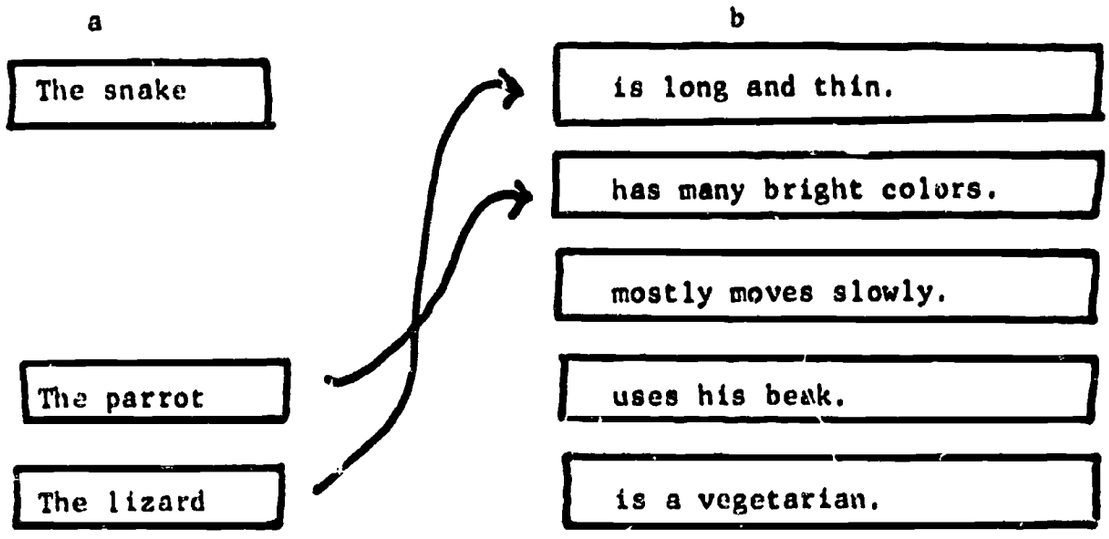
Save the rest of lesson for another day.





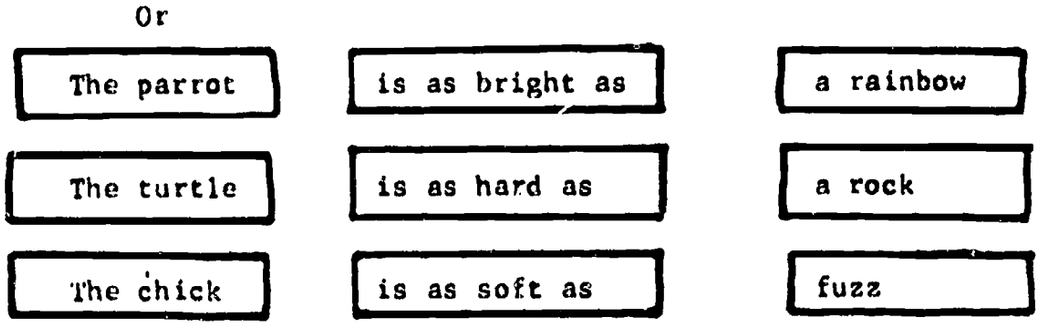


Some groups enjoy using the slides to help in making a set of tag strips to use in a pocket chart.



The b parts can be used with more than one animal. The children decide which.

Or



With a long list, many can be interchanged.

ANIMAL SLIDE ACTIVITIES - ZOO SIGN SET

These slides may be used in any sequence. They are examples of signs that the children may see while at the Zoo. They may be used for reading, oral language development, reasoning, drawing inferences, recall and review.

Some of the signs are warning signs; some are informational, some are directional. Children should be able to think of answers to three questions about each slide:

- WHAT does it say?
- WHERE would it be in the Zoo?
- WHY would the Zoo need a sign like this?

Classes might be interested in viewing the slides again to look for details that would enable them to identify the exact sign when they get to the Zoo.

Some classes might want to help the Zoo by finding places in the Zoo that need signs and designing a sign with correct spelling and neat lettering for that spot.

POSSIBLE LANGUAGE LESSON USING ANIMAL SLIDES

(Adapt to fit your group)

CINQUAIN - A cinquain is a kind of dwarf poem similar to the Japanese tanka and haiku. It uses the following pattern:

1st line.....one word giving title
2nd line.....two words describing the title
3rd line.....three words expressing an action
4th line.....four words expressing a feeling
5th line.....another word for the title

SAMPLE

Cinquains
Five lines
Oh what fun!
Telling about our thoughts
Poems

Turtle
Is wet
Crawls so slow
Has fun with me
Pet

George
Nice snake
Crawls up sleeves
Smooth nice and warm
Friend

Tortoise
Old, wrinkled
Moves so slowly
Has wise old memories
Ancient

Obtain a set of animal slides from Zoo Project office.

1. Select a slide to show class in semi-dark room.

   Discuss: - What is it?
   - What words tell about it?
   - What does it do?
   - How does it make you feel?

2. Read a Cinquain about the slide you have selected.

   e.g. Elephant
   Giant baby
   Loves eating carrots
   Mischief making, naughty girl
   Carol

   Discuss the pattern. List the rules. Try writing a group cinquain on the board for the same slide. Even primary EMR's have been successful with this.

3. Show other slides. Elicit from children cinquain ideas that might be used as you show them. Allow children to select an animal and distribute slides after cautioning children about fingerprints. "Handle only the edges" - explain why - help individuals with cinquains about their selected animals.

4. Practice reading own cinquains and those of others.

   Put on slide and cinquain show for parents and/or other classes. Be sure and explain cinquains and their pattern to your audience before you start. Some classes are more comfortable using a tape recorder to tape their poems before they start. Some classes prefer to read them in person using a second filmstrip projector with no slides in it as a spot light on the reader as he stands to one side to read his cinquain while the animal picture is being shown by the other projector.

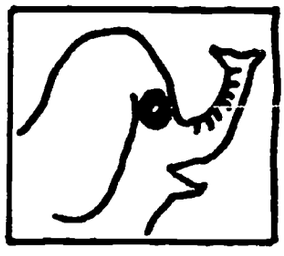
ANIMAL SLIDE ACTIVITIES - SITUATION PICTURES

After doing some of the other animal slide activities, you might want to try our "Situation Picture" set. These are pictures of animals in unusual situations. This lesson is particularly good for developing a program for presentation to parents or another group. Call the ZOO PROJECT office - 234-6194 - and ask for the SITUATION PICTURE set.

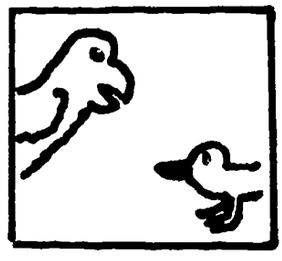
SUGGESTED LESSON PLAN:

1. In semi-dark room view animal slides.
   Discuss descriptive words, e.g. - fat and jolly hippo
   - fluffy, saucy, baby swan (cygnet)
   - milk white polar bear

2. Discuss situations animals are in.
   Imagine that the animals can think, act and talk like people. Think what the speaker in each slide might be saying. List on board several comments for a couple of the pictures. Discuss why one comment is more clever than another.



We'd rather fight than switch!



I said, "Polly wants a cracker, not a quacker."

3. Distribute slides to children after cautioning them about fingerprints. "Handle only by the edges." Explain why. Help individuals with spelling, etc. Practic reading own situation captions and those of others.

4. Put on slide show for parents and/or other classes. Some classes are more comfortable using a tape recorder to tape their captions before they start. Some classes prefer to read them in person using a second projector with no slides in it as a spot light on the reader as he stands to one side to read his caption while the animal picture is being shown by the other projector.

20 QUESTIONS - Provides Identification Skills and Vocabulary Development

This game can be used with many variations at all levels. An animal is selected as a subject and then the individual or team tries to guess what it is by asking questions that can be answered with YES or NO. Subject may be decided upon while guesser is out of the room, or the whole class may be guessers while "It" is the only one who knows the subject. (In this case subject had better be written down to avoid mid-game changes in subject.)

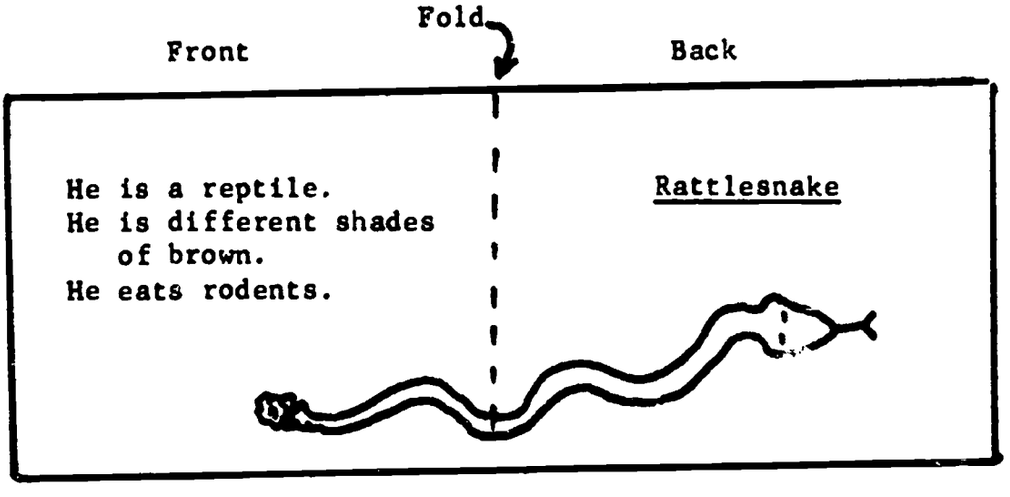
Primary classes may enjoy having a picture pinned on their backs and try to identify this by asking questions. Or an adjustable headband of tag strip may be made. This is placed on a child's head and a picture or silhouette of a zoo animal is paper clipped to it. The child faces the group and asks questions such as, "Is it a bird?" or "Does it eat meat?" to help him figure out what the animal is. Questions should be limited to YES or NO questions for older groups.

CLASS PLAY

Develop a "radio" or tape recorder play. Introduce a misconception about animals and in turn clarify it. This promotes oral reading and fosters creativity. Use announcers, performers, sound effects man, etc.. One successful subject might be "The Misunderstood Snake."

TAIL RIDDLES

Have children make up clues about an animal and have them draw the animal's tail on the front side of the paper. On the back side of the paper have the children draw the rest of the animal's body.



DISCUSSION TOPICS FOR USE WITH AN ANIMAL EXPERIENCE

-- What are some problems that animals have?

-- What might be different if _____(some animal) did not exist?

-- Do animals solve their problems as we do?

-- Compare animal problems with human ones - How are we alike?

Use Animal skills as a lead for comparison to Man

-- Include reasons for man's superiority - Include places where the opposite is true and what makes them necessary to the animal.

Investigate common beliefs not necessarily true about animals, e.g.

-- Ostrich with its head buried.

-- Gorilla beating chest.

Why are animals important to you?

-- Pets

-- Interesting because real and wholesome

-- Alive and vulnerable, as each of us is

-- Creature of God, as we are

-- Useful purpose on our Earth: scavengers, food supply, insect eaters, food makers, workers

What does our Zoo contribute to the community?

-- Relaxation

-- Beauty

-- Fun - Pleasure

-- Chance for family togetherness

-- Desire to care (animals and children)

-- Tourist attraction

-- Jobs

-- Shelter for animals

-- Information for care of animals

-- Inspiration for learning

-- Awareness of importance of animals and plants in our lives

-- Conservation contribution

WHY WE SHOULD WASH OUR HANDS AFTER HANDLING ANIMALS

Materials:

(1) Two unpeeled potatoes

(2) Knife or potato peeler

(3) Two sterilized jars with sealing tops. (Automatic dishwasher does a satisfactory job of sterilizing jars.)

Procedure:

(1) Have 2 children volunteer to help with the experiment

(2) Have one wash his hands as clean as possible

(3) Have other child handle animal (box turtle, etc.)

(4) Have both children peel a potato and place them in the sterile jars

(5) Label the jars with "Hands washed" or "Hands not washed" as the case may be

(6) Place the jars on science table and observe from day to day if any changes occur

Results:

- "Hands not washed" should show mold growth

- If "Hands washed" were well washed, there should be little growth

Conclusions:

Germs grow in dirt. The animals probably aren't as clean as we would like them to be.

It would be well to wash our hands after handling animals, especially before eating to get rid of these germs.

Pictorial Representation (Graphing)

1. General Remarks

This unit would be an application of some learnings and procedures developed in the classroom and then practiced at the Zoo.

Graphs are a useful tool for children who have difficulty in conceptualizing the abstract ideas of math. Graphing ideas they are working with gives them a concrete manipulative device with which to work, and enables them to see relationships in the numbers they are using.

During this activity each child could have the experience of

- collection of data
- decision of the method of pictorial representation
- interpretation of the chart
- computation of his own choice

Class Objectives

(1) Presented with a real life situation involving numbers of animals or other real things, the student:

- will be able to observe the real life situation and collect data for later pictorial representation.
- will be able to match the real life objects to pictorial representations of the objects on a one-to-one basis.
- will be able to define his own categories for representation.
- will be able to select his own ways of keeping a tally.
- will be able to select his own way of recording his findings.

(2) Having developed a pictorial representation of his data, the student:

- will be able to identify relationships among data items on his graph (equal to, greater than, less than, more than, fewer than)
- will produce a "white paper" describing his graph.
- will be able to state generalizations from his pictorial representation.
- will be able to construct situation problems based on his graph.
- will be able to solve situation problems based on his graph or another student's graph.

(3) Presented with Zoo or animal related math materials, the student will be motivated to solve the problems.

(4) Having been presented with number situations, the student will be abie to relate numerals to the situation and solve problems concerning the situations.

2. Preparation

Prior to the Zoo experience, the class would have developed the process of pictorial representation through six stages:

(1) Comparison of two columns of real things
e.g. dolls (or blocks and beads) representing boys and girls in the class

(2) Increase data (several columns)
e.g. months x birthdays in the month

(3) Permanent representation of above (A picture of the object)

(4) Representation by separate squares fastened to paper
e.g. number of pets and kinds owned by children in the class

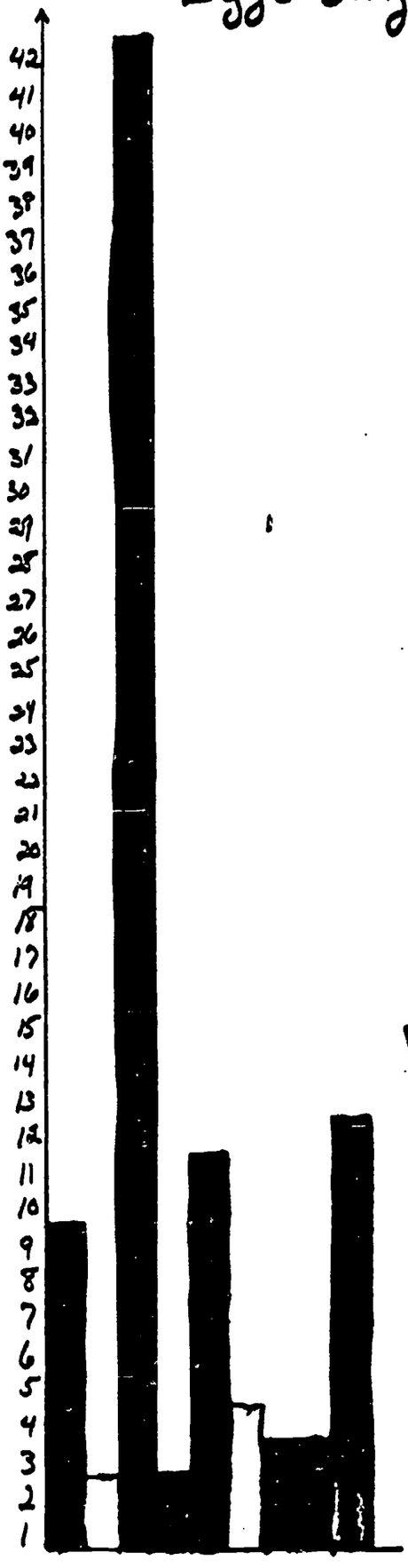
(5) Use of squared paper - squares colored in
e.g. school lunch (hot, sack, go home, girls, boys)

(6) Use of strips or bar lines
e.g. days of the month x noon temperature

As the process is developed with the class, each child would learn, after accumulating the data to develop his graph - study the patterns and relationships shown by it - generalize the interpretive "White Paper" comments and prepare a question card based on his pictorial representation with the solutions.

Eggs Being Incubated on Tuesday January 21, 1969

Karen H.



Kinds of Eggs

Graphs communicate a storehouse of details which can be discussed in words. This communication needs to be interpreted. Children should always have discussions on them and produce a "White Paper" (short interpretive comments) to accompany the Graph.

Eggs in The Incubator

Karen. H.

There are many eggs being incubated

There were 88 eggs altogether.
$9+42+2+2+11+4+3+3+12=88$

Without the Japanese Rice Quail Eggs there were 46 eggs.
$9+2+2+11+4+3+3+12=46$

There were more Japanese Rice Quail Eggs than any other kind.

If you put all the other eggs together there would be more than the Japanese Rice Quail eggs. $46 > 42$

There were as many Bare Throated Francolin eggs as Ostrich eggs. $2=2$

The Zoo must have many Japanese Rice Quail or else they lay many eggs.

The Rhea and the Goose had the same number of eggs.

Emus and Japanese Rice Quail and Chilean Tinamou and Swinhoe Pheasant had the most eggs.

The Swinhoe Pheasant had 4 times as many eggs as the Rhea or Goose. $3\times4=12$

Both the Emu and Ostrich eggs were big, but there were 7 more Emu than Ostrich eggs. $9-2=7$. Maybe Ostriches don't lay eggs at this time.

The Largest number of eggs is 40 more than the smallest number of eggs. $42-2=40$

There were 9 kinds of eggs being incubated

My Questions — Karen H.

1- Find the total number of eggs.

2- What kind of eggs had twice as many as Ostrich eggs?

3- How many had less than 5 eggs?

4- How many more Japanese Rice Quail eggs were there than the next largest?

- Child takes the question card and graph made by another child and uses the graph to answer the questions.

- Answers are on the back of the card or on a separate card depending on your class.

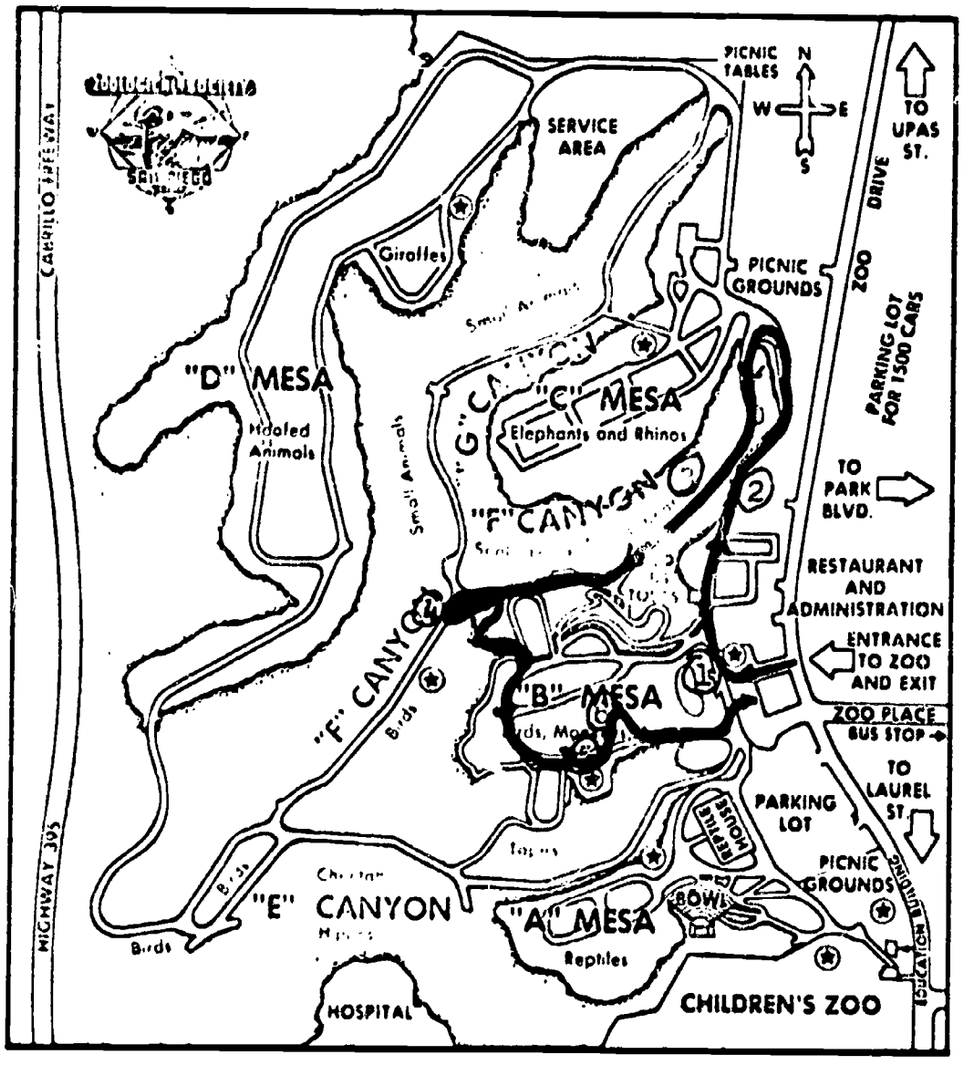
3. Teacher Background

The teacher background for this particular unit would be minimal, as the lesson is based on what the children see during the Zoo experience. If the children decide to collect data on numbers of different species in an exhibit, the teacher should have already become familiar with the exhibit and be prepared to help the children differentiate between the "kinds" of animals.

4. Itinerary

An unlimited number of subjects for charts present themselves in the Zoo environment. The itinerary here was selected to include active animals or multi-specie exhibits that would provide data during a one-day 40-minute Zoo experience.

Classes with the opportunity for several Zoo visits would be enabled to develop many different and richer kinds of data.



Stops on the itinerary are listed along with possible topics the children might develop for collecting data at that stop.

Stop 1 - Dryer Flamingo Lagoon

Possible Topics:

Numbers of different kinds of birds

Activities of birds during a timed period
- number preening
- number eating
- number sleeping, etc.

Standing on one leg - two legs, etc.

Colors of birds in the exhibit

Stop 2 - Penguin Pavillion

Possible Topics:

Numbers of different kinds of penguins

Activities of the penguins
- number in water
- number standing under spray
- number standing
- number lying down
- number sunning

Stop 3 - Bear Canyon

Possible Topics:

Varieties of bears x number of specimens on exhibit

Activities of bears
- number wrestling
- number pacing
- number sleeping
- number performing for visitors
- number swimming
- number sitting, etc.

Response of bears
- respond to class
- respond to class and perform
- ignore class
- respond to bus drivers

Stop 4 - Seal Pool

Possible Topics:

Varieties of animals in enclosure

Activities of the animals
- number swimming
- number barking
- number sunning
- number climbing on rocks
- number sleeping
- number diving, playing, etc.

Number of swimming circuits of individual seals in timed period

Length of stay under water of individual seals in timed period

Swimming habits
- rolling
- up and down
- formation swimming

Stop 5 - Spider Monkey Cage

Possible Topics:

Activities of the animals
- number swinging
- number preening
- number sunning
- number begging
- number fighting

Shades of coloring

Mothers with young

Stop 6 - Brooder-Incubator Exhibit

Possible Topics:

Varieties of chicks x numbers

Varieties of eggs x size

Varieties of eggs x numbers

Varieties of eggs x incubation time

Colors of eggs

5. Continued Follow-up Activities and Bibliography

The discussion of data, and development of the "White Paper" tend to raise questions about why the data might lead to particular conclusions. This in turn may lead to motivation for research to determine why the data resulted as it did - Why the animals acted or look as they do.

The following bibliography includes book and A.V. material of high interest but low difficulty material which could be used by E.H. children in research on the animals in exhibits on this Itinerary. Reference numbers are for the instructional aids center of the San Diego City Schools.

Stop 1:

598.2 Cruickshank, Helen Gere. Wonders of the bird world; with photographs by Allan D. Cruickshank. Dodd, 1956.

598.2 & Sci (P) Darby, Gene. What is a bird; illus. by Lucy and John Hawkinson. Benefic, 1960

598.2 & Sci (I) Hussong, Clara. Golden picture book of birds; illus. by Marjorie Hartwell. Golden, 1959.

598.2 & Sci (U) Jerr, William A. The adventure book of birds; illus. by Charlotte Howard. Capitol, 1957.

598.2 & Sci (I) Webb, Addison. Birds in their homes; illus. by Sabra Mallett Kimball. Garden City Books, 1947.

598.2 & Sci (U) Earle, Olive Lydia. Birds and their nests. Morrow, 1952.

MPF Water birds (Col, 10 min) Disney, 1957.

FS Water birds (48 frames)

SP-s Worlds of birds (Col, 1 Red)

Stop 2: (See also stop 2)

598 Johnston, Johanna. Penguin's way: illus by Leonard Weisgard. Doubleday, 1962.

598 Lauber, Patricia. Junior science book of penguins. Garrard, 1963.

598.2 Lauber, Patricia. Penguins on parade; illus. by Douglas Howland. Coward, 1958

MPF Adelie penguins (Col, 27 min) McGraw, 195

SP-s Penguins (8)

Stop 3:

599 Beebe, Burdetta Faye. American Bears; illus. by James Ralph Johnson. McKay, 1965.

599 Whitehead, Robert. The first book of bears; illus. by James Treason. Watts, 1966.

599 & Sci (I) Wood, Dorothy. The bear family; illus. by Harriett. Harvey, 1966.

MPF Bear country. (Col, 33 min) Disney, 1952

FS Black bear (45 Fr) (599.74)

FS Polar bear (33 Fr) (599.74)

MPF Bear & its relatives (15 min)

MPF White wilderness Part I: The Arctic region and its polar bears (Col, 28 Min Disney, 1958.

Stop 4:

599 & Sci (I) Darling, Louis. Seals and walruses. Morrow, 1955.

599 & CL 3 Goudey, Alice E. Here come the seals! illus by Garry MacKensie. Scribner, 1957.

MPF Seal Island (Col, 27 min) Disney, 1948.

Stop 5:

599 Berrill, Jacquelyn. Wonders of the monkey world; monkeys and apes in the wild. Dodd, 1967.

599 Morriss, Desmond. Apes and monkeys; illus. by Barry Driscoll. McGraw, 1965.

599 & Sci (U) Zim, Herbert Spencer. Monkeys; illus. by Gardall D. Christensen. Morrow, 1955.

MPF Rikki. The baby monkey. (11 min) EBF, 1949.

FS Monkeys of the tropical forests. (46 Fr) 599.8

Stop 6: (See also Stop 1)

591 Georgiou, Constantine. Wait and see; illus. by Janet and Alex D'Amato. Harvey, 1962.

591 Selsam, Millicent Ellis. Egg to chick; illus. by Frances Wells. International, 1946.

598.2 & Sci (U) Bosiger, E. A bird is born, photographs by E. Hosking. Sterling, 1960.

MPF Development of organs. (30 min) McGraw, 1961.

MPF Development of the chick embryo. (Col. 5 min) Coronet, 1953.

FS What will hatch from that egg. (32 Fr) 636.5

FS Embryo development of the chick. (30 Fr Manual) 636.5

FS Eggs that produce chicks. (33 Fr) 636.5

ESTIMATING

".....I told them that most men and women measure between five and six feet tall, with men tending to be closer to six feet, women closer to five. I asked, "If a giraffe's head reaches eighteen feet from the ground how many men would I have to stand on to kiss a lady giraffe?" I added that since a kangaroo can jump as high as 20 feet, it could easily kiss a giraffe with one powerful leap. To further sharpen their conception of distances in feet, we took our rulers outside to measure the length of our steps. Next I suggested that we step off and mark the length of a blue whale, about 100 feet. I also asked that when they came to school the next day, they be able to tell how many times longer than their daddy's automobiles a blue whale would be, and whether their houses were longer or shorter than one. For more practice, I had pupils estimate the length and width of the room, the chalkboard, the cabinets, and so on.

To help them learn to sense the relationship of different weights, we weighed all their textbooks. The speller was the closest we had to a pound, so we each hefted one, comparing its weight with that of other objects. To give the children some idea of the weight of a ton, I selected twenty-four of the children to stand at the front of the room. Since they averaged eighty-four pounds, I pointed out that their combined weights equaled 2,000 pounds or a ton (though I cautioned them that the weights of other groups of twenty-four persons would not necessarily make a ton)....Each individual.....was also to figure how many times his own weight would equal a ton, and then, after finding out how much an elephant weighs, how many of him would equal an elephant....."

Evans, Norman. "Estimating." INSTRUCTOR, p. 36. May 1971.

BUILD A COLLAGE OF COLORFUL ANIMAL PICTURES

(taken from ZooNooz, National Geographic, etc.)

Then assign a sheet such as:

I. How many animals can you name?

II. How many animals' names can you write?
Use a "picture word" (descriptive word) (adjective)
to describe the animal.

Write a word that describes what the animal can do --
action word -- (verb)

	Name	Picture Word	Action Word
1.	lion	hairy	growl
2.			
3.			
4.			

III. Take your words and make sentences.
Use a, the, and, and other words with the three.

1. The hairy lion can growl.

2.

IV. Add ing and ed to action words when needed.

1. The growling lion was hairy.

2.

V. Other Collage Activities:

Name the reptiles in the picture.
How many African animals can you name? Write their names.
Name the animals that hibernate.
How many North American animals can you name?

Are there any pictures alike in the collage? Name the anima..
How many birds can you find?
How many domestic animals can you find?
How many more domestic animals than birds are there?

This is a sample of many other questions that could be asked.

DID YOU KNOW?????

Animals have many and varied uses for their tails. We have begun a list of these uses and you can probably think of many more to add.

The squirrel uses its tail for a parachute.
Kittens use their tails for toys.
The fish uses its tail for locomotion.
Deer use their tails as alarm signals.
The spider monkey (and many other New World monkeys) as an extra arm.
The peacock uses his tail in courtship.
The beaver uses its tail for communication. He slaps the water to create a loud resounding noise.
The woodpecker uses his tail as a prop, while pecking along a tree trunk.
Many lizards use their tails as an escape mechanism. They simply drop their tails when caught and thus escape.
Crocodilians use their powerful tails for offensive maneuvers in overcoming their prey and capturing food.
Foxes use their tails as nose warmers, to warm the air they breathe while sleeping.
The giraffe (and many other animals) uses his tail as a fly swatter.
The kangaroo has a crutch. He can support his body weight on his tail alone.
The armadillo uses his tail as armor. When attacked, he curls up into an armored ball.
The mot mot, a jay-size bird found from Mexico to northern Argentina, uses his tail in signaling and communication.

* * * * * * * * * * * * * * *

ANIMAL POETRY

Some classes have reported success with poems and simple rhymes:

Have you tried "Nashisms"?

If you get a call from a panther
-- Don't anther.

If you get a call from a gorilla
-- He'll kill ya.

Even very young or slow classes enjoy making simple animal rhymes such as:

Catch a fox --
and put him in a box.

Catch a toad --
and chase him down the road.

See the 1971 edition of Impressions for some good examples of animal poetry written by children at all elementary levels. Also see City Schools Guide (Stock No. 41-I-2050) Using Impressions In The Classroom. (Zoo Project office (234-6194) has copies for teachers not in San Diego City School.)

ALPHABET TELEGRAMS

- Discuss what telegrams are.
- Under what circumstances they would be sent.
- Teacher gives any sequence of ten letters (including blends, e.c. if appropriate).
- Students write down the ten letters one under the other.
- In a set period of time they must use each letter as the first letter in each word of a telegram message.
- Example: t-s-a-k-z-l-ch-p-w-r - could become -

  Tiger saw anteater kiss zebra! Little chick purchasing wedding ring. or Turtle soup and kind zoo ladies change places when ready.

- Let students share their efforts aloud.

ANIMAL ALPHABET

Try "Animal Alphabet" sentences in which every word begins with the same letter.

Annie alligator ate apples.
BooBoo bear begs bread.
Candy copy cat cries.
Donald dog digs dirt.
etc.

Have children illustrate the sentences.

Then use the pictures and sentences for a matching activity.

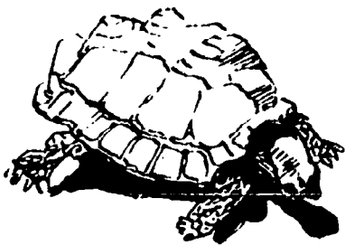
NEVER

For simple sentence completion activities. How about a "Never" book. At the top of each page of a composition book have lead-in sentences such as

Kittens never_____
Ants can never_____
I never saw a fish_____
You will never see an elephant_____
I hope I never hear a monkey_____
I don't think you will ever see a giraffe_____

Have children copy and complete with different ideas and sign their names.

S E C T I O N III



"IN SCHOOL" ACTIVITY SHEETS

- This section contains Master Copies of student pages. These pages may be used in a thermal copier to make duplicating masters.

- Teacher instructions or "Word Bank" sections on some of the following pages may not be appropriate for your class. If you wish to eliminate these, just mask them with a slip of white paper before running them through the thermal copier.

- Although this section is planned mainly for the "In School" program, there are many activities here that would be enjoyed by children in the "In Zoo" program. Feel free to use any ideas, no matter what program your class is in.

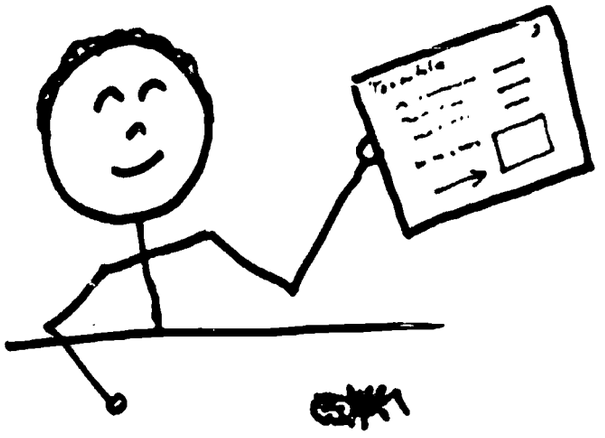
- Feel free to make your own pages or adapt any ideas if these pages would not be appropriate for your class.

ANIMAL ACTIVITY CARDS

- These materials have been designed for individual pupil study of some animals in the "In School" program of the ZOO PROJECT FOR HANDICAPPED CHILDREN. When the appropriate animal arrives in your room:

    - Take the master sheet from your handbook and make a duplicating master using a thermal copier.
    - Distribute copies to the children along with a paper clip and have them cut them apart to make six study cards about that week's animal. You may want to have them put their names on the back of each one.
    - Sometime during the week allow the child to take his cards and sit down in front of the cage, or allow the child to take the animal to his seat and by close, private study see how many cards, or how much of a card he can do on his own.

- Vocabulary for the cards may have to be taught beforehand.
- For some children, you may want to assign only one card at a time, as a whole set of 6 may be too formidable.
- Emphasize reading the whole card, not just filling in answers. All answers on the card can be found by studying the animal except for some of the map questions.
- Do not stress correct answers on the activity cards. Correctness is not as important as the reading and studying and deciding on an answer. What the child thought he saw should be sufficient. The purpose of the card is to give practice in independent work and private successful experiences.



I'm on tarantula card number 3! How do you spell black?

TORTOISE # 1

The Desert Tortoise is a good digger. Look at his feet.

1. Which are made for digging?
   His back feet His front feet
2. How many toes are on the front foot? _____
3. How many toes are on the back foot? _____
4. How many toes does he have altogether? _____

TORTOISE # 2

The tortoise has a shell to protect him from his enemies.

The shell is made of many plates.

1. How many plates are in the middle of the shell? _____
2. How many plates are around the edge? _____
3. How many parts make up the bottom of his shell? _____

TORTOISE # 3

The bottom shell on a female desert tortoise is flat.

The bottom shell on a male desert tortoise is curved in.

1. Your tortoise is probably a

   Male Female

Study the front part of the bottom shell.

Study the place where the bottom and top shell come together.

TORTOISE # 4

Tortoises live longer than most other animals. One lived for over 152 years.

You cannot tell how old a tortoise is by counting the rings on his back.

When tortoises are young their shells are soft. The shell does not get hard until the tortoise is five or six years old.

1. Your tortoise is probably

   older than six years ____

   younger than six years ____

TORTOISE # 5

1. Look in under the shell. Is the tortoise's skin the same all over?

   YES NO

2. How long do you think his neck is?

   _____ inches

3. How long do you think his tail is?

   _____ inches

4. Does he have any teeth?

   YES NO

TORTOISE # 6

1. Does your tortoise have teeth to help him chew his food?

   YES NO

On the desert, tortoises eat grass and flowers and tender parts of plants.

They can go for months without food or water. When food and water are available they fill themselves.

2. Circle the foods you have seen your tortoise eat:

   lettuce grapes tomato
   apple grass water

BOX TURTLE 1.

Box turtles get their name because they can close up like a box. Turn your box turtle over. Can you see the place where the shell bends? DO NOT HURT THE TURTLE by pushing on it.

Sometimes box turtles are too fat to close their shells.

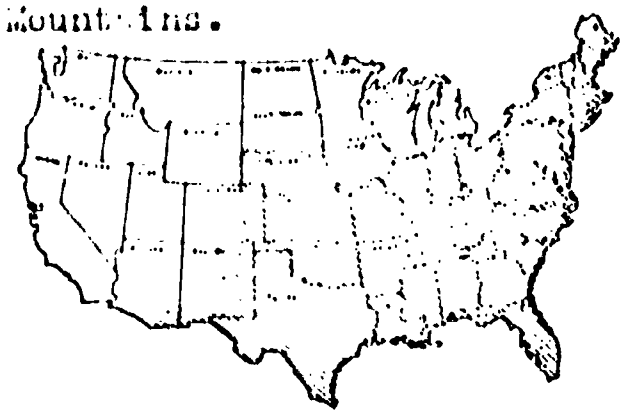
1. Is your box turtle too fat?

____

BOX TURTLE 2.

Box Turtles come from the U. S.

They are found east of the Rocky Mountains.



Your box turtle came from Texas.

1. If you know where Texas is, make an X on the map.

BOX TURTLE 3.

The shell on your turtle is made of many plates.

1. How many large plates are in the center of the shell? ______________________
2. How many plates are around the edge? ______________________
3. How many parts make up the bottom of his shell?

____

BOX TURTLE 4.

Sometimes male box turtles have pink or bright red eyes.

1. What color are the eyes of your box turtle?

____

2. Your box turtle is probably a (circle one)

Male Female

BOX TURTLE 5.

In the wild, box turtles eat [illegible], mushrooms, earthworms, [illegible] plants.

[illegible] feed [illegible], [illegible], melons, bananas, [illegible]es.

[illegible] you have seen your turtle eat.

lettuce raw meat grapes

melon banana tomato

BOX TURTLE 6.

Study the feet of your box turtle.

1. Are they made to help him swim? ______________________
2. How many toes are on the front feet? ______________________
3. How many toes are on the back feet? ______________________
4. How many toes does he have altogether? ______________________

TOAD 1.

1. Your toad is colored so that it looks like the soil. What colors do you see on it?

_____ _____

_____ _____

2. Does he have warts on his back?
(circle one) YES NO

3. Does he have warts on his belly?
YES NO

4. What color is his belly?

_____

TOAD 2.

Your toad is a good jumper. He has powerful legs.

1. How many toes are on his front feet? _____

2. How many toes are on his back feet? _____

3. Are both front and back feet webbed? _____

4. Which way do the fingers of the hands point when the toad is sitting down?
(circle one) IN OUT

TOAD YOU WILL NEED 2 or 3 MEALWORMS or an EARTHWORM or a CRICKET 3.

Toads usually hunt at night but your toad will eat if you put something that moves in front of him. WATCH HIM EAT.

(circle one)

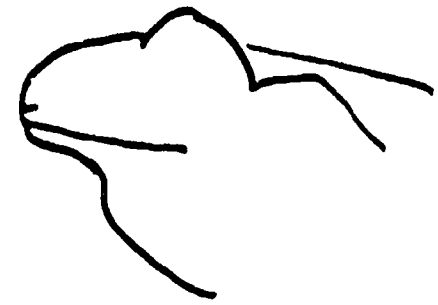
1. Does he have teeth? YES NO
2. How does it swallow a big earthworm? Head first / Tail first
3. Where is the tongue attached? Back of mouth / Front of mouth
4. Did he use his hands to help him yeat? YES NO
5. Did he blink his eyes? YES NO

TOAD 4.

1. Draw the eye.
2. Find the ear. Draw it on your picture.
3. Find the nose. Draw it on your picture.

The big wart behind the ear is a gland for making a poison that smells bad to the toad's enemies. Find it.

Nose Ear



Mouth

Eye Poison gland

4. Draw a line from each word to the right place on your picture.

TOAD 5.

The Toad is a "cold blooded" animal.

1. How does he feel to your hand? warm / cool

Your toad does not drink with his mouth. It takes in water through its skin.

2. Where would it be found? In dry places / In wet places

Your toad has no ribs to help him breathe. He must swallow his air.

3. Can you see his throat move when he swallows his air? YES NO
4. How does he breathe? Faster than you do / Slower than you do

TOAD 6.

A toad is a good digger. Watch him in his tank. You may see him dig.

1. How does he dig? with his front feet / with his back feet
2. Study the toad's eyes.
Can he see:

to the front	YES	NO
to the back	YES	NO
to the side	YES	NO
above	YES	NO

3. Have you heard him make a sound? YES NO
4. Does he feel wet and slimy? YES NO

GUINEA PIG 1.

Guinea pigs come from South America.

They were raised by the Inca Indians for food.

1. Do you think your guinea pig would make a good meal?

_____

2. Do you think he looks like a pig?

_____

3. Do you think he would taste like a pig?

_____

GUINEA PIG 2.

Wild Guinea Pigs look for food at night. Study the eyes of your Guinea Pig.

1. Are they made to help him see well at night?

_____

2. Draw the shape of the Guinea Pig's eye here.

GUINEA PIG 3.

Sometimes people say "If you pick up a Guinea Pig by his tail his eyes will pop out."

1. Is this true?

_____

2. How long is your Guinea Pig's tail?

_____

1. What color is your guinea pig?

_____

GUINEA PIG 4.

Wild Guinea Pigs live underground.

1. Are your Guinea Pig's feet made for digging?

_____

2. How many toes does he have on the front foot?

_____

3. How many toes does he have on the back foot?

_____

GUINEA PIG 5.

Guinea pigs make many sounds.

Save this card and check when you hear each sound.

High whistle ☐

Soft purring whistle ☐

Clicking of teeth ☐

When does your Guinea Pig whistle?

_____

_____

GUINEA PIG 6.

Guinea pigs are useful animals. They make good laboratory animals.

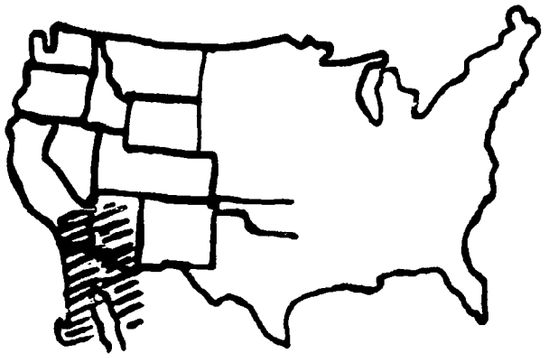
They make good pets. They have a friendly face. Draw a front view of the Guinea Pig here.

Show the nose and mouth.

Show where the whiskers grow.

ROSY BOA # 1

The California Rosy Boa lives in the dry hills of California, Arizona and a small part of Mexico. Your Rosy Boa came from California. If you know where that is, put an X on California.



ROSY BOA # 2

Your Rosy Boa has more than one color.

1. How many colors can you find on him? Write them here.

_____ _____ _____

_____ _____ _____

2. Draw the eye here →

3. Does he feel warm or cool?

_____

ROSY BOA # 3

1. Draw the shape of the Rosy Boa's head here →

2. Can you find his ears? _____

He is not deaf. He can "hear" vibrations with his tongue and body.

3. Does he blink his eyes? _____

4. Does he have eyelids? _____

ROSY BOA # 4

Your rosy boa has shiny scales.

1. (Cirle one) Is your snake dry or slimy? Your rosy boa has different scales on different parts of his body.

2. Draw the shapes of the following scales:

Scales on his back	Scales on his belly	Clear scale over his eye

ROSY BOA # 5

Your Rosy Boa looks for food with his tongue. He touches things with his tongue to see how they feel. He uses his tongue for "smelling" too.

1. Draw the tongue here. Have someone help you.

2. Use the clock. How many times does he stick his tongue out in 10 seconds?

_____

3. How many times would that be in a minute? _____ (Multiply by 6)

ROSY BOA # 6

Turn the snake upside down. Look along his belly for the place where the scale pattern changes. This is called the anal plate.

This is the end of his body and the beginning of his tail.

Measure the tail.

1. How long is the tail? _____

2. Draw the anal plate here →

FINCH # 1

Your finches are a special kind called orange cheeked waxbills. They come from Africa.

1. What colors can you see on them?

_____

_____

_____ _____ _____

2. (Circle one)

These birds sit still a lot.

These birds jump around a lot.

FINCH # 2

In many birds the male is brightly colored so he will charm the females. The female is plain so she can hide the nest.

1. Your birds are almost the same color.

The male is a little bit brighter? Can you tell which one is the male?

YES NO

2. Look carefully. What size is he?

LARGER SMALLER SAME

FINCH # 3

1. Look at the birds' eyes. Do they blink like we do? YES _____ NO _____

2. Where are the birds' eyes?

FRONT SIDE

3. Can they see something with both eyes at the same time? YES _____ NO _____

Can YOU see something with both eyes at the same time?

YES NO

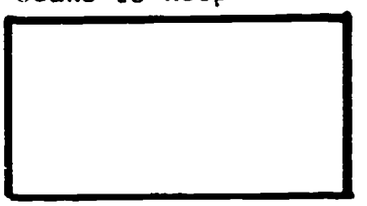
Who can see better? YOU FINCH

4. Be ready to tell why they turn their heads first to one side then the other.

FINCH # 4

Birds do not have arms and hands, so they have learned to use their beaks to help them.

1. Draw the shape of your bird's beak here →



2. Is this beak made for tearing meat? YES NO

3. Is this beak made for cracking seeds? YES NO

4. Look for the bird's nostrils. Can you see them? YES NO

FINCH # 5

1. Look at the birds' feet. How many toes are in the front? _____

2. How many toes are in the back? _____

3. Is the claw straight or curved? _____

4. Are the feet and claws better for:
   - holding on a branch
   - scratching on the ground
   - swimming

5. Draw the feet and legs here →

FINCH # 6

THIS CARD TAKES A LONG TIME TO DO. READ ALL OF IT. THEN YOU CAN DO OTHER WORK WHILE YOU ARE WAITING.

1. Which bird is the singer? MALE FEMALE

2. How many times did they take a bath while you were watching? _____

3. Did you hear more than one song? YES NO

4. Watch the birds when they drink. Did you see how they must put their heads up to let the water run down their throats?

YES NO

5. Did the birds groom each other when you were watching? YES NO

ARANTULA #1

1. Your tarantula comes from North America. It is called a Hairy Tarantula. Can you see why?

   YES NO

2. This tarantula is not harmful to people. It is useful because of what it eats. It helps keep our houses and yards free of beetles, bugs and other small insects.

   Do you have any of those at your house?

   YES NO

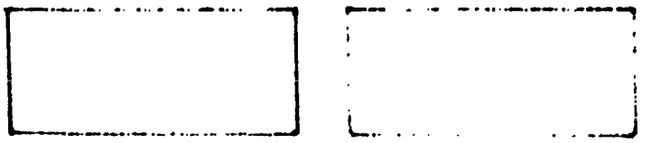
TARANTULA #2

1. How many walking legs does your tarantula have? _____

2. How many feeling legs does your tarantula have? _____

3. How many parts does each walking leg have? _____

4. Draw each kind of leg.



ARANTULA # 3

1. How many parts are in the body of your tarantula? _____

2. Where are the legs connected to the body: the front part of the body
   Circle one: the back part of the body
   both parts of the body

3. What different colors do you see on his body?

   _____ _____

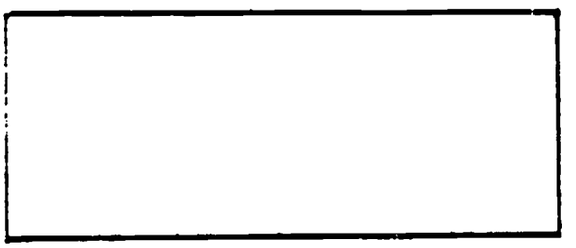
   _____ _____

TARANTULA #4

Your tarantula cannot see very well even though he has eight eyes. His 8 eyes are all together at the top of his body.

1. Can you find his eyes? YES NO

2. Draw a picture of part of his body. Show his eyes.



ARANTULA #5

1. The bite of a tarantula is dangerous to insects. Her fangs are at the front of her body. Can you find them?

   YES NO

2. At the back of her body are the small moving parts used for making silk. They are called spinnerets. How many spinnerets do you see? _____

3. Tarantulas do not spin a web as garden spiders do. They weave silk around their eggs. If you touch the spinneret gently with a pencil, she may spin some silk for you. Did she spin silk?

   YES NO

TARANTULA #6

(Circle the answer)

1. Is the whole body of the tarantula covered with hair? YES NO

2. If you touch the leg hairs gently with a pencil does the spider run? YES NO

3. Did he shake his leg? YES NO

   Blow very gently on the tarantula.

4. Can he feel air moving: YES NO

5. What part of him feels the air move?

   The Shell The Eyes
   The Hairs The Spinnerets

CHICK # 1

1. Is your chick covered with feathers? YES NO

   The covering on chicks is called Down.

2. Can you find any feathers on your chick? YES NO

3. Where do the feathers grow first on a chicken? On the _____.

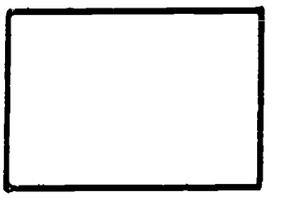
4. Does the chick have down on its beak? YES NO

5. Does the chick have down on its legs or feet? YES NO

CHICK # 2

Look at the chick's feet.

1. Draw a picture of what his foot print would look like here →



2. How many toes point to the front? _____

3. How many toes point to the back? _____

4. Does he have toenails? YES NO

CHICK # 3

1. Your little chick has wings. Can he fly? YES NO

2. Watch your chick eat. Does he chew his food? YES NO

3. Watch your chick drink. Does he drink the same way you do? YES NO

4. Look at his eyes. Does he have eye lids? YES NO

5. Can you find his nose? YES NO

CHICK # 4

Take your chick away from the other chicks.

1. When he feels lost does his peep get loud? YES NO

2. Look in his mouth when he calls. Does he have teeth? YES NO

3. Does he have a tongue? YES NO

4. What color is his tongue? _____

CHICK # 5

YOU WILL NEED A MEALWORM

Show your chick a mealworm.

1. Circle one. He swallowed the mealworm alive.

   He eat the worm on the ground first.

2. Did he swallow the worm all in one piece? YES NO

   Take a crayon and draw some worms on paper.

3. Did your chick try to eat the worms? YES NO

CHICK # 6

Get the chick to perch on your finger.

1. Do his toes bend? YES NO

2. Do his toes go all the way around your finger? YES NO

   Move your hand a little.

3. Can he hold on pretty well? YES NO

   Look on top of his head. Do you see a little ridge of skin? YES NO

   This is called his comb.

RABBIT 1.

Rabbits have large ears. They can move these ears around.

How are the ears held -

when resting?_____

when surprised?_____

when hopping? _____

when the rabbit is not sure where a sound is coming from?_____

_____

RABBIT 2.

Rabbits have interesting noses.

How does this rabbit move his nose?

_____

How does he move his nostrils?

_____

How does he move his head to get the scent?

_____

_____

RABBIT 3.

Rabbits are vegetarians. That means they eat plants and not animals.

Check the kind of food that you have seen in the rabbit's cage.

water	hay	apple
milk	lettuce	beet
carrot	grain	fish
carrot top	wood chips	
paper	rabbit pellets	

RABBIT 4.

A rabbit's eyes are placed on his head in a way that is different from ours.

Can he see backward? Yes_____ No_____

Can he see forward? Yes_____No _____

Does he wink? Yes_____ No_____

Does he sleep with his eyes open? Yes_____ No_____

What color are his eyes?

_____

RABBIT 5.

Does a rabbit use his hind (back) legs the same way as a cat or dog?

Yes _____ No_____

How does a rabbit use his hind legs?

_____

What else can a rabbit do with his hind legs?_____

Which legs are longer, hind or front?

_____

RABBIT 6.

There is something funny about the rabbit's top (upper) lip.

What is it?_____

How does this help him to gnaw?

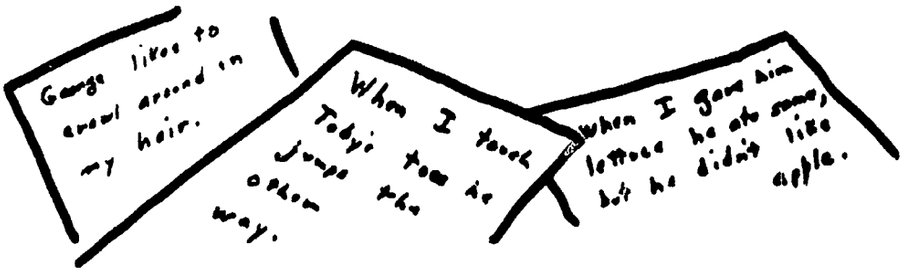
_____

Does he use his front feet to hold food?

_____

When a rabbit eats hay or a plant stem, does he chew it or suck it?

_____



ANIMAL LOGS

Very often children just want to sit and hold the animal or even just look at the animal in its cage. This experience can be utilized to keep a record of observations about the animal. Some logs have been kept in a standard composition book, others on cards, others on duplicated forms. The teacher says, "Yes, you may go and watch Binky for 10 minutes if you will write down something you learned when you go back to your seat." One class used the following form:

- - - - - - - - - - - - - - - - - -

Animal_____ Date_____

Time started_____ Time ended_____

What I did_____

_____

_____

What the Animal did_____

_____

_____

_____

Ideas about this_____

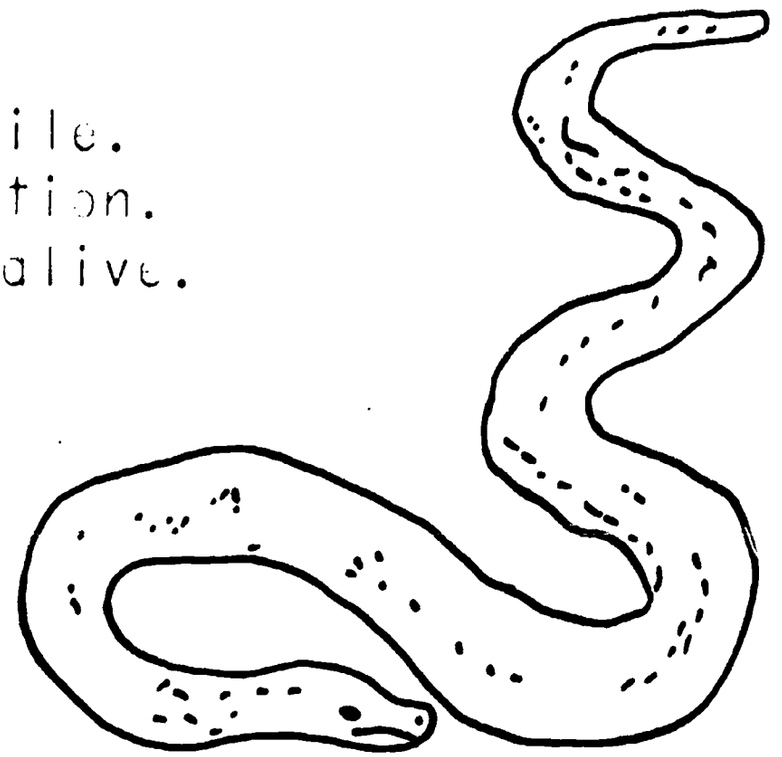
_____

_____

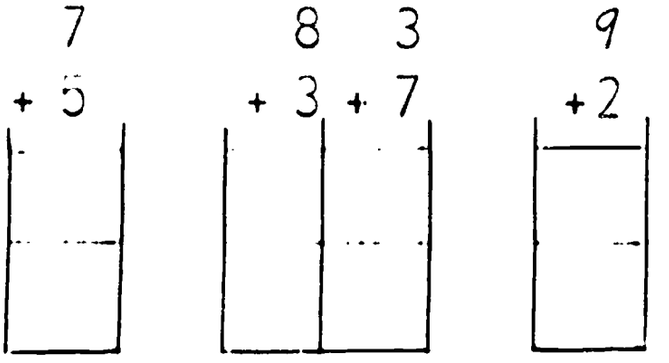
_____

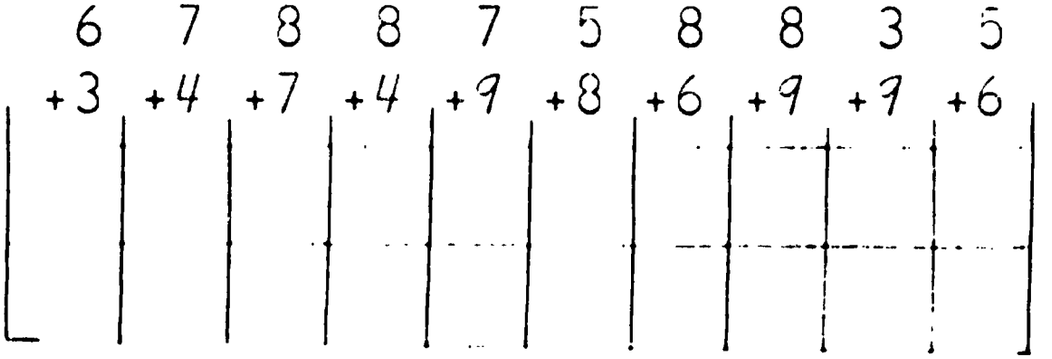
Signed_____

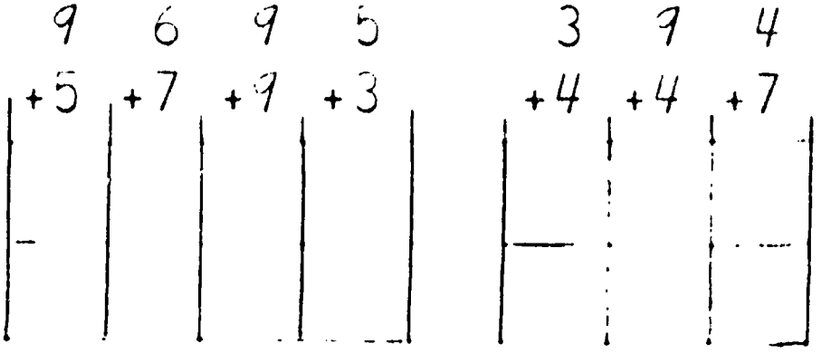
I am a useful reptile.
I kill by constriction.
My young are born alive.

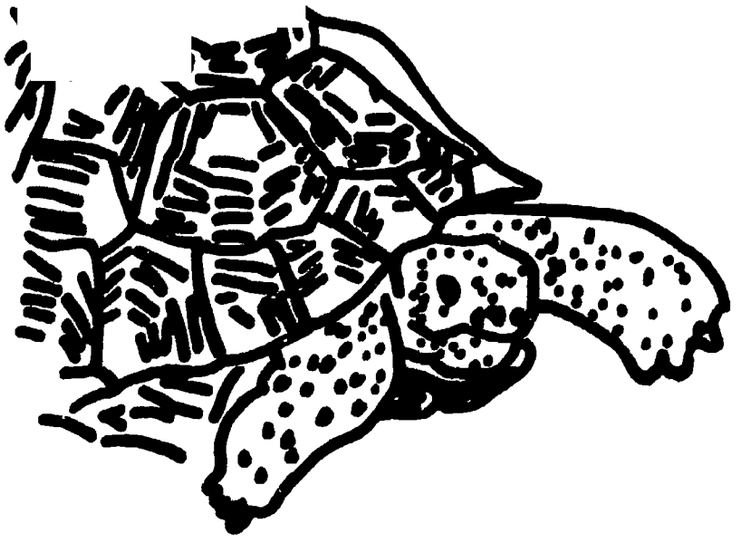


7 = B
8 = Y
9 = C
10 = M
11 = A
12 = I
13 = O
14 = R
15 = L
16 = F
17 = N
18 = S









I am a reptile.

I can go for months without water.

My shell protects me from my enemies.

2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
U	H	F	K	M	L	S	N	C	A	E	O	T	D	G	R	P	W	I

3 +4	6 +6	7 +7	5 +9	1 +1	6 +4	5 +7

3 +8	6 +3	7 +8

7 +9	8 +9	9 +2	9 +9	4 +8	5 +3

4 +2	5 +6	2 +3	9 +3

4 +7

8 +8	6 +7	5 +8	6 +9

3 +3	7 +5	2 +9	5 +2

2 +2	4 +9	10 +7

8 +7	8 +4	6 +2	10 +2	9 +8	6 +8

10 +4	10 +3	11 +6	9 +5	7 +6	10 +10	4 +4	3 +9

10 +9	2 +1	8 +5

11 +9	3 +5

5 +4	15 +5	7 +3	12 +0

8 +6	9 +4

3 +1	7 +5	9 +3	6 +1

2	h
4	u
6	w
8	y
9	i
10	d
12	L
15	C

16	n
18	o
20	A
21	'
24	R
25	t
27	e
30	b

6	2	22
x3	x2	+2

5	10	6	10	8	24	5	6	5
x5	x2	x4	+10	x2	+1	-1	x2	x4

29	12	9	3	4
+1	x2	x2	+3	x4

19	8	5	
+1	x2	x2	

2	5	3	8	4
+0	x4	x3	x3	+4

3	9	4	4	2
x5	x2	x1	x3	x5

20	3	5	9
+10	x3	x5	x3

29	2	24
+1	x2	+1

3	9
+3	x3

5	9	4	7	5
x2	x2	x4	x3	x5

6	6	6	12	4
+0	x3	x4	x2	x1

Name _____ Date _____

Name_____

WHAT DOES YOUR GUINEA PIG LOOK LIKE?

Our Guinea Pig has

_____eyes and

_____ears and

a_____nose.

He has _____feet

and_____

_____fur.

Word Bank

cute tiny long short

black-brown black white big

fat floppy wiggly soft rough

The snake was shaped like a _____
_____. It was
as big around as _____.
It was the color of _____.
Its eyes looked like little_____
_____. Its tongue was
shaped like a _____.
When the tongue moved it looked like a
_____.
When I picked the snake up it felt as cool
as_____. It
was about as long as a_____
_____. When I put it back
down on the ground it looked like a _____
_____lying there.

ANIMAL RIDDLES

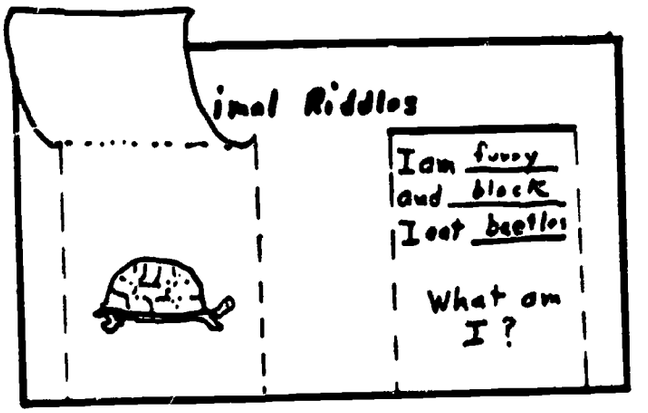
Make up riddles based on clues that answer such questions as:

- What does the animal sound like?
- Where does the animal live?
- What does it eat?
- What does the animal feel like?
- What does the animal look like?

Write two or three of the best riddles on the chalkboard or on charts.

Develop charts of animal names and sounds as a writing resource.

- Give children the attached riddle page. Tell them they can write two riddles but they are not to make pictures there. The picture answers (they may be drawn or cut out) will be on the following page. (Be sure the right picture gets in the right space.)



- To complete the riddle page, cut along the dotted lines and fold along the solid line at the top of the riddle so the flap can be raised to show the answer. Paste the two pages together around the sides and top. Leave the bottom free.

- Children enjoy exchanging and reading the riddles.

- Make the whole set into a class riddle book to share with another room.

Animal Riddles

I am _____

and _____

I say _____

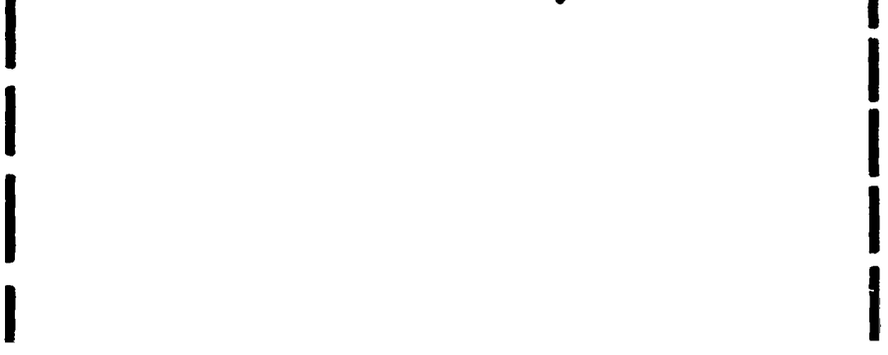
What am I?

I am _____

and _____

I eat _____

What am I?



Paste (DO NOT CUT)

Put your picture here

Paste

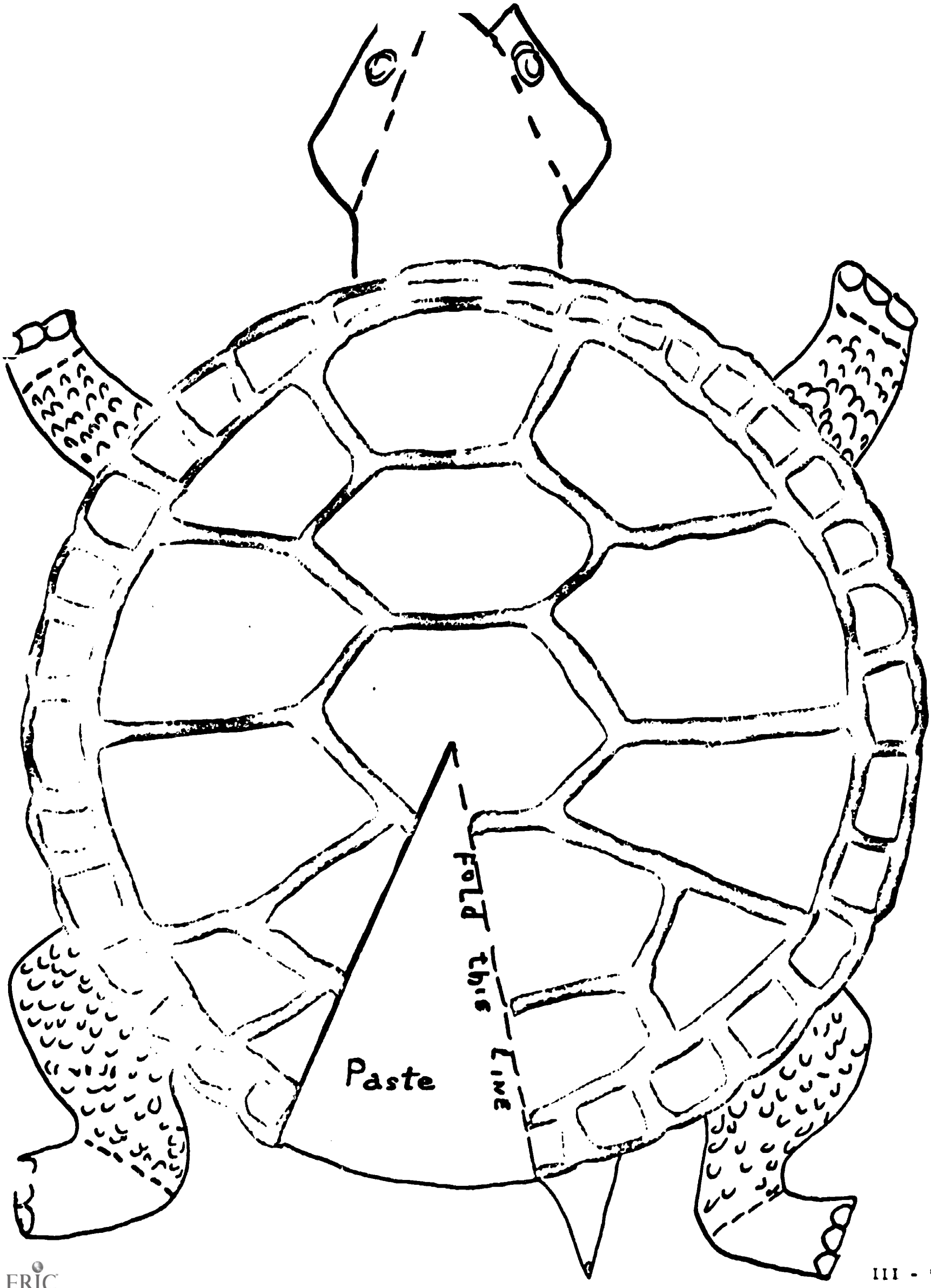
Paste (DO NOT CUT)

Paste

Put your picture here

Paste

(DO NOT CUT) Paste


Paste
Fold this line

Name _____

How is your animal vocabulary?

Match words and Meanings by using numbers of meanings.

1. extinct _____
2. Captivity _____
3. nocturnal _____
4. wild _____
5. vanishing species _____
6. amphibian _____
7. marsupials _____
8. bird of prey _____
9. poisonous fangs _____
10. beak _____

	1. awake at night.
	2. is at home on land or water.
	3. a bird's mouth.
	4. the animal no longer exists.
	5. large teeth with poison.
	6. captured by man.
	7. animals living in natural home.
	8. not many left of one kind.
	9. animals carrying babies in pouch.
	10. large bird with sharp claws - eats meat.

FOOD FOR OUR PETS

5¢ can be made with two different sets of coins. A nickel is worth 5¢. Five pennies are worth 5¢. We would write this down like this:

(1) 0 pennies 1 nickels

(2) 5 p 0 n

Mealworms cost 12¢. There are 4 ways to make 12¢.

(1) _____p _____n _____d

(2) _____p _____n _____d

(3) _____p _____n _____d

(4) _____p _____n _____d

My Toad eats lots of things. His food cost 20¢. There are nine ways to make 20¢.

(1) _____p _____n _____d

(2) _____p _____n _____d

(3) _____p _____n _____d

(4) _____p _____n _____d

(5) _____p _____n _____d

At the pet store, Finch seeds cost 10¢.

10¢ can be made in four ways:

(1) 0 p 0 n 1 dimes

(2) _____p _____n _____d

(3) _____p _____n _____d

(4) _____p _____n _____d

Food for Fred's pet came to 18¢.

There are six ways to make 18¢.

(1) _____p _____n _____d

(2) _____p _____n _____d

(3) _____p _____n _____d

(4) _____p _____n _____d

(5) _____p _____n _____d

(6) _____p _____n _____d

---

(6) _____p _____n _____d

(7) _____p _____n _____d

(8) _____p _____n _____d

(9) _____p _____n _____d

FOOD FOR OUR PETS (Cont'd)

Crickets for the tarantula cost 25¢.

There are thirteen ways to make 25¢.

(1) _____p _____n _____d

(2) _____p _____n _____d

(3) _____p _____n _____d

(4) _____p _____n _____d

(5) _____p _____n _____d

(6) _____p _____n _____d

(7) _____p _____n _____d

(8) _____p _____n _____d

(9) _____p _____n _____d

(10) _____p _____n _____d

(11) _____p _____n _____d

(12) _____p _____n _____d

(13) _____p _____n _____d

Boxes of sand for the bird cage cost 28¢.

_____p _____n _____d

_____p _____n _____d

_____p _____n _____d

_____p _____n _____d

_____p _____n _____d

10 apples for the Guinea Pig cost 30¢. How many different ways can you find to make 30¢?

_____ _____ _____

_____ _____ _____

_____ _____ _____

_____ _____ _____

_____ _____ _____

_____ _____ _____

_____ _____ _____

_____ _____ _____

_____ _____ _____

_____ _____ _____

_____ _____ _____

_____ _____ _____

_____ _____ _____

_____ _____ _____

_____ _____ _____

_____ _____ _____

_____ _____ _____

_____ _____ _____

_____ _____ _____

_____ _____ _____

_____ _____ _____

L O W S C O R E

--Practice in simple mental calculation

--(or column addition if scores are totaled at end of game)

LOW SCORE is played on a playing card by two persons.

One starts at the top corner and works toward the bottom while the other starts at the bottom and works to the top.

Rocks, pennies or other simple objects are used as markers.

Each player in turn may move his marker into any square touching the square his marker is in - (up - down -across or diagonally).

He may move, one square at a time, anywhere on the card.

Each time a player moves into a square that has a number, he must add that number to his score.

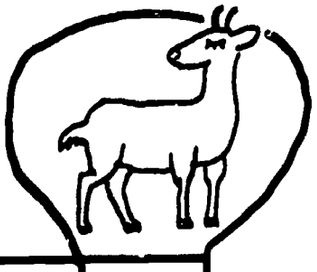
When BOTH players have reached their goals, player with the lowest score is the winner.

--Make blank cards and allow the pupils to make their own games, as hard or as easy as you wish.

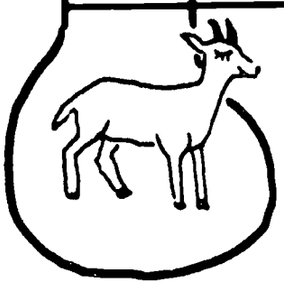
[illegible]	

[illegible]	

SCORE	



	7	3		4	1		6	2	5
	4	3	7	1	2	4	3	1	5
3	1	5		3	7	5	2	3	
7		2	5		3	1	6		4
1	3	4	3	2		6	1	4	3
4	2		1	6	3	4		1	
	4	2	5	6		2	3	5	7
7		5	4	2	6		5	2	2
	5	7	5	2	3	1		5	4
5	4	3		2	3		4	7	



We must move the lion

from one den to another.

Try to keep your score as low

as you can.

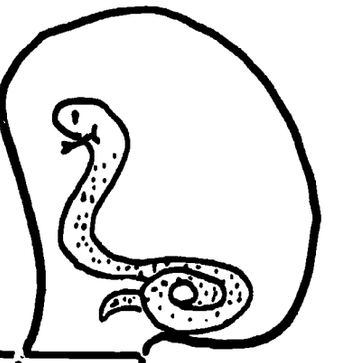
	60	30		20	10		40	50	30
	50	40	60	30	40	20	10	20	60
30	10	50		40	20	60	40	30	
60		30	50		40	20	10		30
10	40	60	30	20		50	30	60	40
50	20		10	60	30	40		10	
	30	10	40	50		30	20	40	60
60		40	30	20	50		60	10	30
	50	10	50	30	40	20		60	50
30	50	40		10	20		30	60	

Use rocks or pennies or nuts

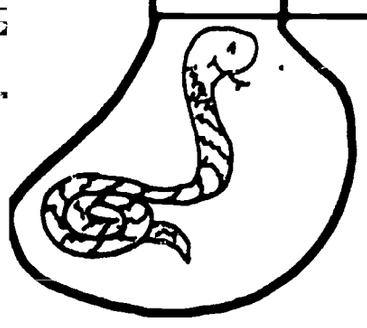
and bolts as markers to help

you keep your place.

It's time to clean the reptile house.
Help us move the snakes from one exhibit
to the other. Keep your score as low as
you can.



	5		15	30		10		5	15
10	25	30	15	30	5	15	30	15	10
25	5	20		20		25	10	20	30
15		5	30	10	20	15	5		20
10	10		25	15	30	20		10	15
30	5		15		5	30	25	15	30
	20	10		25		10	30		5
15		30	20	5	30	15	5	20	
30	5	25	10		25	30		5	15
10		20		15		5	20	10	



Use rocks or pennies or nuts and
bolts as markers to help you
keep your place.

PET STORE PRICES

Apples .....3¢ each
Lettuce ..... 4¢ head
Sunflower Seeds .... 5¢ package
Finch Seeds .....10¢ package
Guinea Pig Food ....11¢ package
Meal worms .....12¢ **dozen**
Crickets .....25¢ **dozen**
Grapes .....15¢ package
Bird Sand .....28¢ package

Fred spent 15¢

What did he buy?

We don't know for sure.

But he could have bought:

a. ☐ **package of grapes.**

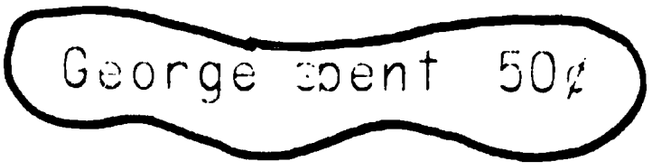
b. ☐ **package of finch seeds and** ☐ **package of sunflower seeds.**

c. ☐ **packages of sunflower seeds.**

d. ☐ **apples.**

e. ☐ **dozen meal worms and** [1] **apple.**

f. [1] **apple and** ☐ **heads of lettuce.**



What did he buy?

We don't know, but he could have bought:

g. ☐ packages of Finch Seeds.

h. ☐ packages of Sunflower Seeds.

i. ☐ crickets.

j. ☐ dozen crickets and ☐ packages of Sunflower Seeds.

k. ☐ packages of Sunflower Seeds and [3] packages of Finch Seeds.

l. ☐ packages of Guinea Pig Food and [2] apples.

m. ☐ box of Bird Sand and ☐ packages of Guinea Pig Food.

What did he buy? We don't know, but he could have bought:

n. ☐ apples and ☐ packages of Finch Seed.

o. ☐ bunches of grapes and ☐ packages of Finch Seed.

p. ☐ bags of Finch Seed and [2] bags of Sunflower Seed.

q. ☐ bunches of grapes and [1] bag of Sunflower Seeds.

r. ☐ bags of Finch Seeds and ☐ bunches of grapes.

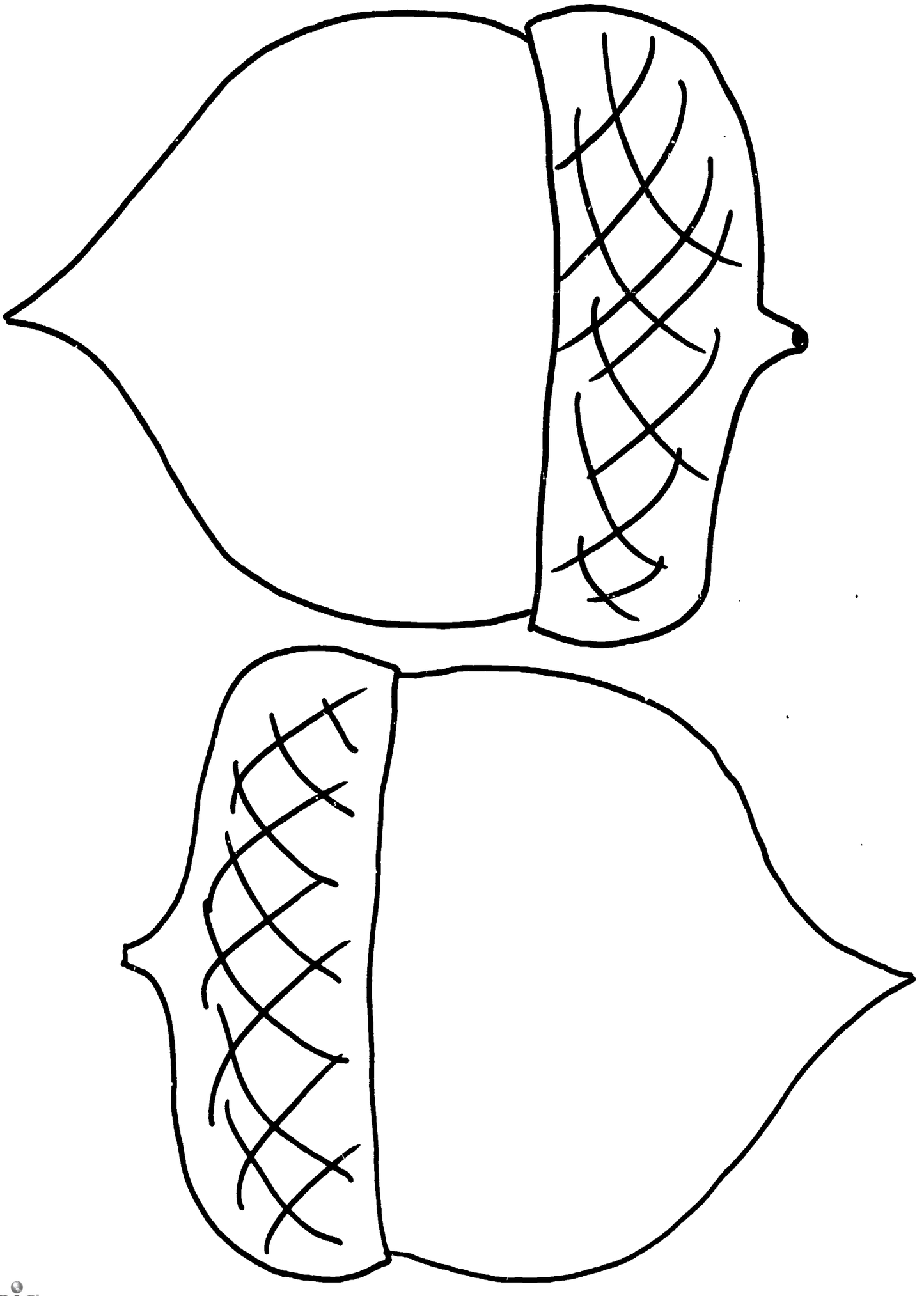
s. [5] heads of lettuce and ☐ bags of Sunflower Seeds.

t. ☐ sacks of Finch Seeds and ☐ packages of meal worms.

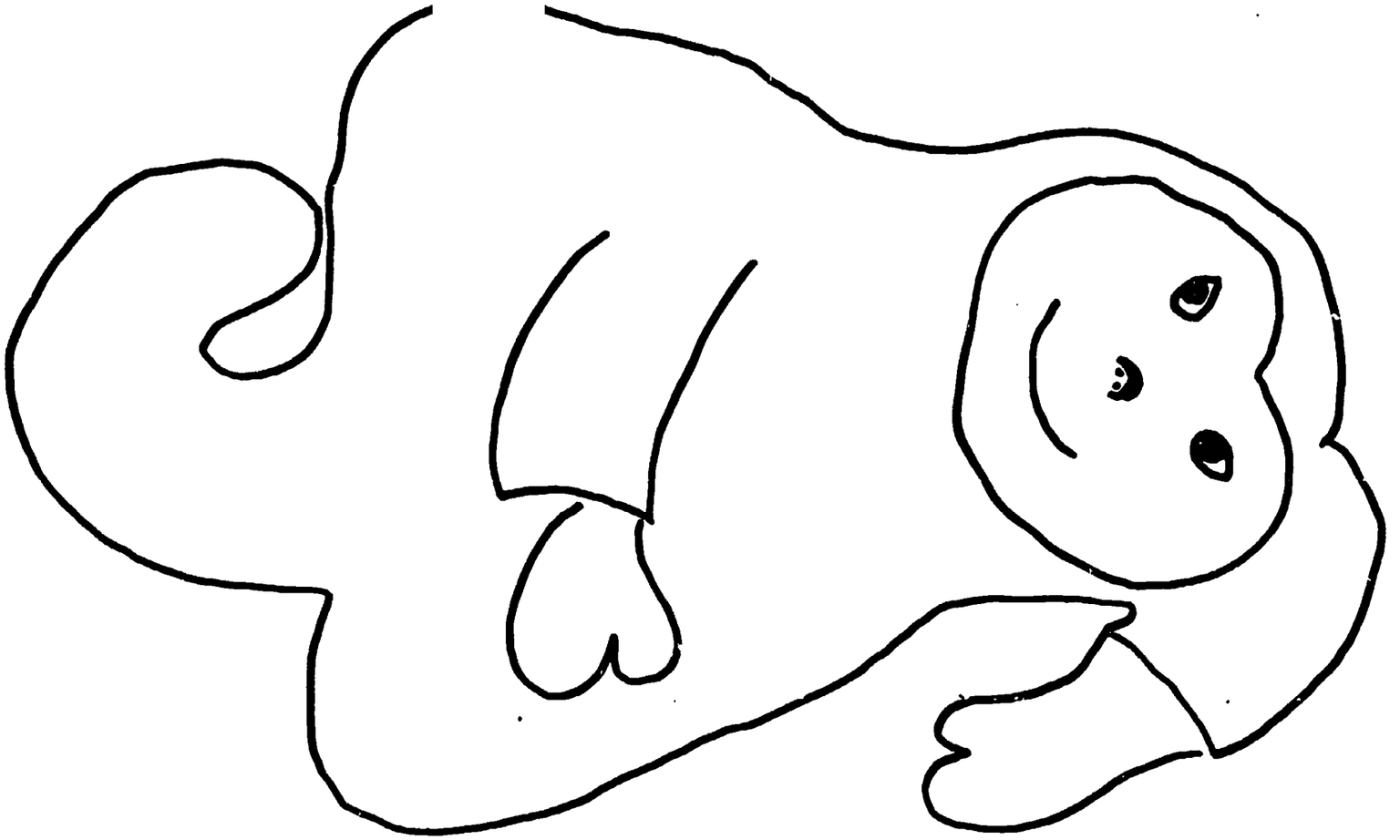
Mark dots on back of alligator
Put corresponding numeral in alligator's mouth.

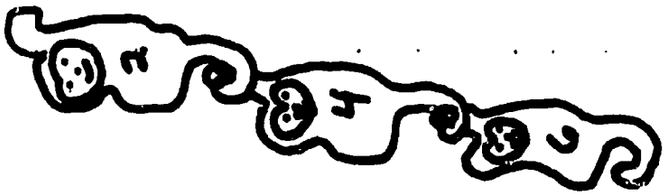
Squirrel Drill Cards

Match Squirrel to right acorn

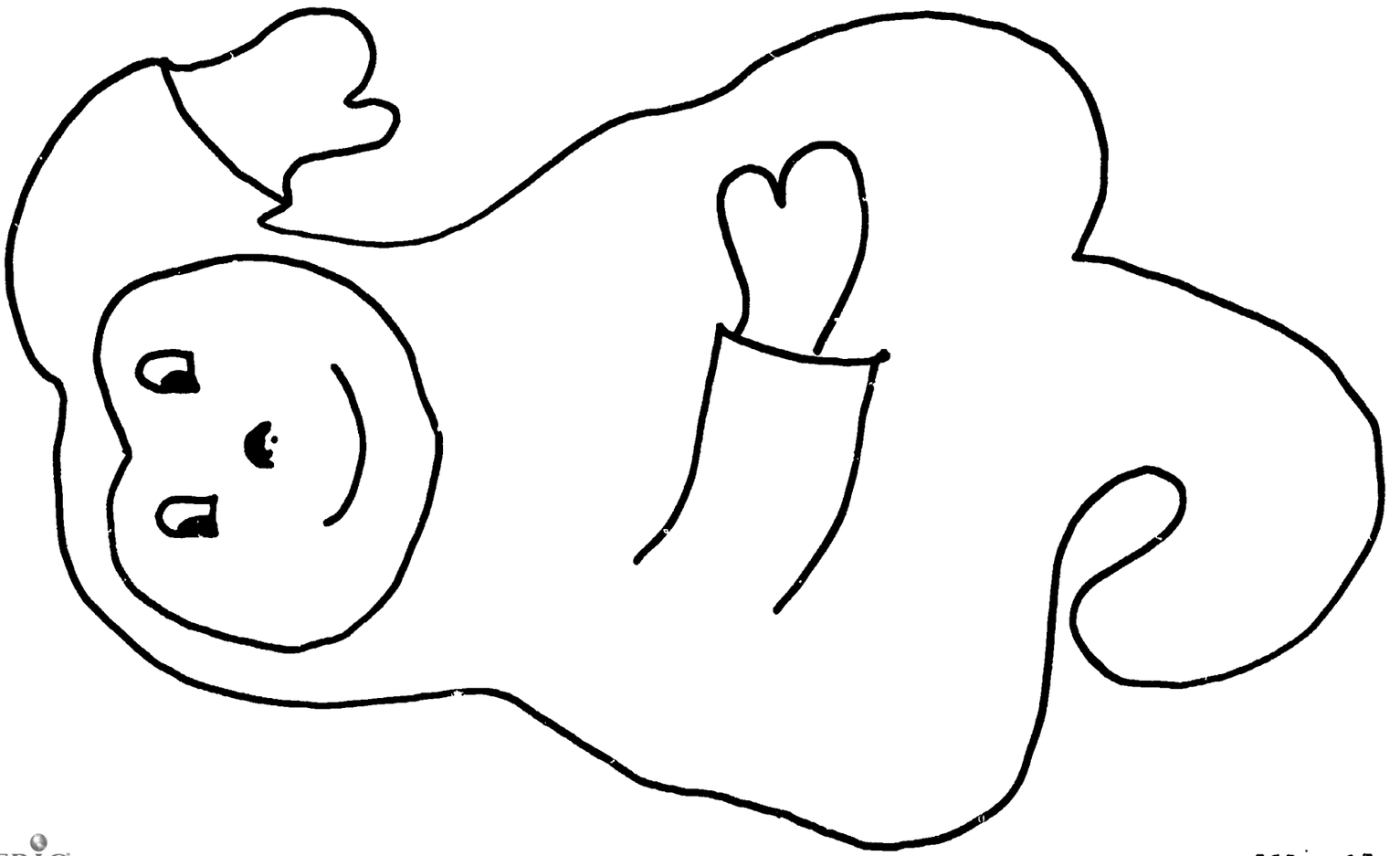



"Lion"
of the day
I am proud!





Have children cut out a set of 10 or more monkeys and number them through 9. Make up chains of monkeys to show number combinations, e.g. - Show me a set of monkeys that make 12.



REPTILE PUZZLE

Find the word. Draw a colored ring around the word. Find the word in the puzzle and circle it with the same color. Use a different color for each word.

REPTILES SNAKE SCALES TURTLE LIZARD

TORTOISE ALLIGATOR CROCODILE COLDBLOOD

Y	W	R	E	P	T	I	L	E	S	Y	R	T	C
A	C	V	W	S	U	Y	Q	W	C	W	E	O	O
L	O	Y	V	N	R	W	Q	V	A	V	P	R	L
L	L	W	Q	A	T	U	R	T	L	E	T	T	D
I	D	V	Y	K	L	V	Y	Y	E	W	I	O	B
G	B	Q	L	E	E	Q	T	W	S	Q	L	I	L
A	L	L	I	G	A	T	O	R	V	Q	E	S	O
T	O	T	Z	W	T	U	R	T	L	E	S	E	O
O	O	Z	A	Y	V	Q	T	U	R	T	L	E	D
R	D	A	R	Q	C	R	O	C	O	D	I	L	E
Y	Y	R	D	W	V	L	I	Z	A	R	D	Y	V
W	Q	D	Q	Q	V	V	S	C	A	L	E	S	W
S	N	A	K	E	W	R	E	P	T	I	L	E	S
C	R	O	C	O	D	I	L	E	W	V	Q	Q	Q

NAME _____ DATE _____

Your dictionary is really a kind of zoo, too. It contains many animals, and tells some facts about each. There are many animals in it which you may not see at the zoo. You may wonder what they look like and how big they are. Your dictionary has an interesting way of telling the size of an animal. Can you find these animals in your dictionary and figure out how large they are in real life?

Name of animal	Fractional size	How many times is he really bigger than his dictionary picture?
1. condor	_____	_____
2. argal	_____	_____
3. chipmunk	_____	_____
4. ibis	_____	_____
5. prairie dog	_____	_____
6. (California) sea lion	_____	_____
7. rattlesnake	_____	_____
8. leopard	_____	_____
9. snapping turtle	_____	_____
10. vicuna	_____	_____

How many of these animals have you seen? _____

Can you put them in alphabetical order? What kind of animal is it - bird, mammal, etc.?

_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

NAME _____ DATE _____

HOW BIG OR HOW SMALL IS IT?

These animals are in the zoo. They are also in your dictionary. Let's track them down! Find them in the dictionary. Write down the page on which you find their picture. Put down the length or height that the dictionary gives you.

ANIMAL	PAGE	LENGTH OR HEIGHT
prairie dog	_____	_____
wolverine	_____	_____
baboon	_____	_____
alligator	_____	_____
walrus	_____	_____
jaguar	_____	_____
hyena	_____	_____
gorilla	_____	_____
crocodile	_____	_____
hippopotamus	_____	_____

Now can you put them in alphabetical order?

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

Which is longest? _____

Which is shortest? _____

Which is tallest? _____

Which is smallest? _____

How many are birds? _____

How many are mammals? _____

How many have you seen? _____

Which would make a good pet? Why?

_____

_____

_____

_____

NAME_____ DATE_____

Have you noticed how many times we use the names of animals when we speak? Sometimes we use words about animals to describe softness, warmth, etc.

Have you heard these expressions? as quiet as a mouse
as stubborn as a mule
as soft as down
as light as a feather

Do you agree with these expressions?

As you learn about animals at the zoo, think about the following words. Can you think of some animals which fit them? Or perhaps something about an animal that makes you think of one of these words? Use the spaces below for your ideas.

soft	hard	light	shiny	glossy	gentle
dangerous	weird	neat	fuzzy	slimy	friendly
clever	stupid	wiry	stubborn	heavy	wrinkly
bold	fearsome	timid	prickly	cuddly	fearful
dull	exciting	colorful	drab	dainty	graceful
awkward	immobile	flighty	prowly	wise	foolish
playful	greedy	amusing	fussy	noisy	sleek
tousled	blind	weak	filthy	nervous	curious
listless	ugly	lovable	_____	_____	_____
_____	_____	_____	_____	_____	_____

As_____ as_____ As_____ as_____

As_____ as_____ As_____ as_____

As_____ as_____ As_____ as_____

As_____ as_____ As_____ as_____

As_____ as_____ As_____ as_____

As_____ as_____ As_____ as_____

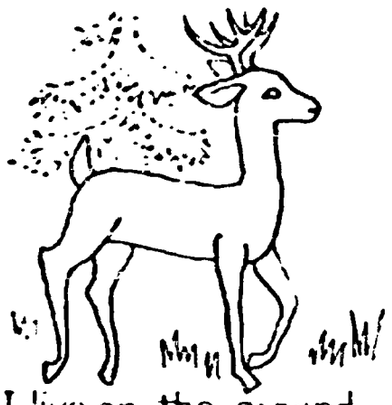
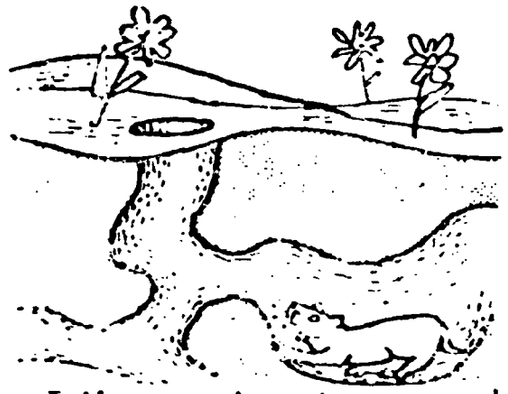
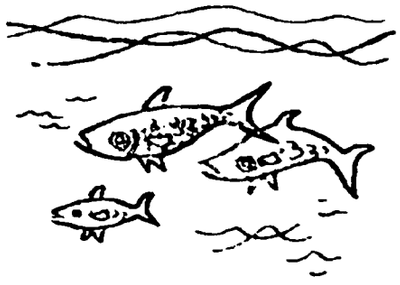
As_____ as_____ As_____ as_____

As_____ as_____ As_____ as_____

Name _____

HOME SWEET HOME

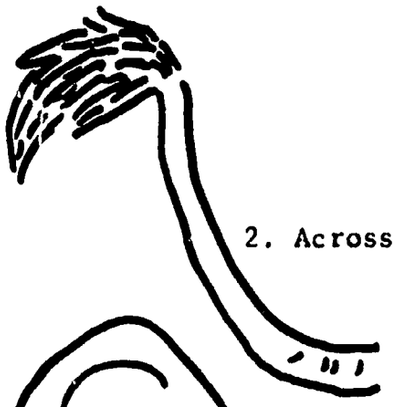
BEST COPY AVAILABLE

 I live on the ground.	 I live off the ground.	 I live under the ground	We live in water. 
So does the -	So does the -	So does the -	So does the -

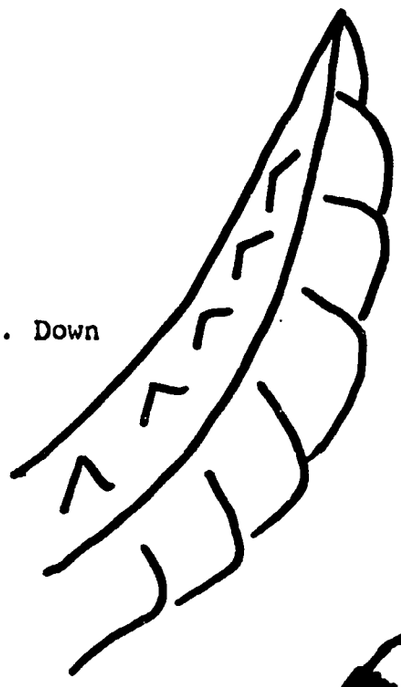
Which environment would you like best?

ANIMAL TAILS

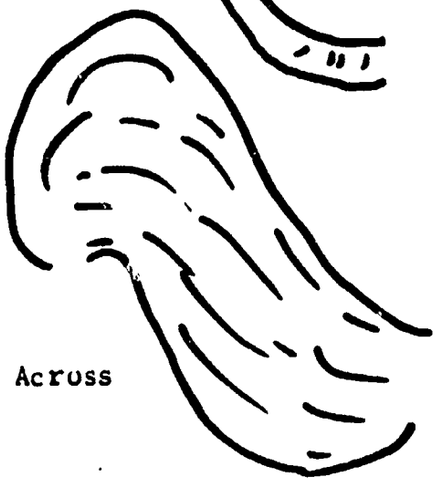
Short tails, long tails
Swish at you
Bushy tails, curly tails
And striped tails, too.



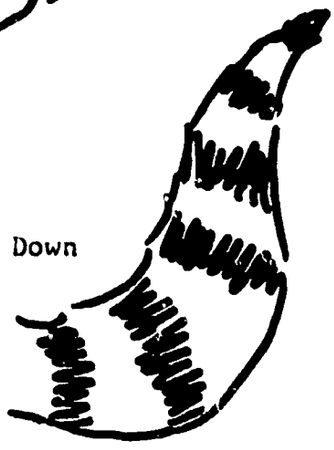
2. Across



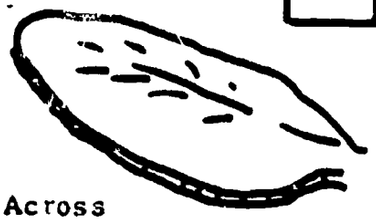
1. Down



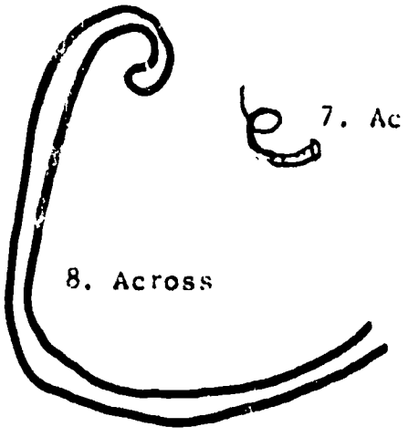
3. Across



5. Down

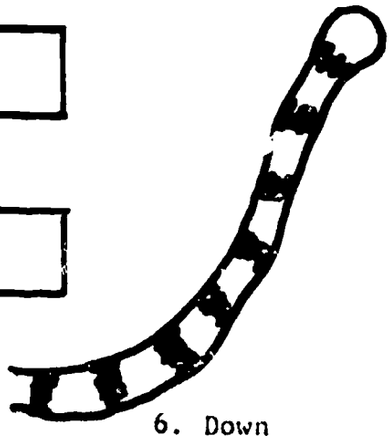


4. Across

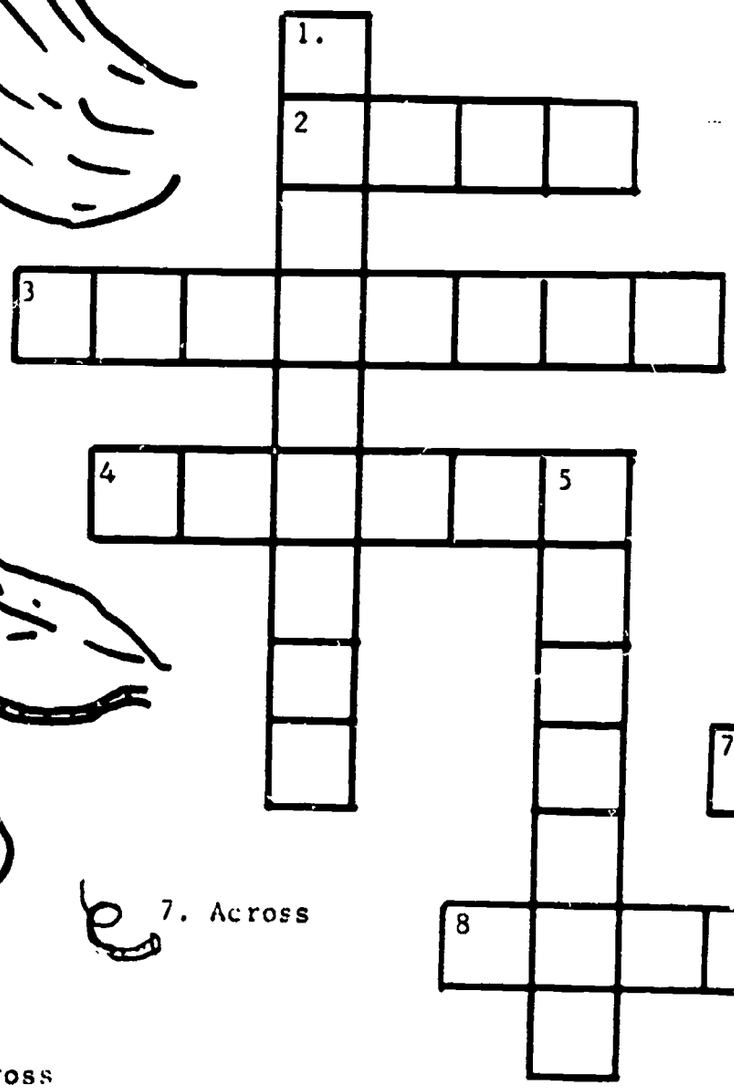


8. Across

7. Across

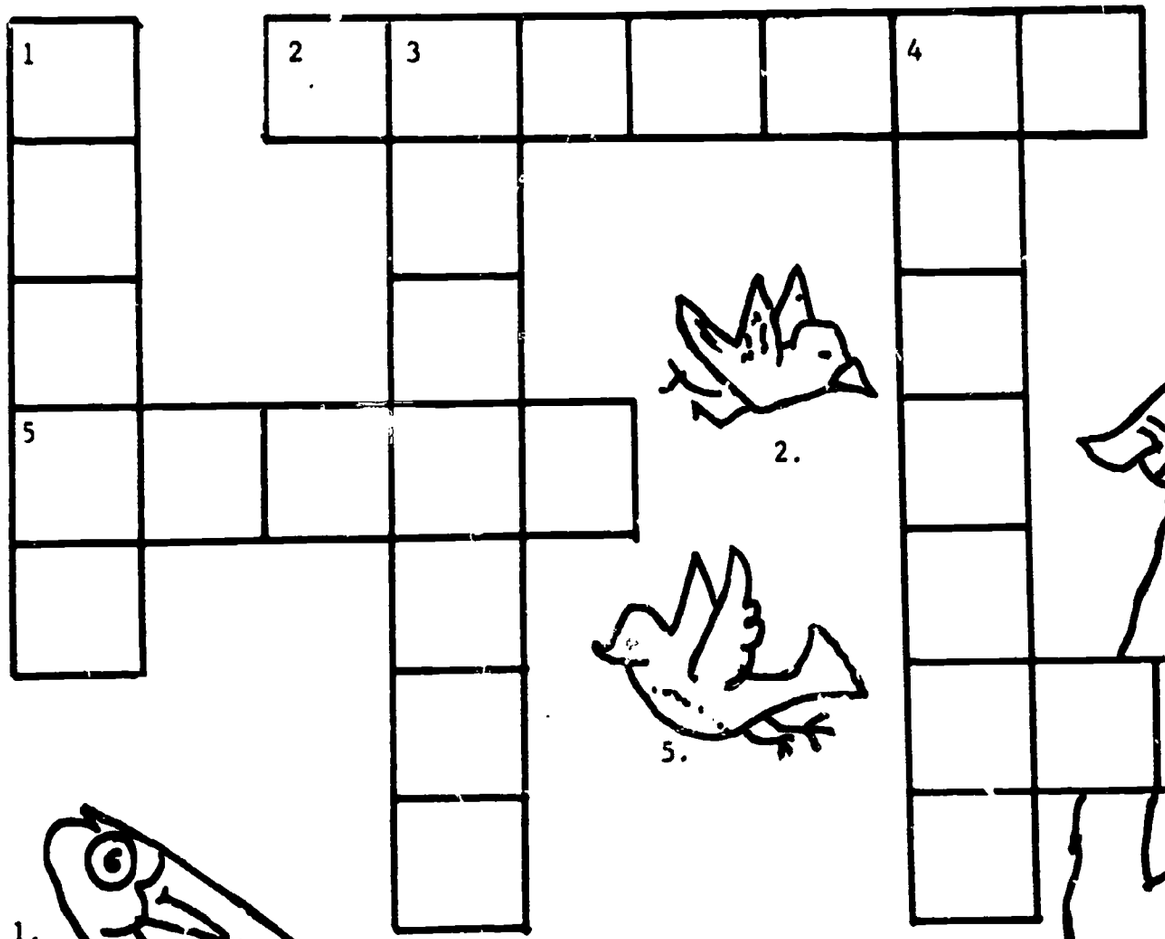


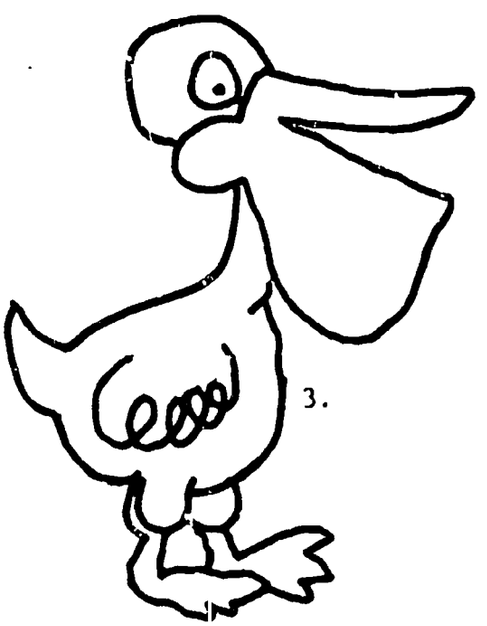
6. Down



WORD BANK - tiger raccoon pig alligator lion
monkey beaver squirrel

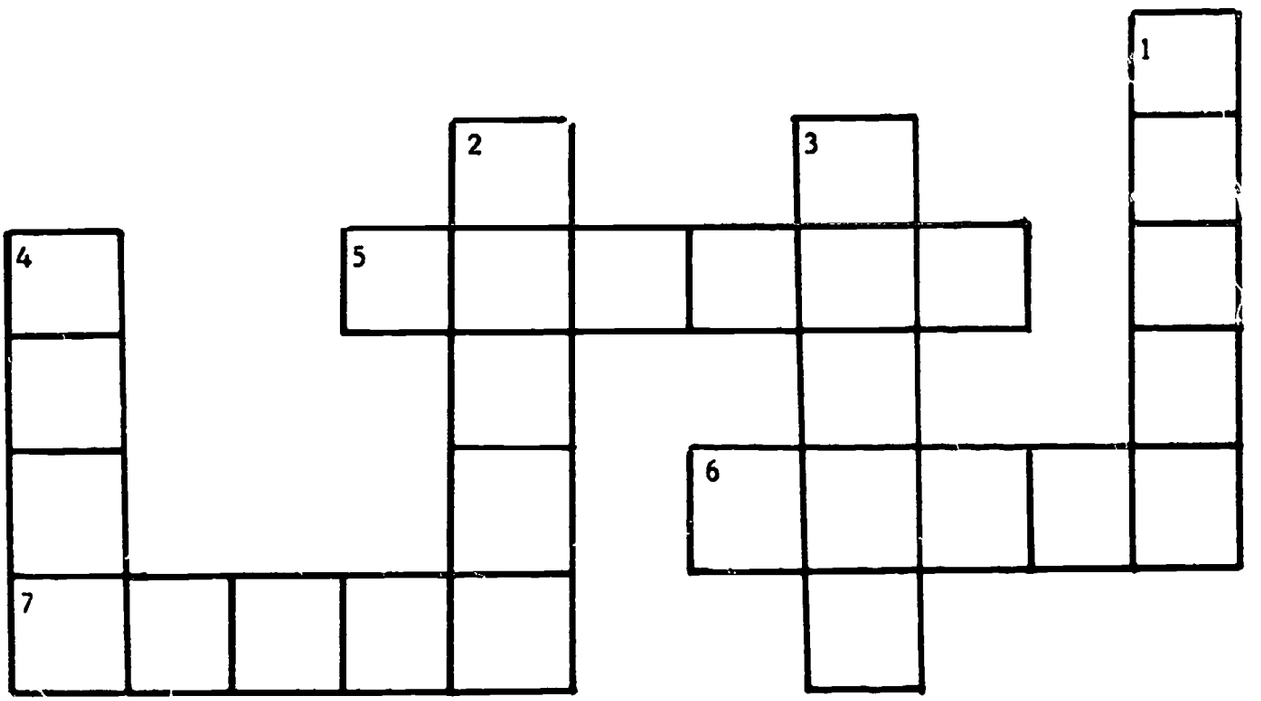
UNSCRAMBLE THE BIRDS!





Across	Down
2. parsrow	1. strke
5. borin	3. icanpel
6. wroc	4. trichost

HOW DO THEY GO ?



Down

1. A Kangaroo _____
2. A horse _____
3. A bird _____
4. A rabbit _____

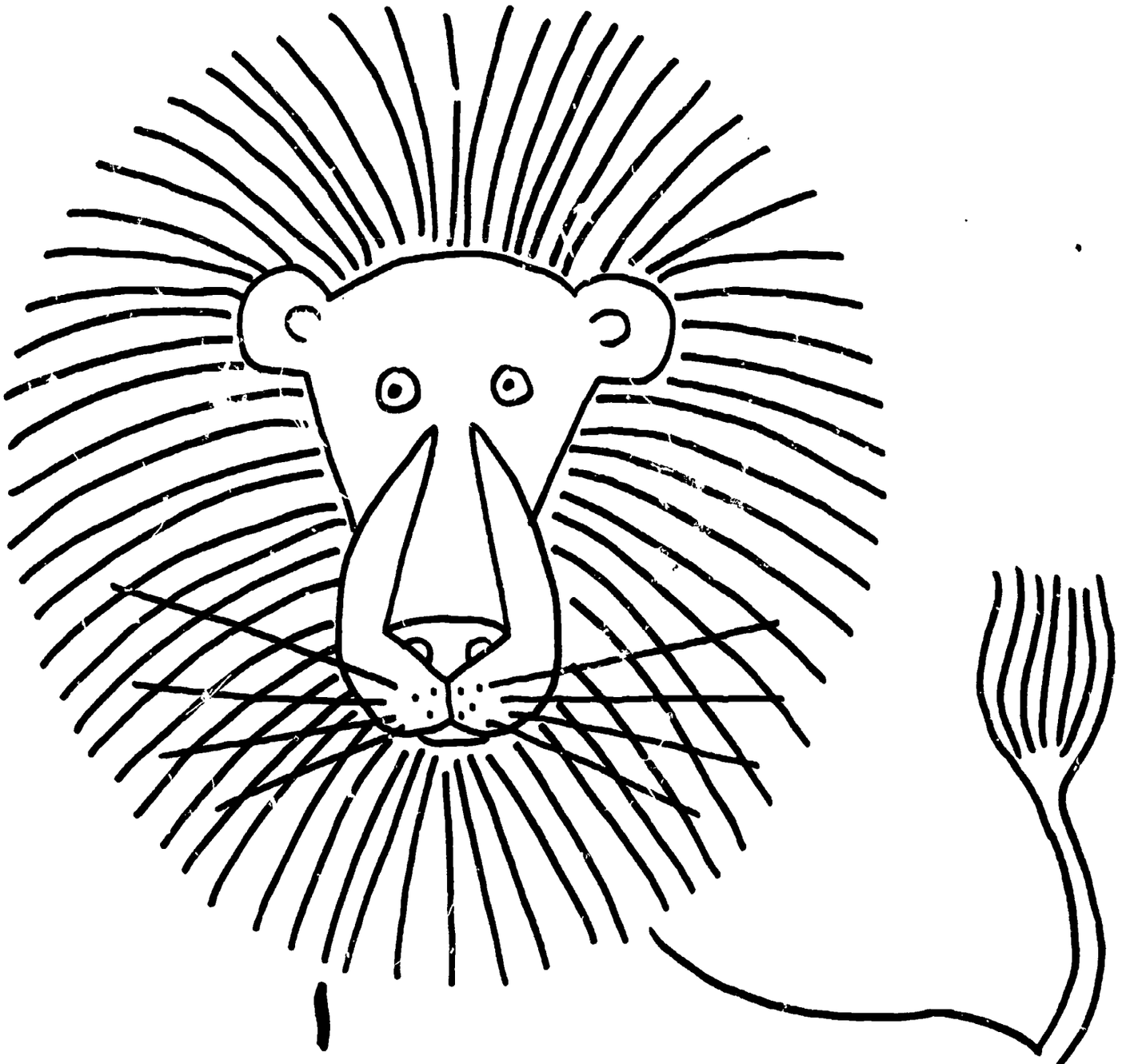
Across

5. A snail _____
6. A frog _____
7. A fish _____

Words to choose from:

trots	hops	waddles	flies
runs	leaps	crawls	creeps
gallops	swims	jumps	glides

LION PUZZLE

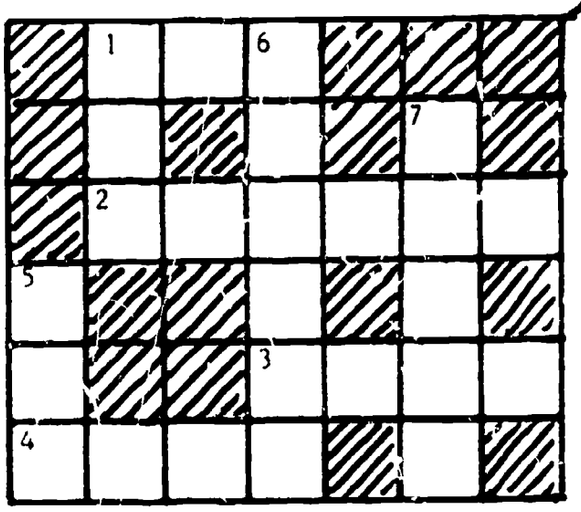


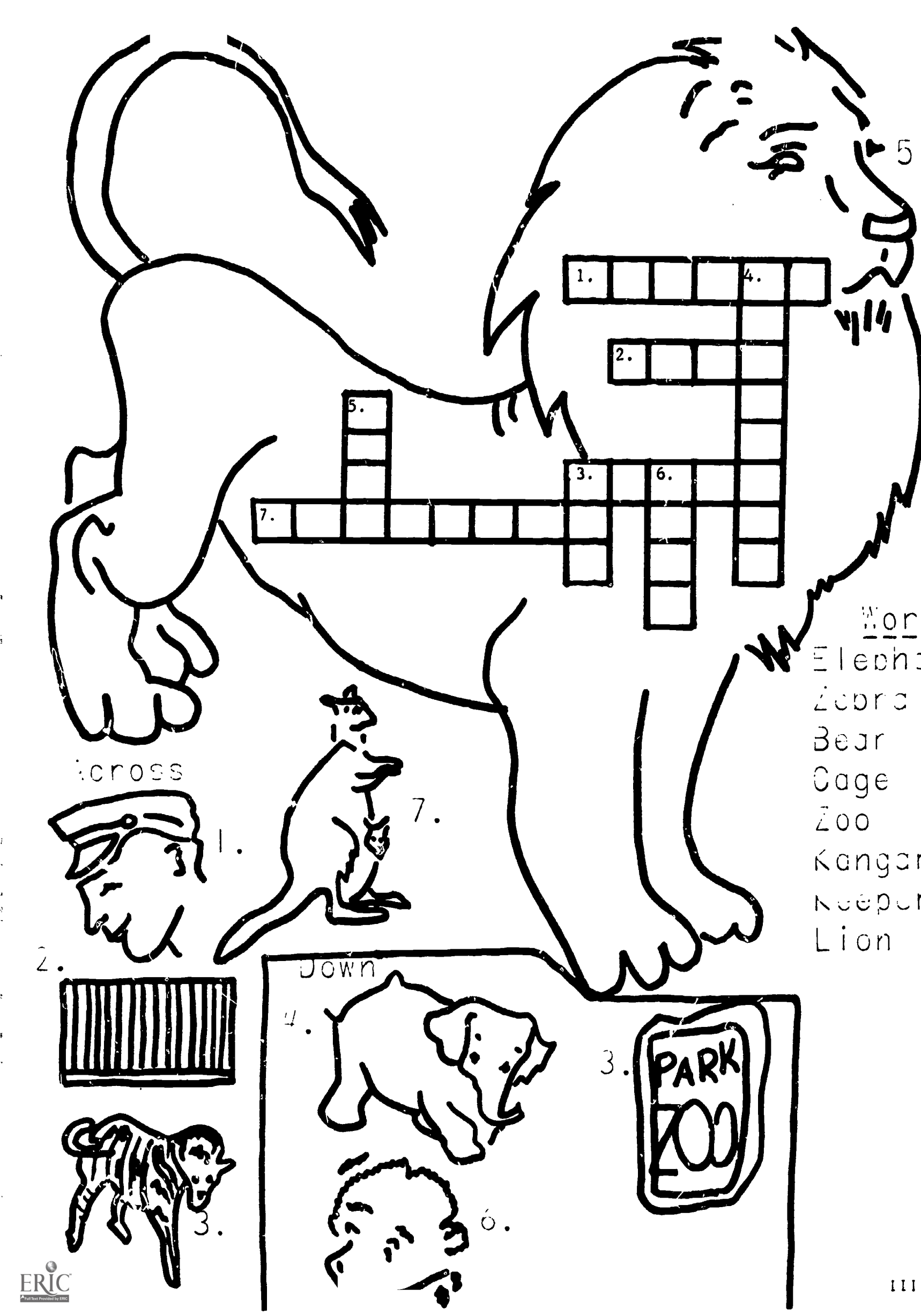
ACROSS

1. A lion is a big_____.
2. The lion is king of_____.
3. The lion is the_____of the jungle.
4. A lion's feet are called_____.

DOWN

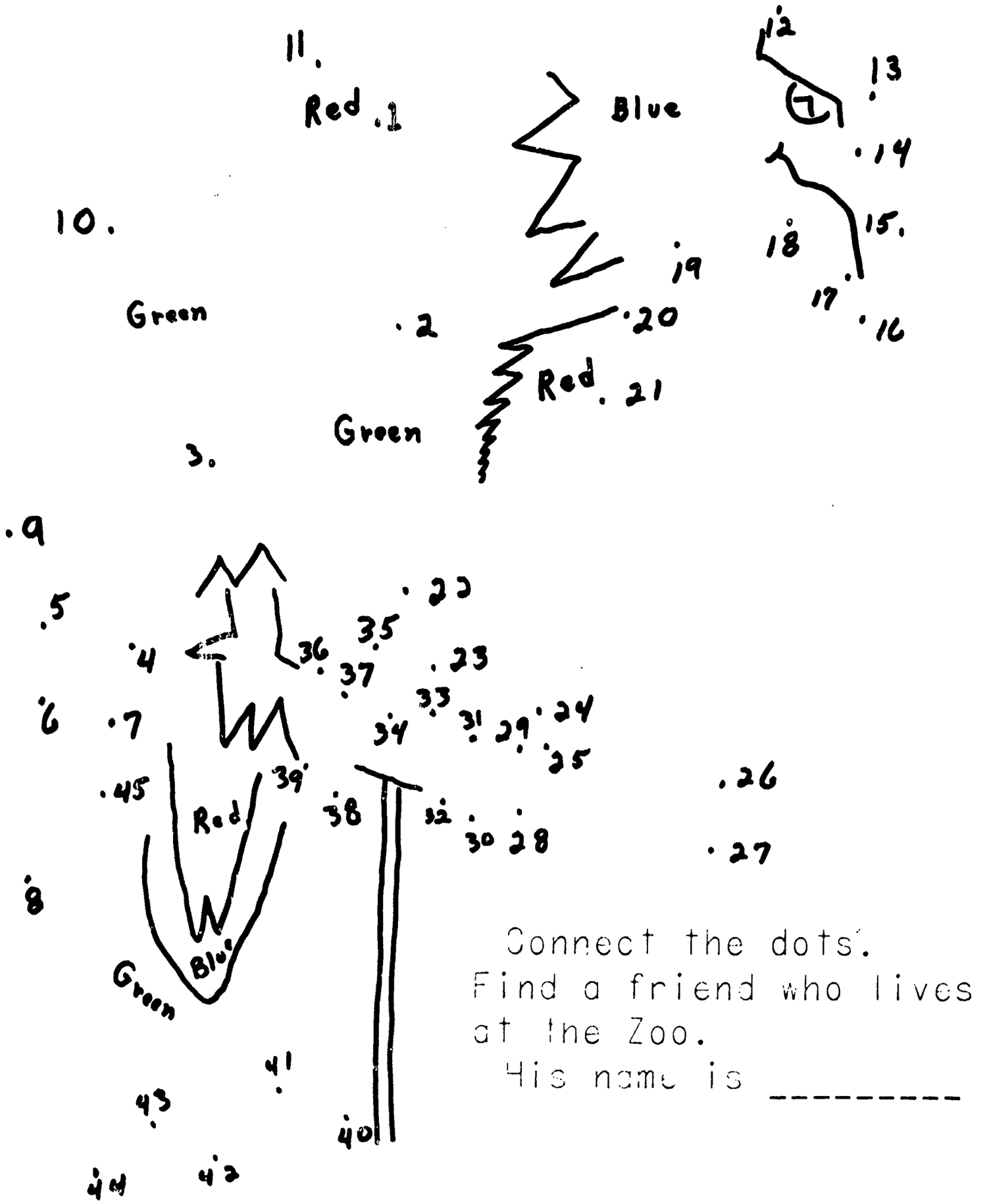
1. A baby lion is a _____.
5. A lion hunter looks at a_____, to find his way through the jungle.
6. A lion's footprints are_____.
7. A lion will_____on his feet.





Words

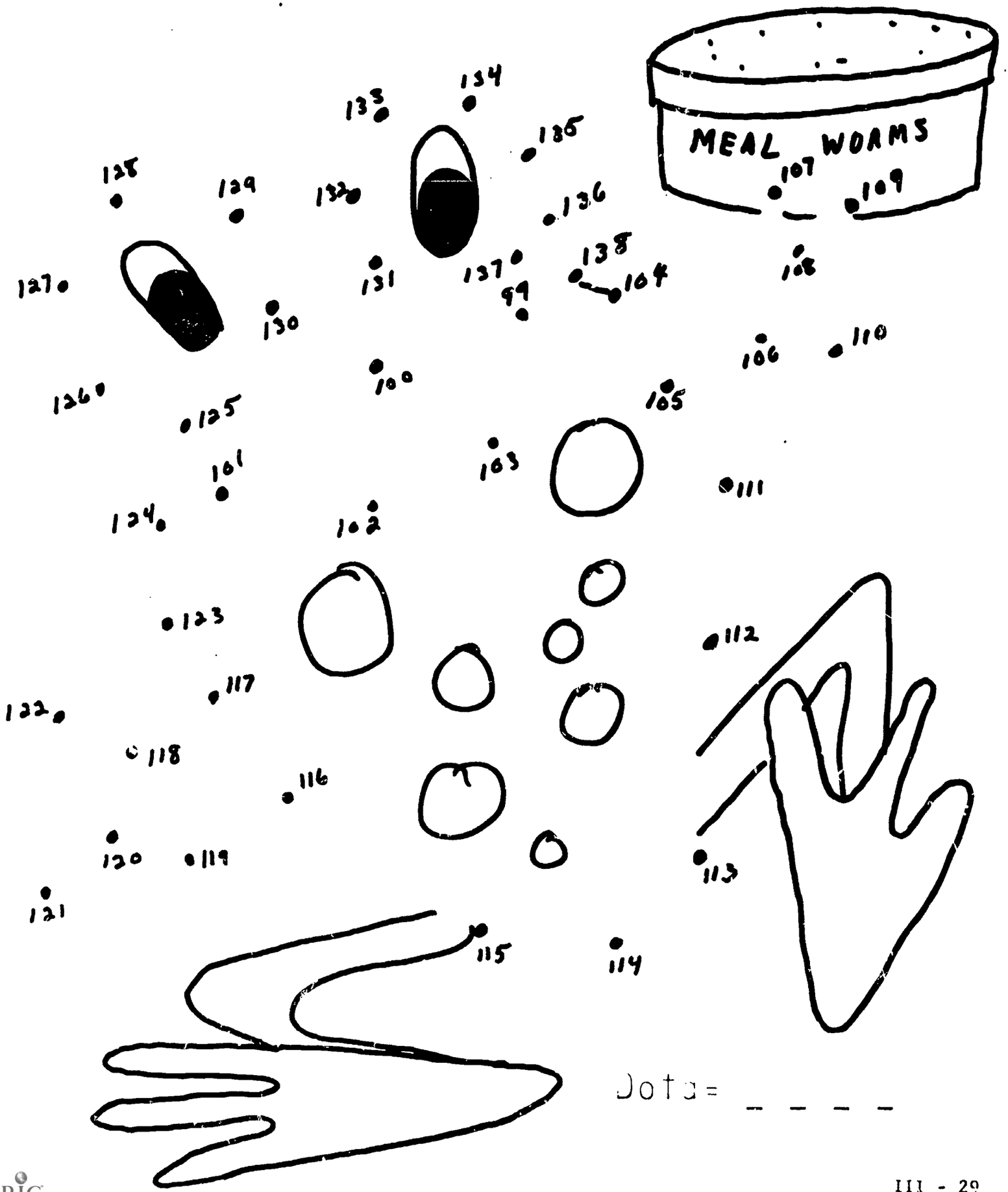
Elephant
Zebra
Bear
Cage
Zoo
Kangaroo
Keeper
Lion



Connect the dots.
Find a friend who lives at the Zoo.
His name is _____

Who likes Mealworms

and Crickets?



Dots = _ _ _ _

Name _____

BIRDS

WHAT DO YOU KNOW ABOUT BIRDS?

Answer the following questions YES or NO

1. There are many different kinds of birds ___
2. All birds can fly. _____
3. All birds have feathers. _____
4. Birds live all over the world. _____
5. All birds hatch from eggs. _____
6. Most birds live on or near water. _____
7. All birds have beautiful bright colors. ___
8. Some birds have webbed feet. _____
9. Some birds eat small animals. _____
10. Many birds eat seeds and insects. _____
11. Some birds eat fish. _____
12. Some birds eat ice cream. _____
13. A good pet bird is a vulture. _____
14. A good pet bird is a parakeet. _____
15. An owl is helpful to farmers. _____

Were YOU a good Bird watcher?

Name_____

Three main body-types of Reptiles are:

1. long body with tail and four feet
2. short body with shell and four feet
3. long body without feet

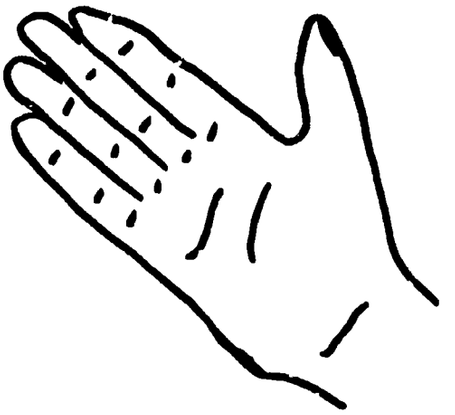
Show the three types below by drawing them in color. Give each one a name.

1.

2.

3.

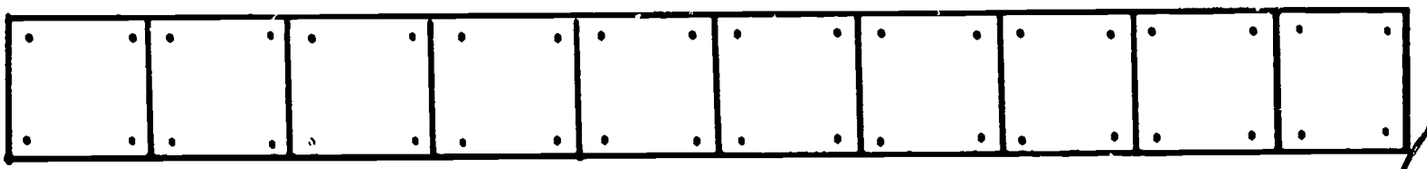
ARE YOUR FINGERS AND THUMB IMPORTANT?



Your hand is an important tool. You use it in everything you do. Let's find out how important your fingers and thumb are:

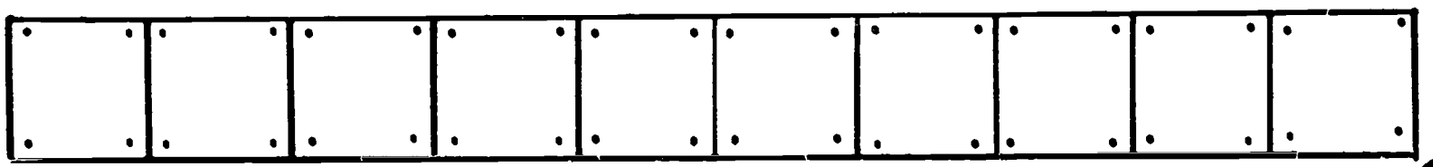
You will need - a pencil
a clock with a second hand
a time keeper
some tape

I. Put your pencil down. On "Go" pick up your pencil. Connect each set of four dots to make a square in each box. You will have 15 seconds.



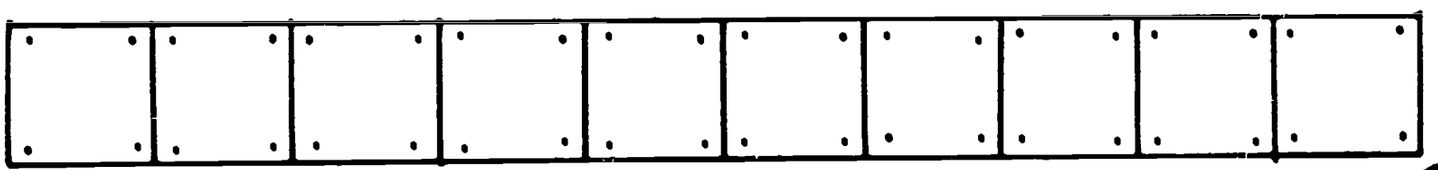
Score with fingers and thumb

II. Put your pencil down. Tape the four fingers of your writing hand together. On "Go" pick up your pencil. Make as many squares as you can. You will have 15 seconds.



Score with fingers taped

III. Put your pencil down. Untape your fingers. Tape your thumb down to your palm. Your fingers should be free. On "Go" pick up your pencil. Make as many squares as you can. You will have 15 seconds.



Score with thumb taped

Are your fingers and thumb important? YES_____ NO_____

Which are most important to you? fingers_____ thumb_____

What can you say about the importance of your fingers and thumb in doing things?

As you look at animals:

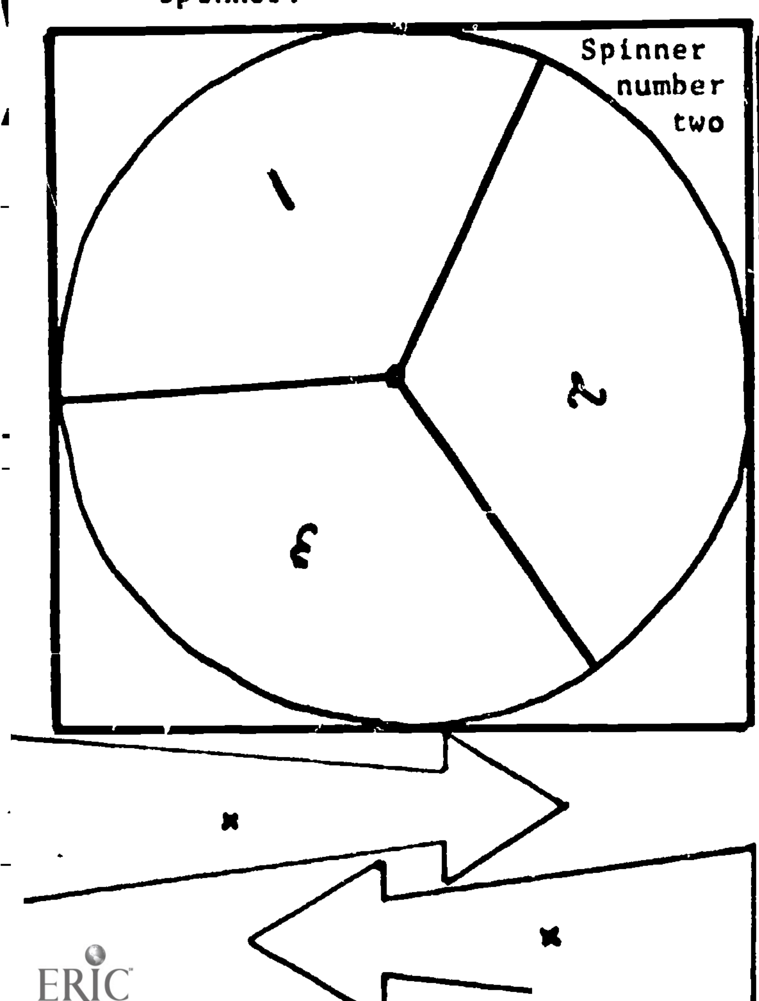
See if they have hands.
See if they have fingers and thumbs.
See if they are able to use their hands as people do.
See if they could draw squares.

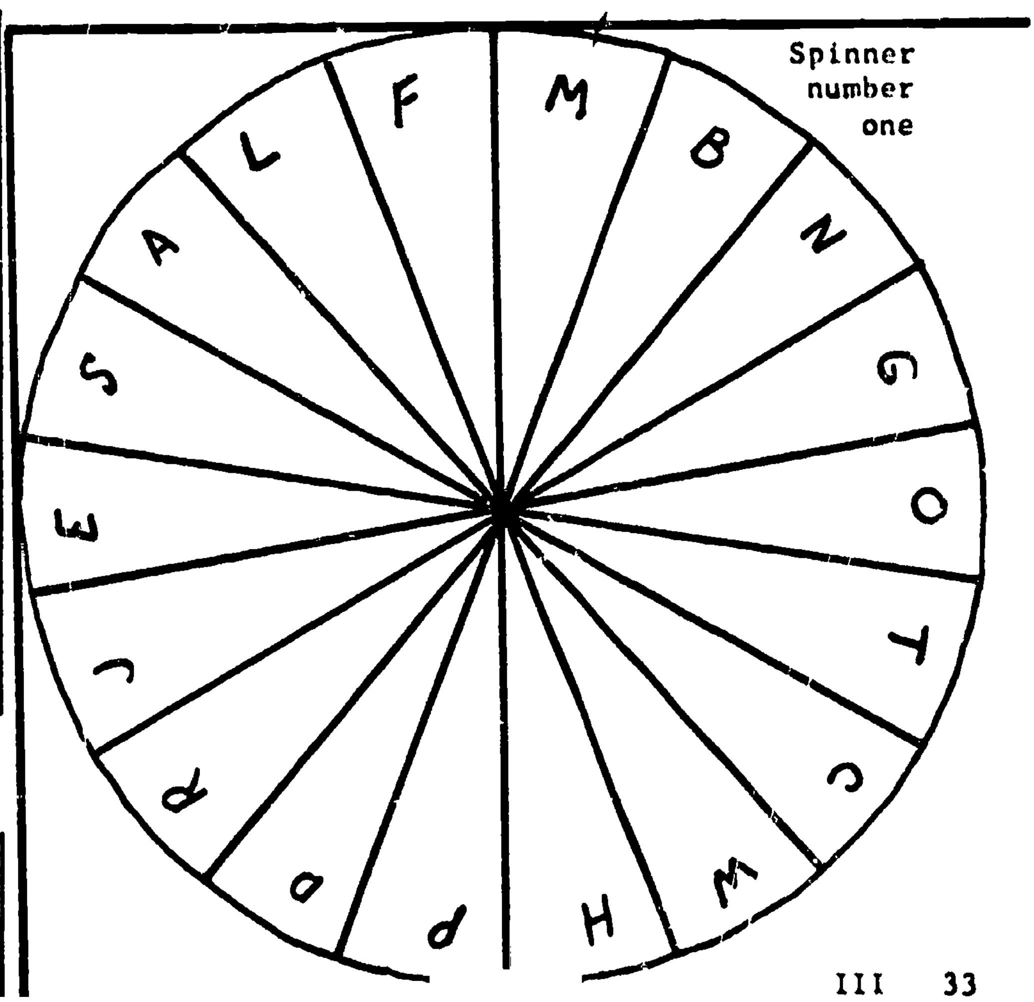
JUNGLE TRAIL is a vocabulary extending game using two spinners and a color keyed game board.

- Each space on the Game board is color keyed to a trail guide which tells the player what kind of word he must think of before he can go on to the next space.
- Spinner #1 is an alphabet spinner. The player spins this one first to see what letter his word will start with. The color of the space his marker is in tells him what kind of word he must think of. (Red - an animal word; orange - a means of transportation; yellow - a food, etc.).
- Having thought of a word that matches his space and also begins with the letter on which the spinner stopped, the player tells his word to the other players.
- If his word is correct, he is ready to use Spinner #2 to see how many spaces he will move. He moves his marker the correct number of spaces and the next player takes a turn. The color of the space he lands on will determine what kind of word he will think of on his next turn.
- First player to reach the end of the JUNGLE TRAIL is the winner.
- If a player cannot think of a word to match his color and letters, the next player takes his turn. Any answer that can be defended should be accepted.

JUNGLE TRAIL can be played by 2 - 4 players, or if you use a thermal copier to make a transparency for the overhead projector, it can be played teacher (or winner of the last game) against the class. For markers use rocks, pennies, nuts and bolts, squares of colored paper, etc. Decorate your game boards with crayon or color pens. Change categories or eliminate some if they are too hard for your class.

- You may wish to allow your group to do research or compile lists for each category between games.
- Duplicate this page to make spinners; run it off on tag board or other heavy material. Punch hole in center of each card and spinner and fasten with metal brad. If you can obtain a couple of small washers, string them on the brad between the card and the spinner.





JUNGLE TRAIL

START

RED

GREEN

YELLOW

BLUE

ORANGE

PURPLE

BROWN

WHITE

RED

GREEN

YELLOW

BLUE

ORANGE

FINISH

GREEN

YELLOW

BLUE

RED

WHITE

BROWN

BLUE

ORANGE

PURPLE

TRAIL GUIDE

An Animal	Red
A Place Where Animals are Found	Green
A Food for Animals	Yellow
It Can Swim	Blue
An Animal Could Hide in it	Orange
It Can Fly	Purple
An Animal Could Live in it	Brown
You can Find it in a Pet Shop	White

KEEP A RECORD

Read Carefully
Write YES or NO in each space.

_____

	Monday	Tuesday	Wednesday	Thursday	Friday
Did _____ get clean water?					
Did _____ get pellets in the morning?					
Does his cage need cleaning today?					
Did _____ get some treats like a little bit of lettuce or some carrots or hay?					
Did someone take _____ out so he could get some exercise today?					
Did someone talk to _____ and give him some love?					
Did you wash your hands after touching _____?					
Did _____ have plenty of pellets at going home time?					

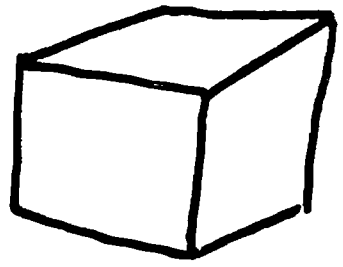
HOW TO MAKE AN ARTIFICIAL HEN

Find a small box

about 10 inches tall

and 10 inches wide

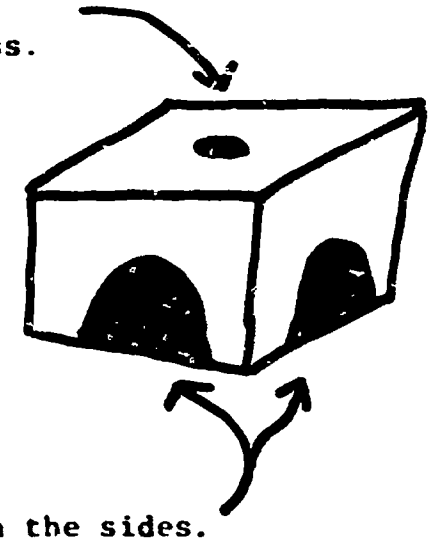
and 10 inches long.



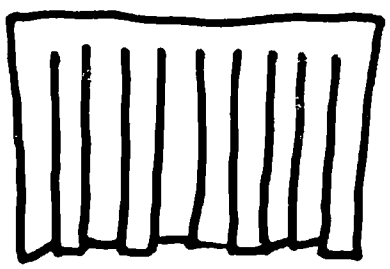
Cut a small hole

in the top of the box

about 1½ inches across.



Cut some doors in the sides.



Take a piece of cloth

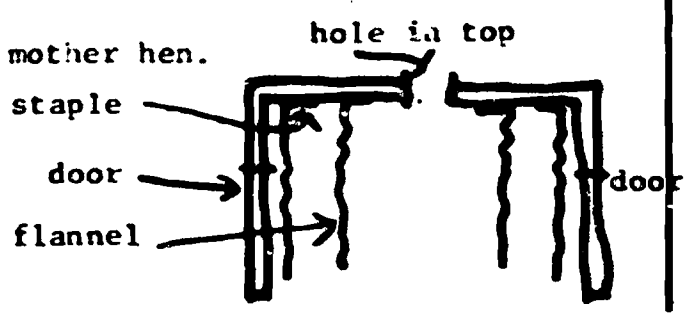
(flannel if you can find it)

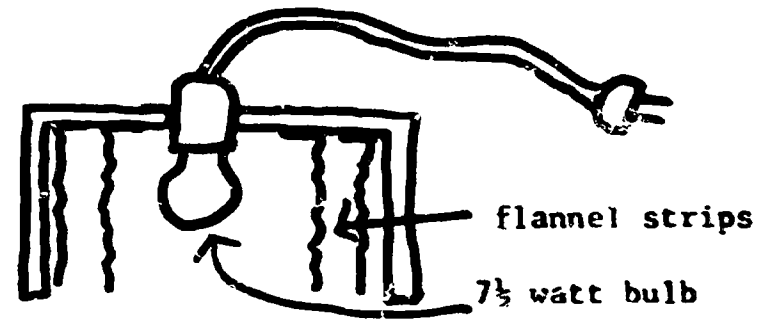
and cut strips almost to the

top.

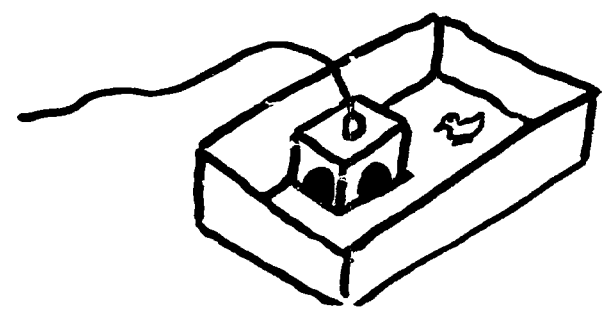
Make enough for all the doors and three or four for the inside.

Staple them to the inside of the box so they hang down like feathers of a mother hen.



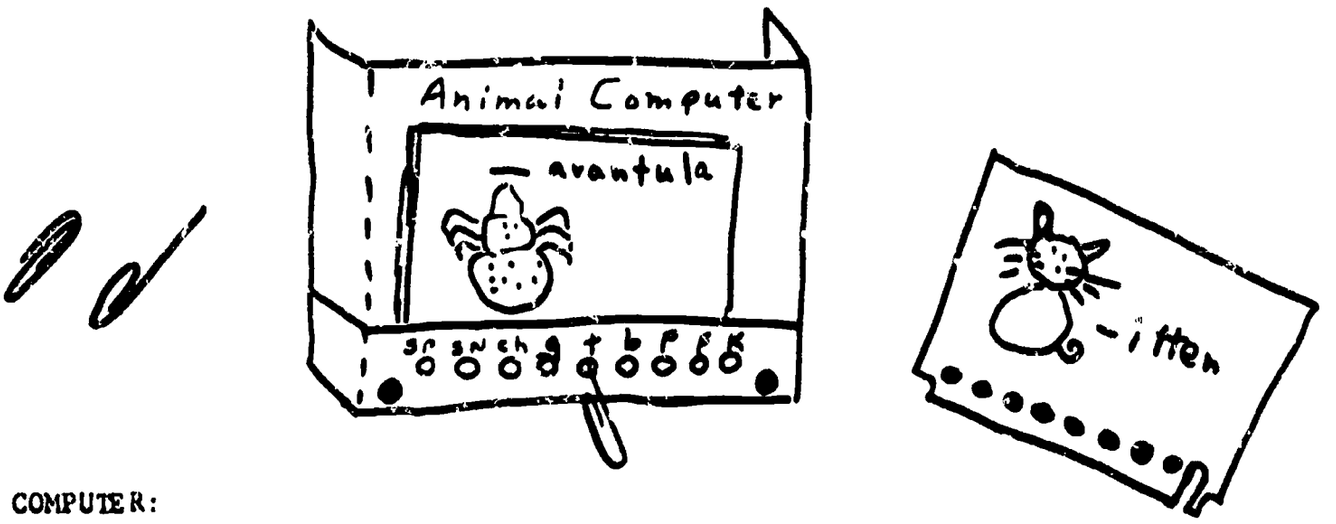


Push a light socket through the hole in the top of the box. Screw in a 7½ watt light bulb. Put your hen in a large play box with your chicks.



ANIMAL COMPUTER

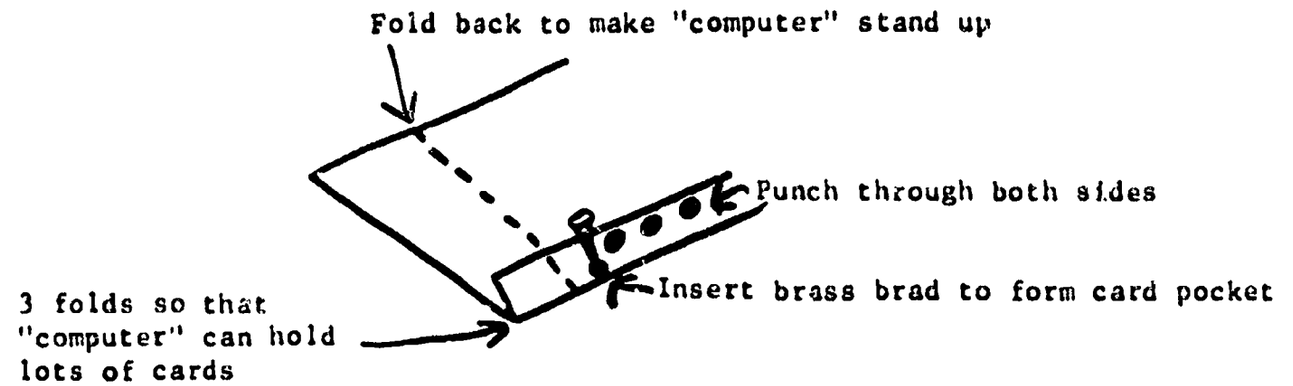
The "Animal Computer" can be used as a self checking device for any number of activities. It is a holder for question cards. The child inserts a straightened paper clip t he hole below the answer he has selected and tries to pull out the card. If he chosen the right answer, the card will come out.



COMPUTER:

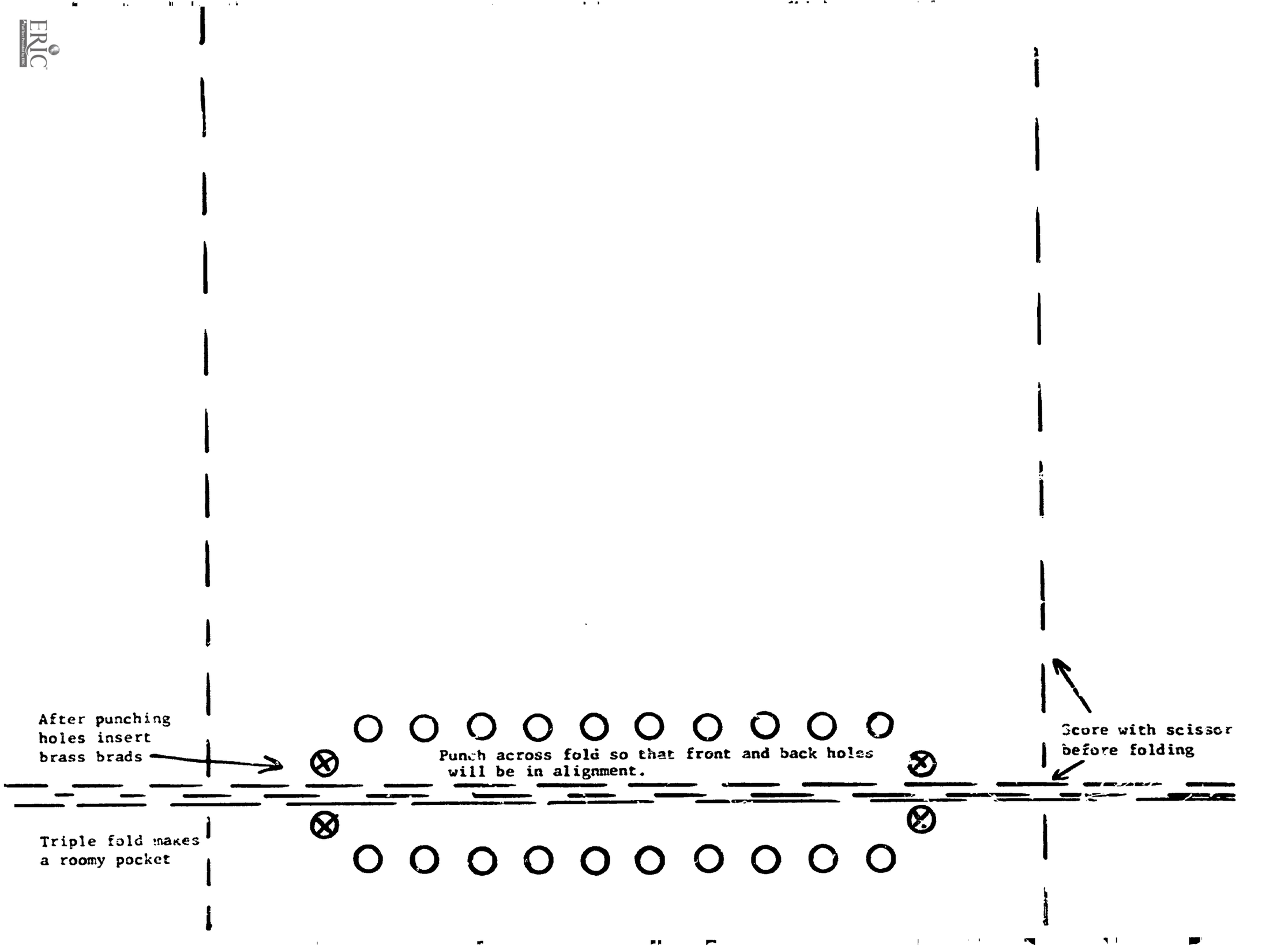
Use the following page in a copy machine to make a ditto master. Run off the card holders on tag paper. Fold up at the bottom with three folds so that the computer can hold "lots" of cards. Then punch so that holes are made through both sides of the folds. Insert brass brads in lower holes to form card pocket. Fold back the sides so that the "computer" will stand up on the student's desk. Label the holes according to the cards you will use. If you plan to use the cards included with this set, you will need to label the holes as follows:

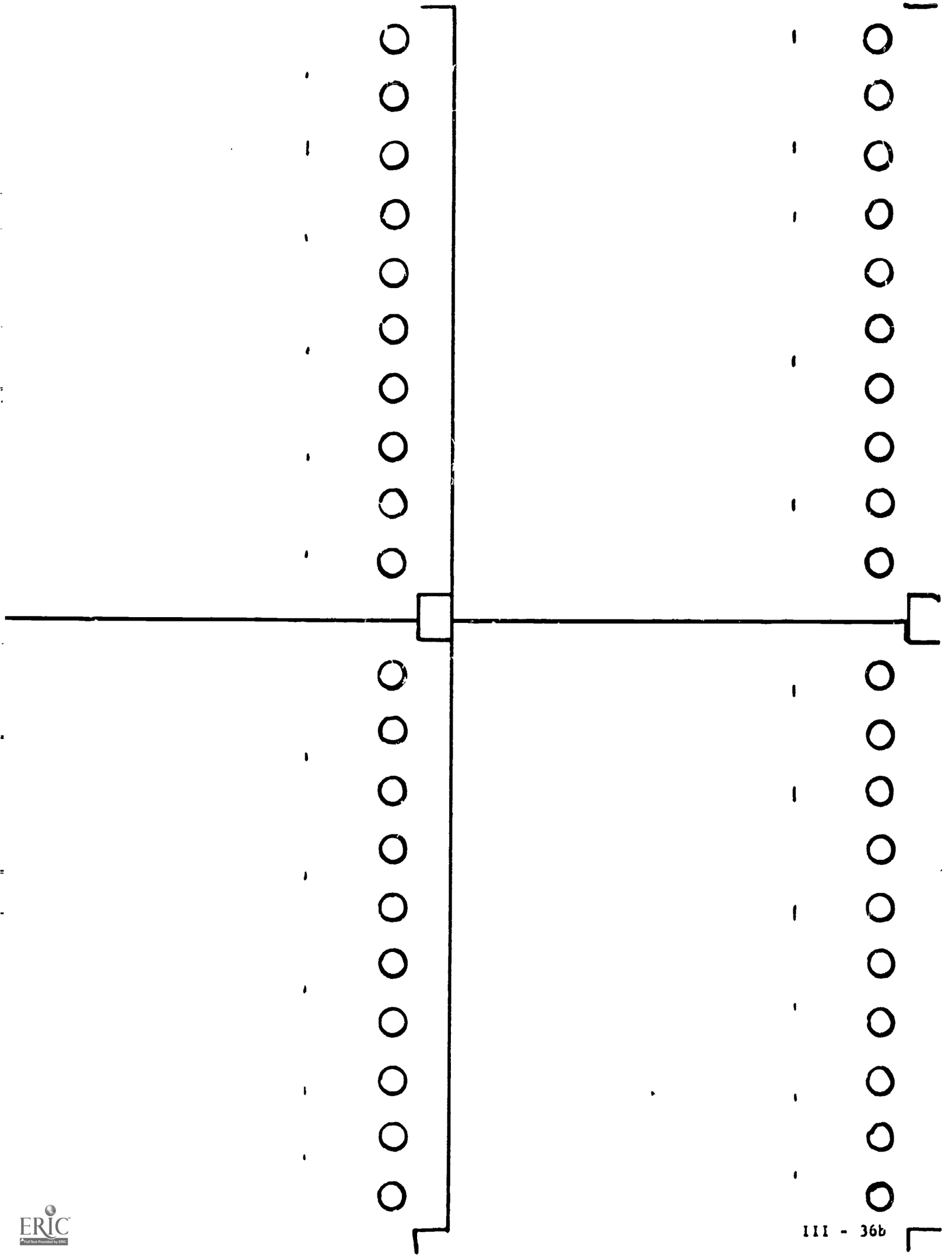
sp sn ch g t b p f k r

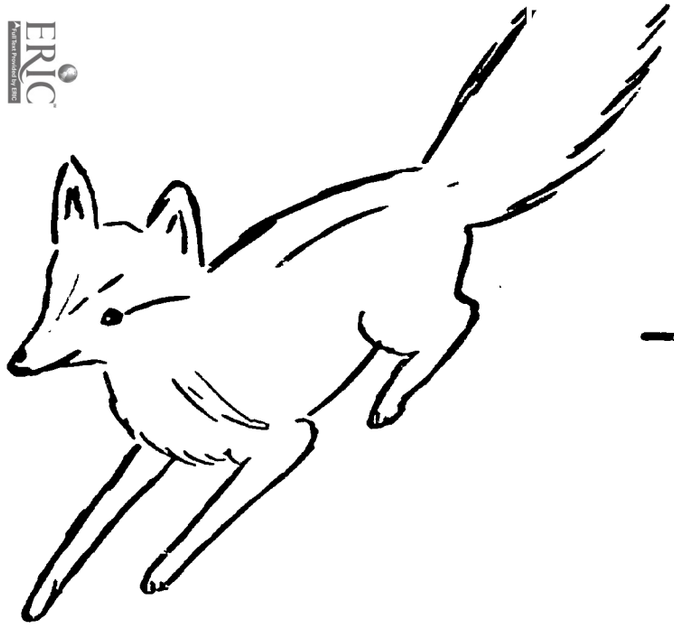


CARDS:

The cards included here are of animals that your children might hold during the Zoo Project. Use a copy machine to make ditto masters. Run off on duplicating paper. Cut out and punch. Be sure and cut out the bottom corners of the cards as indicated as these corners guide the cards into the right position in the "computer." Make up other sets of question cards. Four will fit on an 8½" x 11" sheet of paper. This allows for 10 answers per set. Make as many question cards as you like as long as they fit within these 10 answers. A blank master page is included for planning your own sets. Be sure and draw in a slot to the correct answer hole for each card. Also try Math problems, etc.


After punching holes insert brass brads
Punch across fold so that front and back holes will be in alignment.
Score with scissor before folding
Triple fold makes a roomy pocket



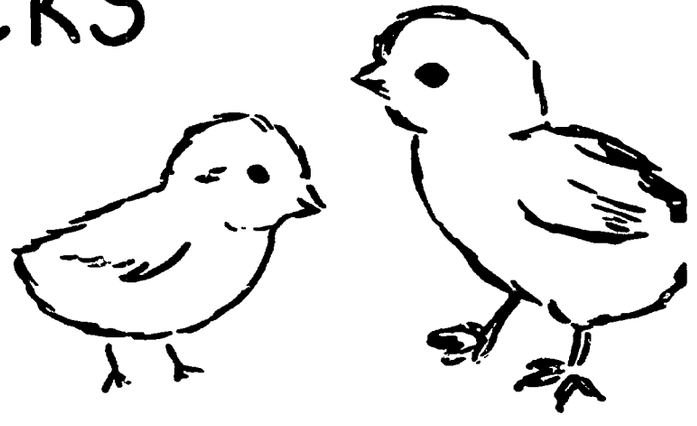


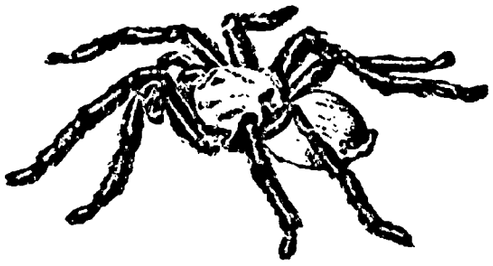
_ox

_abbit

_oad

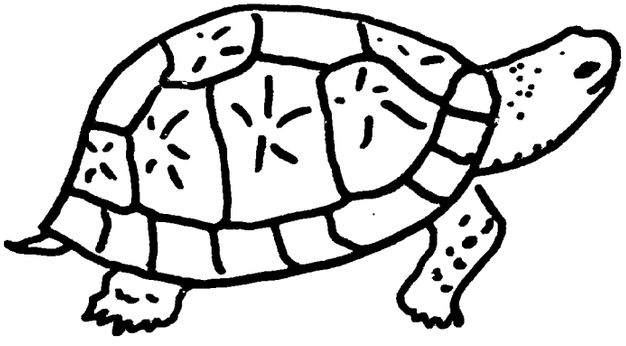
__icks





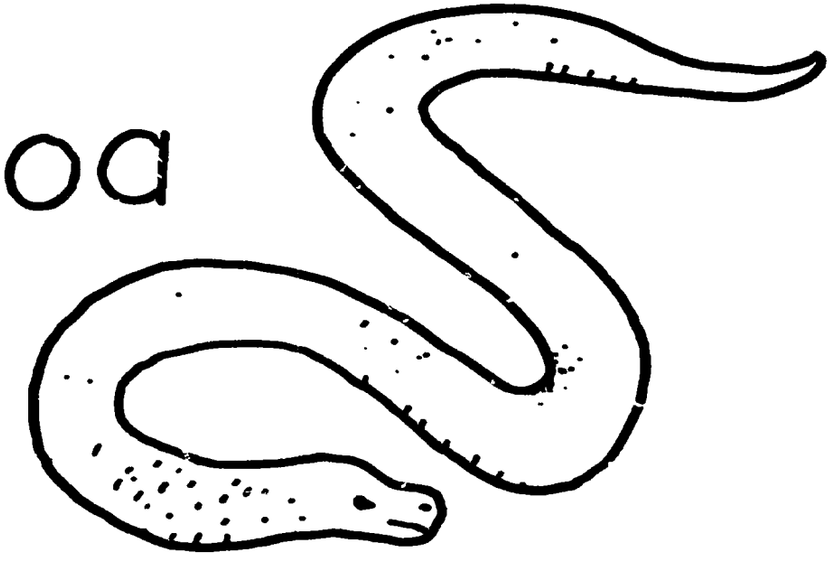
__ider

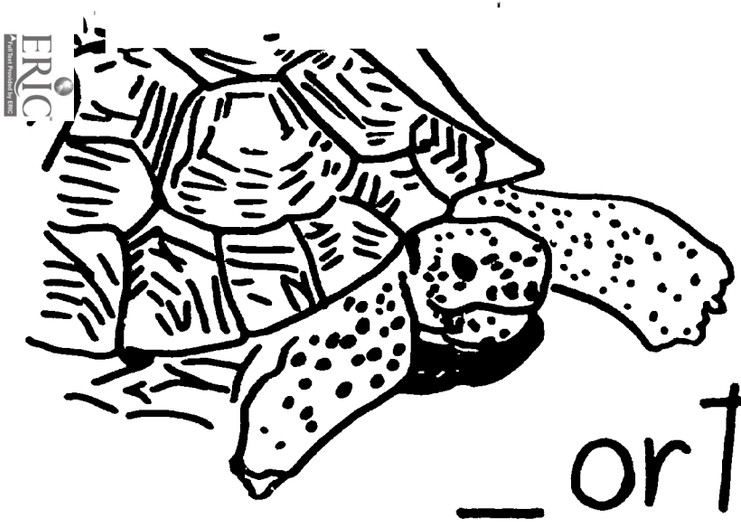
_arantula



_ox turtle

_oa

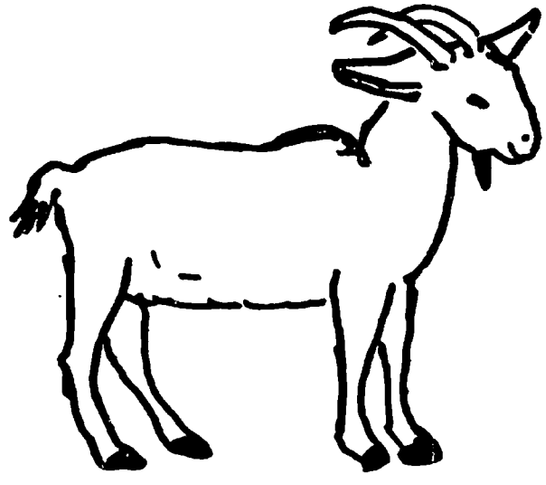




_ortoise

__ake

_arrot

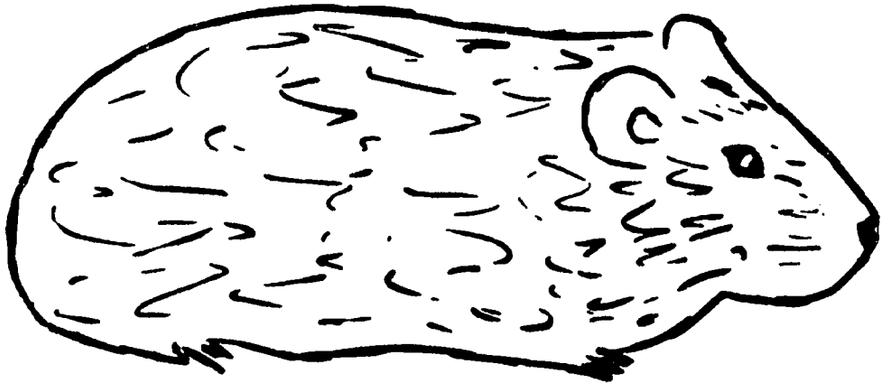


_oat

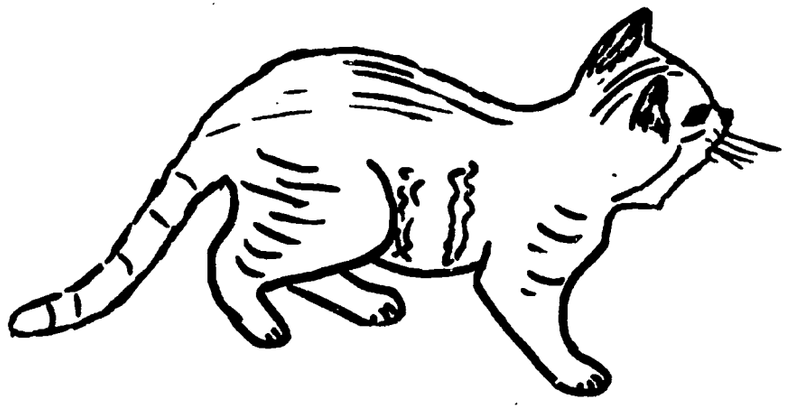
__inchilla

_inkajou

_uinea Pig



_itten



Help! I have found an animal.

It has no legs
Its body is covered with scales
It is probably...

1. A worm
2. A mammal
3. A snake
4. An insect

Help! I have found something alive.

It has four legs
Its body has hair
It is...

1. A bird
2. A reptile
3. A spider
4. A mammal

Teacher: Children should make a card holder with holes numbered (blank) (blank) 1 2 3 4 5 (blank) (blank) (bl
(See Zoo Project Handbook, III - 36 & 36a)

Help! I have something that moves.

It has two legs
It has feathers
It is ...

1. A reptile
2. A mammal
3. A spider
4. A bird

Help! I have found an animal.

It has many eyes
It has eight legs
It is...

1. A snake
2. A spider
3. A bird
4. An insect

Help! I have found an animal.

It has no legs
It has no hair
It has no scales
It is...

1. A snake
2. A worm
3. A bird
4. An amphibian

Help! I have found something alive.

It has hair
It has two legs
It is a ...

1. A mammal
2. A reptile
3. A bird
4. An amphibian

Help! I have found something that moves.

It has no hair
It has six legs
It is...

1. A bird
2. An insect
3. A spider
4. An amphibian

Help! I have found an animal.

It has four legs
It has no hair
It has no scales
It is ...

1. An insect
2. A reptile
3. A mammal
4. An amphibian

A BOOK ABOUT

. . . . . .

(Animal's Name)

by

. . . . . .

(Your Name)

Individualized Animal Books

These books are easy to complete and fun to read. Every child's book will be different and personally his.

Use a thermal copier to make duplicating masters of the following pages. Run off, cut in half and staple together to make 16 page books.

Run covers off on tag or colored construction paper.

You may wish to type up a word bank for the inside of the back cover for children to use in filling in the spaces.

You may wish to add other pages that are appropriate for your class.

You may wish to place a sheet of white paper over this half sheet of instructions when using the thermal copier so that the children's back cover will be blank and will not have these directions on it.

This book is about..... (Animal's Name)

He/she is a..... (Kind of animal)

He/she is a:

Cross out one word.

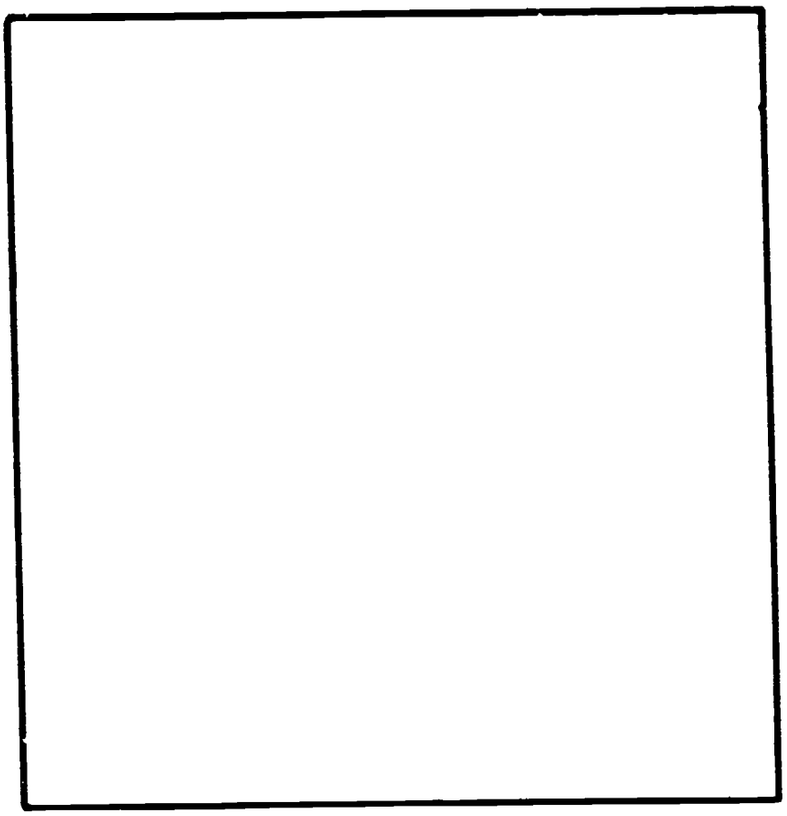
- mammal ☐
- reptile ☐
- bird ☐
- fish ☐
- amphibian ☐
- insect ☐
- spider ☐

1.

.....'s body is covered with

- hair ☐
- skin ☐
- scales ☐
- feathers ☐
- shell ☐
- ..... ☐

Here is a picture of .....

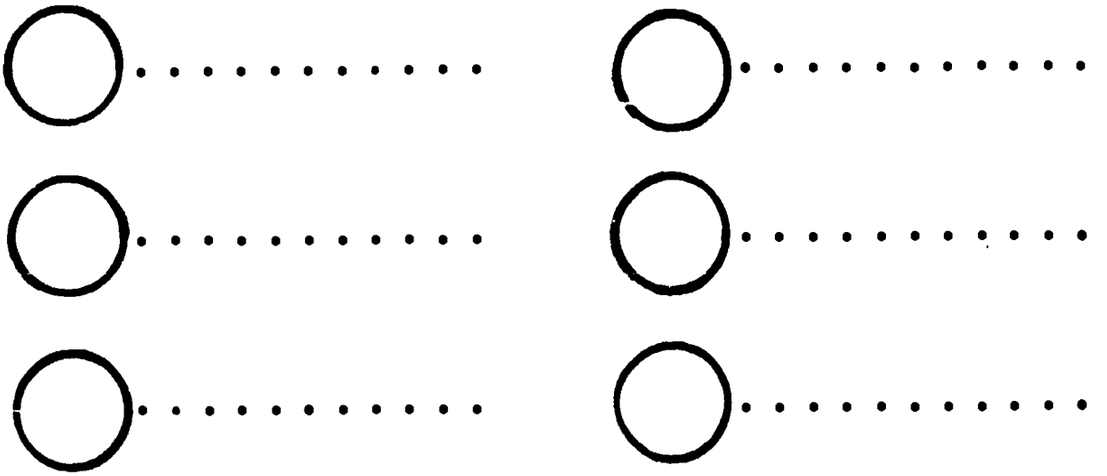


2.

.....'s body has many
(Animal's Name)

colors on it. Some of the colors I can see are:

(Use your crayon in the circle to show the color.)



I think his/her favorite color is.....

.....has.....legs
(Animal's Name)

His/her feet have.....toes.

.....
(Animal's Name)

has a tail ☐

does not have a tail ☐

This tail is about.....inches long.

..... lives in a
(Animal's Name)

.....

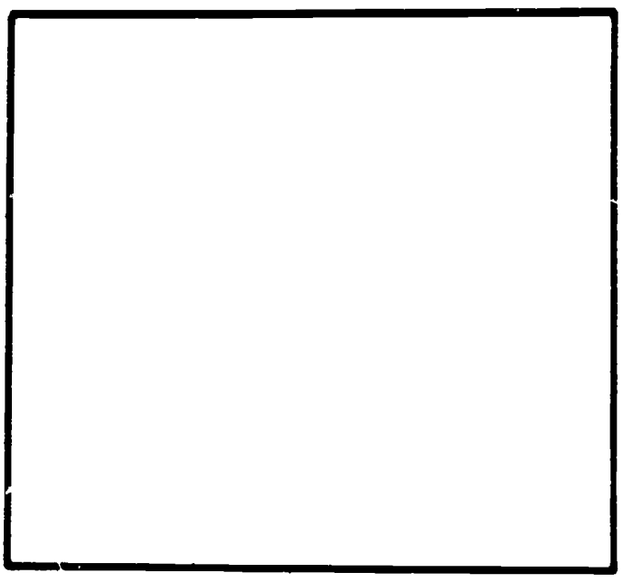
This home is

.....inches long and
.....inches wide and
.....inches tall.

(Use a ruler to help you)

5.

The home is made of



wood	☐	(Check
glass	☐	as
wire	☐	many
steel	☐	as
plastic	☐	you
cardboard	☐	need)
cloth	☐	
.....	☐	

Here is a picture of.....'s home.
(Animal's Name)

6.

.....likes to eat.
(Animal's Name)

His/her favorite food is.....

He/she also likes to eat.....

.....

.....

.....

.....is mostly a
(Animal's Name)

○ plant eater

○ meat eater

7.

All animals can do something.

.....best trick is
(Animal's Name)

.....

.....

.....

.....

.....

.....

8.

My mother would probably

☐ let me have a pet like.....
(Animal's Name)

☐ NOT let me have a pet like.....
(Animal's Name)

because.....

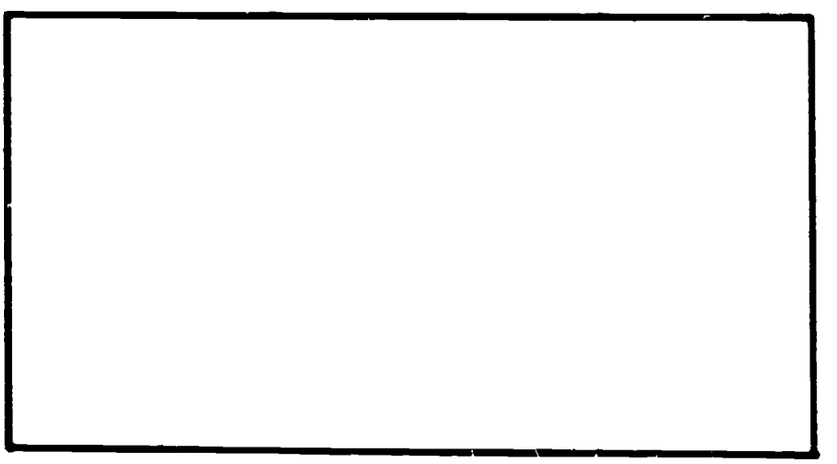
.....

.....

.....

.....

I think one part of.....'s
(Animal's Name)
body is very interesting. Here is a picture of it.



This is.....'s.....
(Animal's Name) (Part of body)

If.....were my pet,
(Animal's Name)

I would let him/her play with my.....

.....and my.....

I would let him/her sleep in my.....

.....

For a treat, I would give him/her.....

.....

.....

.....

11.

.....
(Animal's Name)

would ☐

would not ☐

make

a good pet for a

policeman	○	sailor	○
barber	○	pitcher	○
dentist	○	sheriff	○
king	○	principal	○

because.....

.....

.....

.....

12.

.....'s favorite song
(Animal's Name)
would probably be.....

.....

his/her favorite T.V. program would be

.....

.....

His/her favorite kind of car would be

.....

If.....could talk
(Animal's Name)
probably the first thing he/she would say
would be: ".....

....

.....

....."

He/she would say it to.....

ORAL LANGUAGE ACTIVITIES FOR GROUPS WORKING AT A PRIMARY LEVEL

The following activities may be used in conjunction with either the In-Zoo or In-School Programs. The teacher may elect to collect pictures of her own rather than use the following pictures. These are here just to give you a start. Use a thermal copier to make copies and cut apart to make individual pictures. Do the same with the templates for activity 4.

The Zoo Project office has a tape of appropriate animal sounds to accompany these pictures. Not all these animals have sounds that humans can hear. Not all the sounds on the tape have pictures. To check out the tape, call the Zoo Project Office - 234-6194.

ANIMAL PICTURE ACTIVITIES:

1. Naming - Sentence Building - Play game in which teacher (or child) shows a picture and asks, "What is this?" Children must answer in a sentence, "This is a (bear)."

2. Sound Identification - Collect zoo animal sounds (or borrow our tape).
   (1) Show picture with sound.
   (2) Identify.
   (3) Allow children to imitate the sound.
   (4) Randomly play sounds; allow individual children to point to the picture that matches the sound.
   (5) Have child identify the animal from the sound with a sentence, "I hear a (bee)."

3. Listening for Clues - Show individual pictures to children; have them identify with complete sentence: "That animal is a (bird)." Place picture on chalk rail; give them sets of clues about each picture, e.g. "This animal is small. (pause) It is covered with fur. (pause) It has eight legs. (pause) It has eight eyes. (pause) What animal is it?" On another day allow children to make up the clues.

4. Visual Closure - Take pictures familiar to the children and cover with templates similar to ones on following pages. Encourage them to look for visual clues that will help them identify the animal. If they are unable to identify the animal, remove the top template and see if they can recognize the animal. Guesses should be in complete sentences, e.g. "It is a picture of a (zebra)." If they are unable to identify the animal, take away the second template, leaving only template # 1. If necessary remove all three. Whenever a correct identification is made, remove the remaining templates so that the children can see that the response is correct.

5. Listening - Today you will be the teachers. You must find out if I know the names of these animals. "This animal is a (bird)." Children should respond in a complete sentence. "You are right; that animal is a (bird)" or "You are wrong; that animal is a (bee)."

6. Plurals - Place the animal pictures in groups. Have children identify them in plural sentences, "These animals are a (bird), a (dog) and a (lion)." (Not, "This is a bird, and this is a dog, etc.")

7. Sounding - Explain to children you are going to stretch out the names of the animals in the pictures. You will make it longer like you stretch a rubber band to make it longer. Show the pictures and identify: "C.....at" "ele.....phant" etc. Repeat as necessary. Then line up pictures and give sounds at random and have children respond by pointing to the picture or giving a complete sentence.

8. Following Directions and Location Concepts -
Place animal pictures on chalk rail with wide gaps between pictures.
Give the children directions such as, "Put the dog beside the bee."
"Put the spider between the cat and the chick."
Stress locational word such as "beside," "between," "by," "next to."
You may wish to encourage sentence practice by asking, "Mark, did Sue put the dog beside the bee?" Child should be encouraged to answer with a complete sentence, "Yes, Sue put the dog beside the bee." On a different day use a pocket chart and stress the words above and below.

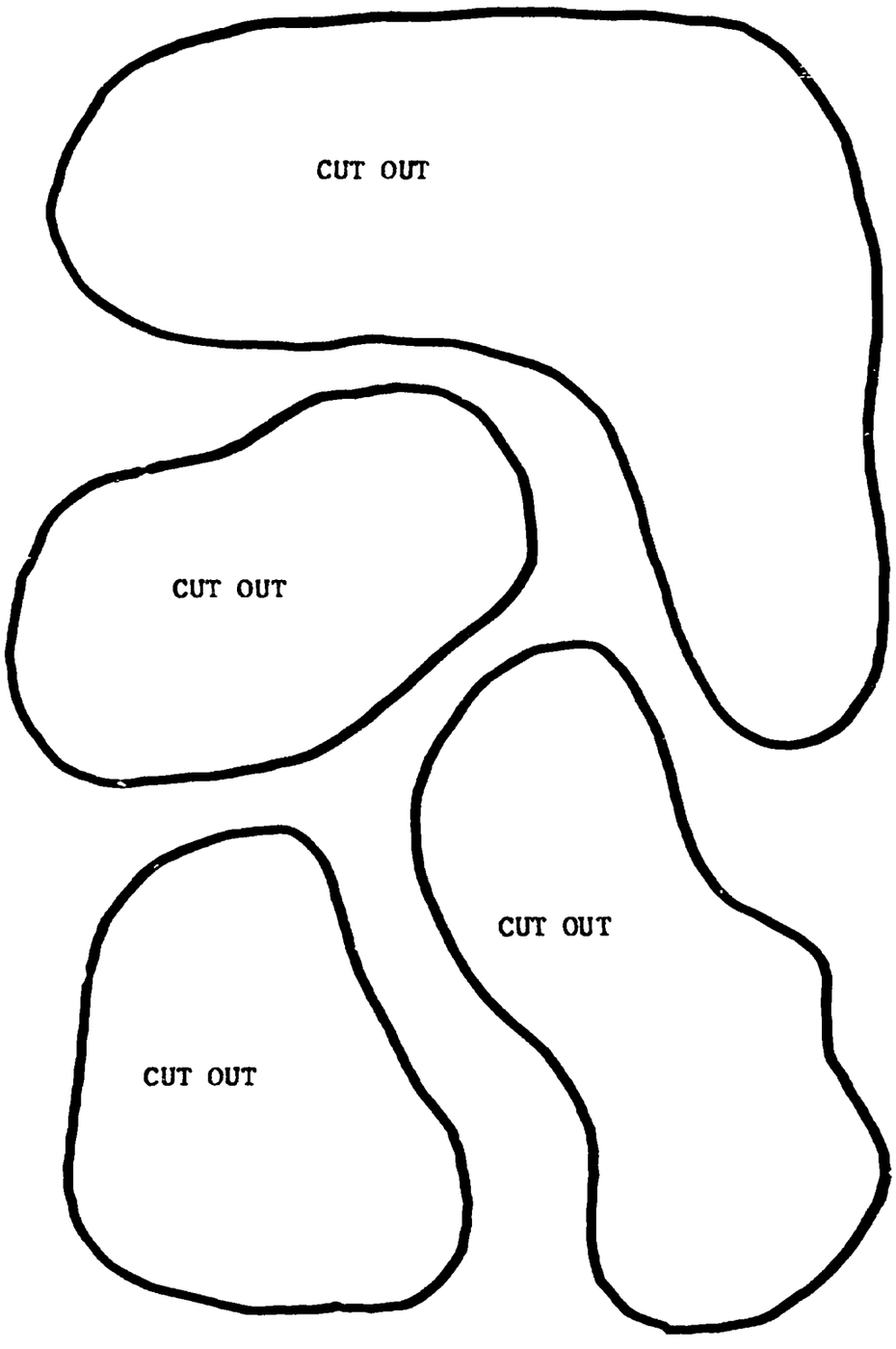
9. Critical Thinking - "I will show you the pictures of two animals. You tell me which animal makes a louder sound." Show pictures in pairs. Children should answer in a complete sentence. "An (elephant) is louder than a (bee)." On a different day use size as a comparison: "A (dog) is bigger than a (bee)." Also reverse sentence, "A (bee) is smaller than a (dog)."

10. Classification - Have children arrange animals in groups - Farm animals - Zoo animals - Pets - Wild Animals (there will be some overlapping between groups. Any placement that they can justify should be allowed) - Have them use complete sentences when arranging animals in groups: "A (chick) is a farm animal."

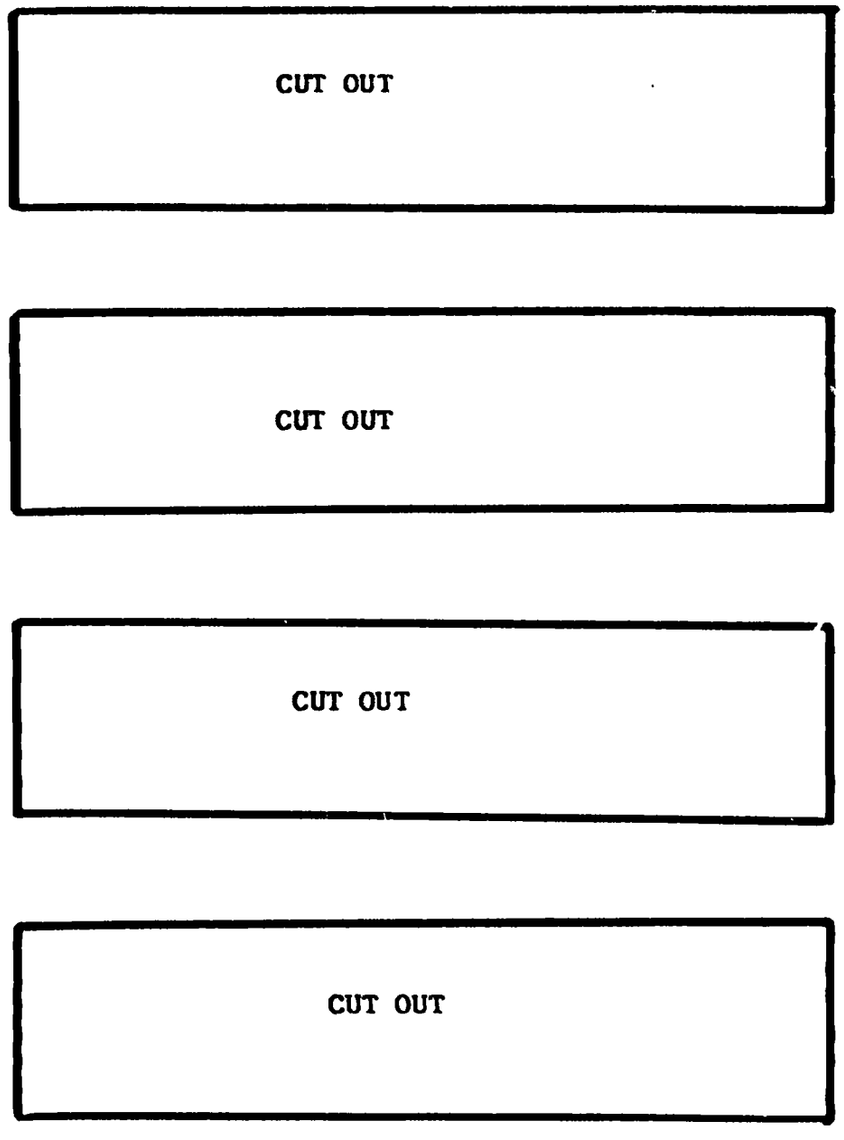
11. Listening - Remembering - Display pictures. Play animal sounds from tape at random. Ask child, "Mark, you went to the zoo. You learned a sound. What did you hear?" Children should answer in a complete sentence, "I went to the zoo. I heard a (seal)." If children's abilities allow, play a sequence of two or three sounds to identify - "I went to the zoo. I heard a cow and a puppy and a lion."

12. Relationships - Display animal pictures in series of three. Have the children use complete sentences in describing their relative size. "The (dog) is larger than the (bee). The (elephant) is the largest animal." (Encourage the use of the word large rather than big.) On another day use smaller and smallest.

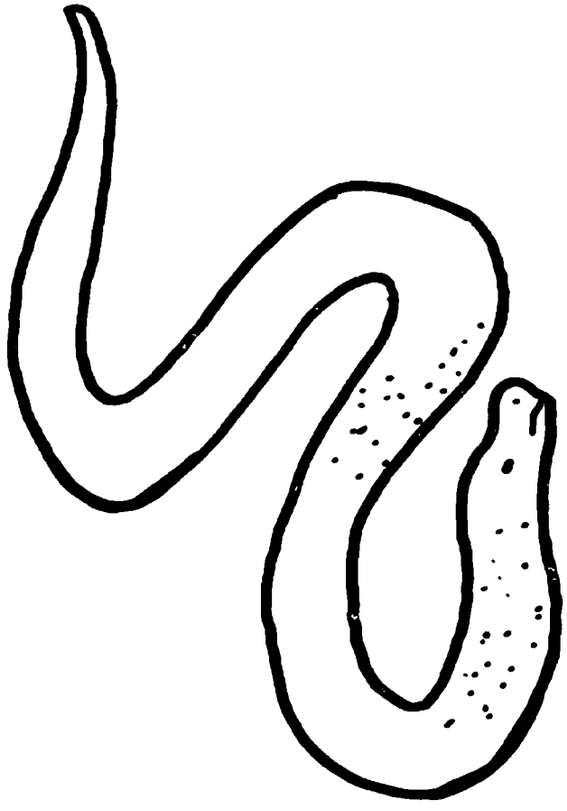
13. Classification - Critical Thinking - Have children pair pictures and give a complete sentence about why they paired them. "The (cat) and the (dog) go together because (they both eat meat)." Accept any pairing that the child makes that he can justify with a good sentence.

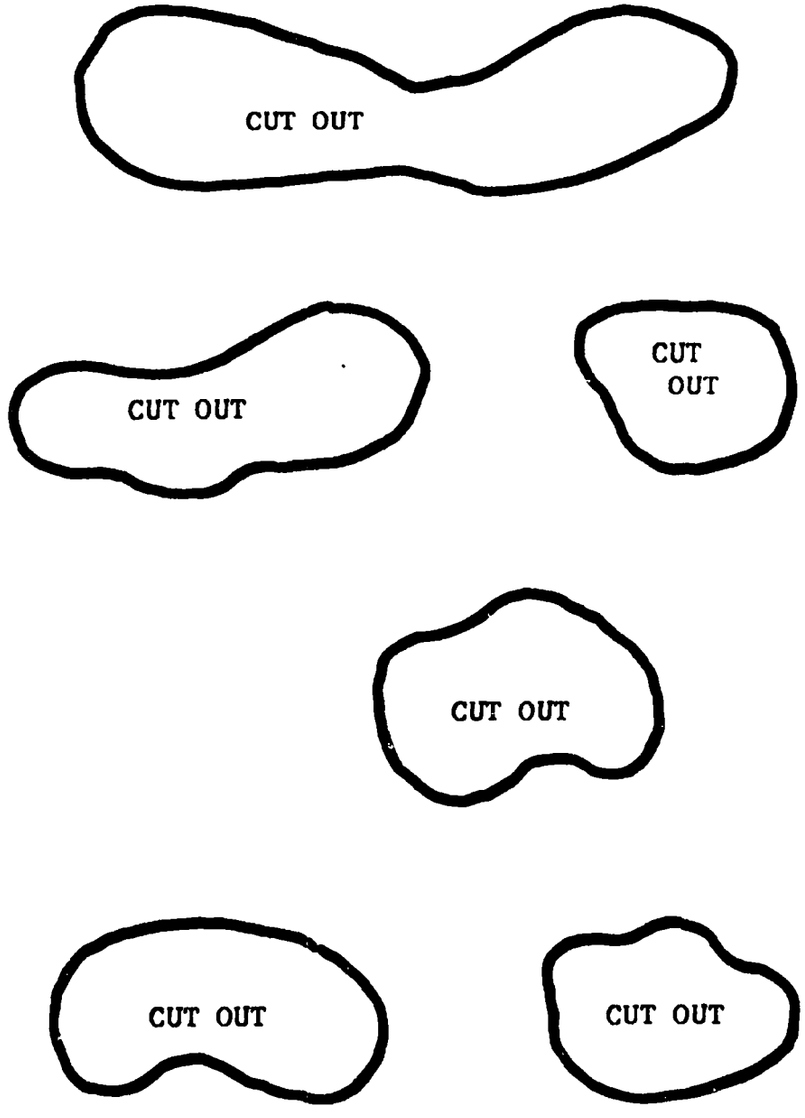


TEMPLATE II

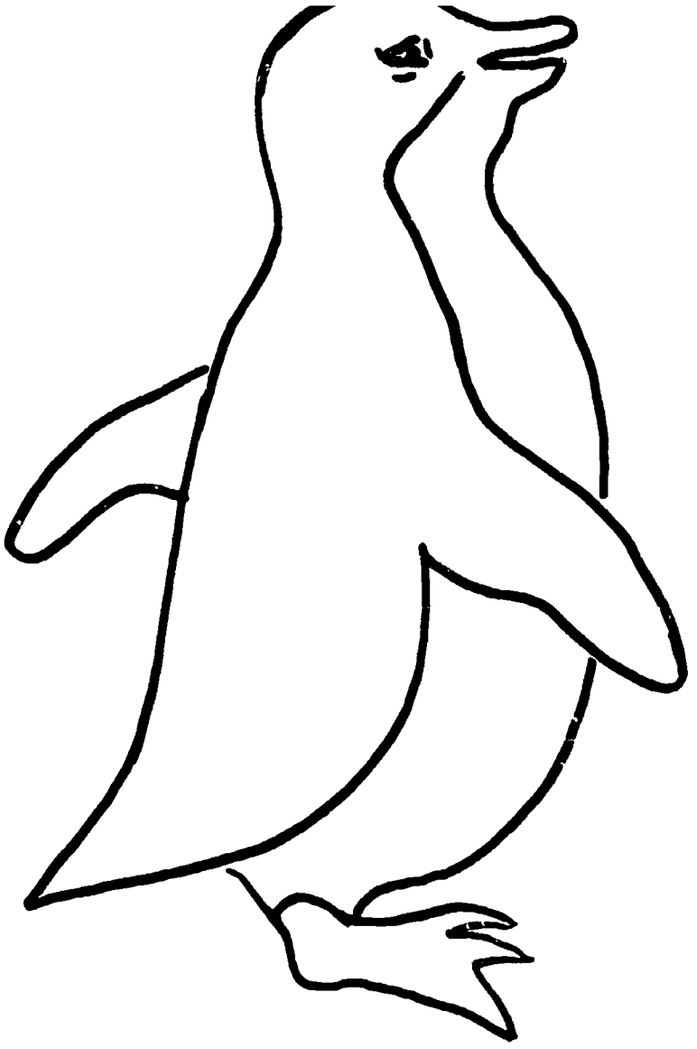


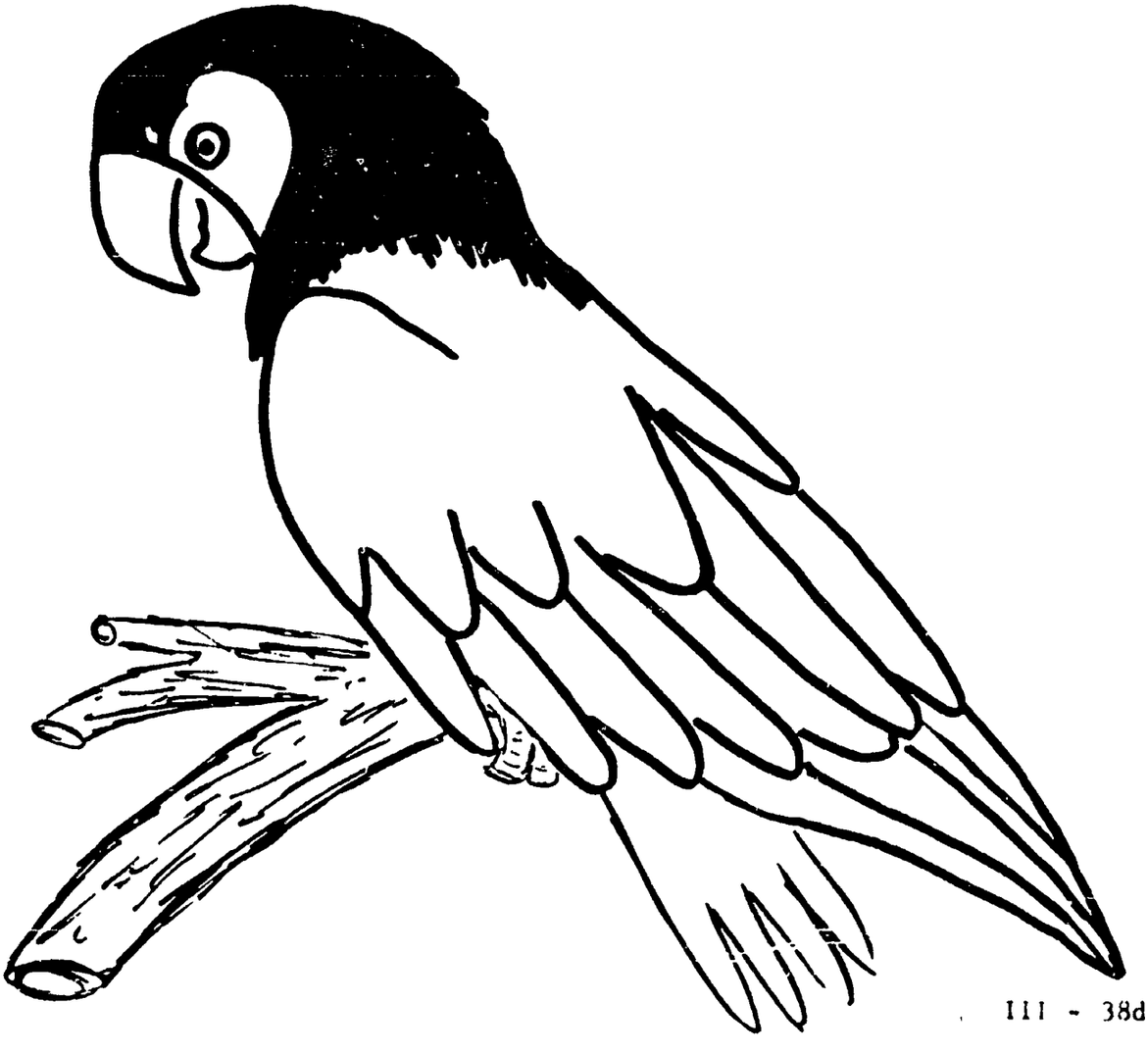
TEMPLATE I

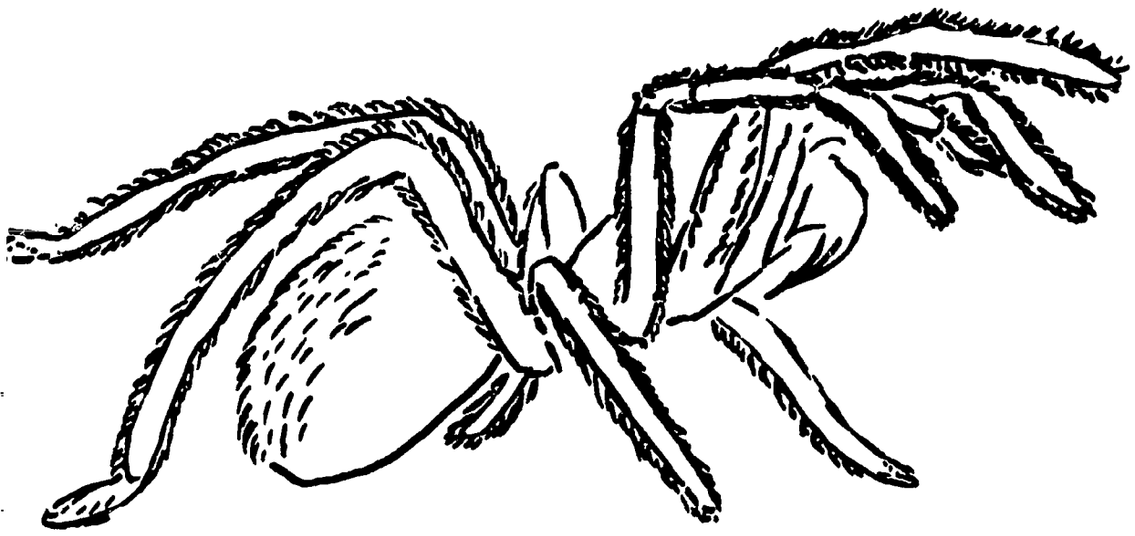


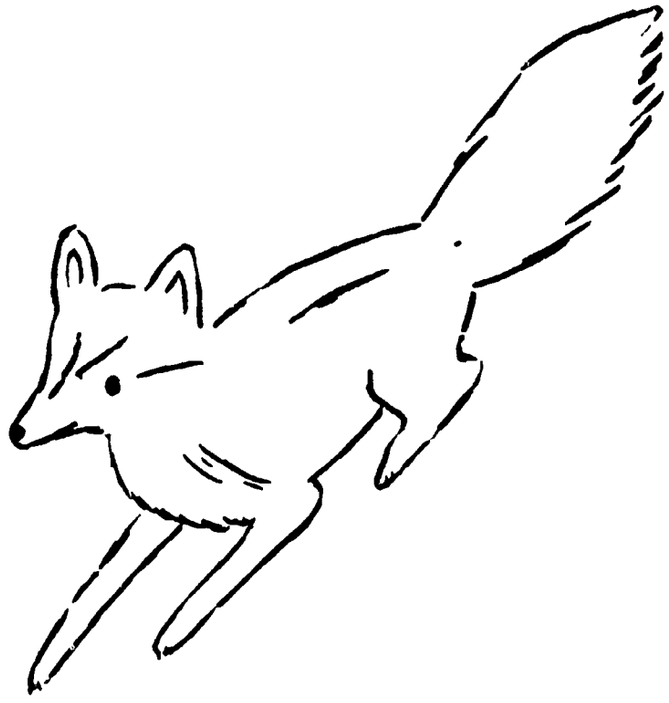


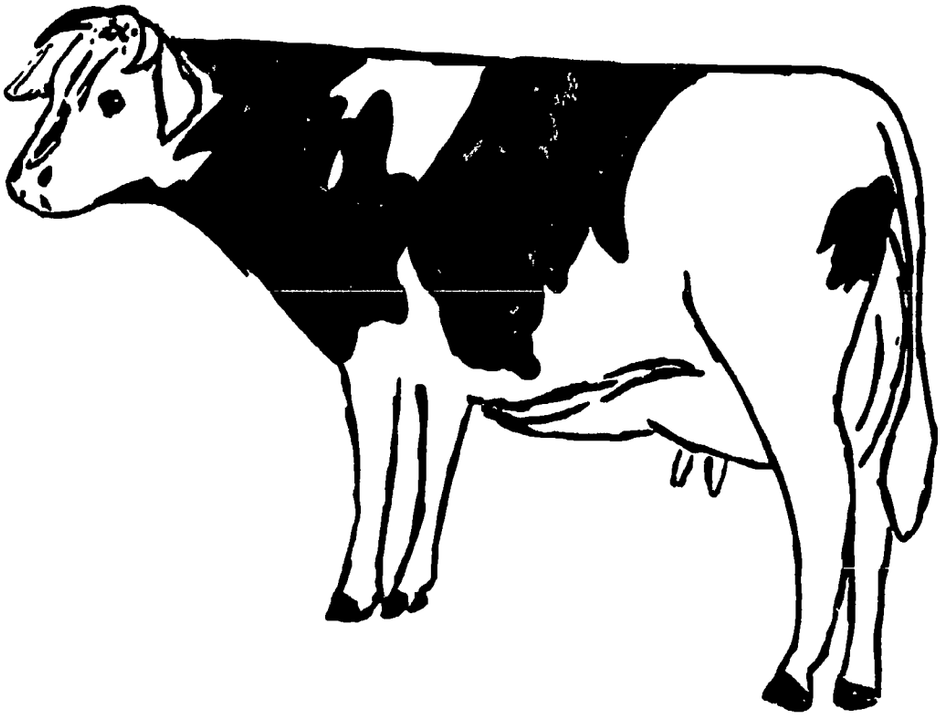
TEMPLATE III

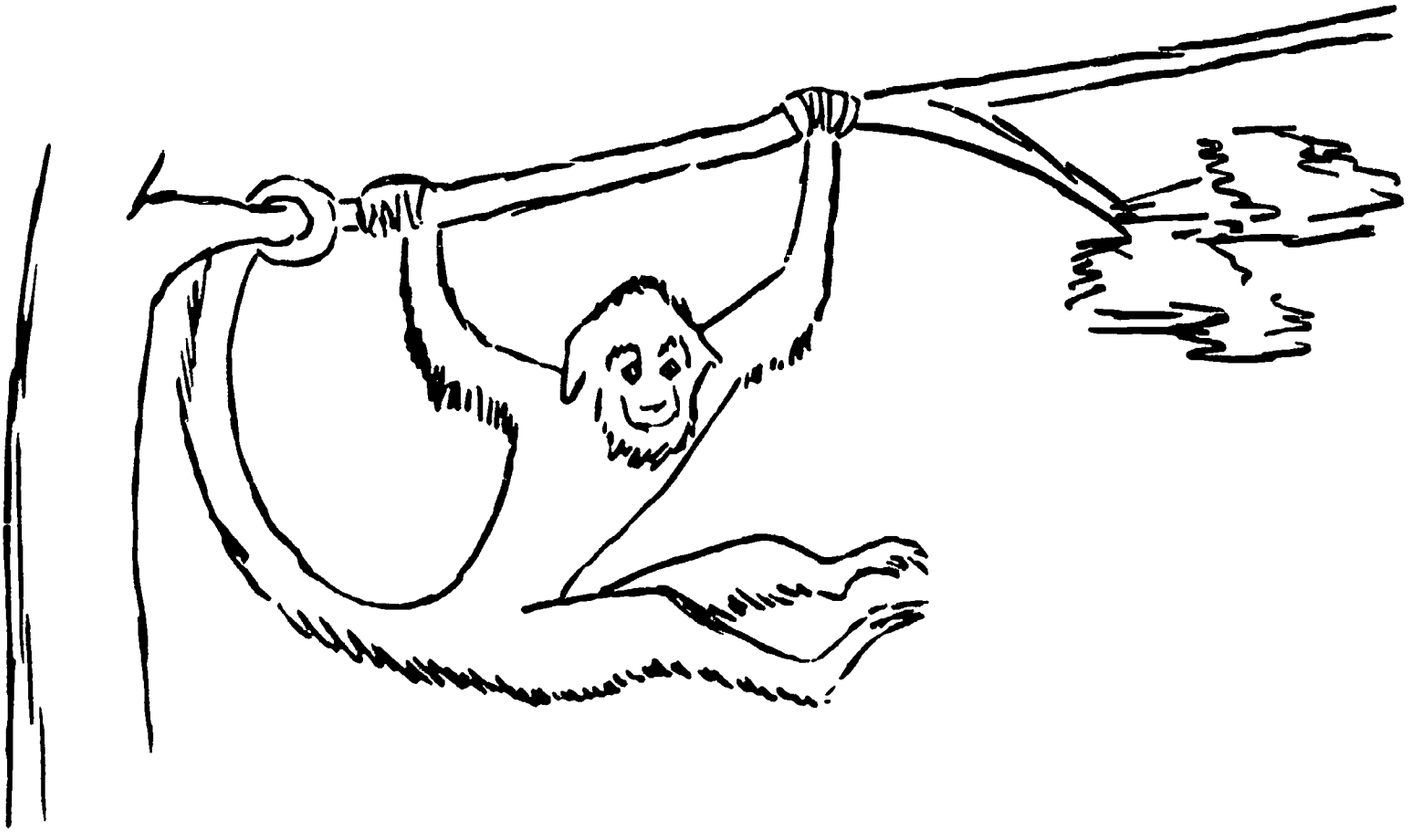


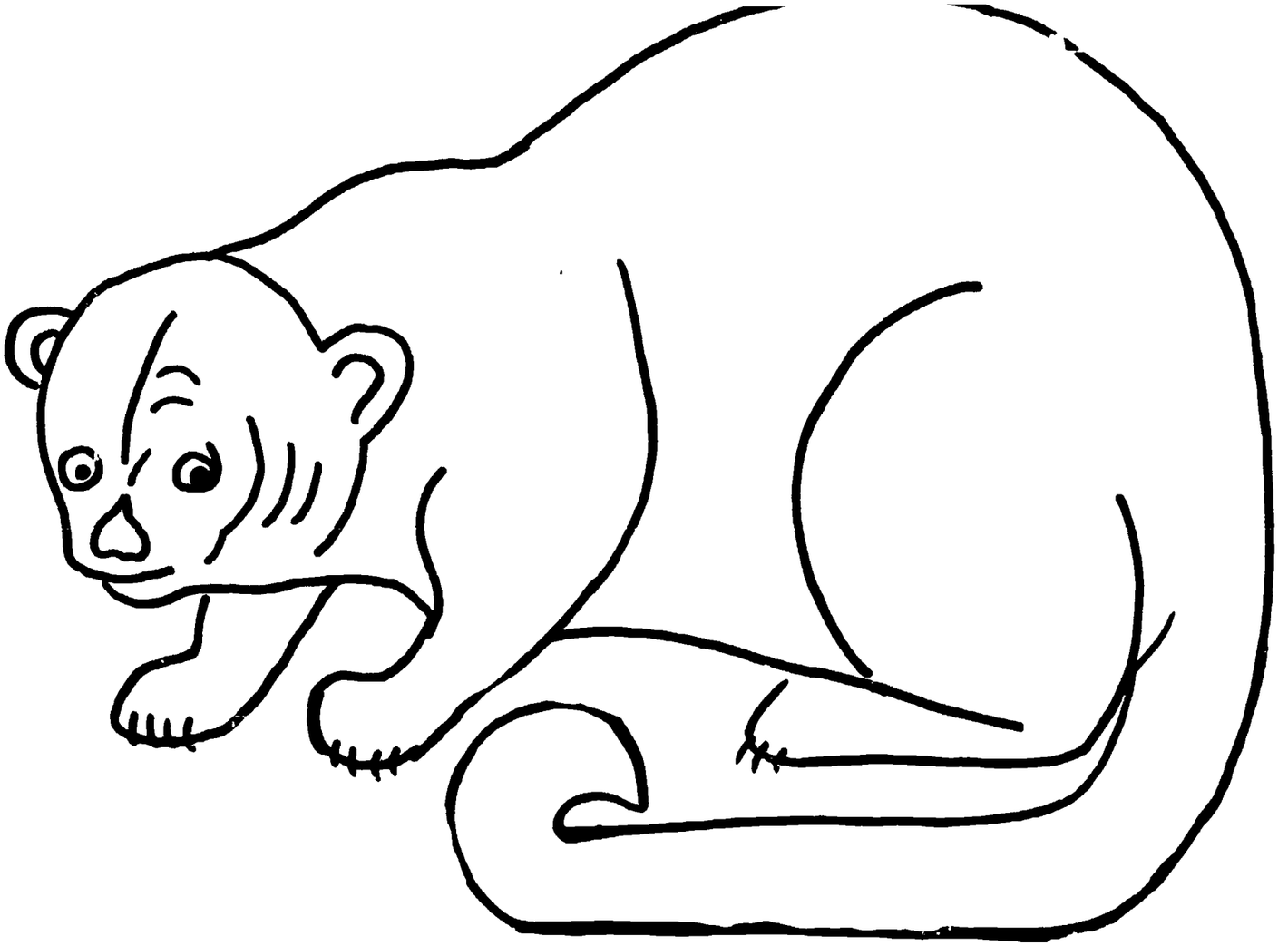


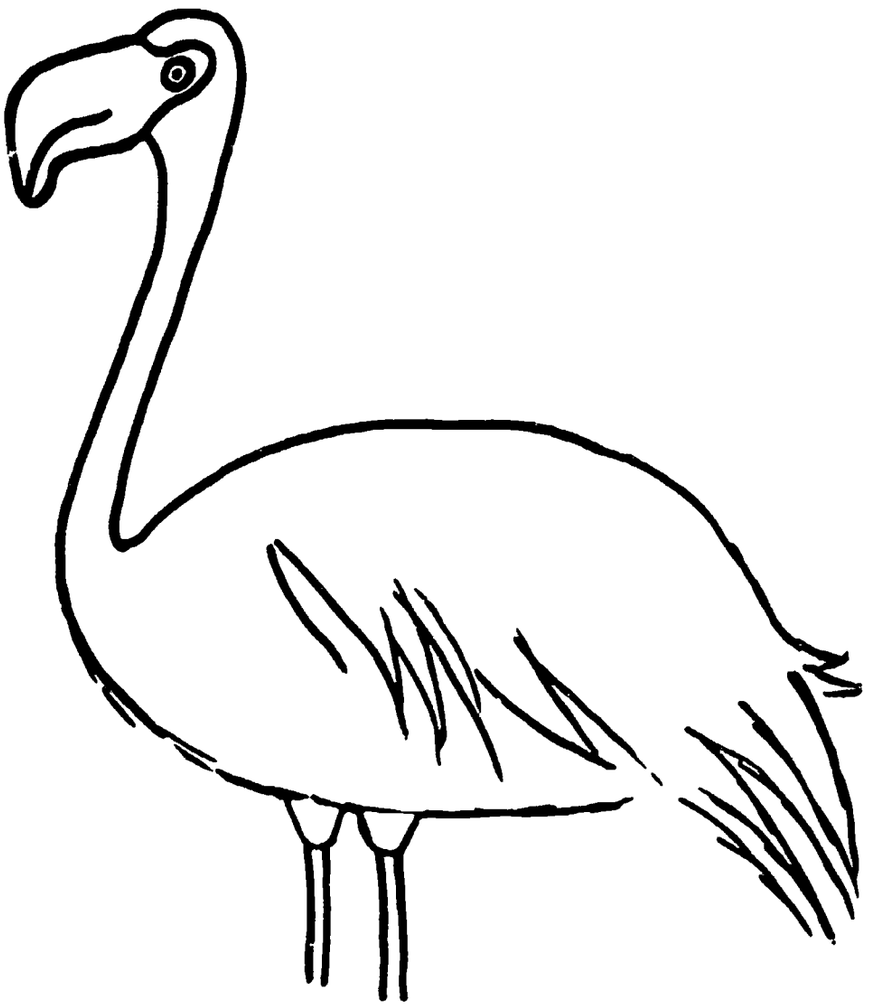


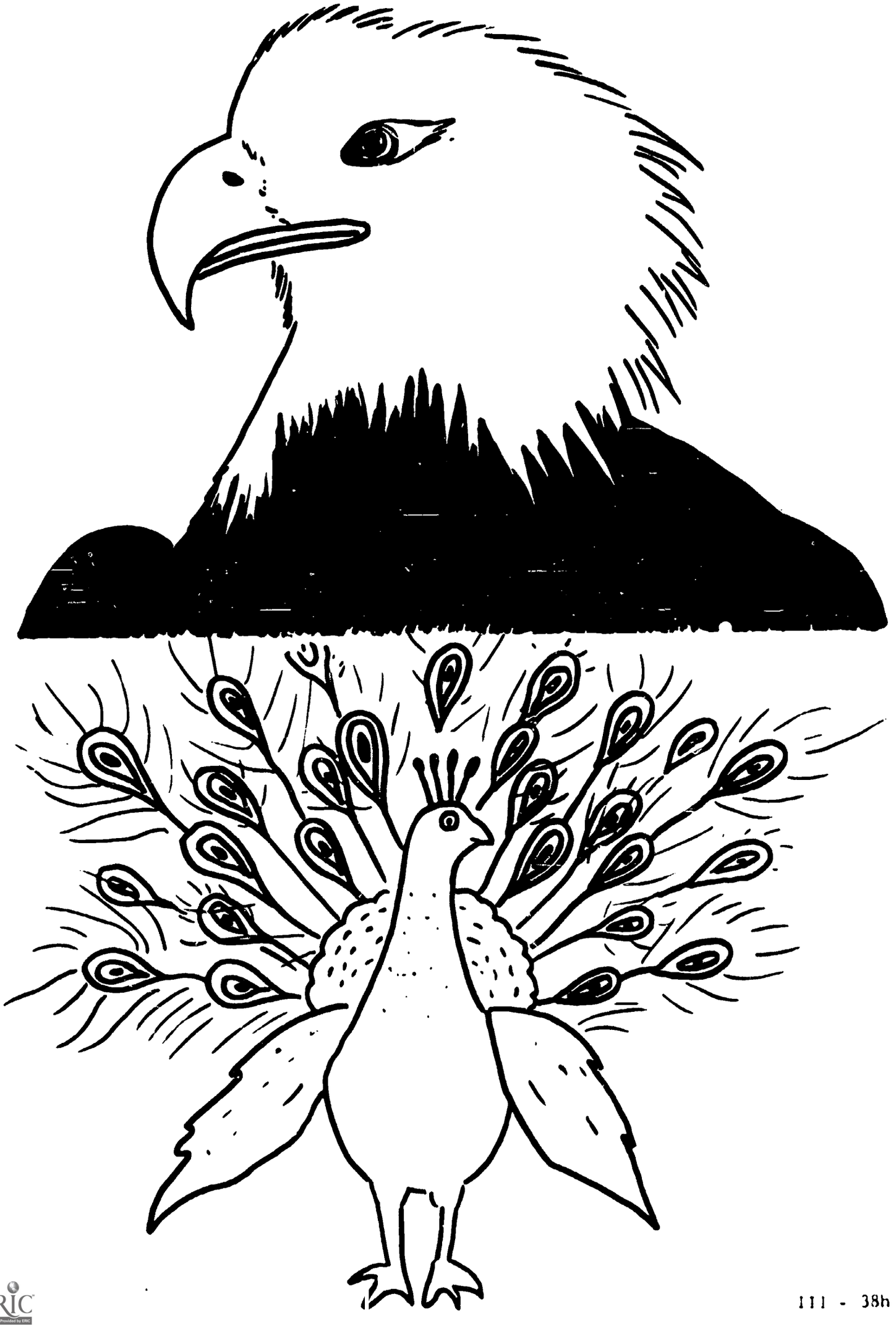


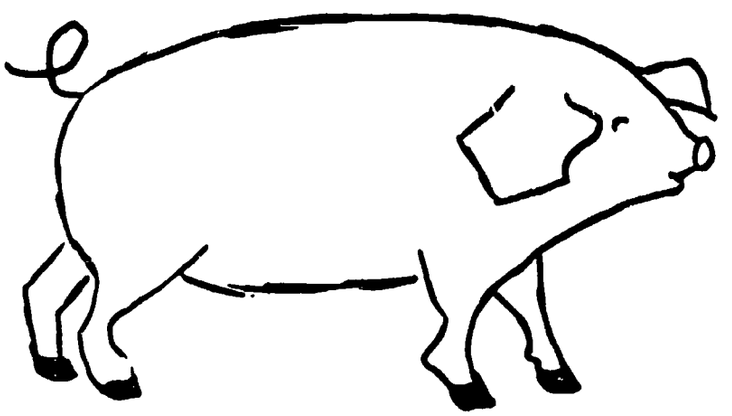


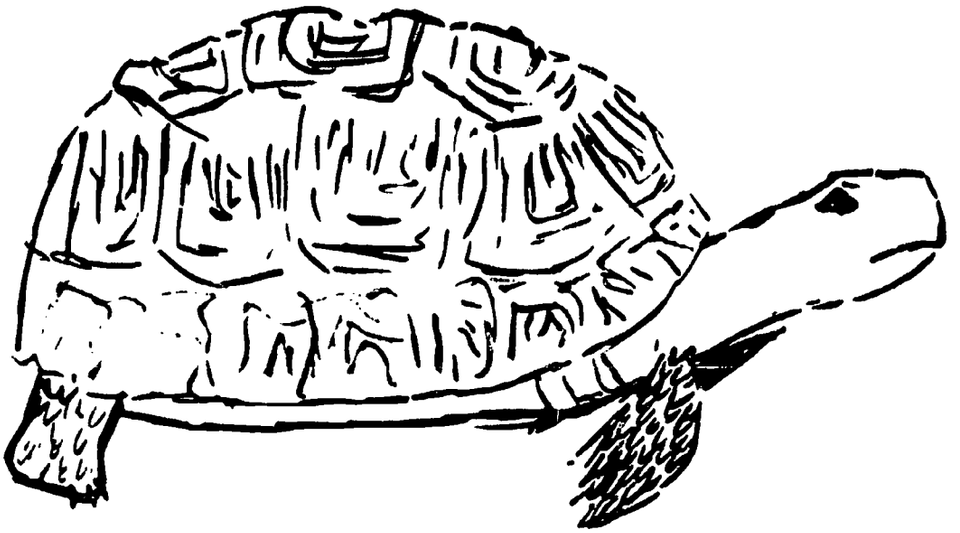


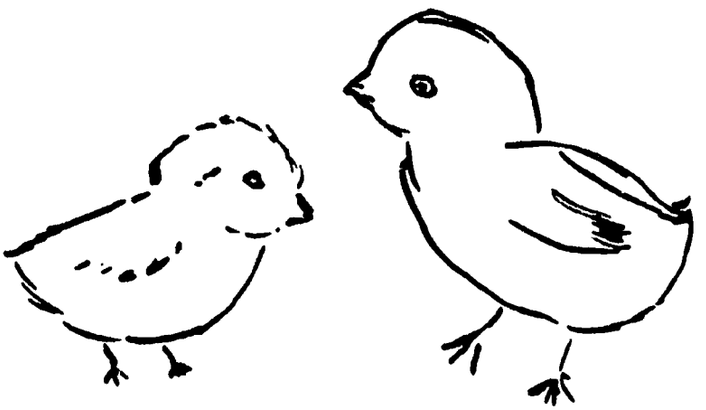


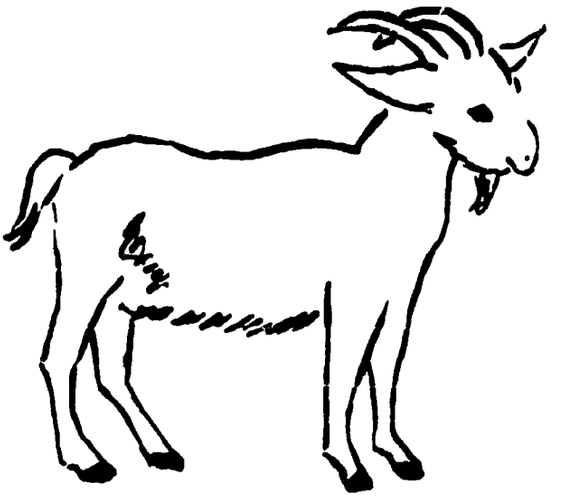


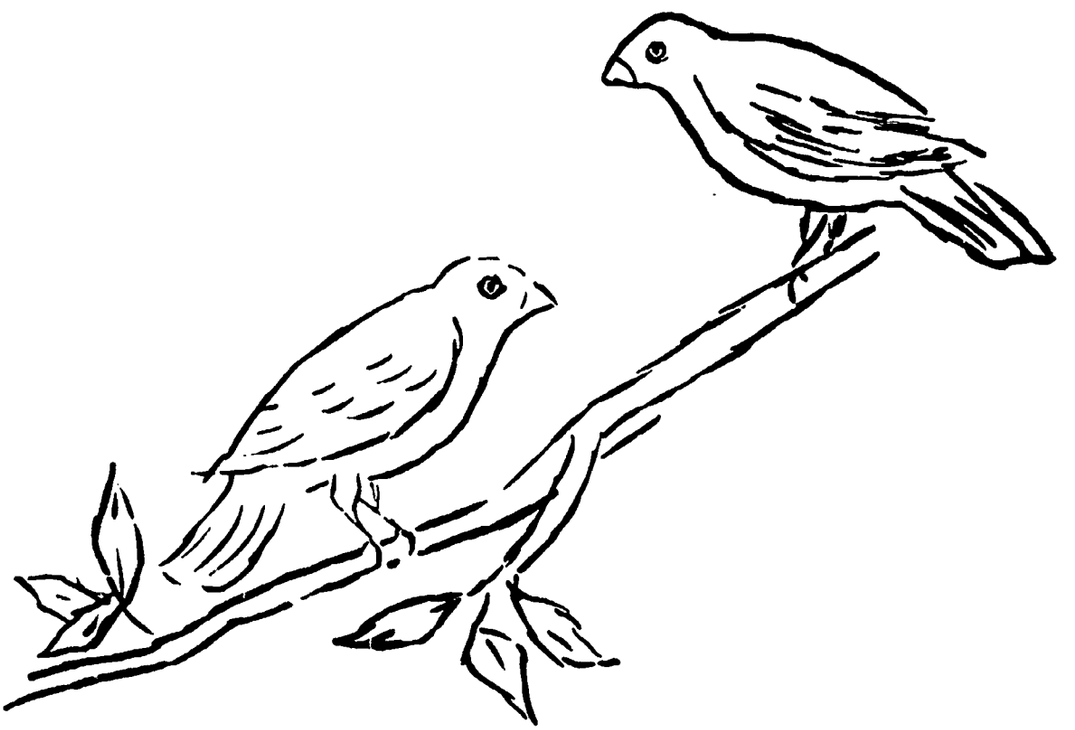


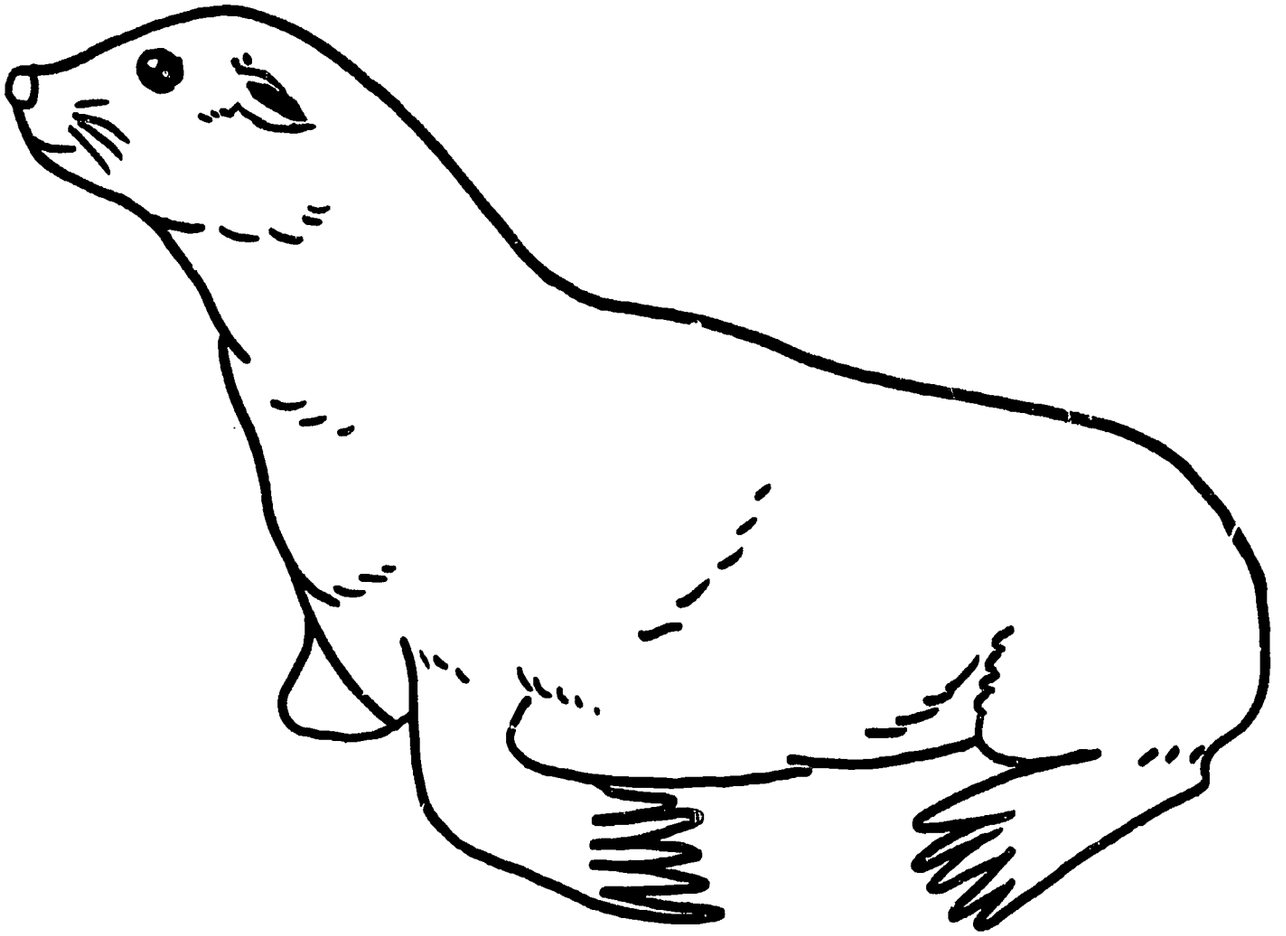


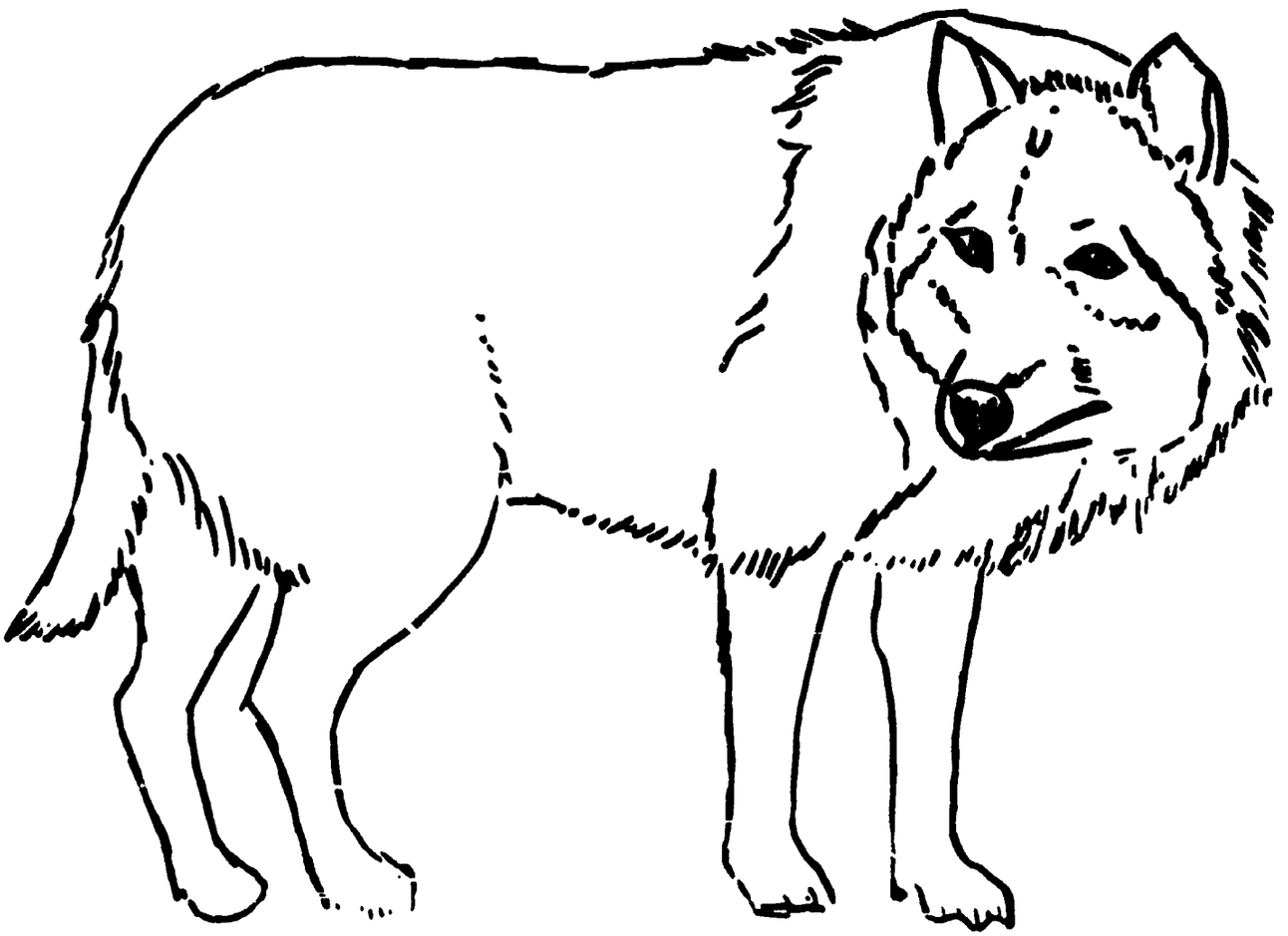


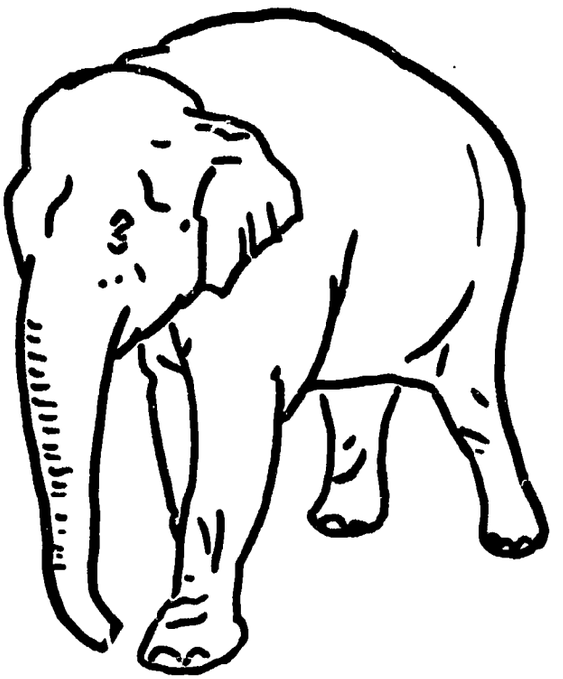


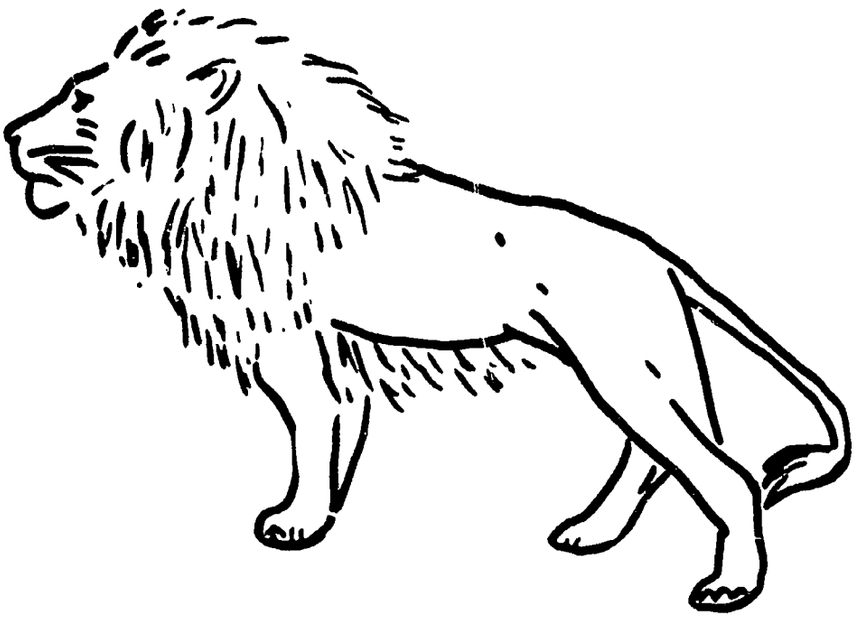


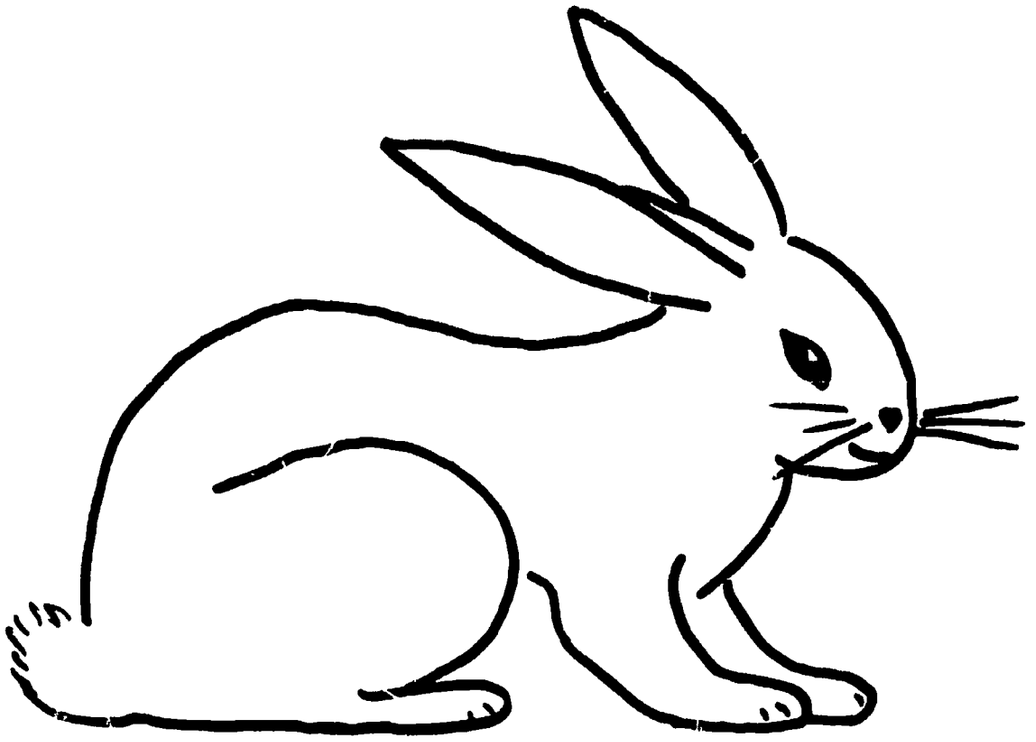


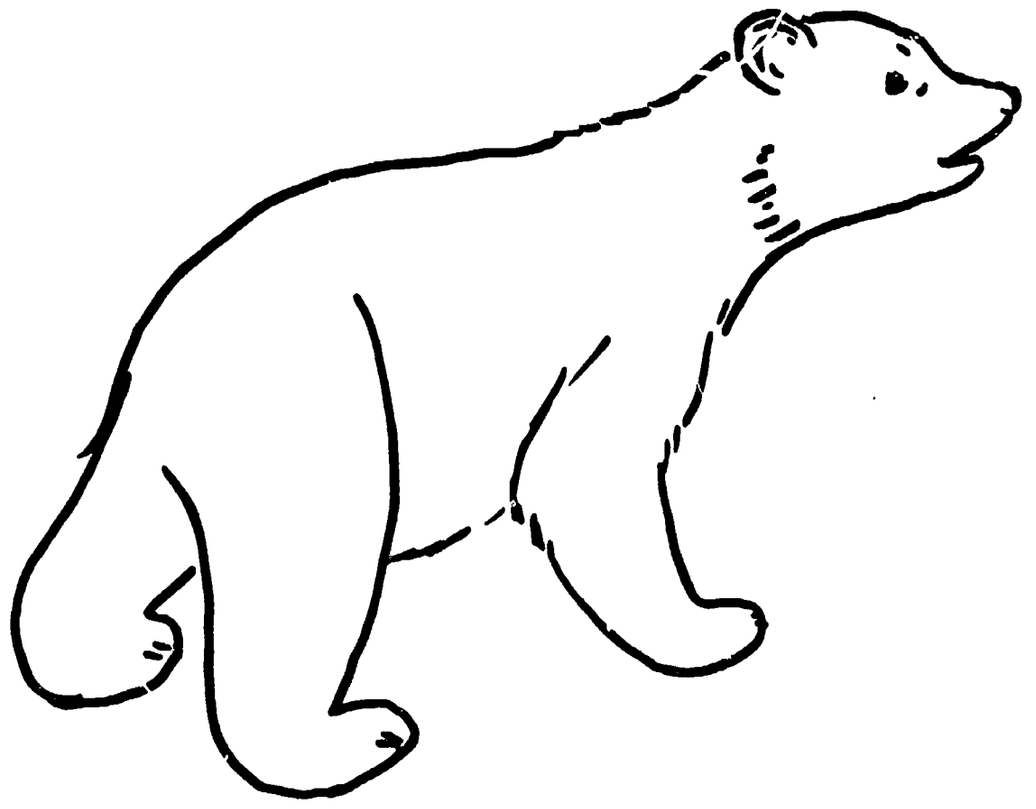


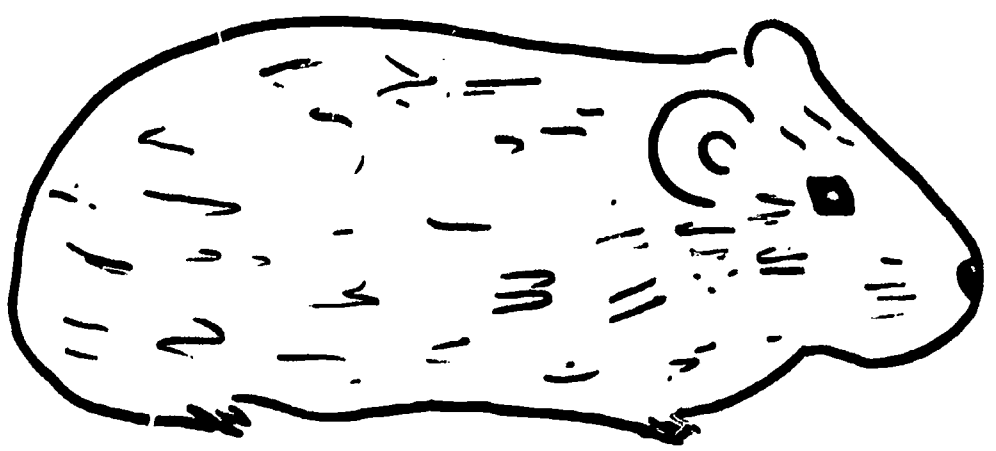


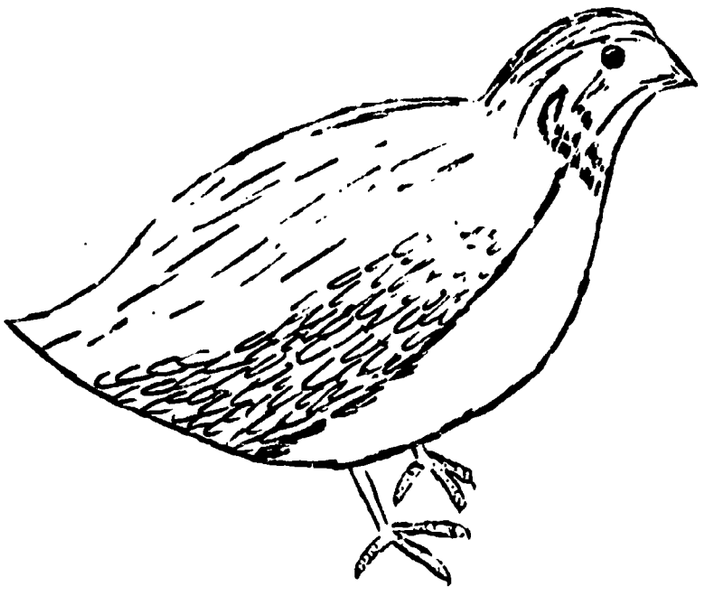


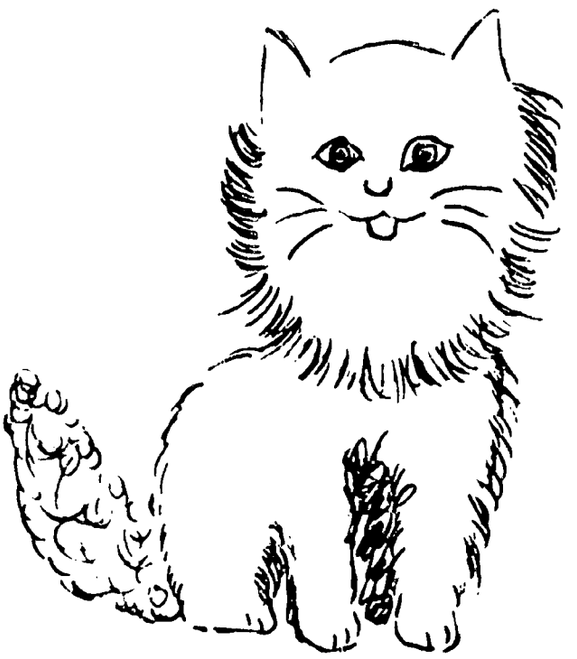












S E C T I O N IV

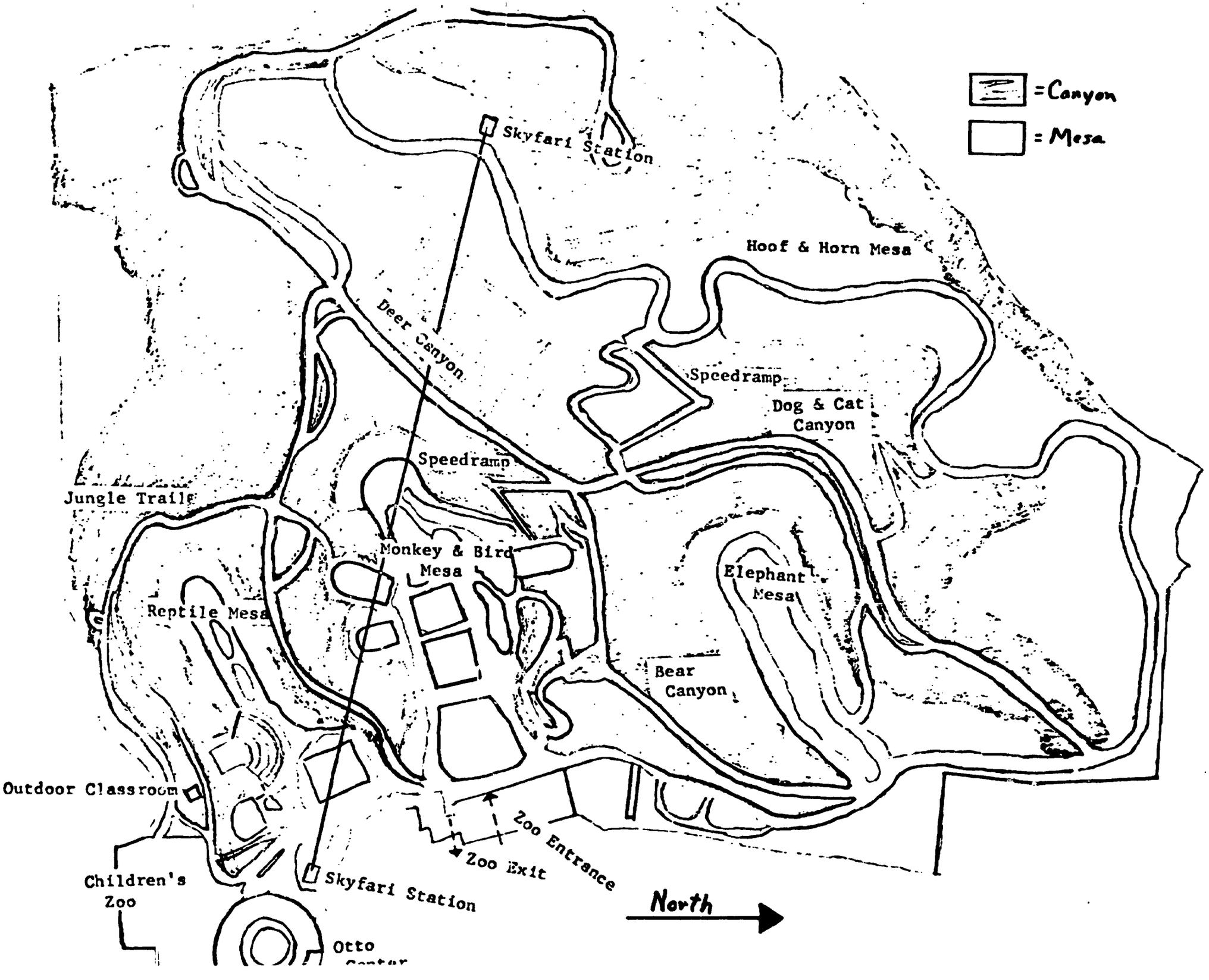
"IN ZOO" ACTIVITY SHEETS

- This section contains Master Copies of student pages. These pages may be used in a thermal copier to make duplicating masters.

- Teacher instructions or "Word Bank" sections on some of the following pages may not be appropriate for your class. If you wish to eliminate these, just mask them with a slip of white paper before running them through the thermal copier.

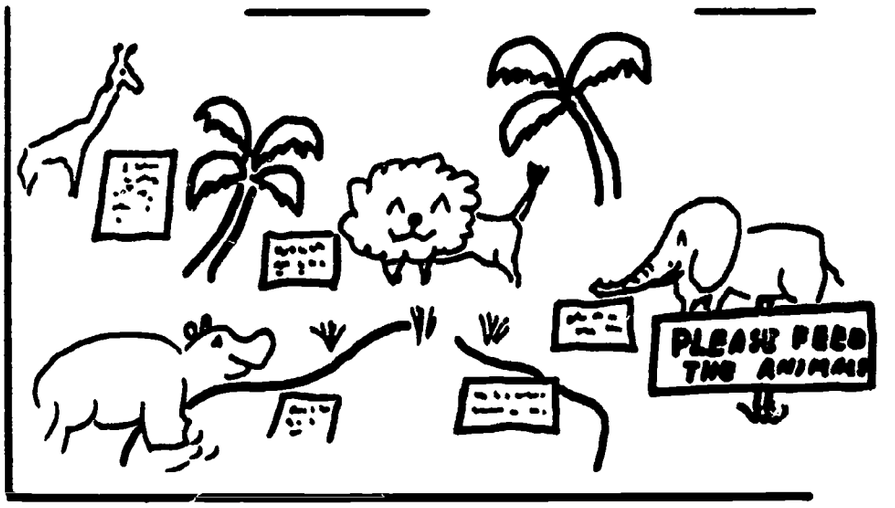
- Although this section is planned mainly for the "In Zoo" program, there are many activities here that would be enjoyed by children in the "In School" program. Feel free to use any ideas, no matter what program your class is in.

- Feel free to make your own pages or adapt any ideas if these pages would not be appropriate for your class.


= Canyon
= Mesa
Skyfari Station
Hoof & Horn Mesa
Deer Canyon
Speedramp
Dog & Cat Canyon
Speedramp
Jungle Trails
Monkey & Bird Mesa
Elephant Mesa
Reptile Mesa
Bear Canyon
Outdoor Classroom
Zoo Entrance
Zoo Exit
Children's Zoo
Skyfari Station
North
Otto

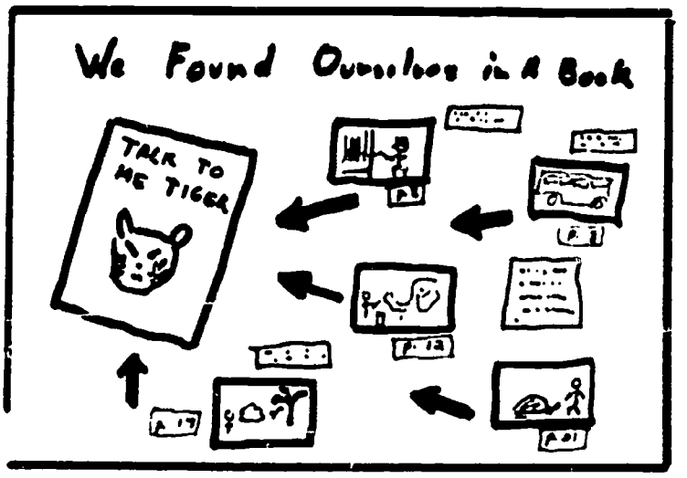
A BULLETIN BOARD IDEA

Children in one class got ready for the Zoo experiences by feeding "good work" to Zoo animals on the class bulletin board.



BOOK INVOLVEMENT

Many of the animal activities will motivate children to do further reading. For classes coming to the Zoo there are three books available in most of the school libraries made up of photographs of the San Diego Zoo. Children can tour the Zoo and try to match locations to the pictures. With a camera, class pictures simulating the book pictures may be taken for later language experiences. What a bulletin board that would make!



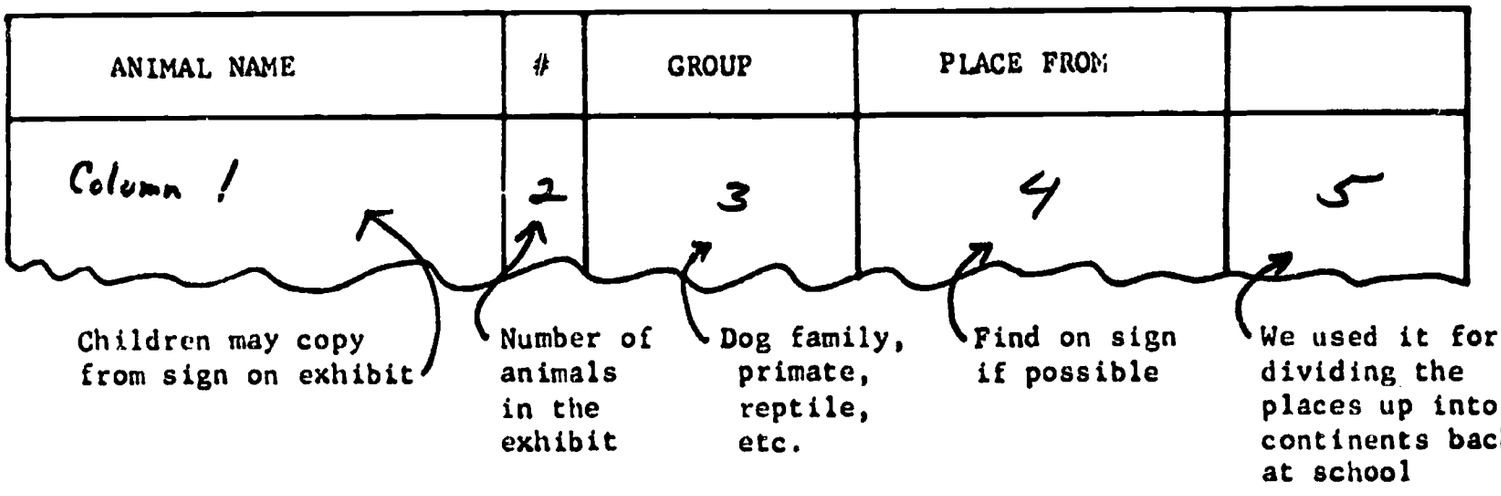
Titles are: Talk to Me Tiger - Dick Snyder

I Was Kissed By A Seal At The Zoo - Helen Palmer

One Day At The Zoo - Dick Snyder

ANIMAL COLLECTING WITH A CLIPBOARD

"Animal Collecting" can be done once or many times in the Zoo experience. The purpose is to collect data for later graphing and math and language activities back at school. The form we have made up has used five columns:



Later we do the graphs.

Columns 1 & 2. "WHAT ANIMALS WERE ON EXHIBIT?" Use

Columns (4) & 5 & 2. "WHERE DO ZOO ANIMALS COME FROM?" Use

Columns 2 & 3. "WHAT ANIMAL GROUPS DOES THE ZOO HAVE?" Use

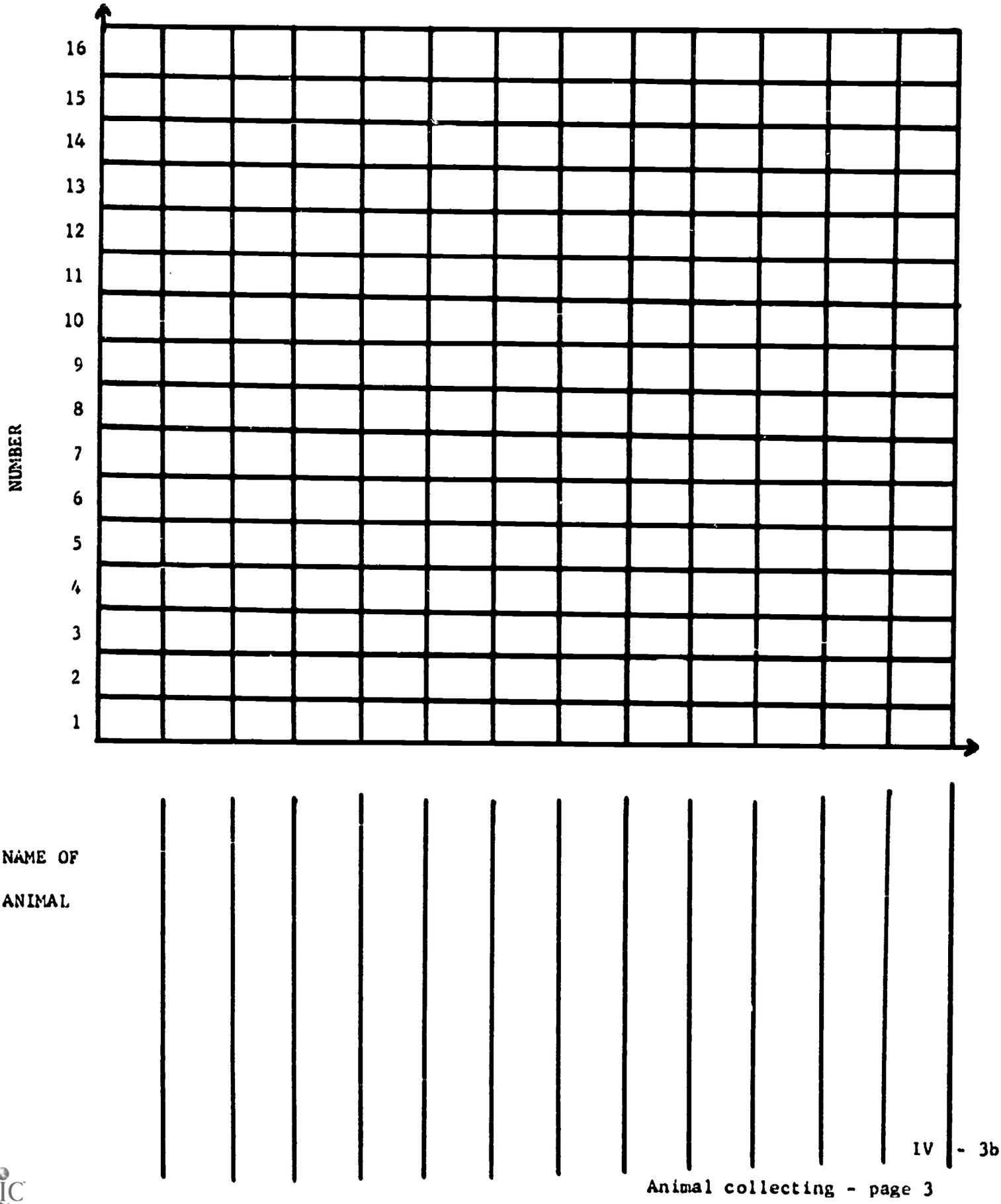
Having made the graphs, children may use them as a basis for writing a "white paper" on what information they see on the graph. These in turn may be used for writing math "thought problems" for use by classmates. (See "Pictorial Representation" in Section II of this handbook.)

ANIMAL COLLECTING DATE DATE

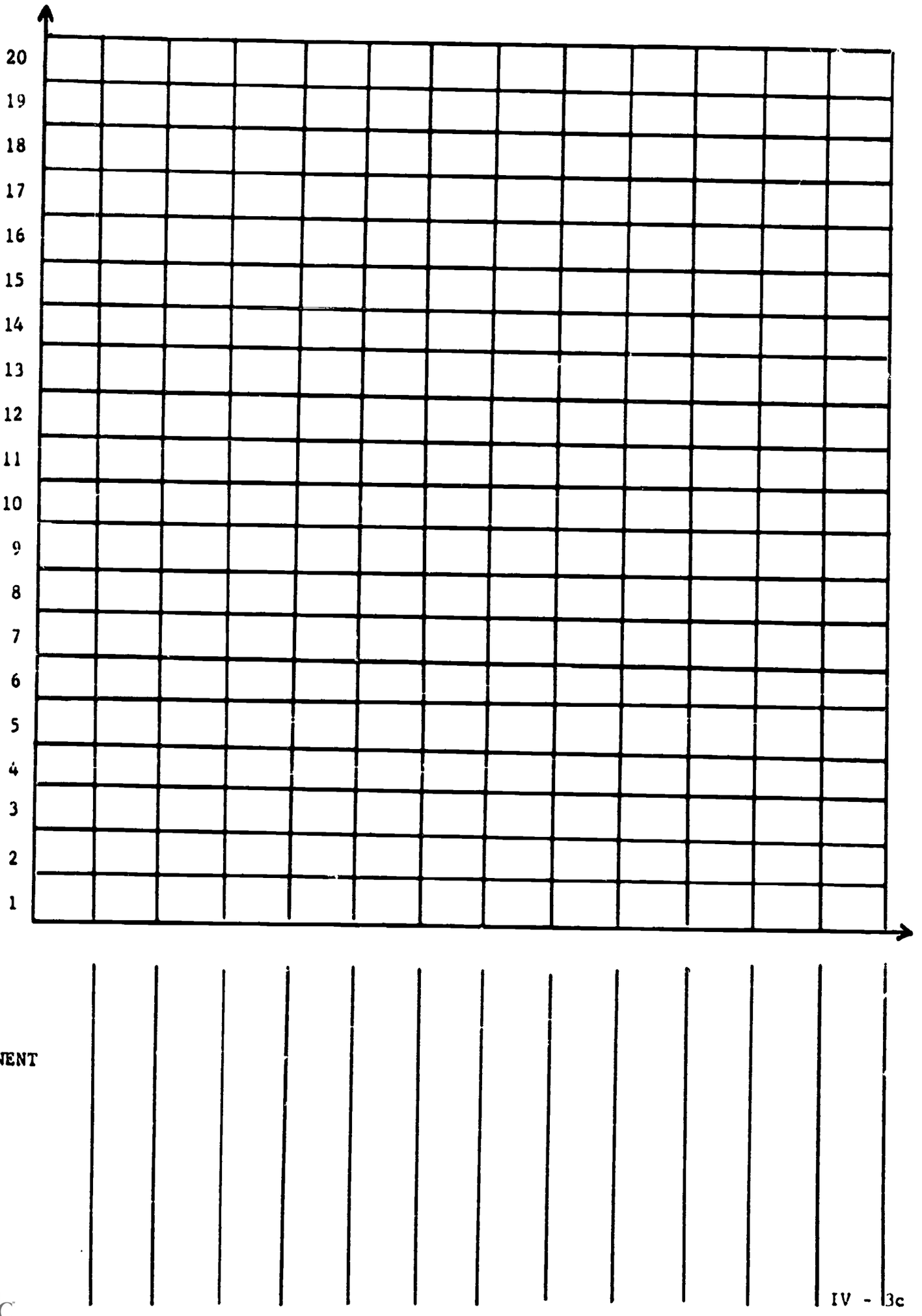
ANIMAL NAME	#	GROUP	PLACE FROM	

WHAT ANIMALS WERE ON EXHIBIT ON_____
(date)

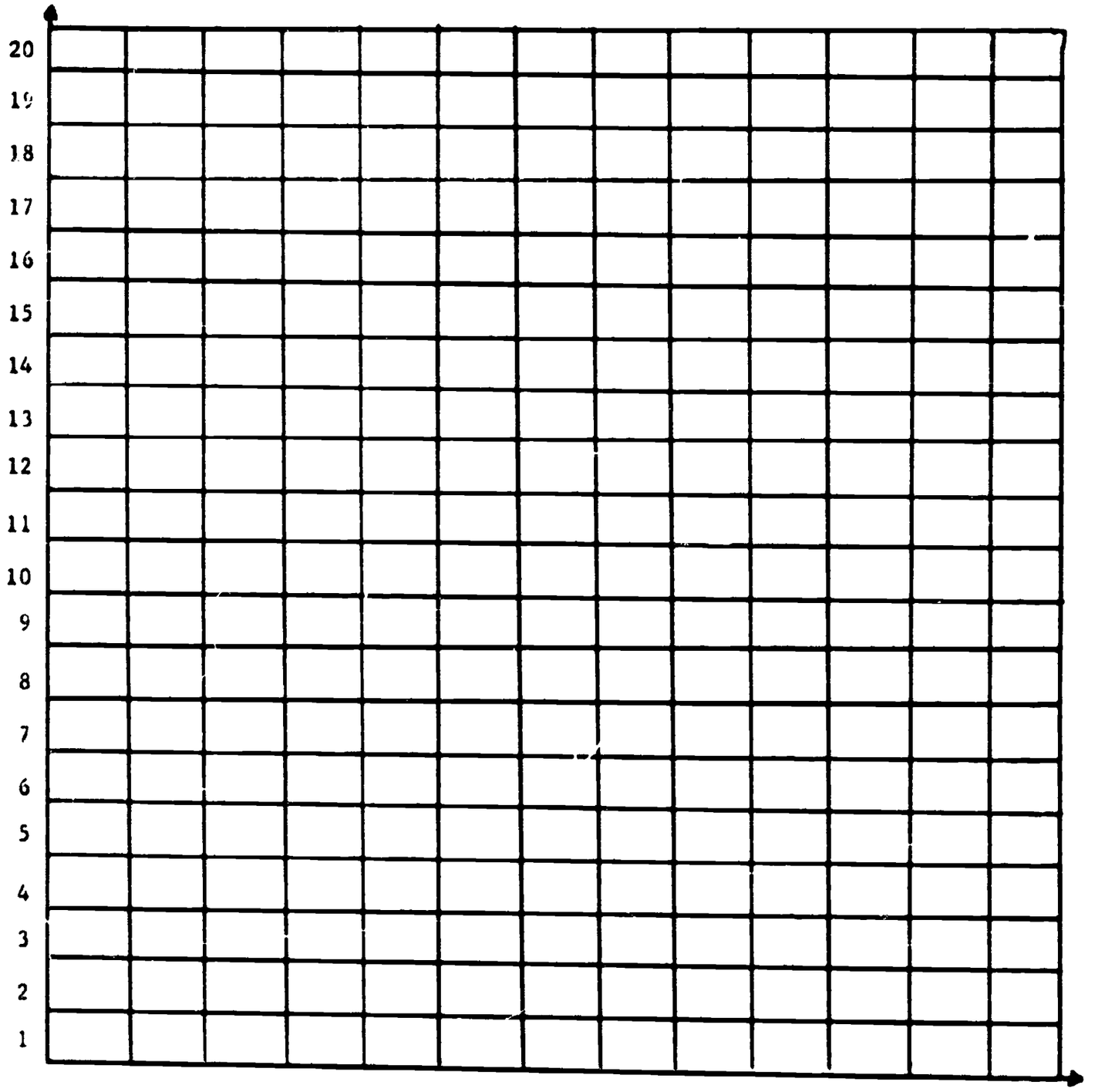
IN_____
(Area of Zoo)



WHERE DO ANIMALS COME FROM?



WHAT ANIMAL GROUPS DOES THE ZOO HAVE?



GROUP

NAME

Name _____

I am an _____.

I am very _____.

I am the _____land
animal in the world.

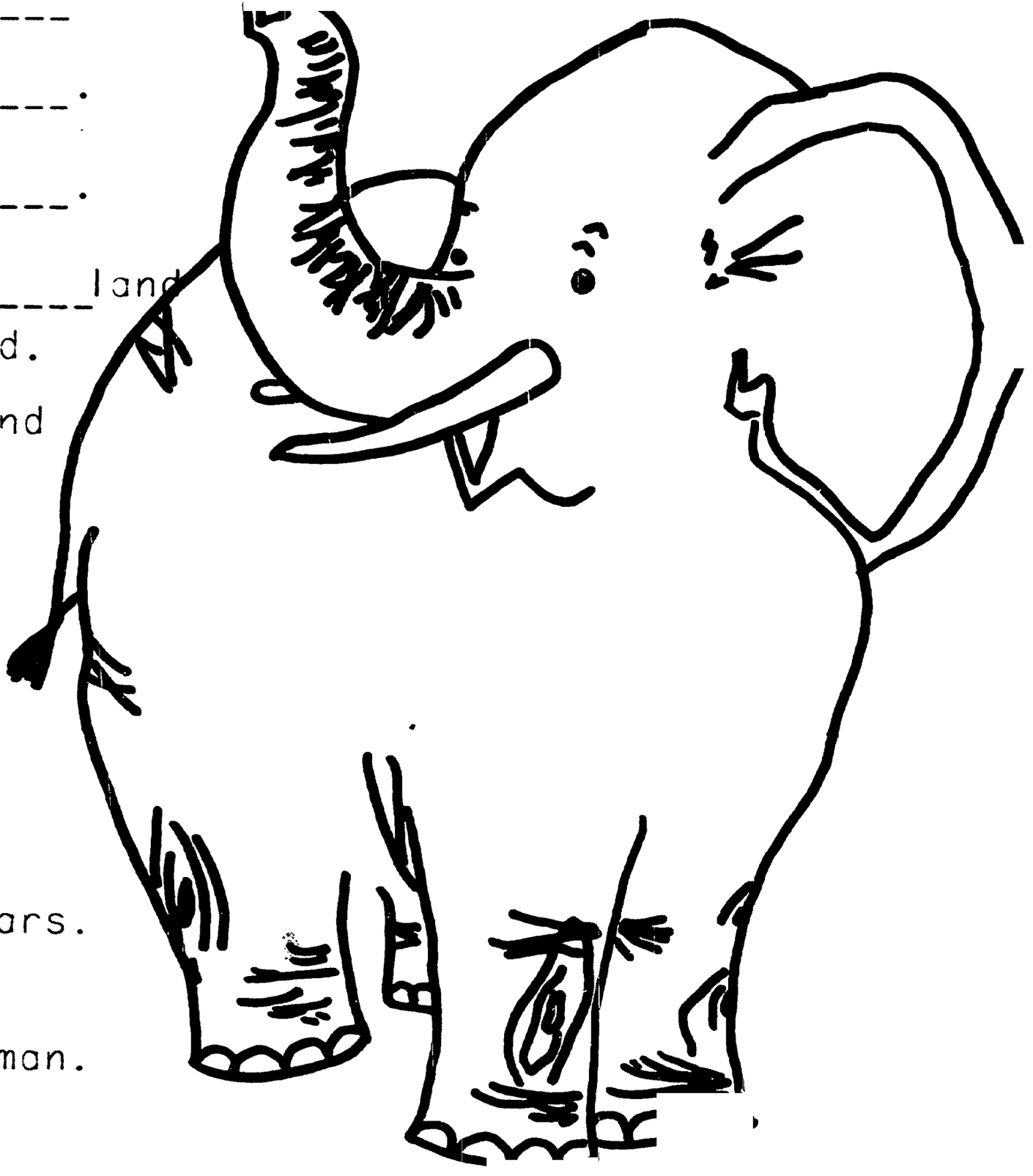
I eat _____and
_____.

I use my trunk to
_____.

I come from Africa
or _____.

African elephants
have _____ears.

I am often very
_____to man.



THIS FORM MIGHT BE USED FOR INFORMATION ABOUT TRIP TO AND FROM THE ZOO

ZOO ARITHMETIC

Date _____

	mileage	time
Left school	_____	_____
Arrived at Zoo	_____	_____
Left Zoo	_____	_____
Arrived at school	_____	_____

How many miles did we travel today? _____

How many minutes did we spend traveling today? _____

ZOO ARITHMETIC

Date _____

	mileage	time
Left school	_____	_____
Arrived at Zoo	_____	_____
Left Zoo	_____	_____
Arrived at school	_____	_____

How many miles did we travel today? _____

How many minutes did we spend traveling today? _____

SOME ENDANGERED OR RARE SPECIES

KEY: CAUSES OF DANGER (Select a color for each)

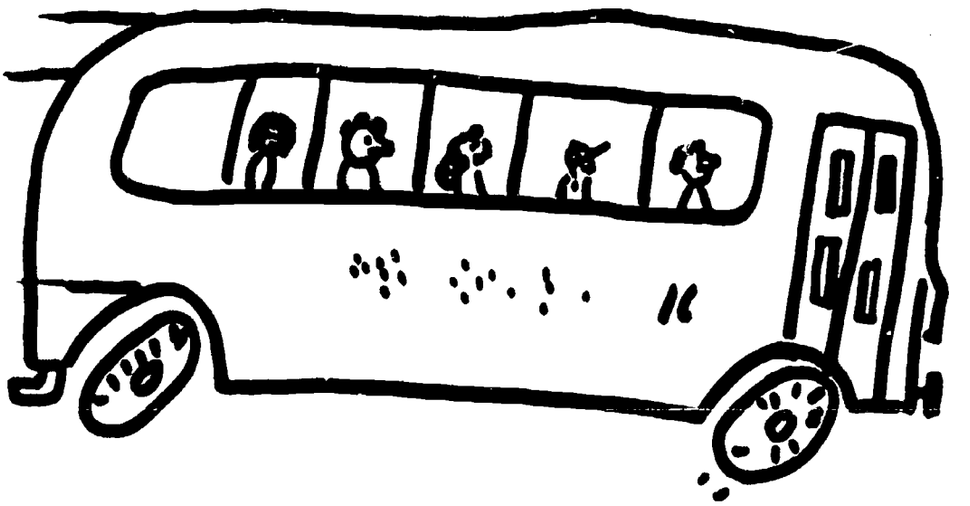
MISTAKEN IDENTITY		HUNTED FOR FOOD	
DESTRUCTION OF NATURAL HABITAT		WANTED FOR PETS	
BREEDS POORLY IN CAPTIVITY		VICTIM OF POISON	
KILLED FOR SKINS OR FEATHERS		EXTREMELY RARE	
KILLED FOR HORNS OR TUSKS			

NAME OF SPECIES	CAUSE OF DANGER	NUMBER LEFT (if known)
ADDAX		
ALLIGATOR, AMERICAN		
BEAR, POLAR		
CHEETAH		
CHIMPANZEE, PYGMY		
COCK-OF-THE-ROCK		
CONDOR		
DUC LANGOR		
EAGLE, BALD		
HIPPOPOTAMUS, PYGMY		
HORSE, PRZEWALSKI'S WILD		
LEOPARD		
MARMOSET, GOLDEN		
NE NE (Hawaiian Goose)		
OKAPI		
ONAGER		

SOME ENDANGERED OR RARE SPECIES - (Cont'd)

NAME OF SPECIES	CAUSE OF DANGER	NUMBER LEFT (if known)
ORANGUTAN		
PELICAN, BROWN		
QUETZEL		
RHINOCEROS, BLACK ..... (Hook-lip)		
TIGER (Bengal and Siberian)		
TORTOISE, GALAPAGOS (Giant)		
TURTLE, GREEN SEA		
WALRUS		
WOLF, MANED (of South America) ...		
ZEBRA, HARTMAN MOUNTAIN		

3	=	C	16	=	H
4	=	G	18	=	S
6	=	U	20	=	Z
8	=	M	21	=	A
9	=	R	24	=	T
12	=	O	27	=	I
15	=	L	28	=	E



3	2	3
x4	x3	x3

1	3	7	2	6
x3	x5	x3	x9	x3

2	9	5	3
x4	x3	x3	x5

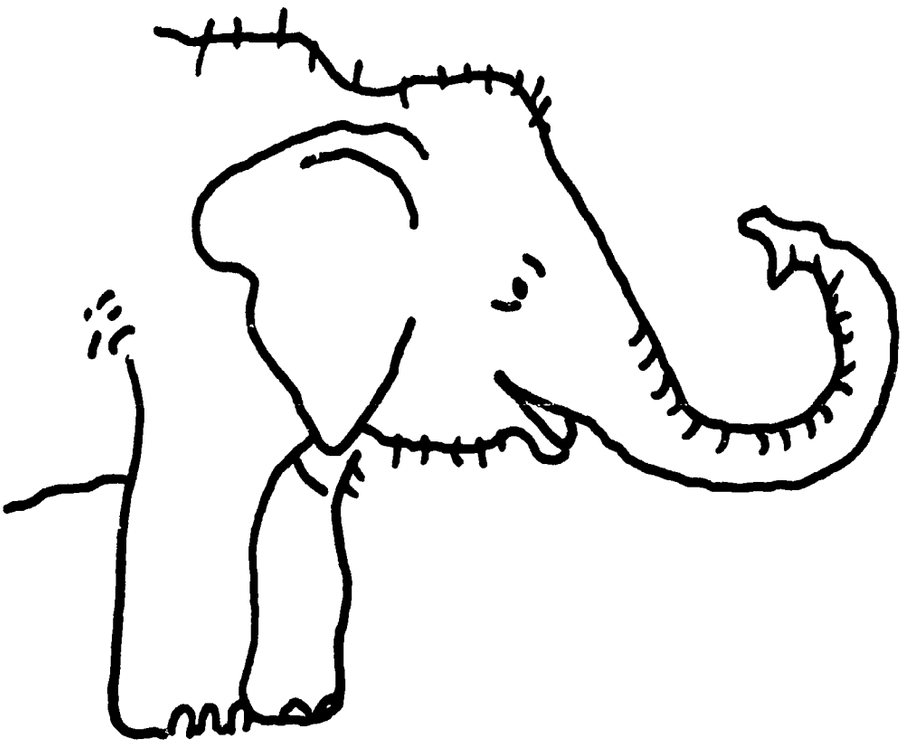
2	6
x2	x2

4	6
x6	x2

8	4	7
x3	x4	x4

5	3	6
x4	x4	x2

4	=	C	12	=	D
5	=	R	13	=	Y
6	=	I	14	=	E
7	=	S	15	=	B
8	=	G	16	=	P
9	=	L	17	=	H
10	=	A	18	=	N
11	=	O	19	=	T



17	9	5
+2	+8	+9

8	3	6	5
+7	+7	+9	+8

7	5	6	8	8	9	9	18
+7	+4	+8	+8	+9	+1	+9	+1

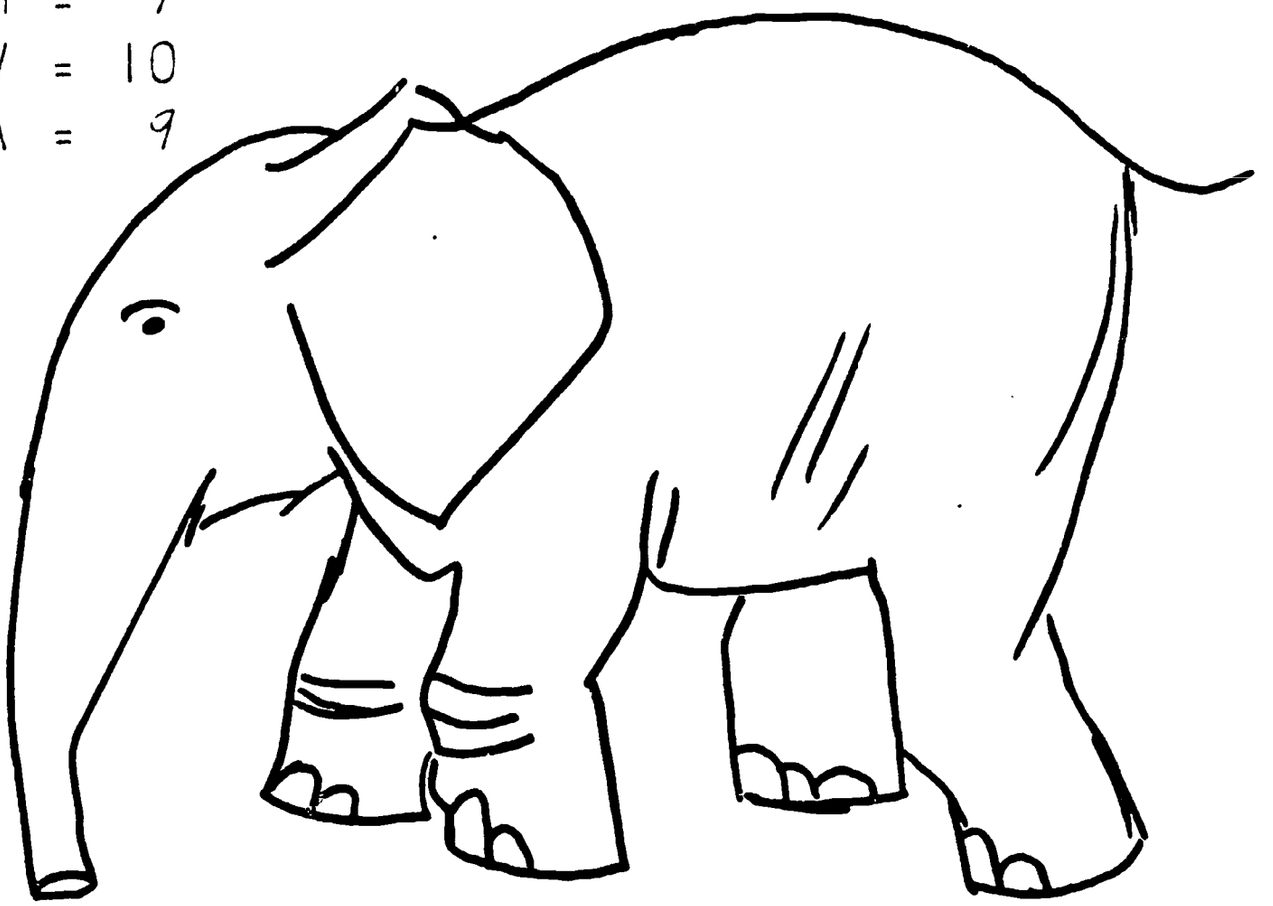
3	5
+3	+2

6
+4

4	8	4	6
+4	+3	+7	+6

4	4	2	4
+4	+2	+3	+5

T	=	12	D	=	2
L	=	13	M	=	7
N	=	15	V	=	10
R	=	18	A	=	9
H	=	14			
E	=	11			
S	=	17			
P	=	3			
I	=	8			
C	=	16			



8	7	5
+4	+7	+6

4	8	2	1	6	3	8	3
+7	+5	+9	+2	+8	+6	+7	+9

4	8
+4	+9

5	9	3
+7	+5	+8

6	4	9	7	7	9	6
+7	+5	+9	+9	+4	+8	+6

4	3	5	6	7	8
+9	+5	+5	+2	+8	+8

5	2	9	1
+8	+7	+6	+1

8	6	7	2	6	9
+1	+9	+1	+5	+3	+4

1	=	A	10	=	B
2	=	G	12	=	T
3	=	O	15	=	R
4	=	N	16	=	E
5	=	U	18	=	I
6	=	H	20	=	D
7	=	F	24	=	S
9	=	M	27	=	L

2	3	8
x6	x2	x2

2	5	3	9	2	4	2	2	3	5	10
x3	x1	x3	x1	x9	x1	x1	x5	x6	x3	x2

9	3
x2	x8

3	1	4
x4	x6	x4

6	6	2	6	2	12	4
x2	x3	x2	x3	x8	x2	x3

1	7
x3	x1

1	3	9
x1	x9	x3

5	3	3	4	6
x2	x6	x5	x5	x4

I am a Penguin.
I come from Western
South America.
I like to eat fish and
squid.

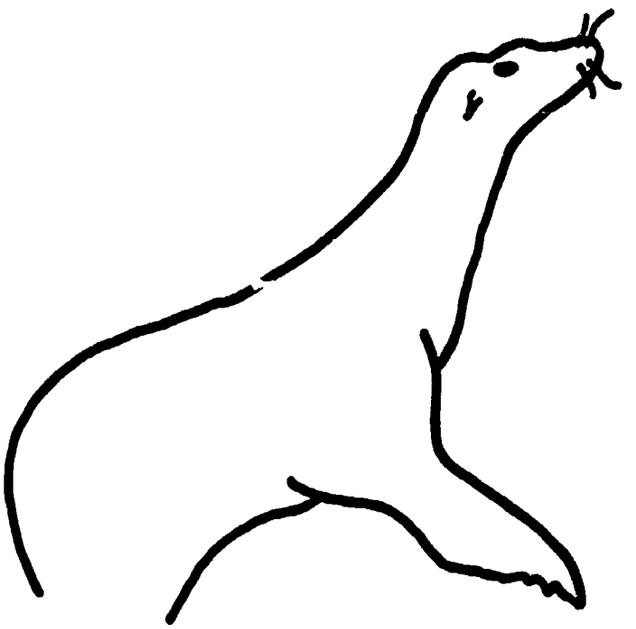
42	81	56	24	12	63	54	0	18	64	72	36	40	49
G	A	B	M	I	L	O	N	T	U	P	H	E	D

3	9	3	9	6	8
x4	x9	x8	x2	x6	x5

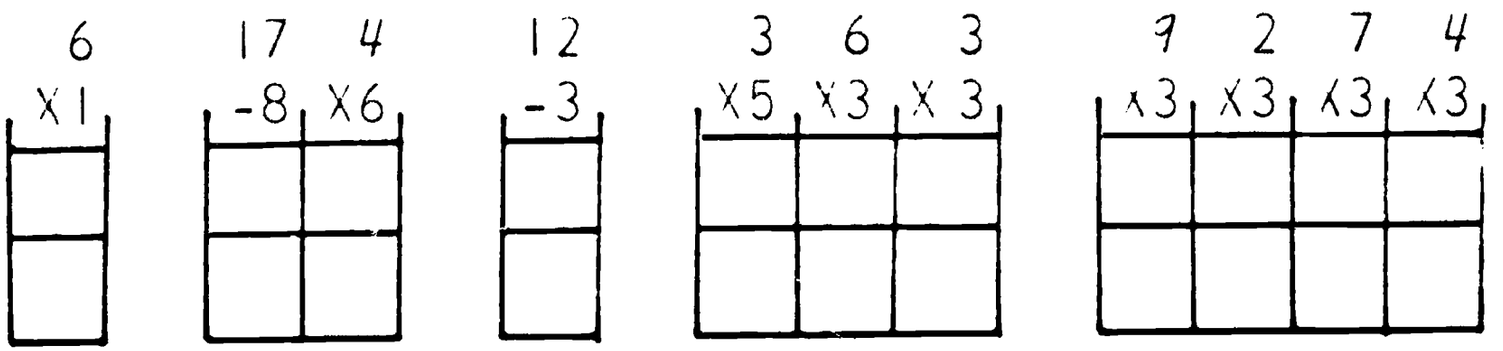
9	3	4	7	3	7	7	6
x4	x8	x6	x8	x9	x9	x7	x3

8	10	18	6	8	6	12
x9	x4	x0	x7	x8	x2	x0

I am a sea animal.
With my large flippers I can walk on land.
If you look carefully you can see that I have ears on the outside of my head.



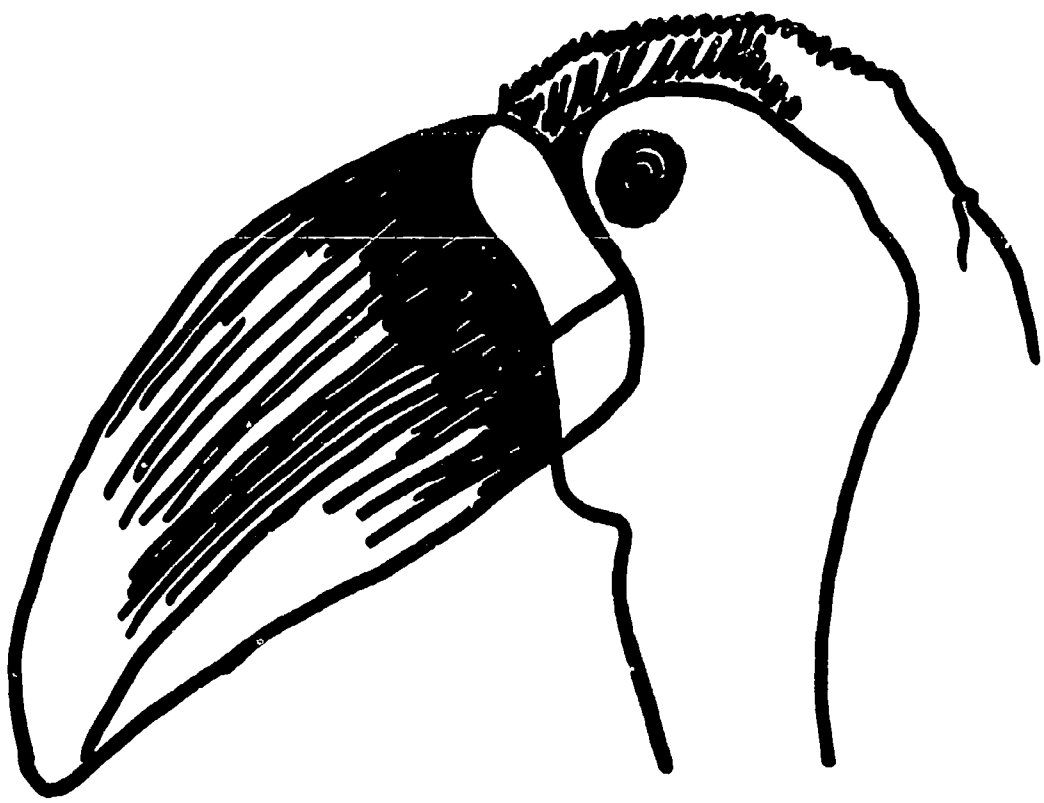
M	E	N	A	L	I	S	O
24	18	12	9	27	6	15	21



I am a bird.

I have a large bill.

I have many colors on my body.



N	O	T	A	M	U	C	I
10	3	9	6	7	4	5	8

16 − 8

14 − 8 − 5

15 − 9

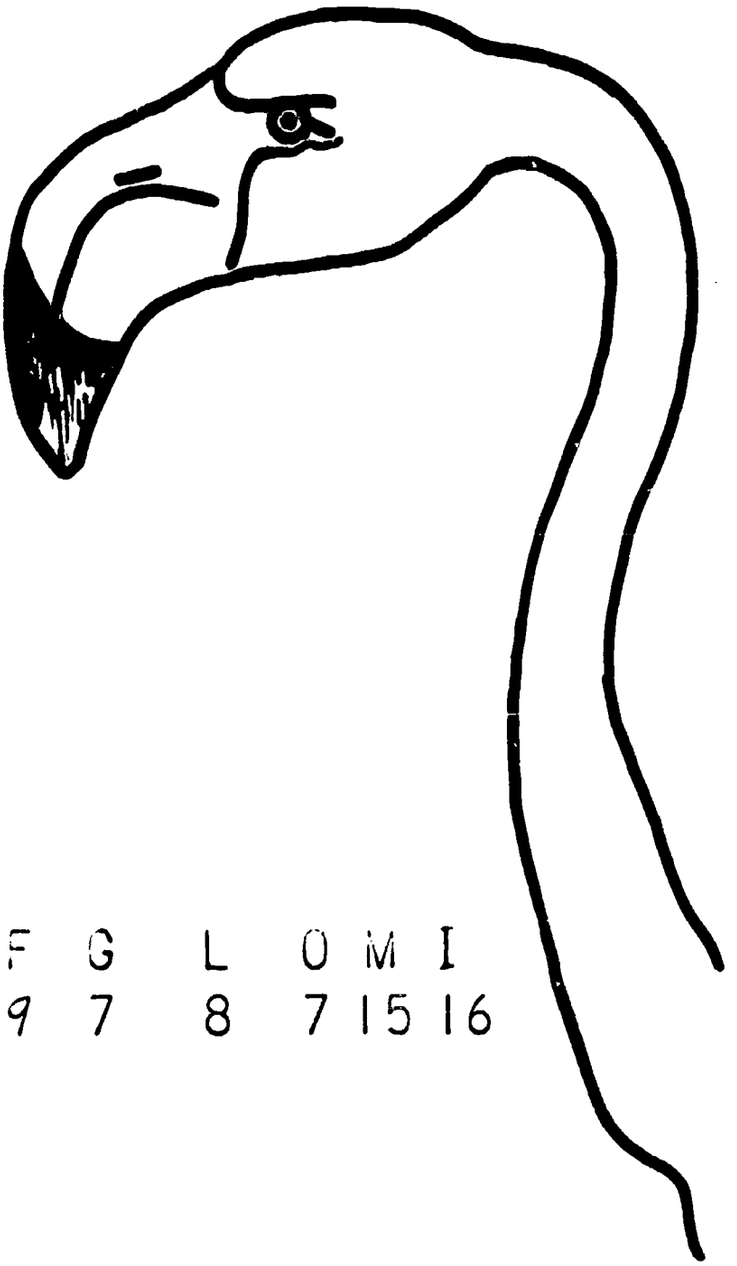
17 − 8 − 8 − 9 − 6 − 7 − 8

I am a bird.

I move my upper bill

instead of my
lower bill.

I find my food in
the mud.



C	E	T	H	N	A	R	F	G	L	O	M	I
11	17	12	14	10	13	18	9	7	8	7	15	16

8	4	7	6	5	9	6	9	8	9	9	5	9	4
+8	+9	+8	+6	+9	+8	+7	+6	+9	+9	+7	+6	+4	+6

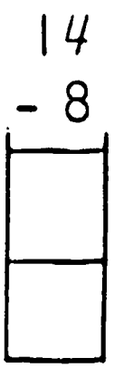
2	4	3	8	1	3	4	2
+7	+4	+5	+7	+9	+7	+3	+4

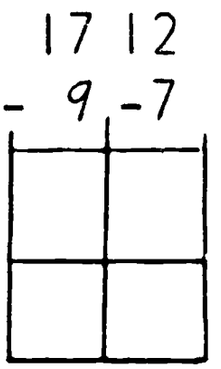
I am a primate.

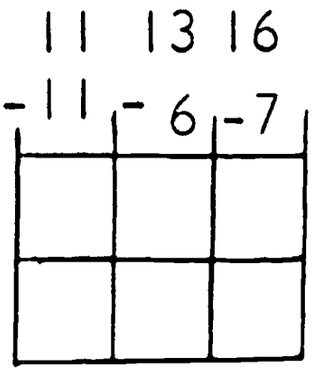
I come from South America.

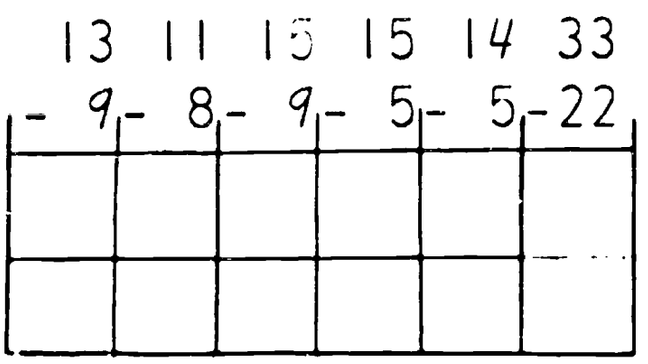
I have only four fingers on each hand.

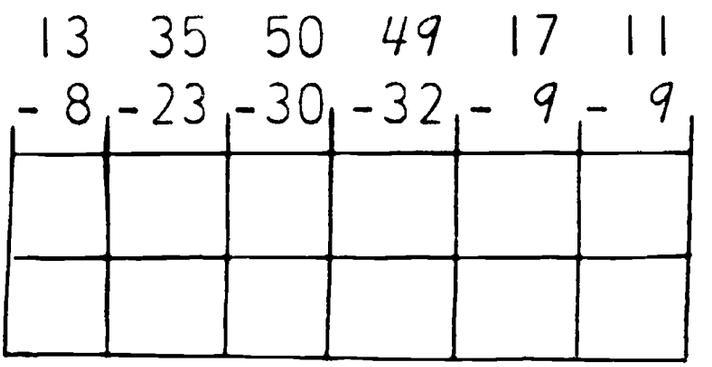
2 = Y	7 = H	12 = O
3 = P	8 = A	17 = K
4 = S	9 = E	20 = N
5 = M	10 = D	0 = T
6 = I	11 = R	







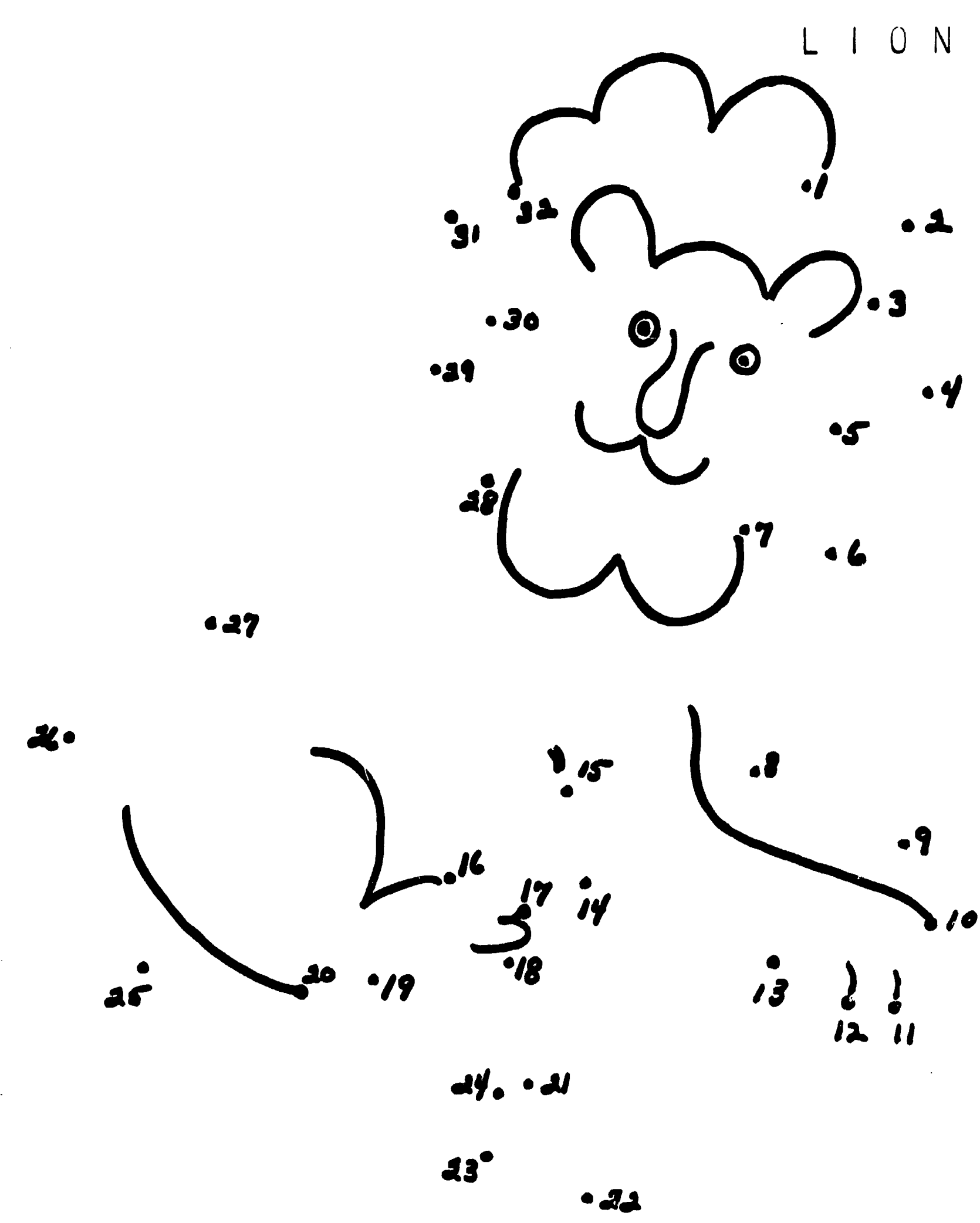




SNEGUPIN = _ _ _ _ _ _ _ _

RHINOCEROS

LION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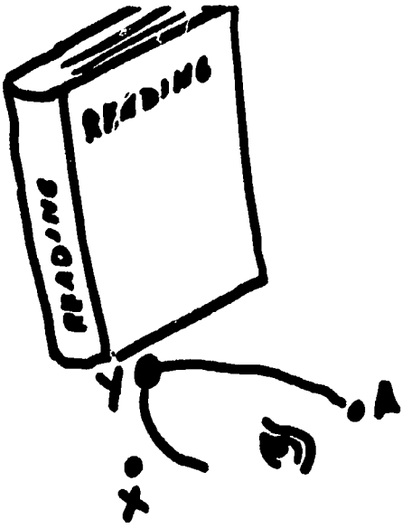
HIPPOPOTAMUS

LAROLIG = _ _ _ _ _ _ _



Who likes to Read?

L E A S = _ _ _ _

F I F A G E R =

_ _ _ _ _ _ _

L I L R C G A A T =

- - - - - - - - - -

Name_____

Date_____

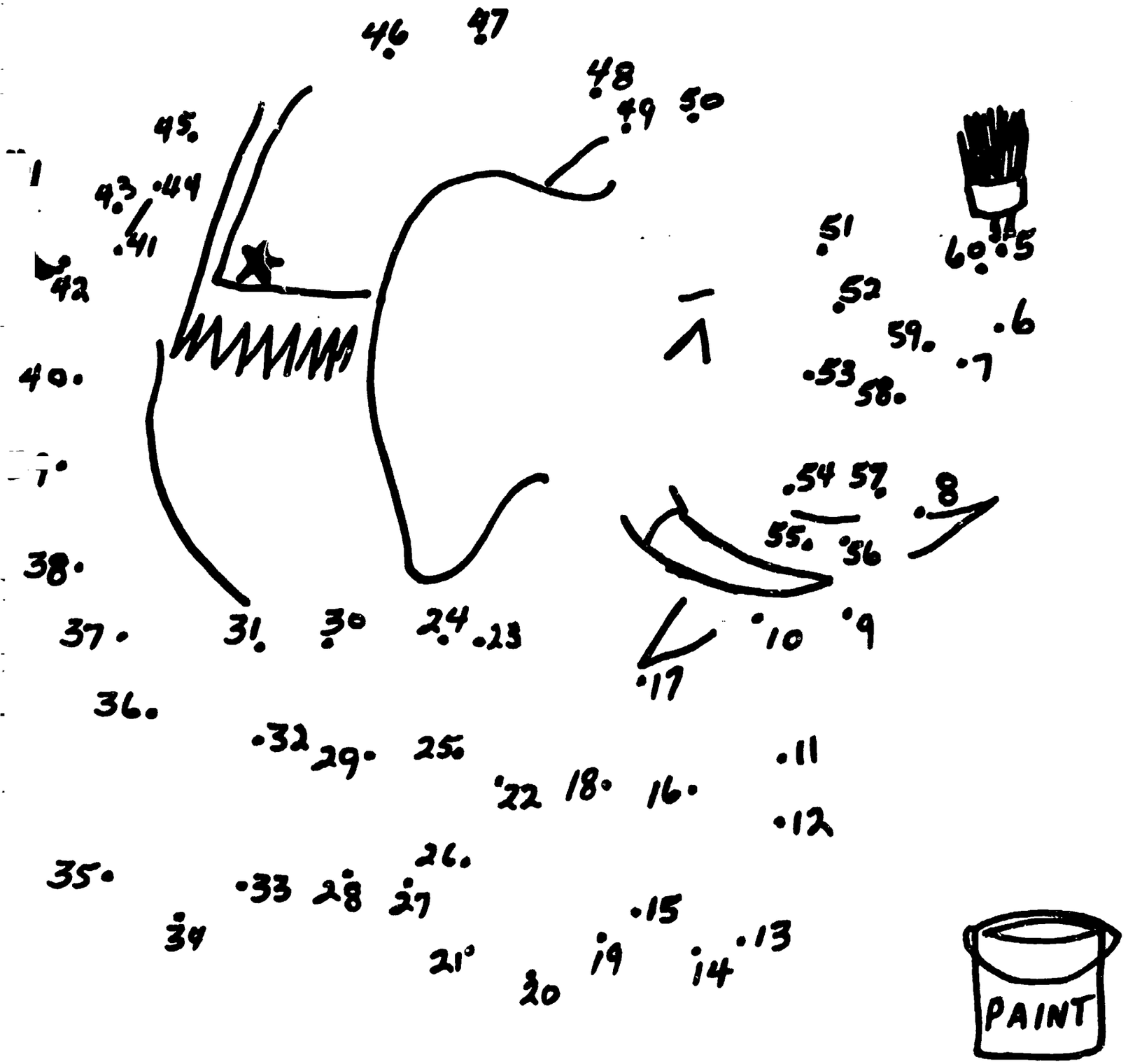
This is a mountain goat.

He has _____ feet to help him climb.

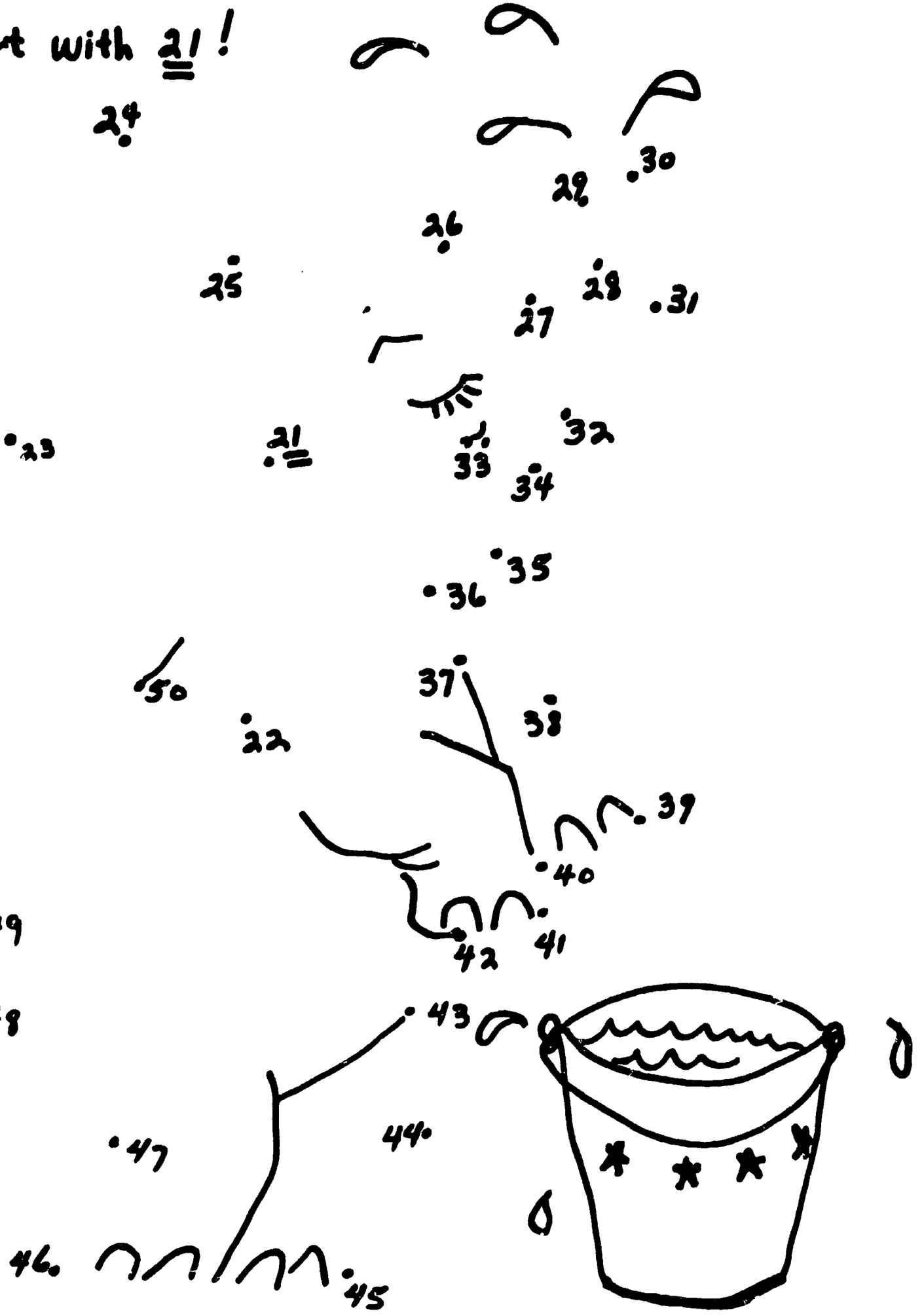
What do you think is his height?_____

Name _____ Date _____

Go from 5 to 60



Start with 21!



Here are the vowels. Can you put in the other letters to make animal words?

1. E_e__a__
2. _a__a_oo
3. _i_a__e
4. _ee_
5. _io_
6. _ea_
7. _i_e_
8. A_e
9. _a_e_
10. _a_ua_
11. _e__a
12. _ea_e_
13. __a_a
14. Aa___a__
15. _u__a_o

(Teachers - cut off or fold under)

- - - - - - - - - - - - - - - - - - - -

Word Bank

llama ape lion elephant buffalo
panther jaguar deer zebra tiger
kangaroo aardvark camel bear giraffe

Be a Bird Watcher

Name _____

Types of Feet help us to know how the bird moves about.

wading feet

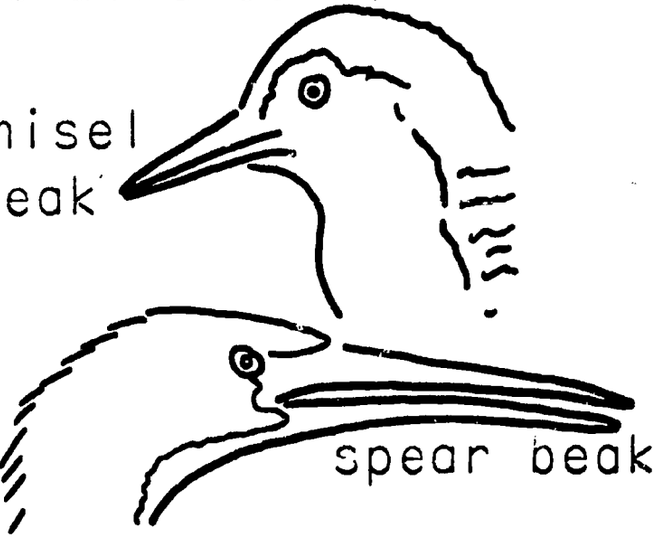
swimming feet

climbing feet

perching foot

grasping foot

Types of Beaks help us to know what the bird eats.

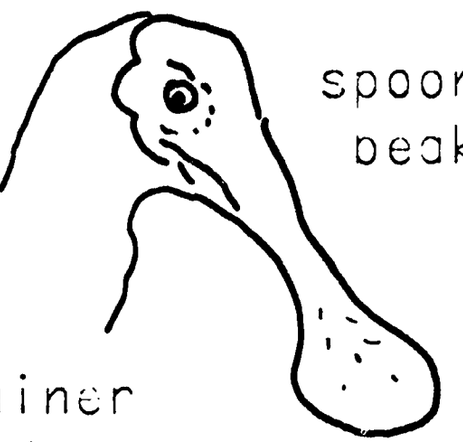


chisel beak

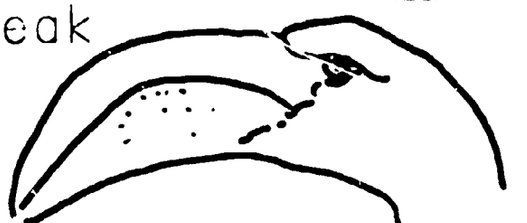
spear beak

cracker beak

prober beak



spoon beak



strainer beak

Name_____ Date_____

BIRDS

There are seven different kinds of birds. As we go bird-watching at the Zoo, see if you can spot and take notes on one bird of each kind.

1. Land Bird
   Name_____ Colors_____
   Country_____ Size (estimate)_____
   Feet_____ Beak_____

2. Water Bird
   Name_____ Colors_____
   Country_____ Size (estimate)_____
   Feet_____ Beak_____

3. Tropical Bird
   Name_____ Colors_____
   Country_____ Size (estimate)_____
   Feet_____ Beak_____

4. Bird of Prey
   Name_____ Colors_____
   Country_____ Size (estimate)_____
   Feet_____ Beak_____

5. Perching Bird
   Name_____ Colors_____
   Country_____ Size (estimate)_____
   Feet_____ Beak_____

6. Game Bird
   Name_____ Colors_____
   Country_____ Size (estimate)_____
   Feet_____ Beak_____

7. Flightless Bird
   Name_____ Colors_____
   Country_____ Size (estimate)_____
   Feet_____ Beak_____

AUDITORY MEMORY AND DISCRIMINATION

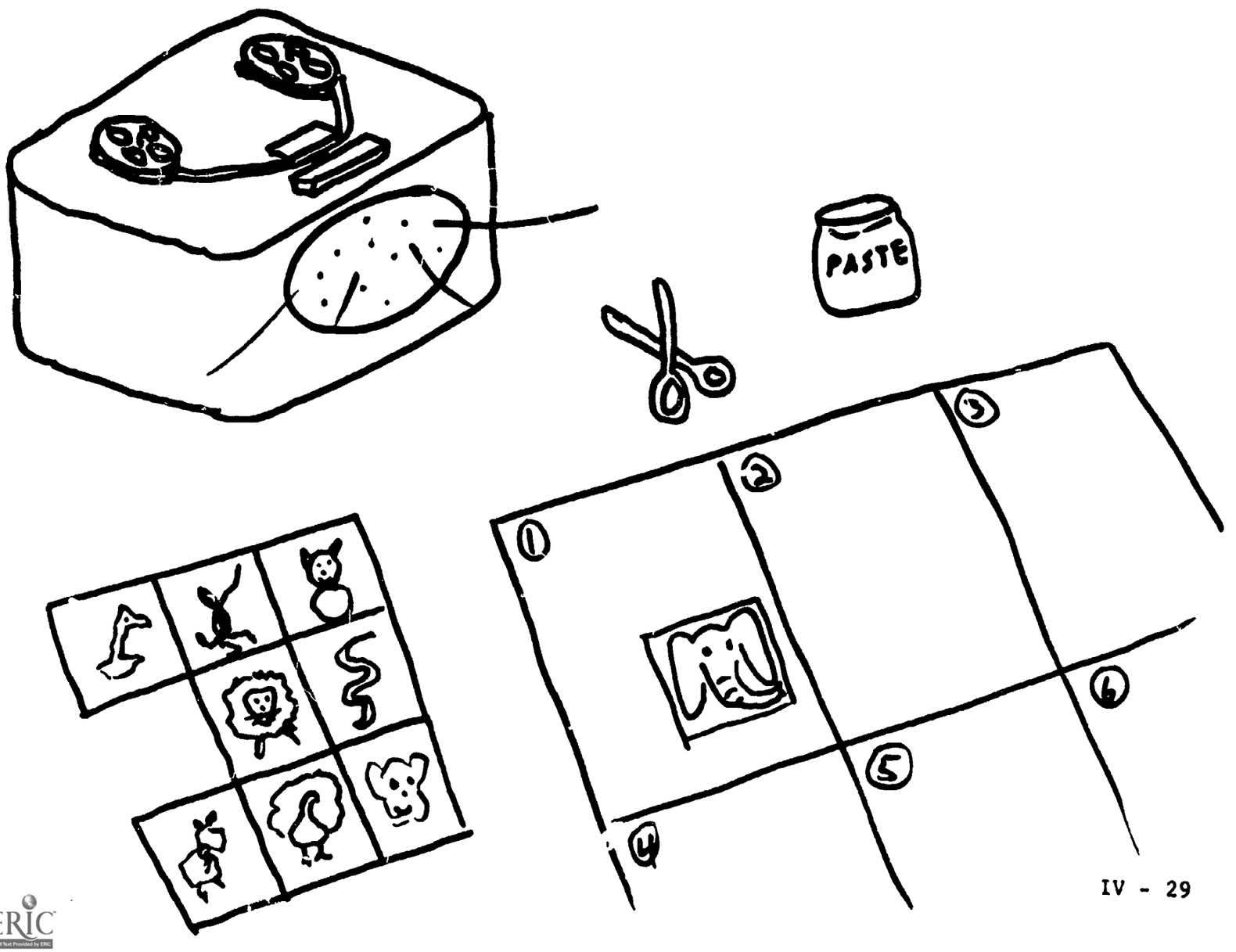
If you are fortunate enough to have a portable tape recorder available to you, you might like to try this animal activity for building auditory memory and discrimination based on animal sounds.

- Collect animal sounds in the Zoo or borrow our record from the Zoo Project.

- Make a page of animal pictures for children to cut apart. Use animals whose sounds you have collected.

- Make a page of numbered answer squares.

- Make a tape for individual or small group work. Give sounds of three or more animals. Identify each. Then on tape tell child to take his answer page and find space # 1 - Play one of the sounds without your identifying it. Tell child to paste the picture of that animal in Space # 1. Depending on the ability of your group you may want to give and identify three more sounds before you go on to space # 2 or you may want to stretch his memory by going on to the next one. Continue until you have filled the page.



A Visit To The Snake House

The longest snake is the.....

He is.....

(crawling, sleeping, wrapped in a tree)

When you find the thickest snake, write his name. .....

What color is he? .....

Find the most dangerous rattlesnake. Write his name.....

Can you find an African Cobra? Yes....No...

Do you remember what he does to drive his enemy away? .....

Find three snakes from the United States.

Write their names. .....,

....., ...

Find and write the names of three other countries where some snakes are found.

....., ...

.....

Find an example of a snake camouflaged.

Write his name. .....

Snakes

Find a yellow, black and red snake.
Draw his picture.

Find this word. (Boa)
Tell the teacher.

What kind of a snake is this?

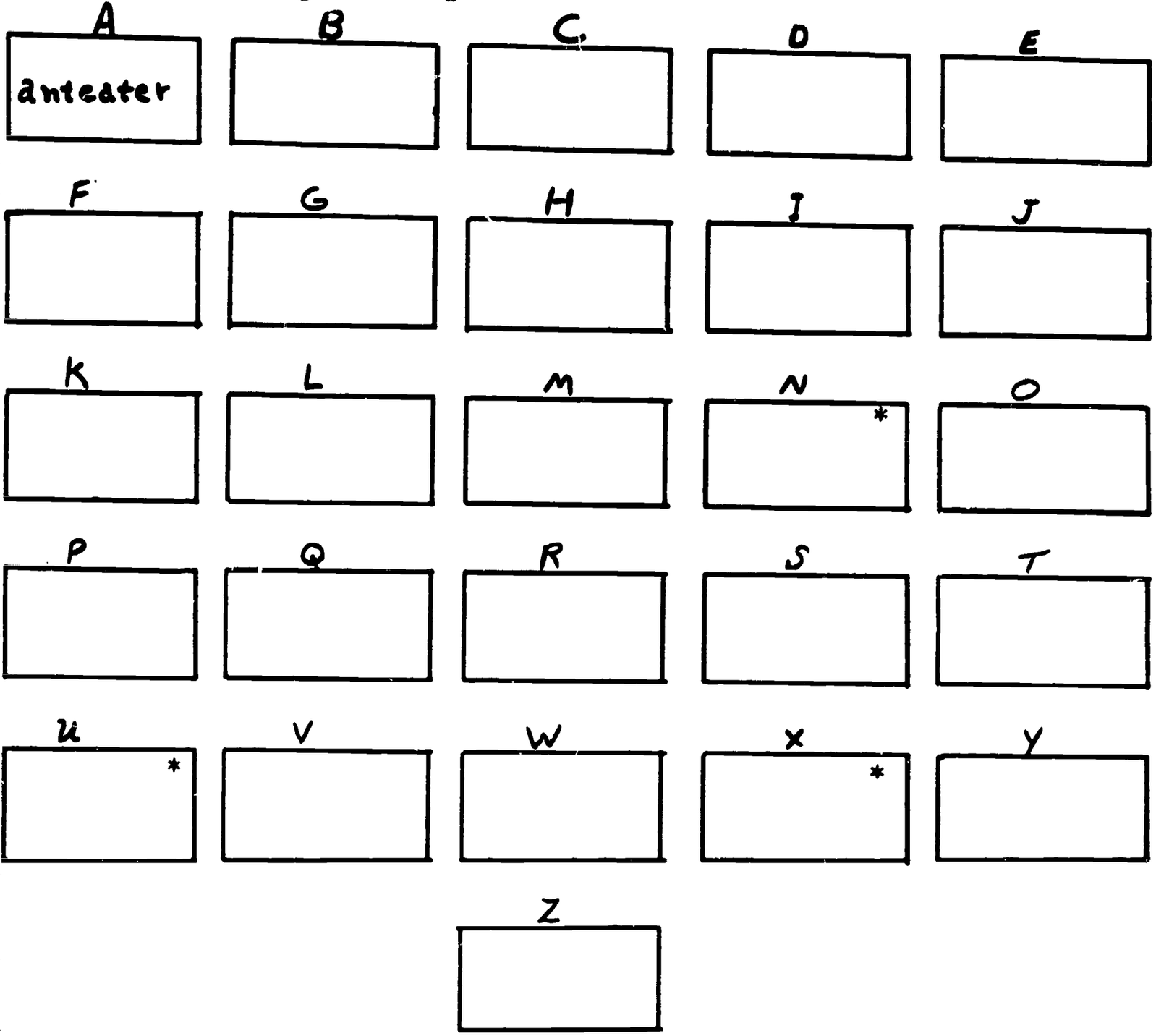
.....

How many eyes does he have? .....
Look at his head.
Are they the same.
Draw each head.

Can you find the name of our state on one of the windows?
Write it. .....

CAPTURE

Zookeeper.....
Make your own Zoo. (Your name)
Capture the animals by writing their names in the right cages.



horse	giraffe	turtle	yak	fox
reptile	monkey	wallaby	bear	lion
anteater	elephant	cheetah	deer	otter
quail	iguana	panther	jackal	seal
zebra	vulture	kangaroo		

*Can you find one?