



ZAP!

Zoo Activity Packet

Walkers and Wrigglers

*A Teacher's Resource
for Pre-Kindergarten*

Walkers and Wrigglers

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Walkers and Wrighlers: Background Information for the Teacher

All living things are capable of movement. Even plants, although usually stationary, move in response to sun, temperature, wind, and moisture. Movement in animals, however, usually means locomotion: the act or power of moving from one place to another.

Animals have developed many varied patterns of locomotion but they can be placed in four main categories: swimming, running and walking, flying and gliding, and wriggling (as in snakes). Of course there are animals that move in more than one of these categories and animals in the same class (taxonomic group) that use different types of locomotion: fish that glide, and others that walk; birds that swim, and some that do not fly; mammals that hop, and others that fly.

Why do animals move? Unlike plants, which are able to produce their own food, animals must move to obtain it. Animals may also move to escape from danger (predators) or to find a place of comfort (optimal temperature, humidity, or other climatic conditions). Particular patterns of movement have always been developed as the result of an animal's habitat (where it lives), food, or enemies.

LOCOMOTION IN THE WATER

Scientists believe that the first animals to exist on our planet lived in the water. Even today, every major group of animals has some representatives that live in the oceans or fresh water.

Animals that move through the water, or swim, rely on the fact that water is denser than air. It exerts a force - called buoyancy - that helps hold up things placed in it. Animals like whales and sea lions nap while floating at the surface of the water and otters often eat while floating on their backs. These animals also move actively, using their legs and bodies to propel themselves through the water.

The fastest swimmers are certain types of fish, which move by undulating (wriggling) their bodies and tails. The whole body actually moves in a smooth back-and-forth sweep, with the backbone forming an S-shaped curve. Why then does a fish have fins? Just as a boat needs a keel and rudder, fish need fins for stabilizing and steering.

Sea mammals such as whales, dolphins and seals swim in a very similar manner, but with one difference. Fish have tails which are more vertical in shape and, therefore, move from side to side. The tail flukes of whales and the hind flippers of seals are flattened horizontally and hinged to move up and down.

Most seals have short, stout front flippers which are not used much for propulsion. While they are fast and agile swimmers, they are extremely clumsy on land, only coming ashore to breed or to bask in the sun. The sea lion and fur seal are somewhat more mobile on land than other seals since their front and hind flippers can be turned forward independently of each other.

Otters have short legs with webbed feet and long tapering tails. When they swim casually, their feet are held close to the body and used only to push off from the bank or change direction. The thrust forward is powered by undulating movements of the body and tail. To swim very fast otters also use their feet. One of the otters' favorite pastimes is sliding down mud banks. To do this they fold their legs backward and slide down on their chests or bellies. The wet fur moistens the slide until it becomes very slippery. This

sliding technique is also used for traveling on land. The otters bound along the ground for several paces then flop down on their bellies to slide as far as they can.

Mammals that have returned to the water as their primary or only habitat have done so to take advantage of a new or better food source. This is also true of birds that have taken up swimming and diving. All have specialized adaptations for life in or near water.

Almost all swimming birds have webbed feet and many also use their wings for sculling. The broad webs are usually made of tough, leathery skin which connects the forward toes. On the swim stroke or backward stroke of the foot, the bird spreads its toes so as to stretch out the web. This web provides more surface area to push against the water. On the recovery stroke, the toes are pulled together, the web folds up like a folding fan so as to slip through the water easily and not slow down the bird's speed. To further improve their swimming performance, ducks have their legs set well back on the body. This is a disadvantage on land, producing the customary "waddle."

Penguins have lost the ability to fly through the air, as their wings have developed into flippers. These paddles can be beaten simultaneously or alternately, giving the birds great maneuverability. Penguins are fast swimmers and can leap from the water to considerable heights to get on ice floes or rocks.

All animals that spend the majority of their lives in water have developed a similar body shape. Although not closely related, fish, seals, and penguins all have torpedo-shaped bodies. This streamlined shape provides these animals with the least resistance to water flow.

LOCOMOTION ON LAND

The first animals that made the transition from water to land had a number of problems to overcome. They had to develop skin which would not dry out, an egg with a protective covering, lungs which could use the air's oxygen, and limbs to support their bodies' weight.

Amphibians. Ancestors of land animals made the adjustments to terrestrial life over a period of millions of years. Probably one of the first animals to move on land was a fish that used its enlarged fins as crude legs. Amphibians (salamanders, newts, frogs, and toads) developed more efficient legs for locomotion on land, however they must still return to the water for breeding. Even with legs, their pattern of locomotion has retained a fishlike quality. Salamanders in particular actually "swim" over the ground with an undulating movement, using the front legs to steer the body. Frogs and toads also use their powerful hind legs for leaping and for swimming.

Reptiles. Most reptiles retained the short legs of their amphibian ancestors but they developed more powerful muscles for greater walking ability. Their legs are placed closer to the middle of the body to support the weight more centrally. Some reptiles have developed larger hind limbs than forelimbs which gives them a greater power of acceleration and agility. All reptiles have tails which aid in balance and movement.

Some reptiles have returned to the water as their primary habitat, using their legs as paddles (e.g., turtles). Turtles and tortoises also carry their protective shelters around with them so they don't need to move to escape predators. Alligators and crocodiles still use a fishlike undulating movement when they walk; however, they are able to run surprisingly fast when necessary. A flattened tail is their main aid to swimming.

One group of reptiles has lost the use of its legs, relying on a slithering movement to get into less accessible places. Snakes have a freely moving rib system, hundreds of vertebrae, and large scales on the underside of the body. The typical snake moves by undulating the body from side to side in a series of curves. It gains traction by pushing against exposed roots, pebbles, grass, or the ground. Boa constrictors can move in a straight line without curving the body; the muscles of the belly contract to move the stomach scales forward in waves so that the snake moves along like a tractor tread.

Mammals. Most mammals that pursue prey on land, and those that are pursued, have limbs adapted for fast running and sudden leaping. The way in which they move depends on the size and shape of their legs and feet. The bear, for example, walks with its entire foot touching the ground. Dogs and cats, on the other hand, walk on their toes, with their heels permanently raised off the ground. Horses and zebras walk on their toenails, which are greatly hardened and are called hooves.

Cats are built to run very fast for short distances. Their large leg muscles give them great strength, and their feet are perfect for hunting, with soft pads which enable them to stalk silently and which cushion their leaps. The cheetah, which is the fastest animal on land, can run as fast as 60 mph. Its flexible backbone arches so easily that it can tighten up like a spring, and then release, shooting it forward with a great burst of speed.

Bears have short, powerful legs and long, heavy toenails which they use for clawing and digging for insects, and for climbing. Although they walk flat-footed, they can go fairly fast for short distances and can climb trees swiftly.

Hooved Mammals. Animals with hooves (horses, giraffes, zebras, etc.) depend mainly on their speed for survival. These animals eat plants and leaves, and must be able to escape from the meat-eaters which hunt them. The giraffe, for example, has long legs and light shoulder muscles for quick action, and heavy thigh muscles for strength. The front legs look longer, but are not; the giraffe must spread them wide apart when it bends over to drink. Giraffes walk swiftly, but when frightened, run with a fast, rocking gallop.

Many animals with hooves, like horses and zebras, have different speeds called the walk, trot, pace, and gallop. In the walk, the animal moves at a leisurely rate, always resting on three of its four feet at a time. When the animal moves a little faster than a walk, it is said to be trotting. The feet move the same way, but the weight is supported by only two legs at a time. Running as fast as it can, a horse is said to be galloping. As it gallops, three and sometimes four feet are off the ground at the same time. When galloping, a horse lifts both front feet and then both back feet, and the distance covered in this way may be four times the length of the animal's body at a time. Trotting and pacing are ways of moving that allow animals to keep constant speed for long distances.

Other hooved animals, mountain goats and sheep, can scramble up nearly sheer cliffs because their hoofs have sharp edges and undersides which curve in. This gives them a "toe hold" on rocky slopes, while the curved hoofs grip the ground.

Hoppers. The kangaroo and wallaby have one of the more unusual ways of moving. Both have small, thin forelegs and large, muscular hind legs, which they use for jumping. When walking, the thick muscular tail is used as a fifth limb. Starting with four feet and the tail on the ground, the kangaroo lifts its two hind legs, leaving the weight on the short front legs and tail. The hind legs then swing forward to a new resting place. As it goes faster, it jumps and only its hind legs touch the ground. The long tail balances the forward leaning

body while the powerful hind legs push the animal forward at up to 30 mph. This jumping locomotion actually uses less energy as the kangaroo goes faster!

Other animals like rabbits also hop, using long, zigzag jumps to escape from predators.

Arboreal Mammals. Mammals that live in trees often do little actual walking, although they may come down to the ground periodically. Monkeys, and some apes, have hands that can be curved into a hook shape. This feature, plus opposable thumbs and big toes, enables them to grasp and hang from branches with both hands and feet.

Gibbons are apes which have perfected the art of brachiation - swinging from branch to branch. Their long slender hands are bent like hooks while their thumbs are small so as to not get in the way. Their arms are longer and stronger than their legs since they depend on their arms from traveling. (Compare this with human arms and legs--what do we use most for locomotion?) Primates that move about on all fours do not have arms as long or as movable as those of apes. Lemurs, capuchin monkeys, and squirrel monkeys all do a lot of jumping, which requires strong hind legs.

Chimpanzees and other great apes are clumsy in trees and spend most of their time on the ground. Their arms are still longer than their legs so when they walk, their weight is borne on the outsides of the feet and their knuckles (hence the term "knuckle-walking").

Most mammals that live in trees use their tails for balance, much like a tight rope walker uses an umbrella to help maintain balance. An even more specialized development is the prehensile tail that can wrap around a branch like an anchor so that its owner cannot fall. Some mammals, such as squirrel monkeys, can even hang and swing by their tails so that they can reach fruit on branches that would otherwise be too far away. For these monkeys, having a tail is almost like having a third hand.

Other mammals have further adaptations which make life in the trees easier. Squirrels have claws that are long, curved and sharp for gripping tree bark. They can actually descend trees head first because the claws on their hind feet act as brakes. Bears also have sharp claws but they descend trees backward because of their great weight.

Some birds which have lost the ability to fly have developed powerful legs for running and protection. For example, the ostrich can run up to 35 mph while its Australian cousin, the emu, can manage 30 mph.

LOCOMOTION IN THE AIR

Three main groups of animals have achieved the ability to fly--birds, bats, and insects--but only the first two will be discussed here.

Birds. When a bird flies, it flaps its wings, which is similar to a mammal jumping--wings are used instead of legs and the animal pushes against air instead of ground. Flapping its wings moves a bird forward on every down stroke. Both wings move up and down at the same time, pushing the air behind them as they move up, down, and back (the propellers of an airplane drag it through the air in the same sort of way but they spin instead of flap). The wings are also used as brakes, pushing against the air; sometimes the tail can become an extra brake by being pushed down and spread out like a fan. To turn, a bird tilts its body and drags one wing in the direction it wants to go. Sometimes it steers using its tail as a rudder.

Birds are the only animals with feathers, a feature that helps give them the ability to fly. Other characteristics are also necessary though: hollow bones, powerful wing muscles, and an efficient breathing system.

Feathers help to streamline the bird's body since each feather overlaps the one behind it like shingles on a roof. Most of the bird's bones are hollow and filled with air, making the skeleton extremely light. A four pound frigate bird, with a wingspan of seven feet, has a skeleton that weighs only four ounces! Birds also have several air-filled sacs within their bodies that are connected to their lungs. Besides keeping the bird light weight, the air sacs help to cool them inside since they can't perspire as mammals can. As a bird flies, its strong muscles help pump air from the air sacs. The faster a bird flies, the faster its muscles work, the faster it pumps air, and the easier it breathes.

Different birds have different kinds of flight, depending on their habitats. This, of course, means that wings will be of different types also. Forest-dwelling birds (doves, woodpeckers, sparrows, etc.) need short arched wings to provide maneuverability, while birds that feed in the open at high speed (swifts, swallows, raptors) require longer, broader wings. The wings of migrators are flatter and taper to a fine tip.

Birds such as hawks, starlings, eagles, and pelicans are excellent gliders and sail long distances without making a single wing beat. Other birds utilize rising warm air currents which push against the underside of their wings. They are able to soar on these "thermals," rising higher and higher on motionless outstretched wings. Seabirds also soar on the smaller thermals created just above waves on the ocean. Birds with big wings like eagles, vultures, condors, and albatross, require air currents and updrafts to fly at all because of their greater weight.

Bats. Although they do not have feathers, bats are also capable of true flight. Bats have very long forelimbs and fingers which serve as supports for the thin membrane that forms the flying surface of their wings. The shape of the wing and the lightness of the animal enables the bat to fly as well as birds. They can maneuver like darting swallows, glide with the air currents, or hover like hummingbirds. Bats have exploited almost every habitat used by birds because they have developed an efficient sonar system which allows them to navigate in the dark.

Gliders. No other mammals can fly but some are able to glide. Several species of forest mammals have flaps of loose skin between their front and hind legs. When the animal leaps from a tree, it spreads its legs until the skin is stretched taut. The animal is able to glide to the ground or another branch using its "parachute." Gliders are found in all parts of the world and include flying lemurs (Southeast Asia), phalangiers and sugar gliders (Australia), and flying squirrels (North and South America, Europe, and Asia).

Vocabulary

Students can be expected to have a beginning understanding of the words listed below:

Chrysalis:	the pupa of a butterfly (similar to the cocoon of a moth)
Climb:	to move upward by grasping with the hands and feet
Crawl or wriggle:	to move slowly without the use of limbs; to move by twisting or turning
Flippers:	a broad flat limb adapted for swimming
Float:	to rest on the surface of the water
Fly:	to move through the air with wings
Glide:	movement through the air by stretching out flaps of skin between the front and hind legs
Hop or jump:	to move by leaps through the air
Locomotion:	movement from one place to another
Run:	to move steadily with springing steps
Swim:	to move through the water by use of limbs
Swing:	to move from one place to another through the air by grasping branches with the limbs
Walk:	to move by steps
Webbing:	a tough leathery skin that connects the three forward toes of the foot
Wings:	front limbs of a bird, bat or insect used for flight
Zoo:	a collection of living animals kept for public display

Pre-Visit Activities

Learning Centers

- Dot-to-dot activities (numbers and letters)
- Puzzle (cut enclosed pieces for individual use or group)
- Crayon rub -- trace animal patterns onto card stock, cut and insert into envelope; child rubs over it with crayon on its side
- Animal-shaped cookies to frost
- Set out clay for modeling
- Use flannel board aids or stories
- Puppets
- A feely bag filled with zoo animal models
- Animal cards: play games like matching, different, same, group by covering, movement, size

Group Games

- Bunny Hop-Along:
Child draws a number card. Child hops that number of times while other children try to imitate him/her. Try hopping in various ways: forward, backward, to side, and around. Use big hops and little hops.
- Wiggle Worm:
Children sit in circle. One child sits in middle to be Wiggle Worm. Everyone recites poem and Wiggle Worm acts out movements described. Rotate turns.

“One day while I was playing,
I met a tiny worm.
Instead of going straight,
He squirmed and squirmed and squirmed.

Here, now, let me show you
How he got around.
He wiggled, wiggled, wiggled
All across the ground

Pre-Visit Activities

- Zoo Train:

Children line up in row to make train. Designate area in room for train station. Let first child be engineer. Have children sing song to tune of “Down By the Station.”

Down by the station,
Next to the zoo,
On came an animal,
Do you know who?

Let engineer tell what animal came aboard the train and what action that animal is performing. Everyone sings the rest of the song as train moves around the room.

We picked up a (kangaroo)
And what do you know?
This is the way
The train started to go.

(Hopping), (hopping), watch us go,
(Hopping) fast, then (hopping) slow.
(Hopping) down, then (hopping) back,
Watch us (hop) around the track.

When train returns to station, have engineer go to the back of the line. The child at the front becomes new engineer and chooses the next animal.

At the Zoo Activities

- While at the zoo, find animals that are in the air, on the land, and in the water.
- As you observe the animals, use cognitive comments like:

“The wallaby is leaping across the grass.”
“The otter is swimming and rolling.”
“The monkey is swinging from limb to limb.”

Then ask the children to look for examples of animals using locomotion and then describe what they see. Use a game format like, “I spy.” Example: “I spy an animal running.” (zebra) “I spy an animal flying.”

At the Zoo Activities

•As you enter the Indonesian Rain Forest exhibit, consider pointing out the following items to the children:

- ➔Note the shapes of the bricks on the walkway. Have the children see if they can identify some of the letters engraved on the bricks.
- ➔Find America on the globe and then trace your finger to the rain forest areas. Are they far or near?
- ➔Why are the people pictured by the gong wearing so few clothes? What would you wear? (This could be a good spring board for a House Area and Dress Up Corner in the classroom. Sarongs could be made from leftover cloth and/or you could print muslin and make rain forest fashions!)
- ➔Tap the gong with your hand and listen. Is the sound high or low? Loud or soft?
- ➔Look at the building. Discuss how it's different from the homes in Ft. Wayne.

•As you enter Dr. Diversity's Rain Forest Research Station, look for:

- ➔When looking for the leaf and stick insects, discuss "camouflage". How many can the children find?
- ➔Are the elephant's tusks big or little?
- ➔Find the Komodo Dragon's toes.
- ➔Lay down in the hammock. How does it feel? Why don't they have beds like the childrens' in the rain forest?
- ➔Find the eye sockets and teeth in the rhinoceros skull.
- ➔How many insects are in each box (or ask each child to count the insects in his favorite drawer or box).
- ➔Look closely at the butterflies on the microscope turn table. Their colors and patterns are made of tiny scales, and some seem almost glowing.

At the Zoo Activities

In Dr. Diversity's Rain Forest Research Station, continued:

- ➔Open each drawer to see the butterflies, moths, beetles, spiders, scorpions, and other insects. Have the children find their favorites. Which is the smallest? The largest? The ugliest?

→ Can they find the beetles' shiny outer shells? Can they see the wings beneath the outer shells?

→ Look at the reticulated python. Measure him out and read the information beneath the doors.

• As you enter the rain forest dome, look for the following:

→ Remind the children that they are guests at the zoo, and are visiting the animals' home. They should be quiet and use their eyes. Animals are frightened by noisy mouths and stamping feet and will hide if the children make too much noise. If the students are quiet, they will see more of the wildlife within the dome! Also, don't touch any animals.

→ Start down the ramp and look up and left. There are three fruit bats hanging from the highest point! These bats are nocturnal and eat only fruits; remind the children that they are not dangerous. Bats like these pollinate many tropical fruit trees.

→ Look at the orangutans. Are their arms longer than the childrens' arms?

→ Listen to the taped orangutan calls and see if children can guess the meaning of these sounds. How do the children sound when they are happy, sad, or angry (remind them to whisper and use their faces to show their moods so they don't frighten anyone or anything in the dome)?

→ Look on the ground for birds that might be walking on the forest floor in the dome.

→ Look in the food pans and see what the dome animals eat.

→ Look at the shapes of the leaves in the dome. Compare these shapes to the leaf shapes on the trees around the children's homes or school.

→ Stand very still and try to listen to the sounds of the rain forest. See if the children can differentiate bird calls from peoples' voices or mechanical noises.

At the Zoo Activities

In the rain forest dome, continued:

→ How many frogs can the children find in the exhibits (located in the cave under the water fall). How do they think these frogs got their names?

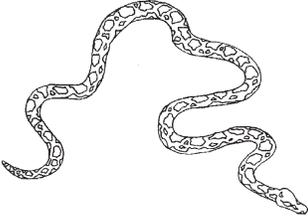
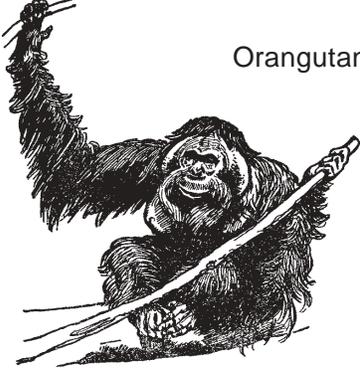
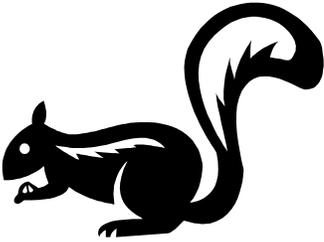
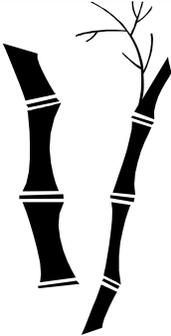
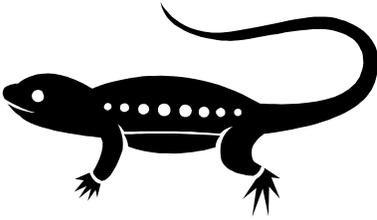
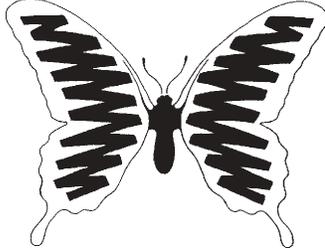
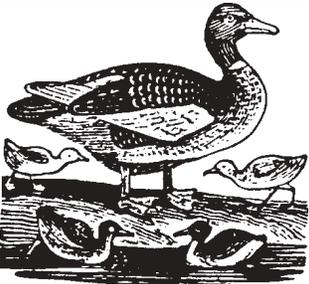
• As you leave the rain forest dome and follow the Tree Tops Trail boardwalk, ask the children to:

→ Look at the pictures on the murals at the top of the Endangered Species Carousel. They represent endangered animals in their natural habitat.

- ➔ Notice how the tree was spared by the builders and grows in the middle of the walk way.
 - ➔ Find the binturong. Is he awake? Can the children see their powerful, prehensile (grasping) tails? These are nocturnal animals so they won't probably be active, but the children can see the size, color, and natural habitat. Would the children like to sleep in a tree? How would they balance?
 - ➔ Look overhead and see the airy tunnel used by the animals when they want to go outside and inside. Discuss how the habitats are as realistic as possible and how every care possible is taken for the welfare of the animals.
 - ➔ How many colors can the children see on the squirrels? Are they fast runners? How do they seem to travel best in their environment? Can the children see what they eat? How are these squirrels different from those seen in their backyards?
- Have students complete the Rain Forest Scavenger Hunt (included in this packet).

Rain Forest Scavenger Hunt

Put an X on the pictures of the things you see as you journey through the Indonesian Rain Forest at the Zoo.

 <p>Frog</p>	 <p>Reticulated Python</p>	 <p>Orangutans</p>
 <p>Squirrel</p>	 <p>Bird</p>	 <p>Bamboo</p>
 <p>Monitor Lizard</p>	 <p>Tiger</p>	 <p>Butterfly</p>
 <p>Duck</p>	 <p>Beetle</p>	 <p>Flying Fox (Bat)</p>

Post-Visit Activities

- Transition Activities

→ When dismissing children to get coats ask the youngest to “hop like a bunny.” Older children can “move as a rabbit would.”

→ When moving as a group from place to place, have children use arms or legs for animal movements (hopping, jumping, swimming, leaping).

- Language-Experience Story

List all the children’s names -- then let each child tell how an animal at the zoo moved. Read the story together.

Example: Jamie said the monkey swings.

 Susie said the bunny hops.

- Write a rebus story about your visit to the zoo.

I saw a  swimming in the .

The  hopped in the .

- Art Activity

Cut basic shapes from paper. Children can use different media to decorate them according to color or texture (use felt, fake fur, textured paper, yarn, string, buttons, etc.)

- Guess Who in the Zoo:

Children sit in a circle to make the zoo. Tell about their experiences at the zoo and name favorite animals. Each child gets a turn going into the zoo and acting out the movements of a different animal. Have the other children guess the animal’s name.

Songs and Finger Plays

Animals at the Zoo

Python, python at the zoo,
Who's that living next to you?

Mother Gecko lives next door,
With her family of four.

Gecko, gecko at the zoo,
Who's that living next to you?

Mother Tree Frog lives next door,
With her family of four.

Substitute other rain forest animals you see at the zoo for the characters in the patterned poem. Continue to play with children supplying the names as long as interest lasts.

Hoppity Toad

I am a funny, hoppity toad (squat down)
Trying to jump across the road (jump in squatting position)
Winking, blinking my big eyes (blink eyes)
Snapping at some bugs and flies (open and close mouth quickly)

“Croak,” said the frog, (make croaking sound)
With the golden eyes. (fists up to eyes)
Sitting on a lily pad,
Catching flies. (grab air with hand and index finger)

I have a sticky tongue,
It's as fast as fast can be. (make darting motion with tongue)
I catch the mosquitoes,
1,2,3. (pop up fingers as you count)

Butterfly

1,2,3,4,5, (pop up fingers as you count)
I saw a butterfly. (flap hands as wings)
6,7,8,9,10 (pop up remaining fingers)
I watched him fly away again. (flap hands)

Songs and Finger Plays

Bees

Here is the bee hive (make a fist)
Where are the bees? (hold out hands, palms up)
Hidden away,
Where nobody sees!

Soon they'll be coming
out of the hive.
1,2,3,4,5! (hold up fingers, one by one)

What Animals Do

We'll hop, hop, hop like a tree frog, (hop)
And we'll run, run, run like a jaguar. (run in place)
We'll walk, walk, walk like a Binturong (walk in place, but bend over and swing your extended arms like trunks)

We'll swim, swim, swim like a fishy, (pretend to swim)
And fly, fly, fly like a bird. (flap arms as wings)
We'll sit right down and fold our hands,
And not say a single word.

Rainforest Animals

The rain forest is a home to many animals.
We can name a few:

(have the children list or act out their favorite Rain forest animals)

We walk softly and watch the animals;
They see and watch us too!

I'm a Little Caterpillar (to the tune of "I'm a Little Teapot")

I'm a little caterpillar round and fat.
Here is my body,
Here are my legs.
When I've finished molting
Then I'll shout
I'm in a chrysalis. Let me out!

Songs and Finger Plays

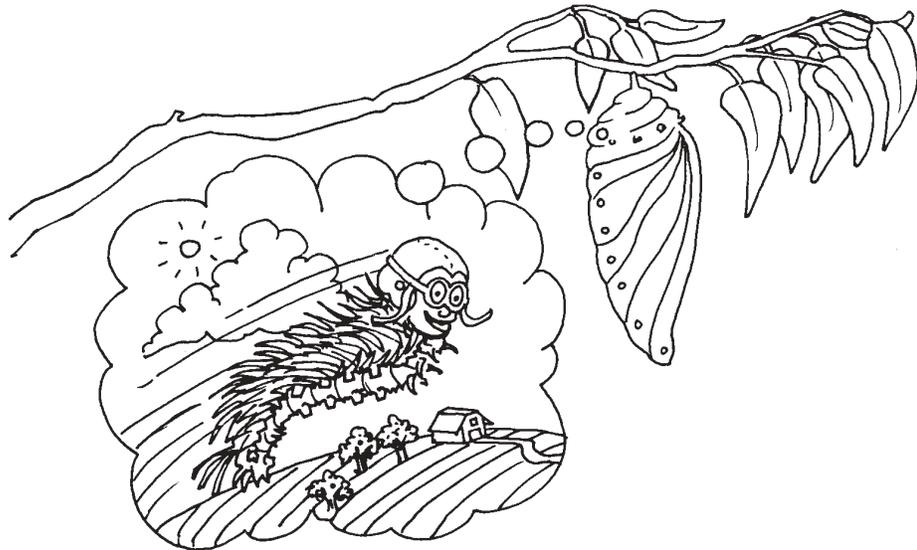
Metamorphosis (to the tune of 'Up on the Housetop')

First comes a butterfly and lays an egg,
Out comes a caterpillar with tiny legs.
See the caterpillar shed its skin
Then a chrysalis just to sleep in.

Look, look, look, see it now.
Look, look, look, see it now.
Out of the chrysalis, my, oh, my
Out comes a graceful butterfly!

The Fuzzy Caterpillar (to the tune of "The Eentsy-Weentsy Spider")

The fuzzy caterpillar
Crawled up the garden vine,
Came to a green leaf
and there it stopped to dine.
Soon it was a chrysalis dreaming it could fly.
Later when it woke up It was a butterfly!



Songs and Finger Plays

Did You Ever See a Bunny? (sung to tune of "Did You Ever See a Lassie?")

Did you ever see a bunny, a bunny, a bunny,
Did you ever see a bunny, that hops -- so slow?
He hops, and hops, and hops, and hops,
Did you ever see a bunny, that hops so slow?
2. That hops -- so fast?
3. That hops -- backwards?
4. That hops on one foot?

I'm a Fish (sung to "I'm a Little Teapot")

I'm a little fishy, I can swim.
Here is my tail, Here is my fin.
When I want to have fun with my friend,
I wiggle my tail and dive right in.

All Around the Yard (sung to "Ten Little Indians")

Crawl, crawl, crawl, little snake,
Crawl, crawl, crawl, little snake,
Crawl, crawl, crawl, little snake,
All around the yard.

Underneath the Monkey Tree (sung to "The Muffin Man")

Come and play awhile with me,
Underneath the monkey tree.
Monkey see and monkey do.
Just like monkeys in the zoo. (join hands and move in circle)

Swing your tail, one, two, three,
Underneath the monkey tree.
Monkey see and monkey do,
Just like monkeys in the zoo. (put hands behind back and pretend to swing tail)

Jump around and smile like me,
Underneath the monkey tree,
Monkey see and monkey do
Just like monkeys in the zoo. (jump and smile)

Taken from Piggyback Songs, by Jean Warren (Totline Press Ware Publishing House)

Songs and Finger Plays

Jump or Juggle

Frogs jump
Caterpillars hump

Worms wiggle
Bugs jiggle

Rabbits hop
Horses clop

Snakes slide
Sea gulls glide

Mice creep
Deer leap

Puppies bounce
Kittens pounce

Lions stalk--
But--
I walk!

--Evelyn Beyer

The Yellow Giraffe

The yellow giraffe is tall as can be, (Put hand up high)
His lunch is a bunch of leaves off a tree. (Put arm up for tree branches)
He has a very long neck and his legs are long too, (Point to neck and legs)
And he can run faster than his friends in the zoo. (Run in place)

The Brown Kangaroo

The brown kangaroo is very funny
She leaps and runs and hops like a bunny. (Hop)
And on her stomach is a pocket so wide, (Put hand on stomach like a pocket)
Her baby can jump in and go for a ride. (Have other hand jump into a "pocket")

Games

Hummingbird

The children sit in a circle. One child is designated as it. "It" covers her eyes while another child hides an object or picture of something from the rain forest. "It" must try to find the hidden object and is guided by the other children. They will hum loudly when "It" gets close to the hidden object, and hum more softly as "It" gets farther away. Once the object is discovered "It" gets to pick the next person to search and the last "It" hides the object. Play until everyone has had a turn.

The Farmer in the Dell

Substitute animals for the farmer and jungle for the dell:

The jaguar in the jungle;
the jaguar in the jungle;
Heigh-ho the derry-oh,
The jaguar in the jungle.

The jungle needs the trees
The trees need the rain
The bats need the fruit
The hummingbirds need the nectar
The caterpillars need the leaves etc, etc.

Select one child to be in the center of the circle to begin the game; then have the group hold hands and walk around him as they sing the song. Stop walking at the end of the verse, then the Center Child chooses another to take his place for the next verse, and so on. Make sure that everyone has a chance to be in the middle if they want to.

I Spy

Begin game by saying, "I spy... " and describe an animal found at the zoo or a color found within the rain forest habitat. The other children try to guess what it is. If someone is successful, he or she becomes the next one to "spy". Have the child tell the teacher what he's thinking of initially so that when the others guess it correctly the game can proceed smoothly.

Art and Craft Projects

Rain Forest Mural Use corrugated cardboard and place it beneath drawing paper to make rubbings of various shapes of leaves for a rain forest. Paper towel tubes could be the tree trunks. Drape crepe paper and craft twine between and around the “trees” to represent the air ferns and vines that grow among the trees. Toy animals from home can live there!

3-D Rain Forest Animals Have the children cut out two large shapes each of rain forest animals that the teacher has outlined on brown paper. Staple the shapes together on all but one side. The children then stuff the animals with crumpled newspaper and paint. These forest creatures can now inhabit the forest previously constructed!

Rain Forest Jewelry Using large shaped noodles (mostaccioli is a good one), the children paint or use marker to color their “beads”. String them on yarn for a nice Rain Forest Native necklace.

Make bracelets by cutting 1 1/2" x 2" pieces of cardboard. Paint one side of each with glue. The children can then glue seeds and pasta shapes onto one side of each piece of cardboard. When dried, line the decorated sides up and place a piece of elastic 8 1/2" long across the center of the line of cardboard pieces. Attach the elastic to each piece with strong tape. Tie the ends together with a double knot and use as arm or a leg bracelet.

Rain Forest Insects Use air-drying clay to make insects. After the children have rolled it out, they can use pipe cleaner pieces for legs, or cut pieces of colored construction paper for wings. After their creatures have dried, the children can paint them the bright colors of their tropical cousins.

Butterflies Draw a butterfly shape on a large piece of paper. Fold it in the middle along the body line. Then, open it out and lay it flat. Have the children paint one side of the butterfly only. Then, while the paint is still wet, fold the paper in half. Open and they will see the symmetry of their design in their completed butterfly.

Insects Go to the store and get Gummy Insects. Have the children examine the number of legs each has, or how long the different insects are. Graph colors, sizes, number of legs, longest to shortest, whatever you and the class wish. Make sure you have enough candies so that the graphers can munch while working!

Tree Frogs Use the puppet pattern and make a rain forest full of frogs for your room using different colors of felt.

Rain Forest Cooperative Painting Use a piece of butcher paper at least ten feet long and let the children paint a rain forest and its inhabitants. While somewhat teacher-directed in terms of theme, the art work will be open ended and the children can make whatever they wish to add. They will be cooperating and sharing, but can also work in a parallel manner if they want.

Or, finger paint paper with different colors. After drying, this can be cut into appropriate shapes for the flora and fauna of the jungle.

Art and Craft Projects

Spider Webs Cut notches in cardboard pieces, styrofoam meat trays or pizza cardboards. Have the children make “webs” with yarn by wrapping and weaving in and around the notches and across the cardboards.

Sponge Animals After the teacher cuts kitchen sponges into insect shapes, the children could sponge paint them onto the rain forest floor or trees. Discuss camouflage and provide brown and green paint as well as the bright reds and yellows. Larger sponges could be cut into tree frog shapes or birds.

Animal Masks Cut out the center portion of a paper plate. Use this center part to cut ears for your animal, if it needs any. Staple the ears to the outer rim of the plate. Paint the outer rim/ears of the plate. Glue one jumbo craft stick to the base of the plate for a handle. Use eyebrow pencil to draw whiskers and/or nose on the actual child’s face. When the children hold the mask up to their face, THEY are the animal!

Home-made Stickers

Mix together:

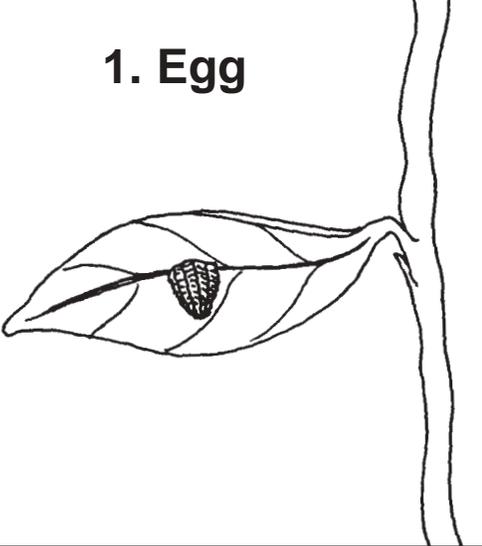
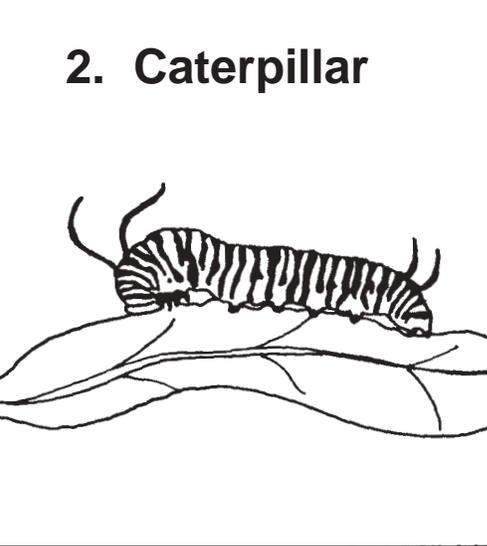
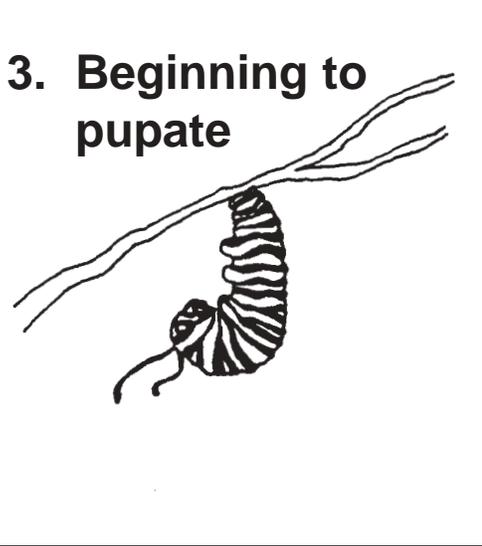
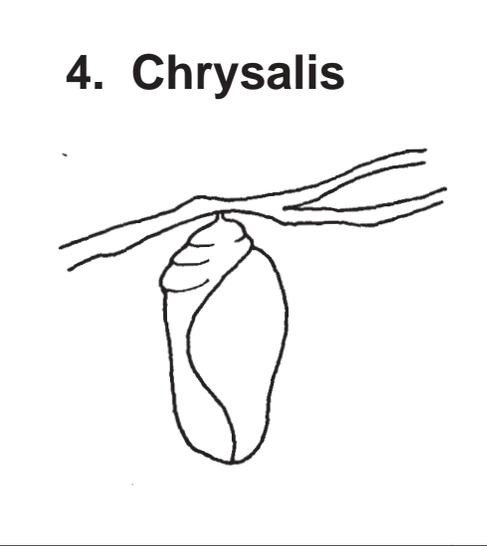
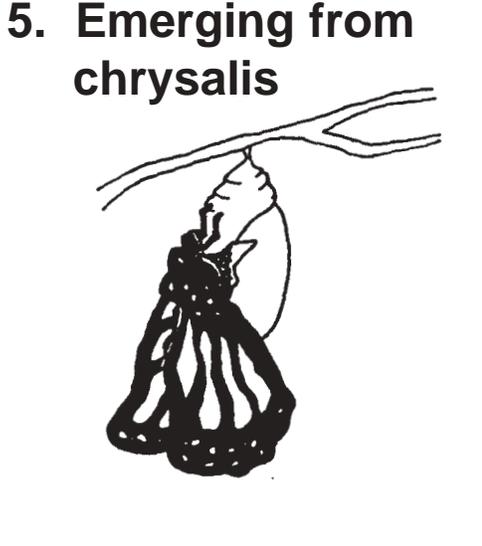
1/4 c. white nontoxic glue

1 Tbs. vinegar

1 drop of any flavoring

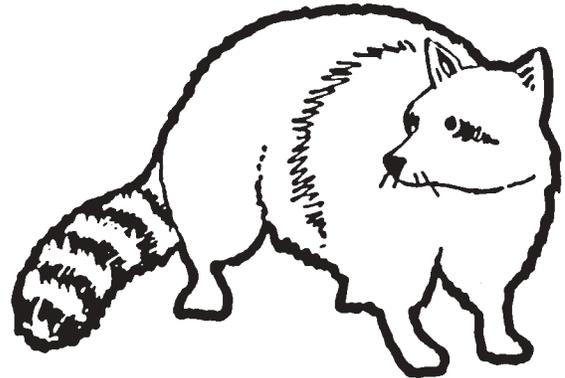
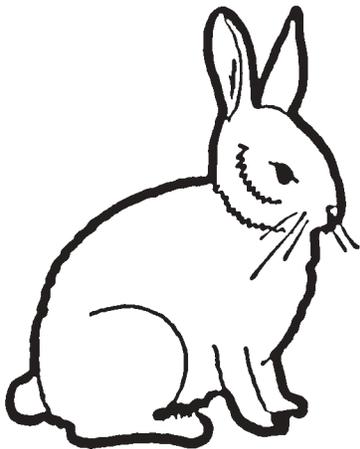
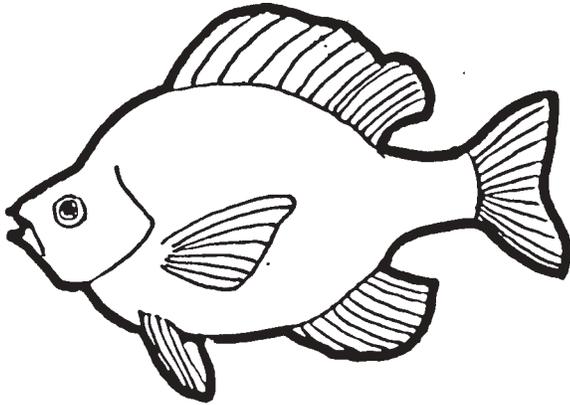
Have the children cut pictures of animals from magazines or gift wrap. Paint the mixture on the back and let dry. Then lick and stick!

Butterfly Life Cycle

<p>1. Egg</p> 	<p>2. Caterpillar</p> 
<p>3. Beginning to pupate</p> 	<p>4. Chrysalis</p> 
<p>5. Emerging from chrysalis</p> 	<p>6. Adult</p> 

Teacher: Have the children cut apart the pictures on the lines. Glue the pictures to a piece of paper in the correct sequence.

On the Move



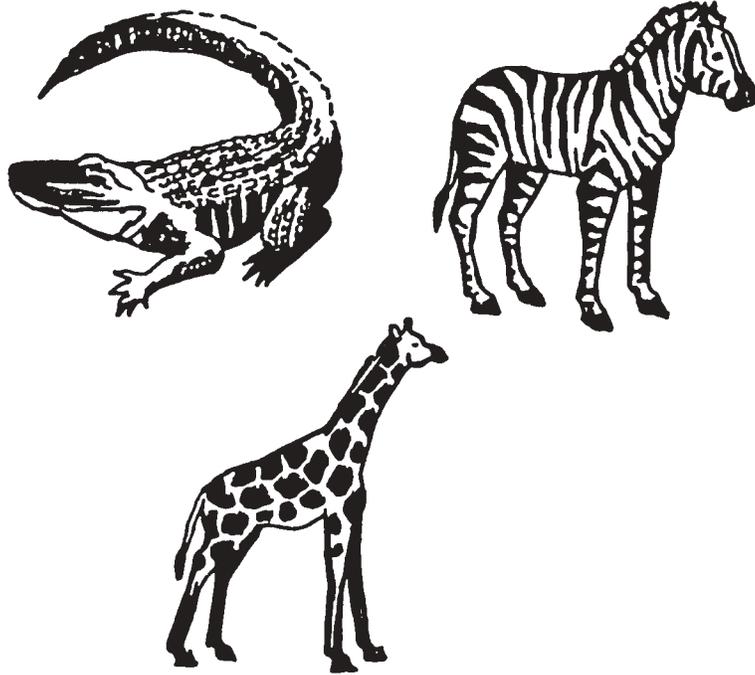
Put an X on the animal that hops.

Draw a circle around the animal that swims.

Color the animal that climbs trees brown.

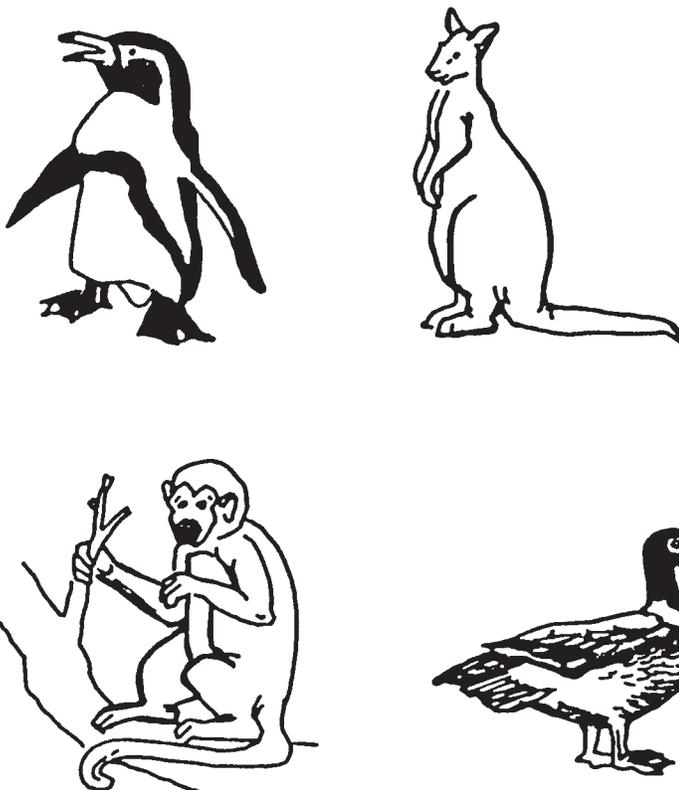
Draw a square around the animal that crawls on the ground.

Connect the animal picture groups to the correct number.



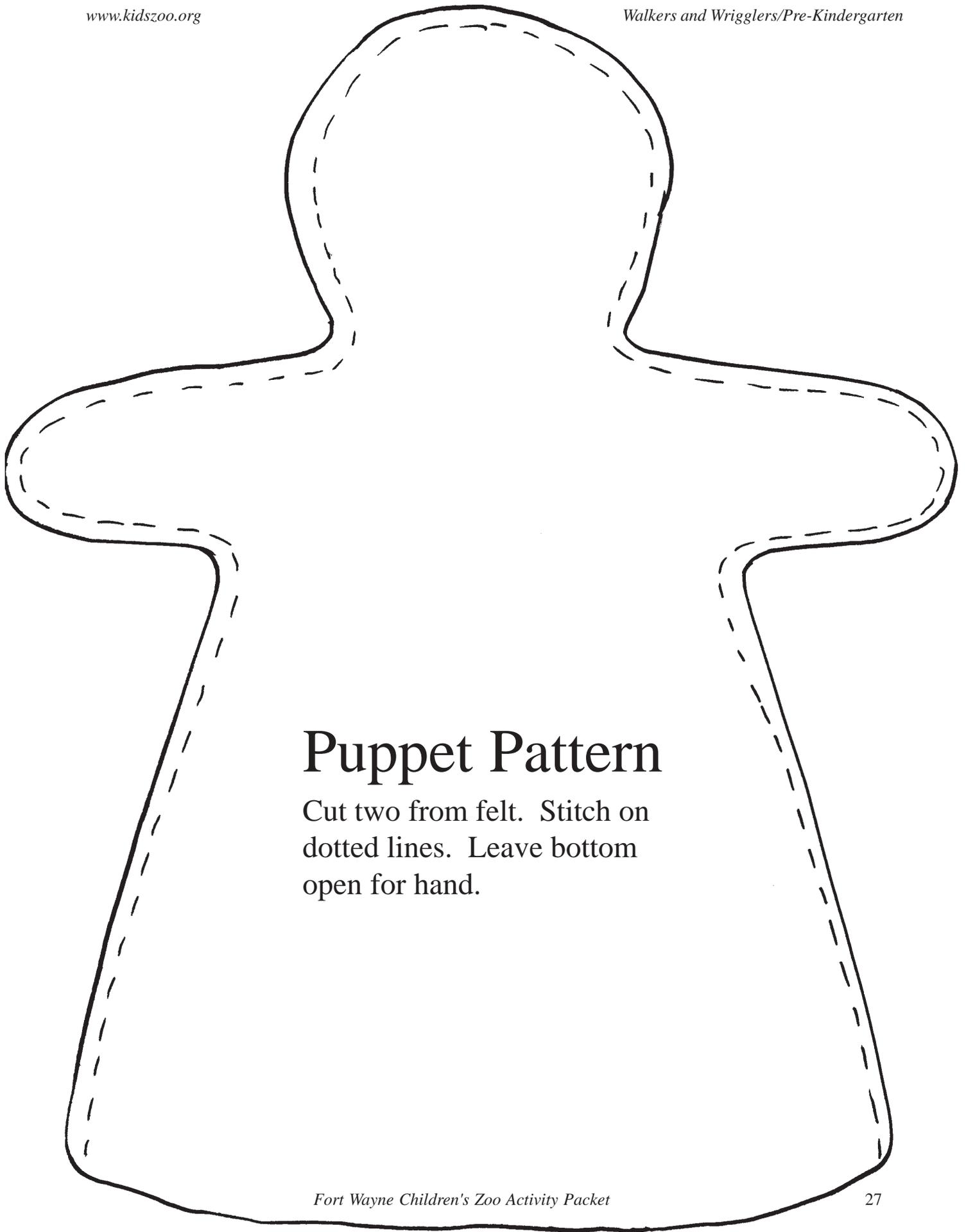
6

4



5

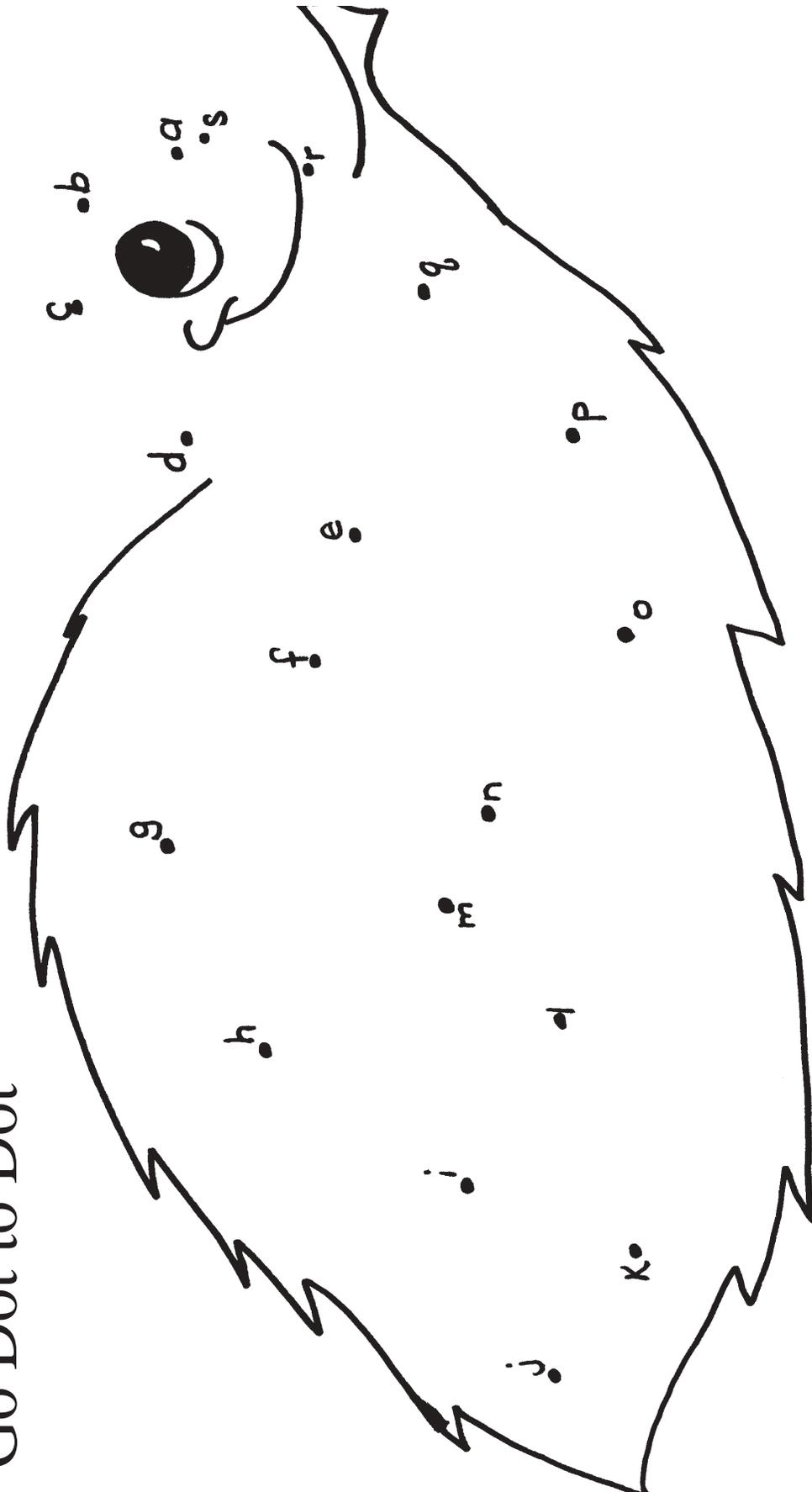
3



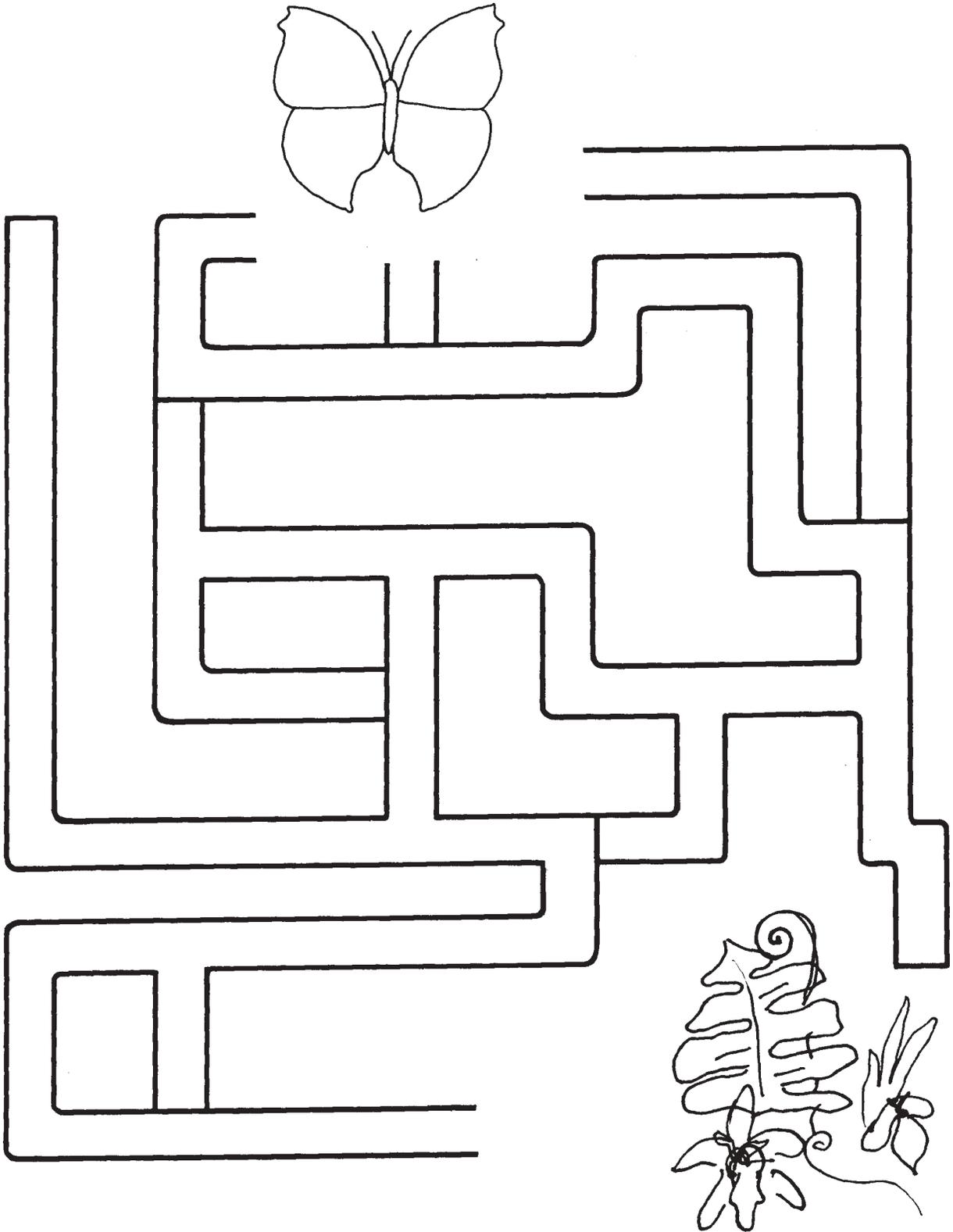
Puppet Pattern

Cut two from felt. Stitch on dotted lines. Leave bottom open for hand.

Go Dot to Dot



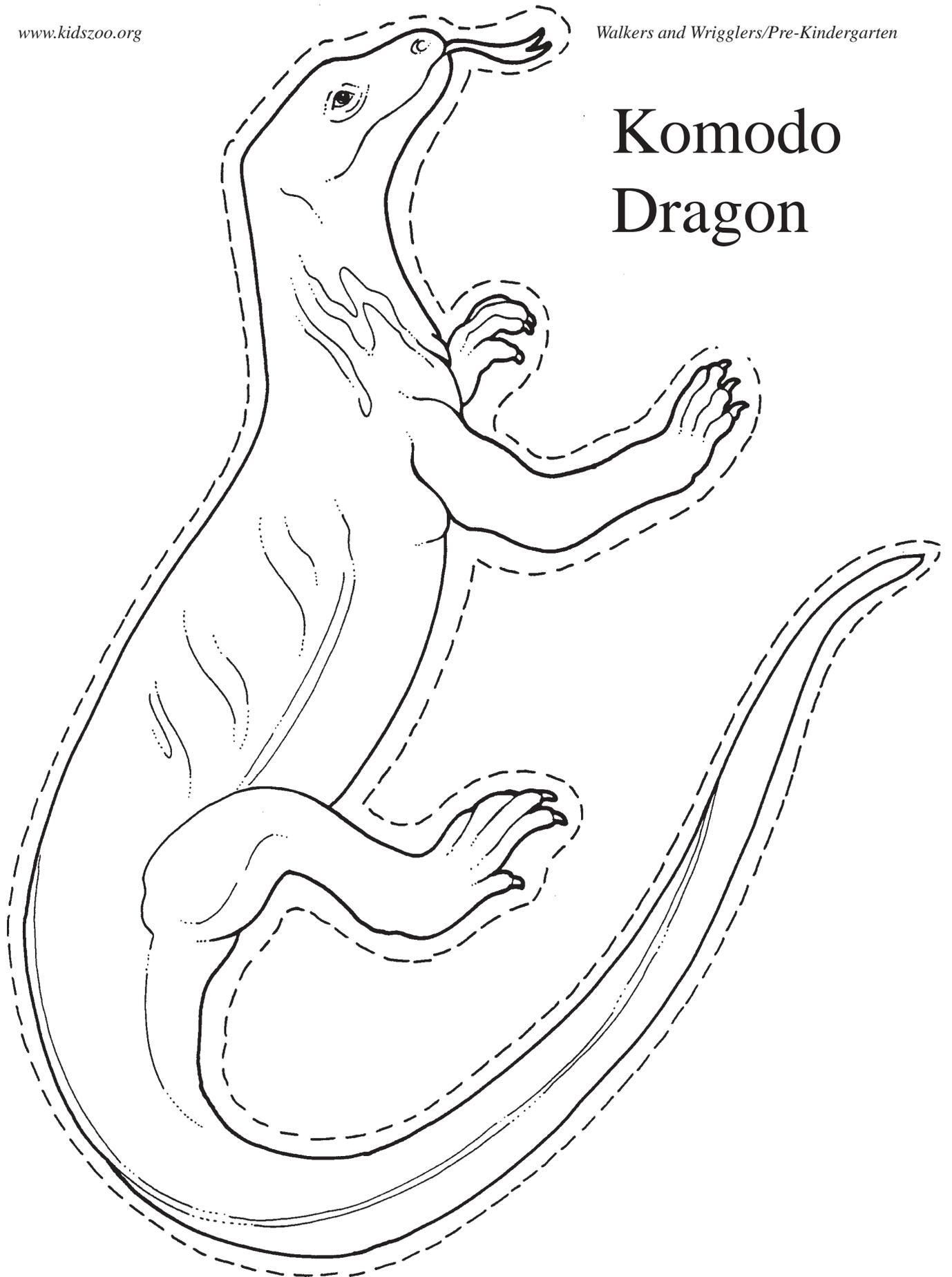
Help the butterfly find the flowers. Do not cross any lines.





Tiger

Komodo Dragon

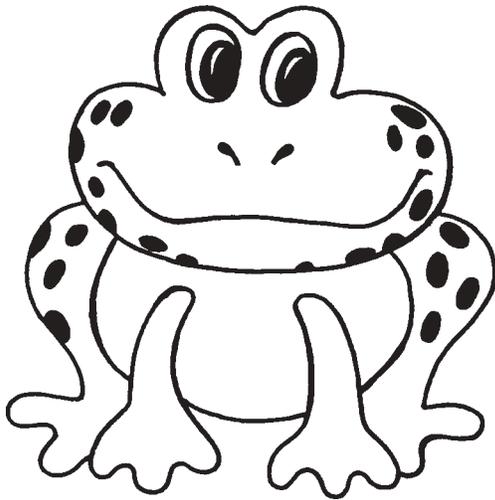




Make a Puzzle!

Color the picture. Cut on the dotted lines.

FROG



Materials

Construction paper:

green for head, legs, and body

light green for tummy

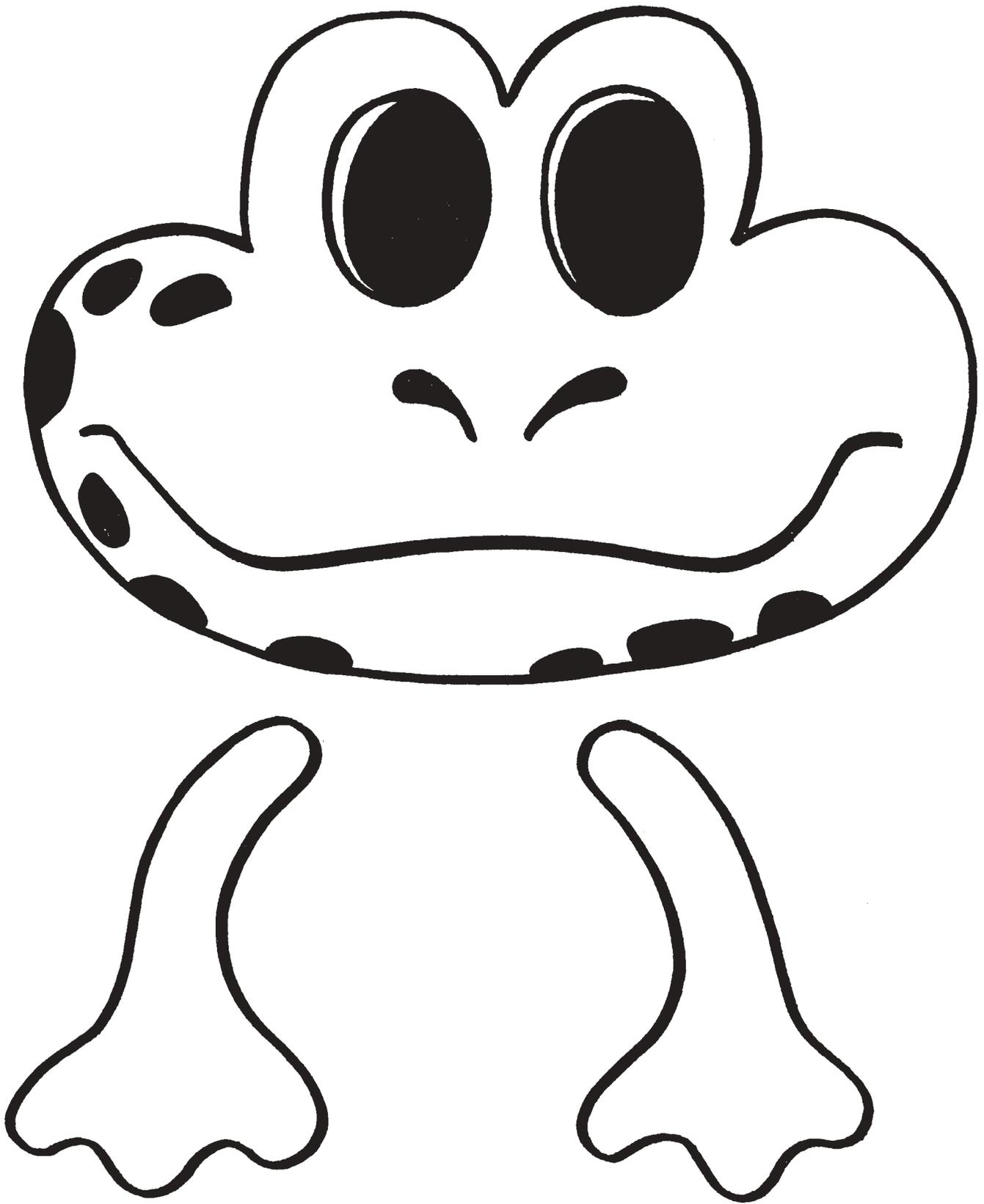
black and white scraps for eyes

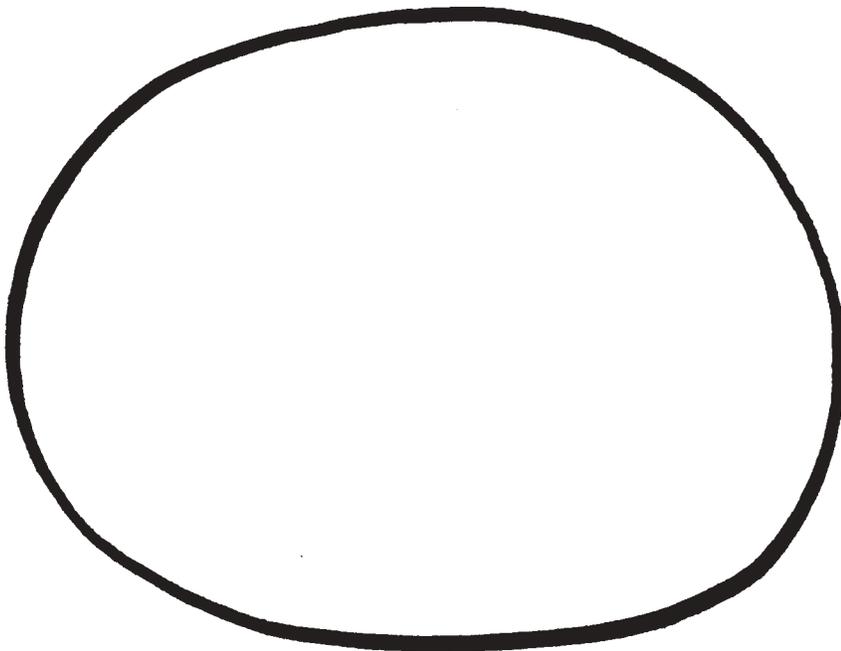
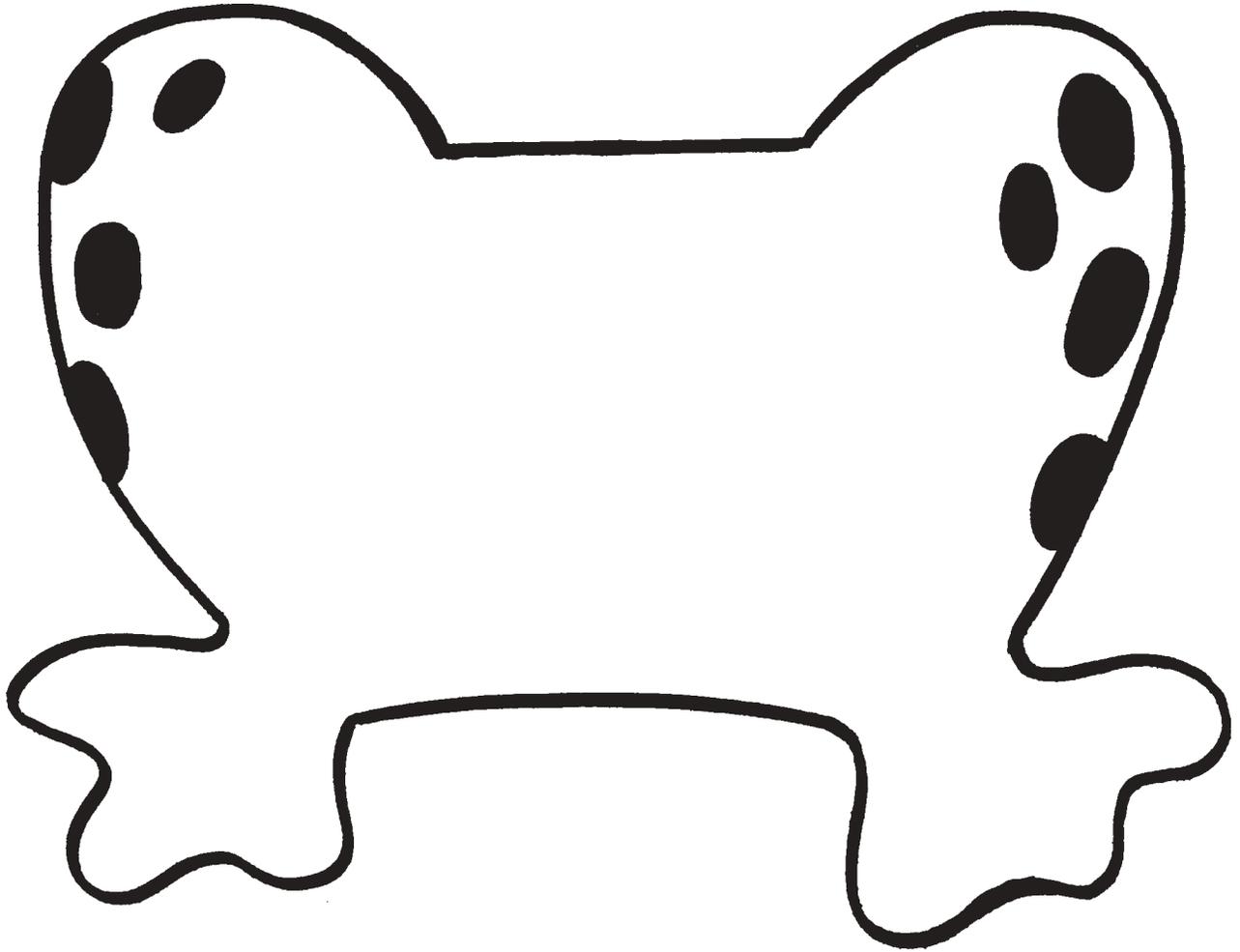
Scissors, glue, crayons, or markers

Patterns on following pages

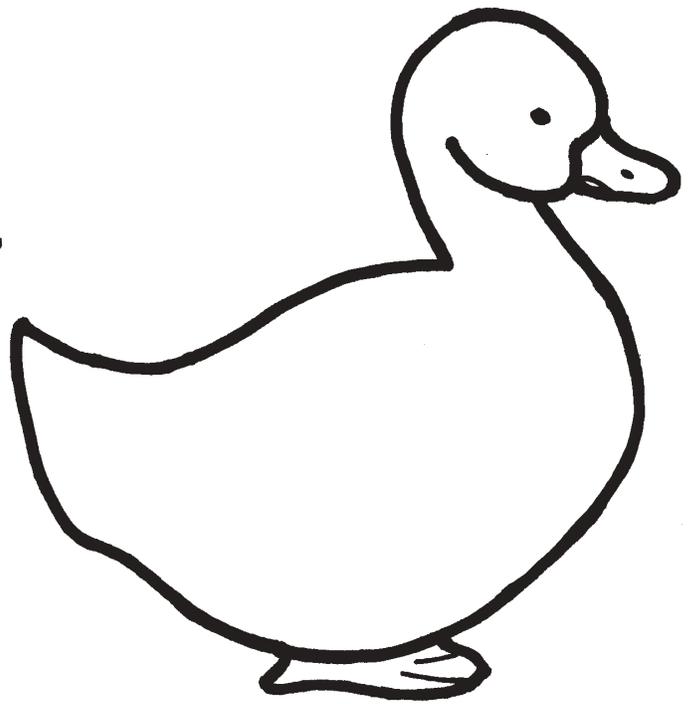
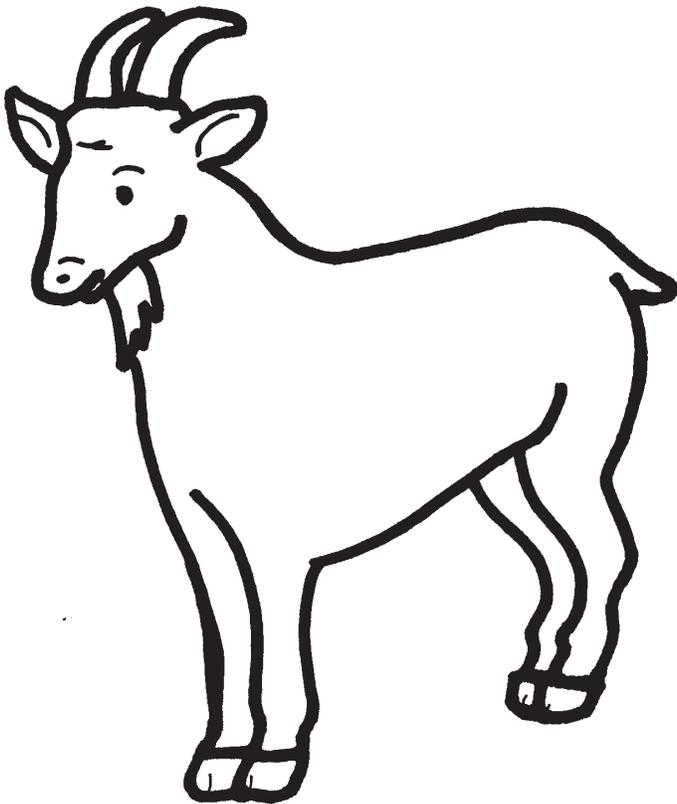
Construction

1. Cut out all pieces.
2. Glue tummy to body and then glue legs to top of tummy.
3. Glue head to top of body.
4. Cut eyes freehand or draw with marker. Draw mouth and nose.
5. Use a green crayon or marker to make spots on body and face.

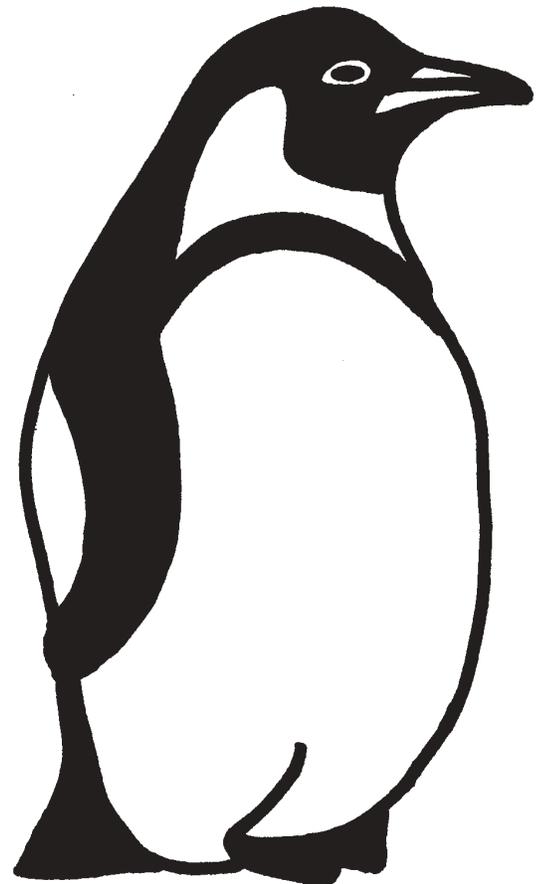
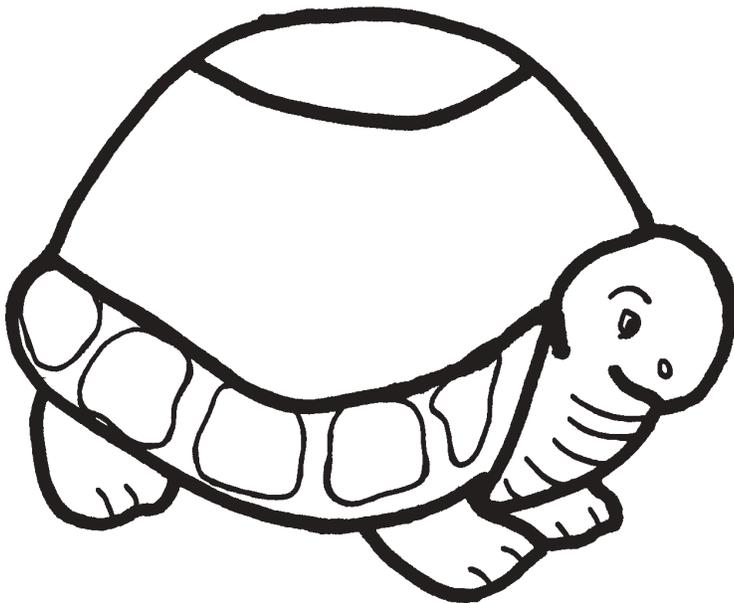




Name Tag Patterns



Name Tag Patterns



General Resources for Students and Teachers

BOOKS:

- All About Alligators. Jim Arnosky. Scholastic Inc. 1994.
- Amazing Animal Disguises-Eyewitness Jr. Sandie Sowler. Alfred Knopf. 1992.
- Amazing Armored Animals-Eyewitness Jr. Sandie Sowler. Alfred Knopf. 1992.
- Amazing Cats-Eyewitness Junior. Alexandra Parsons. Alfred Knopf Co. 1990.
- Amazing Wolves, Dogs, & Foxes-Eyewitness. Mary Ling. Alfred Knopf Co. 1991.
- And Then There Was One. Margaret Facklam. Little Brown & Co. 1990.
- Animals A to Z. David McPhail. Scholastic. 1988.
- Animal Homes- Jungles. Shirley Greenisky. Newington Press. 1991.
- Animal Inventors. Thane Maynard. Franklin Watts. 1991.
- Animals of the Night. Lionel Bender. Gloucester Press. 1989.
- Animal Specialists. Nathan Aaseng. Lerner. 1987.
- Big Animals. Anne Priestley. Random House Look and Learn. 1987.
- Big Birds. Denise Casey. Cobblehill Books. 1993.
- Big Book of Amazing Animal Behavior. Tison and Taylor. Grosset and Dunlap. 1987.
- Big Cats. Bobbie Kalman. Crabtree Publishing Co. 1994.
- Big Cats - Picture Library. N.S. Barrett. Franklin Watts. 1988.
- Changing Shape - Nature's Secrets. Paul Bennett. Thomson Learning. 1994.
- Cheetah. Caroline Arnold. Morrow Junior Books. 1993
- Cheetahs - Nature's Children. Alia Smyth. Grolier. 1989.
- Conserving Rainforests. Martin Banks. Steck-Vaughn Co. 1990.
- Egg, A Photographic Story of Hatching. Robert Burton. Dorling Kindersley Inc. 1994.
- Flightless Birds - Picture Library. Norman Barrett. Franklin Watts. 1991.
- Frogs and Toads. Helen Riley. Thomson Learning. 1993.
- Gazelles - Nature's Children. Sheila Dalton. Grolier. 1990.
- Giraffe. Caroline Arnold. Morrow Junior Books. 1993.
- Giraffes - Nature's Children. Merebeth Switzer. Grolier. 1990.
- Here Is the Tropical Rain Forest. Madeleine Dunphy. Hyperion Books. 1994.
- How Speedy Is a Cheetah? Fascinating Facts About Animals. Knapp. Grosset and Dunlap. 1987.
- I Spy at the Zoo. Maureen Roffey. Four Winds. 1988.
- Journey Through A Tropical Jungle. Adrian Forsyth. Simon & Schuster. 1988.
- Kangaroo. Caroline Arnold. Morrow Junior Books. 1993.
- Kangaroos and Other Marsupials. Lionel Bender. Gloucester Press. 1988.
- Kids' World Almanac of Animals & Pets. Deborah Felder. Pharos Books. 1989.
- Llama. Caroline Arnold. Morrow Junior Books. 1993.
- Making A Nest -- Nature's Secrets. Paul Bennett. Thomson Learning. 1994.
- Mammal Eyewitness Books. Steve Parker. Alfred Knopf. 1989.
- Midnight Animals. Christopher Tunney. Random House All-About Books. 1988.
- Monkey. Caroline Arnold. Morrow Junior books. 1993.
- Nature Close-Up, The Turtle. Hidetomo Oda. Raintree Publishers. 1986.
- New Zoos. Madelyn Anderson. Watts. 1987.
- Old World Monkeys - Nature's Children. Bill Ivy. Grolier. 1990.

- One-Hundred Words About Animals. Harcourt Brace. 1987.
- Orangutan. Caroline Arnold. Morrow Junior Books. 1993.
- Orangutan. Carl Green. Crestwood House. 1987.
- Orangutans. Sheila Dalton. Grolier. 1990.
- Penguin. Caroline Arnold. Morrow Junior Books. 1993.
- Rain Forest. Rene Mettler. Scholastic. 1994.
- Rain Forest. Gallimard Jeunesse. Cartwheel Books-Scholastic. 1992.
- Rain Forest. Barbara Taylor. Dorling Kindersley. 1992.
- Rain Forests - Eco Zone. Lynn Stone. Rourke Enterprises Inc. 1989.
- Rainforest Secrets. Arthur Dorros. Scholastic Inc. 1990.
- Really Radical Reptiles & Amphibians. Leslie Elliott. Sterling Publishing. 1994.
- Sea Otters, Jane Goodall's Animal World. Ruth Ashby. Atheneum. 1990.
- Secrets of the Animal World. National Geographic Society. 1986.
- Snake. Caroline Arnold. Morrow Junior Books. 1991.
- Snakes. Helen Riley. Thomson Learning. 1994.
- Strange Animals of Australia. Toni Eugene. National Geographic Society. 1991.
- Tasmanian Devil On Location. Kathy Darling. Lothrop, Lee, and Shepard Books. 1992.
- The World of Fishes. Hiroshi Takeuchi. Raintree Publishers. 1986.
- Tigers - Nature's Children. Bill Ivy. Grolier. 1990.
- Visit to the Zoo. Sylvia Tester. Children's Press. 1987.
- Weird & Wonderful Fish. Colin Milkens. Thomson Learning. 1994.
- Where's That Reptile - Hide & Seek Science. Barbara Brenner. Cartwheel Scholastic Books. 1993.
- Wonders of the Jungle. National Wildlife Federation. 1987.
- Zebra. Caroline Arnold. Morrow Junior Books. 1993.
- Zoo. Gail Gibbons. Crowell. 1987.
- Zoos. Miriam Moss. Bookwright Topics. 1987.

www.kidszoo.org

MAGAZINES:

National Geographic World
National Geographic Society
P.O. Box 2330
Washington, D.C. 20013-23

Wildlife Conservation

Available as part of Fort Wayne Zoological Society membership or from Bronx Zoo/Wildlife Conservation Park
Bronx, NY 10460

Science and Children

National Science Teachers Assoc.
1742 Connecticut Ave., N.W.
Washington, D.C. 20009-1171

Ranger Rick

National Wildlife Federation
8925 Leesburg Pike
Vienna, VA 22184-0001

Your Big Backyard

National Wildlife Federation
P.O. Box 777
Mt. Morris, IL 61054-0777

Owl Magazine

25 Boxwood Lane
Buffalo, NY 14227

Dolphin Log

The Cousteau Society
870 Greenbrier Circle, Suite 402
Chesapeake, VA 23320

3-2-1 Contact

Children's Television Workshop
P.O. Box 53051
Boulder, CO 80322-3051

Scienceland

Scienceland Inc.
501 Fifth Ave., Ste. 2108
New York, NY 10017-6165

Project Learning Tree

American Forest Council
1250 Connecticut Ave., N.W.
Washington, D.C. 20036

Project WILD/Aquatic Project WILD

Western Regional Environmental Education Council
Salina Star Route
Boulder, CO 80302

Walkers and Wrigglers/Pre-Kindergarten

Ranger Rick's Naturescope
National Wildlife Federation
1400 16th Street, N.W.
Washington, D.C. 20036-2266

3-2-1-Contact

E=Mc Square
P.O. Box 51177
Boulder, CO 80322-1177

ZOOBOOKS.

P.O. Box 85384
San Diego, CA 92103.

VIDEOS

3-2-1 Classroom Contact: Australian Mammals - Life Down Under. 3-2-1 Contact Classroom Video Series. 1991. 15 min.

3-2-1 Classroom Contact: Social Behavior -- Living Groups. 3-2-1 Contact Classroom Video Series. 1991. 15 min.

African Animals -- Nature Series, Educational Favorites. Trans Atlantic Video. 1988. 30 min.
African Wildlife. National Geographic Society. 1990. 60 min.

Animals of the Night, Children's Series Animal in Action. Kodak Video Programs. 1988. 30 min.
Big Cats of the World. Aims. 1994. 19 min.
Cool Creatures: Reptiles. Rainbow. 1994. 22 min.

Dive to the Coral Reefs. Reading Rainbow. 1990. 30 min.

Food Chains -- Eat and Be Eaten. 3-2-1 Contact Classroom Video Series. 1991. 15 min.

Giraffes and How They Live. Aims. 1994. 19 min.

How We Classify Animals. Aims. 1990. 14 min.
Lions of the African Night. National Geographic Society. 1986. 60 min.

Mountain Animals, Children's Series Animals in Action. Kodak Video Programs. 1988. 30 min.

Penguins, Nature Series, Education Favorites. Trans Atlantic Video. 1988. 30 min.

Rain Forest: More Complicated Than You Thought. Aims. 1993. 15 min.

Reptiles, Nature Series, Educational Favorites. Trans Atlantic Video. 1986. 30 min.

VIDEOS, continued

Shooting Africa, A Photo Safari Video. Questar Travel Network Productions. 1988. 60 min.

Snakes and How They Live. Aims. 1988. 12 min.

Stellaluna. Reading Rainbow. 1990. 30 min.

The Turtle Family, Children's Series Animals in Action. Kodak Video Programs. 1988. 30 min.

Tree Living Animals, Children's Series Animals in Action. Kodak Video Programs. 1988. 30 min.

You Can't Grow Home Again. 3-2-1 Contact Classroom Video Series. 1991. 60 min.

Zoo, Zoo, Zoo: Animal Groups. Agency for Instructional Technology (AIT). 1993. 15 min.

SOFTWARE

TITLE	GRADE	TYPE	PUBLISHER
ABC's Wide World of Animals	4 - 12	MAC/CD/Windows	Creative Wonders
Destination Rain Forest	K - 6	MAC/CD	Edmark
Discovering Endangered Wildlife	4 - 12	CD/Windows	Queue
ECO Adventures in the Rainforest	3 - 12	MAC/Windows	Chariot Software
How Animals Move	4 - 12	MAC/CD/Windows	Discovery Channel
How We Classify Animals	3 - 6	MAC/CD/Windows	ClearVue
Introduction to Vertebrates	3 - 6	MAC/CD/Windows	ClearVue
Learning All About Animals	3 - 6	MAC/CD/DOS	Queue
Mammals of Africa	4 - 12	MAC/CD/Windows	RE Media (Sunburst)
Ocean Explorers and Zoo Explorers	K - 5	CD	Compton's
Ocean Life -- Great Barrier Reef	4 - 12	MAC/CD	Sumeria
Odell Down Under -- Great Barrier Reef	3 - 12	MAC/Windows	MECC
Rainforest Bundle	4-8	MAC/Windows	Sunburst
Rainforest Explorer	4 & up	MAC/CD/Windows	Orange Cherry
San Diego Zoo Presents The Animals 2.0	2 - 12	MAC/CD	Mindscape
Scavenger Hunt Adventure Series: Africa	3 - 12	MAC/CD/Windows	Swe
The Great Ocean Rescue	5 - 8	MAC/Windows	Tom Snyder Prod.
The World of Reptiles	3 - 6	MAC/CD/Windows	ClearVue
Virtual Reality Bird	4 - 12	CD/Windows	DK Multimedia
Virtual Reality Cat	4 - 12	CD/Windows	DK Multimedia
Zoo Keeper	3 - 8	MAC/Windows	Davidson
Zootopia	3 - 12	MAC/CD/Windows	Lawrence
Zurk's Rainforest Lab	K - 3	MAC/CD/Windows	Soliel Software

Evaluation Form Zoo Activity Packet

Dear Teacher:

Please take a few minutes to fill out and return this evaluation form. Your input will help us improve our teacher resource materials in the future.

Return in the envelope provided or mail to Education Department, Fort Wayne Children's Zoo, 3411 Sherman Blvd., Fort Wayne, IN 46808. Thank you for your time and effort!

SCHOOL or GROUP NAME: _____

GRADE LEVEL: _____ DATE OF VISIT: _____

1. Were the materials and activities appropriate for your grade level? _____

2. Which work sheets did you use? _____

3. Which activities did you try? _____

4. Which of these were enjoyed most by your students? _____

5. Did you create or modify any activities to supplement this packet? If so, we would appreciate receiving a copy to include in future packets or to distribute to teachers on request.

6. What other materials would you like to see included in the packet? _____

7. Additional comments: _____
