

If My Mom Were a Platypus: *Mammal Babies and Their Mothers*

Hands-On Demonstrations Preparation Information and Directions

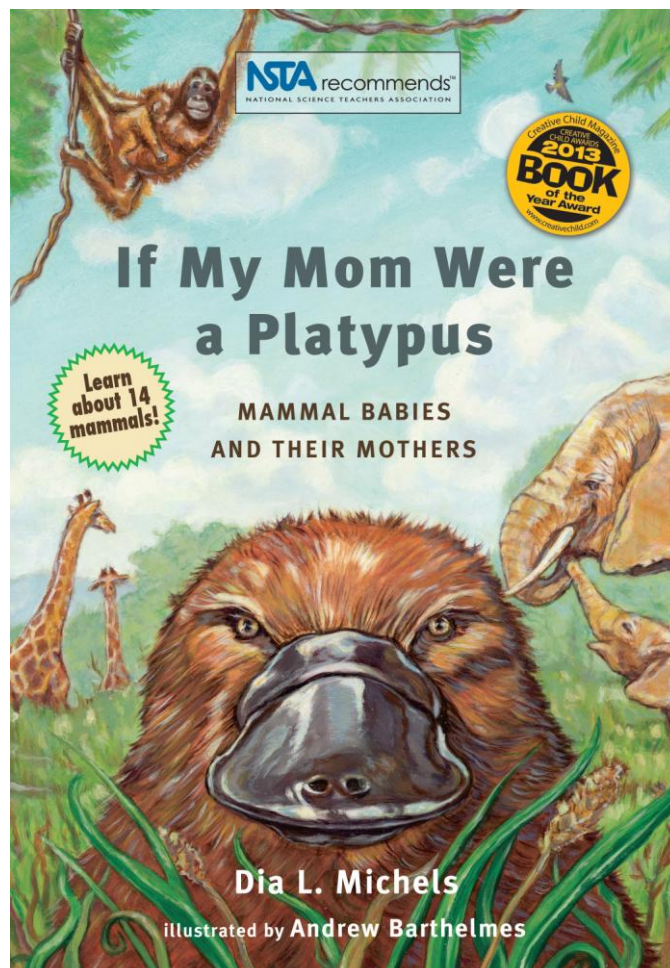
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DISCOVER WHY EVERYONE LOVES

If My Mom Were a Platypus: Mammal Babies and Their Mothers



Book of the Year by Creative Child Magazine



Young Voices Foundation Seal of Approval



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Recommended by the **Carnegie Institution for Science**:
“As engaging visually as it is verbally!”



Featured annually at Family Science Days at the **American Association for the Advancement of Science (AAAS)**



ForeWord Magazine: “...completely engrossing! School-aged animal lovers will really enjoy the easily digestible and fun-for-sharing facts.”



Recommend by KidsPost as a favorite summer reading animal book!

If My Mom Were a Platypus: Mammal Babies and Their Mothers
Dia L. Michels, Illustrated by Andrew Barthelmes

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Acclaim for

If My Mom Were A Platypus: Mammal Babies and their Mothers

ISBN 10: 1-9384921-1-0

Available in English, Spanish, Dutch and Hebrew

Teacher-written Activity Guide & Hands-On Demonstrations Directions available free on our website

I am blown away by this book! This is one of the most engaging nonfiction books I have ever read. It correlates so well with our science curriculum and the Common Core State Standards. The Activity Guide and Hands-On Demonstrations are so teacher friendly. I cannot say enough positive things about this material!

—Sonya Smith, Science Coordinator, ATOMS^{2XP} (Advancing Teachers of Middle School Science) and IMPACT2 (In-depth Mathematical Practices and Content Teacher Training), Miss. State, MS

An amazing achievement! Zoologists will get lost in the accuracy and detail of the descriptions of birth and feeding. Children will be captivated by the beautiful pictures and stories of mammal mother and baby pairs. I was surprised by how many new facts I learned. And what could be more entertaining yet educationally valuable for a child to see than that mammas—whether human, bear, bat, giraffe, seal, or shrew—all have important things in common. The only problem with *If My Mom Were A Platypus* is that big adult kids might butt out smaller kids in their effort to read the book!

—James McKenna, Ph.D., Dept. of Anthropology, University of Notre Dame, South Bend, IN

Children are curious about the natural world around them. We are always looking for good materials to help teachers respond to their students' questions and were delighted to find *If My Mom Were A Platypus*. The book uses the simple concept of comparing offspring to expose students to life cycles, environments, animal behavior—the wonderful variety of life on Earth. Not only is the book as engaging visually as it is verbally, but the Activity Guide gives teachers the tools they need to present, explain and expand upon the book's content. *If My Mom Were A Platypus* is a real asset for teachers delving into the world of mammals.

—Dr. Inés L. Cifuentes, Director, Carnegie Academy for Science Education
Carnegie Institution of Washington, Washington, DC

If My Mom Were A Platypus fits perfectly into our 5th grade Animals curriculum. The students greeted the book like eager beavers – devouring each chapter and delving right into the next one. In class after class, they read beyond the required reading, propelled by excitement over what they were learning. The Activity Guide is chock-full of ways to explore the text, but the book is so full of fascinating facts, I was hardly wanting for ideas. What the kids really loved was writing up quiz questions they learned from the book, then testing each other on their newfound knowledge. This book is a natural for elementary and middle school science classes!

—Catherine Taylor, 5th Gr. Science Teacher, Stuart Hobson Museum Magnet MS, Washington, DC

If My Mom Were A Platypus is an entrancing children's book covering all sorts of animal babies—platypus, koala, lion, orangutan, whale, shrew and more. The beautifully-illustrated text pulls in children by pretending they are the baby. *If My Mom Were A Platypus* describes in detail how different babies eat, learn, grow and mature. This fact-loaded book delights both adults and children and is extraordinarily hard to put down. Even the ending is superb. Includes glossary and index and highlights endangered or threatened species. Activity guides are available at PlatypusMedia.com. Perfect for school or home use. Ages 4-adult.

—Dr. Kathleen Kain, Science Educator, Science Spiders Newsletter

If My Mom Were A Platypus is enjoyable, accurate and informative. It will be useful, indeed, in primary and middle school curricula. I know how difficult—but essential—it is to have all of the facts right, yet still be interesting and readable. This book manages both very well. I hope that it ends up in many, many schools!

—Don E. Wilson, Ph.D., Editor, *Animal: The Definitive Visual Guide to the World's Wildlife*

Science Through Literature Hands-On Activities for

If My Mom Were a Platypus: Mammal Babies and Their Mothers

Whether the subject is biomes, habitats, reproduction, ecology, nutrition, health, life cycle, anatomy, energy systems, classification, adaptations, family life, or community – educators have embraced *If My Mom Were a Platypus: Mammal Babies and Their Mothers*. The book (and its accompanying Activity Guide) has lessons and hands-on experiments that will excite and stimulate kids of all ages!

Activity	Key Materials	Science Topic(s)
Baby Bat cups	Sounds and smells in covered cups	Sensory perception Infant identification Habitats Life Cycle
Giraffe/Swan Necks	Wooden Spools Beads Pipe Cleaners	Classification Habitats Anatomy Adaptations
Koala odor	Aluminum Foil Paper towels Eucalyptus Oil	Biomes Classification Ecology Permeability Adaptations
Milk delivery	Plush Platypus	Adaptations Life Cycle Family Life Classification
Whale Blubber	Ice Water Crisco	Nutrient Density Habitats Anatomy Energy Systems
Whale “Teeth”	Container for water Beads Sand Combs	Teeth Habitats Nutrient Density
Shrew Heartbeat	Stopwatch	Metabolism Energy Systems
Elephant Feet	Sponges	Habitat Adaptations Weight Management
Elephant Teeth	Bricks Sandpaper	Nutrient Density Anatomy
Lion Tongue	Crayons Sandpaper White paper	Habitats Nutrient Density Adaptations
Biodiversity	Biodiversity Tables	Classification Biomes
Imaginative Mammals	Arts and Crafts supplies Blank “Look What I See! Books (contact us for details)	Evolution Family Life Adaptations

To learn more about *If My Mom Were a Platypus: Mammal Babies and Their Mothers* (ISBN: 10: 1-9384921-1-0), visit ScienceNaturally.com or call us at 1-866-SCI-9876 (1-866-724-9876).

BABY BAT CUPS ACTIVITY

Mammal:	Bats
Concepts Addressed:	Sensory Perception Infant Identification Habitats Life Cycle
Materials:	Sounds and Scents in Covered Cups
Shopping List: [for class]	Opaque cups with lids Various distinct sounds (e.g. popcorn, rice, lentils, noodles, beans, etc) Various distinct scents (e.g. cinnamon, coffee, curry powder, anise, mint, etc.) Black and Red Markers
Sources:	Cups can be purchased at restaurant supply stores Sounds/Scents can be purchased in bulk at grocery stores, food co-ops, health food stores, etc. Bat Erasers can be purchased at Oriental Trading
Activity Guide Reference:	Page 15

Background Information:

Mammal moms have a number of strategies for feeding themselves while they take care of their young. Some mammal moms, primarily the herbivores such as hippos, elephants, etc, keep their babies with them while they feed. Other mammal moms, like the polar bear, eat fast while the cubs are young, because it is not safe to leave the cubs to long. Additionally, the mom can't hunt effectively with them tagging along. Some mammal moms, the social carnivores like in a lion's pride, share the duties, where some females will care for all the young while others do the hunting for the community. Most mammal moms hide their young while they seek food. Bats are among this group. Hiding your young seems simple enough – but is it?

Mexican free-tailed mother bats leave their babies “pups” in a bat nursery (a cave) while they go out at night and hunt mosquitoes. At dawn, with their bellies full, they return to the nursery to feed their young. What's the catch? There are three million baby bats in the nursery! The cave is dark, (no natural light), cold and the bats are huddled tightly together (to stay warm). How does one mom locate her own baby (she won't nurse any other pup): by memorizing their smell and the sound of the pup's voice. Try it!

BABY BAT CUPS ACTIVITY (CONTINUED)

Instructions:

Prepare 5-20 pairs of cups (depending on age and ability of students) as follows. Preparing them can seem unduly complicated the first time, but once you get the hang of it, it gets easier:

- 1) Using a pin, open paper clip or other sharp object, poke holes in the tops of all the cups so you can smell through them.
- 2) Using a marker, put a red circle on the top of half the cups, a black circle on the tops of the other half.
- 3) On the bottom of each red cup, write a number starting with 1 and continuing through all the cups (1,2,3,4,5, etc)
- 4) On the bottom of each black cup, write a number starting with 41 and continue through all the cups (41, 42, 43, 44, etc)
- 5) Put the cups into pairs, with red #1 paired with black #41, red # 2 paired with black #42, etc.
- 6) Each pair needs to have a sound and scent added. One scent should go into multiple pairs and one scent should go into multiple pairs – however, only one pair should have the combination of sound/scent. For example, put popcorn in four different pairs of cups. Put mint into four different pairs of cups, but only put popcorn and mint in one pair of cups. You will end up with pairs like this: popcorn/mint (1,41), popcorn/cinnamon (2,42), popcorn/curry (3,43), noodles/mint (4,44), noodles/cinnamon (5,45), noodles/curry (6,46), etc.
- 7) Put all the red cups together in one area, place all the black cups together in a different area. Ask each participant to select one cup, shake and smell it, and note the number on the bottom, then place it back on the table. They, then, walk to the other set of cups and try to find the one cup with the identical scent and sound. You can verify if they have done this with the numeric codes (1 goes with 41, 2 with 42, etc).

Discussion:

Every living thing is adapted for its environment. Humans rely primarily on their sight and touch to gain information about their surroundings. Bats rely primarily on their hearing and sense of smell. This exercise is difficult for humans because our sense of hearing and smell are not well developed. It helps us realize how much the senses we use are the ones necessary for survival in our environment.

Note: Bat Erasers, available from Oriental Trading, make fun, inexpensive prizes for this game.

ADAPTABLE NECKS ACTIVITY

Mammals:	Humans, Giraffes and Swans (non-mammal)
Concepts Addressed:	Classification, Habitats, Anatomy, Adaptations
Materials	Wooden Spools, Beads, Pipe Cleaners
Sources:	spools available at www.woodparts.biz ; pipe cleaners at www.officemart.com , beads are available at craft stores
Shopping List: for each student:	7 small (.4") spools, 7 larger (.75") spools, 25 (.25") beads, 3 pipe cleaners (approx. 10")
Activity Guide Reference:	Page 12

Background Information:

All mammals have backbones, but even more interesting is the structure of the neck. While birds, amphibians, and reptiles have large variations in number, in mammals it is fixed at 7. The long neck of the swan is composed of 22 to 25 cervical vertebrae, while ducks have 16. In contrast, the long necks of the giraffe and camel have 7 cervical vertebrae, the same number as humans, mice, and whales. With just two exceptions (the manatee and the sloth), the number is constant for all mammals.

If a giraffe and a mouse have the same number of vertebrae, how are they different? How would the size of the vertebrae help an animal to survive? Let's see...

Instructions:

Tie a knot in a pipe cleaner, string 25 beads on it.
Tie a knot in another pipe cleaner, string 7 small spools on it.
Tie a knot in a third pipe cleaner, string 7 larger spools on it.

Compare the necks for stiffness and flexibility.

Discussion:

Not all necks are the same. A human neck has 7 vertebrae, the same as a giraffe neck. Both giraffes and swans have very long necks, but a giraffe's neck is stiff and a swan's is flexible. Giraffes have only 7 neck bones, but each bone may be up to a foot long. This provides stiffness for an animal that feeds from the tops of trees. A swan has 23-25 small neck bones, this provides for flexibility for an animal that fishes for its food and requires quick, precise movements. How does a human neck compare. Each of our vertebrae is about 1" long, compared to a giraffe vertebra which is about a foot long.

KOALA ODOR ACTIVITY

Mammal:	Koala
Concepts Addressed:	Biomes, Classification, Ecology, Permeability, Adaptations
Materials:	Aluminum Foil, Paper Towels, Eucalyptus Oil (located at Health food stores)
Shopping List:	Aluminum Foil, Paper Towels, Eucalyptus Oil
Sources:	Eucalyptus Oil can be found at any health food store
Activity Guide Reference:	Page 11

Background Information:

Koalas are slow and lazy during the day. In fact, they sleep in trees most of the day; however, at night, they eat eucalyptus leaves. These leaves are also used by humans to make cough drops because they contain menthol. Koalas eat so many eucalyptus leaves that they smell like eucalyptus or cough drops. How does this happen? Do you think it helps or hurts the koala to smell like menthol?

Instructions:

Have the participant smell the eucalyptus oil from the bottle; show them how to wave the odor towards their nose so they don't accidentally inhale an scent that could be dangerous.
 Discuss that leaves have oil even though they are primarily water and fiber.
 Have them put a few drops of the oil onto a paper towel. What happens?
 Have them put a few drops of the oil onto a piece of foil. What happens?

Discussion:

Discuss permeability (having pores or openings that permit liquids or gases to pass through).
 Discuss mucous membranes (A membrane lining all body passages that communicate with the exterior, such as the respiratory, genitourinary, and alimentary tracts, and having cells and associated glands that secrete mucus).
 The oil passes through the koala's mucus membrane and is excreted through the skin, thus the smell (humans can witness this by consuming large amounts of garlic).

 Students will guess that the smell is bad for the koalas because it will point them out to predators. This is logical, but koalas don't have any natural predators. In fact, the menthol smell helps the koala as it helps to drive away fleas.

MILK DELIVERY

Mammal:	All Mammal Species
Concepts Addressed:	Adaptations, Life Cycle, Family Life, Classification
Materials	Plush Platypus for demonstration
Sources:	Platypus Media or any plush platypus
Activity Guide Reference:	Page 10

Background Information:

All mammals have milk glands, but not all mammals necessarily have breasts or nipples as the source of delivering milk to their babies. Likewise, all baby mammals consume milk, but not all baby mammals have lips to suckle. Platypuses are unique in the sense that they have no breasts, or nipples, and no lips to latch on with. So, how does the mother feed her baby?

Instructions:

How does the mom do it?

Using the plush platypus, show that there are no breasts or nipples on the chest. However, like a human mother, the Platypus does have glandular tissue that produces breastmilk. Her glandular tissue lines her whole chest wall. The milk is excreted through the pores in her skin. It simply oozes out of her chest and onto her fur, the way that sweat is excreted from us onto our skin.

How does the baby do it?

In order to breastfeed, a human baby must make a vacuum seal around the nipple and then suck, pulling the milk out with movements in the lower lip and jaw. A Platypus baby has no lips and therefore can't make a vacuum seal so they cannot breastfeed like us. Instead they use their bill to push against the chest of the mother so she will release the milk. When the milk excretes out, the baby then licks the milk off the mother's chest fur.

Discussion:

The breastmilk production system for a Platypus is sterile, but the breastmilk delivery system is not. Exposure to small amounts of microbes is part of building a strong immune system. The platypus is a good way to observe this.

Extra credit: What other mammals have no lips and therefore need an adaptation for drinking breastmilk? (Whales)

WHALE BLUBBER ACTIVITY	
Mammal:	Whales
Concepts Addressed	Nutrient Density, Habitats, Anatomy, Energy Systems, Insulation
Materials:	Ice Water, Crisco, Paper Towels
Shopping List:	Bucket or bowl, Crisco, Paper Towels [for class]
Sources:	Grocery store
Activity Guide Reference:	Page 11
<p>Background Information:</p> <p>The Pacific Gray Whale has the longest known migration of any mammal. They feed in Alaska in the summer, eating 900-2,400 pounds of krill a day. When they begin their journey to Mexico in the fall, the mothers weigh 30 tons and is coated in a 5-10" layer of blubber. The mothers will swim 24 hours a day, travel 10,000 miles, gestate a 2,000 pound baby, produce 6 tons of breastmilk and through all of this with <i>NO</i> food. Even if they wanted to eat, the krill they feed on are only in Alaska. For 270 days each year, they live off their blubber. This fat layer not only provides nourishment for them. Fat is a concentrated food source for the whales, but it also helps keep them warm during the long journey. Use solid fat to show the insulation properties of the whale's fat.</p>	
<p>Instructions:</p> <p>Put Crisco around one pointer finger of the participant while leaving the other one clean. Dip both fingers (one with and one without Crisco) into ice water and keep them there for about a minute. How do the fingers feel? Do they feel different? The Crisco finger resembles the blubber on a whale. The Crisco keeps the participant's finger warm as the blubber keeps the whale insulated.</p> <p>Also, have the kids rub their fingers together comparing the fat-coated fingers with their naked skin-coated fingers. What's the difference?</p>	
<p>Discussion:</p> <p>Fat has many functions in the body. Most kids know that fat provides a place to store energy, but they may not know that it plays an essential role in lubricating the insides. It protects the body from injury and it insulates it against both hot and cold. This activity helps kids experience the way fat insulates the body and protects it from cold.</p>	

WHALE “TEETH” ACTIVITY

Mammal:	Whales
Concepts Addressed	Nutrient Density, Teeth, Habitats
Materials:	Container for water, sand, beads, combs
Shopping List: [for class]	Container for water Sand Small Beads Combs
Sources:	various
Activity Guide Reference:	Page 11

Background Information:

There are two kinds of whales: baleen whales and toothed whales. Toothed whales, like the killer whale, are hunters. Baleen whales, like the Pacific Gray Whale, feeds off krill, a small shrimp-like crustacean. Baleen is a material, like the cartilage in human noses, which forms a sieve in the whale’s mouth. The whale scoops up a mouthful from the bottom of the sea, the sand and water strain out, and only the krill are left. Pacific Gray Whales eat 900-2,400 pounds of these tiny krill a day to support their 30-ton bodies.

Instructions:

Fill water about an inch over the sand line in a container. Place some small beads in the sand. The beads represent the krill. Take a comb and sweep up some sand from the container. Shake it slightly. The sand will sieve out; the beads will remain. This is how the baleen works in the whale’s mouth.

Discussion:

It is curious that the largest creatures on the planet eat the smallest food. African elephants (the largest land mammals) support their 12,000 pound (5,455 kg) bodies with grasses. Giraffes (the tallest land mammals) support their 3,500 pound (1,600 kg) bodies with leaves. Baleen whales, which include blue, humpback and grey whales as well as dolphins and porpoises, eat animals, but their food, krill--shrimp-like marine invertebrates that grow no larger than about two and one-half inches (6 cm) and plankton, is tiny. The blue whale, who can weigh 150 tons, only feeds on krill. The whale needs to eat 900-2,400 pounds (1,000 kg) of krill to fill its stomach—each day! All depending on which species you look at.

SHREW HEARTBEAT ACTIVITY

Mammal:	Shrew
Concepts Addressed:	Metabolism, Energy Systems
Materials:	Stopwatch or clock with a second hand
Shopping List:	Stopwatch or clock with a second hand
Sources:	Sporting good stores, Target, Kmart, etc
Activity Guide Reference:	Page 12

Background Information:

Least Shrews are exceptional in the mammal world because they have no ability to store or metabolize fat. In fact, shrews have so little body fat they cannot go more than a few hours without food. Missing a meal is a sure way to a quick death; a good night's sleep could be fatal. The Least Shrew's life is all about getting enough food often enough to survive. A shrew eats 60-100 percent of its body weight within 24 hours – if you weigh 75 pounds, to be like a shrew you would have to eat about 50 large hamburgers in 24 hours! Just as shrews eat on a large scale, their hearts beat on a similarly grand scale.

Instructions:

Count how many times your heart beats in a minute. This is your pulse. A human child's heart beats about 90 beats per minute, a human adult's heart will be about 70 times each minute. A shrew's heart beats 1,200 times per minute!

Discussion:

It is very hard on the body to operate at such high speeds. In fact, the shrew has a very short life span, just 18 months, because, with the system working at such high speed, the body wears out.

ELEPANT FEET ACTIVITY

Mammal:	Elephant
Concepts Addressed:	Habitat, Adaptations, Weight Management, Anatomy
Materials:	Thick sponges (need to be moist for softness), rubber bands
Shopping List:	One thick sponge with one rubber band wrapped around it
Sources:	Grocery or Hardware stores
Activity Guide Reference:	Page 10

Background Information:

Elephants have the largest land mammal feet on the planet. A male African Elephant can weigh up to 7.5 tons! You would think that carrying so much weight around would be hard on the joints. You would also think that moving through the jungle would be a loud endeavor. You would be wrong on both accounts.

Instructions:

Give a student a moistened sponge with a rubber band around the girth. Have them put the sponge on their hand using the rubber band to hold it into place. Using the other hand, with no protective padding, gently hit a flat surface. Hear how much sound it makes and feel how much impact is made. Now, using the padded hand, gently hit the same flat surface. Notice that there is almost complete silence. Also, notice that there is very little impact. Soft padded feet help the elephant move over rocks, absorb the pressure from their weight off their leg bones, and allows even a herd of elephants to move almost silently through the jungle -- barely leaving footprints!

Discussion:

Elephants are the largest land animals, yet their size and weight do not mean that they have a noisy walk or even leave footprints. How would you design a human shoe to walk silently and not leave a footprint?

ELEPHANT TEETH ACTIVITY

Mammal:	Elephant
Concepts Addressed:	Nutrient Density, Anatomy, Health, Dental Care
Materials:	Bricks, Sandpaper
Shopping List:	Bricks, Sandpaper
Sources:	readily available
Activity Guide Reference:	Page 10

Background Information:

The majority of mammals are herbivores, eating grasses, leaves and plants. These foods are mostly fiber and water and are low in nutrients. In order to get the nutrients they need to survive, most herbivores have to eat up to 20 hours a day (and even then, some resort to vomiting food and re-eating it or re-eating their stools to extract any nutrients missed the first time!). Eating can be very hard on the teeth. Herbivores largely grind their food, mammals who eat seeds and nuts need to crack them open. Either way, the teeth take a beating!

Instructions:

Elephants spend 16 hours each day looking for food. While eating, they grind their teeth. Using the sandpaper, rub the brick until you see dust in the air. This is what happens to the elephants teeth with each meal.

Discussion:

After 10 years of constant grinding and wearing away, the elephants will grind their teeth until there is nothing left. Fortunately, this triggers a new set of teeth to erupt. Their full set of teeth will grow back six times, but after the sixth set, no more will grow in. What will happen when the elephants no longer have teeth? How are teeth connected to survival? How many sets of teeth do humans have? How are teeth important to carnivores? From a dental point of view, would you rather be a herbivore, an omnivore, or a carnivore?

LION TONGUE ACTIVITY

Mammal:	Lion
Concepts Addressed:	Habitats, Nutrient Density, Adaptations
Materials:	Paper with Wildebeest design, crayons, sandpaper
Shopping List:	crayons, sandpaper
Sources:	readily available
Activity Guide Reference:	Page 11

Background Information:

Lions have amazing social structure. The females do all the hunting and share tasks and motherly duties within the pride while the males protect them as a whole. They hunt antelope, wildebeest, and buffalo, which are eaten by the whole pride. Hunting is serious work, with a low success rate, requiring a lot of risk. When an animal is felled, it is essential to gain all the nutrients possible from the animal. Lions have an adaptation in their tongues that allow them to leave no waste behind. They have tongues like sandpaper that efficiently scrape all the flesh off the bones.

Instructions:

Using a dark-colored crayon, color in a section of the wildebeest. Take a piece of sandpaper and rub it on the crayon. Look at the sandpaper. The crayon has lifted off the paper and attached itself to the sandpaper. This is how a lion's tongue works. The scratchy tongue catches the remaining flesh and pulls it off the bone.

Discussion:

Cats are called the only true carnivores, because they feed solely on meat. You may see a cat eating grass, but they cannot digest plant material and eating grass helps them bring back up fur they may have swallowed while grooming themselves. Most meat-eaters are actually omnivores. They can feed on meat and plant matter. Omnivores have teeth adapted for eating digesting both.

It is not surprising, then, that cats are the only mammals with a scratchy tongue since it is specifically adapted for scraping flesh off bone.

When you notice something distinct about an animal, it is always interesting to ask why...

IMAGINATIVE MAMMALS ACTIVITY

Mammals:	Species not yet discovered....
Concepts Addressed:	Evolution, Family Life, Adaptations
Materials:	assorted Arts and Crafts Supplies
Shopping List:	assorted Arts and Crafts Supplies
Sources:	various

Background Information:

Mammals come in all different shapes and sizes, and each has its own adaptation methods to survive. Using arts and crafts materials, design and create a mammal. Decide what its habitat is, how it lives and how its adaptations allow it to survive. Then, using a first-person lifecycle story, in the style of the If My Mom Were a Platypus, describe how the animal lives and what it needs to survive.

BIODIVERSITY ACTIVITY

Mammal:	Assorted
Concepts Addressed:	Classification, Biomes, Diversity
Materials:	Biodiversity Tables (attached)
Sources:	Biodiversity Tables
Shopping List:	None

Background Information:

There are thousands of mammal species sharing our planet. Most scientists believe there are approximately 4,600, others put the number closer to 5,100.

While we do not know the exact number of species, we do know that all of them have milk glands, hair or fur, a backbone, and are warm-blooded. All mammal mothers feed, protect, and teach their young. And all mammal babies need to learn how to feed and protect themselves, but that's where the similarity ends. Humans have classified animals in order to group them by characteristics. All mammals are in the kingdom *Animalia* and the Phylum *Chordata* (having a backbone). Our Class in *Mammalia*. Within that class, there is tremendous diversity. See if you can fill out the biodiversity table supplied to get a glimpse of how much variety there is in the world of mammals!