Teaching Activity Guide

Animal Ears, Eyes, Legs, Mouths, Noses, Skins, and Tail

Table of Contents

Arbordale Publishing
Mt. Pleasant, SC 29464

How to Use This Activity Guide (General)

There are a wide variety of activities that teach or supplement all curricular areas. The activities are easily adapted up or down depending on the age and abilities of the children involved. And, it is easy to pick and choose what is appropriate for your setting and the time involved. Most activities can be done with an individual child or a group of children.

For teachers in the classroom: We understand that time is at a premium and that, especially in the early grades, much time is spent teaching language arts. All Arbordale titles are specifically selected and developed to get children excited about learning other subjects (science, geography, social studies, math, etc.) while reading (or being read to). These activities are designed to be as comprehensive and cross-curricular as possible. If you are teaching sentence structure in writing, why not use sentences that teach science or social studies? We also know and understand that you must account for all activities done in the classroom. While each title is aligned to all of the state standards (both the text and the For Creative Minds), it would be nearly impossible to align all of these activities to each state's standards at each grade level. However, we do include some of the general wording of the CORE language arts and math standards, as well as some of the very general science or social studies standards. You'll find them listed as "objectives" in italics. You should be able to match these objectives with your state standards fairly easily.

For homeschooling parents and teachers in private schools: Use as above. Aren't you glad you don't have to worry about state standards?

For parents/caregivers: Two of the most important gifts you can give your child are the love of reading and the desire to learn. Those passions are instilled in your child long before he or she steps into a classroom. Many adults enjoy reading historical fiction novels . . . fun to read but also to learn (or remember) about historical events. Not only does Arbordale publish stories that are fun to read and that can be used as bedtime books or quiet "lap" reading books, but each story has non-fiction facts woven through the story or has some underlying educational component to sneak in "learning." Use the "For Creative Minds" section in the book itself and these activities to expand on your child's interest or curiosity in the subject. They are designed to introduce a subject so you don't need to be an expert (but you will probably look like one to your child!). Pick and choose the activities to help make learning fun!

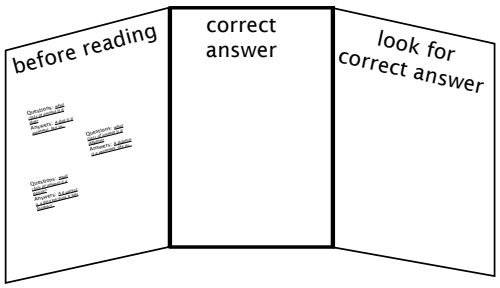
For librarians and bookstore employees; after-school program leaders; and zoo, aquarium, nature center, park & museum educators: Whether reading a book for story time or using the book to supplement an educational program, feel free to use the activities in your programs. We have done the "hard part" for you.

What Do Children Already Know?

Young children are naturally inquisitive and are sponges for information. The whole purpose of this activity is to help children verify the information they know (or think they know) and to get them thinking "beyond the box" about a particular subject.

Before reading the book, ask the children what they know about the subject. A list of suggested questions is below. The children should write down their "answers" (or adults for them if the children are not yet writing) on the chart found in Appendix A, index cards, or post-it notes.

Their answers should be placed on a "before reading" panel. If doing this as a group, you could use a bulletin board or even a blackboard. If doing this with individual children, you can use a plain manila folder with the front cover the "before reading" panel. Either way, you will need two more panels or sections—one called "correct answer" and the other "look for correct answer."



Do the children have any more questions about the subject ? If so, write them down to see if they are answered in the book.

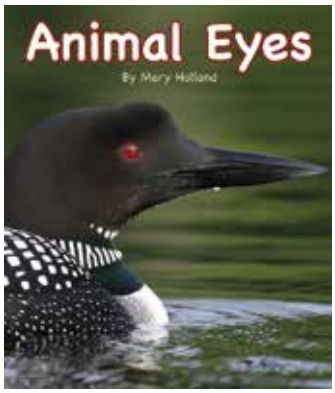
After reading the book, go back to the questions and answers and determine whether the children's answers were correct or not.

If the answer was correct, move that card to the "correct answer" panel. If the answer was incorrect, go back to the book to find the correct information.

If the children have more questions that were not answered, they should look them up.

When an answer has been found and corrected, the card can be moved to the "correct answer" panel.

Pre-Reading Questions



What are some ways that eyes help animals?

What are some things we can tell about animals based on the placement of their eyes?

Why do animals like coyotes, wolves, and dogs have two eyes in the front of their heads?

Why do animals like chipmunks and squirrels have eyes on the side of their heads?

How do dragonflies and some other insects see in all directions at the same time?

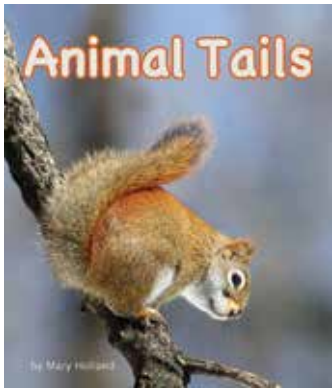
Why do many nocturnal (awake at night) animals have big eyes?

Name a kind of animal that has eight eyes instead of two. Do you think they can see better than us because they have eight eyes and we only have two?

If humans (a type of mammal) have two eyelids on each eye, how many eyelids do beavers (water-livling mammals) and many kinds of birds have on each of their eyes?

What kind of covering do snakes have over their eyes?

What are some things the color of eyes tell us about some animals?



What do animals use their tails for?

Do all animals have tails?

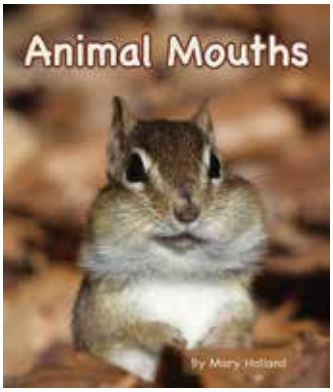
Are all tails alike?

How might an animal use its tail to communicate?

How could an animal use its tail to protect itself?

Do all animals that have tails, have them for their entire lives?

What is a prehensile tail?



What is a mouth for?

What are some different types of mouths?

Are all teeth alike or are there different types of teeth?

Can an animal's mouth tell you about its diet?

Do all animals eat other animals for food?

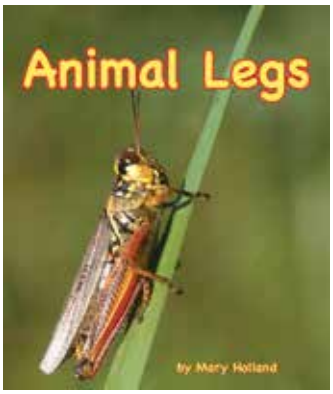
What do you call an animal that eats only plants?

Do all animals have mouths?

What are canine teeth?

What do you call the teeth a snake uses to inject venom?

When you chew, do you move your upper jaw or your lower jaw?



What parts of your body do you use to move?

What are some ways you move?

What are some ways that animals move?

Describe body parts that animals use to move.

Can you name some animals that have two legs?

Can you name some animals that have four legs?

Can you name some animals that have six legs?

Can you name some animals that don't have any legs?

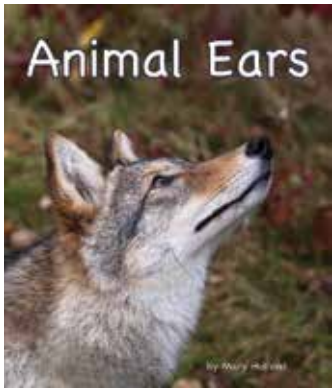
What are some ways that animals use legs and feet other than to move?

Can you describe the legs/feet of some predators that need to catch prey?

Describe the feet of some animals with legs that swim.

Describe the feet of some animals that dig.

Describe the feet of birds that grab prey.



What do ears look like?

Do all ears look the same?

Describe some different types of ears.

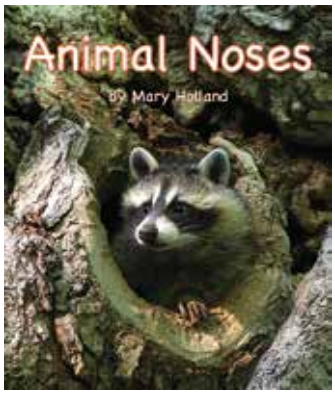
What does vibration have to do with sound?

How could an animal use its ears to communicate?

Can you name any animals that have really big ears?

What about really small ears?

Are there any animals that can move one ear at a time?



Describe what some animal noses look like.

Do all animals have noses? Why or why not?

What are two main ways animals use noses (including humans)?

How does the sense of smell help animals interact with other animals?

How does the sense of smell help animals survive?

Do all animals have noses?

If some animals don't have noses, what are some ways they breathe?

What are some things that skins do to help animals?

What is special about mammal skins?

Are all mammal skins the same? Can you describe?

How are bird skins different than mammal skins?

What do you think an insect's skin is like?

Describe some ways that skin colors help animals.

How are skin coverings for amphibians and reptiles alike and different?

What are some animals that shed their skins as they grow?

What animals eat their own shedded skins?

Comprehension Questions & Writing Prompts

Explain major differences between books that tell stories and books that give information, (paired fiction & For Creative Minds non-fiction)
Identify basic similarities in and differences between two texts on the same topic. (story versus For Creative Minds non-fiction component)
Compare and contrast the most important points presented by two texts on the same topic. (story versus For Creative Minds non-fiction component)
With prompting and support, identify basic similarities in and differences between two texts on the same topic.
Ask and answer questions about key details in a text read aloud or information presented orally or through other media.
Confirm understanding of a text read aloud or information presented orally or through other media by asking and answering questions about key details and requesting clarification if something is not understood.
Recount or describe key ideas or details from a text read aloud or information presented orally or through other media.
Retell stories, including key details, and demonstrate understanding of their central message or lesson.
Ask and answer such questions as who, what, where, when, why, and how to demonstrate understanding of key details in a text.

Determine whether this book is fiction or non-fiction and explain why.

Pick an animal featured in the book and explain why the eyes are located where they are and why the eyes look the way they do.

If an animal has two eyes on the front of its head, is the animal probably a predator or prey? Why?

If an animal has two eyes on the side of its head, is the animal probably a predator or prey? Why?

If an animal has very large eyes, is the animal more likely to be active during the day (diurnal) or at night (nocturnal)?

Describe a compound eye.

What are some kinds of animals that have compound eyes?

How many eyes do most spiders have?

Why do beavers and many other water-living or flying animals have a third eyelid?

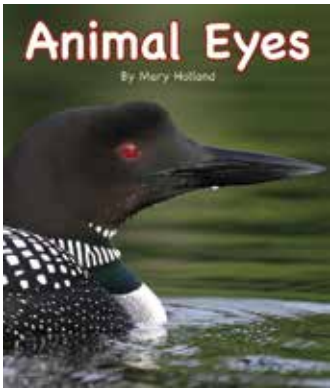
Describe the covering of a snake's eyes.

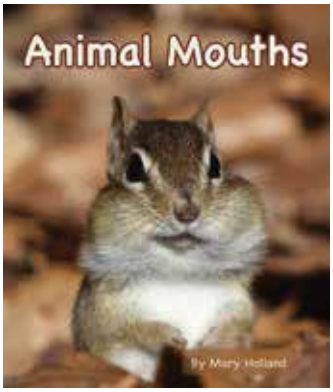
What color are a very young bear cub's eyes?

What color are an older bear's eyes?

What color eyes do most boy box turtles have?

What color eyes do most girl box turtles have?





Looking only at the main part of the book, write down everything you learn about mouths.

Looking only at the "For Creative Minds" section, write down everything you learn about mouths.

Compare your two lists. What did you learn in the main part of the book that you did not learn in the "For Creative Minds"? Was there anything in the "For Creative Minds" that helped you better understand something you learned from the book?

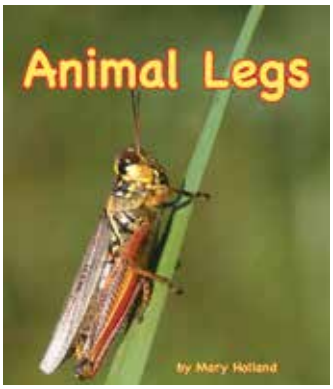
What is something you want to know about mouths that was not covered in this book? How could you find that information?

Pick one of the animals in this book. Describe its mouth. What do you know about that animal's diet? Can you infer anything about its diet by looking at its mouth?

Pretend you are talking to someone who doesn't know what a mouth is. Explain what mouths are and why animals have them.

Draw pictures of different kinds of mouths and explain why an animal might have one type of mouth instead of another.

Use your imagination to come up with a new type of animal. Draw a picture of your animal. Write a description of your animal's mouth. What does your animal eat? How does your animal's mouth help them eat their food?



Write down (or tell someone) 5 things you learned about animal legs and feet.

Name some animals that use legs to grab prey. How are their legs and feet different than yours?

Name some animals that have six legs.

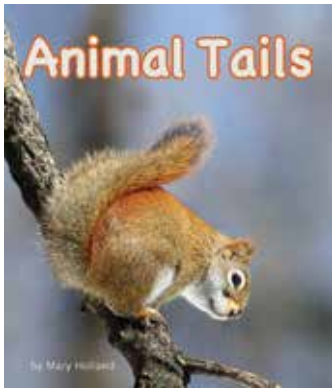
Name some animals that use their legs to taste food. What part of our body do we use to taste?

Name some animals that have webbed feet. Describe how the webbing helps those animals move.

What warning does a skunk give (using its feet or legs) before spraying another animal? What would you do if you saw a skunk doing this?

Describe what some land frogs have on their feet to help them climb. Would you like to have this? Why or why not?

Draw a picture of yourself with another animal's legs. Explain why you picked those legs and how those legs would help you.



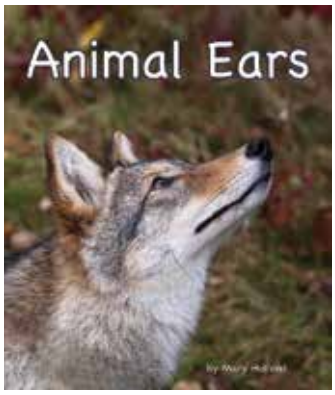
How can you describe to someone what a tail is?

Pick one of the animals in this book. Describe its tail and what it uses it for.

Draw a picture of yourself with a tail. What type of tail would you want to have and why?

Are there any animals not covered in this book that you would want to learn more about their tails? How could you find that information?

What is your favorite animal tail? Why?



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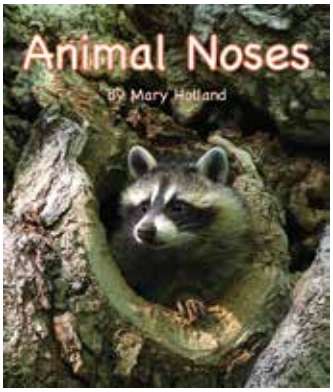


What are the two main things animals use theirn noses for?

Do all animals have noses? If not, what body part do they use to smell?

What are some reasons animals use their sense of smell?

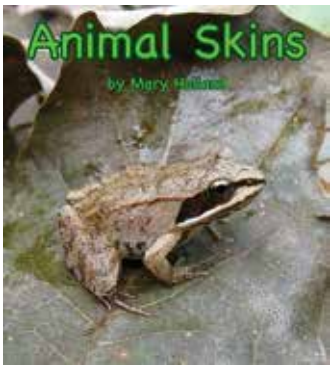
Pick an animal and describe how it uses its sense of smell?

How does licking their noses help deers?

What's differnt about insect "noses?"

What body part do snakes use to smell?

What is a Jacobson's organ and name an animal (or two) that may have one.



Describe how mammal skins are different than bird skins.

Can the mammal or bird skin types tell scientists to what kind of class the animal belongs? Why or wy not?

What vertebrae classes (mammals, fish, birds, amphibians, or reptiles) have scales?

How are those scales alike or different in the different animal classes?

Describe one way that animals use skins to warn other animals that they are dangerous.

Describe one way that an animal uses skin coloring to attract a mate.

Describe one way that an anmal uses skin coloring to hide from predtors.

Do you think some predators might use their skins to hide (camoflage) from prey? Why or why not?

List as many animals you can think of that shed their skins as they grow. Have you ever found or seen one of these shed skins? If so, where were you?

List as many animals as you can that breathe through their skins.

Animal body parts are used together to help animals move, find food, and protect themselves. Each part is a piece of the whole and it's the whole that works together.

Describe various body parts that a predator might use to capture prey. What are some things they have in common?

Pick a nocturnal (awake at night) animal and describe how its body parts help it survive in the dark.

Using information learned in the above books, describe how insects see, taste, move, and lay eggs.

If you saw a bird with a sharp beak and talons, do you think it would be a predator or prey? Why? Where do you think it's eyes would be: in front of its face or on the sides? Why?

What kind of animal has compound eyes and six legs?

If an animal has a third, see-through eyelid and at least two webbed feet, in what kind of habitat do you think that animal might live and why?

Why do you think amphibians keep their skin moist?

Describe how some animals use their sense of smell to communicate with other animals. For animals without noses, what body parts do they use to smell?

Cross-Curricular Vocabulary Activities

Objective Core Language Arts:
Determine or clarify the meaning of unknown and multiple-meaning words and phrases based on grade-level reading and content.
Identify new meanings for familiar words and apply them accurately (e.g., duck is a bird & the verb to duck).
Use words & phrases acquired through conversations, reading/being read to, and responding to texts.
Determine the meaning of general academic and domain-specific words and phrases in a text relevant to a grade-level topic or subject area.
Explain the function of nouns, pronouns, verbs, adjectives, and adverbs in general and their functions in particular sentences.
Write informative/explanatory texts in which they introduce a topic, use facts and definitions to develop points, and provide a concluding statement or section.
Use frequently occurring adjectives.

Vocabulary Game: This activity is a very general idea and is designed to get children thinking of vocabulary words that will then be used as the beginning vocabulary list for a science lesson.

Select an illustration from the book and give the children a specific length of time (five minutes?) to write down all the words they can think of about the particular subject. It is helpful to project an illustration on a whiteboard. Use eBook or book preview found at www.ArbordalePublishing.com.

The children's word list should include anything and everything that comes to mind, including nouns, verbs, and adjectives. At the end of the time, have each child take turns reading a word from his/her list. If anyone else has the word, the reader does nothing. However, if the reader is the only one with the word, he/she should circle it. While reading the list, one person should write the word on a flashcard or large index card and post it on a bulletin board or wall.

At the end, the child with the most words circled "wins." And you have a start to your science vocabulary list. Note: if a child uses an incorrect word, this is a good time to explain the proper word or the proper usage.

Glossary/Vocabulary Words: Word cards may be used (see Appendix) or have children write on index cards, a poster board, or on a chalkboard for a "word wall." If writing on poster board or chalkboard, you might want to sort words into nouns, verbs, etc. right away to save a step later if using for Silly Sentences (on the next page). Leaving the words posted (even on a refrigerator at home) allows the children to see and think about them frequently. The glossary has some high-level words. Feel free to use only those words as fit your situation.

Using the Words: The following activities may be done all at once or over a period of several days.

- Sort vocabulary words into nouns, verbs, adjectives, etc. and write what they are on the backs of the cards. When the cards are turned over, all you will see is "noun," etc. (these can then be used for the "silly sentences" on the next page).
- After the cards have been sorted, go over the categories to ensure that all cards have been placed correctly. (Mistakes are a great opportunity to teach!)
- Choose two words from each category and write a sentence for each word.
- Write a story that uses at least ten vocabulary words from the word sort.
- Have children create sentences using their vocabulary words. Each sentence could be written on a separate slip of paper. Have children (individually or in small groups) sort and put sentences into informative paragraphs or a story. Edit and re-write paragraphs into one informative paper or a story.

Silly Sentence Structure Activity: This "game" develops both an understanding of sentence structure and the science subject. Use words from the "word wall" to fill in the blanks. After completing silly sentences for fun, have children try to fill in the proper words by looking for the correct information in the book.

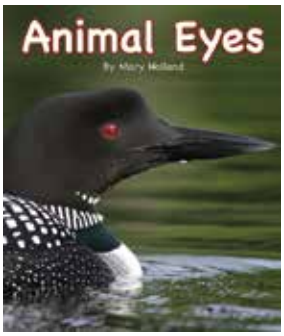
Word Bank

Some words may be used more than once.

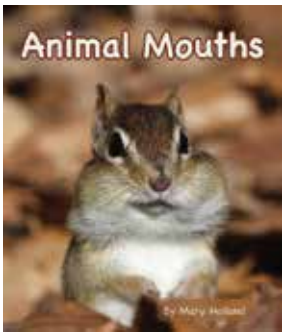
Adjective	Noun		Verb
back	amphibian	life	attract
binocular	animals	lizard	blend
compound	back	male	breathe
curved	beak	mammal	camouflage
different	beak	mate	catch
dry	beak	mice	climb
female	beaver	molar	close
flat	bird	mole	die
front	butterfly	mosquito	display
hind	claw	mouth	dive
inside	color	nose(s)	eat
larger	danger	nostril	find
long	direction	plant	fly
longer	distance	praying mantis	grab
lower	earthworms	predator	grasp
lower	enemy/ies	prey	hide
male	eyelid	proboscis	hold
new	eyes	reptile	inject
old	fangs	river otter	leave
pointed	feather	scales	molt
round	feelers	sense	move
see-through	feet	shovel	protect
sharp	female	skin	replace
side	field	snakes	rub
slimy	fish	spectacles	save
small	flaps	spider	see
sticky	flipper	spray	shed
strong	food	tail(s)	smell
thick	frog	talon	sneak
thin	fur	teeth	spray
third	hair	they	stamp
tight	head	toe	sting
upper	hole	tongue	swim
venomous	home	tree	taste
warm	housefly	turtle	warn
webbed	insect	vision	watch
white	jaw	water	wave
young	land	wood	work

Cross-Curricular: Silly Sentences

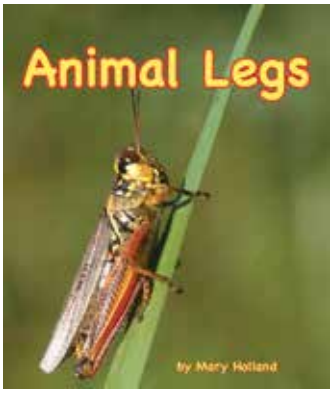
1. _____ (adjective) eyes are usually located in the _____ (adjective) of an animal's _____ (noun).
2. Binocular _____ (noun) helps animals to judge _____ (noun)s, helping them to track _____ (noun).
3. Most _____ (noun)s have _____ (adjective) vision.
4. Many prey animals have _____ (noun)s on the _____ (adjective) of their heads, not the _____ (adjective).
5. Their eyes help them _____ (verb) for _____ (noun)s in many _____ (adjective) directions at the same time.
6. _____ (noun)s have eyes that "bug" out, letting them see in all _____ (noun)s at once.
7. Most animals have _____ (adjective) and _____ (adjective) eyelids that move up and down.
8. Some animals have a _____ (adjective), see-through _____ (noun) to protect their eyes.
9. Many animals that _____ (verb) or _____ (verb) use these eyelids to protect their _____ (noun)s.
10. _____ (noun)s and some _____ (noun)s have see-through _____ (noun)s called _____ (noun)s that cover their eyes.



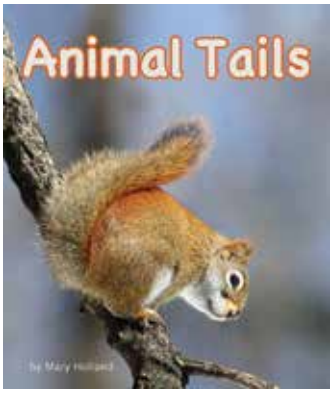
1. _____s use the sharp edges of their jaws to eat both plants and animals.
   noun
2. Birds have _____s instead of teeth.
   noun
3. Eagles and hawks have _____, _____ beaks to tear the flesh of the animals they eat.
   adjective, adjective
4. Many birds that eat fish, frogs and other animals that live in the water have _____, pointed _____s to grab their _____.
   adjective, noun, noun
5. Most _____s have a row of very small teeth along the edge of their upper jaw and on the roof of their mouth.
   noun
6. Venomous snakes have special teeth that _____ venom (_____s).
   verb, noun
7. _____s have many different kinds of mouthparts for eating different kinds of food.
   noun
8. Moths and butterflies have long, hollow mouthparts that form a tube called a _____.
   noun
9. Animals that eat plants have _____ teeth called molars in the back of their mouths.
   adjective
10. Animals that eat other animals have _____ and pointed teeth to cut and tear the flesh of the animals they eat.
    adjective



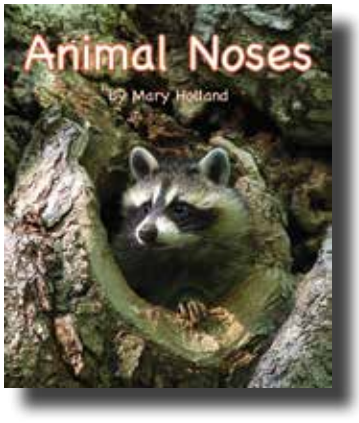
1. Praying mantises use their _____ (adjective) legs to _____ (verb) their prey.
2. Most _____ (noun)s and many insects, such as butterflies, houseflies and _____ (noun), can _____ (verb) with their feet!
3. Most frogs that live in _____ (noun) have _____ (adjective) hind feet.
4. The webbing between the _____ (noun) turns a frog's foot into a _____ (noun).
5. Some frogs that live on land have special, _____ (adjective) toe pads that are very _____ (adjective).
6. Birds that eat animals have strong _____ (noun), or talons, for grabbing their prey.
7. Hawks, falcons and eagles use their _____ (noun)s to catch rabbits, _____ (noun), _____ (noun) and other animals.
8. Skunks announce that they are about to _____ (verb) by stamping their feet.
9. River otters have _____ (adjective) feet.
10. The front feet of a mole look and act like _____ (noun)s.



1. Some animals have _____ and some don't.
   noun
2. Before a tadpole comes out of the water to live on land, it grows _____ legs.
   number
3. The deer _____ its tail like a flag as it runs away,
   verb
4. Have you ever smelled a striped skunk's _____?
   noun
5. Some animals, like the Virginia opossum, have a tail that can _____ onto things (prehensile).
   verb
6. When they go to sleep, _____ curl up and wrap their tails around them, tucking their _____ down into their tails.
   noun noun
7. Birds even spread out and _____ their tails to attract a mate.
   verb
8. A muskrat's tail is _____ and covered with scales.
   adjective
9. Tails are used by many animals to _____ themselves.
   verb
10. If a honey bee _____ someone, the honey bee will _____.
    verb verb



1. Most noses help animals do _____ (number) things – _____ (verb) ____ and _____ (verb). Many animals use their sense of smell to find _____ (noun), to find a _____ (noun) and to know when _____ (noun) is near.
2. Birds have _____ (number) holes, or _____ (noun), just above their _____ (noun).
3. Bears _____ (verb) their backs against trees and _____ (verb) their _____ (noun) so that other _____ (noun) can smell the trees and know who has been there.
4. Snakes use their _____ (noun) and _____ (noun) to smell.
5. Frogs use their _____ (noun) and sense of _____ (noun) to find mates, to find _____ (noun), to keep away from _____ (noun), and to find their way home.
6. Frogs breathe through their noses, but they also breathe through their _____ (noun) and the _____ (noun) of their mouth.
7. A beaver has _____ (noun), or valves, in its nose that act like nose clips. When it _____ (verb) under water, the flaps ___ _____ (verb), keeping water out of its nose and allowing the beaver to _____ (verb) deeper and stay under water _____ (adjective).



1. Animal skin coverings can keep an animal _____ (adjective) and _____ (adjective), _____ (verb) an animal from predators, _____ (verb) other animals to stay away, or even help an animal hide (_____ (verb)).
2. Like _____ (noun), when a _____ (adjective) insect's skin gets too _____ (adjective), it must replace it. The insect makes a new, _____ (adjective) skin under its _____ (adjective) one and then sheds its old skin.
3. All _____ (noun) have _____ (noun) (fur).
4. During their first summer, _____ (noun) are covered with _____ (adjective) spots to help them blend in to the _____ (noun) and _____ (noun) where they live.
5. Instead of _____ (noun), birds have _____ (noun). Feathers do lots of things—help a bird _____ (verb), attract a _____ (noun), and keep _____ (adjective).
6. Sometimes the _____ (noun) of an animal's skin covering can tell you whether you are looking at a _____ (adjective) or a _____ (adjective) animal.
7. Snakes are not _____ (adjective)! They are reptiles, and, like all _____ (noun), have _____ (adjective) sections of _____ (adjective) skin called scales.

What Kind of Body Part?

Classify organisms according to one selected feature, such as body covering, and identify other similarities shared by organisms within each group formed.
Describe several external features and behaviors of animals that can be used to classify them (e.g., size, color, shape of body parts).
Identify observable similarities and differences (e.g., number of legs, body coverings, size) between/among different groups of animals.

Circle words that refer to eyes or seeing.
Underline words that refer to mouths or tasting.
Draw a box around words that refer to legs, feet or movement.
Draw a squiggly line under words that refer to tails.
Draw a triangle around words that refer to animal skins or coverings.
Draw a double circle around words that refer to animal noses or the sense of smell.

Talons are very, very sharp. Hawks, falcons and eagles use their talons to catch rabbits, mice, fish and many other animals. They then hold their prey in their talons while they tear it into small pieces with their beak.

A woodpecker spends a lot of time clinging to the bark of trees while it drills holes with its beak to reach insects or make nesting holes. Many birds have three toes pointing forward and one toe pointing backwards. Woodpeckers have two toes in front and two toes in back (zygodactyl feet), which gives them a much better grip on tree trunks and branches.

Robber flies use their hairy legs to catch an insect and then puncture the insect with their beaks.

Before a tadpole comes out of the water to live on land, it grows four legs. Its tail is absorbed by its body, and eventually disappears.

Frogs breathe through their noses, but they also breathe through their skin and the inside of their mouths.

During their first summer, fawns are covered with white spots to help them blend in to the woods and fields where they live.

A beaver has flaps, or valves, in its nose that act like nose clips. When it dives under water, the flaps close, keeping water out of its nose and allowing the beaver to dive deeper and stay under water longer.

Classifying Animals

Objective: Classify organisms according to one selected feature, such as body covering, and identify other similarities shared by organisms within each group formed.

Describe several external features and behaviors of animals that can be used to classify them (e.g., size, color, shape of body parts).

Identify observable similarities and differences (e.g., number of legs, body coverings, size) between/among different groups of animals.

Just as we sort candy, scientists sort all living things into groups to help us understand and connect how things relate to each other. Scientists ask questions to help them sort or classify animals.

Based on the answers to the questions, scientists can sort the living organisms. The first sort is into a Kingdom. There are five commonly accepted Kingdoms: Monera, Protista, Fungi, Plantae, and Animalia. All of the living things in this book belong to Animalia or the Animal Kingdom.

The next big sort is into a Phylum. One of the first questions that a scientist will ask is whether the animal has (or had at some point in its life) a backbone. If the answer is "yes," the animal is a vertebrate. If the answer is "no," the animal is an invertebrate.

Each Phylum is broken down into Classes, like mammals, birds, reptiles, fish, amphibians, insects, or gastropods (snails). Then each class can be broken down even further into orders, families, genus and species, getting more specific.

The scientific name is generally in Latin or Greek and is the living thing's genus and species. People all over the world use the scientific names, no matter what language they speak. Most living organisms also have a common name that we use in our own language.

Some questions scientists ask:

- Does it have a backbone?
- What type of skin covering does it have?
- Does it have a skeleton? If so, is it inside or outside of the body?
- How many body parts does the animal have?
- Does it get oxygen from the air through lungs or from the water through gills?
- Are the babies born alive or do they hatch from eggs?
- Does the baby drink milk from its mother?
- Is it warm-blooded or cold-blooded?

Using what you know, and information and pictures in the book, see how many Animal Chart squares you can fill in for each animal.

Animal Chart

	Animals		
Appendages	legs (how many)		
	flippers/fins		
	wings		
	tail/no tail		
	horns/antlers		
Feet or hands: if they have; may have more than one	claws		
	web		
	toes		
	opposable thumbs/toes		
	hooves		
Movement: may do more than one	walks/runs		
	crawls		
	flies		
	slithers		
	swims		
	climbs		
	hops		
Backbone	backbone/vertebrate		
	no backbone/invertebrate		
Skeleton	inside skeleton (endoskeleton)		
	outside skeleton (exoskeleton)		
	no skeleton		
Body covering	hair/fur/whiskers/quills		
	feathers		
	dry scales or bony plates		
	moist scales		
	smooth, moist skin		
	hard outer shell		
	hard outer covering		
Color/patterns	stripes or spots		
	mostly one color		
	skin color changes		
	bright, vivid colors		
Gets oxygen	lungs		
	gills		
Body temperature	warm-blooded (endothermic)		
	cold-blooded (ectothermic)		
Babies	born alive		
	hatch from eggs		
	born alive or hatch from eggs		
Metamorphosis	complete		
	incomplete		
	none		
Teeth	sharp		
	flat		
	no teeth (bill/beak)		
Food	plant eater (herbivore)		
	meat eater (carnivore)		
	both (omnivore)		

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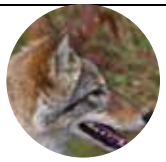
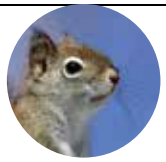
	Animals		
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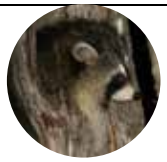
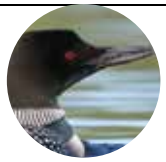
	Animals		
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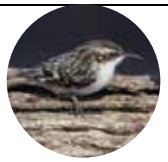
	Animals		
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Vertebrate Classes

Objective: Compare structures (e.g., wings vs. fins vs. legs; gills vs. lungs; feathers vs. hair vs. scales) that serve similar functions for animals belonging to different vertebrate classes

Mammals:

hair, fur, whiskers, or quills at some point during their lives

backbone (vertebrate)

inside skeleton (endoskeleton)

lungs to breathe

most give birth to live young

produce milk to feed young

warm-blooded

Birds:

feathers

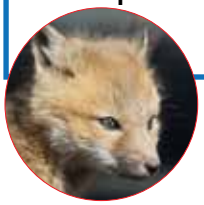
backbone (vertebrate)

inside skeleton (endoskeleton)

lungs to breathe

hatch from hard-shelled eggs

warm-blooded



Warm-blooded animals make their own heat and have a constant body temperature

Reptiles:

dry scales or plates

backbone (vertebrate)

inside skeleton (endoskeleton); most turtles also have a hard outer shell

lungs to breathe

most hatch from leathery eggs

cold-blooded

Cold-blooded animals' body temperature comes from their surroundings

Fish:

most have scales covered with a thin layer of slime

backbone (vertebrate)

inside skeleton (endoskeleton)

gills to breathe

babies are either born alive or hatch from jellylike eggs

cold-blooded

Amphibians:

soft, moist skin

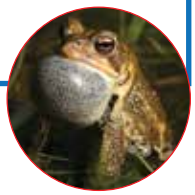
backbone (vertebrate)

inside skeleton (endoskeleton)

most hatchlings (jellylike eggs) are called larvae or tadpoles and live in water, using gills to breathe

as they grow, they develop legs and lungs and move onto land

cold-blooded



Using the sorting cards, sort the animals into their class.

Common Invertebrates

Arthropods: Insects:

hard outer covering

no backbone (invertebrate)

outside skeleton (exoskeleton)

adults have 3 body parts: head, thorax & abdomen

mouthparts adapted for chewing, biting, sucking and lapping

breathe through trachae

compound eyes

3 pairs of legs

usually 2 pairs of wings and 1 pair of antennae

most hatch from eggs

metamorphosis: none, incomplete, or complete

cold-blooded

Mollusks Bi-valves:

have a two-part shell with a hinge to open/close

no backbone (invertebrate)

outside skeleton (exoskeleton)

hatch from eggs

cold-blooded

marine and freshwater

symetry:

Mollusks Gastropods (Snails):

most have hard shells

no backbone (invertebrate)

outside skeleton (exoskeleton)

hatch from eggs

cold-blooded

Anthropod Arachnia (Spiders):

no backbone

one or two body segments

pincers or fangs near mouth

4 pairs of legs

no antennae

Arthropod Crustaceans (Crabs):

hard outer covering

no backbone (invertebrate)

outside skeleton (exoskeleton)

mouthparts adapted for chewing

5 or more pairs of legs

claws

2 pairs of anntenae

2 compound eyes on stalks

adults have 2 or 3 body segments

hatch from eggs

cold-blooded

Compare/Contrast: Animal and Human Senses

Identify words and phrases in stories or poems that suggest feelings or appeal to the senses.

Students know that senses can provide essential information (regarding danger, food, mates, etc.) to animals about their environment.

Identify the five senses and their related body parts: sight – eyes, hearing – ears, smell – nose, taste – tongue, touch – skin,

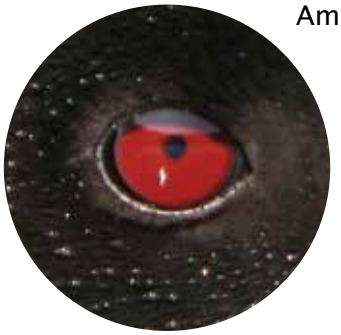
Identify the structures of living organisms and explain their function.

Compare and contrast animal and human body parts used for seeing:


deer fly


American toad


red fox


common loon


human

Compare/contrast animal legs & feet. How do they move, grab things or protect themselves?


barred owl


beaver


honey bee


oppossum


spider

Animal Sorting Cards

Objective: Classify organisms according to one selected feature, such as body covering, and identify other similarities shared by organisms within each group formed.

Describe several external features and behaviors of animals that can be used to classify them (e.g., size, color, shape of body parts).

Identify observable similarities and differences (e.g., number of legs, body coverings, size) between/among different groups of animals.

Animal Card Games:

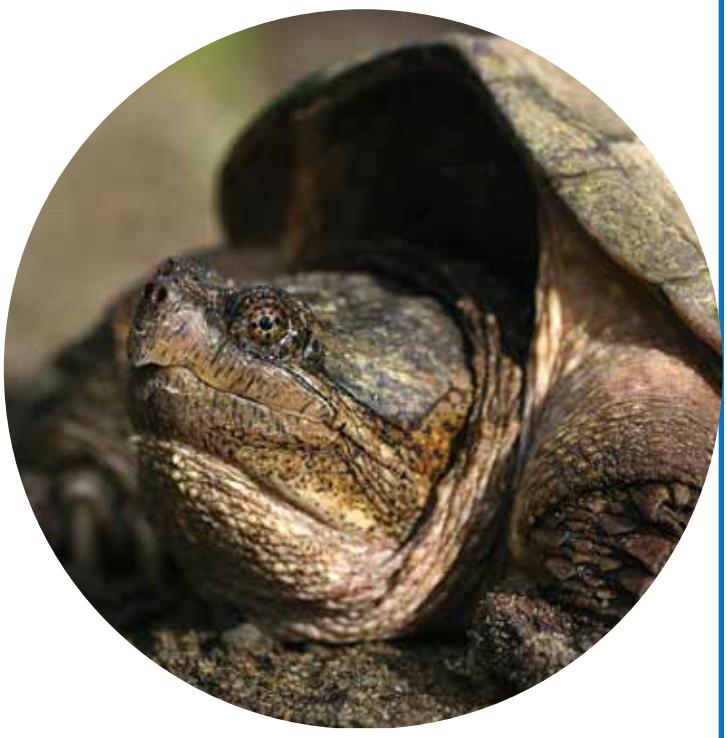
Sorting: Depending on the age of the children, have them sort cards by:

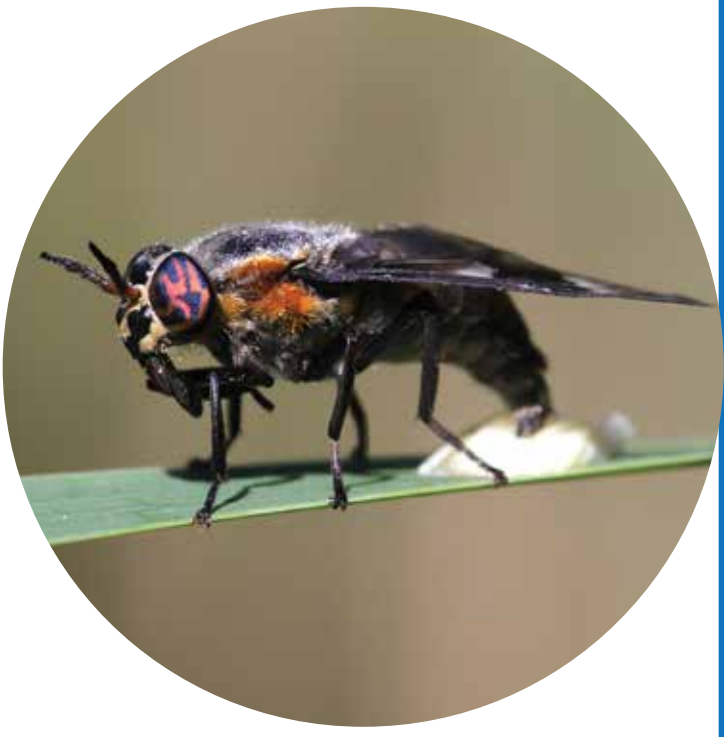
- where the animals live (habitat)
- number of legs (if the animals have legs)
- how they move (walk, swim, jump, or fly)
- type of skin covering (hair/fur, feathers, scales, moist skin)
- what they eat (plant eaters/herbivores, meat eaters/carnivores, both/omnivores)
- tail, no tail
- colors or skin patterns
- animal class

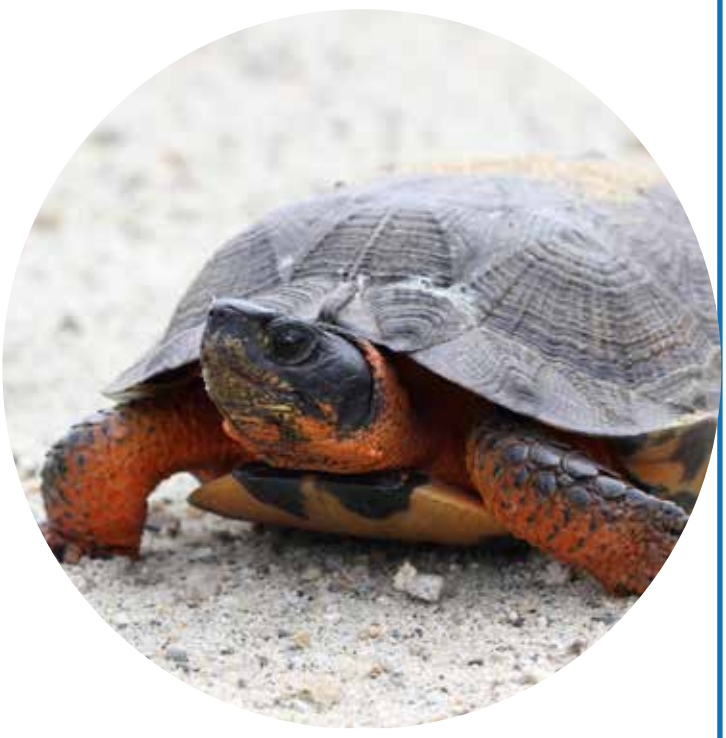
Memory Card Game: Make two copies of each of the sorting card pages and cut out the cards. Mix them up and place them face down on a table. Taking turns, each player should turn over two cards so that everyone can see. If the cards match, he or she keeps the pair and takes another turn. If they do not match, the player should turn the cards back over and it is another player's turn. The player with the most pairs at the end of the game wins.

Who Am I? Copy and cut out the cards. Poke a hole through each one and tie onto a piece of yarn. Have each child put on a "card necklace" without looking at it so the card hangs down the back. The children get to ask each person one "yes/no" question to try to guess "what they are." If a child answering the question does not know the answer, he/she should say, "I don't know." This is a great group activity and a great "ice-breaker" for children who don't really know each other.

Charades: One child selects a card and must act out what the animal is so that the other children can guess. The actor may not speak but can move like the animal and imitate body parts or behaviors. For very young children, you might let them make the animal sound. The child who guesses the animal becomes the next actor.







binocular vision

my definition	my drawing

compound eyes

my definition	my drawing

nictitating membrane	
my definition	my drawing

spectacles	
my definition	my drawing

fang

my definition	my drawing

proboscis

my definition	my drawing

molar	
my definition	my drawing

incisor	
my definition	my drawing

opposable thumb

my definition	my drawing

prolegs

my definition	my drawing

webbed feet	
my definition	my drawing

talon	
my definition	my drawing

carnivore

my definition

my drawing

omnivore

my definition

my drawing

herbivore

my definition

my drawing

predator

my definition

my drawing

prehensile

my definition

my drawing

communicate

my definition

my drawing

rudder

my definition

my drawing

quill

my definition

my drawing

stinger

my definition

my drawing

ovipositor

my definition

my drawing

ear

my definition

my drawing

vibration

my definition

my drawing

echolocation

my definition

my drawing

sound wave

my definition

my drawing

hair or fur

my definition

my drawing

feathers

my definition

my drawing

Jacobson's organ

my definition

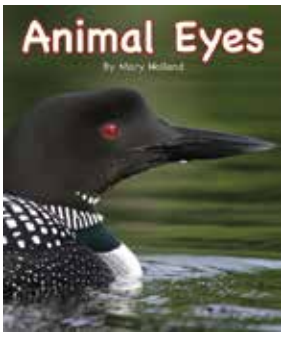
my drawing

smell

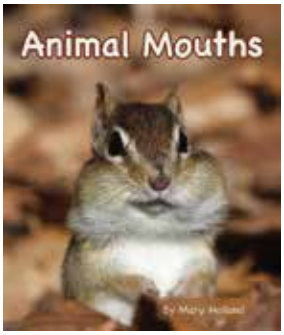
my definition

my drawing

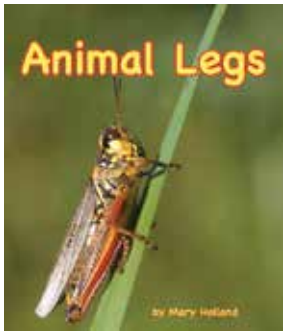
Silly Sentences Answers



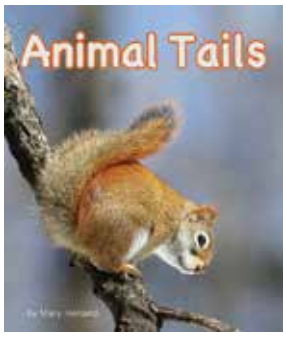
1. Binocular eyes are usually located in the front of an animal's head.
2. Binocular vision helps animals to judge distances, helping them to track prey.
3. Most predators have binocular vision.
4. Many prey animals have eyes on the sides of their heads, not the front.
5. Their eyes help them watch for enemies in many different directions at the same time.
6. Insects have eyes that "bug" out, letting them see in all directions at once.
7. Most animals have upper and lower eyelids that move up and down.
8. Some animals have a third, see-through eyelid to protects their eyes.
9. Many animals that swim or fly use these eyelids to protect their eyes.
10. Snakes and some lizards have see-through scales called spectacles that cover their eyes.



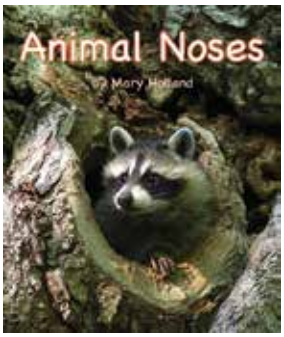
1. Turtles use the sharp edges of their jaws to eat both plants and animals.
2. Birds have beaks instead of teeth.
3. Eagles and hawks have strong, curved beaks to tear the flesh of the animals they eat.
4. Many birds that eat fish, frogs and other animals that live in the water have long, pointed beaks to grab their prey.
5. Most frogs have a row of very small teeth along the edge of their upper jaw and on the roof of their mouth.
6. Venomous snakes have special teeth that inject venom (fangs).
7. Insects have many different kinds of mouthparts for eating different kinds of food.
8. Moths and butterflies have long, hollow mouthparts that form a tube called a proboscis.
9. Animals that eat plants have flat teeth called molars in the back of their mouths.
10. Animals that eat other animals have sharp and pointed teeth to cut and tear the flesh of the animals they eat.



1. Praying mantises use their front legs to grasp their prey.
2. Most spiders and many insects, such as butterflies, houseflies and mosquitoes, can taste with their feet!
3. Most frogs that live in water have webbed hind feet.
4. The webbing between the toes turns a frog's foot into a flipper.
5. Some frogs that live on land have special, round toe pads that are very sticky.
6. Birds that eat animals have strong claws, or talons, for grabbing their prey.
7. Hawks, falcons and eagles use their talons to catch rabbits, mice, fish and many other animals.
8. Skunks announce that they are about to spray by stamping their feet. Can you stamp your feet like a skunk?
9. River otters have webbed, with flaps of skin between the toes.
10. The front feet of a mole look and act like little shovels.



1. Some animals have tails and some don't.
2. Before a tadpole comes out of the water to live on land, it grows four legs.
3. The deer waves its tail like a flag as it runs away,
4. Have you ever smelled a striped skunk's spray?
5. Some animals, like the Virginia opossum, have a tail that can hold onto things (prehensile).
6. When they go to sleep, they curl up and wrap their tails around them, tucking their noses down into their tails.
7. Birds even spread out and display their tails to attract a mate.
8. A muskrat's tail is thin and covered with scales.
9. Tails are used by many animals to protect themselves.
10. If a honey bee stings someone, the honey bee will die.



1. Most noses help animals do two things – breathe and smell. Many animals use their sense of smell to find food, to find a mate and to know when danger is near.
2. Birds do not have a real "nose," but they do have two holes, or nostrils, just above their beak.
3. Bears rub their backs against trees and leave their scent so that other bears can smell the trees and know who has been there.
4. Snakes use their tongues and mouths to smell.
5. Frogs use their noses and sense of smell to find mates, to find prey, to keep away from predators, and to find their way home.
6. Frogs breathe through their noses, but they also breathe through their skin and the inside of their mouth.
7. A beaver has flaps, or valves, in its nose that act like nose clips. When it dives under water, the flaps close, keeping water out of its nose and allowing the beaver to dive deeper and stay under water longer.

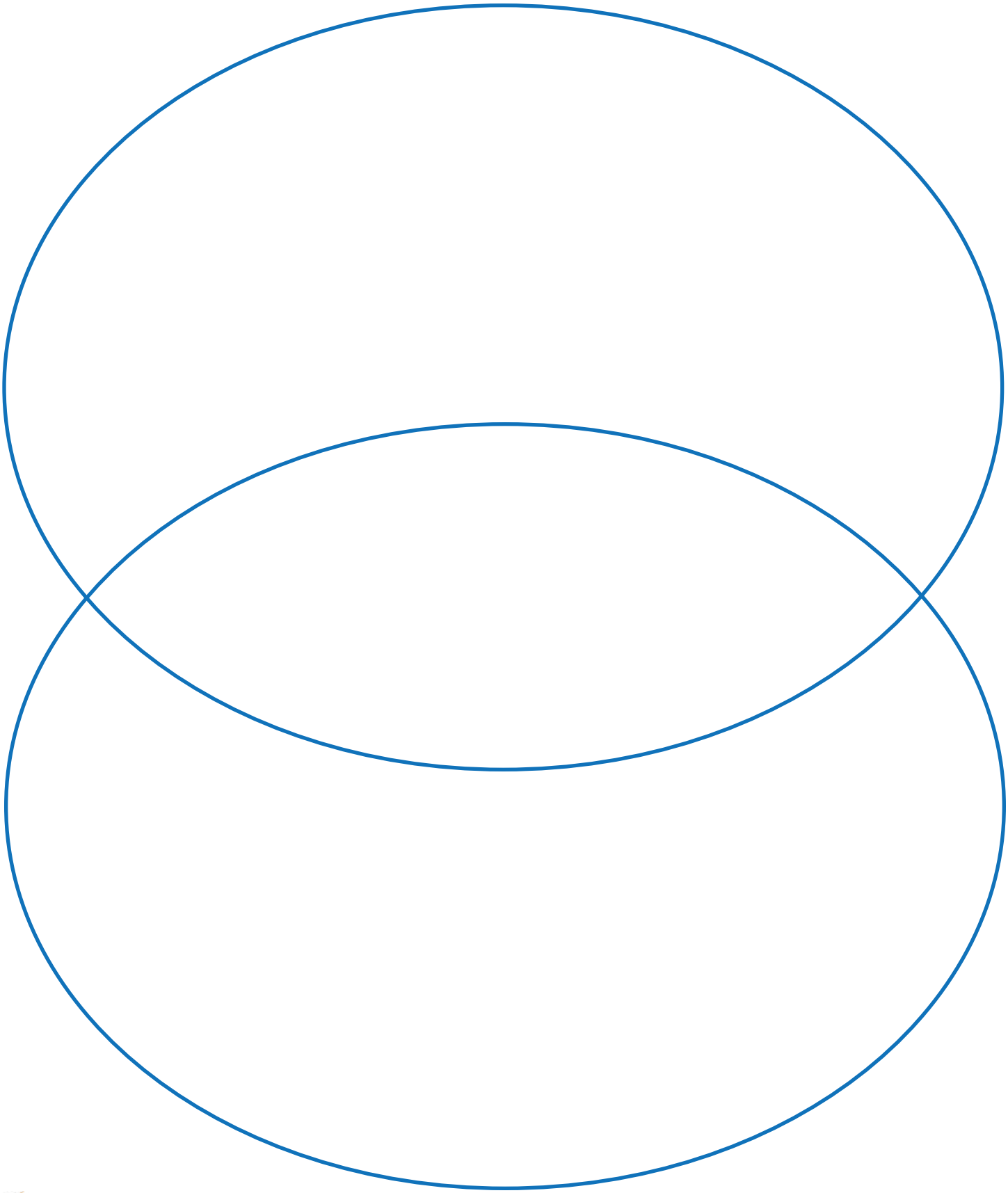
1. Animal skin coverings can keep an animal warm and dry, protect an animal from predators, warn other animals to stay away, or even help an animal hide (camouflage).
2. Like snakes, when a young insect's skin gets too tight, it must replace it. The insect makes a new, larger skin under its old one and then sheds its old skin.
3. All mammals have hair (fur).
4. During their first summer, fawns are covered with white spots to help them blend in to the woods and fields where they live.
5. Instead of hairs, birds have feathers. Feathers do lots of things—help a bird fly, attract a mate, and keep warm.
6. Sometimes the color of an animal's skin covering can tell you whether you are looking at a male or a female animal.
7. Snakes are not slimy! They are reptiles, and, like all reptiles, have thick sections of dry skin called scales.

Appendix A—"What Children Know" Cards

Question: My answer: This information is correct! This information is not correct; can you find the correct information?	Question: My answer: This information is correct! This information is not correct; can you find the correct information?
Question: My answer: This information is correct! This information is not correct; can you find the correct information?	Question: My answer: This information is correct! This information is not correct; can you find the correct information?

Appendix B—Venn Diagram

Compare and contrast two animals and their body parts.



eyes	binocular vision
compound eyes	nictitating membrane
spectacles	vision

beak	canine
carnassial	fang
incisor	jaw

molar	mouth
proboscis	skull
incisor	inject

prolegs	webbed feet
sticky toe pads	claws
talons	opposable thumbs

tail	prehensile
signal	balance
quill	stinger

ear	sound
vibration	echolocation
smell	nose

beak	nostril
feathers	hair or fur
dry scales	moist scales