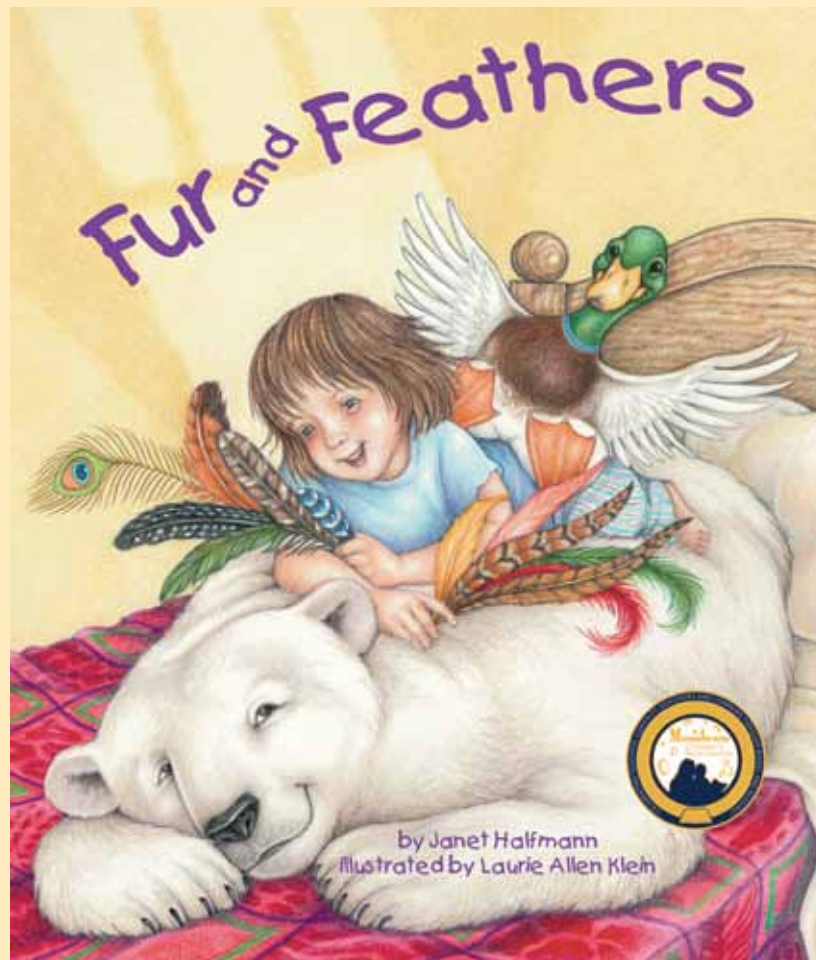


Teaching Activity Guide



This guide is designed for:

- teachers in the classroom
- homeschooling parents
- parents/grandparents who want to encourage their children to learn (some of the group activities can even be used for a book-themed birthday party!)
- librarians and bookstore employees for story times
- after-school program leaders
- zoo, aquarium, nature center, park & museum educators

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How to Use This Activity Guide

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.

Glossary/Vocabulary words: Words may be written 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 into nouns, verbs, etc. right away to save a step later if using for Silly Sentences. 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.

Silly Sentence Structure Activity: 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 information in the book.

Sequence Sentence Strips: Cut into sentence strips, laminate if desired, and place in a “center.” Have children put the events in order. Children may work alone or in small groups. Cards are in order but should be mixed up when cut apart.

Animal Card Games:

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

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

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 the animal pictured on it. The card hangs down the back. The children ask one another “yes/no” questions to try to guess their animals. This is a great group activity!

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, can 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.

Math Card Games (Make four copies of the math cards to play these games):

Tens Make Friends Memory Game is a combination of a memory and adding game.

- Play like the memory game, above.
- If the animal numbers add up to 10, the child keeps the pair and takes another turn.
- If they do not add up to ten, the player should turn the cards back over and it is another player’s turn.

Go Fish for Fact Families is a twist on “Go Fish.”

- Shuffle cards and deal five cards to each player. Put the remaining cards face down in a draw pile.
- If the player has three cards that make a fact family, he/she places them on the table and recites the four facts related to the family. For example, if someone has a 2, 3, and 5, the facts are: $2 + 3 = 5$, $3 + 2 = 5$, $5 - 2 = 3$, $5 - 3 = 2$.
- The player then asks another player for a specific card rank. For example: “Sue, please give me a 6.”
- If the other player has the requested card, she must give the person her card.
- If the person asked doesn’t have that card, he/she says, “Go fish.”
- The player then draws the top card from the draw pile.
- If he/she happens to draw the requested card, he/she shows it to the other players and can put the fact family on the table. Otherwise, play goes to the next person.
- Play continues until either someone has no cards left in his/her hand or the draw pile runs out. The winner is the player who then has the most sets of fact families.



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.”

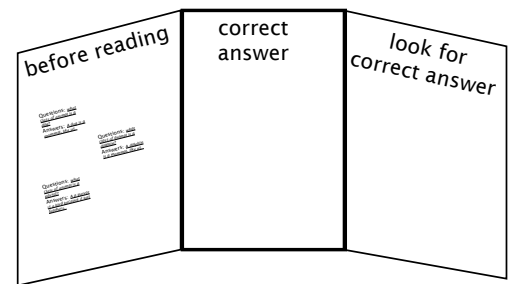
Do the children have any more questions about the subject? If so, write them down to see if they are answered in the book.

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 child/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 types of animal body coverings (skins, coats)?

What are vertebrates?

What are invertebrates?

What are the five classes of vertebrates?

What are some classes of invertebrates?

What makes an animal a mammal? Can you name some?

What makes an animal a reptile? Can you name some?

What makes an animal a bird? Can you name some?

What do birds have that no other animals have?

What makes an animal a fish? Can you name some?

Do all animals that live in the ocean have gills?

What makes an animal an amphibian? Can you name some?

Thinking It Through & Writing Prompts

Do you think everything in the story could be true? Why or why not?

Write a different ending to the story.

Does this story remind you of any other story that you've read? If so, which one, and how are they alike?

How would you describe Sophia?

Have you ever seen any of these animals? If so, describe where you saw them and what they were doing.

What facts are mentioned in the text?

Comprehension Questions

Why did Sophia have trouble getting to sleep?

What did Sophia's mother do to help her get to sleep?

What did the wind do to the animals in Sophia's dream?

What did she give the animals in her dream?

Why didn't Sophia's clothes help the animals?

Then how did Sophia help the animals?

What kind of coat did the polar bear need and why?

What little "extra" did Sophia sew onto her coat?

What kind of coat did the duck need?

What did Sophia change on the duck?

What kind of coat did the porcupine need?

What did Sophia use to make her new coat?

What kind of coat did the frog need?

What kind of coat did the fish need?

What kind of coat did the snake need?

What did the snail need?

Where did Sophia and her grandmother go the next day?

What did they see on the polar bear?

Do you think that could be true? Why or why not?

Five Senses

Re-read the story and write down any words that relate to the five senses:

Touch	Taste	Sight	Smell	Hearing

Art Scavenger Hunt

How many times do you see the polar bear reading a book to other animals?

Find some of the animals folding clothes.

Find the frog in a sweater.

Find the duck wrapped in scarves.

Find the ladybug in a thimble.

Find the snail in the slipper.

Find the framed picture of Sophia's dog.

Find the sunglasses.

Find a key.

Find a flip-flop.

Vocabulary Game

This activity 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. If you do not have classroom sets of the book, it is helpful to project an illustration on a white board. Check Web site (www.ArbordalePublishing.com) for book “previews” that may be used.

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.

Using the Words

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

- Continue to add words to the vocabulary list as children think of them.
- 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 to create silly sentences on the next page).
- Now sort the vocabulary words into more specific categories. For example, nouns can be divided into plants, animals, rocks, minerals, etc. They can be divided into living/non-living, or into habitat-related words.
- 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

Mammals have hair, _____, whiskers, or _____s at some point during their lives.
noun: body part noun: body part

_____ mothers produce milk to feed their young.
noun: classification

_____ have _____s to breathe.
noun noun: body part

Most fish have _____s covered with a thin layer of slime.
noun: body part

Most reptiles hatch from _____s.
adjective noun

Reptiles have an inside _____ (_____); most turtles also have a hard outer shell.
noun: body part noun: body part

_____s do not have a backbone (invertebrates).
noun: classification

Most gastropods have hard _____s.
noun: body part

Birds are the only animals that have _____s.
noun: body part

Birds _____ from eggs.
verb

Amphibians have soft, _____ skin.
adjective

Most amphibian hatchlings are called larvae or _____s and live in water, using _____s to breathe.
noun noun: body part

As the _____s grow, they develop _____s and _____s and move onto land.
noun: classification noun: body part noun: body part

Adult insects have 3 body parts: _____, _____ & _____.
noun: body part noun: body part noun: body part



Sequence Sentence Strips

The howling wind wakes Sophia. Her mother suggests that they count animals to help them forget about the noisy storm.

They count together: one polar bear, two ducks, three snakes . . . and then Sophia is sound asleep.

But in her dreams, the animals whirl with the whipping wind. Faster and faster they spin, till the wind blows them right out of their coats. Fur, shells, feathers, and scales fly everywhere. The animals shiver in their bare skin.

From her closet, Sophia grabs every piece of clothing she owns. *Push! Pull! Tug!* She helps the animals fit tails, fins, and wings into her kid-sized outfits.

The animals are thankful . . . but they find it hard to walk, crawl, or fly. And they think they look terribly silly!

“I can make new coats for all of you, just like your old ones,” Sophia exclaims. “Form a line and tell me what you need.”

All night long, Sophia sews new coats for an endless parade of animals—and adds her own special touches.

In the morning when she wakes up, her mother has a surprise. The whole family is going to spend the day at the zoo.

“Look,” exclaims Grandma, pointing to a polar bear. “That bear has a red heart behind her ear!” Sophia just smiles.

Word Search

Find the hidden words. Even non-reading children can match letters to letters to find the words! Easy—words go up to down or left to right (no diagonals). For older children, identify the coordinates of the first letter in each word (number, letter).

	A	B	C	D	E	F	G	H	I	J
1	A	Q	U	E	H	A	H	I	K	C
2	D	U	M	A	M	M	A	L	W	O
3	F	I	N	S	E	C	T	I	B	V
4	O	Z	S	K	I	N	C	O	I	E
5	G	S	H	E	L	L	H	Q	U	R
6	E	C	E	G	Y	S	F	U	N	I
7	S	A	M	P	H	I	B	I	A	N
8	O	L	D	I	E	F	I	L	K	G
9	F	E	A	T	H	E	R	L	P	A
10	T	D	Y	F	U	R	D	E	G	G

FUR
SCALE
QUILL
HATCH
BIRD
INSECT
SKIN

FEATHER
SHELL
EGG
MAMMAL
AMPHIBIAN
COVERING
SOFT

Edible Sorting and Classifying Activity

Gather a cup of edible “sorting items.” For example:

- As many different kinds of M&Ms as you can find
- Chocolate & peanut butter chips
- Hershey Kisses
- Peanuts or other type of nuts



Ask the children to sort the items into groups. There is no right and wrong, only what makes sense to the child. When finished, ask the child:

What feature or attribute (color, size, ingredient, etc.) did you use to sort the items?

- Are there some items that fit more than one group or don't fit any group?
- Is it easy to sort or were there some items that were a little confusing?

If more than one person did this, did everyone sort by the same attribute? To extend the learning, graph the attributes used to sort the items (blank graph below).

Graph the attributes that children used to sort their items.

What was the most common attribute (size, shape, color, etc.) used?

10				
9				
8				
7				
6				
5				
4				
3				
2				
1				
attribute				

Classifying 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, 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

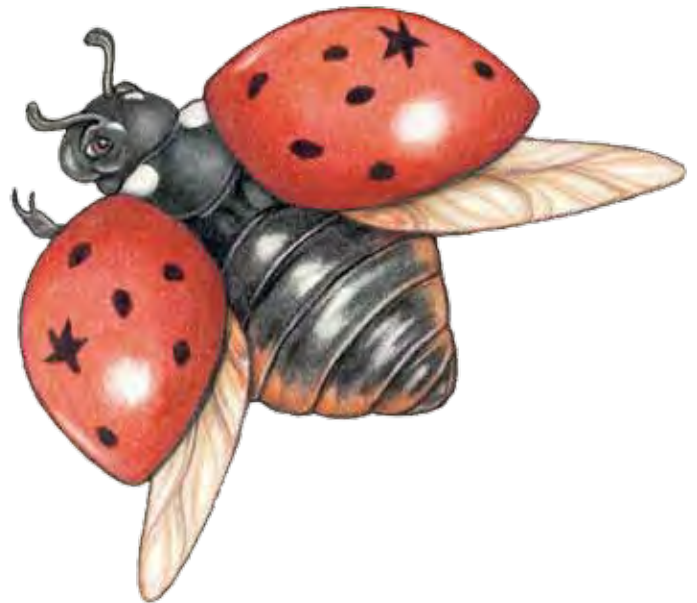
	Animals		
Appendages	legs (how many)		
	flippers/fins		
	wings		
	tail/no tail		
	horns/antlers		
Feet or hands: if they have; may have more than one	claws		
	web		
	toes		
	opposable thumbs/toes		
	hooves		
Movement: may do more than one	walks/runs		
	crawls		
	flies		
	slithers		
	swims		
	climbs		
	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		
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)		

	Animals		
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Food	plant eater (herbivore)		
	meat eater (carnivore)		
	both (omnivore)		

Animal Sorting Cards





Adaptations

Adaptations help animals to live in their habitat: to get food and water, to protect themselves from predators, to survive weather, and even to help them make their homes. Here are a few different types of adaptations.

Physical Adaptations

body parts

teeth—depends on type of food eaten
feet, flippers, fins—ability to move
placement of eyes
gills, lungs, or other—how does the animal get oxygen
ears—or how the animal hears/senses

body coverings

hair or fur
feathers
scales
moist skin

camouflage and protection

color of skin or pattern to blend into background
mimicry: pretending to be something else to fool predators
poisonous or stinky smells

Behavioral Adaptations

instinct: behaviors or traits that the animals are born with
learned behavior: traits that animals learn to improve their chances of survival or to make their life easier
social groups versus solitary living
communication with other animals
defense/camouflage
reaction to cycles (day/night, seasons, tides, etc.)
migration: the seasonal movement of animals from one location to another
hibernation: a long, deep sleep in which the animal's breathing and heartbeat are slower than usual

Pick an animal from the book and answer the following questions:

My animal is:

Where (in what kind of habitat) does your animal live?

What is one of its physical adaptations and how does it help the animal live in its environment?

What is another of its physical adaptations and how does it help the animal live in its environment?

What is another of its physical adaptations and how does it help the animal live in its environment?

What behavioral adaptations (if any) were mentioned in the story?



Match the Feet Adaptations

The shape and kind of feet animals have are another adaptation to help animals live in their environment. Can you match the feet adaptations to the animals that use them?



1.

I don't have any feet but I use my tail to help me swim.

2.

I have five toes on each foot that help me stand and walk. Because I don't have fur to keep me warm, I use socks and shoes.

3.

My feet are very wide so I don't sink into snow when I walk. I even have fur on the bottom of my feet to keep me warm!

4.

I have long, sharp, curved claws to help me climb trees and to strip bark from trees so I can eat.

5.

My back feet have webs to help me swim; my front feet do not have webs for jumping on land.

6.

I have webbed feet to help me swim.

hair or fur

my definition

my drawing

scales

my definition

my drawing

feathers

my definition

my drawing

moist skin

my definition

my drawing

True or False?

Circle whether you think the statement is true or false:

1. T/F Scientists sort all living things into groups to help us understand and connect how things relate to each other.
2. T/F The first big sort of living things is into Castles.
3. T/F An important sorting question is whether the animal has (or had at some point in its life) a backbone.
4. T/F The scientific name is generally in English or Spanish.
5. T/F Warm-blooded (endothermic) animals always live in the tropics, and cold-blooded (ectothermic) animals always live in temperate and polar regions.
6. T/F Mammals have hair or fur. Whiskers and quills are a type of hair.
7. T/F Most fish have scales covered with a thin layer of slime.
8. T/F Most gastropods have hard outer shells.
9. T/F Birds are the only animals that fly.
10. T/F Most amphibian hatchlings 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.
11. T/F Mammals' hair comes in different colors or patterns.
12. T/F Eyelashes are a type of hair.
13. T/F Dry scales or plates protect amphibians while crawling on the ground.
14. T/F Turtles have to look for bigger shells as they grow.
15. T/F Bird feathers come in different shapes, sizes, and colors.

Measuring (comparing and contrasting)

Animals come in all shapes and sizes. Some animals are so small that they can only be seen with a microscope. Other animals (blue whales) are so big that they are the size of a school bus when they are born!

What standard measuring tool would you use to measure something in:

Inches or centimeters

Feet or meters

Pounds or kilograms

Animal Sizes

	size (height/length)		weight	
Duck (Mallard)	20-26 in	50-65 cm	2-3 lb	1-1.4 kg
Ladybug	less than 1/4 in	4-8 mm		
Polar Bear (male)	8.2-9.8 ft	2.5-3 m	772-1,433 lb	350-650 kg
Porcupine (male)	25-31 in	73-78 cm	15-18 lb	7-8.5 kg

Which of the listed animals is the biggest?

Which of the listed animals is the smallest?

Which animal is the closest to you in size?

What are some things that weigh about the same as a mallard duck?

Do you weigh more or less than an adult male porcupine? By how much?

If a mallard duck is 24 inches long, how many feet is that?

Try to imagine how big or small an animal is compared to something you know. If the animal is small, what are some other things about the same size? How many pennies, paperclips, quarters, hands, or shoes would equal it? If the animal is very big, how many “things” would equal it?

How big is that 9-foot polar bear?


Using the right measuring tool (yard stick or measuring tape) and chalk, mark off how big 9 feet is on the playground, sidewalk, or driveway.

If you were to lie down on or next to the line, how many times would you have to lie down in order to equal the size of the polar bear?

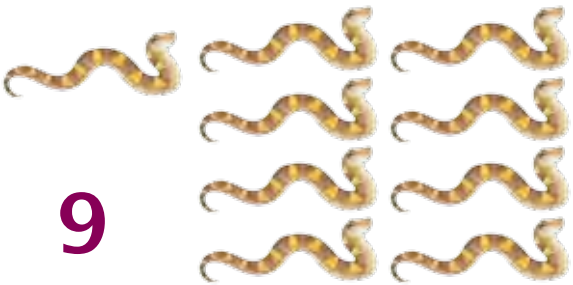


male polar bear: 9 feet
adult woman: 5 1/2 feet
young boy: 3 feet
mallard duck: 2 feet

Math Cards

<p>1</p> 	<p>2</p> 
<p>3</p> 	<p>4</p> 
<p>5</p> 	<p>6</p> 
<p>7</p> 	<p>8</p> 

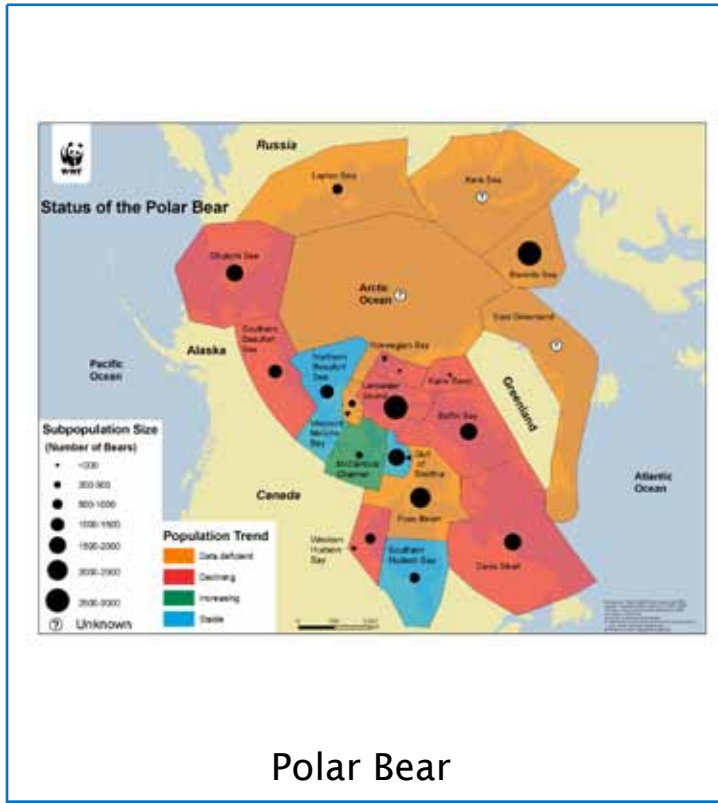
9



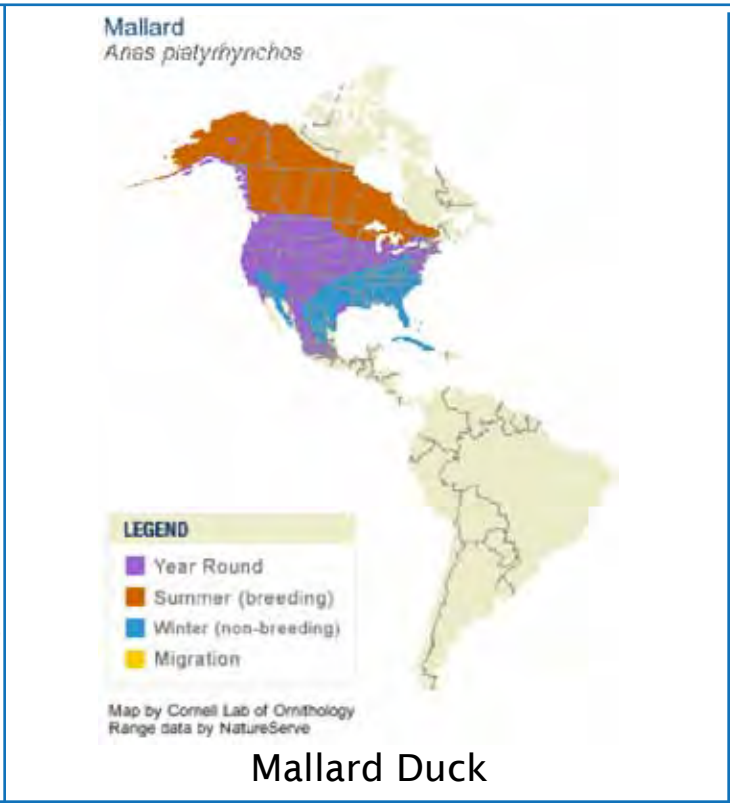
Map Activity

Using these maps as a reference, color the areas where these animals live on the blank map (in appendix). Click on the animal name to go to the map source.

Do any animals live in the same state or province as you?



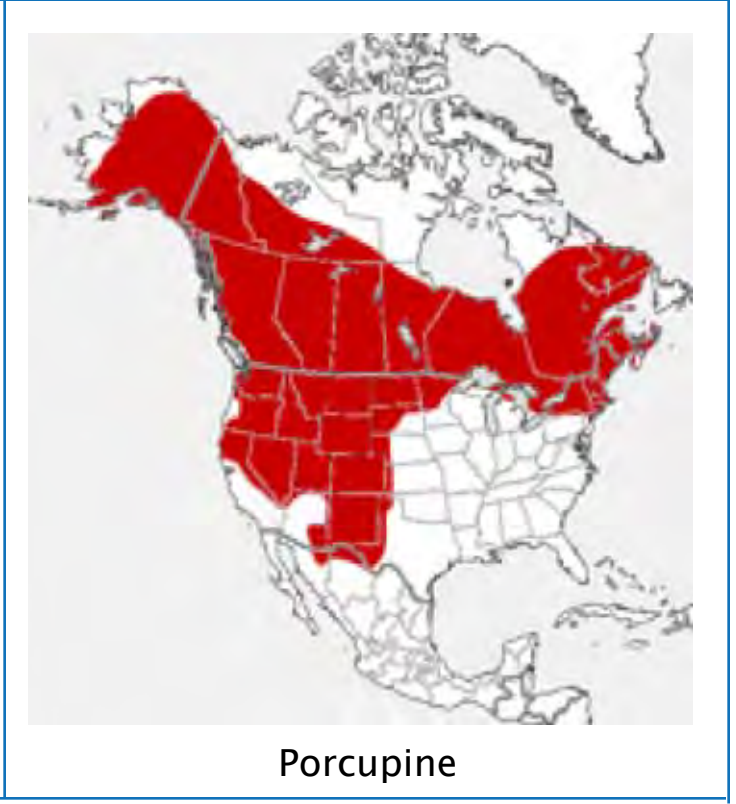
Polar Bear



Mallard Duck



Ladybug



Porcupine

Character

- Trustworthiness
- Respect
- Responsibility: Do what you are supposed to do
- Fairness
- Caring about others/Citizenship
- Persevere: keep on trying!
- Always do your best
- Use self-control
- Be self-disciplined
- Think before you act — consider the consequences
- Be accountable for your choices

How did Sophia show that she cared about the animals that had lost their “coats” in the wind?

What did she do when the animals were not happy wearing her clothes?

Do you think it was easy for Sophia to make all the different animal coats?

Which of the good character traits did she have?

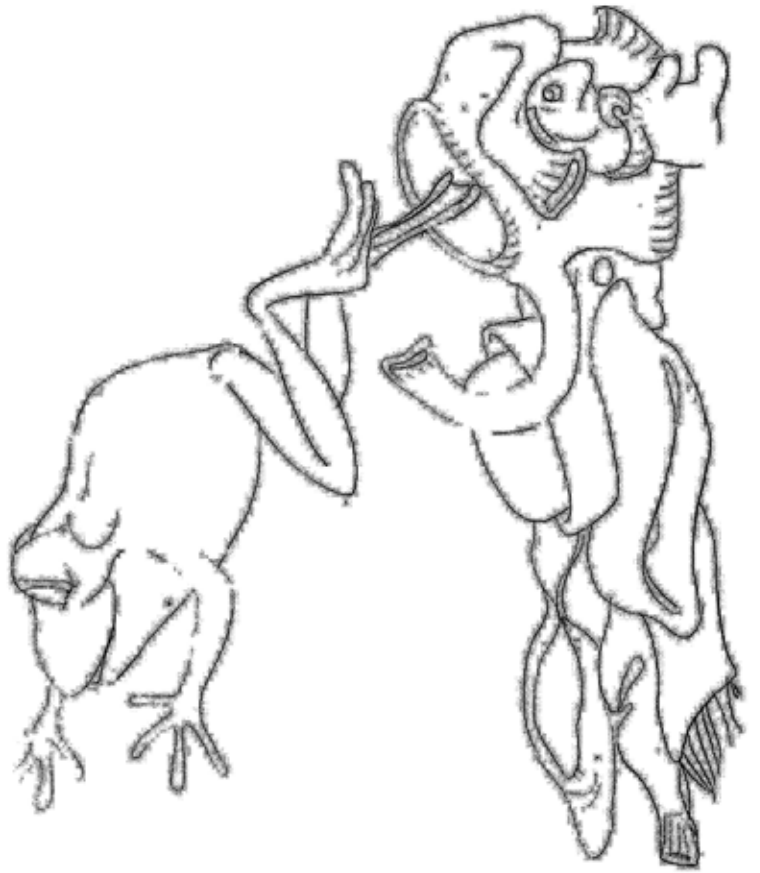
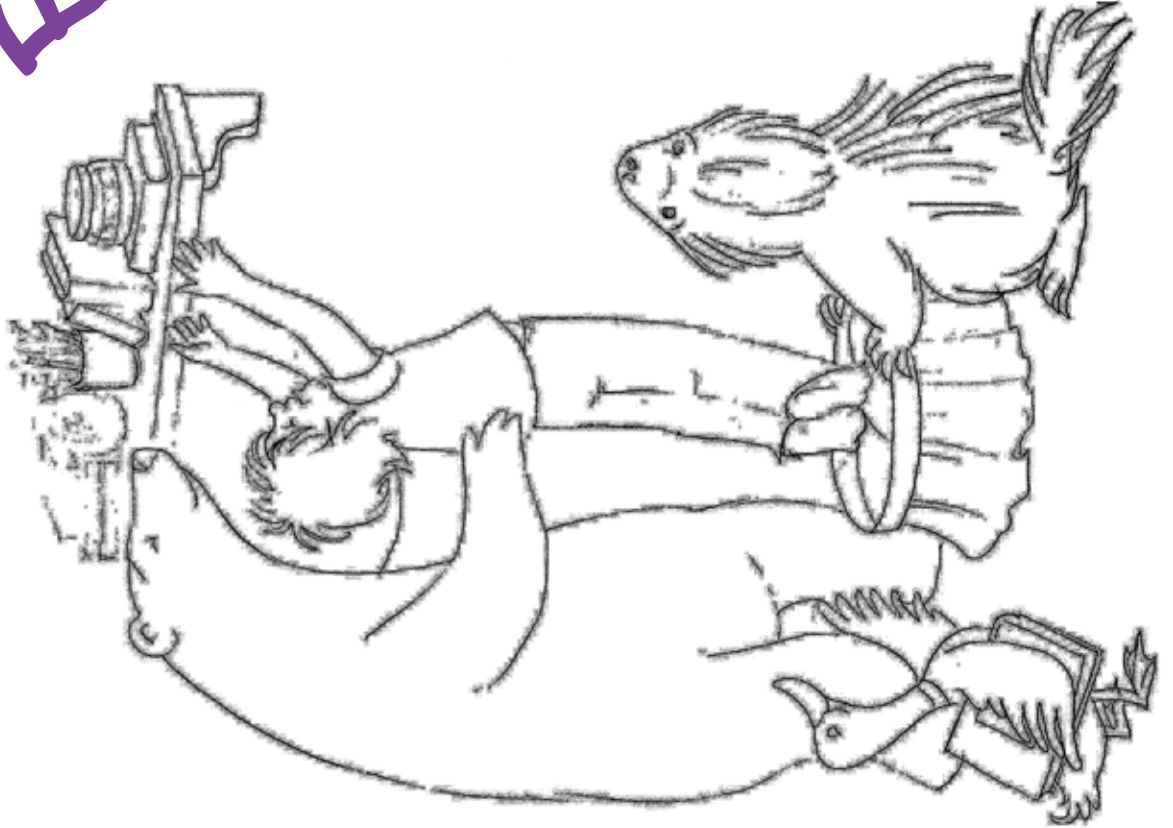
Fur and Feathers



Fur and Feathers



Fur and Feathers



What Type of Covering?

In addition to the animals that were specifically mentioned in the book, Sophia spent all night sewing coats for a wide variety of animals.

Pretend that you are Sophia and color a new coat for each of the animals that were waiting in line.

- Based on the animal's classification, what type of covering does it need?
- If you know (or have hints about) where the animal lives (habitat), are there any special needs this animal might have?
- What color is the animal and does it blend into its surrounding habitat?
- Does the animal need anything to protect itself from predators?

Design the new coat and then look at a picture of the animal taken from the internet (in answer section) to see how close you came to the real thing!

Can you find these animals in the book?

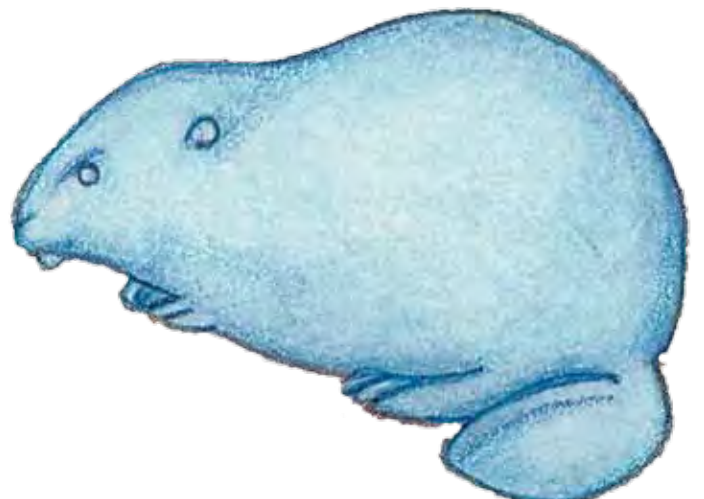
What do you notice about the names of the animals?

For younger children: cut the animal cards apart, mix up, and put in order.

Alpaca (Mammal)



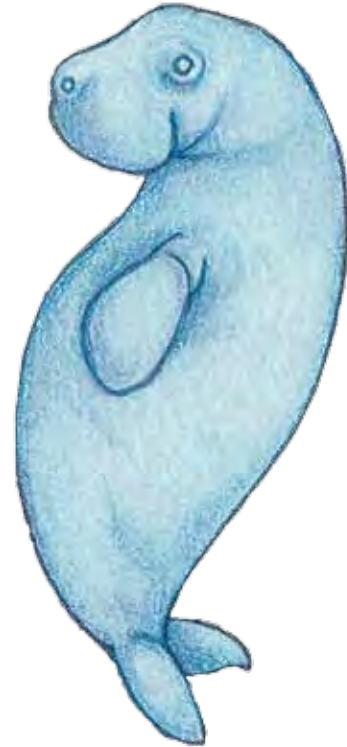
Beaver (Mammal)



Cobra (Reptile)



Dugong (Mammal)



Echidna (Mammal)



Flounder (Fish)



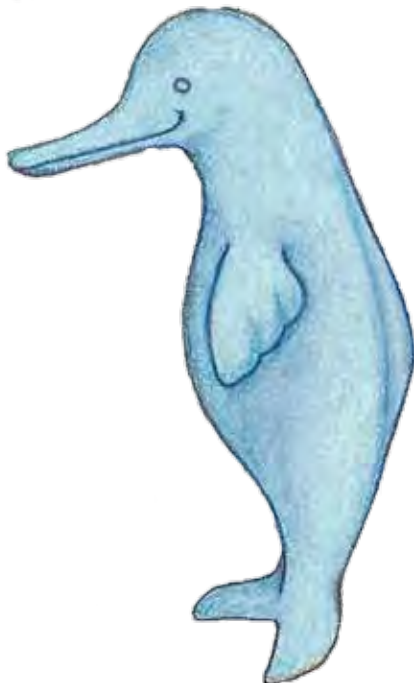
Goose (Bird)



Hyena (Mammal)



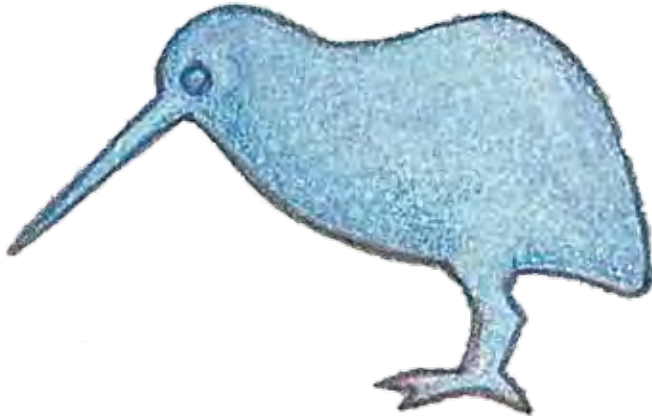
Indus River Dolphin
(Mammal)



Jackal (Mammal)



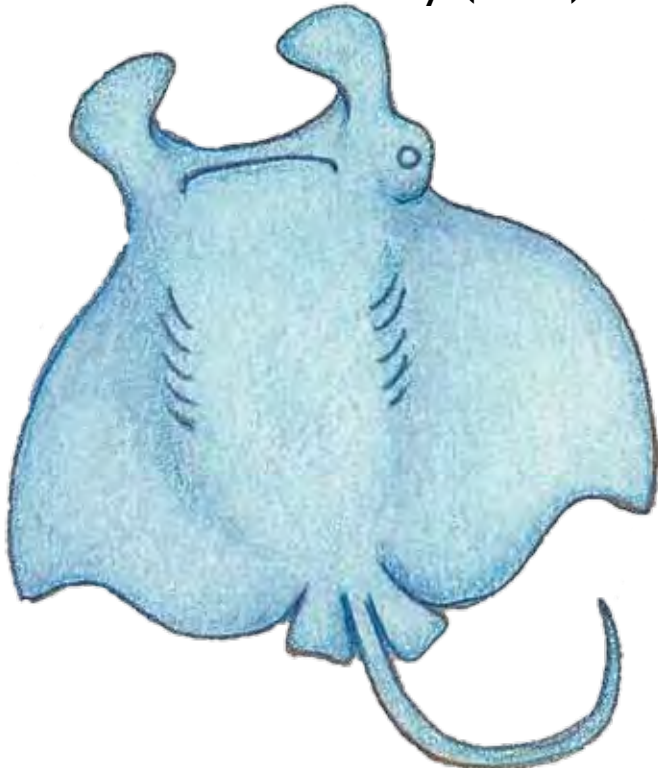
Kiwi (Bird)



Lemur (Mammal)



Manta Ray (Fish)



Narwhal (Mammal)



Owl (Bird)



Platypus (Mammal)



Quokka (Mammal)



Rabbit (Mammal)



Salamander (Amphibian)



Tapir (Mammal)



Uakari (Mammal)



Vulture (Bird)



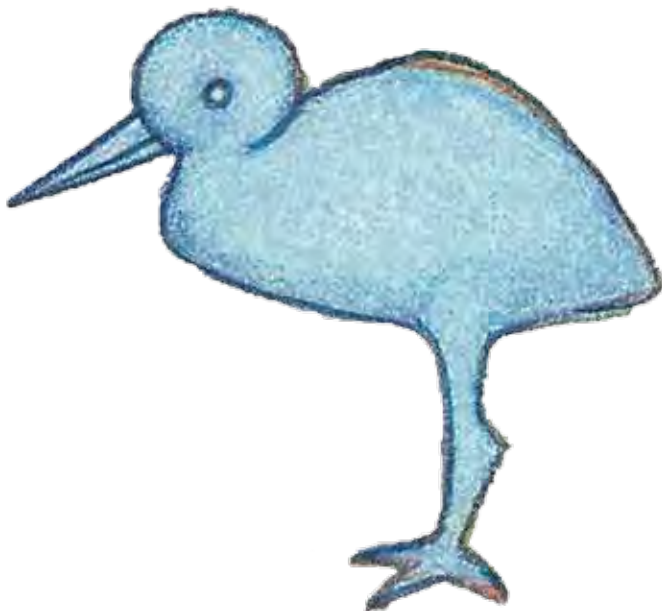
Wombat (Mammal)



Xoloitzcuintli (Xolo)
(Mammal)



Yellowlegs (Bird)



Zorilla (Mammal)



Glossary

Word	Definition	Part of Speech	Spanish
abdomen	the hindmost of the three main body divisions of an insect	noun: body part	abdomen
adapt	to change, to alter, to adjust to a changing environment or situation	verb	adaptar
adaptation	a physical or behavioral feature of a plant or animal that allows it to survive in its environment	noun	adaptación
Amphibian	a cold-blooded animal with smooth, moist skin; lives in water and then land; breathes through gills and then lungs, e.g. frogs, newts, and salamanders	noun: classification	anfíbio
animal	any member of the kingdom Animalia: can move voluntarily, get and eat food, and respond to stimuli	noun	animal
attribute	a characteristic that identifies an object or person as part of a group	noun	atributo, cualidad
backbone	the series of vertebrae forming the axis of the skeleton and protecting the spinal cord	noun: body part	columna vertebral, espina dorsal
behavior	an organism's actions and responses to its environment and other organisms in that same environment	noun	conducta
Bird	a warm-blooded vertebrate that breathes oxygen with lungs, has a beak, feathers, two wings, two legs, and lays eggs; birds are the ONLY animals that have feathers; not all birds fly	noun: classification	ave, pájaro
body covering	any covering for the body or a body part: skin, fur, hair, feathers, scales, shell	noun: body part	lo que cubre el cuerpo
breathe	to take in/absorb oxygen	verb	respirar
camouflage	physical adaptations that allow organisms to hide in their surroundings	noun	camuflaje
camouflage	to hide by disguise or color	verb	camuflar
carnivore	an animal that eats the meat of other animals (consumer)	noun: eating characteristic	carnívoro/a
characteristic	a distinguishing trait, feature, quality, or property	noun	característica
class	a taxonomic group containing one or more orders sharing common attributes	noun: classification	clase
classify	to arrange or organize according to class or category	verb	clasificar, ordenar
claw	sharp, curved horny process on the toe of a bird, some mammals or reptiles; 2) a structure like a pincer on the limb of a crustacean or other arthropods	noun: body part	pinza, garra
cold-blooded	having a body temperature that rises or falls with the temperature of the surrounding environment	adjective	de sangre fría
complete metamorphosis	each stage of the life cycle (egg, larva, pupa, and adult) looks different from the others	noun	metamorfosis completa
compound eye	an eye consisting of many individual elements	noun: body part	ojo compuesto
contour feather	predominate feather type found on the body, wings, and tail of birds	noun: body part	tectrice
dichotomous key	a key based on "yes" or "no" questions to identify species	noun	clave dicotómica
duck	a small, web-footed swimming bird	noun: animal	pato
ectothermic	cold-blooded: animals that regulate their body temperatures from the surrounding air or water	adjective	ectotérmico
egg	the roundish reproductive object produced by bird, reptile, and a few mammal females	noun	huevo
endoskeleton	an internal skeleton found in vertebrates (like we have)	noun: body part	esqueleto interior
endothermic	warm-blooded: animals that make and maintain their own body heat (humans maintain body temperature at 98.6; a higher temperature signals a fever)	adjective	endotérmico
exoskeleton	the hard covering system on the outside of an insect or other invertebrate	noun: body part	esqueleto exterior

Word	Definition	Part of Speech	Spanish
family	a taxonomic category of related organisms ranking below an order and above a genus; a family usually consists of several genera	noun: classification	familia
feathers	a bird's body covering	noun: body part	plumas
feathery	having feathers	adjective	plumoso
Fish	a type of animal (classification) that lives in water, is cold-blooded, has scales, and breathes air through gills	noun: classification	pez (vive) pescado (comida)
frog	amphibian with long hind limbs for leaping	noun: animal	rana
fur	the hairy coat of a mammal	noun: body part	pelaje
furry	having fur	adjective	peludo
fuzzy	have a covering with fine, light hairs	adjective	muy rizado
Gastropod	a class of mollusks that usually have a one-piece coiled shell, a flattened muscular foot, and compound eyes on stalks	noun: classification	gasterópodo
genus	a classification category that is more specific than family and more general than species	noun: classification	género
gills	body parts that some aquatic animals (fish) use to obtain oxygen from the water	noun: body part	agallas, branquias
hair	a mammal's outermost covering, made up of threadlike growths on the skin	noun: body part	pelo
hatch	to emerge from an egg, pupa, or chrysalis	verb	incubar
head	the front body part of insects; has mouthparts, eyes, and antennae	noun: body part	cabeza
herbivore	an animal that eats only plants; a primary or first-order consumer	noun: eating characteristic	herbívoro/a
incomplete metamorphosis	life cycle with three stages: egg, nymph, and adult	noun	metamorfosis incompleta
insect	a six-legged arthropod, usually with a hard exoskeleton and three main body parts	noun: classification	insecto, bicho
invertebrate	animal without a backbone; about 97% of all known species are invertebrates	noun: classification	invertebrado
keratin	the tough protein that makes up hair, nails, feathers, scales, horns and hooves	noun	queratina
kingdom	the top taxonomic rank; there are five biological kingdoms: Monera, Protista, Fungi, Plantae, and Animalia	noun: classification	reino
ladybug	small round bright-colored, and spotted beetle that usually feeds on aphids and other insect pests	noun: animal	mariquita
larva	the immature free-living form of most invertebrates, amphibians, and fish	noun: animal baby	larva
leathery	tough but bendable	adjective	como cuero
leg	a structure in animals used for locomotion	noun: body part	pierna
lungs	organs to provide an animal with oxygen	noun: body part	pulmones
Mammal	a warm-blooded vertebrate that breathes with lungs and is covered with hair/fur (at some point in its life); females produce milk to feed their live offspring	noun: classification	mamífero
metamorphosis	a change in form and often habits as an animal develops from egg to adult	noun	metamorfosis
moist	slightly wet	adjective	mojado
order	taxonomic group containing one or more families	noun: classification	orden
phylum	the major taxonomic group of animals and plants; contains classes	noun: classification	filo, filum
plumage	a bird's feathers	noun: body part	plumaje
polar bear	an endangered white-colored bear native to the Arctic	noun: animal	oso polar
porcupine	relatively large rodent with sharp bristles mingled with the fur	noun: animal	puerco espín
preen	to clean feathers with a bill, like a bird does	verb	limpiarse

Word	Definition	Part of Speech	Spanish
quill	a stiff, hollow protective spine	noun: body part	púas
Reptile	a cold-blooded, air-breathing animal with scales or plates and a backbone; most hatch from eggs (snakes, turtles, crocodiles)	noun: classification	reptil
scale/scales	small, plate-like structures that cover reptiles	noun: body part	escamas
scientific name	a formal, Latinized name applied to a taxonomic group of animals or plants	noun	nombre científico
shell	hard outer covering of some arthropods and turtles	noun: body part	caparazónm, concha
skeleton	a hard structure that supports and shapes an animal.	noun: body part	esqueleto
skin	a natural protective covering of the body; site of the sense of touch	noun: body part	piel
snail	a marine or land gastropod, usually with a spiral shell	noun: animal	caracol
snake	a legless reptile	noun: animal	serpiente, culebra
species	a group of organisms different from all others; can't breed with other groups	noun: classification	especies
tadpole	a larval frog or toad	noun: animal baby	renacuajo
talon	a sharp hooked claw, especially on a bird of prey	noun: body part	garra
thorax	the middle section of an insect, where its six legs and wings attach to the body	noun: body part	tórax
vertebrate	an animal with a backbone or spinal column	noun: classification	vertebrado
warm-blooded	having a warm, constant body temperature that doesn't depend on the outside environment	adjective	de sangre caliente
wings	the two forelimbs of most birds and of bats, like arms, that are specialized for flight	noun: body part	alas

Answers

Silly Sentences (page 8)

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

Mammal mothers produce milk to feed their young.

Fish have gills to breathe.

Most fish have scales covered with a thin layer of slime.

Most reptiles hatch from leathery eggs.

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

Gastropods do not have a backbone (invertebrate).

Most gastropods have hard shells.

Birds are the only animals that have feathers.

Birds hatch from eggs.

Amphibians have soft, moist skin.

Most amphibian hatchlings are called larvae or tadpoles and live in water, using gills to breathe.

As the amphibians grow, they develop legs and lungs and move onto land.

Adult insects have 3 body parts: head, thorax & abdomen.

Word Search (page 11)

FUR 10,D

SCALE 5,B

QUILL 5,H

HATCH 1,G

BIRD 7,G

INSECT 3,B

SKIN 4,C

FEATHER 9,A

SHELL 5,B

EGG 10,H

MAMMAL 2,C

AMPHIBIAN 7,B

COVERING 1,J

SOFT 7,A

Match the Feet Adaptations (page 22)

1. fish, 2. human, 3. polar bear, 4. porcupine, 5. frog, 6. duck

True/False Questions (page 25)

1. True: Scientists sort all living things into groups to help us understand and connect how things relate to each other.
2. False: The first big sort of living things is into Kingdoms (not Castles).
3. True: An important sorting question is whether the animal has (or had at some point in its life) a backbone.
4. False: The scientific name is generally in Latin or Greek.
5. False: Warm-blooded (endothermic) animals maintain a nearly constant body temperature, and cold-blooded (ectothermic) animals use the heat of the sun or surrounding water to warm themselves.
6. True: Mammals have hair or fur. Whiskers and quills are a type of hair.
7. True: Most fish have scales covered with a thin layer of slime.
8. True: Most gastropods have hard outer shells.
9. False: Birds are the only animals that have feathers but some birds do not fly (penguins do not fly). Bats are the only flying mammal.
10. True: Most amphibian hatchlings 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.
11. True: Mammals' hair comes in different colors or patterns.
12. True: Eyelashes are a type of hair.
13. False: Dry scales or plates protect reptiles, not amphibians, while crawling on the ground.
14. False: Hermit crabs have to look for bigger shells as they grow. The shells of turtles and snails are actually their skeletons and grow with them.
15. True: Bird feathers come in different shapes, sizes, and colors.

Animal Sizes (page 26)

Which of the listed animals is the biggest? **The polar bear.**

Which of the listed animals is the smallest? **The ladybug.**

Which animal is the closest to you in size? **That depends on how tall you are.**

What are some things that weigh about the same as a mallard duck? **A few cans of soup, some books, two 1 lb. boxes of food.**

Do you weigh more or less than an adult male porcupine? By how much? **That depends on how much you weigh.**

If a mallard duck is 24 inches long, how many feet is that? **Two.**

What Type of Covering? (pages 34-40)

These photos were obtained from the internet. Click on the animal's name to go to the link to see the photo.

Can you tell which animals live in water?

Do any of these animals live near you?

Have you ever seen any of these animals?

If so, where and what were they doing?

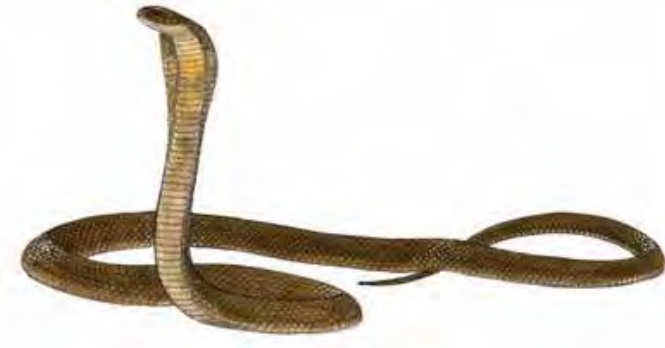
Alpaca (Mammal)



Beaver (Mammal)



Cobra (Reptile)



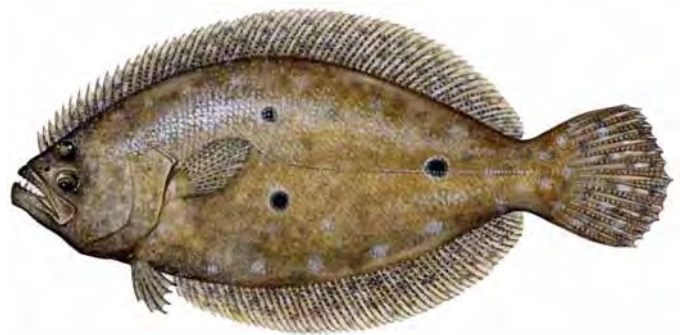
Dugong (Mammal)



Echidna (Mammal)



Flounder (Fish)



Goose (Bird)



Hyena (Mammal)



Indus River Dolphin (Mammal)



Jackal (Mammal)



Kiwi (Bird)



Lemur (Mammal)



Manta Ray (Fish)



Narwhal (Mammal)



Owl (Bird)



Platypus (Mammal)



Quokka (Mammal)



Rabbit (Mammal)



Salamander (Amphibian)



Tapir (Mammal)



Uakari (Mammal)



Vulture (Bird)



Wombat (Mammal)



Xoloitzcuintli (Xolo) (Mammal)



Yellowlegs (Bird)



Zorilla (Mammal)

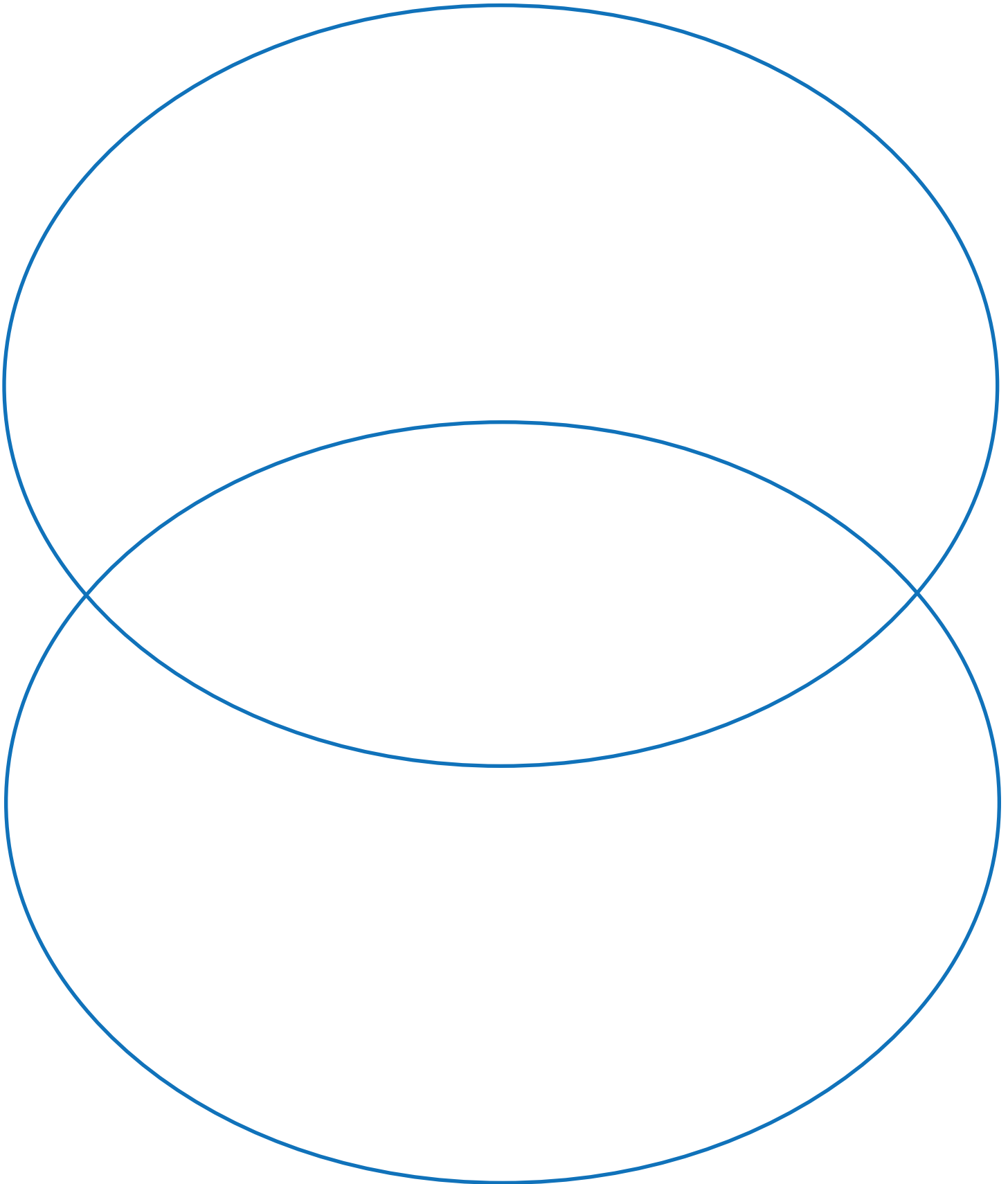


Appendix A—“What Children Know” Cards

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

Appendix B—Venn Diagram

Pick two animal classes and compare and contrast their characteristics in the Venn diagram.



Appendix C—U.S. Map



Appendix D—North America Map



Appendix E—World Map

