

Teaching Activity Guide

Compare and Contrast

Animal Classes

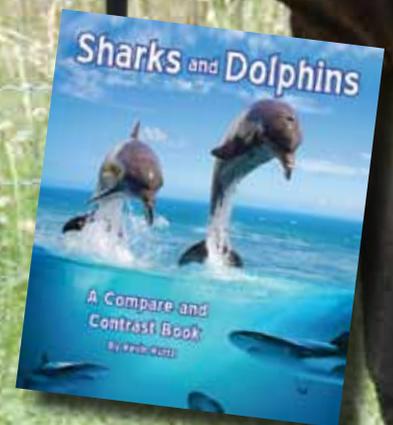
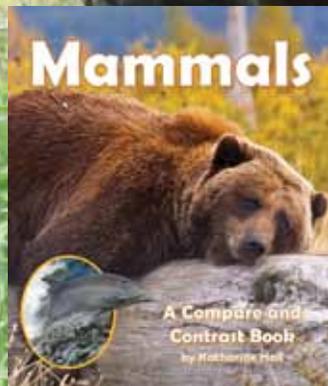
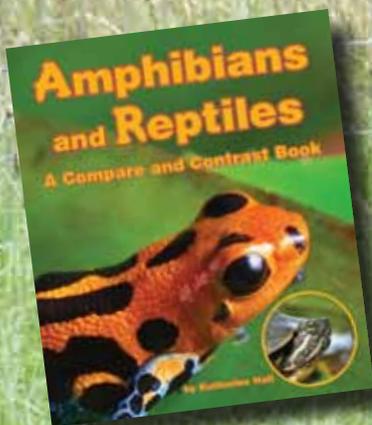
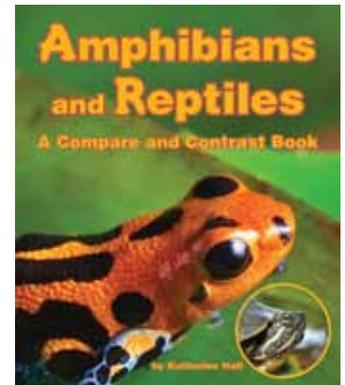
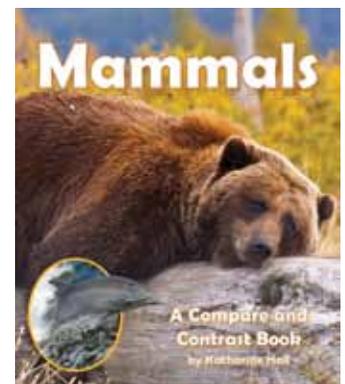


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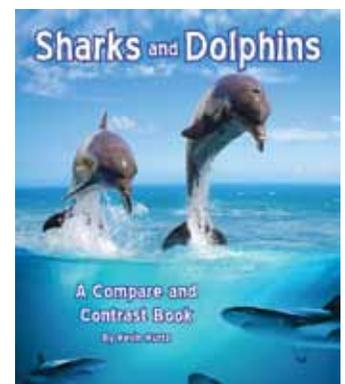
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How to Use This Activity Guide (General)

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.”

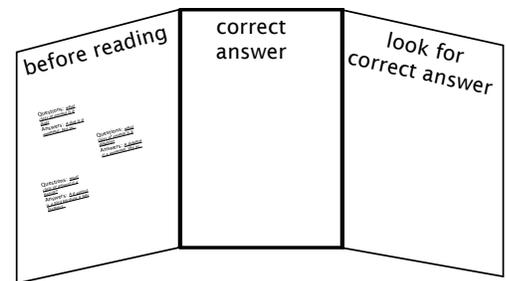
Do the children have any more questions about the subject? If so, write them down to see if they are answered in the book.

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

Amphibians and Reptiles

1. Where do reptiles live? Where do amphibians live?
2. Do reptiles feel slimy?
3. Do reptiles and amphibians lay eggs?
4. Are all reptiles venomous?
5. Do amphibians breathe through gills like fish?
6. What is the difference between reptiles and amphibians?
7. What do baby amphibians look like? What do baby reptiles look like?

Mammals

1. What is a mammal?
2. What are some things all mammals have in common?
3. Do mammals breathe air, water, or both?
4. Do mammals have fur, feathers, or scales?
5. Do all mammals live on land?
6. Are there any mammals near where you live?
7. How are mammals different from other animal classes?
8. Are there any mammals that lay eggs?

Sharks and Dolphins

1. Are sharks and dolphins in the same animal class (fish, amphibians, reptiles, mammals, birds)?
2. Do dolphins breathe oxygen from the water?
3. What do sharks and dolphins have in common?
4. How are sharks and dolphins different?
5. Which animal has more teeth over the course of its lifetime: sharks or dolphins?
6. Which of these animals is a predator: sharks, dolphins, or both?

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.

Amphibians and Reptiles

1. Can you name three reptiles? Can you name three amphibians?
2. Why do you think amphibians have moist skin and reptiles do not?
3. What is “metamorphosis”? What does a tadpole turn into during the process of metamorphosis?
4. If you were a herpetologist and studied reptiles and amphibians, what sorts of things would you study about them?
5. Why are some animals poisonous or venomous? How does this help them?
6. What are some ways to stay safe from poisonous and venomous animals?
7. What does “cold-blooded” mean?
8. What sort of habitat do amphibians live in?
9. Do you think a reptile would be able to live in an amphibian’s habitat?
10. Which is the scariest reptile or amphibian to you? Which is your favorite?

Mammals

1. In your own words, describe what makes a mammal a mammal?
2. Can you name ten different types of mammals?
3. What does “warm-blooded” mean?
4. What type of animal are you: fish, amphibian, reptile, bird, or mammal?
5. What do all mammals have on their bodies?
6. What do all mammals feed their young?

7. What do dolphins use to breathe?
8. How are platypus and echidna different from other mammals?
9. How are bats different from other mammals?
10. What are some animal signs that mammals leave behind?
11. Imagine you are a mammal that lives in the water. Write a paragraph describing how your body might be different.
12. Imagine you are a mammal that lives in the water. Write about how your life would be different and what you would do every day.
13. Pick your favorite mammal and write a description without using the mammal's name. Switch descriptions with a friend—can you tell what their favorite mammal is, based on what they wrote? Can they guess yours?
14. Create your own mammal! Make up your own animal that belongs in the mammal class. What type of fur does it have? What does it eat? How does it live?

Sharks and Dolphins

1. How many different types of sharks can you name?
2. How many different types of dolphins can you name?
3. Do you have a favorite shark?
4. In your own words, describe how sharks and dolphins are different.
5. Pretend that you are talking to someone who has never heard of or seen a shark before. How would you describe sharks to them?
6. What special sense do sharks use to find prey?
7. Imagine you have a special sense, like sharks do. What would you be able to sense and how would you use this sense?
8. How do dolphins use sound to find their prey?
9. If you could be a shark or a dolphin, which would you be?
10. Dolphins and Sharks have some body parts in common, and they have some body parts that are similar but have different names. Do you have any body parts in common with sharks and dolphins?
11. So you have any body parts that are similar to a body part on a shark or a dolphin, but have different names?

Observation Skills: Art Scavenger Hunt

Objective Core Language Arts Integration of Knowledge and Ideas: Use information gained from illustrations (e.g., maps, photographs) and the words in a text to demonstrate understanding of the text (e.g., where, when, why, and how key events occur).

Distinguish between information provided by pictures or other illustrations and information provided by the words in a text.

Explain how specific aspects of a text's illustrations contribute to what is conveyed by the words in a story (e.g., create mood, emphasize aspects of a character or setting).

Use illustrations and details in a story to describe its characters, setting, or events.

Amphibians and Reptiles

How do herpetologists catch the reptiles and amphibians they study?

In what ways do reptiles and amphibians look alike? In what ways do they look different?

Do amphibians lay only a few eggs or many at a time?

How do the tadpole and the adult frog look different?

What do you notice about the poisonous frog? How is it different from other frogs?

Does the snake's skin look rough or smooth?

Where does the snake's venom come out?

Mammals

Do human noses look more like gorilla noses or dolphin blowholes?

Look at the skeleton on the page that says "Mammals are a type of vertebrate animal." Do you think that skeleton comes from a mammal that lives on land or a mammal that lives in water? How can you tell?

How does a newborn horse look similar to its mother?

How does a newborn sea lion look like its mother? How does it look different?

Sharks and Dolphins

Can you tell which is a shark and which is a dolphin just by looking at them?

How can you tell the difference?

Do fish live in the water, on land, or both?

Do mammals live in the water, on land, or both?

Do you ever see dolphins in groups? Do you ever see sharks in groups?

Language Arts & Science: Basic Needs

Objective: Describe the basic needs of living things and how they are met.

Plants need water, oxygen, food, light and space to grow and reproduce; animals need water, oxygen, food, and shelter/space to grow and reproduce.

Re-read the story and write down any words that relate to how the plants or animal(s) meet their basic needs.

Plant/ Animal	water	oxygen	food	light	space

If not mentioned in the text, are there any indications in the illustrations of how these needs are met? Can you describe, draw, or write an explanation of how the needs are met?

Fill in the Conjunction

Objective Core Language Arts: Use frequently occurring conjunctions.

Use one of the following words to fill in the sentence so that it makes sense.

and

but

or

so

because

Baby amphibians get oxygen from the water, _____ adult amphibians get oxygen from the air.

Reptiles and amphibians are cold-blooded, _____ sometimes they stay warm by sitting in the sun.

Herpetologists study reptiles _____ amphibians.

Amphibians have moist skin _____ they live in cool, damp environments.

Poison dart frogs are brightly colored _____ predators will stay away from them.

Some snakes have venom, _____ they inject it through their teeth.

Do baby reptiles look like their parents, _____ do they go through metamorphosis?

Both reptiles and adult amphibians get oxygen from the air _____ lay eggs.

You should never touch a snake in the wild _____ it could be venomous.

Do you like reptiles _____ amphibians better?

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.

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.

Cross-Curricular Silly Sentences

Amphibians and Reptiles

1. Herpetologists _____ reptiles and amphibians. They collect them from their natural _____ in order to observe them.
verb noun
2. Because reptiles and amphibians are _____, they stay cool when they _____ in _____ environments, and they stay warm by sitting in the _____.
adjective verb adjective noun
3. Both amphibians and reptiles _____ eggs. Amphibians lay their eggs in the _____, and reptiles lay their eggs on _____.
verb noun noun
4. Baby amphibians are called _____. They then go through _____ and grow into adults.
noun noun
5. Reptiles _____ oxygen from the air from birth, but young amphibians need _____ to get oxygen.
verb noun
6. Amphibians have _____ skin, while reptiles normally have _____ skin.
adjective noun adjective
7. Some poisonous amphibians have _____ colors on their skin to warn _____ not to _____ them.
verb adjective adjective noun verb
8. Venemous snakes release _____ through their very sharp _____. They use it to _____ prey and to try to _____ against predators.
noun noun verb verb verb

Mammals

1. Herpetologists _____ reptiles and amphibians. They collect them from their natural _____ in order to observe them.
2. Because reptiles and amphibians are _____, they stay cool when they _____ in _____ environments, and they stay warm by sitting in the _____.
3. Both amphibians and reptiles _____ eggs. Amphibians lay their eggs in the _____, and reptiles lay their eggs on _____.
4. Baby amphibians are called _____. They then go through _____ and grow into adults.
5. Reptiles _____ oxygen from the air from birth, but young amphibians need _____ to get oxygen.
6. Amphibians have _____ skin, while reptiles normally have _____ skin. noun
7. Some poisonous amphibians have _____ colors on their skin to warn _____ not to _____ them.
8. Venemous snakes release _____ through their very sharp _____. They use it to _____ prey and to try to _____ against predators.

Sharks and Dolphins

Language Arts: Parts of Speech

Objective: explain the function of nouns, pronouns, verbs, adjectives, and adverbs in general and their functions in particular sentences.

The subject of a sentence tells you who or what the sentence is about. A subject is a noun. In the following sentences, draw a circle around the subject. The predicate tells you what the subject does or is. A predicate is a verb. In the following sentences, underline the predicate.

1. A herpetologist collects tadpoles from the pond.
2. Frogs, salamanders, and newts are amphibians.
3. Alligators, lizards, and turtles are reptiles.
4. Reptiles and amphibians are cold-blooded.
5. The turtle sits in the warm sun.
6. The frog laid eggs in the water.
7. This tadpole will grow into a frog.
8. Young amphibians take in oxygen from the water.
9. The salamander lives under a rock.
10. The poison dart frog has brightly colored skin.
11. Mom said, "Don't touch that snake!"
12. The crocodile has sharp teeth.
13. The turtle hid in its shell when it got scared.
14. An alligator is lying in my yard.
15. The snake attacked the mouse in the field.

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).

Amphibians and Reptiles

	A	B	C	D	E	F	G	H	I	J
1	s	n	a	k	e	l	m	a	p	d
2	a	e	r	e	p	t	i	l	e	n
3	l	f	r	o	g	u	f	l	c	r
4	a	z	f	p	a	n	u	i	l	t
5	m	p	d	q	r	k	h	g	x	u
6	a	m	p	h	i	b	i	a	n	r
7	n	r	x	s	p	w	d	t	q	t
8	d	w	e	r	v	e	n	o	m	l
9	e	o	f	a	d	y	l	r	z	e
10	r	f	w	e	g	g	s	d	b	h

reptile
alligator
frog
amphibian
salamander
snake
turtle
eggs
venom

Mammals

	A	B	C	D	E	F	G	H	I	J
1	d	c	a	n	e	w	b	o	r	n
2	b	a	t	t	n	e	e	r	i	c
3	a	r	p	a	a	m	l	s	h	a
4	a	e	d	i	r	w	e	t	a	s
5	t	h	e	v	p	a	p	r	i	t
6	f	u	r	i	o	k	h	e	r	r
7	a	m	m	l	y	t	a	h	y	o
8	t	a	s	i	d	n	n		r	u
9	o	n	b	r	e	a	t	h	e	g
10	s	e	q	u	m	o	s	t	s	e

bat
breathe
elephant
fur
gorilla
hair
human
newborn

Sharks and Dolphins

	A	B	C	D	E	F	G	H	I	J
1	r	f	b	l	o	w	h	o	l	e
2	i	d	i	s	h	w	g	c	a	p
3	v	o	w	h	a	l	e	e	o	s
4	e	l	f	m	a	m	m	a	l	h
5	r	p	a	s	t	j	o	n	s	a
6	s	h	p	r	e	d	a	t	o	r
7	f	i	s	h	o	r	s	i	a	k
8	d	n	p	g	h	y	b	w	h	a
9	e	e	l	i	t	t	e	e	t	h
10	g	i	l	l	s	n	o	f	c	e

blowhole

dolphin

fish

gills

mammal

ocean

predator

shark

teeth

Edible Sorting and Classifying Activity

Objective Core Language Arts Vocabulary Acquisition and Use: Sort common objects into categories (e.g., shapes, foods) to gain a sense of the concepts the categories represent.

Objects and materials can be sorted and described by their properties. (color, shape, size, weight and texture)

Use whole numbers, up to 10, in counting, identifying, sorting, and describing objects and experiences.*

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?

- Were there some items that fit more than one group or don't fit any group?
- If so, how did the child decide which attribute was more important?
- How are various objects similar and different?
- Was 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. (Graph provided on next page).

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

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.

10				
9				
8				
7				
6				
5				
4				
3				
2				
1				
attribute				

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		
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		
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 have more than one	walks/runs		
	crawls		
	flies		
	slithers		
	swims		
	climbs		
	hops		
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	no backbone/invertebrate		
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	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)		
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	born alive or hatch from eggs		
Metamorphis?	complete		
	incomplete		
	none		
Teeth	sharp		
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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

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

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

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.

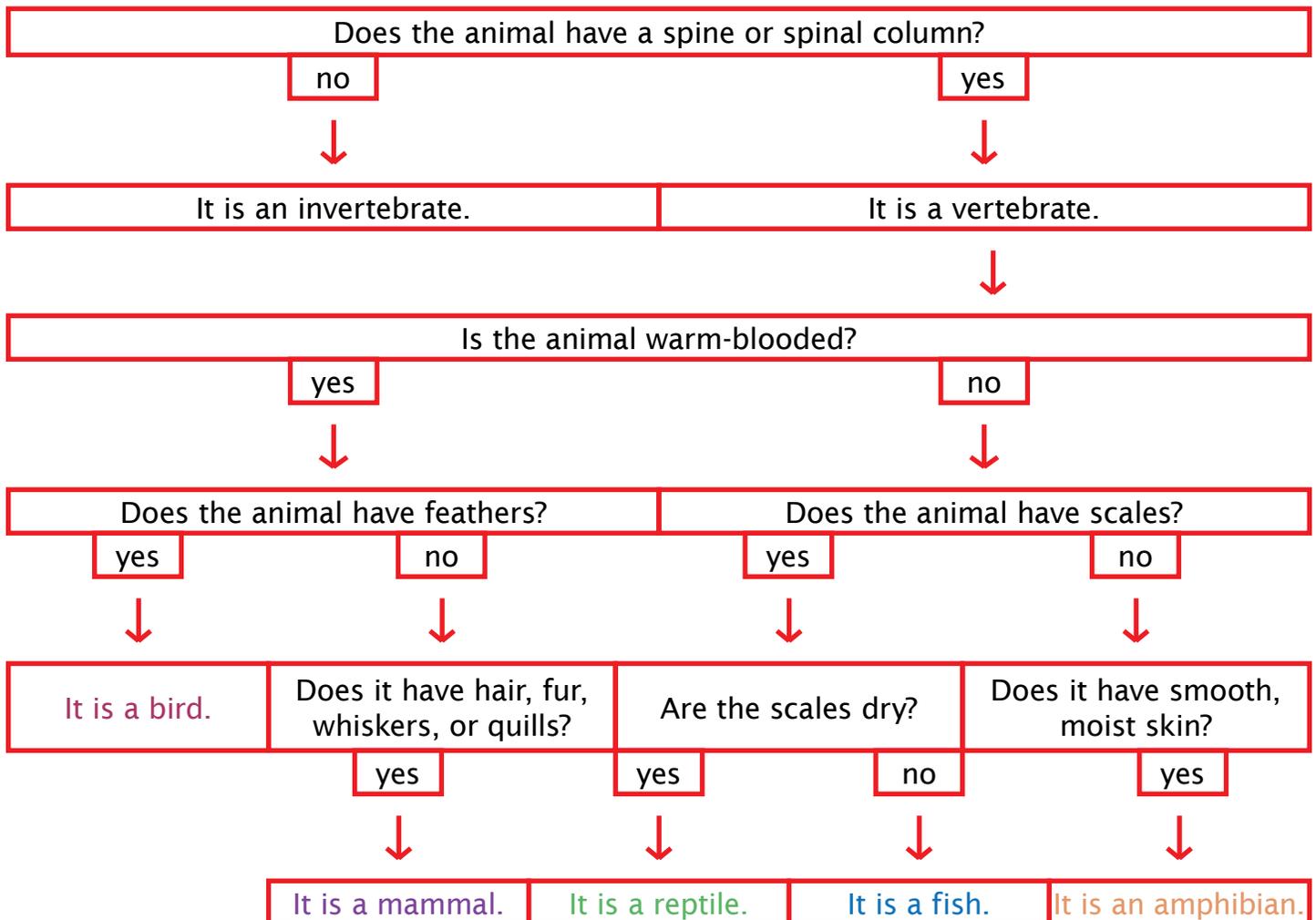
Dichotomous (Yes/No) Key

A dichotomous key helps to sort (classify) animals. These keys work by asking yes or no questions. Each answer leads to another yes or no question, until the animal class is identified. There are five classes of animals with backbones (vertebrates): fish, reptiles, amphibians, birds, and mammals. Use the information found in the book to match the animal to its classification.

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 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)	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)	

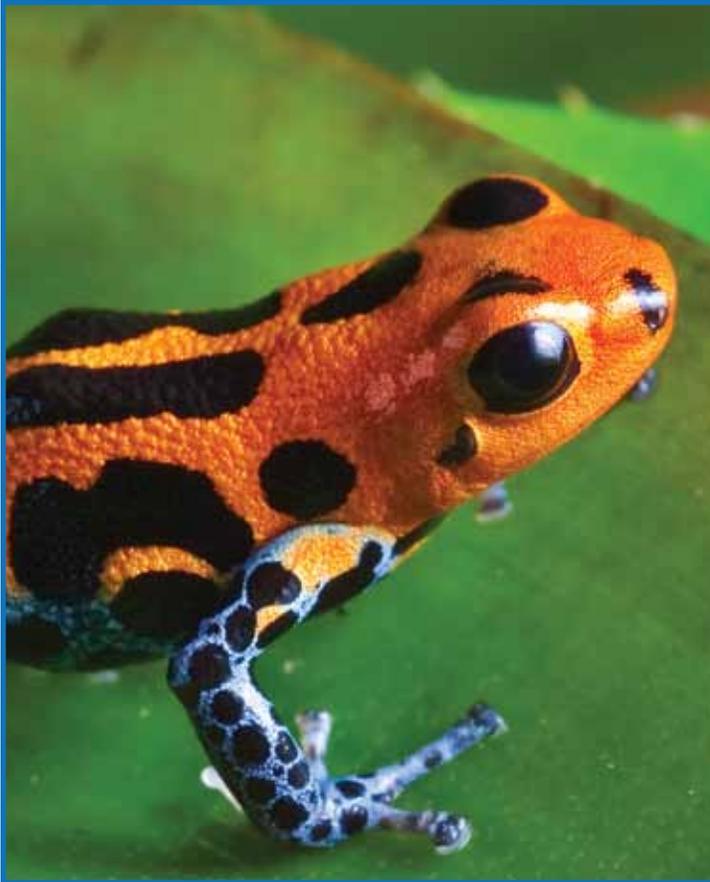
Memory Card Game: Make two copies of each of the sorting card pages and cut out the cards. Mix them up and place them face down on a table. Taking turns, each player should turn over two cards so that everyone can see. If the cards match, he or she keeps the pair and takes another turn. If they do not 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 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.

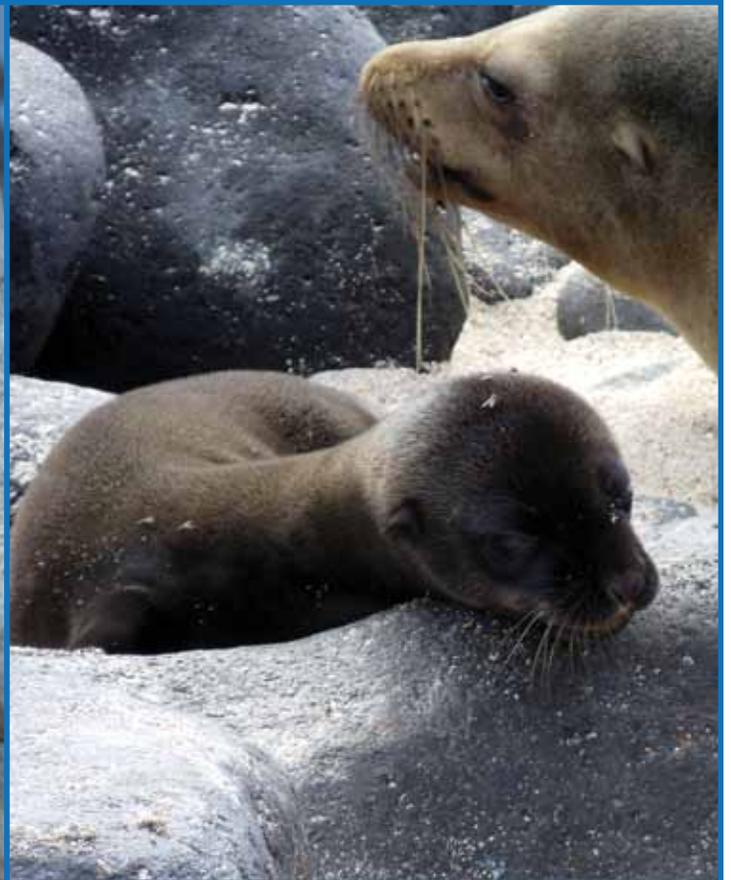
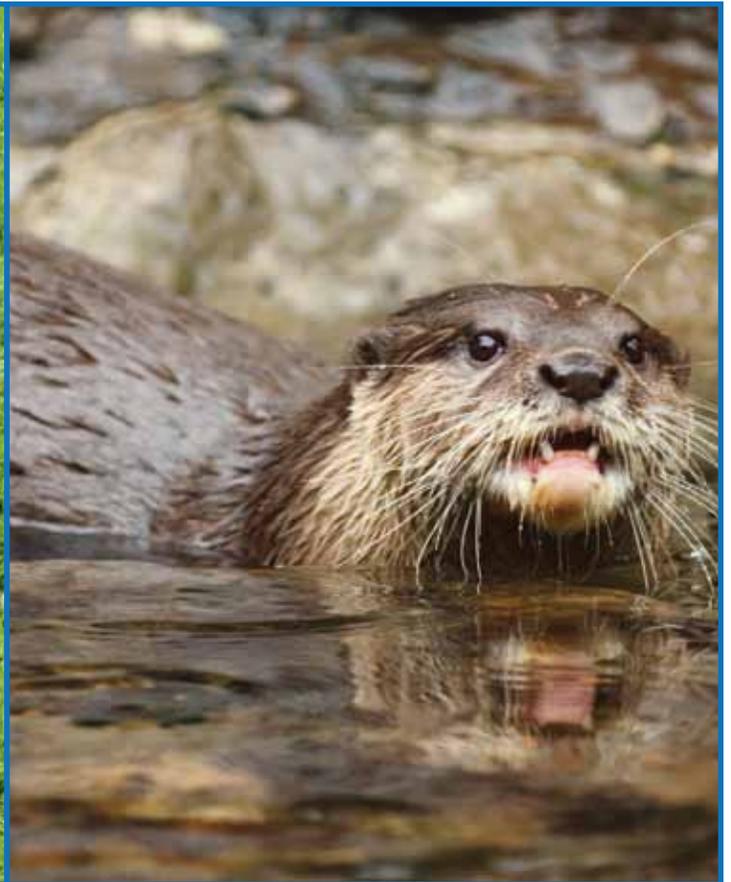
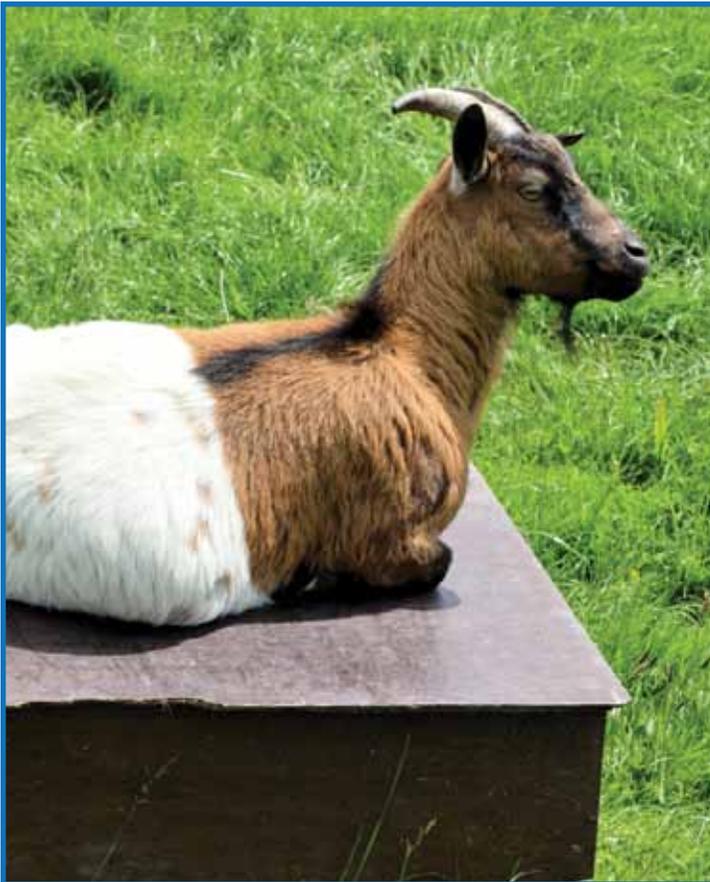
Charades: One child selects a card and must act out what the animal is so that the other children can guess. The actor may not speak but can move like the animal and imitate body parts or behaviors. For very young children, you might let them make the animal sound. The child who guesses the animal becomes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

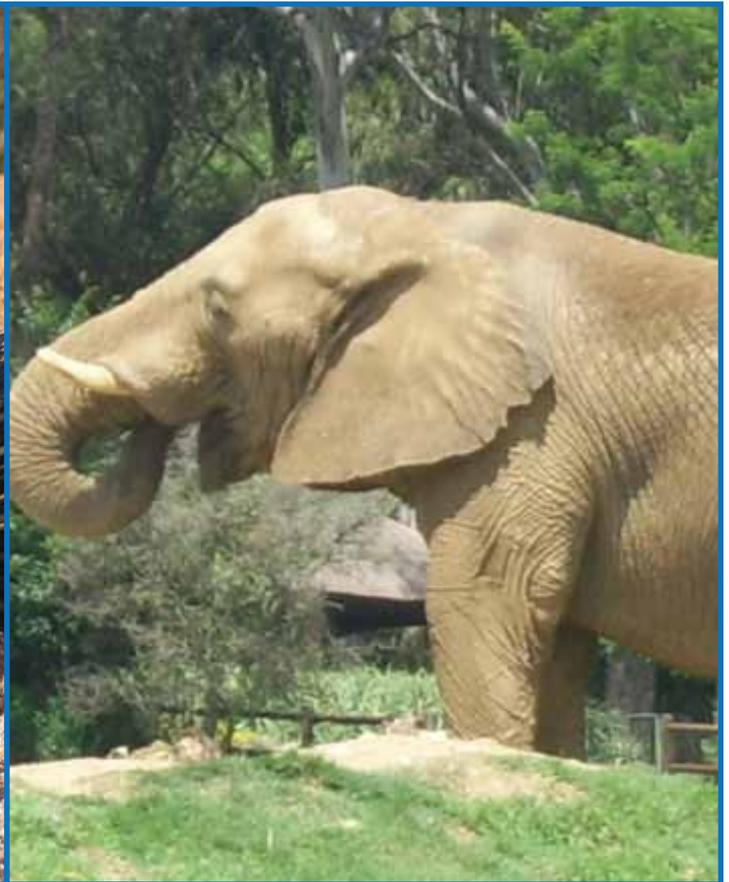


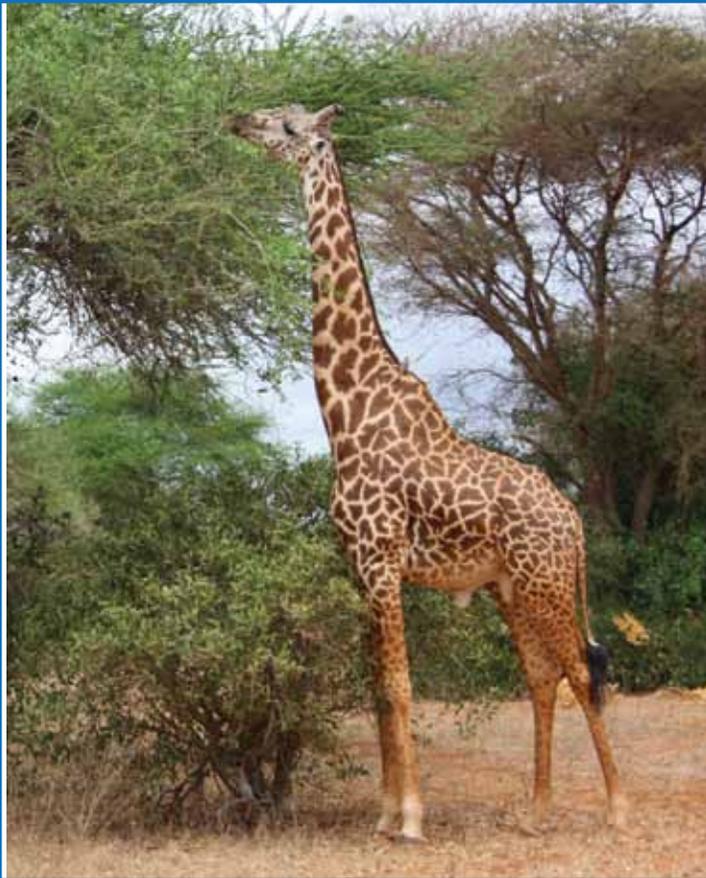














Habitats

Objective: Identify and describe physical characteristics of a place (physical features, climate, vegetation and animal life)

Identify natural characteristics of places: landforms, bodies of water, natural resources, and weather).

Geography includes the study of Earth's physical features including climate and the distribution of plant, animal, and human life.

Habitats are more than just the plants and animals that live there. They are communities of plants, animals and non-living things that interact in certain locations. There are many different types of habitats all over the world.

Some things might live in more than one kind of habitat. Can you find any plants or animals that are in more than one habitat?

What are some of the non-living things in each habitat?

- Water: freshwater or saltwater? deep water or shallow water? what kind of precipitation? How often and how much?
- Elevation above sea level
- Climate (temperate, tropical, polar)
- Rocks: how big, how many
- Soil

What are some ways that plants or animals interact with each other or non-living things?

What are some living and non-living things you see when you go outside?

What are some ways that a habitat might change?

Plants and animals (living things) live in habitats that meet all of their basic needs.

- Animals need food, water, oxygen to breathe, and a safe space for shelter and to give birth to their young.
- Plants need sunlight and heat (temperature), water, soil to grow, and a way for seeds to move (disperse).

Living things have body parts and behaviors (adaptations) that help them live in their habitats and meet their basic needs.

- Animals need oxygen to breathe. Animals get their oxygen from either the air or the water. What body parts do they use to get the oxygen? What behaviors do they have? (Mammals or reptiles that live in water must come to surface of the water to get the oxygen from the air).
- Living things have body parts or behaviors to protect themselves from predators or things that might hurt them.
- Most animals move from one place to another. Special body parts help them move in their habitat but not easily in other habitats. For example, which body parts help animals move in the air, land, or water?
- All living things need energy to grow and have body parts to help them get food.

Adaptations

Objective: Identify adaptations that help plants and animals survive and grow in their environment

Identify external parts of plants and animals

Observe and compare the structures and behaviors of different kinds of plants and animals

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

Use the illustrations in the book to see how many physical adaptations you can see for each animal.

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
body structure resembles another organism 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
hiding in an area that provides 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:

<p>Where (in what kind of habitat) does your animal live?</p>	<p>What is one of its physical adaptations and how does it help the animal live in its environment?</p>
<p>What is another of its physical adaptations and how does it help the animal live in its environment?</p>	<p>What is another of its physical adaptations and how does it help the animal live in its environment?</p>

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

Map Activity

Objective: reading maps, geography, know that plants and animals live in different locations

Pick your favorite animal from these books and look online to find where that animal lives. The places an animal lives can be called its range. Search for your animal's range map. Using the maps you find online as a reference, color the areas where your animal lives on the blank map (in appendix).

Does your animal live in the same state or province as you?

Can you find two animals that live in the same area? Do you think those animals ever interact in the wild? Why or why not?

There are many different types of habitats on land in the ocean. Pick your favorite habitat (mountains, desert, tundra, rainforest, etc) and search online for a map of where that habitat is found. Color in your habitat on the maps in the appendix. Do any of the animals in these books live in the habitat you picked?

Science Journal (Vocabulary)

Reptile

my definition

my drawing

Amphibian

my definition

my drawing

Metamorphosis

my definition

my drawing

Poisonous

my definition

my drawing

Mammal

my definition

my drawing

Milk

my definition

my drawing

Born

my definition

my drawing

Fur

my definition

my drawing

Fish

my definition

my drawing

Fin

my definition

my drawing

Teeth

my definition

my drawing

Predator

my definition

my drawing

Math Cards

Objective Core Mathematics Classify objects into given categories; count the numbers of objects in each category and sort the categories by count. (up to 10)

Solve addition and subtraction word problems, and add and subtract within 10, e.g., by using objects or drawings to represent the problem.

Use numbers, up to 10, to place objects in order, such as first, second, and third, and to name them

For any number from 1 to 9, find the number that makes 10 when added to the given number, e.g., by using objects or drawings, and record the answer with a drawing or equation.

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
- 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, they place 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, they must give the person their card.
- If the person asked doesn't have that card, they say, "Go fish."
- The player then draws the top card from the draw pile.
- If they happen to draw the requested card, they show 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 their hand or the draw pile runs out. The winner is the player who then has the most sets of fact families.

1



2



3



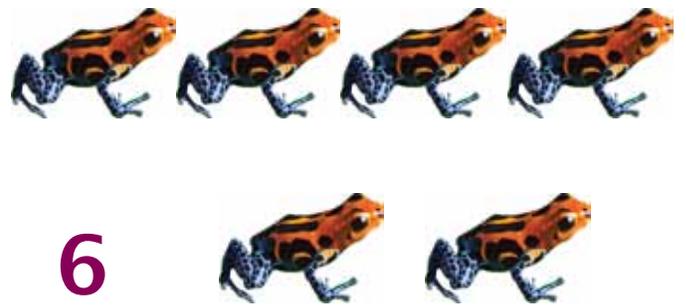
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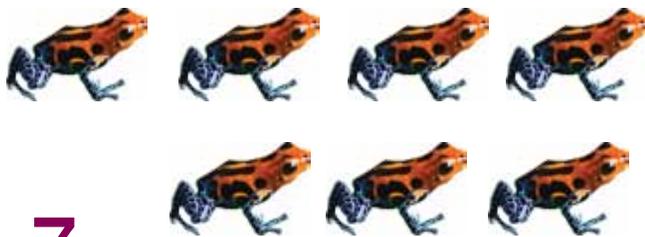
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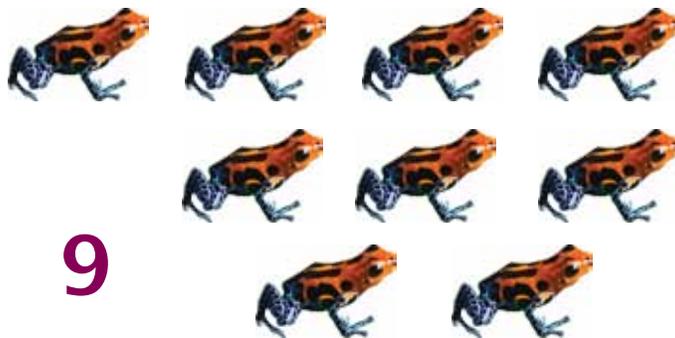
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8



9



Answers

Conjunctions:

Baby amphibians get oxygen from the water, **but** adult amphibians get oxygen from the air.

Reptiles and amphibians are cold-blooded, **so** sometimes they stay warm by sitting in the sun.

Herpetologists study reptiles **and** amphibians.

Amphibians have moist skin **because** they live in cool, damp environments.

Poison dart frogs are brightly colored **so** predators will stay away from them.

Some snakes have venom, **and** they inject it through their teeth.

Do baby reptiles look like their parents, **or** do they go through metamorphosis?

Both reptiles and adult amphibians get oxygen from the air **and** lay eggs.

You should never touch a snake in the wild **because** it could be venomous.

Do you like reptiles **or** amphibians better?

Silly Sentences:

1. Herpetologists study reptiles and amphibians. They collect them from their natural habitat in order to observe them.
2. Because reptiles and amphibians are cold-blooded, they stay cool when they live in cool environments, and they stay warm by sitting in the sun.
3. Both amphibians and reptiles lay eggs. Amphibians lay their eggs in the water, and reptiles lay their eggs on land.
4. Baby amphibians are called tadpoles. They then go through metamorphosis and grow into adults.
5. Reptiles breathe oxygen from the air from birth, but young amphibians need water to get oxygen.
6. Amphibians have moist skin, while reptiles normally have dry scales.
7. Some poisonous amphibians have bright colors on their skin to warn predators not to eat them.
8. Venomous snakes release venom through their very sharp teeth. They use it to attack prey and to try to defend against predators.

Parts of Speech:

Subject

Predicate

1. A herpetologist collects tadpoles from the pond.
2. Frogs, salamanders, and newts are amphibians.
3. Alligators, lizards, and turtles are reptiles.
4. Reptiles and amphibians are cold-blooded.
5. The turtle sits in the warm sun.
6. The frog laid eggs in the water.
7. This tadpole will grow into a frog.
8. Young amphibians take in oxygen from the water.
9. The salamander lives under a rock.
10. The poison dart frog has brightly colored skin.
11. Mom said, "Don't touch that snake!"
12. The crocodile has sharp teeth.
13. The turtle hid in its shell when it got scared.
14. An alligator is lying in my yard.
15. The snake attacked the mouse in the field.

Word Search:

	A	B	C	D	E	F	G	H	I	J
1	s	n	a	k	e			a		
2	a		r	e	p	t	i	l	e	
3	l	f	r	o	g			l		
4	a							i		t
5	m							g		u
6	a	m	p	h	i	b	i	a	n	r
7	n							t		t
8	d				v	e	n	o	m	l
9	e							r		e
10	r			e	g	g	s			

	A	B	C	D	E	F	G	H	I	J
1				n	e	w	b	o	r	n
2	b	a	t				e			
3							l		h	
4							e		a	
5		h					p		i	
6	f	u	r				h		r	
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8		a					n			
9		n	b	r	e	a	t	h	e	
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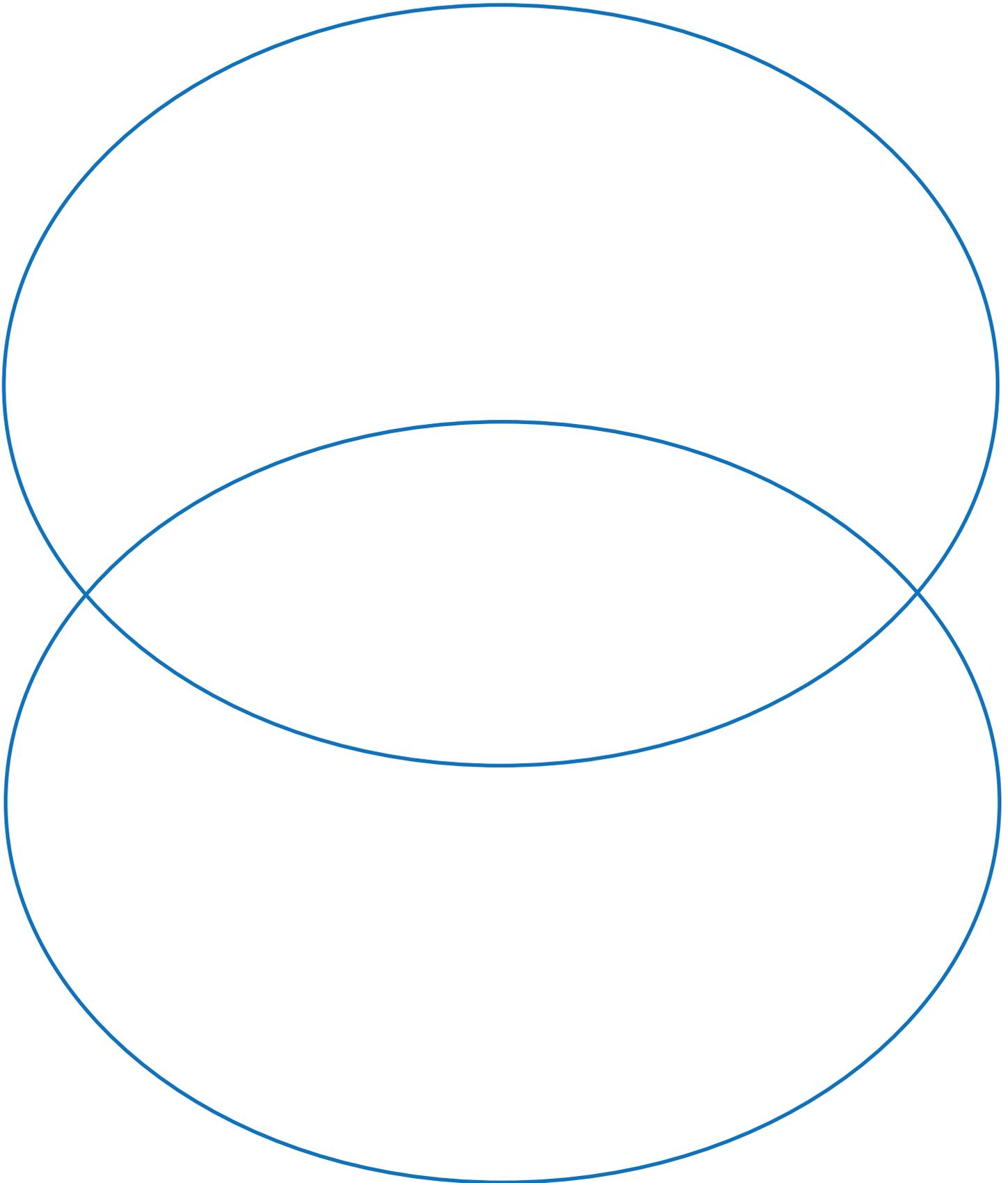
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1			b	l	o	w	h	o	l	e
2		d						c		
3		o						e		s
4		l		m	a	m	m	a	l	h
5		p						n		a
6		h	p	r	e	d	a	t	o	r
7	f	i	s	h						k
8		n								
9						t	e	e	t	h
10	g	i	l	l	s					

Appendix A—“What Children Know” Cards

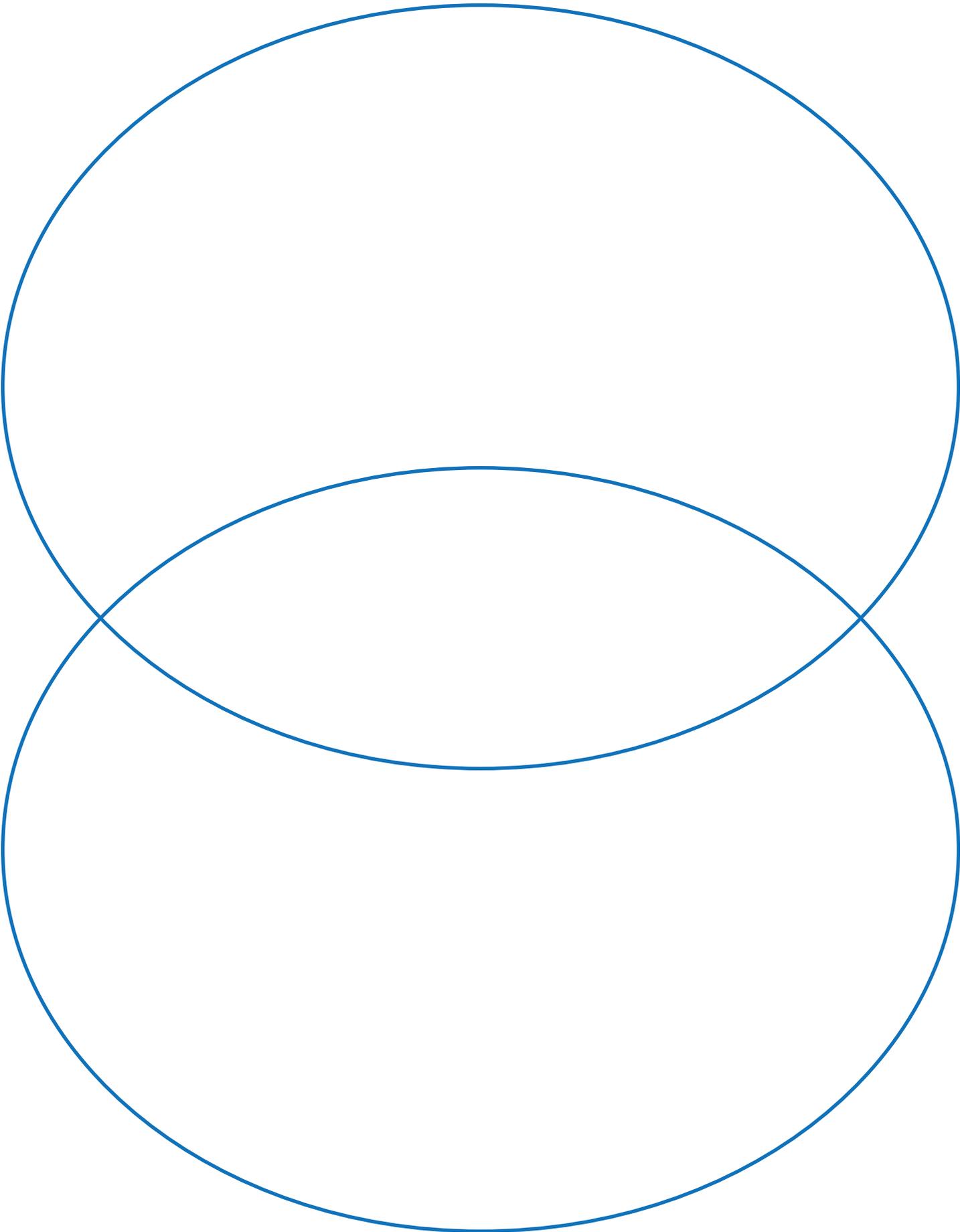
<p>Question:</p> <p>My answer:</p> <p>This information is correct! This information is not correct; can you find the correct information?</p>	<p>Question:</p> <p>My answer:</p> <p>This information is correct! This information is not correct; can you find the correct information?</p>
<p>Question:</p>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

Appendix B—Venn Diagram

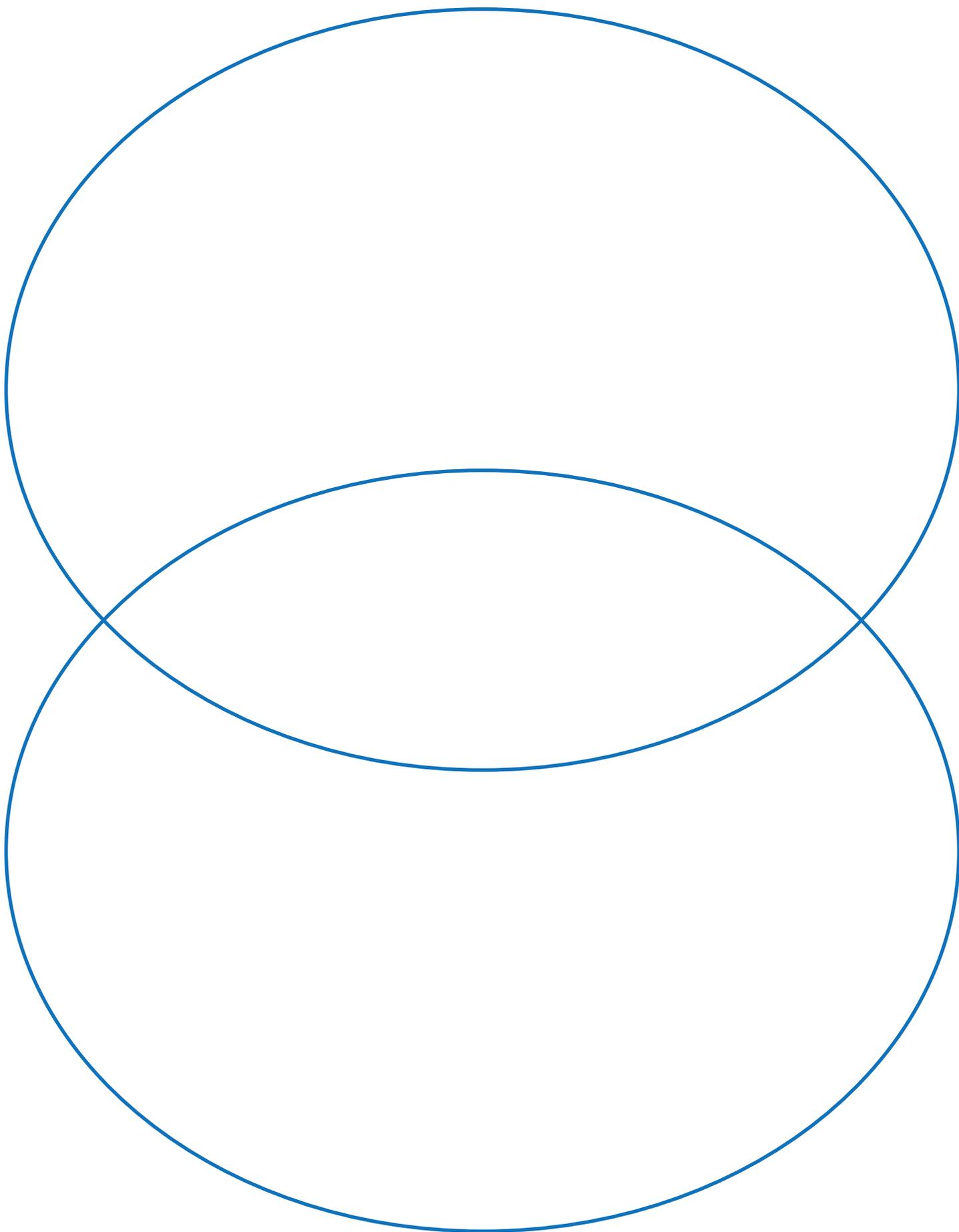
Compare and contrast reptiles and amphibians.



Compare and contrast mammals that live on land and in the water.



Compare and contrast sharks and dolphins.



Appendix C—U.S. Map



Appendix D—North America Map



Appendix E—World Map



Appendix F—Vocabulary Cards

herpetologist

cold-blooded

tadpole

metamorphosis

scales

venom

warm-blooded

fur

vertebrate

blowhole

live young

animal tracks

gills

lungs

fin

fish

mammal

teeth