

Teaching Activity Guide

DEEP

IN THE DESERT

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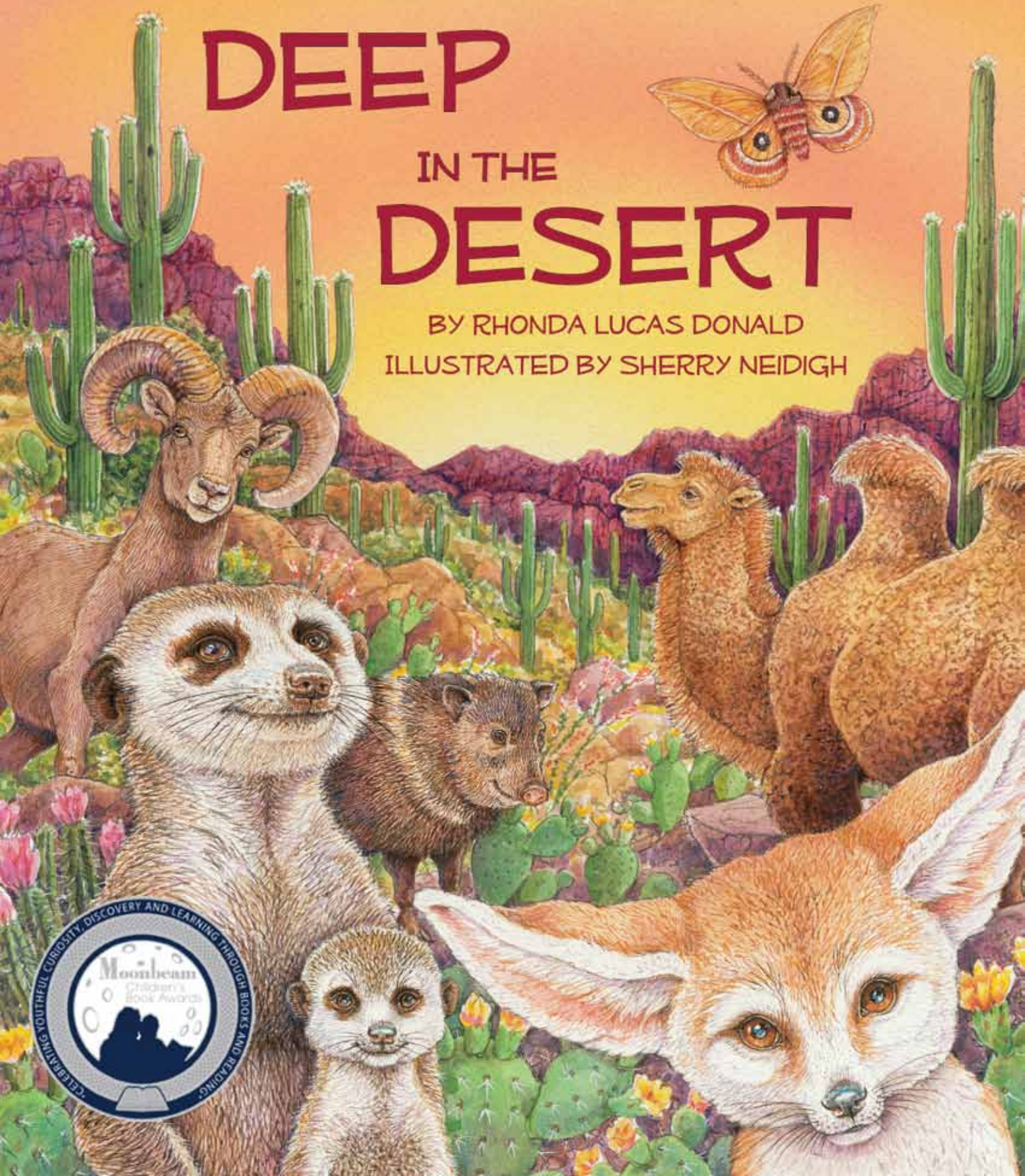


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How to Use This Activity Guide

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 words 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 get to ask each person one “yes/no” question to try to guess their animals. If a child does not know the answer, they should say they 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, 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.”

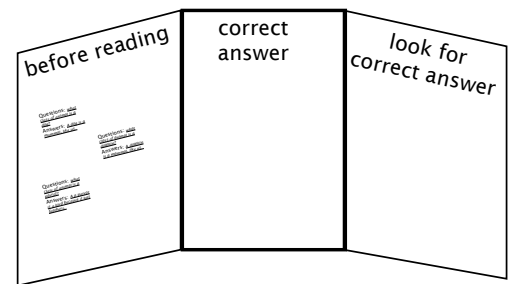
Do the children have any more questions about the subject? If so, write them down to see if they are answered in the book.

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 do you think of when you hear the word “desert?”

Do you think that all deserts are hot?

Do you think camels live in all deserts?

Where in the world are deserts found?

What kinds of animals do you think live in a desert?

What kinds of plants do you think live in a desert?

How do plants and animals survive desert conditions?

Can you name any deserts? What desert is found in the United States?

Thinking It Through & Writing Prompts

Write a song about a desert.

Can you think of another title for the book?

Did the author use puns or any play on words? Can you think of any others?

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

Do any of the animals remind you of animals you have seen before? If so, how?

Do any of the characters remind you of someone that you know? If so, how?

Describe the location of where this story took place. Can you find such a location on a map or globe?

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?

What, if anything, can be inferred from the text?

Pause during second readings and ask the child/children if they remember what happens next.

Comprehension Questions

Are all the animals in the story living in the same desert?

What animals only come out at night and why?

How do bats help cacti grow?

How do the meerkats know when there is danger?

Where is the desert tortoise resting?

Why are the fennec fox's ears so big?

What defenses do thorny devil and Gila monster use to warn off predators?

Why does the ostrich dance?

Does the camel only live in hot, sandy deserts?

How do the javelinas communicate with each other?

What does the tarkawara eat?


Why do cacti have spikes?

Poems and Songs

Deep in the Desert


(Down in the Valley)

Piano




Deep in the des - ert, down in a mine, bats are all sleep - ing,
Bats love the nec - tar of cac - tuses tall. Sip from the flow - ers;
Bats love the nec - tar, but don't you know, cac - tus - es need bats
Deep in the des - ert, down in a mine, bats are all sleep - ing,

Pno.



'til it is time. Time for the sun - set; time to go dine.
vis - it them all. Vis - it them all, bats; vis - it them all.
to help them grow. Flow - er to flow - er, pol - len they sow.
'til it is time. Time for the sun - set; time to go dine.

Pno.



Bats are all sleep - ing, 'til it is time.
Sip cac - tus flow - ers; vis - it them all.
Cac - tus - es need bats to help them grow.
Bats are all sleep - ing, 'til it is time.

Over in the Desert

(Over in the Meadow)

Piano 

O-ver in the des-ert, in the sun in the sand, lives a lit-tle group of
O-ver in the des-ert, in the sand in the sun, hunt the lit-tle clan of
O-ver in the des-ert, bab-y meer-kats play. The pups all chase and tum-

Pno. 

meer-kats you can call a clan. "Dig!" said a meer-kat. "We
meer-kats—that is all but one. "Bark!" says the meer-kat. "Go
ble; it's the meer-kat way. "Pounce!" says a pup. "We

Pno. 


dig!" said the band. We dig a shad-y bur-row in the sun
hide, ev-ery one." A bark means there is dan-ger in the sand
pounce!" they all say. So while their sit-ter watch-es, ba-by meer-


Pno. 

in the sand.
in the sun.
kats play.

Desert Tortoise

(Baa, Baa Black Sheep)

Piano 
Des - ert tor - toise, may I come in - side? The sun is hot. I need to hide.


Pno. 
Come in my bur - row for a sha - dy rest. There is room for ev - ery - one, so

Pno. 
please be my guest. Des - ert tor - toise, may I come in - side? The sun is hot. I

Pno. 
need to hide.

You're A Fennec Fox

(Do Your Ears Hand Low?)

Piano 

Do you have big ears? Do they help with what you hear? Can they
You're a fen - nec fox. Dig a den a - mong the rocks. Sleep in -

Pno. 

turn from side to side? Can you hear both far and wide? Do they
side through-out the day. Keep the boil - ing heat at bay. When the

Pno. 

keep you nice and cool, like a clear re - fresh - ing pool? Do you have big
moon and stars come out, then it's hunt - ing time, no doubt. You're a fen - nec

Pno. 

ears? Spoken: *If so then . . .*
fox.

Thorny Devil

(Yankee Doodle)

Piano Thorn - y dev - il on the sand, soak - ing up the sun.
Thorn - y dev - il, watch your back; fal - con shad - dow warns. You

Pno. Lit - tle ant goes march - ing by; you eat him just for fun.
tuck your head with lit - tle dread— who'd eat a bunch of thorns?

Pno. Thorn - y dev - il on the sand, why are you so prick - ly? Some may think you
Thorn - y dev - il on the sand, why are you so prick - ly? Some may think you

Pno. look a fright and run off ver - y quick - ly.
look a fright and run off ver - y quick - ly.

Hiss, Gila Monster

(Pop, Goes the Weasel)

Piano High a - top a des - sert rock waits the Gi - la mon - ster. A
Near a nest of Gam - ble's quail stalks the Gi - la mon - ster. The
Sprawled be - neath a prick - ly pear lies the Gi - la mon - ster. His

Pno. hawk flies by and cat - ches his eye. Hiss, Gi - la mon - ster.
quail has left her eggs all a - lone. Chomp, Gi - la mon - ster.
color's a clue to stay far a - way. Poison Gi - la mon - ster.

An Odd Birdy That Never Could Fly

(An Old Woman Who Swallowed a Fly)

Piano 

There is an odd bird - y that nev - er could fly. I won - der why the

Pno. 

bird can-not fly. Do you know why? 3X
There is a fast bird - y that
There is a tall bird - y that's
There is a big bird - y that

Pno. 

runs on strong legs. You can't be - lieve the size of its eggs. It
big - ger than Dad. One kick can knockout a li - on it's said. It
does a cool dance. He hopes the girls will give him a chance. He

Pno. 

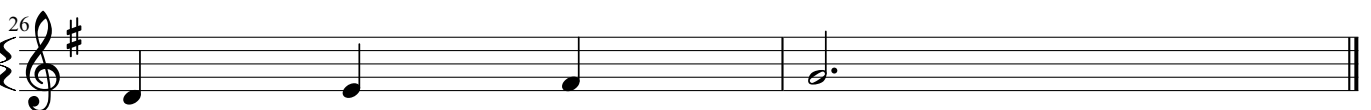
runs on strong legs be - cause it can't fly. I won - der why the
kicks with strong legs al - though it can't fly. I won - der why the
danc - es and bows, but still he can't fly. I won - der why the

Pno. 

bird can-not fly. Do you know why? This big run-ing bird - y an
bird can-not fly. Do you know why?
bird can-not fly. Do you know why?

Pno. 

os-trich is he. And fly-ing is simply not his cup of tea. Now you know why

Pno. 

the birdy can't fly.

The Camel With Two Humps

(The Itsy, Bitsy Spider)

Piano 


The cam - el with two humps walks far a - cross the plain.
 The cam - el with two humps has(a) shag - gy coat of fur.
 The cam - el with two humps has lash - es long and thick.

Pno. 

Where the cam - el lives there's hard - ly an - y rain. When the rain does
 In the win - ter snow she real - y needs it burr! In the sum - mer
 In the blow - ing sand, they real - y do the trick. Lash - es long and

Pno. 

fall, the cam - el drinks her fill, and the cam - el with two
 heat, she sheds it off a - gain. And the cam - el with two
 thick block out the blow - ing sand, and the cam - el with two

Pno. 

humps walks far a - cross the hill.
 humps walks far a - cross the plain.
 humps walks far a - cross the land.

I'm a Javelina

(I'm a Little Teapot)

Piano 

I'm a ja - ve - li - na, short and stout. Here are my hooves, and
I'm a ja - ve - li - na; I love to roam the sands of the West that
I'm a ja - ve - li - na. I grunt and snort. That's how we talk; it's

Pno. 

here is my snout. I will eat a cac - tus, not a trout. It's
I call home. Roam-ing with my bud - dies a herd are we. If
not for sport. Grunt-ing ja - ve - li - nas, what a sight. We

Pno. 

des - sert life for me no doubt.
coy - ote prowls, we all will flee.
sleep by day and roam at night.

Tarkawara

(Kookaburra)

Piano 

Tar - ka - wa - ra hops on the des - ert sand. Eag - le tries to catch him
Tar - ka - wa - ra eats what he can find. Bugs or seeds or grass— he
Tar - ka - wa - ra naps in a den by day. Out of the hot sun, he

Pno. 


if he can. Hop, tar-ka-wa-ra! Hop, tar-ka-wa-ra! Hop fast as you
does not mind. Eat, tar-ka-wa-ra! Eat, tar-ka-wa-ra! Eat what you can
stays a - way. Sleep, tar-ka-wa-ra! Sleep, tar-ka-wa-ra! Dream the day a -


Pno. 

can.
find.
way.

Out in the Desert


(Over the River)

Piano  3X

1.Out in the des-ert it's dry and hot, but cac - tus-es grow tall. With-
2.Out in the des-ert it's dry and hot, but cac - tus-es have spikes. They
3.Out in the des-ert it's dry and hot, but cac - tus-es are food 

Pno.  3

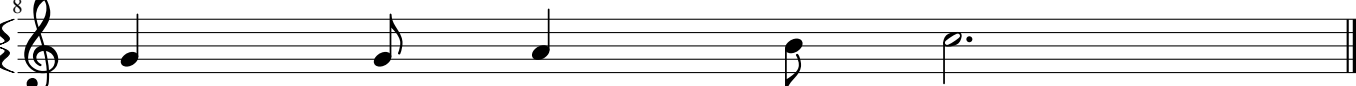
out an - y leaves, they don't seem to need to
get in the way, keep crit - ters at bay. They
bugs and to birds and ev - en to herds of

Pno.  4

have them af - ter all— aw! 4.Out in the des-ert it's dry and hot, and
get too close it hurts— yikes!
big - horn sheep, it's true— ooo!

Pno.  6

cac - tus-es stand high. They cov - er the land and hold down the sand and

Pno.  8

reach up to the sky.

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. If you do not have classroom sets of the book, it is helpful to project an illustration on a whiteboard. 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

1. Deserts are on all seven _____s including Antarctica.
noun
2. On average, a _____ gets less than 10 to 12 inches (25 – 30 cm) of rain a year.
noun
3. Cold winter deserts, also called _____ deserts, have cold winters with some snow and long, dry, hot _____s.
adjective
noun
4. Plants and animals that live in the desert have special body parts or behaviors, called _____s , that help them _____ without very much water.
noun
verb
5. Many desert animals spend their days hiding from the hot sun in a _____ dug by the desert tortoise.
noun
6. The camel can close its _____s so sand doesn't blow up its nose.
noun
7. _____s between the thorns along the _____'s back carry rainwater and dew to its mouth.
noun
noun
8. We use the Gila monster's _____ in a medicine to treat diabetes.
noun
9. Javelinas have a ring of light-colored _____ around their necks that looks a bit like a _____.
noun
noun
10. Male ostriches _____ to attract females.
verb

Word Families and Rhyming Words

Word families are groups of words that have some of the same combinations of letters in them that make them sound alike...or rhyme. For example ad, add, bad, brad (Brad), cad, Chad, clad, dad, fad, gad, glad, grad, had, lad, mad, pad, plaid (silent 'i'), sad, shad, and tad all have an "ad" letter combination and rhyme.

- Find and write down rhyming words in the poem.
- Are they in the same word family?
- If so, circle the combination of letters that are the same.
- Can you think of more words in the word family?

Rhyming words are:

and

They are / are not from the same word family.

Other words that rhyme are:

Rhyming words are:

and

They are / are not from the same word family.

Other words that rhyme are:

Rhyming words are:

and

They are / are not from the same word family.

Other words that rhyme are:

Rhyming words are:

and

They are / are not from the same word family.

Other words that rhyme are:

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

DESERT
CACTUS
MEERKAT
OSTRICH
CAMEL
JAVELINA
HABITAT
SAGUARO
SAHARA
TORTOISE

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		
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		
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		
Metamorphis?	complete		
	incomplete		
	none		
Teeth	sharp		
	flat		
	no teeth (bill/beak)		
Food	plant eaters (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		
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		
Metamorphis?	complete		
	incomplete		
	none		
Teeth	sharp		
	flat		
	no teeth (bill/beak)		
Food	plant eaters (herbivore)		
	meat eater (carnivore)		
	both (omnivore)		

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

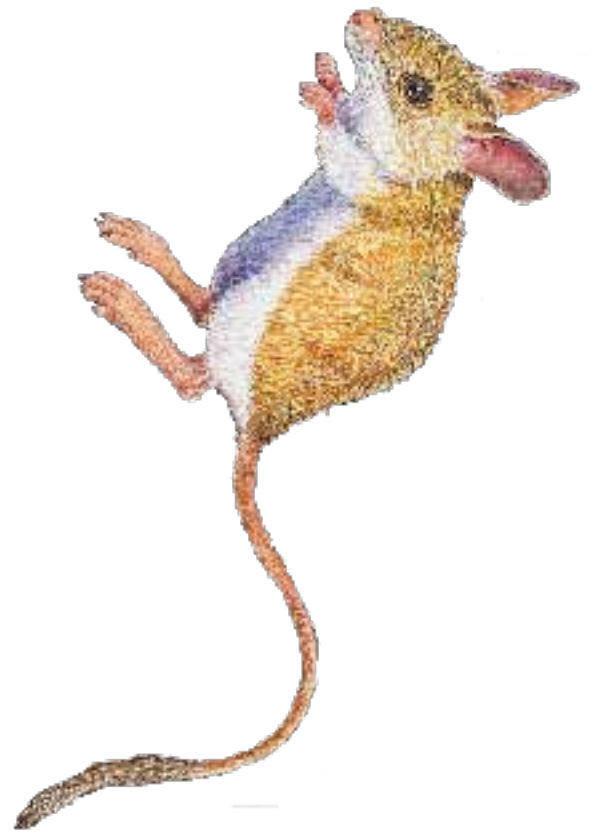
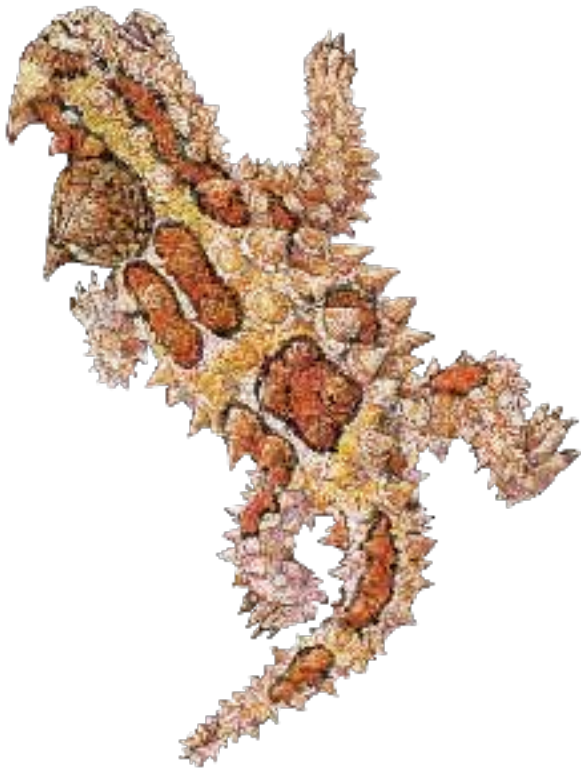
Amphibians:

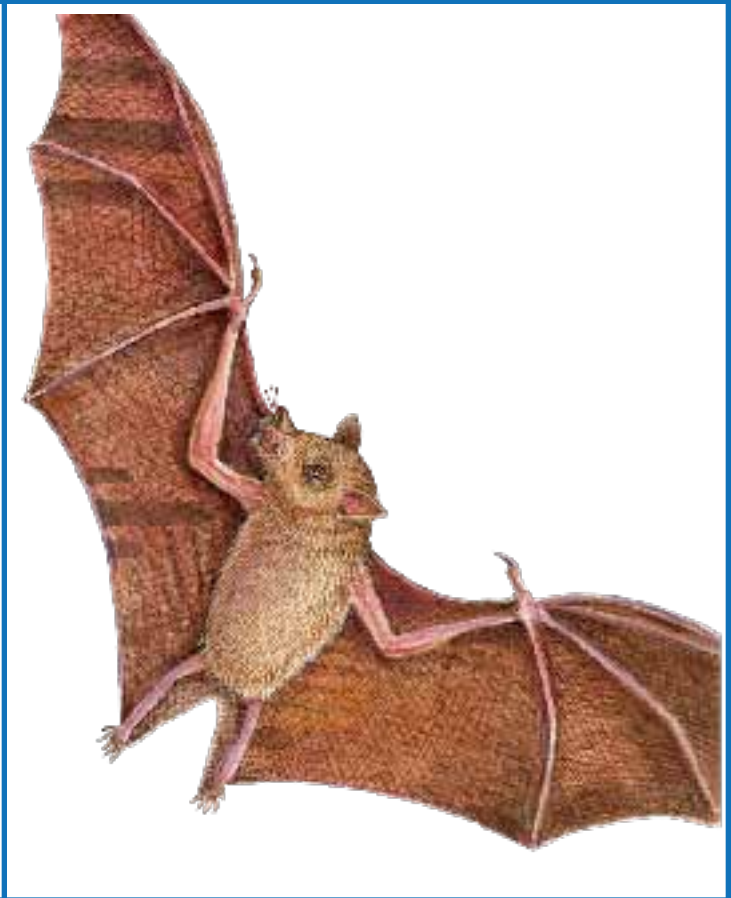
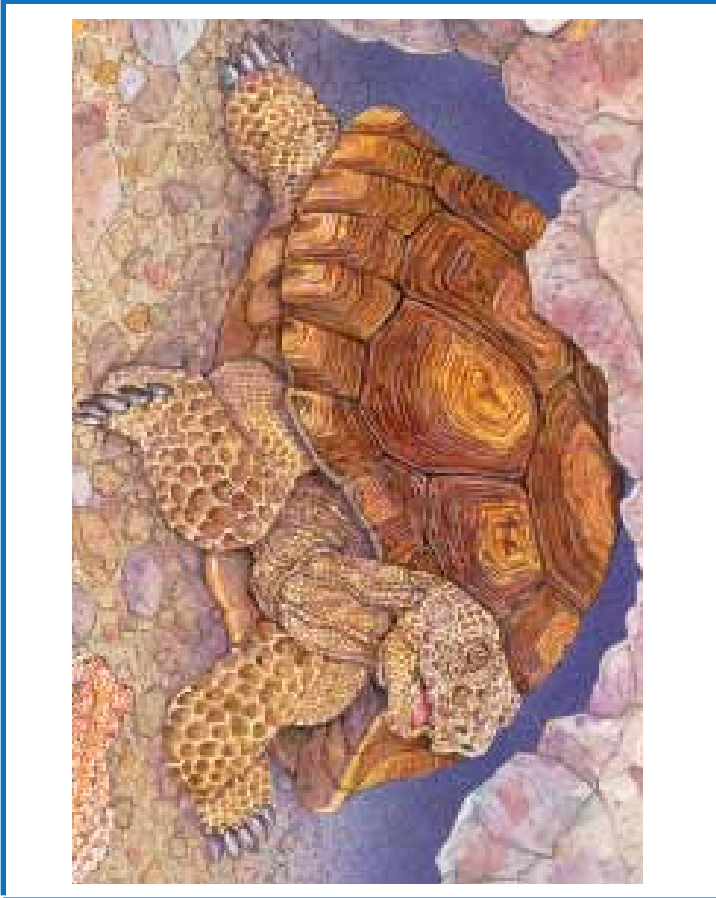
soft, moist skin
backbone (vertebrate)
inside skeleton (endoskeleton)
most hatchlings (jellylike eggs) are called larvae or tadpoles and live in water, using gills to breathe
as they grow, they develop legs and lungs and move onto land
cold-blooded

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

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:

<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?

Science Journal

Desert

my definition

my drawing

Habitat

my definition

my drawing

Polar

my definition

my drawing

Nocturnal

my definition

my drawing

Learned or Inherited?

Learned behavior: Behavior that is obtained by observing, practicing, or experimenting.

Inherited behavior: Behavior received from parents and ancestors through genetics; instinct; born knowing it.

Circle whether you think the behavior is learned or inherited:

- | | | |
|---|---------|-----------|
| 1. A dog barks, a cat meows, a duck quacks. | learned | inherited |
| 2. A dog sits when told to. | learned | inherited |
| 3. A human baby cries. | learned | inherited |
| 4. Animals migrate (birds, butterflies, whales). | learned | inherited |
| 5. People smile or dogs wag tails when happy. | learned | inherited |
| 6. Animals mark their territory (scratching, etc.). | learned | inherited |
| 7. Birds build nests. | learned | inherited |
| 8. A human can read. | learned | inherited |
| 9. A child rides a bike. | learned | inherited |
| 10. A human speaks a language (English, Spanish, etc.). | learned | inherited |
| 11. Thorny Devils curl up when scared. | learned | inherited |
| 12. The lesser long-nosed bats eat cactus blooms. | learned | inherited |
| 13. Desert tortoises dig burrows. | learned | inherited |
| 14. Male ostriches dance to attract mates. | learned | inherited |
| 15. Meerkats bark when there is danger. | learned | inherited |
| 16. The tarkawara sleeps during the heat of the day. | learned | inherited |

True or False?

Circle whether you think the statement is true or false:

1. T/F Coastal deserts have long, cold winters and can have snow- or ice-covered ground.
2. T/F Cacti can hold water in their stems (trunks).
3. T/F The bactrian camel's humps store water to give it energy when it is dry.
4. T/F Deserts are found on all seven continents, including Antarctica.
5. T/F The Gila monster stores fat and water in its tail, so it only has to eat three or four times a year.
6. T/F The lesser long-nose bat eats the pollen of cactus flowers.
7. T/F On average, a desert gets more than 10 to 12 inches of rain a year.
8. T/F Ostrich eggs are about the size of a small cantaloupe.
9. T/F All desert animals are nocturnal in order to escape the heat.
10. T/F Aestivation is when an animal only goes out in the morning and early evening when it is cool.
11. T/F The meerkat gets water from eating prickly pear cactuses (spines and all).
12. T/F The tarragana is found in the deserts of Australia.
13. T/F A "rain shadow effect" is when high mountains block precipitation from reaching the area, causing a desert to form.
14. T/F Bighorn sheep can only be found in desert habitats.
15. T/F The fennec fox's huge ears help to keep it cool like 'air conditioners'.

Measuring (comparing and contrasting)

Animals come in all shapes and sizes. Some animals are so small, 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

Animal	Height/length	Weight
Ostrich (male)	6 - 9 feet	140 - 290 lb.
Desert Tortoise	10 - 14 inches	8 - 15 lb.
Meerkat	9.8 - 14 inches	720 - 731 grams
Tarkawara	3.7 - 4.5 inches	35 grams
You		
An adult (parent/teacher)		



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 desert tortoise?

Do you weigh more or less than a meerkat? By how much?

If a male ostrich is 9 feet tall, how many inches is that?

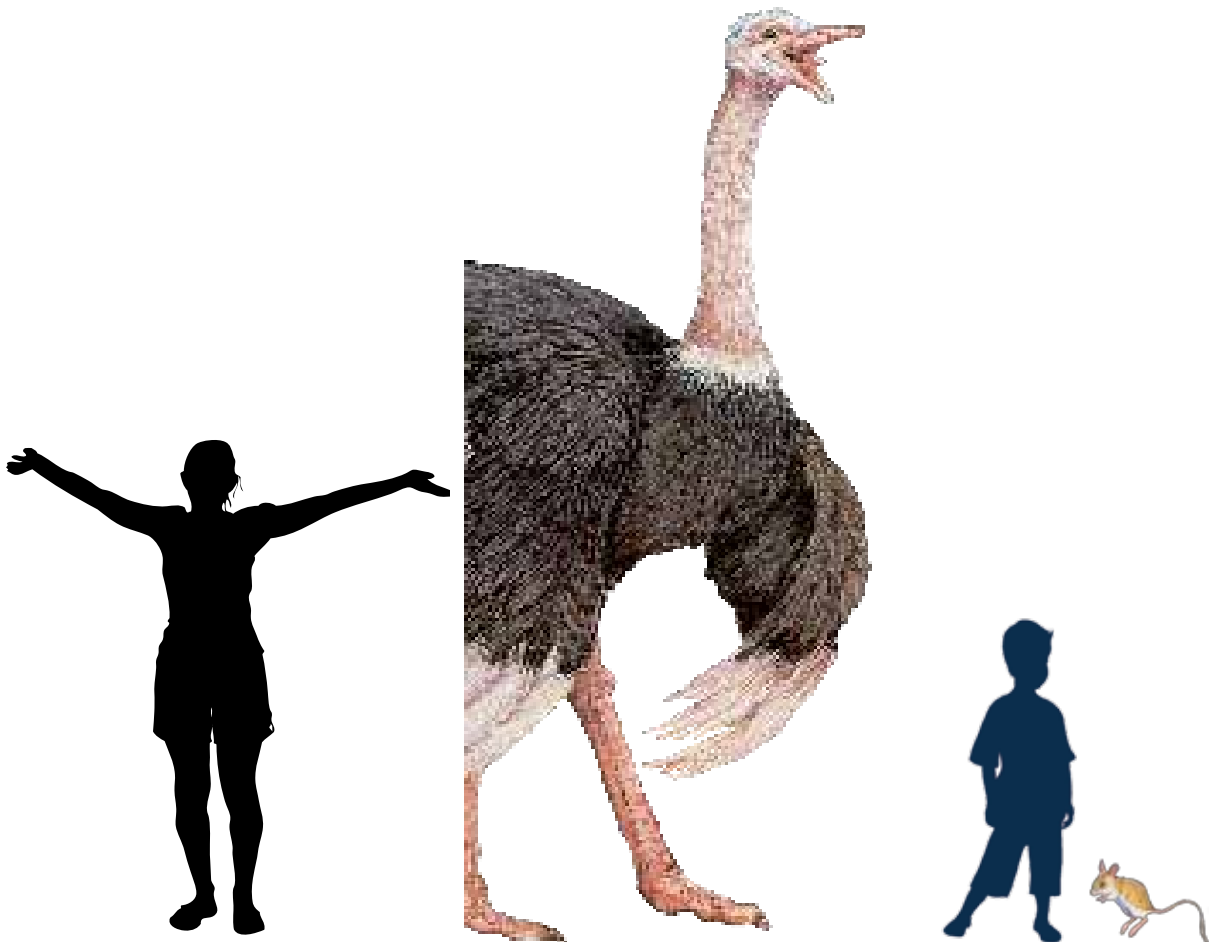


Try to imagine how big or small an animal is compared to something you know. If the animal is small, what are some other things about the same size? How many pennies, paperclips, quarters, hands, or shoes would equal it? If the animal is very big, how many “things” would equal it?

How big is that 9-foot ostrich?

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 wingspan?



Male Ostrich: 9 feet
Adult woman: 5 1/2 feet
Young boy: 3 feet
Tarkawara: 4.5 inches

Graph it!

The one thing all deserts have in common is that they are dry. On average, a desert gets less than 10 to 12 inches of rain a year. Using the chart on the following page, answer the these questions.

Choose one of the cities from the chart.

What is the average annual precipitation?

What is precipitation and why don't we use the word "rain?"

Based on this amount, is this city a desert? Explain why or why not.

Which city in your state receives the most precipitation on average per year?

Which city in your state receives the least precipitation on average per year?

Which city in the chart (US cities) receives the most precipitation per year?

Which city in the chart (US cities) received the least precipitation per year?

Which U.S. Cities receive, on average, less than 10 inches of precipitation per year?

In what states are these cities?

Find and color the states in the U.S. Map (Appendix C).






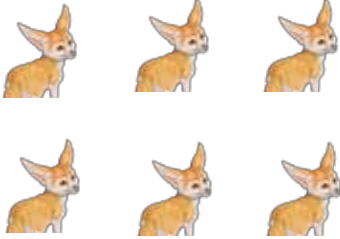

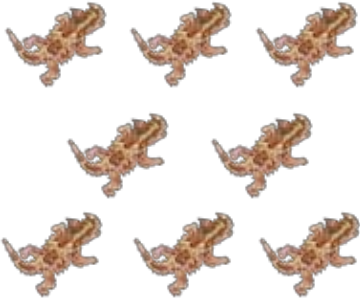

What do you notice about the location of these states?

US cities with less than 10 inches annual precipitation:

City	State	Average Precipitation (inches)
Henderson	NV	4.13
Las Vegas	NV	4.13
North Las Vegas	NV	4.13
Bakersfield	CA	5.72
Lancaster	CA	6.92
Palmdale	CA	6.92
Reno	NV	7.53
Glendale	AZ	7.66
Peoria	AZ	7.66
Phoenix	AZ	7.66
Scottsdale	AZ	7.66
Mesa	AZ	8.5
El Paso	TX	8.81
Tempe	AZ	8.88
Albuquerque	NM	8.88
Chandler	AZ	9.04
Gilbert Town	AZ	9.04
Chula Vista	CA	9.34
Riverside	CA	9.58
San Diego	CA	9.9

Data for this chart was obtained from the US Census (<http://www.census.gov/statab/ccdb/cit7140r.txt>) based on a 30-year average.

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> 
<p>9</p> 	

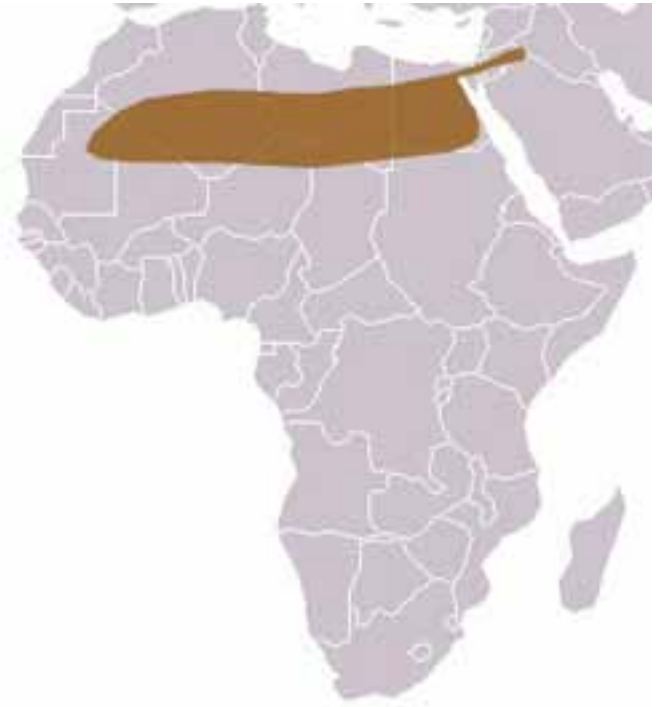
Map Activity

Using these maps as a reference, color the areas where these animals live on the blank map (in appendix).

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



Bat Range



Fennec Fox range



Javelina Range



Gila Monster Range

Maps



Meerkat Range



Ostrich Range

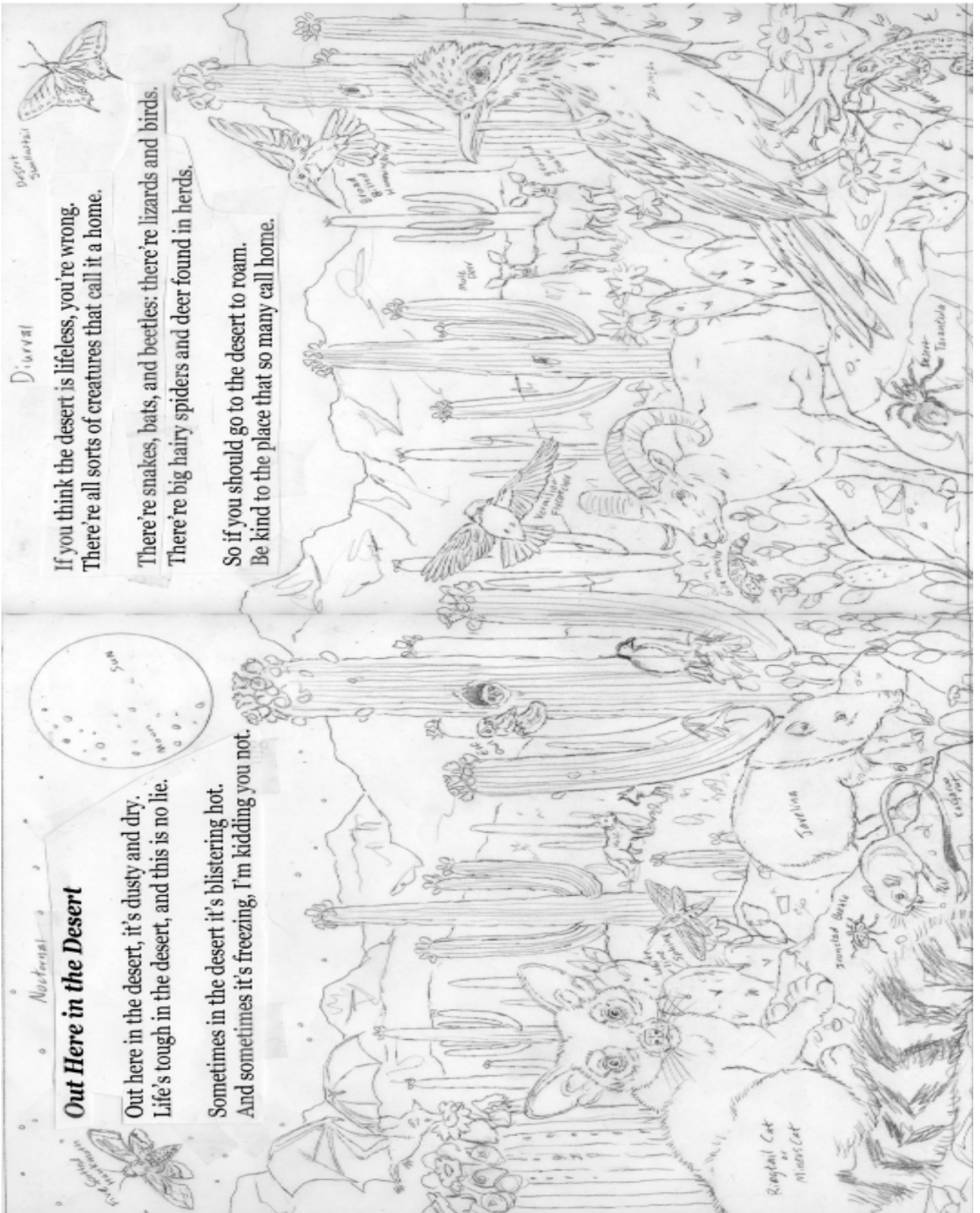


Thorny Devil Range



Bactrian Camel Range

Coloring Pages



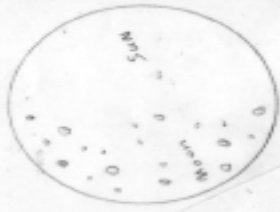
Desert
Squawbush

Diurnal

If you think the desert is lifeless, you're wrong.
There're all sorts of creatures that call it a home.

There're snakes, bats, and beetles: there're lizards and birds.
There're big hairy spiders and deer found in herds.

So if you should go to the desert to roam.
Be kind to the place that so many call home.



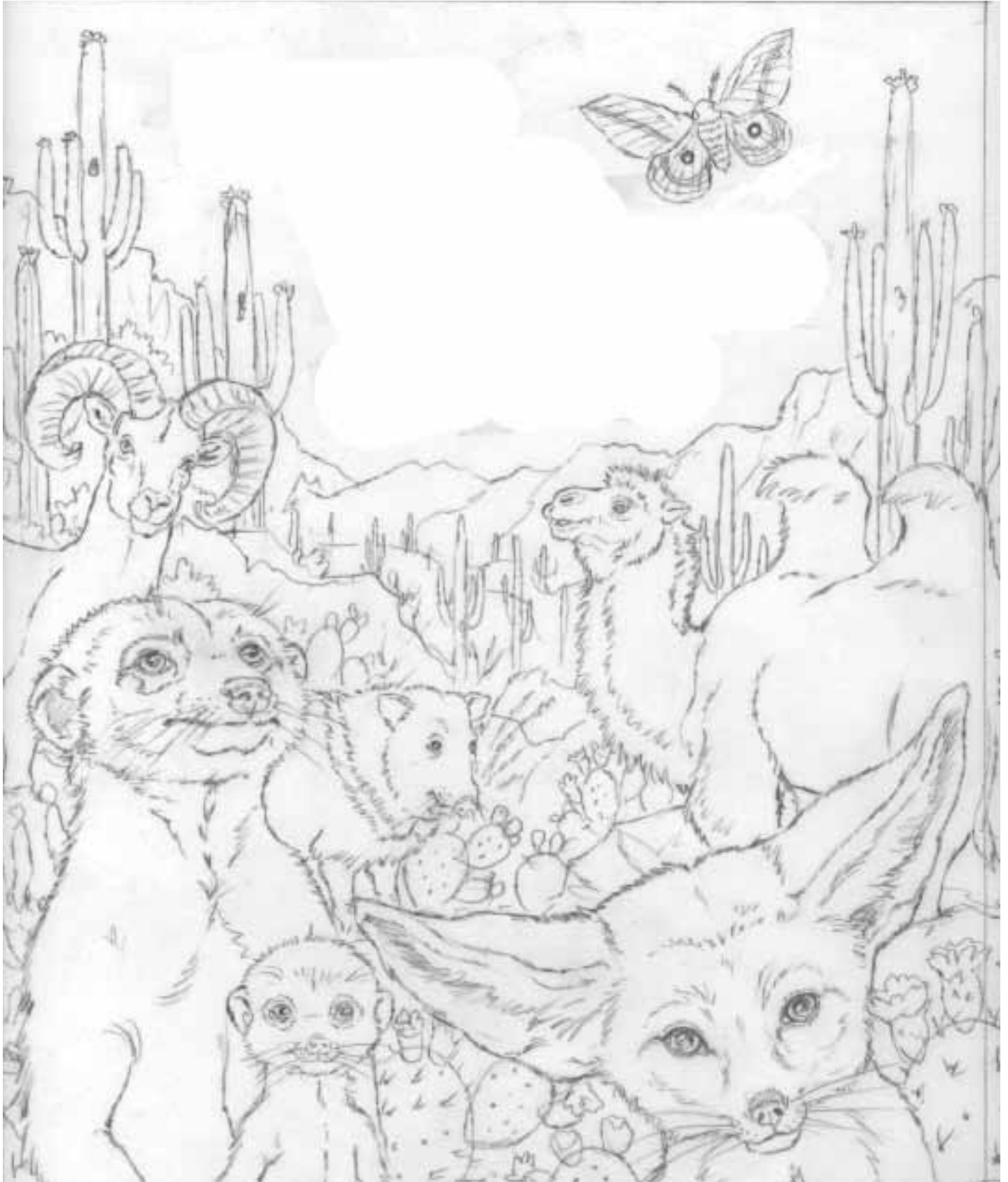
Nocturnal

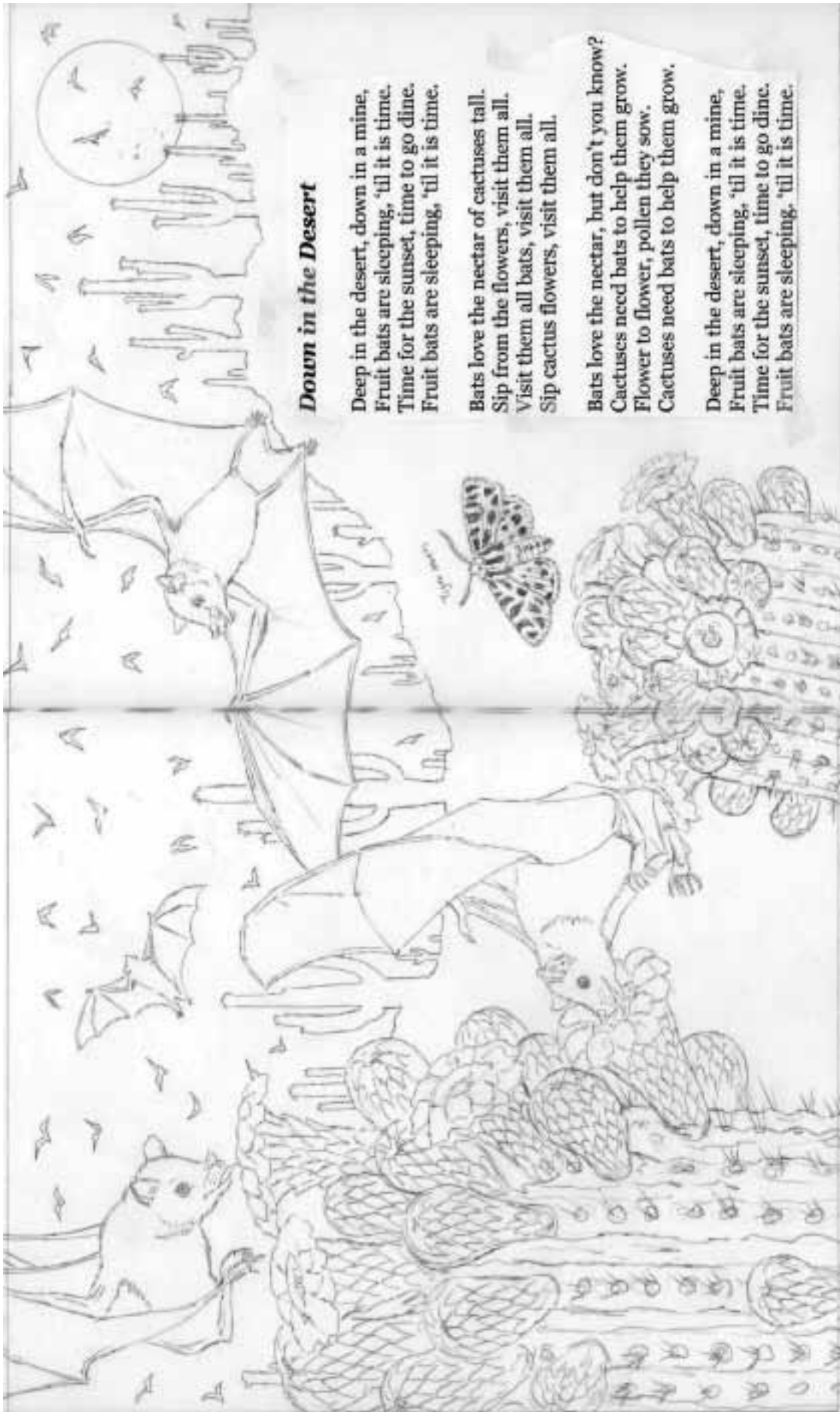
Out Here in the Desert

Out here in the desert, it's dusty and dry.
Life's tough in the desert, and this is no lie.

Sometimes in the desert it's blistering hot.
And sometimes it's freezing, I'm kidding you not.







Down in the Desert

Deep in the desert, down in a mine,
Fruit bats are sleeping, 'til it is time.
Time for the sunset, time to go dine.
Fruit bats are sleeping, 'til it is time.

Bats love the nectar of cactuses tall.
Sip from the flowers, visit them all.
Visit them all bats, visit them all.
Sip cactus flowers, visit them all.

Bats love the nectar, but don't you know?
Cactuses need bats to help them grow.
Flower to flower, pollen they sow.
Cactuses need bats to help them grow.

Deep in the desert, down in a mine,
Fruit bats are sleeping, 'til it is time.
Time for the sunset, time to go dine.
Fruit bats are sleeping, 'til it is time.

Glossary

Word	Definition	Part of Speech	Spanish
adaptation	a physical or behavioral feature of a plant or animal that allows it to survive in its environment	noun	adaptación
aestivation	animals' deep sleep/dormancy during the summer; aestivation is to summer as hibernation is to winter	noun	estivación
Africa	one of the seven continents	noun	África
airflow	the flow of air, as in wind	noun	flujo de aire
animal	any member of the kingdom Animalia: can move voluntarily, get and eat food, and respond to stimuli	noun	animal
Antarctica	one of the seven continents	noun	Antártica
arctic	land or water north of 60° N latitude	noun	Ártico
arid	Lacking moisture especially because of insufficient rainfall; dry	adjective	árido
Australia	one of the seven continents	noun	Australia
backbone	the series of vertebrae forming the axis of the skeleton and protecting the spinal cord	noun: body part	columna vertebral, espina dorsal
bactrian camel	a two-humped camel native to Asia	noun: animal	camello bactriano
bark	a sound made by some animals: dogs, sea lions	noun	ladrido
barren	not able to support life	adjective	árido, seco
behavior	an organism's actions and responses to its environment and other organisms in that same environment	noun	conducta
bighorn sheep	mountainous sheep with big, curly horns.	noun: animal	musmón
bipedal	an animal that walks on two legs.	adjective	bípedo
bird of prey	carnivorous birds that hunt and eat animals: owls, hawks, eagles, vultures, ospreys, peregrines	noun	ave rapaz
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
bone	The hard tissue that forms the skeleton of vertebrates.	noun: body part	huesos
burrow	an animals' hole or excavation in the ground used shelter or habitation	noun	madriguera
cactus	a plant that grows in deserts and has thick stems and sharp points called spines	noun: plant	cactus
camouflage	physical adaptations that allow organisms to hide in their surroundings	noun	camuflaje

carnivore	an animal that eats the meat of other animals (consumer)	noun: eating characteristic	carnívoro/a
cave	a hollow in the earth, side of a hill	noun	cueva
characteristic	a distinguishing trait, feature, quality, or property that compares or contrasts one object to another	adjective	característica
chart	a diagram that illustrates information in the form of a table, graph, or picture.	noun	tabla
clan	a close-knit group of interrelated families	noun: collective	clan
classification	the systematic grouping of organisms into categories based on distinct characteristics or features	noun: classification	clasificación
climate	average weather condition at a place over a period of years based on temperature, wind velocity and precipitation	noun	ambiente
coastal	the land near a coast, or shoreline.	noun: habitat	costero
compare	to look at similarities in properties of two or more objects	verb	comprar
continent	any of the world's main continuous expanses of land (Africa, Antarctica, Asia, Australia, Europe, North America, South America)	noun	continente
cool	neither very warm or very cold	adjective	fresco
coyote	a wolf-like wild dog native to North America	noun: animal	coyote
dance	move up and down lightly and quickly	verb	bailar
desert	land area that receives less than 25-30 cm (10-12 inches) of rain per year with plants and animals adapted to aridity, can be cold or warm and daily temperatures typically fluctuate.	noun: habitat	desierto
desert: coastal	cool winters (with whatever rain there may be) and long, warm, dry summers; soil is salty	noun: habitat	
desert: cold winter / semi-arid	cold winters with some snow, and long, dry, hot summers; many are formed by "rainshadow effect" when high mountains block precipitation from reaching the area	noun: habitat	
desert: hot (subtropical) desert	warm throughout the year but very hot in the summer; temperature drops at night to cool or cold; rain tends to be in short bursts anytime of the year with long, dry periods in between	noun: habitat	
desert: polar	long, cold winters; can have snow-or ice-covered ground	noun: habitat	
desertification	the man-made or natural formation of desert from usable land	noun	la desertificación
dig	break up and move earth with a tool or machine, or with hands , paws, snout, etc.	verb	cavar

diurnal	an animal that is active during the day, 2) one day	adjective	diurno
dry	free from moisture or liquid; not wet or moist	adjective	seco
dunes	a mound or ridge of sand or other loose sediment formed by the wind , especially on the sea coast or in a desert	noun	dunas
ecosystem	a community of living organisms and how they relate interact with their living and non-living (rocks, soil) environment	noun	ecosistema
environment	all living (plants, animals) and nonliving things (soil, weather, etc), that affect organisms in that community	noun	medio ambiente
evaporation	to convert or change into a vapor	noun	evaporación
evening	the period of time at the end of the day, usually from about 6 p.m. to bedtime	noun	por la noche
fennec fox	a very small fox with huge ears; lives in Sahara desert and Arabia	noun: animal	Zorro del Sahara
foot	a customary unit used to measure length; 1 foot = 12 inches.	noun	pie
fur	the hairy coat of a mammal	noun: body part	pelaje
geography	the study of the physical features of the earth and its atmosphere, and of human activity as it affects and is affected by these, including the distribution of populations and resources, land use, and industries.	noun	geografía
gila monster	a very large, poisonous lizard found in SW US deserts and northern Mexico	noun: animal	monstruo de Gila
Gobi	a cold desert located in central Asia. The word Gobi means desert in Mongolian.	noun: habitat	gobio
desert (gopher) tortoise	a threatened land tortoise (turtle) that digs large, deep burrows (found from Florida west to the Mojave desert); many other animals rely on this animal's burrow for their survival; keystone species	noun: animal	tortuga de tierra de Florida
granivore	Seed or grain-eating.	noun: eating characteristic	granívoro
graph	a way of organizing data in the form of a picture or diagram	noun	representar gráficamente
grunt	make a low, short guttural sound	verb	gruñir
guard	to watch over, keep safe	verb	proteger
habitat	an address: a combination of the physical environment - the rocks and land and water - as well as all of the organisms that live in the same place	noun	hábitat
heat	the energy associated with the random motions of the molecules, atoms, or smaller structural units of which matter is composed	noun	calor

herbivore	an animal that eats only plants; a primary or first-order consumer	noun: eating characteristic	herbívoro/a
herd	a group of certain large animals that associate together	noun: collective	rebaño
hoof	the horny part of the foot of an ungulate animal, especially a horse	noun: body part	casco
hot	having a high degree of heat or a high temperature	adjective	calor
hump (camel)	a rounded protuberance found on the back of a camel or other animal	noun: body part	jorobas
inch	a customary unit for measuring length or distance; 12 inches = 1 foot; roughly equivalent to the distance from the end of one's thumb to the first joint.	noun	pulgada
inherited traits	distinguishing characteristics received from parents (genetically)	noun	
invertebrate	animal without a backbone; about 97% of all known species are invertebrates	noun: classification	invertebrado
javelina, (collared peccary)	a small pig-like mammal that can live in tropical rainforests, grasslands, and deserts in North, Central and South America	noun: animal	pecarí de collar, jabalí
hop	move by jumping with two or all feet at once	verb	saltar
kingdom	the top taxonomic rank; there are five biological kingdoms: Monera, Protista, Fungi, Plantae, and Animalia	noun: classification	reino
lashes	each of the short curved hairs growing on the edges of the eyelids, serving to protect the eyes from dust particles.	noun: body part	las pestañas
lesser long-nosed bat	is a medium-sized bat found in El Salvador, Guatemala, Honduras, Mexico and the United States	noun: animal	
long	(Dolce) Sight word, grade 3	adjective	de largo
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
map	a diagrammatic representation of an area of land or sea showing physical features, cities, roads, etc	noun	mapa
meerkat	a small desert-living mammal (mongoose family) that lives in large social groups (mob or pack) in the southern part of Africa.	noun: animal	suricata
nectarivore	nectar-eating animals (hummingbirds, some bats)	noun: eating characteristic	nectarivore
night	time of darkness between sunset and sunrise	noun	noche
nocturnal	animals that are active at night	adjective	nocturnos

nostril	either of two external openings of the nasal cavity in vertebrates that admit air to the lungs and smells to the olfactory nerves	noun: body part	nariz
omnivore	consumer: an organism that eats both animals and plants	noun	omnívora - omnívoro
ostrich	the largest bird on earth, it runs but can't fly	noun: animal	avestruz
phylum	the major taxonomic group of animals and plants; contains classes	noun: classification	filo, filum
poison	something that harms or destroys	noun	tóxico
polar	the regions of the earth that surround the north and south poles, from the north pole to 60 degrees north and from the south pole to 60 degrees south.	noun: habitat	polares
pounce	spring or swoop suddenly so as to catch prey	verb	saltar
prickly	covered in prickles	adjective	espinoso
prickly pear cactus	a low-growing cactus with long, flat stem "pads" and sharp spines	noun: plant	nopales, tunas o chumberas
root	the underground part of a seed plant body; functions as an organ of absorption, aeration, and food storage or as a means of anchorage and support	noun	raíz
saguaro cactus	a tall-growing cactus with arms; grows only in the Sonoran Desert	noun: plant	saguaro
Sahara	a vast desert in North Africa that extends from the Atlantic Ocean on the west to the Red Sea on the east and from the Mediterranean Sea and the Atlas Mountains in the north to the Sahel in the south	noun: habitat	Sáhara
sand	an earth material, the largest particles that make up soil; grains of weathered rock	noun	arena
shady	situated in or full of shade	adjective	sombreado
snort	an explosive sound made by the sudden forcing of breath through one's nose	verb	esnifar
snout	the projecting nose and mouth of an animal, especially a mammal	noun: body part	hocico
South America	one of the seven continents	noun	Sudamérica
species	a group of organisms different from all others; can't breed with other groups	noun: classification	especies
spine	sharp, rigid protrusions from the cactus that prevent it from being eaten by animals	noun: plant part	espinas
stem	the main body or stalk of a plant or shrub, typically rising above ground but occasionally subterranean.	noun: plant part	tallo
subtropical	the region between the tropical and temperate regions, an area between 35° and 40° North and South latitudes	adjective	subtropical

sun	the star closest to Earth, the center of our solar system; a ball of hot, glowing gases giving Earth heat and light.	noun	sol
survive	to remain alive or in existence	verb	sobrevivir
tarkawara (spinifex hopping mouse)	a type of hopping mouse with long hind feet, a long tail, and large eyes and ears; found only in Australia	noun: animal	
temperature	The extent of warmth or coldness of something; a thermometer is used to measure temperature in Fahrenheit or Celsius.	noun	temperatura
Thorny devil (Moloch)	an Australian lizard with body spines and camouflage coloring	noun: animal	
toxin	a poisonous substance produced by organisms that causes harm or disease when introduced into the body tissues of other organisms.	noun	toxina
tropical	area between 23.5 degrees north and south of the equator	adjective	de trópico, tropical
underground	under the earth	adjective	subterráneo
venn diagram	a drawing showing relationships among sets.	noun	diagrama de Venn
vertebrate	an animal with a backbone or spinal column	noun: classification	vertebrado
warning colors	colors on an animal that send other animals a message to stay away; it implies that they have a defense mechanism that other animals will want to steer clear of, like being poisonous.	noun	colores de alerta
water	a fluid necessary for the life of most animals and plants	noun	agua

Answers

Silly Sentences

Deserts are on all seven (**continents**) including Antarctica.

On average, a (**desert**) gets less than 10 to 12 inches (25 – 30 cm) of rain a year.

Cold winter deserts, also called (**semi-arid**) deserts, have cold winters with some snow and long, dry, hot (**summers**).

Plants and animals that live in the desert have special body parts or behaviors, called (**adaptations**), that help them (**survive**) without very much water.

Many desert animals spend their days hiding from the hot sun in a (**burrow**) dug by a desert tortoise.

The camel can close its (**nostrils**) so sand doesn't blow up its nose.

(**Ridges**) between the thorns along the (**thorny devil's**) back carry rainwater and dew to its mouth.

We use the Gila monster's (**poison**) in a medicine to treat diabetes.

Javelinas have a ring of light-colored (**fur**) around their necks that looks a bit like a (**collar**).

Male ostriches (**dance**) to attract females.

Word Search

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

DESERT A3

CACTUS A4

MEERKAT B1

OSTRICH D6

CAMEL C10

JAVELINA C1

HABITAT H3

SAGUARO C3

SAHARA J4

TORTOISE F3

Circle whether you think the behavior is learned or inherited:

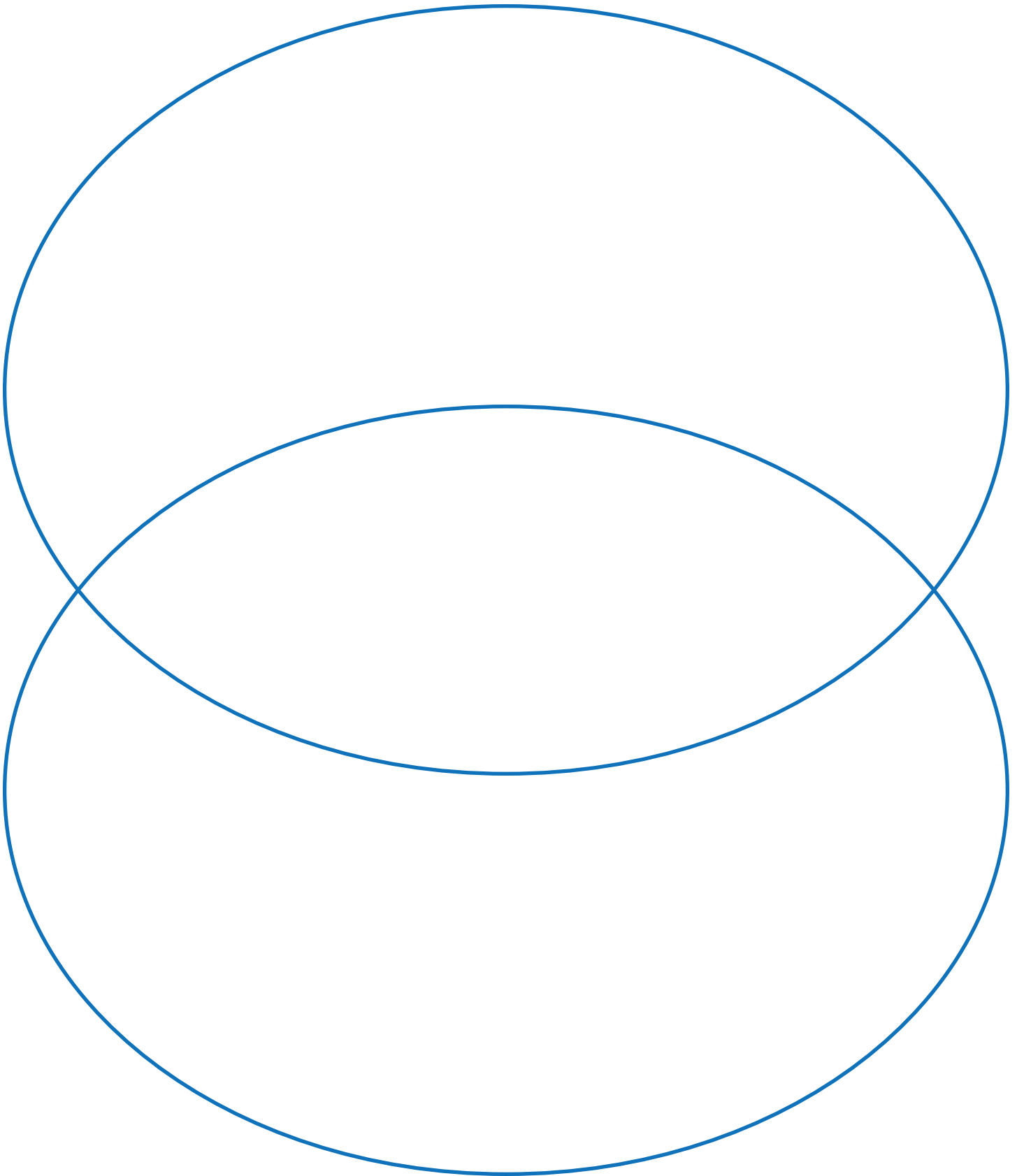
1. A dog barks, a cat meows, a duck quacks. learned **inherited**
2. A dog sits when told to. **learned** inherited
3. A human baby cries. learned **inherited**
4. Animals migrate (birds, butterflies, whales). learned **inherited**
5. People smile or dogs wag tails when happy. learned **inherited**
6. Animals mark their territory (scratching, etc.). learned **inherited**
7. Birds build nests. learned **inherited**
8. A human can read. **learned** inherited
9. A child rides a bike. **learned** inherited
10. A human speaks a language (English, Spanish, etc.). **learned** inherited
11. Thorny Devils curl up when scared. learned **inherited**
12. The lesser long-nosed bats eat cactus blooms. learned **inherited**
13. Desert tortoises dig burrows. learned **inherited**
14. Male ostriches dance to attract mates. learned **inherited**
15. Meerkats bark when there is danger. learned **inherited**
16. The tarkawara sleeps during the heat of the day. earned **inherited**

Desert True/False

1. False - POLAR deserts have long, cold winters and can have snow- or ice-covered ground, while coastal deserts generally have cool winters and long, warm, dry summers.
2. True
3. False - The bactrian camel's humps store FAT to give it energy when it cannot find food, although the camel can also survive several days without water.
4. True
5. True
6. False - The lesser long-nose bat eats the NECTAR of cactus flowers and through this action the animal spreads the pollen to help the plants grow.
7. False - On average, a desert gets LESS than 10 to 12 inches of rain a year, which is the common factor among all types of deserts.
8. True
9. False - SOME desert animals are nocturnal in order to escape the heat, including the lesser long-nosed bat, the tarkawara, and the fennec fox. Others, like the meerkat and the ostrich, are active during the day.
10. False - CREPUSCULAR describes an animal that only goes out in the morning and early evening when it is cool. Aestivation is when an animal goes into a deep sleep because it is too hot, like summer hibernation.
11. False - The JAVELINA gets water from eating prickly pear cactuses (spines and all), which most other animals cannot eat.
12. True
13. True
14. False - Bighorn sheep can be found in MULTIPLE habitats, including deserts and mountainous regions.
15. True

Appendix B—Venn Diagram

Pick two desert animals and compare and contrast them based on their characteristics, including habitats, diets, and adaptations.



Appendix C—U.S. Map



Appendix D—North America Map



Appendix E—World Map

