

Teaching Activity Guide for Nature Recycles How About You?

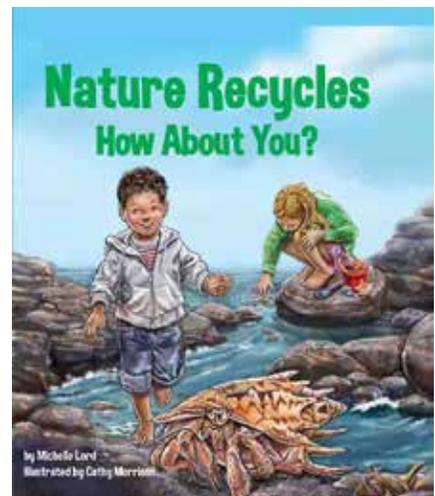


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How to Use This Activity Guide (General)

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 near 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.”

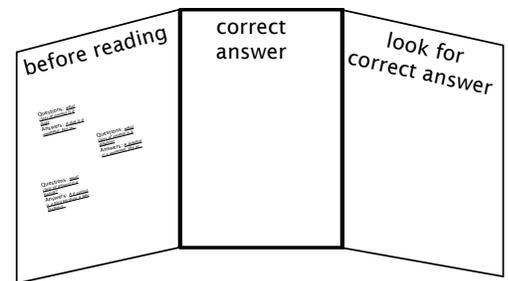
Do the children have any more questions about the subject? If so, write them down to see if they are answered in the book.

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 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 does it mean to recycle something?

Do animals recycle things?

What are some things that humans recycle?

What are some things that animals might recycle?

What are some reasons that animals might recycle?

Comprehension Questions & Writing Prompts

Objective Core Language Arts, Speaking and Listening: Ask and answer questions about key details in a text read aloud or information presented orally or through other media.

Confirm understanding of a text read aloud or information presented orally or through other media by asking and answering questions about key details and requesting clarification if something is not understood.

Recount or describe key ideas or details from a text read aloud or information presented orally or through other media.

Retell stories, including key details, and demonstrate understanding of their central message or lesson.

Ask and answer such questions as who, what, where, when, why, and how to demonstrate understanding of key details in a text.

What are some ways that animals recycle?

What are some of the things that animals recycle?

Do any of the animals reuse things? What and how?

What is the difference between reusing and recycling?

Can something that's reused be recycled too?

What's the difference between "trash" and naturally occurring debris?

Writing Prompts:

What kinds of things can you recycle? Keep a journal of how you reduce, reuse and recycle.

How is water recycled? Imagine that you are water and write about your journey in the water cycle.

What kinds of things do you put in a recycle bin? What do you think happens with those items at the recycling plant?

Why is it good to recycle?

Language Arts & Science: Five Senses

Objective Core Language Literature 4: Identify words and phrases in stories or poems that suggest feelings or appeal to the senses.

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

Animal	Touch	Taste	Sight	Smell	Hearing

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 the eBook or book preview found at www.ArbordalePublishing.com.

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

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

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

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

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

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

Word Bank

See Glossary for words in Spanish and the definition in English.

Adjective	Noun		Verb
beautiful	algae	perch	abandon
big	beetle	poop	bake
colorful	bromeliad	rain	clap
discarded	burrow	rainforest	crash
empty	cactus	rhinoceros	devour
fallen	coconut	river	dig
hot	coral	savanna	fill
huge	desert	shell	find
hungry	egg	snow	gather
juicy	elephant	soil	hide
little	finch	spider	hide
old	froglet	spine	hunt
pesky	grub	stone	nip
recycled	hatchlings	tadpole	outgrow
rotting	hide	termites	protect
rough	hole	tongue	recycle
shiny	hollow	tool	reduce
short	lake	tower	reuse
soft	larva	trouble	roll
strong	manure	trout	search
tiny	mate	twig	see
warm	mound	urchin	sense
wrinkled	nest	vapor	wear
young	ocean	water	
	octopus	wave	
	oyster	wren	

Cross Curricular: Silly Sentences

1. Urchin _____ colorful algae, rocks, or _____.
verb noun
2. The _____ protects the hermit crab's _____
body from predators.
noun adjective
3. The wren and her _____ gathered _____, spider
webs, leaves, trash, and snakeskin.
noun noun
4. In the _____ Sonoran Desert, an elf owl _____ for
a place to nest.
adjective verb
5. When the _____ senses trouble, he claps the coconut
together and _____ inside.
noun verb
6. Waves _____ around the Galapagos Islands.
verb
7. A _____ dung beetle rolls rhino _____ into a
ball.
adjective noun
8. A huge _____ bakes on the _____ savanna.
noun adjective
9. The larva's _____ stone house _____ it from
_____ trout.
adjective verb adjective
10. Frog _____ leaves and nut pods as cradles for his
young.
verb
11. Pesky flies _____ at an Asian _____'s
wrinkled _____.
verb noun noun
12. Water _____ rivers, _____, and oceans
once again.
verb noun

Language Arts: Word Families & Rhyming Words

Language Arts, Reading Standards: Foundational Skills, Recognize and produce 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 text.
- 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:

Big

and

Twig

They are / are not from the same word family.

Other words that rhyme are:

Rhyming words are:

Lake

and

Bake

They are / are not from the same word family.

Other words that rhyme are:

Rhyming words are:

Juicy

and

Tiny

They are / are not from the same word family.

Other words that rhyme are:

Rhyming words are:

Hole

and

Role

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

Elephant

Frog

Green

Octopus

Owl

Recycle

Reduce

Reuse

Water

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	 Elephant	 Frog
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	 Urchin	 Octopus
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		
Metamorphosis?	complete		
	incomplete		
	none		
Teeth	sharp		
	flat		
	no teeth (bill/beak)		
Food	plant eaters (herbivore)		
	meat eater (carnivore)		
	both (omnivore)		

	Animals	 Elf Owl	 Finch
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

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.

Common Invertebrates

Arthropods: Insects:

- hard outer covering
- no backbone (invertebrate)
- outside skeleton (exoskeleton)
- adults have 3 body parts: head, thorax & abdomen
- mouthparts adapted for chewing, biting, sucking and lapping
- breathe through tracheae
- compound eyes
- 3 pairs of legs
- usually 2 pairs of wings and 1 pair of antennae
- most hatch from eggs
- metamorphosis: none, incomplete, or complete
- cold-blooded

Mollusks

Bi-valves:

- have a two-part shell with a hinge to open/close
- no backbone (invertebrate)
- outside skeleton (exoskeleton)
- hatch from eggs
- cold-blooded
- marine and freshwater
- symetry:

Mollusks

Gastropods (Snails):

- most have hard shells
- no backbone (invertebrate)
- outside skeleton (exoskeleton)
- hatch from eggs
- cold-blooded

Arthropod

Arachnia (Spiders):

- no backbone
- one or two body segments
- pincers or fangs near mouth
- 4 pairs of legs
- no antennae

Arthropod

Crustaceans (Crabs):

- hard outer covering
- no backbone (invertebrate)
- outside skeleton (exoskeleton)
- mouthparts adapted for chewing
- 5 or more pairs of legs
- claws
- 2 pairs of antennae
- 2 compound eyes on stalks
- adults have 2 or 3 body segments
- hatch from eggs
- cold-blooded

Dichotomous (Yes/No) Key

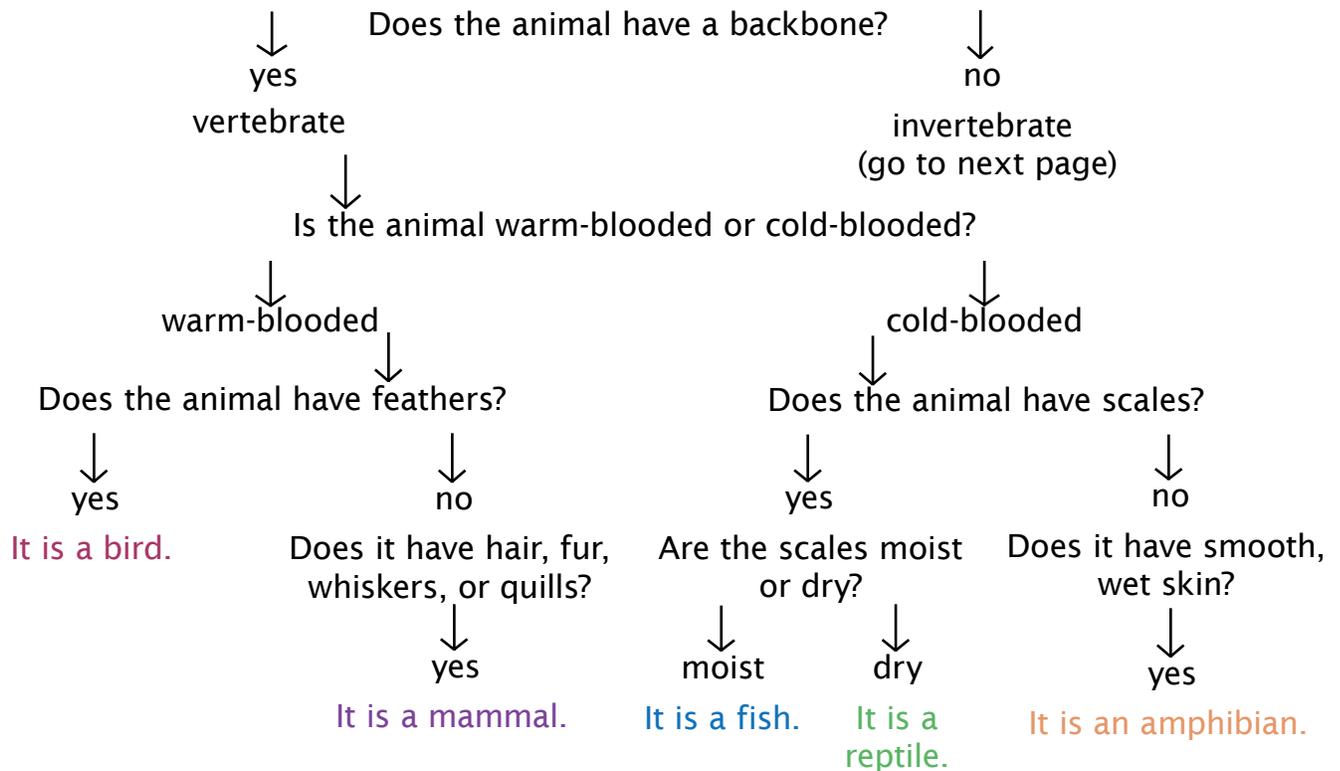
Use the information found in the book to match the animal to its classification.

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.

Develop and use a simple dichotomous key to classify common plants and animals



Compare/Contrast: Animal and Human Senses

Objective Core Language Literature 4: Identify words and phrases in stories or poems that suggest feelings or appeal to the senses.

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

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

Identify the structures of living organisms and explain their function.

Compare and contrast animal and human body parts used for senses.

to smell	to feel
to hear	to see

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:

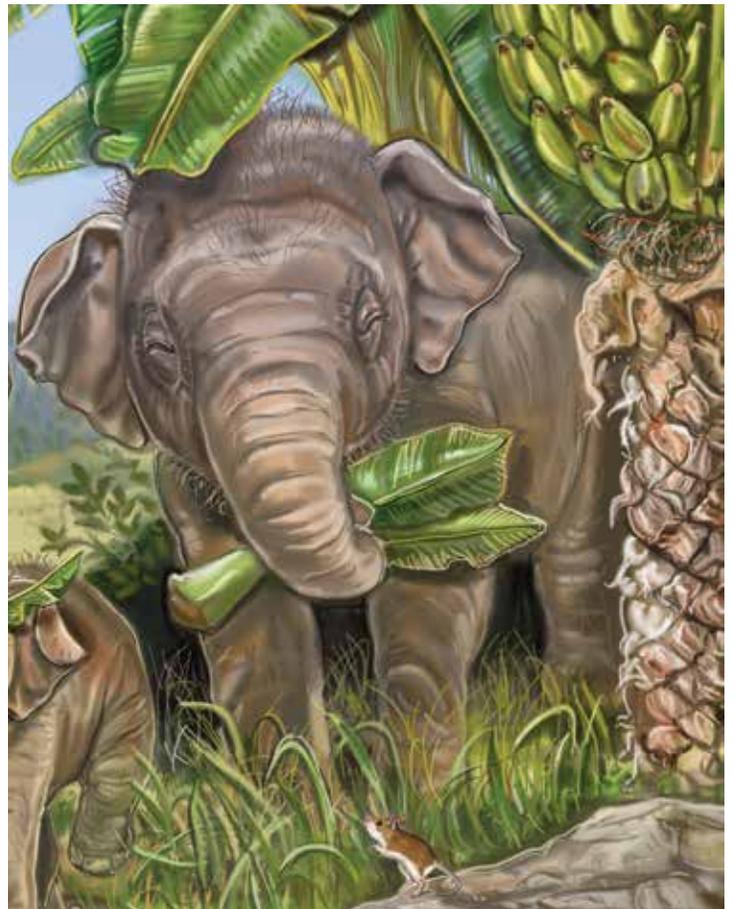
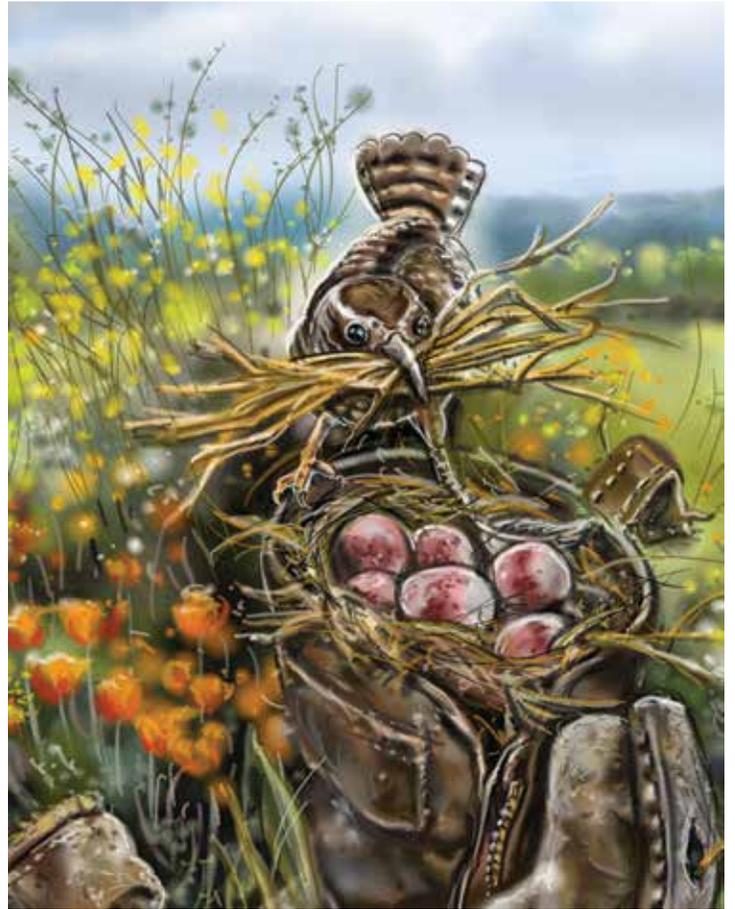
Sorting: Depending on the age of the children, have them sort cards by:

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)	

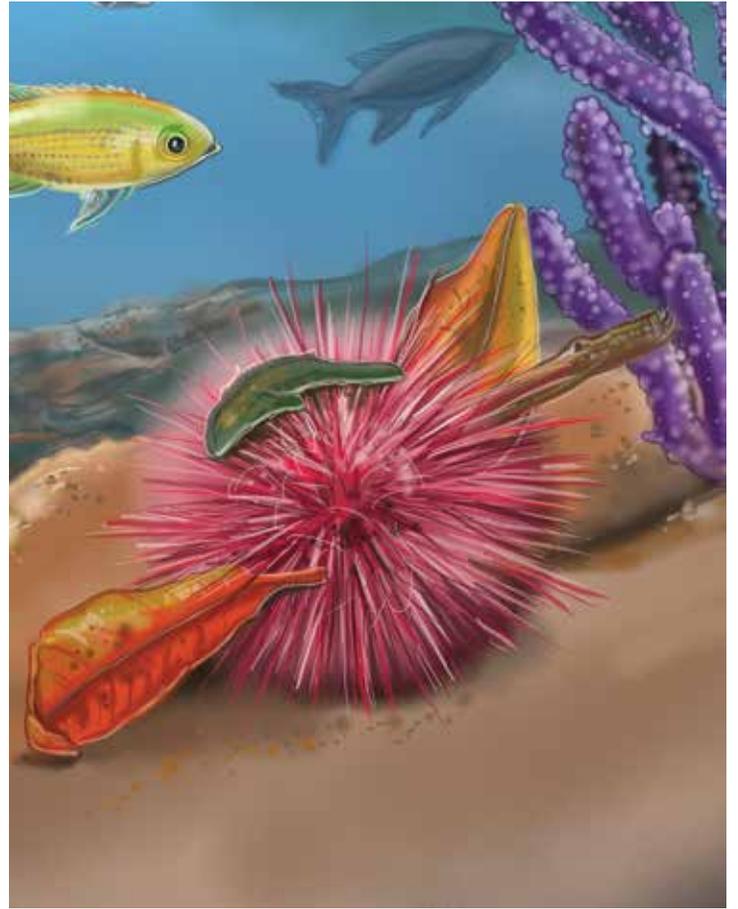
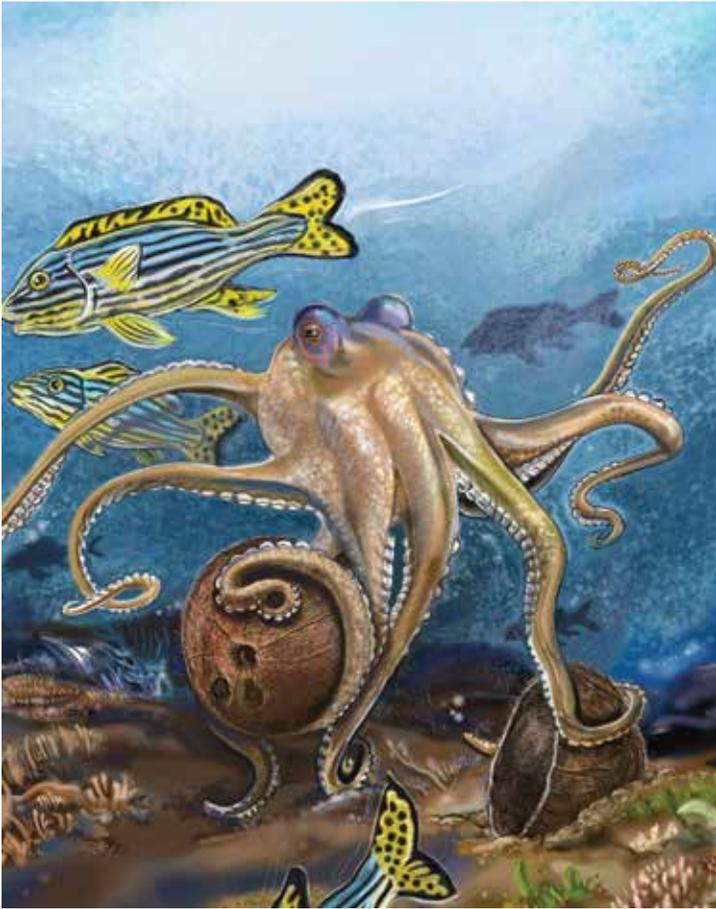
Memory Card Game: Make two copies of each of the sorting card pages and cut out the cards. Mix them up and place them face down on a table. Taking turns, each player should turn over two cards so that everyone can see. If the cards match, he or she keeps the pair and takes another turn. If they do not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







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

Adapt to the Habitat

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

Compare and explain how external features of plants and animals help them survive in different environments.

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

My animal is:

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

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

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

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

Science Journal (Vocabulary)

Reuse

my definition

my drawing

Precipitation

my definition

my drawing

Nest

my definition

my drawing

Recycle

my definition

my drawing

Math: Measuring (compare & contrast)

Objective Core Mathematics Measurement:

Order three objects by length; compare the lengths of two objects indirectly by using a third object.

Express the length of an object as a whole number of length units, by laying multiple copies of a shorter object (the length unit) end to end; understand that the length

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

Describe measurable attributes of objects, such as length or weight. Describe several measurable attributes of a single object.

Measure the length of an object by selecting and using appropriate tools such as rulers, yardsticks, meter sticks, and measuring tapes.

Measure to determine how much longer one object is than another, expressing the length difference in terms of a standard length unit.

Represent whole numbers as lengths from 0 on a number line diagram with equally spaced points corresponding to the numbers 0, 1, 2, ..., and represent whole-number sums and differences within 100 on a number line diagram.



Try to imagine how big or small something is compared to something you know.

What are some other things about the same size?

What is something that weighs about the same?

How big is it?

Using the right measuring tool (yard stick or measuring tape) and chalk, mark off how big something 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?



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

Inches or centimeters

Feet or meters

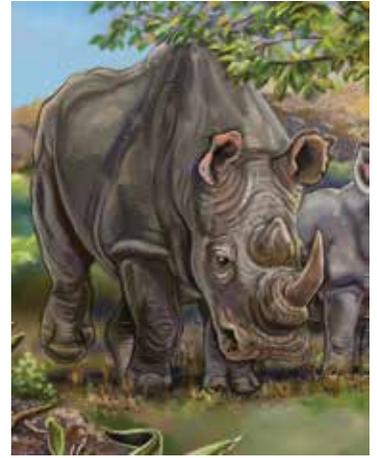
Pounds or kilograms



Adult Asian elephants can weigh between 2.7 — 5.4 tons.

Adult rhinoceroses can weigh up to 1 ton.

Which is bigger — an adult Asian elephant or an adult rhino?



An elf owl stands between 4.7—5.5 inches tall and has a wingspan of more than 10 inches.

A carolina wren is between 4.9—5.5 inches tall and has an 11 inch wingspan.



A veined octopus (plural: octopi or octopuses) has a small body, only 3 inches long, and arms that are twice the length of the body (6 inches).

A veined octopus has 8 arms and each of the arms is lined with small, white suckers that help the octopus grab and hold objects.

There are more than a thousand species of hermit crabs. Most of them never grow bigger than a baseball (2.5—3 inches in diameter). One species can grow much bigger — as big as a coconut and as heavy as 8 ounces.



Growing Good Veggies from Stumps, Seeds and Leaves

Vegetable	Day 1	End of Week 1	End of Week 2	End of Week 3
Name of your plant. What do you know about growing your fruit or vegetable?	How did you plant the fruit/vegetable? Any special treatments of the fruit/vegetable?	Has your plant grown? How much water does it need? How much sun does it get?	Has your plant grown? Are you doing anything different?	What changes do you see happening?

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, 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.

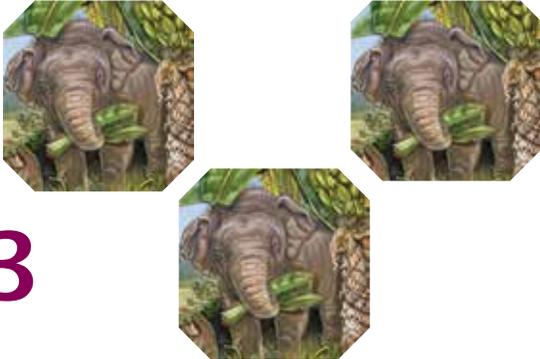
1



2



3



4



5



6



7



8



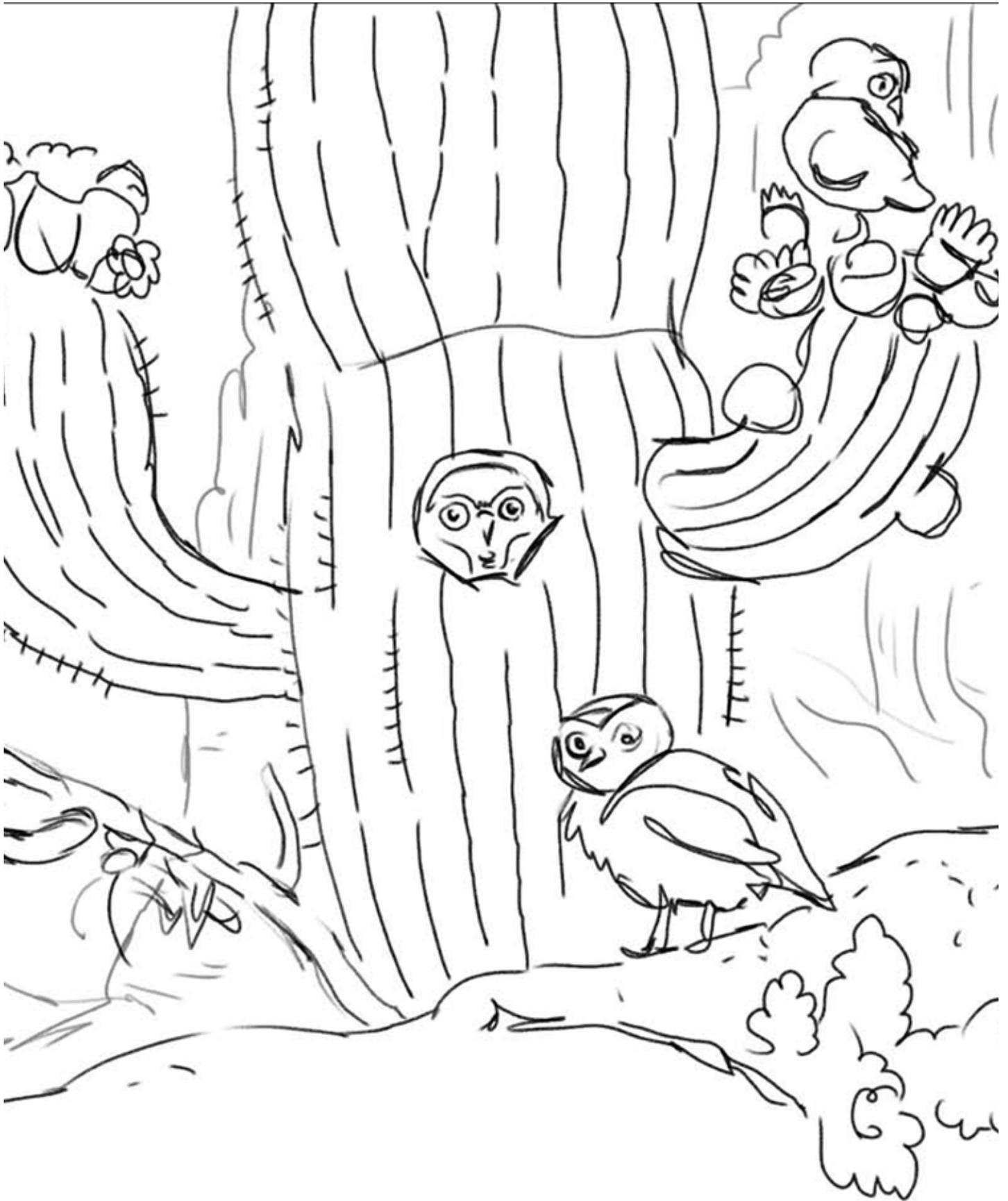
9



Coloring Pages







Glossary

Word	Definition	Part of Speech	Spanish
abandon	to leave behind, to discard	verb	abandonar
algae	very small, simple plants that live in water through photosynthesis, algae are the main producers of food and oxygen in water environments	noun	alga marina
aluminum	a lightweight, silvery-white metal	noun	aluminio
animal	any member of the kingdom Animalia: can move voluntarily, get and eat food, and respond to stimuli	noun	animal
Asian elephant	the smaller of two varieties of large pachyderms with a long, prehensile trunk.	noun	elefante Asiático
banana leaf	a wide, flat leaf of the banana plant	noun	hoja de plátano
beak	the long mouth of some dolphins or birds	noun	pico
beetle	a winged insect with a hard smooth back	noun	escarabajo
bromeliad	One of a family of plants including the pineapple and Spanish moss	noun	bromelia
burrow	an animal's hole or tunnel in the ground used as a shelter or place to live	noun	madriguera
cactus	a plant that grows in deserts and has thick stems and sharp points called spines	noun	cactus

Word	Definition	Part of Speech	Spanish
caddisfly	a certain kind of insect with four hairy wings, antennae, and aquatic larvae	noun	Tricóptera
Carolina wren	a large, North American wren	noun	ratona Carolinense
case	a container, a protective covering	noun	protección
chick	baby bird	noun	pollo, polluelo
cloud	visible collection of tiny water droplets or ice crystals in the atmosphere	noun	nube
coconut	the fruit of a coconut palm with a fibrous husk surrounding a tough, inner core containing edible meat and coconut milk	noun	coco
coral	the skeletal deposit of certain polyps; a polyp colony with its membranes and skeleton	noun	coral
debris	remains of plants and animals	noun	desechos
desert	land area that receives less than 10-12 inches (25-30 cm) of rain per year	noun	desierto
devour	to eat rapidly, to consume entirely	verb	devorar
discarded	cast off, left behind, abandoned	adjective	desecho
dung beetle	a beetle that rolls balls of animal waste	noun	escarabajo pelotero
ear	a body part used to hear	noun	oreja
egg	a rounded reproductive object from which animals hatch (birds, amphibians, reptiles, insects, fish)	noun	huevo, óvulo (biol.)

Word	Definition	Part of Speech	Spanish
eye	1) the organ with which we see; 2) the center of a tropical storm or hurricane, with a roughly circular area of light winds and rain-free skies	noun	ojo
finch	any of numerous songbirds with short, conical bills	noun	pinzón
forest floor	the layer of decomposing material that covers the soil in a forest	noun	suelo
froglet	a young frog who has recently transitioned from tadpole to frog	noun	ranitas
Galapagos	an archipelago off of the coast of Ecuador (South America)	noun	Galápagos
grassland	an ecosystem with a dry, temperate climate long periods of the summer, and freezes in the winter with grasses, no trees or shrubs	noun	herbazal
grub	the larva stage of beetles, bees, and wasps	noun	larva
hatchlings	animal babies that have recently emerged from an egg	noun	crías
hermit crab	any of various marine crustaceans with soft bodies that inhabit the empty shells of gastropods	noun	cangrejo ermitaño
hide	to put something or be somewhere that none can find or see	verb	esconder
hide	the skin of a large animal	noun	piel

Word	Definition	Part of Speech	Spanish
hole	an opening in or through something	noun	hueco, agujero
hollow	openings (in trees, rocks)	noun	huecos
lake	a body of water entirely surrounded by land	noun	lago
larva (larvae pl)	the immature free-living form of most invertebrates, amphibians, and fish	noun	larva
macaw	a kind of parrot from South and Central America	noun	guacamaya
manure	animal excrement used to fertilize or return nutrients to the land	noun	excremento
material	The tangible substance (chemical, biological, or mixed) that goes into the makeup of a physical object; One of the basic resources used in a technological system	noun	material
mound	a heap or pile, an artificial hill	noun	montículo
nest	a place used by birds, insects, fishes, turtles, rabbits, etc, for depositing their eggs or raising young	noun	nido
nutrient	a substance that provides the nourishment needed for the survival of an organism	noun	nutrientes, alimentos nutritivos, sustancia nutritiva
ocean	the vast body of salt water that covers almost three fourths of the earth's surface	noun	océano

Word	Definition	Part of Speech	Spanish
ocean floor	the bottom of the ocean, the ground beneath the water	noun	fondo del océano
octopus	a marine mollusk with a soft body, eight arms, and a strong beaklike mouth	noun	pulpo
outgrow	to grow too large for, to increase faster than	verb	
oyster	a kind of marine bivalve mollusk with a rough outer shell	noun	ostras
park	a piece of land in a city or town kept aside for nature and recreation	noun	parque
perch	a high resting place	noun	perca, mojerra
plant	any member of the kingdom Plantae that usually produces its own food through photosynthesis	noun	planta
plastic	a kind of synthetic, processed material	noun	plástico
poison dart frog	any of various small, brightly colored frogs in South and Central America, whose skin produces poisonous secretions	noun	rana venenosa punta de flecha
precipitation	any form of water (rain, snow, sleet, or hail), falling to the earth's surface	noun	precipitación
predator	an animal that depends on or preys on other animals for food	noun	animal de rapiña, predadores
rag	a scrap of cloth used for a variety of purposes	noun	trapo

Word	Definition	Part of Speech	Spanish
rain	liquid precipitation in the form of drops	noun	lluvia
rainforest	tropical or temperate forest with an average of over 60 inches (152 cm) of rain a year	noun	selva
ray	Part of a line that has one endpoint and extends infinitely in one direction.	noun	rayo
recycle	to turn used/discarded products into new, useable products	verb	reciclar
refuse	the leftover part of something, trash, garbage	noun	desechos
rhinoceros (rhino)	a large animal with very thick gray skin and one or two horns on its nose. It lives mainly in southern Asia and Africa.	noun	rinoceronte
river	a large, natural body of running water that flows from its start (headwater) to the ocean	noun	rio
rotting	wasting away, decomposing	adjective	podridos
savanna	a tropical or subtropical grassland	noun	sabana
sea snail	a common name for many marine gastropod mollusks	noun	caracol
sense	to become aware of something through touch, sight, hearing, taste, or smell	verb	sentir
shell	hard outer covering of some arthropods and turtles	noun	caparazónm, concha

Word	Definition	Part of Speech	Spanish
shelter	a structure that provides privacy and protection from danger	noun	lugar protegido
sleet	a mixture of snow and rain	noun	lluvia congelada
snakeskin	the molted skin of a snake	noun	piel de víbora
snow	small, white crystal flakes of frozen precipitation; each individual flake always has six sides	noun	nieve
soil	the top layer of the earth's surface made up of small pieces of rocks and minerals mixed with deorganic matter	noun	suelo
spider	an invertebrate with 8 legs that usually spins a web to catch prey	noun	araña
spine	another word for backbone (vertebrate) 2) sharp, rigid needles from the cactus that prevent it from being eaten by animals	noun	espinas
stream	a small, narrow river	noun	arroyo, corriente
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
tadpole	a larval frog or toad	noun	renacuajo
termites	any of a number of pale, soft-bodied insects that live in colonies and feed on wood	noun	termitas
tongue	an organ used to taste, found in the mouth of many animals	noun	lengua

Word	Definition	Part of Speech	Spanish
tool	object used to make observations, extend the senses, and achieve goals		instrumento
tower	a structure higher than its surroundings or taller than it is wide	noun	torre
trash	garbage	noun	basura
trout	a kind of freshwater or anadromous fish	noun	trucha
twig	a small branch	noun	ramita
urchin	any of various echinoderms, with a soft body inside a round case covered with spines	noun	erizo de mar/de fondo
vapor	a substance in a gaseous state, diffused matter in the air	noun	vapor
warm	pleasantly hot	adjective	caliente
water	a fluid necessary for the life of most animals and plants	noun	agua
wave	the repeating and periodic disturbance that travels from one place to another; ocean/lake waves carry through water, sound waves carry through space, seismic waves carry through the ground	noun	ola (water) (onda=radio & seismic)
woodpecker	any of a variety of birds with a hard bill used to drill into the bark and wood of trees	noun	correcaminos
woodpecker finch	a species of bird found in the Galapagos Islands, a member of the group of Darwin's Finches	noun	pinzón carpintero

Answers

Silly Sentences

1. Urchin wears colorful algae, rocks, or coral.
2. The shell protects the hermit crab's soft body from predators.
3. The wren and her mate gathered twigs, spider webs, leaves, trash, and snakeskin.
4. In the hot Sonoran Desert, an elf owl searches for a place to nest.
5. When the octopus senses trouble, he claps the coconut together and hides inside.
6. Waves crash around the Galapagos Islands.
7. A shiny dung beetle rolls rhino poop into a ball.
8. A huge tower bakes on the hot savanna.
9. The larva's little stone house protects it from hungry trout.
10. Frog reuses leaves and nut pods as cradles for his young.
11. Pesky flies nip at an Asian elephant's wrinkled hide.
12. Water fills rivers, lakes, and oceans once again.

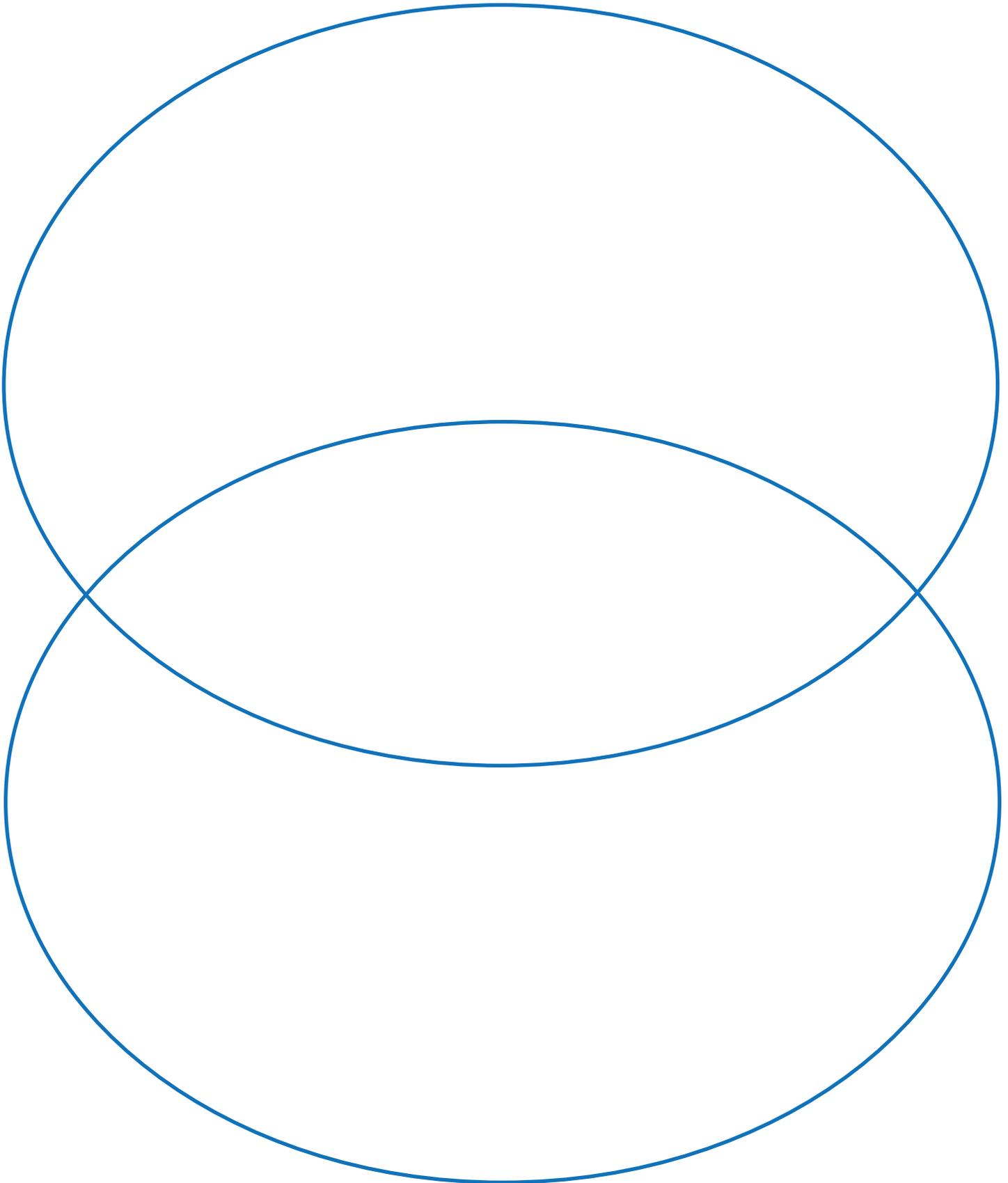
Word Search

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

- C10 — Elephant
- B2 — Frog
- D2 — Green
- B9 — Octopus
- J2 — Owl
- C5 — Recycle
- C5 — Reduce
- I4 — Reuse
- D7 — Water

Appendix B—Venn Diagram

Compare and contrast two



Appendix C—Vocabulary Cards

Debris

Larva

Manure

Plastic

Soil

Water vapor

Trash

Shelter

Hollow

Material

Nest

Nutrient

Outgrow

Predator

Rainforest

Reduce

Reuse

Recycle