

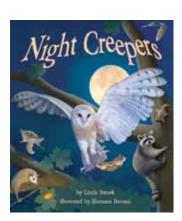
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## How to Use This Activity Guide (General)

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 crosscurricular as possible. If you are teaching sentence structure in writing, why not use sentences that teach science or social studies? We also know and understand that you must account for all activities done in the classroom. While each title is aligned to all of the state standards (both the text and the For Creative Minds), it would be nearly impossible to align all of these activities to each state's standards at each grade level. However, we do include some of the general wording of the CORE language arts and math standards, as well as some of the very general science or social studies standards. You'll find them listed as "objectives" in italics. You should be able to match these objectives with your state standards fairly easily.

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

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

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

## What Do Children Already Know?

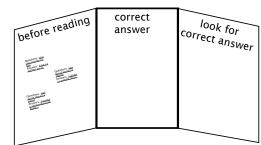
Young children are naturally inquisitive and are sponges for information. The whole purpose of this activity is to help children verify the information they know (or think they know) and to get them thinking "beyond the box" about a particular subject.

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

Their answers should be placed on a "before reading" panel. If doing this as a group, you could use a bulletin board or even a blackboard. If doing this with

individual children, you can use a plain manila folder with the front cover the "before reading" panel. Either way, you will need two more panels or sections—one called "correct answer" and the other "look for correct answer."

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



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

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

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

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

## **Pre-Reading Questions**

- 1. What does nocturnal mean?
- 2. What does diurnal mean?
- 3. What does crepuscular mean?
- 4. What are some nocturnal animals?
- 5. When are humans most active, day or night?
- 6. When are bats most active, day or night?
- 7. When are owls most active, day or night?
- 8. What are mother foxes called?
- 9. What is a family group of wolves called?
- 10. What are the only mammals that can fly?
- 11. How do bats use their ears to map their surroundings?
- 12. What do flying squirrels eat?
- 13. What do skunks eat?
- 14. What does a mother opossum keep in her pouch?
- 15. What does "prehensile" mean, as in a prehensile tail?
- 16. Why do male bullfrogs croak?
- 17. What is bioluminescence?
- 18. What animal in this book (other than humans) can open simple locks?
- 19. What is it called when a bird uses its beak to smooth and arrange its feathers?
- 20. What does "bobbed" mean, as in a bobbed tail or a bobcat?
- 21. What are mother deer called?
- 22. Why do mother deer leave their babies alone during the day?

## Comprehension Questions & Writing Prompts

Explain major differences between books that tell stories and books that give information, (paired fiction & For Creative Minds non-fiction)

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.

- 1. Are you nocturnal, diurnal, or crepuscular? How do you know?
- 2. If you were a nocturnal animal, what type of animal would you like to be?
- 3. Have you ever seen an animal's eyeshine? What was it like? If you haven't seen an animal's eyeshine, how do you think you would react?
- 4. Imagine people were nocturnal. How would your life be different?
- 5. If people were nocturnal, do you think our bodies would be different? Why or why not?
- 6. What is the most interesting fact you learned about an animal in this book?
- 7. Are there any animals in this book you are curious to learn more about? How would you go about finding more information?

## Language Arts & Science: Basic Needs

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

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

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

Plant/ Animal	water	oxygen	food	light	space

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

## Cross-Curricular Vocabulary Activities

Objective Core Language Arts:

Determine or clarify the meaning of unknown and multiple-meaning words and phrases based on grade-level reading and content.

Identify new meanings for familiar words and apply them accurately (e.g., duck is a bird & the verb to duck). Use words & phrases acquired through conversations, reading/being read to, and responding to texts. Determine the meaning of general academic and domain-specific words and phrases in a text relevant to a grade-level topic or subject area.

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

Write informative/explanatory texts in which they introduce a topic, use facts and definitions to develop points, and provide a concluding statement or section.

Use frequently occurring adjectives.

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

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

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

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

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

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

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

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

## **Word Bank**

Build a word bank using words found in the story or For Creative Minds.

Adjective	Noun	Verb
adaptable	back	are
blue	bats	bark
brave	bioluminescence	climb
crepuscular	body	creep
diurnal	bullsfrogs	find
dry	chemicals	fly
excellent	day	glide
green	echolocation	howl
nocturnal	foxes	hunt
oily	hunters	leap
old	night	sleep
scared	opossums	spray
smart	racoons	
strong	them	
weak	time	
young	trees	
	wolves	

# **Cross-Curricular Silly Sentences**

1.	Red are adaptable
	noun noun
2.	howl, growl, whine, and bark.
3.	use to get around in the
	dark and food.
	dark and food.
4.	Flying squirrels don't actually —they
	and glide.
5.	When a skunk is, it turns its back and adjective
	an awful-smelling, mist.
	verb adjective
6.	are climbers and spend a
	noun adjective
	lot of time in
7.	Bullfrogs at night.
8.	Fireflies have in their that
	help to make them glow.
9.	Raccoons are adjective
10.	Night creepers all day and then it's time
	for them to again.

## Edible Sorting and Classifying Activity

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

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

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

Gather a cup of edible "sorting items." For example:

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



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

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

- · Were there some items that fit more than one group or don't fit any group?
- · If so, how did the child decide which attribute was more important?
- · How are various objects similar and different?
- · Was it easy to sort or were there some items that were a little confusing?

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

Graph the attributes that children used to sort their items. (Graph provided on next page.

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

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

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

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

10		
9		
8		
7		
6		
5		
4		
3		
2		
1		
attribute		

### Vertebrate Classes

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

### Mammals:

hair, fur, whiskers, or quills at some point during their lives backbone (vertebrate) inside skeleton (endoskeleton) lungs to breathe most give birth to live young produce milk to feed young warm-blooded

### Birds:

feathers backbone (vertebrate) inside skeleton (endoskeleton) lungs to breathe hatch from hard-shelled eggs warm-blooded

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

### Reptiles:

dry scales or plates backbone (vertebrate) inside skeleton (endoskeleton); most turtles also have a hard outer shell lungs to breathe most hatch from leathery eggs cold-blooded

Cold-blooded animals' body temperature comes from their surroundings

### Fish:

most have scales covered with a thin layer of slime backbone (vertebrate) inside skeleton (endoskeleton) gills to breathe babies are either born alive or hatch from jellylike eggs cold-blooded

### Amphibians:

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

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



### Common Invertebrates

### Arthropods: Insects:

hard outer covering no backbone (invertebrate) outside skeleton (exoskeleton)

adults have 3 body parts: head, thorax & abdomen

mouthparts adapted for chewing, biting, sucking and lapping

breathe through trachae

compound eyes

3 pairs of legs

usually 2 pairs of wings and 1 pair of antennae

most hatch from eggs

metamorphosis: none, incomplete, or complete cold-blooded

### Mollusks Bi-valves:

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

### Mollusks Gastropods (Snails):

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

### Anthropod Arachnia (Spiders):

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

# Arthropod Crustaceans (Crabs):

hard outer covering

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

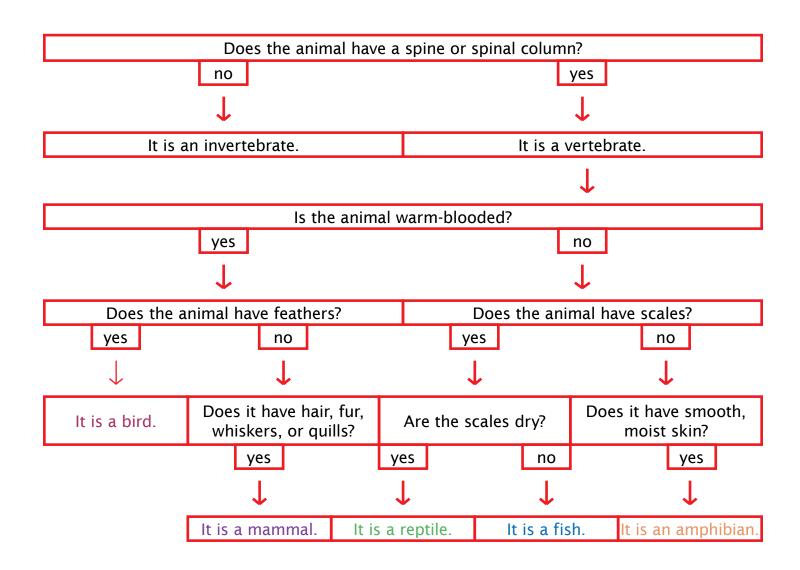
## Dichotomous (Yes/No) Key

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

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

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

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



## **Animal Sorting Cards**

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

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

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

### **Animal Card Games**:

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

where the animals live (habitat) tail, no tail

number of legs (if the animals have legs) colors or skin patterns

how they move (walk, swim, jump, or fly) animal class

type of skin covering (hair/fur, feathers, scales, moist skin)

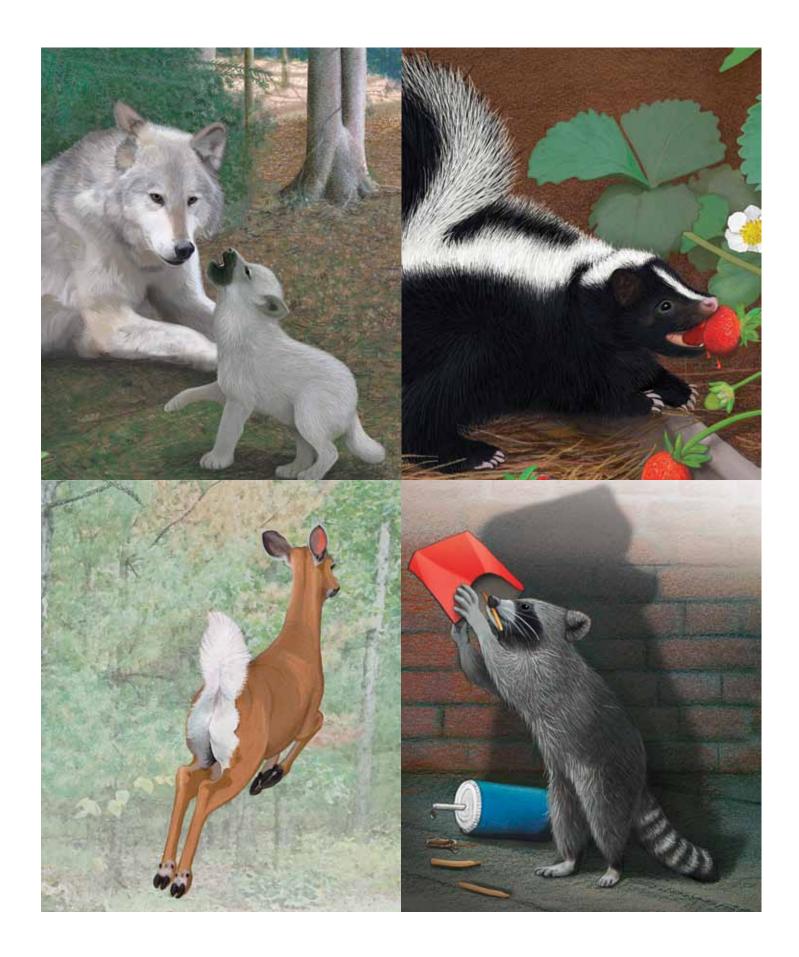
what they eat (plant eaters/herbivores, meat eaters/carnivores, both/omnivores)

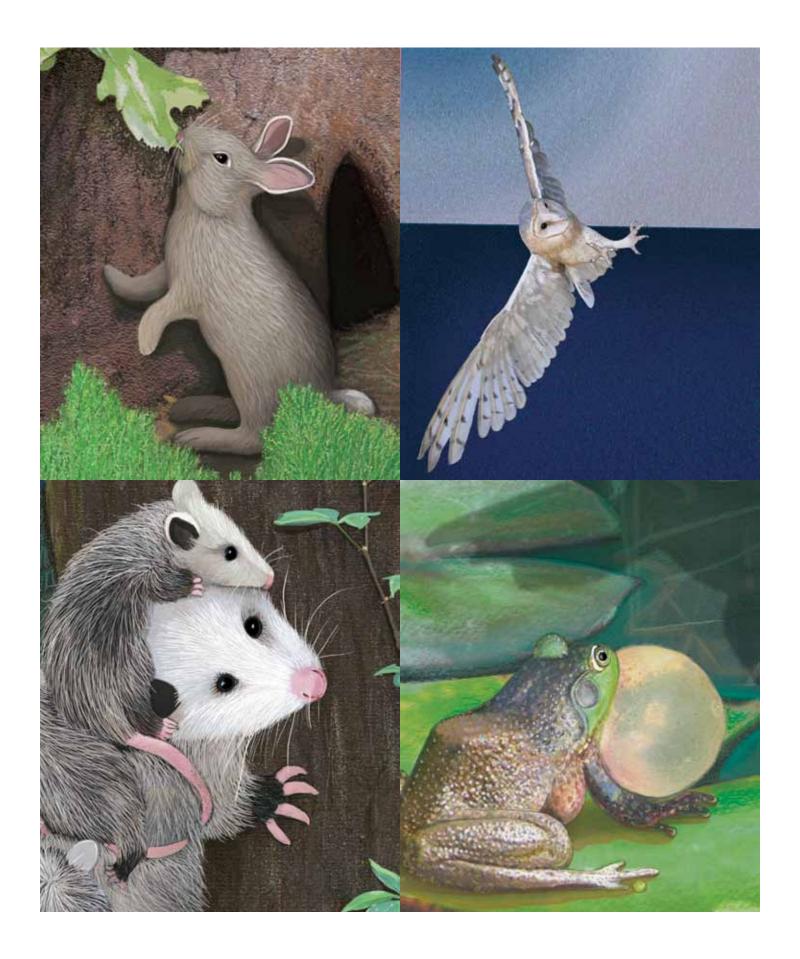
Memory Card Game: Make two copies of each of the sorting card pages and cut out the cards. Mix them up and place them face down on a table. Taking turns, each player should turn over two cards so that everyone can see. If the cards match, he or she keeps the pair and takes another turn. If they do not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

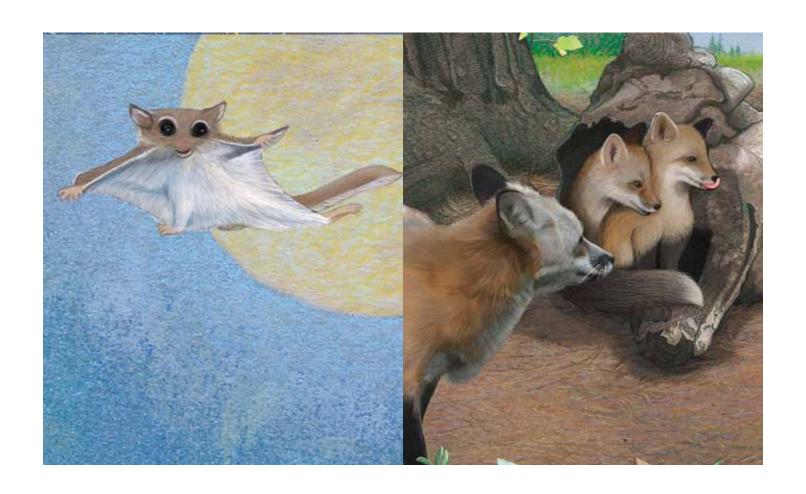
Who Am I? Copy and cut out the cards. Poke a hole through each one and tie onto a piece of yarn. Have each child put on a "card necklace" without looking at it so the card hangs down the back. The children get to ask each person one "yes/no" question to try to guess "what they are." If a child answering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

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









## **Adaptations**

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

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

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

### **Physical Adaptations**

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

### body parts

teeth—depends on type of food eaten feet, flippers, fins—ability to move placement of eyes gills, lungs, or other—how does the

animal get oxygen
ears—or how the animal hears/senses

### body coverings

hair or fur feathers scales moist skin

### camouflage and protection

color of skin or pattern to blend into background body structure resembles another organism to fool predators poisonous or stinky smells

### **Behavioral Adaptations**

instinct: behaviors or traits that the animals are born with

learned behavior: traits that animals learn to improve their chances of survival

or to make their life easier

social groups versus solitary living communication with other animals

defense

hiding in an area that provides camouflage reaction to cycles (day/night, seasons, tides, etc.)

migration: the seasonal movement of animals from one location to another hibernation: a long, deep sleep in which the animal's breathing and heartbeat are slower than usual

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

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

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

# Science Journal (Vocabulary)

noc	turnal
my definition	my drawing

diu	rnal
my definition	my drawing

crepus	scular
my definition	my drawing

biolumin	iescence
my definition	my drawing

# **Animal Observation Journal**

Researcher Name: \_\_\_\_\_

	Location:
	Date:
Time	Notes

## Living or Nonliving?

Objective: Identify differences between living and nonliving things.

What things in this book are living things? What are nonliving things? How can you tell? It can be hard sometimes to know the difference. A living thing will meet most or all of the criteria on this checklist.

Breathes
Takes in water
Gets nutrients and energy from its environment
Reproduces
Grows and changes

### 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**

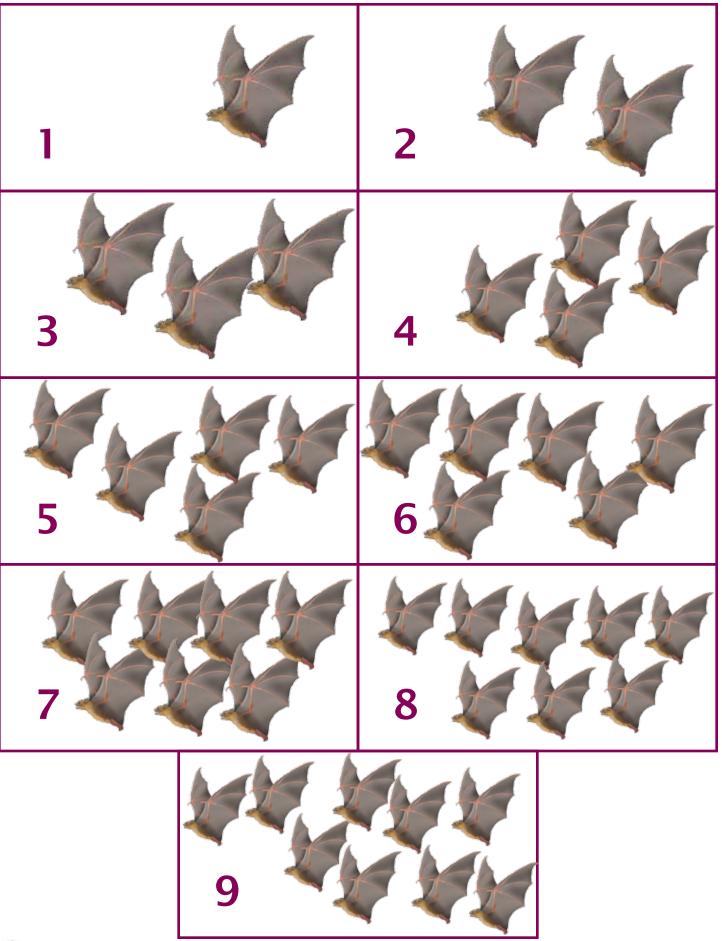
(Make four copies of the math cards to play these games):

**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.



# **Coloring Pages**







### **Answers**

- 1. Red foxes are adaptable hunters.
- 2. Wolves howl, growl, whine, and bark.
- 3. Bats use echolocation to get around in the dark and find food.
- 4. Flying squirrels don't actually fly—they leap and glide.
- 5. When a skunk is scared, it turns its back and sprays an awful-smelling, oily mist.
- 6. Opossums are excellent climbers and spend a lot of time in trees.
- 7. Bullfrogs hunt at night.
- 8. Fireflies have chemicals in their body that help to make them glow.
- Raccoons are smart.
- 10. Night creepers sleep all day and then it's time for them to creep again.

# Appendix A—"What Children Know" Cards

Question:	Question:
My answer:	My answer:
This information is correct!	This information is correct!
This information is not correct; can you find the correct information?	This information is not correct; can you find the correct information?
Question:	Question:
	Qu'05.110111
My answer:	My answer:
This information is correct!	This information is correct!
This information is not correct; can you find the correct information?	This information is not correct; can you find the correct information?

# Appendix B—Venn Diagram

Compare and contrast two animals in this book

