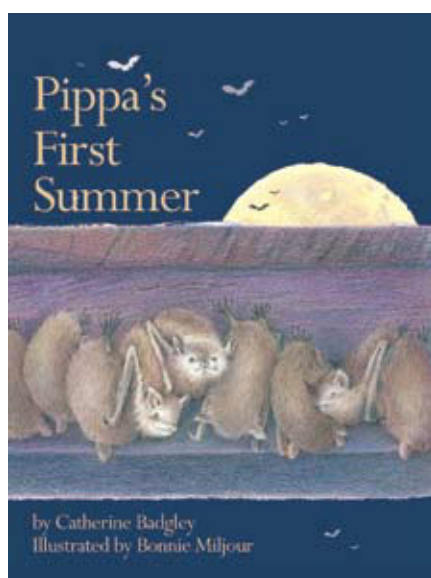


# Pippa's First Summer

written by CATHERINE BADGLEY illustrated by BONNIE MILJOUR

## Teacher and Parent Guide



created by MAURA DALIAN

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# Bat Communication I

All bats can see with their eyes, but many rely on sounds that bounce off or echo from even tiny objects in order to find their way around and locate food at night. The sounds are produced in their voice box just like our sounds are. Some of the calls Catherine Badgley describes in *Pippa's First Summer* are: a wake-up call, a gathering call, an alarm cry, an arrival call, and a journey call. When the bat is in flight to find food, their calls are described as rapid clicking phrases.

## BAT TALK

In cooperative groups discuss the different ways bats can communicate with each other. Then, as a group, decide on what your calls will sound like. Be sure everyone understands. Take turns choosing calls.

Now, try communicating with your group using only the calls you created. Have one person be the “calling bat.” After the calling bat is through making the call, the other bats must act on the call. For example, if the calling bat cries out the wake-up call, all of the other bats in that group must recognize it, pretend to sleep, and WAKE UP!!!! If the gathering call is chosen, all the bats will huddle together. The alarm cry? They will hide! An arrival call? Welcome the caller home. Finally, with a journey call the bats would gather together and fly off. See if you can communicate with your classmates the way bats communicate with each other! Can you think of other calls you will need? Take turns being the calling bat.

Make notes below of how your group has described the calls (for example, your wake-up call might be 3 squeaks and a click).

wake-up call \_\_\_\_\_

gathering call \_\_\_\_\_

alarm cry \_\_\_\_\_

arrival call \_\_\_\_\_

journey call \_\_\_\_\_

finding food \_\_\_\_\_

others? \_\_\_\_\_

Be sure that everyone writes the same thing down so you can really communicate!



# Bat Communication II

**OBJECTIVE:** Using the book *Pippa's First Summer*, students will demonstrate knowledge about what bats eat and the process of echolocation.

In cooperative groups of four or five, name one member to be the bat and place a blindfold on them. Next give each of the other members a name tag that identifies him or her as one of the many kinds of insects bats eat. The bat's job is to catch one of the bugs for dinner. All the bugs scatter. **BE SURE THAT THE BLIND-FOLDED CHILD CANNOT RUN INTO ANYTHING OR TRIP OVER ANYTHING.** The bat calls out a bug's name. Each time the bat makes a noise, the bug that has been called must echo it. The bug that is being hunted may move only twice. If the bat touches the bug then that bug is eaten!!! The bat must then describe how the bug tasted using an adjective (crunchy, juicy, slimy). The bug that has been caught is now the bat and the game continues until all players have a turn "at bat." For added fun give the bat a cape for wings so he can scoop the bug up in them.

Some insects bats eat are: lacewings, mayflies, mosquitoes, and beetles. Look back at the book, *Pippa's First Summer*, to see if you can find the names of more bugs that bats eat.





# Guided Poetry

---

NAME: \_\_\_\_\_

**STEP ONE: BRAINSTORM!** In the next minute list as many adjectives that you can think of that describe Pippa.

Now list as many things as you can think of that Pippa needs.

List as many things that you can think of that Pippa loves.

List as many things that you can think of that Pippa fears.

List as many things that you think of that Pippa would like to see.



# Guided Poetry *continued*

**STEP TWO:** Now write a first draft of a biographical poem about Pippa. Choose your best ideas from the brainstorming page.

## PIPPA

Write 4 adjectives that best describe her \_\_\_\_\_

3 things she needs \_\_\_\_\_

4 things she loves \_\_\_\_\_

3 things she fears \_\_\_\_\_

1 thing she would like to see \_\_\_\_\_

## PROOFREAD

Now check your ideas. Read your poem out loud to yourself and to a friend. Do you need to change any of the words you have chosen?

## EDIT

Check your spelling and punctuation.

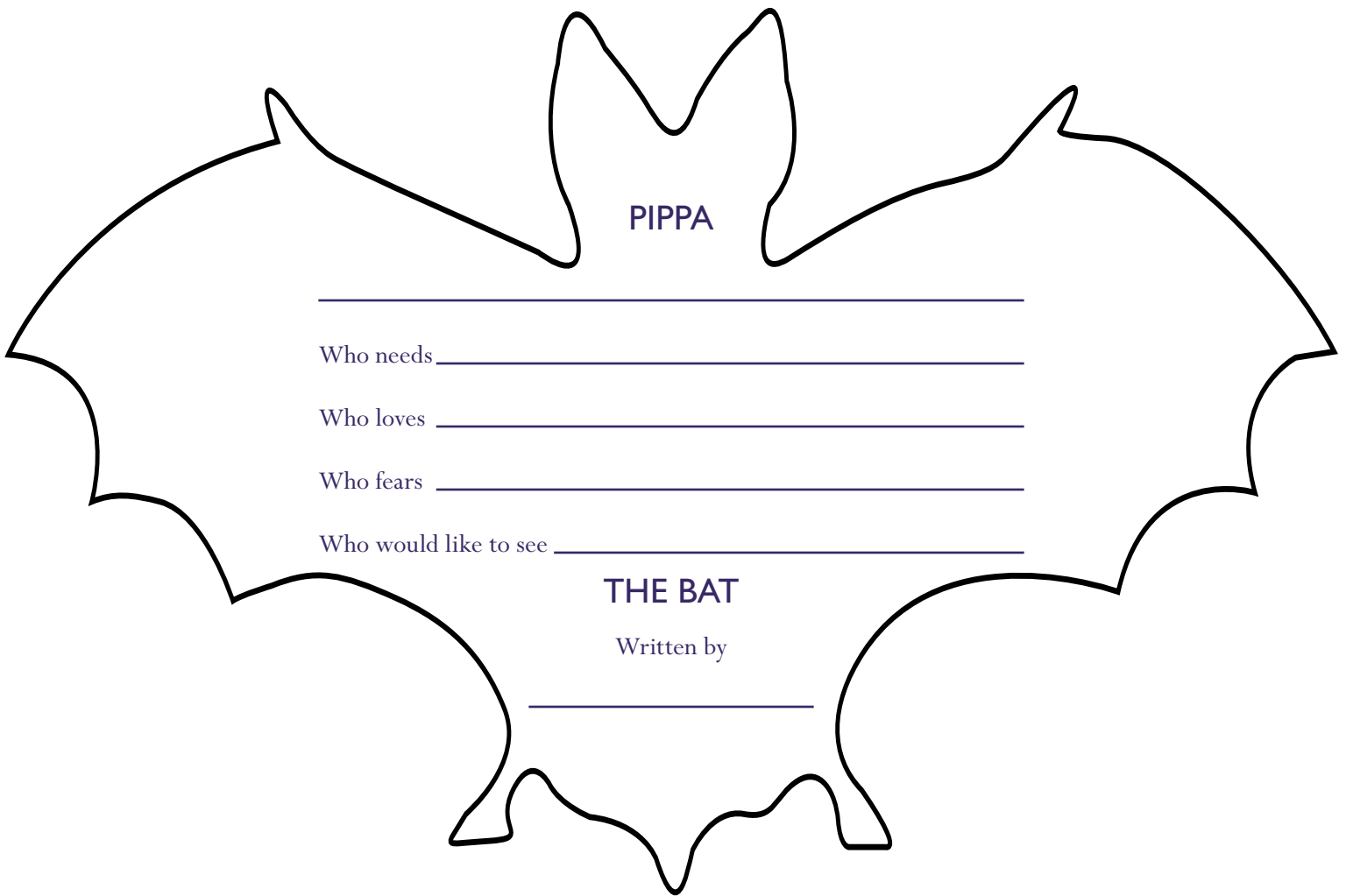
## REVISE

Fix any mistakes or changes you wish to make.

## PUBLISH

Now write your poem on the bat shape. Punch a hole in your bat and hang her up to fly.

# Guided Poetry *continued*



# Bat Travel Brochure

NAME: \_\_\_\_\_

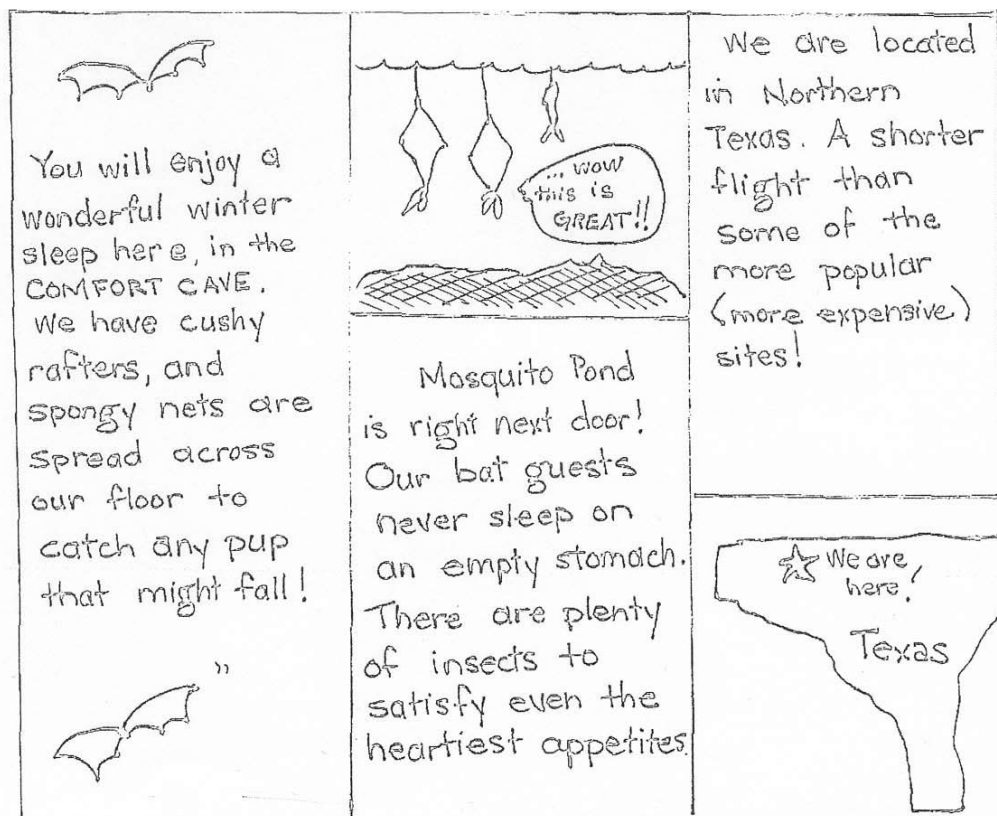
In the book *Pippa's First Summer*, Pippa and her mother migrate to a cave to hibernate. Just how do you suppose the bats found out about the cave? Create a travel brochure for a special cave bats can travel to for their long winter sleep. You must include a map that shows the location of the cave, a description of the accommodations, and the availability of food and water.

Before you do this, check out two very popular bat "hangout." The Bracken Cave in Central Texas is host to over 20 million bats and the Congress Avenue Bridge in downtown Austin, Texas, can have as many as 1.5 million bats sleeping underneath it. You can see pictures of both places at the following web sites:

<http://www.batcon.org/discover/txguide.html>

<http://www.batcon.org/batsmag/v10n3-1.html>


To create your brochure fold a piece of paper into three columns. Think about how you want to lay out all the information you need to include. Plan it out carefully. Here is an example:



# The Bat-A-Log

NAME: \_\_\_\_\_

In the book *Pippa's First Summer*, you learned a lot about what a bat needs to survive. Now try designing the first ever "Bat-A-Log," a mail order catalog for the discriminating bat. Decide on a name for your bat-a-log and put it in the heading. In each of the squares below draw a picture of the merchandise you are selling and write a short description of a product a bat might use. Give the product an item number and a cost. (The cost should be in terms of things bats value like mosquitoes.)

	
#	#
cost:	cost:
#	#
cost:	cost:

# The Bat-A-Log Order Form



qty	item #	description	price each	total
			subtotal	
			shipping (10%)	
			total	

Your satisfaction is 100% guaranteed. If you have any questions or concerns contact us online at  
 www. \_\_\_\_\_ .com

or by phone \_\_\_\_\_

Please be sure to include your address and zip code so we can get your order to you as quickly as possible.

SHIP TO:

Name \_\_\_\_\_

Address \_\_\_\_\_

City, State, Zip \_\_\_\_\_

Phone \_\_\_\_\_

e-mail \_\_\_\_\_

Please include payment with your order. Live bugs only. We appreciate your patronage.



# Answering Machine Message

NAME: \_\_\_\_\_

Many of the words below are used in the book *Pippa's First Summer*. Pretend you are a bat who has just purchased a new answering machine for your home. Use as many of the vocabulary words listed as possible to compose a message for your answering machine.

colony    rafter    pup    imminent    content    echolocation

rabies    predator    prey    cavern    guano    clutch    nocturnal

## EXAMPLE:

*"Hello. You have reached the bat colony. We are either on the rafter, contentedly asleep, or outside trying to catch our prey. We shouldn't need to remind you that we are nocturnal so nighttime is not the best time to catch us at home."*

You get the idea! If you have a tape recorder you can record your message for your friends and classmates. Another idea to try is to record your message into a computer and illustrate the bat that is leaving the message. You might be able to animate the bat in your picture to make it look as if it were talking! Hyperstudio is a great program for a project like this! Good luck and have fun!

Write your message here:

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# Events Accordion Book

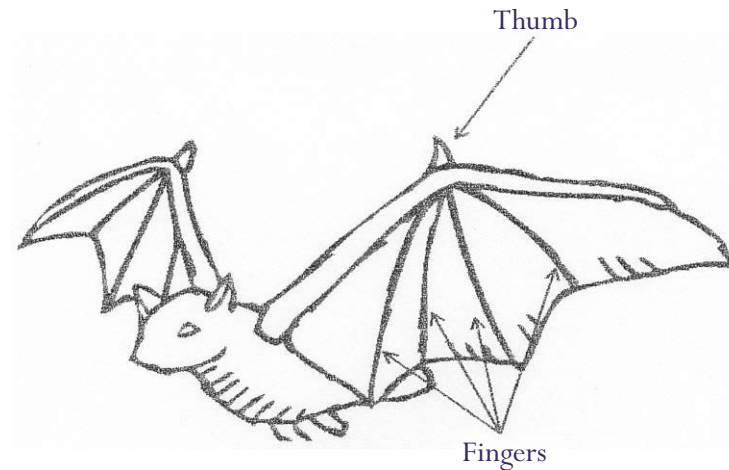
You will need: 16 sheets of  $4\frac{1}{2} \times 5\frac{1}{2}$ " white drawing paper, 8 sheets of colored construction paper, glue, masking tape, markers or colored pencils

Listed below are the events in the book *Pippa's First Summer*. Illustrate each event on a  $4\frac{1}{2} \times 5\frac{1}{2}$ " sheet of white drawing paper. When you are done illustrating the events, put them in order. Glue two events (in proper sequence) side-by-side on a colored sheet of construction paper. Fold the construction papers in half going forward. Next tape the pieces of construction paper together. Then, at the tape, fold the paper going back like an accordion.

1. Pippa and Click are born in the old red barn.
2. They meet Tip, then ride with their mother outside while she eats and she is almost caught by an owl.
3. Click falls from the rafter and is rescued by Tip's mother.
4. Click and Pippa make their first flight.
5. While playing tag, Pippa gets tangled in a horse hair and is trapped in the barn.
6. The barn cat tries to capture her but she hides behind the grain bins.
7. Pippa is discovered by the children, Amy and Sam, and the farmer puts her into an apple tree to rest and heal.
8. The three bats play hide-and-seek. Pippa flies into the house and Click and Tip follow her.
9. Click is killed by a babysitter, Lucy, and is buried in the backyard by Sam.
10. Amy and Sam help Pippa find a way out of the house and she returns to her mother with the news of Click's death.
11. Pippa watches a Luna Moth escape being eaten and uses the same strategy to escape from an owl while returning home.
12. The bats leave on their journey to a cave in the south, but Pippa is injured from her near-death run-in with the owl.

# Events Accordion Book continued

13. Pippa blacks out repeatedly on the journey. She and her mother are forced to stop flying with the group. They spend the night in a hollow tree where they meet Dart.
14. They reach the cave and meet up with others of their own kind.
15. Pippa is on her own while her mother returns to the cave to find a mate. During this time, Pippa meets Luce, goes exploring, and is reacquainted with Tip.
16. Pippa is reunited with her mother and the bat colony begins its long winter hibernation.



Bats are the only mammals that can fly.

Bat wings are made of two thin layers of skin that are stretched over their arms and fingers.

Bat fingers are very long. If we were like bats, our fingers would be longer than our legs!

# Vocabulary Word Search


NAME: \_\_\_\_\_



T C I C H P Q Z C U G E X Y X  
W E M N R A T C E N T L R N G  
N S V S S P N M N A R E G O U  
Z R T A R E I G N A T R L L A  
V A E E C G C R E F E A A O N  
B E Y V R N E T A Y C N N C O  
S V Z A A B E R S L H O R N U  
T Z T V I C S K U F O S U U N  
B E X H W Q T W C T C R T R J  
P R E D A T O R A A G L C S I  
W I N G S F N R V L R Y O E H  
S P U P F T R E U O C B N R S  
J G I O P P S U P F L I P Y L  
O I X N Z K Y Q I R E J L I L  
G E J T O E S Y B T H G I N X

BATS  
BRACKEN CAVE  
CAVERN  
CAVES  
CLAWS  
COLONY  
EAR  
ECHO  
FLY  
FRUIT  
FUR  
GUANO  
HANG  
HIBERNATE

INSECTS  
MIGRATE  
NECTAR  
NIGHT  
NOCTURNAL  
NURSERY  
PREDATOR  
PREY  
PUPS  
RAFTER  
SONAR  
TOES  
WINGS






# Fact and Opinion Bat Mobile

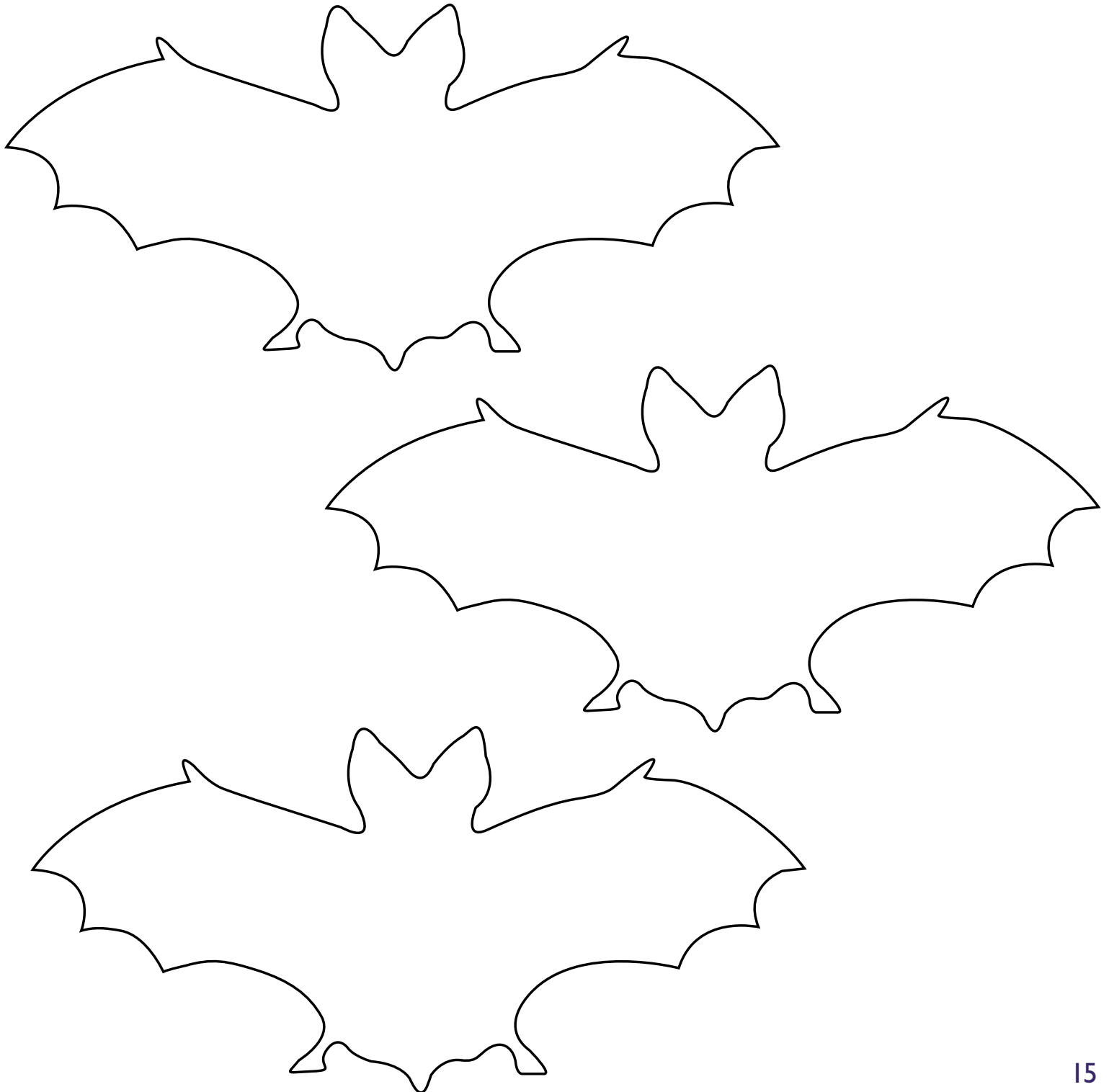
NAME: \_\_\_\_\_

The following statements are either a fact or an opinion. Label the facts with the letter “F” and label the opinions with an “O.”

1. \_\_\_\_ The largest bats, the Flying Foxes of Indochina, have a wing span of up to six feet.
  2. \_\_\_\_ Bats are ugly.
  3. \_\_\_\_ Bats can live for many years.
  4. \_\_\_\_ Some bats can eat up to 600 insects in an hour and 3,000 in a night.
  5. \_\_\_\_ The smallest bat, the Bumblebee Bat of Thailand, weighs less than a penny.
  6. \_\_\_\_ Bats are the most unusual animals.
  7. \_\_\_\_ Bats are a nuisance.
  8. \_\_\_\_ Bats are mysterious.
  9. \_\_\_\_ Seventy percent of bats eat insects using echolocation, while 30% eat nectar, fruit, or blood.
  10. \_\_\_\_ Bats are dirty, scary, and bad to have in your yard.
  11. \_\_\_\_ Bats are the only flying mammals.
  12. \_\_\_\_ Bats in cooler climates migrate and hibernate in winter.
- 

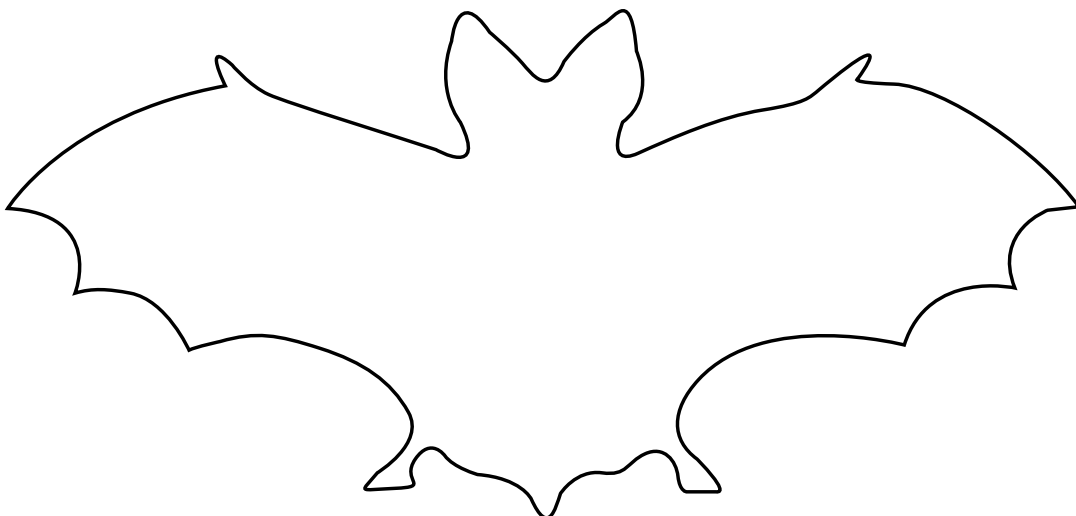
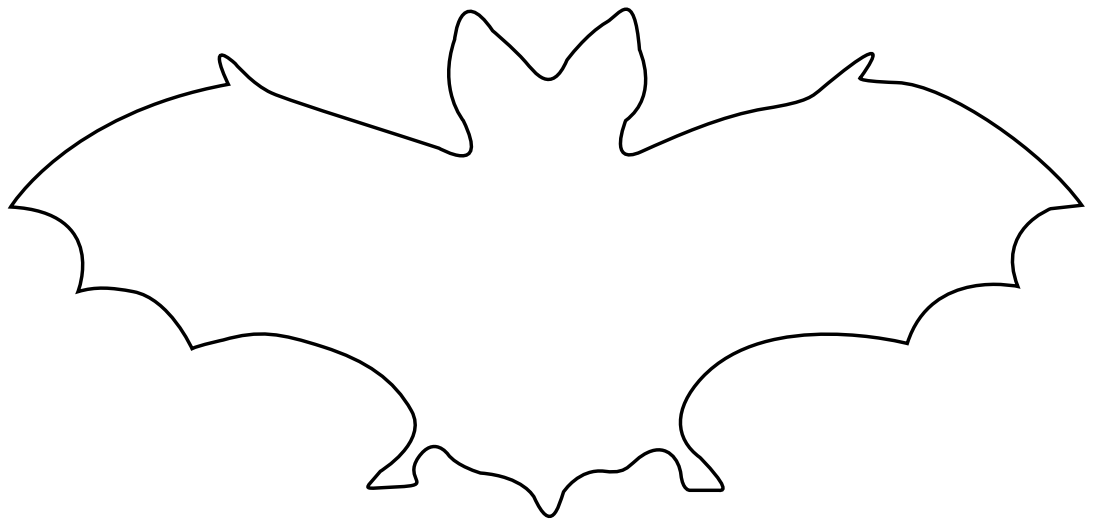
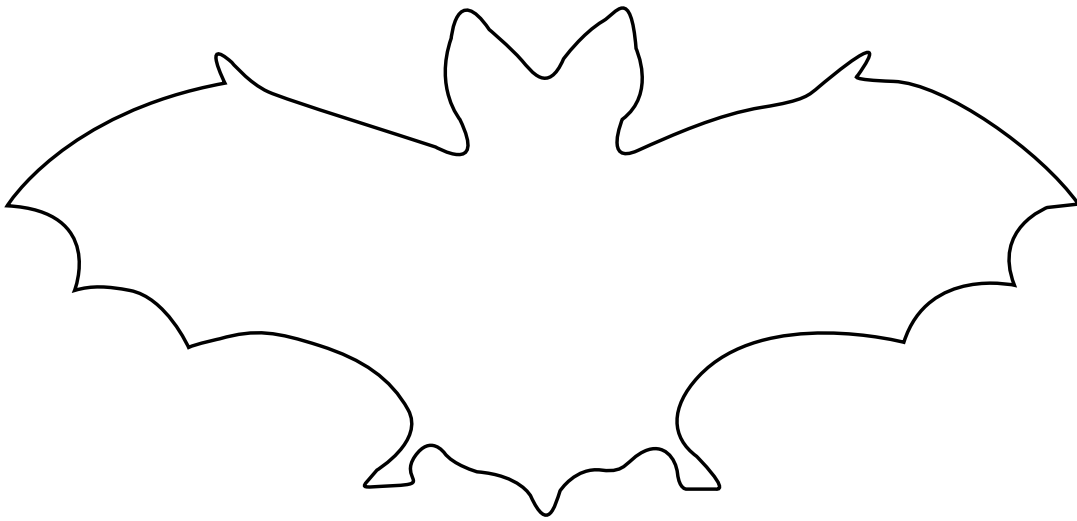
# Fact and Opinion Bat Mobile continued

Now, make a bat mobile. Write each sentence that is a fact on a bat below. Then, cut out each bat outline, punch holes in each image, attach yarn, tie them to a coat hanger, and you have a factual bat mobile!





# Fact and Opinion Bat Mobile continued





# Bat Houses

Want to build a bat house for your backyard? Visit this website for instructions on how to make your own house:

<http://lancaster.unl.edu/enviro/pest/factsheets/265-95.htm>

Or, check out:

*Bat House Builders Handbook*, 2001 printing, copyright 1993 by Bat Conservation International Inc.

You can write Bat Conservation for house plans or other information on bats at:

Bat Conservation International  
P.O. Box 162603  
Austin, Texas 78716





# Bat Myths and Truths

There are myths about bats. A myth is a popular belief about something or someone that may be unfounded or false. Here are some common myths about bats and facts that may help you sort out the truth about our insect-eating buddies.

---

**MYTH:** Bats are dirty and spread diseases such as rabies.

**TRUTH:** Bats groom themselves like cats do. Mother bats generally lick the mouths of their babies before nursing. Less than 0.5% of bats carry rabies. However, if you find a bat the best thing to do is to leave it alone. Most bat bites occur when a human touches a bat.

---

**MYTH:** Bats are blind.

**TRUTH:** Bats can see but use echolocation to find their way around and for catching food. Their sonar skills are so superior they can distinguish a mosquito among branches filled with leaves.

---

**MYTH:** Bats will get stuck in your hair.

**TRUTH:** Bats will steer clear of you by using their echolocation ability. Adult bats can detect objects as thin as hair.

---

**MYTH:** Vampire bats will suck your blood.

**TRUTH:** While vampire bats do usually feed on the blood of livestock, they do not take much of their blood. They bite the animal and lick the blood from the surface of the wound. There is no sucking involved. Like most bats, vampire bats are wary and usually steer clear of humans.

---

Have you heard any other myths about bats? If so, do some research to find out what is the correct information about the bats' habits.



# Bat Stories and Fables

Bats are such exciting little creatures that people have been curious about them for centuries. Many times they would tell and retell stories about bats. The following stories were collected from the stories told by the Chiricahua Apache Indians of New Mexico, the Cherokee Indians of Oklahoma, the Apache Indians of Texas, Aesop a storyteller from Ancient Greece, and finally there is one from the Kono people of Sierra Leone, Africa.

After you read the collection, pick something that interests you about bats and develop a question.

Why do bats sleep all day long?

Why do bats eat mosquitoes?

Try to answer the question in your own creative way!





# Bat Stories and Fables *continued*

## Retold from a Legend of the Cherokee Indians of Oklahoma

**L**ONG AGO, the mammals challenged the birds to a ball game. Bear was captain of the mammals. On the way to the game he tossed great logs into the air to show his strength. Deer ran alongside to show off his speed.

Eagle was captain of the birds. Hawk and Falcon, both swift in flight, joined the team. But secretly, the birds were afraid the mammals would win. The birds perched high in the trees, waiting for game time. Two furry things, not much larger than mice, scurried along a branch.

“Please, Eagle, let us play,” they said.

“But you have four feet and fur. You belong with the mammals,” Eagle said.

“The mammals would not have us,” the furry things replied. “They said we were not strong or fast.”

“To be on our team, you must have wings,” Eagle said. So the birds took spare leather from a drum head and cut two wing shapes from it. They stretched the leather shapes with cane strips and fastened them to the forelegs of the first little mammal. In this way came Tla’meha the bat. Eagle tossed the ball to him. He caught it in his wing and flew with it, dodging and circling. The birds knew he would do well on their team.

There was no more drum leather to make wings for the second mammal.

“We’ll have to stretch his skin,” Eagle said. So the birds pulled at his fur with their beaks until the skin formed flaps between the little creature’s front and hind legs. In this way came Tewa, the flying squirrel. He could carry the ball in his teeth as he glided from tree to tree.

The game began. Bat, skillful and agile, swooped close to the ground to catch the ball and carry it to the goal. He was the star player! The mammals wished they had him on their team.



# Bat Stories and Fables *continued*

## Retold from a Myth of the Lipan Apache Indians of Texas

ONCE, LONG AGO, Coyote thought he would take a wife, but did not know whom to choose.

“Why not take the wife of Hawk Chief?” Bat said, for Hawk Chief was missing and had not been seen for many days.

But Hawk Chief returned and became angry with Bat for giving such ill-considered advice. He picked Bat up and slung him with full force into a juniper bush. Bat hung upside down in the bush, caught by his long, pointy-toed moccasins. He twisted and he turned, but however much he struggled, he could not get free. And from that time on, bats hang upside down—even when they sleep.



## Retold from a Fable by Aesop, A Legendary Storyteller of Ancient Greece

ONCE, A BAT slipped from his roost in a tree and fell to the ground. A hungry weasel was beneath the tree. A good meal, he thought, as he snapped at the bat.

“Help me! Mercy! Save me!” the bat cried, knowing he was about to die.

“Why should I save you?” asked the weasel. “You are my enemy. In fact, you are my worst enemy among the birds.”

“But I am not a bird,” said the bat. “See my fur? See my teeth? I’m a sort of flying mouse.”

“Then I suppose I’ll let you go,” the weasel said.

Later, the same bat slipped from his roost again. He was caught by a different weasel, which happened to be hunting beneath the tree.

“I shall eat you,” said the weasel. “I fancy a tasty mouse for dinner.”

“But I am not a mouse,” said the bat. “Look at my wings.”

“Then I suppose you are a bird. I will let you go,” the second weasel said.

And so twice the bat went free.

The moral of this fable is to be flexible in the face of danger!



# Bat Stories and Fables *continued*

## Retold from a Myth of the Chiricahua Apache Indians of New Mexico

**L**ONG AGO, Killer-of-Enemies vowed to save his people from the terror of monster eagles that roamed the skies and carried off children. Killer-of-Enemies tricked one monster eagle into carrying him up to the eagle nest on the cliff, where he killed the monster eagle and its family. But Killer-of-Enemies did not know how to get down from the cliff. Just then, he saw an old woman approaching. It was Old Woman Bat.

“Grandmother, help me. Take me down,” Killer-of-Enemies said. Old Woman Bat looked all around, but did not see him. Killer-of-Enemies called out again, and again, and again. Finally, Old Woman Bat saw him high in the eagle’s nest. She came over to the cliff and began to climb.

“What are you doing here?” she asked, when she reached the top.

“Monster eagle carried me up here,” he said. “Please take me down.”

“Climb in my basket,” Old Woman Bat said. Killer-of-Enemies looked at the burden basket on the old woman’s back. Its carrying strap was made of spider’s silk.

“That strap is too fine,” he said. “It will break and I shall fall.”

“Nonsense! I’ve carried a bighorn sheep in this basket,” Old Woman Bat said. “Get in and close your eyes. If you look, we will fall.”

Old Woman Bat clambered down the rock, singing a strange song. Her burden basket swayed wildly from side to side. Killer-of-Enemies thought the spider thread would surely break, so he opened his eyes to look.

As soon as Killer-of-Enemies opened his eyes, he and Old Woman Bat crashed down from the cliff. Old Woman Bat landed first and broke her legs. Killer-of-Enemies fell on top of her and was safe. Old Woman Bat’s broken legs soon mended but from that day on, her legs were short.



# Bat Stories and Fables *continued*

## Retold from a Legend of the Kono People of Sierra Leone, Africa

**L**ONG AGO, when first the world was made, it never became dark or cold. All day the sun shone brightly, giving creatures warmth and light. All night the full moon gleamed, making twilight almost as light as day. Until ...

One day, Bat accepted a mission to carry a mysterious basket to the moon. In the basket was darkness, but Bat did not know that.

Bat took off to fly to the moon with the basket on his back.

“Bother this basket,” he said after a while. “It’s too heavy and I’m tired and hungry.” So Bat put the basket down and went to find some food and take a rest.

Along came some other animals. They saw the basket abandoned along the way.

“That is a large basket,” said one of them. “I wonder if it is full of good things to eat?”

“Let’s open it and see,” said another.

Just as the animals were peeking under the basket lid, Bat came back. But he was too late. Darkness had escaped.

Ever since that time, Bat rests by day so he is ready to fly at twilight. At night, you will see him rushing about everywhere. He is trying to catch all the pieces of dark to put back in the basket, so he can take it to the moon. His mission now is to capture every tatter of darkness.



# Bat Crossword Puzzle

NAME: \_\_\_\_\_

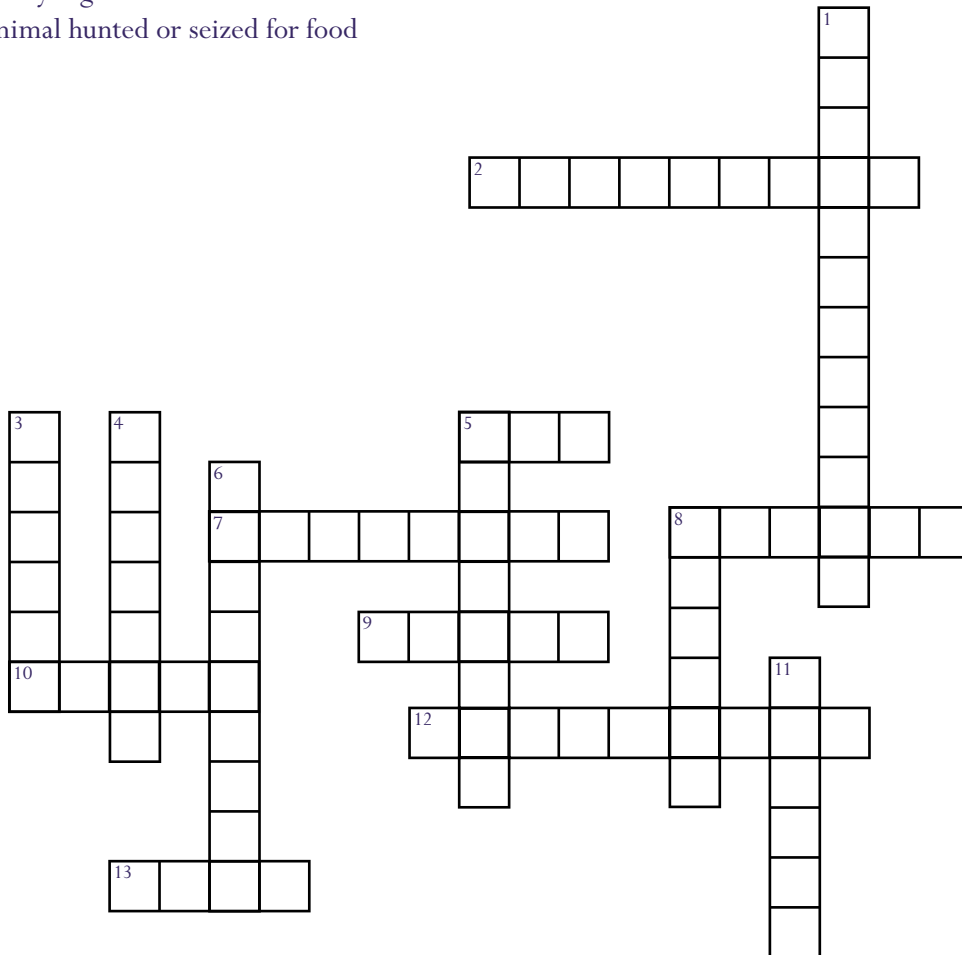
Hint: If you get stuck, check the vocabulary words used in the Answering Machine Message.

## ACROSS

2. when a group of mammals or birds move from one region to another
5. a young bat
7. likely to occur at any moment
8. a group of bats of the same species that live together
9. a natural manure produced by bats and some sea birds
10. a method for detecting and locating objects by means of sounds waves
12. active by night
13. an animal hunted or seized for food

## DOWN

1. the method of locating objects by determining the time for an echo to return to the bat sending the sound
3. an infectious disease of mammals that is transmitted by the bite of an infected bat
4. satisfied
5. the hunter of other animals
6. to spend the winter in close quarters in a dormant state
8. a large cave mostly underground
11. timber beams that support a roof





# Answer Keys

## FACT AND OPINION BAT MOBILE

1. Fact
2. Opinion
3. Fact
4. Fact
5. Fact
6. Opinion
7. Opinion
8. Opinion
9. Fact
10. Opinion
11. Fact
12. Fact

## BAT CROSSWORD PUZZLE

### *Across*

2. migration
5. pup
7. imminent
8. colony
9. guano
10. sonar
12. nocturnal
13. prey

### *Down*

1. echolocation
3. rabies
4. content
5. predator
6. hibernate
8. cavern
11. rafter



# Other Sources

## OTHER GREAT SOURCES FOR BAT INFORMATION:

Denver Museum of Natural History, *Bats: Swift Shadows in the Twilight*, Roberts and Rinehart Publishers, ISBN 1-879373-52-1

Porter, Karen, “Creative Creatures,” *The Mailbox Intermediate*, Oct/Nov 2005, p. 24

Also, check the “About Bats” chapter in *Pippa’s First Summer* for the author’s recommendations for further reading on bats.

All puzzles were made using [Puzzlemaker.com](http://Puzzlemaker.com).

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