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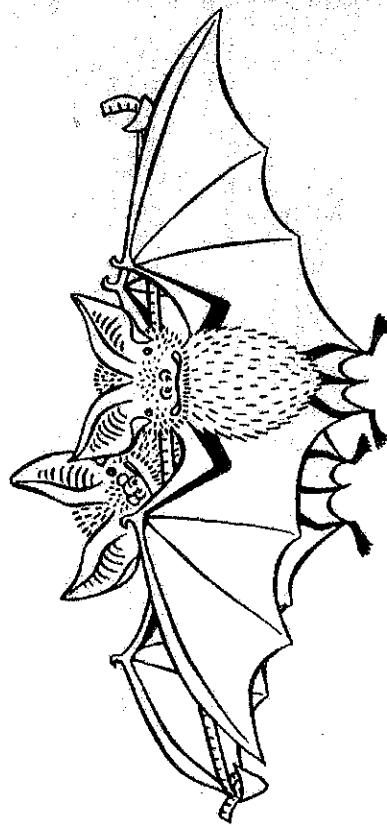
Proyecto Bio-regional de
Educación Ambiental, A. C.



Bat Conservation International

TOOLS FOR TEACHING BAT CONSERVATION

A One-day Workshop for Formal and Non-Formal Educators



CONTENT

Program TOOLS FOR TEACHING BAT CONSERVATION

ACTIVITY 1 Using the KIDS DISCOVER BATS Video (3 pages)	<ul style="list-style-type: none"> Teacher's notes (Introduction, Materials, Objective, Procedure) Worksheet Diagram
ACTIVITY 2 Book 'FLOWERS FOR LUCIA, THE BAT™ and MIGRATION POSTER (6 pages and a plastic bag with 18 cards with key words)	<ul style="list-style-type: none"> Teacher's notes THE BOOK (Introduction, Materials, Objective, Procedure) Teacher's notes (Possible questions for 'Flowers for Lucia, The Bat) Teacher's notes THE POSTER (Introduction, Materials, Objectives, Procedure) Teacher's notes (answer sheet for the teacher) Worksheet Communication Strategies Exercise Teacher's notes (the 18 words on a page and the 18 key words in cards)
ACTIVITY 3 Educator's Activity Guide HOW A BAT COMPARES WITH ME (14 pages, a picture of a bat front and back, and 12 colored cards in English and Spanish)	<ul style="list-style-type: none"> Teacher's notes (Introduction, Materials, Objective, Procedure) Teacher's notes (Necessary materials for each station) 6 pages with information in English and Spanish for the clock 1 page with numbers from 1 to 12 1 page with the names of the parts of the body of the bat Twelve colored cards in English and Spanish ready for the clock exercise 2 pages with the picture of the bat front and back 1 picture of the anatomy of the bat ready for the exercise 2 worksheets for students - one in English and one in Spanish
ACTIVITY 4 Wrap Up A Bat Mind Map to remember what we did (2 pages)	<ul style="list-style-type: none"> Teacher's notes (Introduction, Materials, Objective, Procedure) Teacher's notes (An example of a possible Bat Mind Map)
EXTRA ACTIVITY 5 LEARNING SCIENTIFIC AND COMMON NAMES OF BATS (4 pages and the 6 pictures of the bats cut in half)	<ul style="list-style-type: none"> Teacher's notes (Introduction, Materials, Objective, Procedure) Worksheet for students 2 pages with 6 pictures of bats and their scientific and common names The 6 pictures of the bats and scientific and common names ready for the exercise
2 DIRECTORIES OF PARTICIPANTS - San Diego, February 2003 (One random order - the other by organizations)	

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PROGRAM

- REGISTRATION and WELCOME
- INTRODUCTION
 - Lecture 1 - BAT DIVERSITY SLIDE SHOW
- Break 1
- Lecture 2 - SDBC EDUCATION PROGRAMS
 - Activity 1 - Video
- Lecture 3 - BATS: UNDERSTANDING THEIR BALANCE IN NATURE
 - Activity 2 - Book and Poster
- Break 2 - LUNCH
- Lecture 4 - LOCAL BATS
 - Activity 3 - Educator's Activity Guide
- SURPRISE - SURPRISE
- Break 3
- Activity 4 - Wrap up
- EVALUATIONS and GOOD-BYES
- FIELD TRIP (optional)

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ACTIVITY 1

Using the KIDS DISCOVER BATS Video as a teaching tool.

Teacher's notes

INTRODUCTION

- The KIDS DISCOVER BATS video is an incredible tool for learning. Teachers and students can discover and learn together very interesting facts about bats.
- It is important to tell the participants that the way we are presenting this activity today is an example of how we could use the video in our classrooms with our kids, or in Nature Centers with our children visitors. And that we are going to pretend they are our kids or our children visitors (it is different with adults).

MATERIALS

The video and a TV or a projector with speakers.

A board and chalk or markerboard and markers.

The worksheet for the exercise and pencils for each participant.

OBJECTIVE

To share with educators a technique that can be used in classes (and adapted to different levels) or presentations in Nature Centers to encourage students to pay attention by observing and listening carefully for specific information; to share what they discover and know about bats; to listen to what others know about bats; to learn more about bats; to think of something they can do to protect bats and the environment in general; to start a project to inform and educate others about bats.

PROCEDURE

- Give each student a worksheet and read the twelve questions. Students will try to find as many pieces of information as they can while watching the first part of the KIDS DISCOVER BATS VIDEO. Play the first part of the video. Give students a few minutes to complete their worksheet. Ask them if they need to watch the video again to complete the information. Play the video again if necessary. Students share their answers.
- Another possible activity could be the following: Write on the board the word BAT or draw a bat and ask students what information they would like to know about bats. Write on board key words (see diagram). Play the first part of the video. Ask students to mark the key words they found information about, then, choose one and talk a little about it. For example: SIZE - "Bats are different sizes. The smallest is as small as a bumblebee". Another student might want to complete that information. Continue watching the video for more information.

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ACTIVITY 1 Using the KIDS DISCOVER BATS Video as a teaching tool.

Worksheet

What else would you like to know about bats?

What was your favorite part in the video?

What did you find interesting and new?

What other animals were mentioned in the video?

What did you learn about their size?

What did you learn about their wings?

What kind of animals are bats?

How many different kinds of bats are there?

Can you write the name of two bats they mention in the video?

What did you learn about their ears?

What did you learn about their eyes?

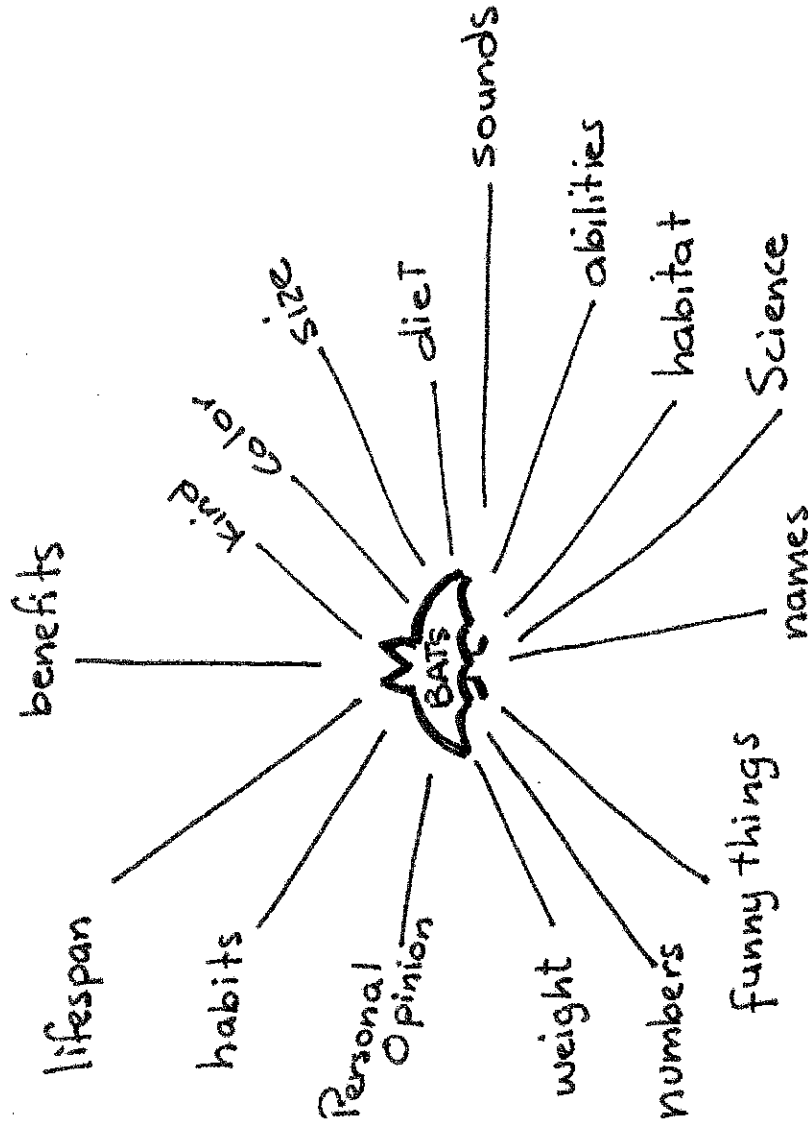
What did you learn about their hair?

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ACTIVITY 1

Using the KIDS DISCOVER BATS Video
as a teaching tool.

Diagram



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ACTIVITY 2

BOOK "FLOWERS FOR LUCÍA, THE BAT" and MIGRATION POSTER. More tools for teaching about bats.

Teacher's notes

INTRODUCTION

The book "Flowers for Lucía, the bat" provides teachers with a unique teaching tool. Being a bat is not easy, they have to face many challenges and dangers all their lives. They have to learn how to fly and how to eat by themselves; they have to learn how to use all their senses; and they have to learn when and where to migrate. Readers will accompany Lucía and her loving mother in their adventures and learning experiences.

MATERIALS

The book "Flowers for Lucía" pages 22 to 32

A list of questions that will be answered by students.

Sheets of paper and pencils for students

OBJECTIVE

- To have students listen for specific information about migration of bats while reading a piece of the story about Lucía the Bat.
- To represent the story in pictures while they are listening (to develop visual perception and communication)
- To answer some questions and talk about the story (to develop auditory perception and communication)
- To represent in a play the story (to develop kinesthetic perception and communication)

PROCEDURE

- (Because in our workshop there were English and Spanish speaking people we chose to read in English and Spanish)
- Tell participants you are going to read a little piece of the book "Flowers for Lucía" and they are to listen carefully for the information so that at the end they can answer some questions. Tell them that while you are reading they are to represent the story in pictures.
- Read the story.
- Ask the questions and listen to your students' answers.
- Tell them to find a partner and switch drawings. Ask them to 'read' each other's pictures. Try to walk through the classroom to hear what they are saying.
- Ask your participants what they discovered and learned during this exercise.

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ACTIVITY 2

BOOK "FLOWERS FOR LUCÍA, THE BAT"
and MIGRATION POSTER. More tools for
teaching about bats.

Teacher's notes

POSSIBLE QUESTIONS

- What is the name of the principal character in the book? Lucía
- What kind of bat is Lucía?
- What does Lucía eat?
- What does 'migration' mean?
- How far do bats, like Lucía and her mother, migrate every year?
- Why do they migrate?
- Where does the trip end?
- What time do bats fly?
- What are some of the things Lucía saw while flying?
- Where do bats spend the day?
- How do bats sleep?
- What are some of the dangers bats face while migrating?
- Why do you think humans throw stones at the bats?
- What do you think about it?
- What would you like to say to humans who hurt bats?
- What message would you like to tell everybody about bats? Would you like to make a poster with that message?
- How does Lucía's mother describe the ocean?
- How many bats were there in the last cave?
- What is Lucía like?
- What do you think about the relationship between Lucía and her mother?
- What does Lucía like to do?
- What did Lucía learn during her first migration?
-

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ACTIVITY 2

POSTER

Communication Strategies Activity

Teacher's notes

INTRODUCTION

The poster about Migration of Bats provides teachers with a picture to talk about two different types of bats that migrate, their importance to the environment and how necessary it is to protect them.

There are many ways in which a poster can be used in a class: you can cut it in pieces and give a piece to each student who will describe his/her part and then, everybody tries to put their pieces to complete the puzzle.; you can prepare a list of questions that might be answered by observing the poster; or you can ask students to describe the poster and then give it a name.

This poster also provides teachers with very interesting information, written in small words, and that information is exactly what we wanted to use this time to create an exercise that motivates students to participate, to use their knowledge of language, and to find the strategy to communicate others what they know.

MATERIALS

The poster and the worksheet for students. The blue, red, and green cards for the exercise

OBJECTIVE

To give the participants an opportunity to come to the front of the room and participate in a Communication Strategies Exercise using the information provided in the poster of Migration of Bats. For the teacher, this exercise helps him/her know their audience. Teacher will distinguish the ones that are spontaneous and the ones who are analytical; the detailed oriented ones and the holistic ones; the ones that follow rules and the ones that just pay attention to the result; and more. Also, when students know what it feels to be in front of the group they might be more generous with their teacher later. This exercise also develops visual, auditory, and kinesthetic communication and perception.

PROCEDURE

- Organize your cards by colors; or by numbers; or as you want (you have 7 blue, 6 green, and 5 red). Students will have to represent in pictures the words that are in BLUE. They will represent in miming the words in RED. They will have to explain the words in GREEN.
- Write on the board a list of numbers from 1 to 18 (see teacher's notes for the answers). Ask for volunteers to participate and come to the front.
- Explain what the exercise is about and what colors mean. Give each student a card as they come to the front. When the participants decipher the word, the student writes the word next to the corresponding number.
- Once they decipher all 18 words. You can give them the worksheet. The students write the words in the columns and then they complete the paragraph about migration below the picture of the poster. They read it and talk about how that information might be completed.
- Ask students to remember Lucía and her mother and find the connection with this poster. Remind them (if they do not mention it) that bats are very valuable and we need to learn how to protect them. Finally, read the rest of the information on the poster.



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ACTIVITY 2

POSTER

Communication Strategies Activity

Teacher's notes

VISUAL	AUDITORY	KINESTHETIC
1. Bats	2. among	
	3. most	
4. valuable		
5. animals.		6. huge
	7. colonies	8. eat
9. billions		
10. insect	11. pests	
12. night,		
13. pollinate		14. flowers
		15. many
	16. millions	
		17. dollars
	18. year.	

Bats are among
our most valuable animals.
Mexican free-tailed bats
form huge colonies
that eat billions of insect pests
each night,
and long-nosed bats
pollinate agave
and cactus flowers
that are worth
many millions of dollars
each year.

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ACTIVITY 2 POSTER

Worksheet Communication Strategies Activity

Worksheet

VISUAL	AUDITORY	KINESTHETIC
1.	2.	
	3.	
4.		
5.	6.	
	8.	
9.		
10.	11.	
12.		
13.	14.	
	15.	
16.		
	17.	
18.		



(1) _____ are (2) _____
 our (3) _____ (4) _____ (5) _____
 Mexican free-tailed bats
 form (6) _____ (7) _____
 that (8) _____ (9) _____
 of (10) _____ (11) _____
 each (12) _____
 and long-nosed bats
 (13) _____ agave
 and cactus (14) _____ that are worth
 (15) _____ (16) _____ of
 (17) _____ each (18) _____

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ACTIVITY 2

POSTER

Cards

Communication Strategies Activity

1 Bats	2 among	3 most	4 valuable
5 animals,	6 huge	7 colonies	8 eat
9 billions	10 insect	11 pests	12 night,
13 pollinate	14 flowers	15 many	16 millions
17 dollars	18 year.		

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EDUCATOR'S ACTIVITY GUIDE

ACTIVITY 3-

Lots of activities for teaching about bats.

Teacher's notes

INTRODUCTION

- In the Educator's Activity Guide there are many activities and ideas teachers can use in their classrooms. We chose the activity HOW A BAT COMPARES TO ME on pages 31, 32, 33, 34
- We copied the information on pages 31 and 33 in 10 cards and included two more to make 12 so that we can put them in 12 'stations' around the classroom as if it were a clock.
- I like to think of this activity as turning our classroom into a hands-on and minds-on museum.

MATERIALS

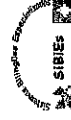
- Students worksheets in Spanish or English
- 12 colored cards with numbers from 1 to 12 with information in English and Spanish about bats and the instructions for students
- All students need pencils to write down their answers on their worksheet
- There is specific material for each station. (See Teacher's notes about the "stations")

OBJECTIVE

- To introduce the Educator's Activity Guide
- To compare the anatomy and physiology of bats and humans
- To share with teachers a way to enrich the activities presented in the Educator's Activity Guide by using the whole classroom space.
- To have students work in pairs and stop at every station, do the activities and register their results.

PROCEDURE

- Imagine the classroom is a clock where the front is 12 and the back is 6 and the center right is 3 and the center left is 9.
- Put the cards with the information and the necessary materials for each activity in the corresponding 'hour'.
- Students have their own worksheet to write their answers. They will have to read the information at every station and do every activity (in random order if you decide it like that.)
- If some finish too fast they could do the extra activity.
- At the end you can direct a discussion about their results and about what they learned during this activity



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EDUCATOR'S ACTIVITY GUIDE

Lots of activities for teaching about bats.

ACTIVITY 3-

Teacher's notes

Necessary materials for each station

<p>1</p> <p>BACKGROUND INFORMATION</p>	<p>2</p> <p>MAMMALS</p>	<p>3</p> <p>WINGSPAN</p> <p>At children's height, put on the wall</p> <ul style="list-style-type: none"> A 7 inches line or ruler A 6 feet line 	<p>4</p> <p>NUMBER OF FINGERS</p> <p>Anatomy of a Bat Front and Back (in binder)</p>
<p>5</p> <p>WEIGHT</p> <ul style="list-style-type: none"> A photo of a Bumblebee Bat of Thailand A weight scale for humans A penny A bag of sand or rice of 50 grams 	<p>6</p> <p>RESTING HEART RATE</p> <ul style="list-style-type: none"> A chair A clock with seconds A calculator Show them to find their carotid artery Formula (in card) 	<p>7</p> <p>ACTIVE HEART RATE</p> <ul style="list-style-type: none"> Space to do jumping jacks A clock with seconds A calculator Show them to find their carotid artery Formula (in card) 	<p>8</p> <p>WING BEATS</p> <ul style="list-style-type: none"> Space to flap arms A clock with seconds A calculator Formula (in card)
<p>9</p> <p>FOOD CONSUMPTION</p> <ul style="list-style-type: none"> A human scale Help from teacher to determine (1/32 of child's weight) 	<p>10</p> <p>LIFESPAN</p>	<p>11</p> <p>WHAT DID YOU LEARN ABOUT BATS IN THIS EXERCISE?</p>	<p>12</p> <p>WHAT DO YOU THINK ABOUT THIS EXERCISE?</p>

MAMÍFEROS

A pesar de que los murciélagos vuelan y que la gente camina, los murciélagos y la gente son parecidos en muchas formas. Esto es porque tanto la gente como los murciélagos son mamíferos. Con unas pocas excepciones, las crías de todos los mamíferos nacen vivas, alimentan a sus bebés de leche y tienen pelo. Otros mamíferos son los gatos, los perros, las ardillas, los mapaches, los elefantes, los changos y las ballenas.

MAMMALS

Even though bats fly and people walk on the ground, bats and people are similar in many ways. That is because both people and bats are mammals. With few exceptions, all mammals give birth to live young, nurse babies with milk, and have hair. Other mammals include dogs, cats, chipmunks, raccoons, elephants, monkeys, and whales.

ENVERGADURA

La envergadura de los murciélagos varía desde unos 15 centímetros hasta casi dos metros. La mayoría de los murciélagos son pequeños mamíferos, aunque las zorras voladoras alcanzan un tamaño grande. El murciélago más grande del mundo es una zorra voladora del Sureste de Asia. Su cara es muy similar a la de una zorra o a la de un perro y se alimenta completamente de fruta.
Pida a sus alumnos que extiendan sus brazos y midan la distancia entre las puntas de sus dedos y que registren el resultado.

WINGSPAN

Bats wingspans vary from about seven inches to nearly six feet. Most bats are small animals, although the flying fox bats achieve a large size. The world's largest bat is a flying fox from Southeast Asia. Its face is very similar to a fox or a dog. It feeds entirely on fruit.
Have your students stretch their arms and measure the distance between finger tips.

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NÚMERO DE DEDOS

El ala de un murciélago es una mano modificada. Utilice al diagrama de la página 15 y explique cómo los huesos de las alas son de hecho dedos muy alargados. También haga notar el dedo pulgar; que tiene una pequeña garra que le ayuda al murciélago a arrastrarse sobre superficies ásperas.

Pida a sus alumnos que anoten sus observaciones

NUMBER OF FINGERS

A bat's wing is actually a modified hand. Refer to the diagram on page 15 and explain how the wing bones are actually greatly elongated fingers. Also point out the thumb. The thumb has a small claw which aids the bat in crawling around on rough surfaces.

PESO

Haz que tu compañero se pese en una báscula.
Anota el resultado.

El murciélago más pequeño del mundo - el murciélago abejorro de Tailandia - pesa solamente dos gramos, menos que una moneda. La mayoría de los murciélagos pesan menos de 50 gramos.

WEIGHT

Have children get on a scale and take their own weight.
The world's smallest bat - the bumblebee bat from Thailand - weighs only two grams, less than a penny.
The majority of bats weigh less than 50 grams, about two ounces.

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PULSO CARDIACO EN ESTADO DE REPOSO

Utilizando un reloj con segundero, demuéstrelas a sus estudiantes cómo encontrar el pulso - poniendo los dedos en la arteria carótida en el cuello. Sentados, los estudiantes deberán tomarse el pulso descansando contando el número de latidos del corazón por un período de 15 segundos. Después pídale que multipliquen el resultado por cuatro para determinar el total de latidos por minuto.

RESTING HEART RATE

Using a clock with a seconds indicator, demonstrate to students how to find their pulse - by putting their fingers against the carotid artery in the neck. Sitting down, students should take a resting pulse by counting the number of heart beats in a 15 second period and multiplying this by four to determine the total for one minute.

PULSO CARDIACO EN ESTADO ACTIVO

Antes de tomar este pulso, haga que sus alumnos simulen el vuelo haciendo un minuto de saltos abriendo las piernas y los pies, inmediatamente después, pídale que se tomen el pulso - poniendo los dedos en la arteria carótida en el cuello. El pulso de los murciélagos es algo porque el vuelo es una trabajo pesado. Su corazón debe bombear rápidamente para proporcionarle muchísimo oxígeno, que es transportado a los músculos del vuelo por la sangre. Durante la hibernación se presenta el extremo opuesto, el pulso de los murciélagos disminuye a solamente 20 latidos por minuto.

ACTIVE HEART RATE

Before taking this rate, have children simulate flight by doing one minute of jumping jacks. Immediately following this, they take their pulse - by putting their fingers against the carotid artery in the neck. The bat's heart rate is high because flight is hard work. Its heart must pump rapidly to provide lots of oxygen, which is carried to flight muscles by blood. During hibernation, the opposite extreme, a bat's heart rate slows to only 20 heart beats per minute.

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ALETEOS

Para determinar el número de aleteos por segundo, haga que sus alumnos batan los brazos como si fueran alas y que cuenten el número de veces que lo pueden hacer en cinco segundos. Después divida el número entre cinco para encontrar la tasa por segundo.

Para soportar a un cuerpo en aire y superar la fuerza de gravedad, un animal debe batir sus alas muy rápido (talvez 12 veces por segundo) para mantener la altitud. ¿Cómo se compara la tasa de los niños con la de los murciélagos? Algunos murciélagos son capaces de planear en el viento, igual que los gavianes y las águilas.

CONSUMO DE ALIMENTOS

Necesitará ayudar a sus estudiantes a determinar este número ($1/32$ del peso del niño). Las zorras voladoras comen alrededor de dos veces y media su propio peso en fruta cada noche. Pida que sus alumnos se pesen y, con su ayuda, calculen cuántos kilos de comida deberían de comer si comieran como un murciélago frugívoro. Los murciélagos insectívoros comen alrededor de la mitad de su peso en insectos cada noche.

WING BEATS

To determine wing beats per second, have your students flap their arms like wings to count the number they can do in five seconds. Then divide that number by five to find the rate per second.

To support a body in the air and overcome the force of gravity, a flying animal must beat its wings very quickly (perhaps 12 times a second) to maintain altitude. How does the children's rate compare to the bat's? Some very large bats are capable of soaring on the wind, just like hawks and eagles.

FOOD CONSUMPTION

You will need to help students determine this number ($1/32$ of child's weight).

Flying fox bats eat about two and a half times their own body weight in fruit in a night. Have the children weigh themselves, and with your help, calculate how many pounds of food they would have to eat if they ate like a fruit bat. Insectivorous bats eat about half their weight in insects each night.

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LONGEVIDAD

El promedio de vida para un humano es de 74 años. Los registros de marcaje de murciélagos han demostrado que algunos murciélagos insectívoros pueden vivir hasta 34 años o más. Para su tamaño, los murciélagos son de los animales más longevos. Para comparar, la mayoría de los ratones viven solamente alrededor de dos años.

LIFESPAN

The average lifespan for a human is 74 years. Banding records have shown that some insectivorous bats live up to 34 years or more. For their size, bats are among the longest lived animals. For comparison, most mice have a lifespan of only about two years.

INFORMACIÓN BÁSICA

Los niños pueden aprender mucho de los murciélagos y de ellos mismos comparando varios aspectos de su anatomía, fisiología y comportamiento. En esta actividad los niños toman sus propias medidas y las comparan con las de los murciélagos.

BACKGROUND INFORMATION

Children can learn a great deal about bats and themselves by comparing various aspects of their anatomy, physiology, and behavior. In this activity, children take their own measurements and compare them to those of bats.

¿QUÉ APRENDISTE DE LOS MURCIÉLAGOS
EN ESTE EJERCICIO?

Por favor, anota en tu hoja lo que hayas aprendido de los
murciélagos.

WHAT DID YOU LEARN ABOUT BATS
IN THIS EXERCISE?

Please, write down on your activity sheet what you have
learned about bats.

¿QUÉ TE PARECIÓ ESTE EJERCICIO?

¿Qué fue NUEVO para ti?

¿Qué te pareció INTERESANTE?

¿Qué te pareció IMPORTANTE?

¿Observaste algo especial durante el proceso de esta
actividad?

WHAT DO YOU THINK ABOUT THIS
EXERCISE?

What did you find NEW?

What did you find INTERESTING?

What did you find IMPORTANT?

Did you observe anything special during the process of
this activity?

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

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ACTIVITY 3-

EDUCATOR'S ACTIVITY GUIDE

Lots of activities for teaching about bats.

thumb	pulgar	tail membrane	membrana de la cola
finger 1	dedo 1	wing membrane	membrana de las alas
finger 2	dedo 2	wrist	codillo
finger 3	dedo 3	forearm	antebrazo
finger 4	dedo 4	upper arm	brazo superior
thumb	pulgar	tail membrane	membrana de la cola
finger 1	dedo 1	wing membrane	membrana de las alas
finger 2	dedo 2	wrist	codillo
finger 3	dedo 3	forearm	antebrazo
finger 4	dedo 4	upper arm	brazo superior

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12.- WHAT DO YOU THINK ABOUT THIS EXERCISE?
What did you find NEW? INTERESTING? IMPORTANT?
Did you observe anything special during the process of this activity?

11.- WHAT DID YOU LEARN ABOUT BATS?

10.- LIFESPAN

Student _____
Bats *some bats live 30 years or more.*

9.- FOOD CONSUMPTION

Student _____
(one to five pounds, about 1/32 of body weight)
Bats *flying fox bats can eat 2 1/2 times their body weight in one night.*

8.- WING BEATS PER SECOND

Student _____
Bats *12 for a little brown myotis*

7.- ACTIVE HEART RATE PER MINUTE

Student _____
Bats *as many as 900*

6.- RESTING HEART RATE PER MINUTE

Student _____ Bats *less than 100*

1.- BACKGROUND INFORMATION

HOW A BAT COMPARES TO ME

2.- KIND OF ANIMAL

Student _____
Bats *Mammal*

3.- WINGSPAN - ARMSPAN

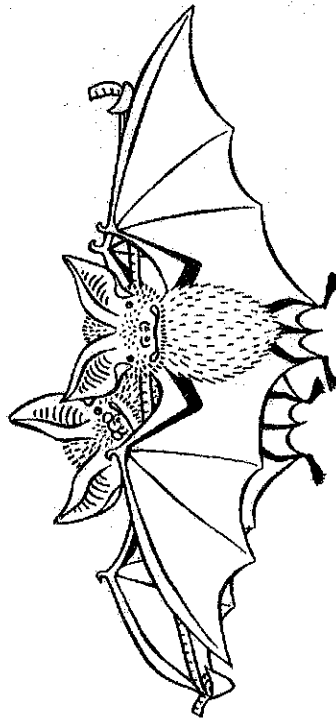
Student _____
Bats *6 1/2 inches bumblebee bat from Thailand; almost 6 feet for the great flying bat fox from Java.*

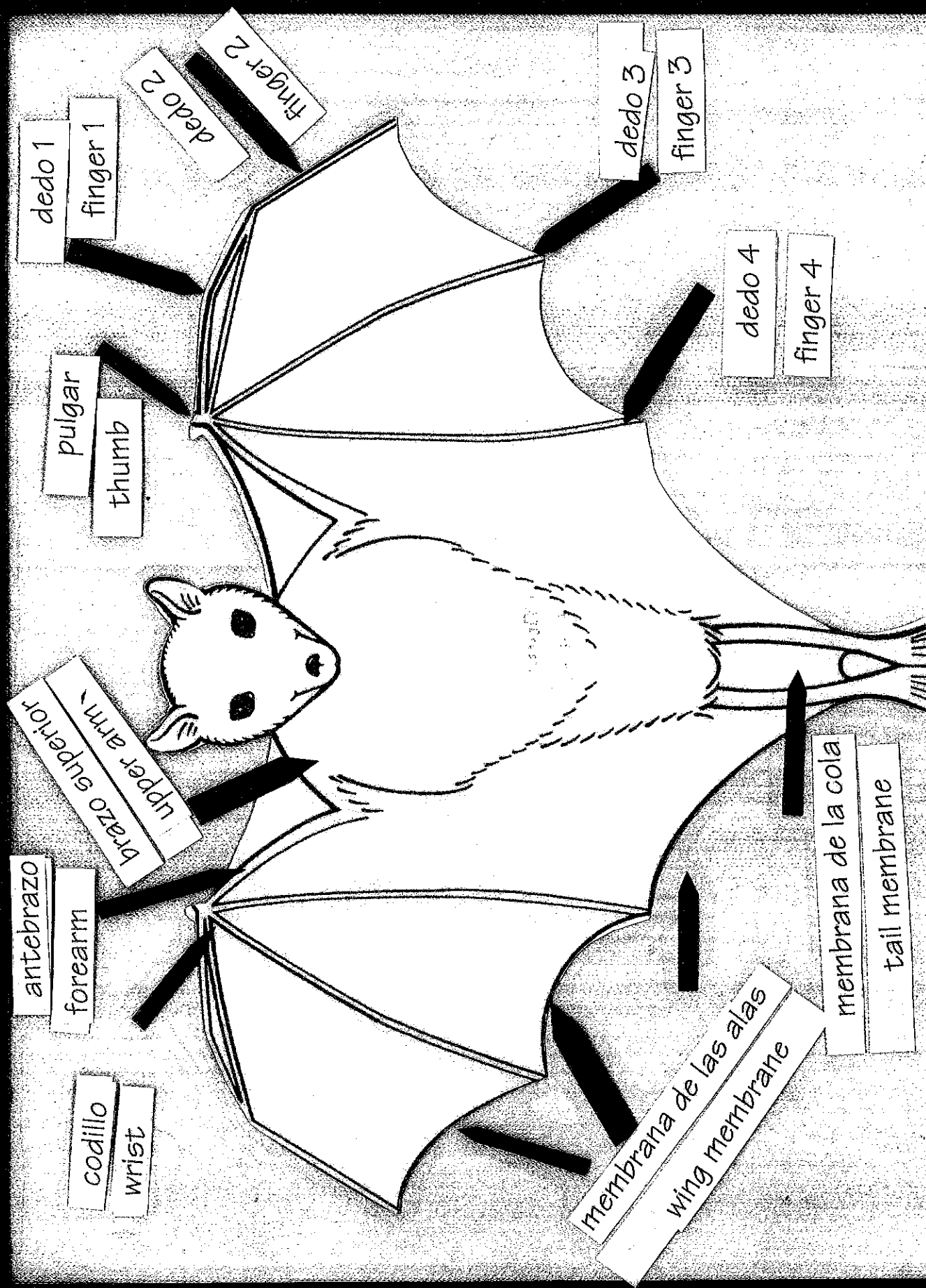
4.- NUMBER OF FINGERS

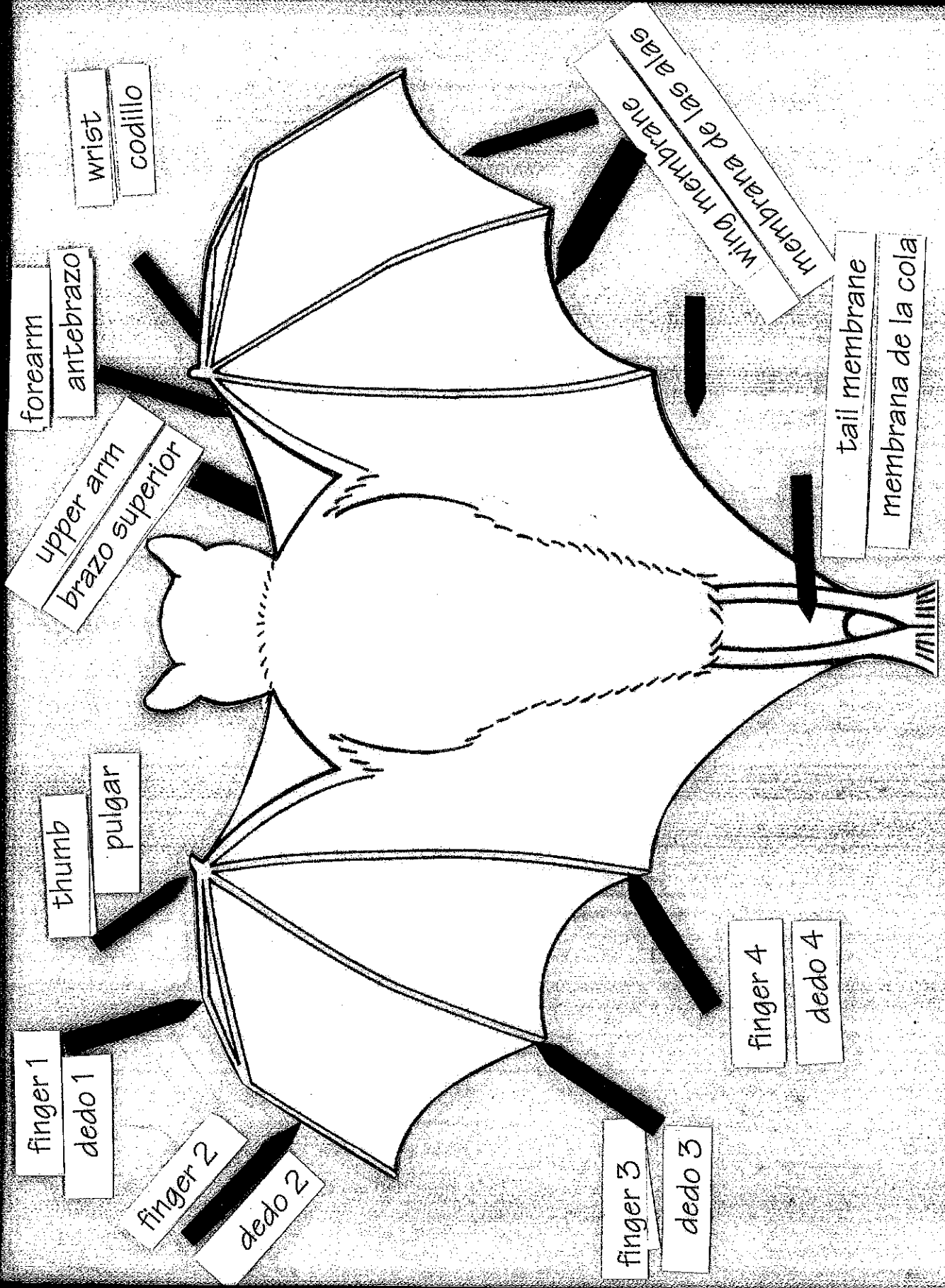
Student _____
Bats *Four fingers and one thumb.*

5.- WEIGHT

Student _____
Bats *most bats weight less than 2 ounces or 56 grams*







forearm

antebrazo

wrist

codillo

upper arm

brazo superior

thumb

pulgar

finger 1

dedo 1

finger 2

dedo 2

finger 3

dedo 3

finger 4

dedo 4

wing membrane

membrana de las alas

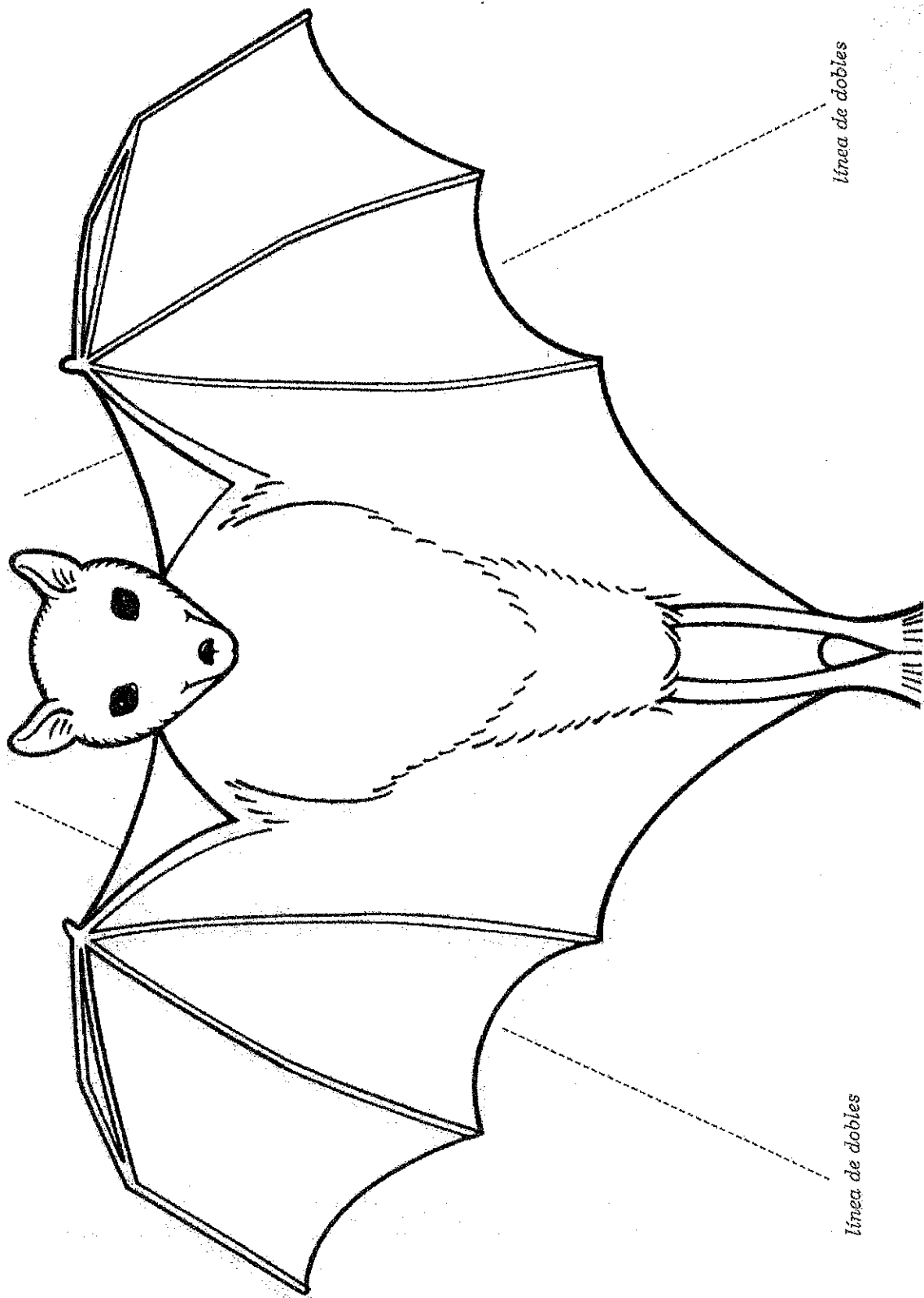
tail membrane

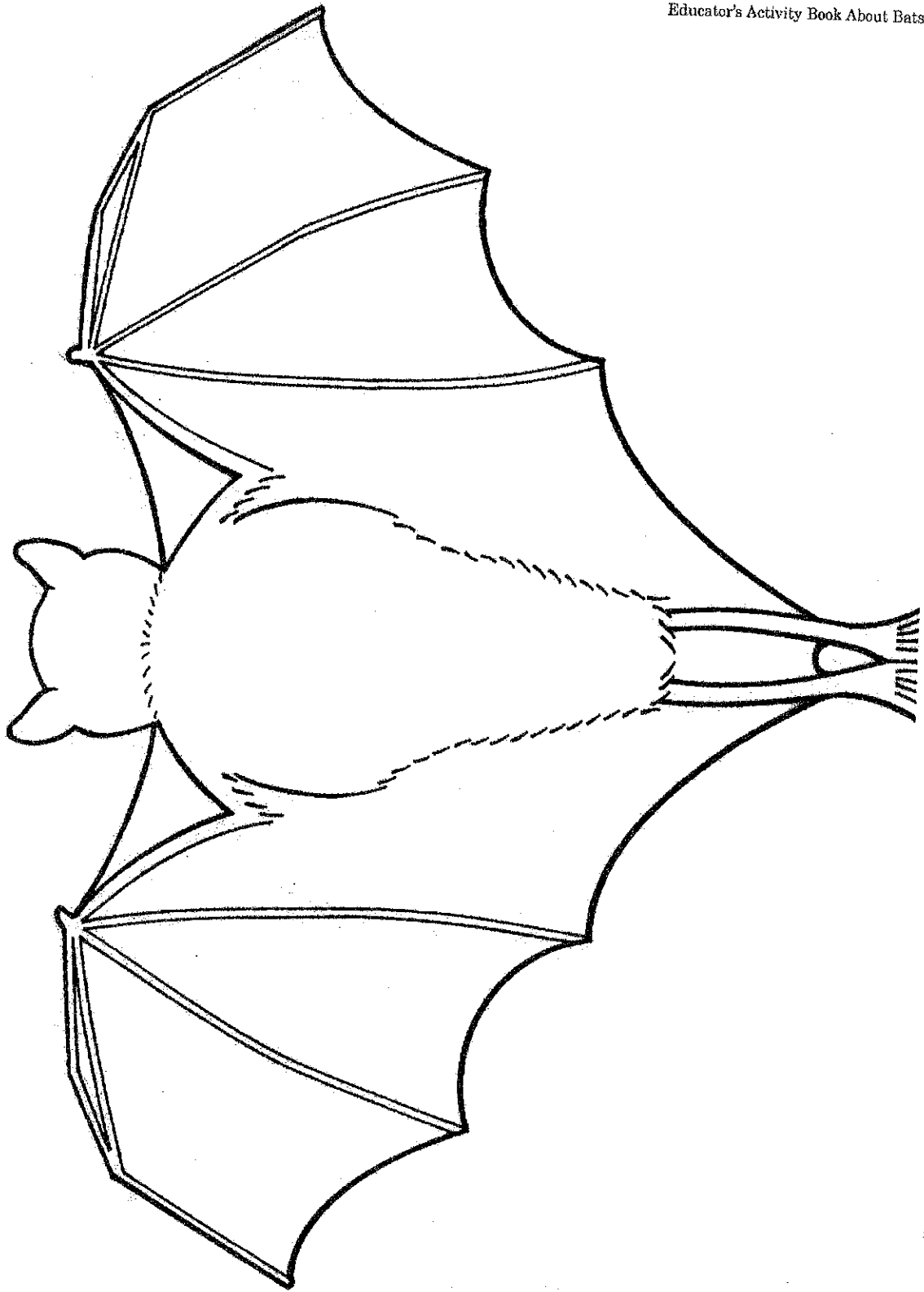
membrana de la cola

**PRO
BEA**

Proyecto Bio-regional de
Educación Ambiental, A. C.

Bat Conservation International





Bat Conservation International

ACTIVITY 4

WRAP UP

A Bat Mind Map to remember what we did.

Teacher's notes

INTRODUCTION

We have done so many things and we have learned so much today; we have seen so many pictures of different bats; we have listened to so much information; we have participated in different activities; we have met interesting people; and we have even seen a real bat. This activity will help us all together remember the things we have seen, heard, felt, done, and learned today.

MATERIALS

A board and several pieces of chalk or a markerboard and several markers.

OBJECTIVE

To wrap up the day by remembering everything we did and learned; to have everybody participate and share what they found interesting, valuable, fun, and new.

PROCEDURE

- Draw a bat in the center of the board and write the initials BCI. Tell students that with this activity we will try to remember everything we have seen, heard, felt, done, and learned during this workshop.
- Give them the first example: I have learned that bats are mammals so I say: KIND. Draw a line from the center towards the edge of the board and write the word KIND. Ask students to classify the information they want to share so that you can write only one word. Another example: I learned that different kinds of bats eat different kinds of food like fish, insects, pollen, fruit: In one word DIET. Students are supposed to say only the ONE word that represents what they want to share.
- Look at the example of a map in the teacher's notes.
- When you consider that the map is complete. Ask students to choose one word and give information about it.

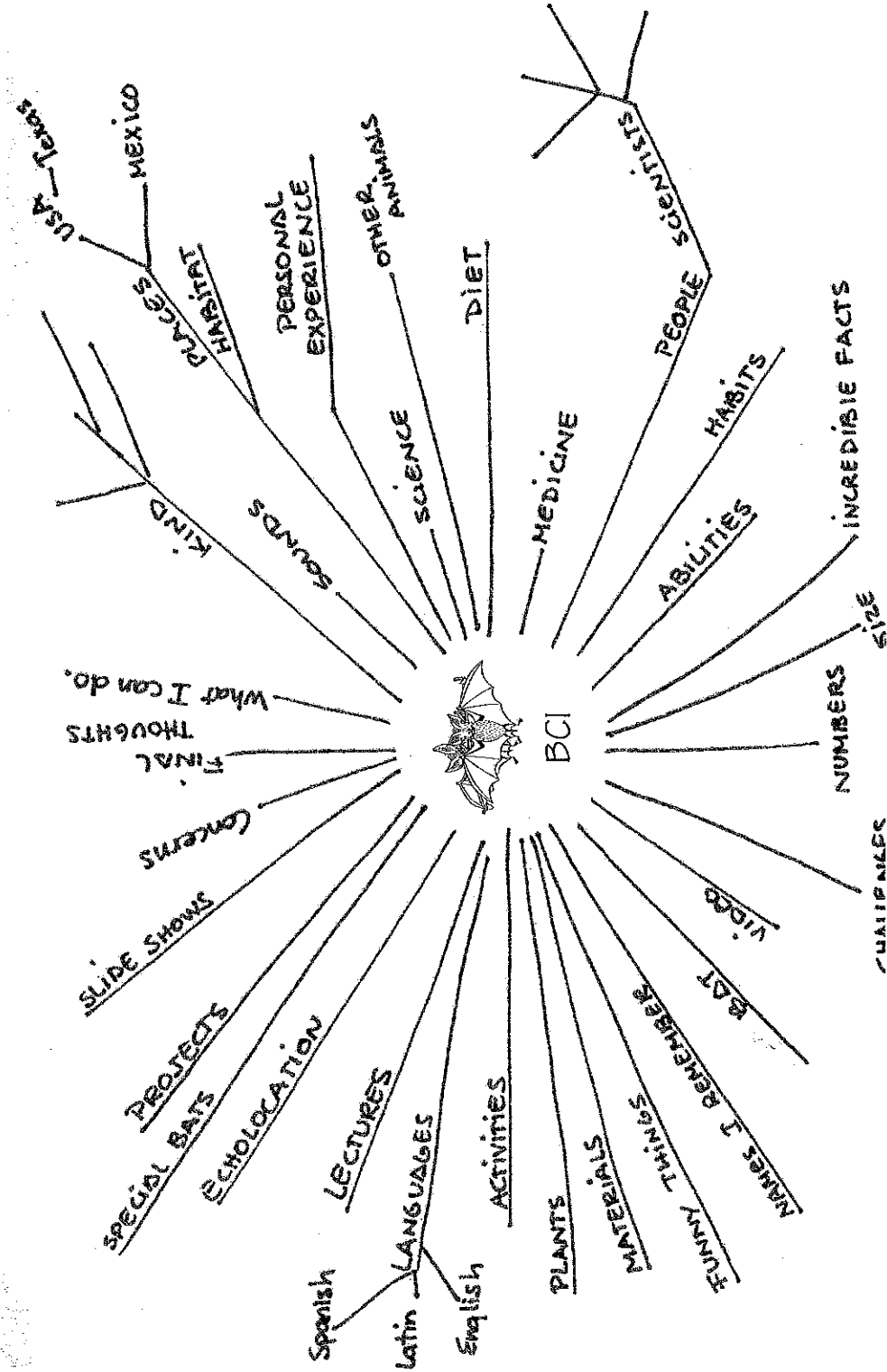
Bat Conservation International

ACTIVITY 4

WRAP UP

A Bat Mind Map to remember what we did.

Teacher's notes



Bat Conservation International

ACTIVITY 5

EXTRA ACTIVITY

Teacher's notes

Scientific and Common Names

INTRODUCTION

We should always have an extra activity prepared in case of emergency. An emergency might be when some students finish their tasks before the others, or when all students finish their tasks faster than expected. And, of course, teachers know many other cases of emergency. This activity introduces students to the scientific names and the common names of bats in a fun and challenging exercise that requires patience and attention to details. This is also an example of what teachers can do with the materials in the WEB PAGE of BCI.

MATERIALS

- 1 set of cards of pictures of bats and scientific and common names cut in half.
- A team of 6 students maximum
- Worksheet

OBJECTIVE

To have students observe and write scientific and common names of bats. This is an excellent activity for students who have trouble in spelling because it forces them to observe letter by letter and space by space, paying attention to details.

PROCEDURE

- As an individual exercise
 - Give each student a worksheet and ask them first to describe one of the bats in the worksheet. Then, ask them to complete the spaces with the corresponding letters - vowels and consonants.
- As a group exercise
 - Give each student in a team (of a maximum of 6) a piece of a card. Each student, one by one, describes what he/she can see in the picture including the parts of the bat he/she can see. All the other students listen carefully. When they have described their pictures they will pair up with the students who have the part that complements their picture. When they are together they can dictate each other the letters each one has so that they can complete the scientific and common names of their bat. (One student will have consonants and the other the vowels)


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ACTIVITY 5

EXTRA ACTIVITY


Worksheet

Scientific and Common Names




__e_o_u__o_i_o_e__a_u__
__a__e_a_e__i__o__

Pt_r_p_s p_l_c_ph_l_s
gr_y_h_d_d fly_ng f_x




__a_l_a__o__
__e_o__i_e__a__

L_v__fr_ns
y_ll_w-w_ng_d b_t




Ei_o_o__e_u__
__a__o_o_e__i__o__

__d_l_n h_lv_m
str_w-c_l_r_d fly_ng f_x




E_o_o_o_u__a__e_i__
__a__e__s_e_a_u_e__u_i__a__

__p_m_ph_r_s w_hlb_rg__
W_hlb_rg's_p_l_t_t_d fr_t b_t



__l_o_o_u__e_u_e_u_i_u__
__e_a_e__o_e_o_e__a__

Rh_n_l_ph_s_f_r_r_m_q_n_m
gr__t_r h_rs_sh__b_t



E_o_o__a__a__a__
__i_e__u_i__a__

__ct_phyll__lb__
wh_t_fr_t b_t

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ACTIVITY 5-

EMERGENCY ACTIVITY

Scientific Names

Picture Cards

--e_o_u_o_j_o_e_a_u_
_ay_ea_e_i_o_



Photo Merlin D. Tuttle, BCI

Ei_o_o_e_u_
_a_o_o_e_i_o_



Photo Merlin D. Tuttle, BCI

--l_o_o_u_e_u_e_i_u_
_ea_e_o_e_o_e_a_

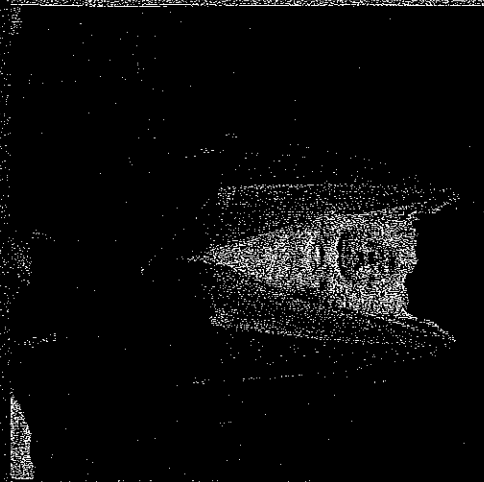


Photo Merlin D. Tuttle, BCI

Pt_r_p_s_p_l_c_ph_l_s
gr_y_h_d_d_fly_ng_f_x

--d_l_n_h_lv_m
str_w-c_l_r_d_fly_ng_f_x

Rh_n_l_ph_s_frr_m_q_n_m
gr_tr_hrs_sh_b_t

ACTIVITY 5-

EMERGENCY ACTIVITY

Scientific Names

_a_i_a _ _o_ _
_e_o_i_e _a_



Photo Merlin D. Tuttle, BCI

L_v _ _ fr_ns
y_ll_w_w_ng_d b_t

E_o_o_o_u _a _e_i
_a _e's e_a_u_e _e _ui _a_

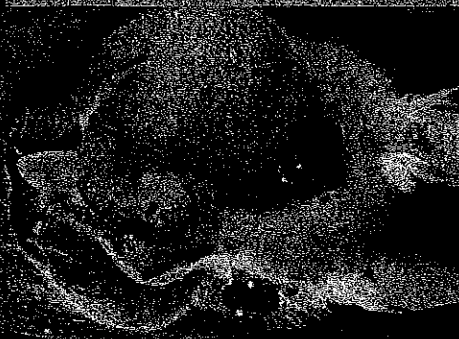


Photo Merlin D. Tuttle, BCI

_p_m_ph_r_s w_hlb_rg_
W_hlb_rg's p_l_tt_d fr_t b_t

E_o _ _ _a _a_a
_ _ie _ _ui _a_



Photo Merlin D. Tuttle, BCI

_ct_phyll _lb_
wh_t_fr_t b_t