

THE ZOO Teacher Resource Guide

# Baby Fruit Bat “Barbara Gordon”

K-2nd Grade



## HOW TO USE THIS RESOURCE GUIDE

We created this guide to support student learning utilizing Animal Planet's The ZOO, a television show focusing on animal care, conservation, and education at The Bronx Zoo. In the following pages, we highlight a storyline from the show and provide you with tools and tips for learner engagement and understanding. The Bronx Zoo Education department created this resource in collaboration with our Teacher Advisory Council, a group of certified teachers and educators that supports education programming at The Bronx Zoo. Below, you will find an outline and tips on how to use each section of this guide.

### Summary

This section includes the season and episode number, a summary of the episode's storyline, and timestamps to help you navigate to the applicable portions of the episode. Please note that the timestamps may not match exactly, depending on the browser and website that you are using to watch the episode.

### Background Information

This section provides more information and context for the highlighted storyline. This information may include natural history, animal biology, conservation background, and more. This information will help both you and your learner get a more complete picture of the topic covered in the episode.

### Vocabulary

This section defines words introduced in the episode that may be new to the learner or have a different meaning in the context of The ZOO or conservation in general.

### Connection to Standards

In this section, you will find a list of the specific standards that this resource meets if completed in full. Next Generation Science Standards ([NGSS](#)) and New York State Standards Common Core ([NYSS CC](#)) are both included.

### Episode Discussion Topics

This section was developed to encourage discussion and further understanding of the concepts introduced in the show. These questions are intended to facilitate a meaningful conversation about topics introduced in each segment of the storyline. Feel free to use as many of them as you wish to further understanding based on the needs of your learners.

### Activities

This section details activities that align with the content of the individual storyline. There is an introductory activity to do before watching, a follow up activity to do after, and extension activities to help connect these lessons to other subjects.

### Additional Resources and Literature

This section contains resources related to the topic of the episode as well as recommended reading for continued learning.

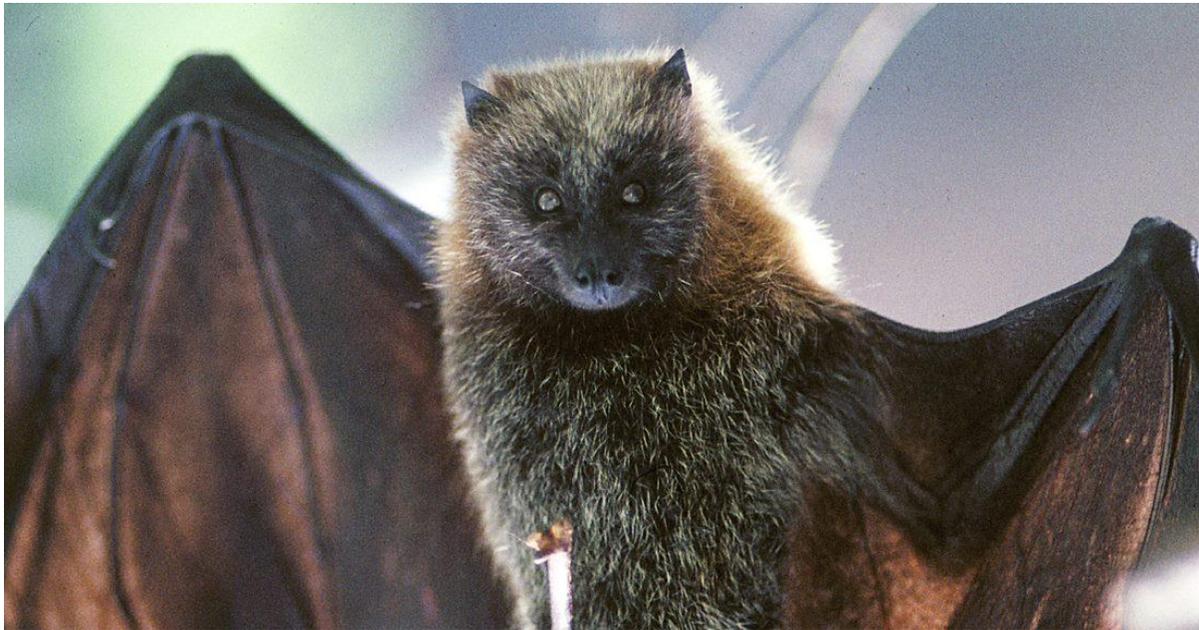
**SEASON: 3****EPISODE: 3****EPISODE TIMESTAMPS:**

- Segment 1: **2:07 - 6:20**
- Segment 2: **14:21 - 16:57**
- Segment 3: **24:43 - 28:20**
- Segment 4: **30:20 - 35:10**
- Segment 5: **37:30 - 41:49**

*\* Time stamps may vary based on viewer's platform*

**SUMMARY**

Rodrigues fruit bat “Barbara Gordon” was orphaned at a young age and raised by the veterinary and animal care staff at the Bronx Zoo. This episode follows her progress from being orphaned to her reintroduction to the JungleWorld Exhibit.



## BACKGROUND INFORMATION

### Where is Rodrigues Island?

Rodrigues Island is a small island in the Indian Ocean west of Madagascar.

### What is an endangered species?

An endangered species is a species that is in danger of going extinct.

### Why is the Rodrigues fruit bat endangered?

This animal is endemic to Rodrigues Island and is endangered due to habitat loss caused by deforestation.

### What are the characteristics of mammals?

Mammals are warm-blooded vertebrates that, with the exception of the echidna and duck-billed platypus, give birth to live young, feed their young milk from mammary glands, and have fur or hair.

### How do Rodrigues fruit bats find food?

Rodrigues fruit bats use a keen sense of smell to find food. This species is considered a megabat. Megabats, except for a few species, do not have the ability to use echolocation.

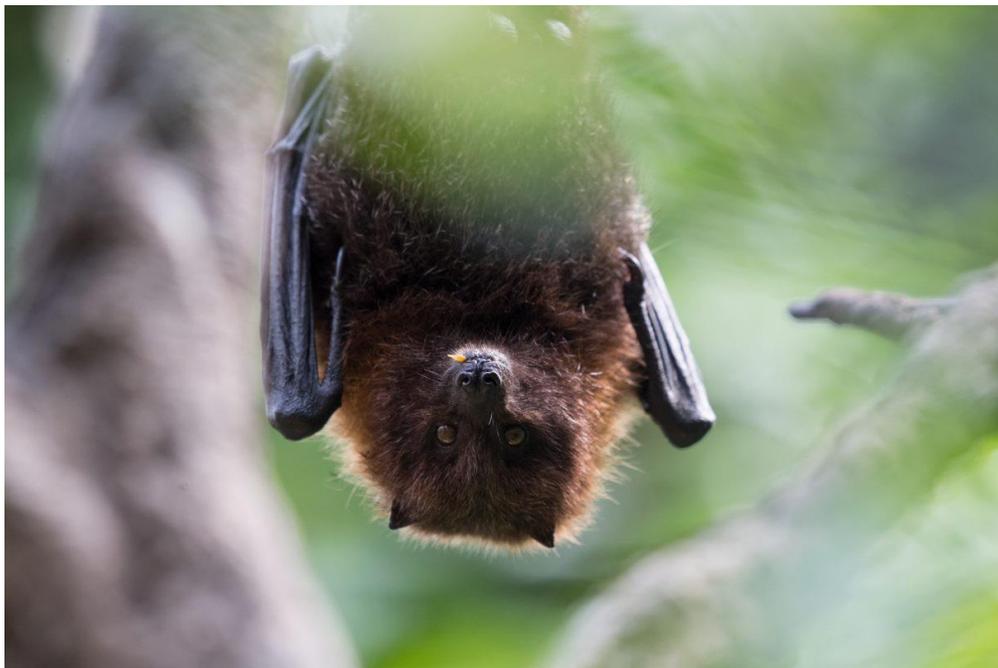
### What are other ways bats find food?

Other bats, like those native to New York, use echolocation. Echolocation is the determination of location of objects by reflected sound and helps bats find food and maneuver through the environment.



## VOCABULARY

- **Mammal** – warm-blooded, vertebrate animals that, with the exception of the echidna and duck-billed platypus, give birth to live young, nourish offspring with mammary secretions, and are covered with hair or fur
- **Habitat** - the natural home or environment of an organism
- **Adaptation** - a behavior or body part that helps an organism survive in its habitat
- **Nocturnal** - active at night
- **Endearing** - inspiring love or affection
- **Echolocation** - the location of objects by reflected sound
- **Enclosure** - an animal's habitat at the zoo
- **Herbivore** - an animal that feeds on plants
- **Omnivore** - an animal that feeds on both plants and animals
- **Carnivore** - an animal that feeds on other animals



## **CONNECTION TO STANDARDS**

### **New York State Standards Common Core (NYSS CC)**

#### **Kindergarten**

RI.K.1 With prompting and support, ask and answer questions about key details in a text.

#### **First Grade**

RL.1.5 Explain major differences between books that tell stories and books that give information drawing on a wide reading of a range of text types.

#### **Second Grade**

RL.2.3 Describe how characters in a story respond to major events and challenges.

### **Next Generation Science Standards (NGSS)**

#### **Kindergarten**

1-LS1-2. Read texts and use media to determine patterns in behavior of parents and offspring that help offspring survive.

## EPISODE DISCUSSION TOPICS

### **Segment 1 (2:07-6:20): Meeting Barbara**

- Why did the baby bat (Barbara) have to go to the health center?
- How are bat mothers like human parents?
- What does Barbara eat?
- How do you know that a bat is a mammal? What characteristics make a bat a mammal?

### **Segment 2 (14:21-16:57): Stretching Your Wings**

- What is an incubator?
- Why is it important to build an exercise area for the baby?
- Why were there so many sock moms for Barbara in the exercise area?
- How are bat wings similar to human hands?

### **Segment 3 (24:43-28:20): A New Enclosure**

- Why was it important to use the mesh material for Barbara's new enclosure?
- What are some things that bats need to survive?
- Why does Barbara need a new enclosure?
- Why is it important for Barbara to socialize with other bats?

### **Segment 4 (30:20-35:10): Getting Ready**

- Why is it important to get Barbara ready for JungleWorld? Can you think of a time when something in your life changed? How did you feel?
- How is Barbara's current enclosure different from JungleWorld?
- Why do the zoo staff play music and spray water before Barbara goes to JungleWorld?

### **Segment 5 (37:30-End of episode): Going Back Home**

- What challenges might Barbara face in her new home?
- Why do you think the zookeepers put Barbara in a smaller space inside JungleWorld before introducing her to the main exhibit?

## ACTIVITIES

### Introductory Activity

#### Read Aloud: *Bats by Gail Gibbons*

**Objective:**

Students will understand that readers read non-fiction to learn more about a topic and will be able to identify characteristics of bats.

**Summary of Lesson:**

The main discussion question is “What makes a bat a bat?” Bats are *nocturnal mammals* that help our environment. We will generate questions about bats before reading the book.

**Steps:**

1. Begin by introducing important vocabulary. *Mammals* are warm-blooded animals that, with the exception of the echidna and duck-billed platypus, give birth to live young, nurse their babies, and have hair or fur. *Nocturnal* animals are awake at night and asleep during the day. Some animals use *echolocation* to navigate in the dark by reflecting sound off objects.
2. Read the book and discuss the new information the students learned about bats, including the vocabulary introduced before reading.
3. Play the echolocation game. Sit in a circle and choose one child to be the bat. The “bat” wears a blindfold and stands in the middle of the circle. Next, silently choose, with a tap on the shoulder, a child in the circle. This student can then make a sound by clapping once. The “bat” has to try to figure out where the sound is coming from and move in that direction. Let a few children have a turn.

This activity can also be done at home! Children can play with a grown up or another child hiding in another room. Designate one person to be the “bat” and the other to be the “moth.” The moth will stand still and make a sound by clapping once. The “bat” can try to follow sounds with their eyes closed and try to find (and tag!) the other person.

4. After the game you can all celebrate being bat experts by saying this pledge:  
Bats are mammals that can fly  
They use their senses in the night sky  
Some bats eat bugs, others fruit from a tree  
Who’s a bat expert? Who? It’s me!

## Follow Up Activity

### Exploring Flight

**Objective:**

Students will explore the function of wings and determine how wing shape impacts flight.

**Summary of Lesson:**

The shape of an animal wing can have a large effect on the way it flies. Bats have shorter wider wings that help them turn quickly to catch their prey. A long, narrow wingspan, like that of a gull or a commercial airplane is good for long distance cruising. Triangular wings, like those of a falcon or fighter jet, are good for flying very fast. Students will make paper airplanes with different wing shapes and explore how the different airplanes fly.

**Steps:**

1. Provide students with at least two sheets of printer paper or construction paper.
2. Walk the students through how to fold the paper into a basic paper airplane, so that all of the students have one airplane that is approximately the same shape.
3. Then allow the students to use the remaining paper to design their own paper airplane, making at least one with wings that are either wider or narrower than the first airplane.
4. Have the students do multiple test flights with each airplane and describe how the airplane flies. You can use these prompts to help guide the discussion:
  - a. Did the airplane with wide wings or narrow wings fly further?
  - b. Did the airplanes fly in a straight line or did they turn? Which airplane flew straighter? Which airplane turned more while it flew?
  - c. Why do you think this airplane turned more (or flew straighter)?

## Extension Activities

**Art:** Have the students make their own “sock mom” using an old sock. Offer a variety of materials to fill the sock, such as cotton balls, toy stuffing (polyfill), or other socks. Once stuffed the open end of the sock can be tied, glued, or sewn shut. Students can decorate their “sock mom” to look like a bat.

**Literature:** Read the fiction book, *Stellaluna* by Janell Cannon and have a discussion about how birds differ from bats.

**Visit the Bronx Zoo:** Bring your students to the Bronx Zoo to take Animal Diversity program and visit bats in the JungleWorld or Congo exhibit. You can learn more about Bronx Zoo Education programs at <http://www.bronxzoo.com/learn>.



## ADDITIONAL RESOURCES AND LITERATURE

### Resources for Bat Facts:

[Bat Conservation International](#) This organization provides information on the importance of bats in ecosystems and has some resources for getting kids involved in bat conservation in their Kidz Cave section.

[Bats of New York](#) For teachers in New York State, the Department of Environmental Conservation has created this colorful guide that highlights all the species of bats found in New York. If you are outside New York State, check with your local environment or wildlife commission for information on the bats in your area.

### Literature about Bats:

#### Fiction

*Stellaluna* by Janell Cannon – The story of a young bat that is separated from her mother and adopted by a bird family.

*The Magic School Bus Going Batty: A Book About Bats* by Joanna Cole – Ms. Frizzle takes her class on a nighttime adventure to enhance their lesson about nocturnal animals.

*The Secret Life of the Little Brown Bat* by Laurence Pringle – The story of a year in the life of a little brown bat named Otis and how he learns to hunt, escape predators, and find a mate.

#### Nonfiction

*Bats* by Gail Gibbons ([Read-a-loud version](#)) – This book highlights the amazing features of bats and how they fit into the natural world.

*National Geographic Readers - Bats* by Elizabeth Carney – A Level 2 Reader that will teach kids about bats place in the wild and the world.

*What Makes a Bird a Bird* by May Garelick – This book looks at what characteristics birds share with other animals and what makes them unique.

## PHOTO CREDITS

All photos: Julie Larsen Maher/WCS