

# Hoofed Animals of **BROOKFIELD ZOO**

Chicago Zoological Society



A Multitouch Book for School  
Groups on Self-Guided Field Trips





# Using the Multitouch Book







Hello students! Welcome to our multitouch book. Please use your finger and swipe to the next page to learn how to use this book.

## Interactive Features

### Links

When you see words that are [blue](#), that means they can take you to a website. Test this out below by tapping on the blue words.

[Brookfield Zoo Website](#)

### Audio

There are audio files on pages 21, 22, 23, and 56. Test the audio feature by tapping on the button below. Tap once to play. Tap again to pause.





## Photo Gallery

Swipe sideways with your finger to view the images below.

### Gallery 1.1 Practice Photo Gallery



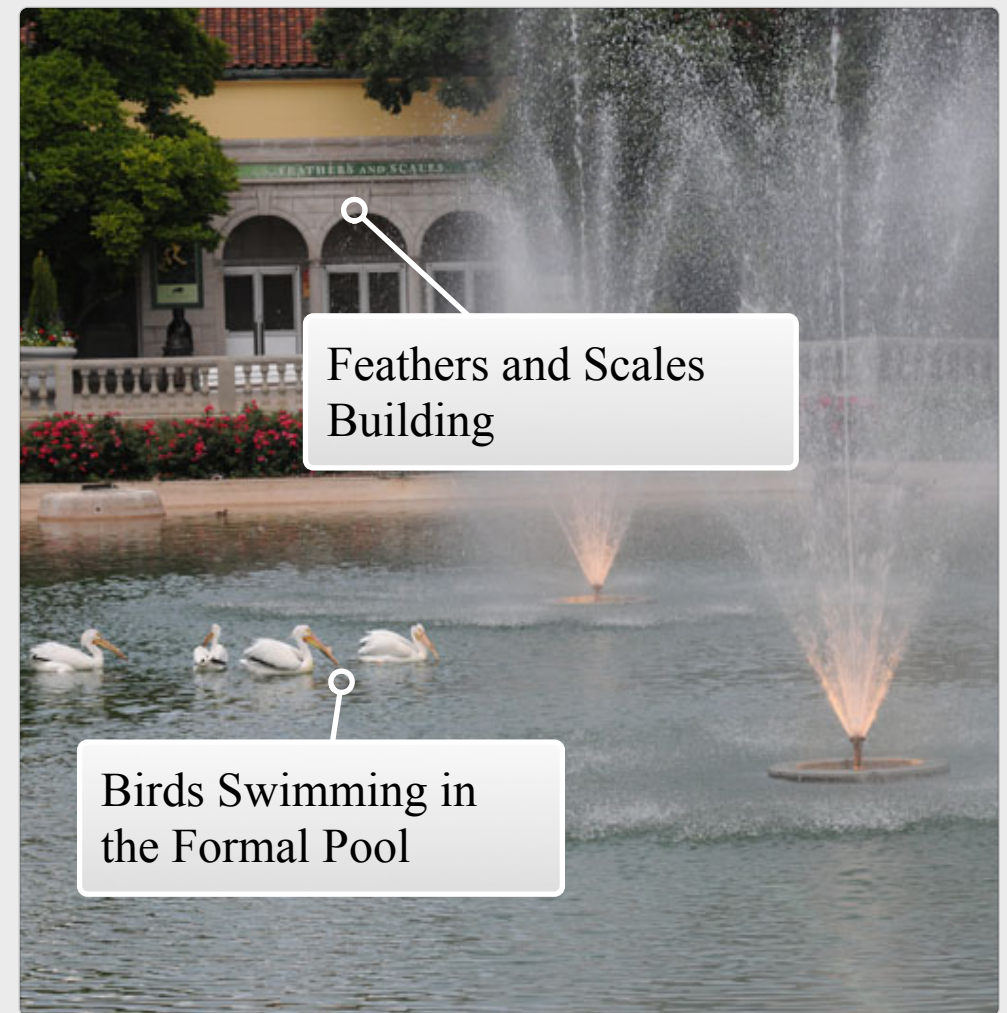
Roosevelt Fountain



## Interactive Image

Tap on labels to learn more information.

### Interactive 1.1



## Glossary

When you see a word in **bold**, that means it is a vocabulary word. The meaning of the word can be found in the glossary. Tap on the **bold** glossary term below to see the definition.

The desert is a **habitat** for many animals.

## Video

Tap on the widget below to practice playing and pausing the movie.

### Movie 1.1



Video of a Przewalski's Horse

## Interactive 1.2 Interactive Scratchpad



Test out the scratchpad by tapping on a color. Choose the size of your pen by tapping on small, medium, or large. Practice writing your name or drawing a shape.



# NGSS Connections



## Kindergarten

### K-LS1-1 FROM MOLECULES TO ORGANISMS: STRUCTURES AND PROCESSES

Students who demonstrate understanding can:

Use observations to describe patterns of what plants and animals (including humans) need to survive.

## 1st Grade

### 1-LS1-1 FROM MOLECULES TO ORGANISMS: STRUCTURES AND PROCESSES

Students who demonstrate understanding can:

Use materials to design a solution to a human problem by mimicking how plants and/or animals use their external parts to help them survive, grow, and meet their needs.

## 2nd Grade

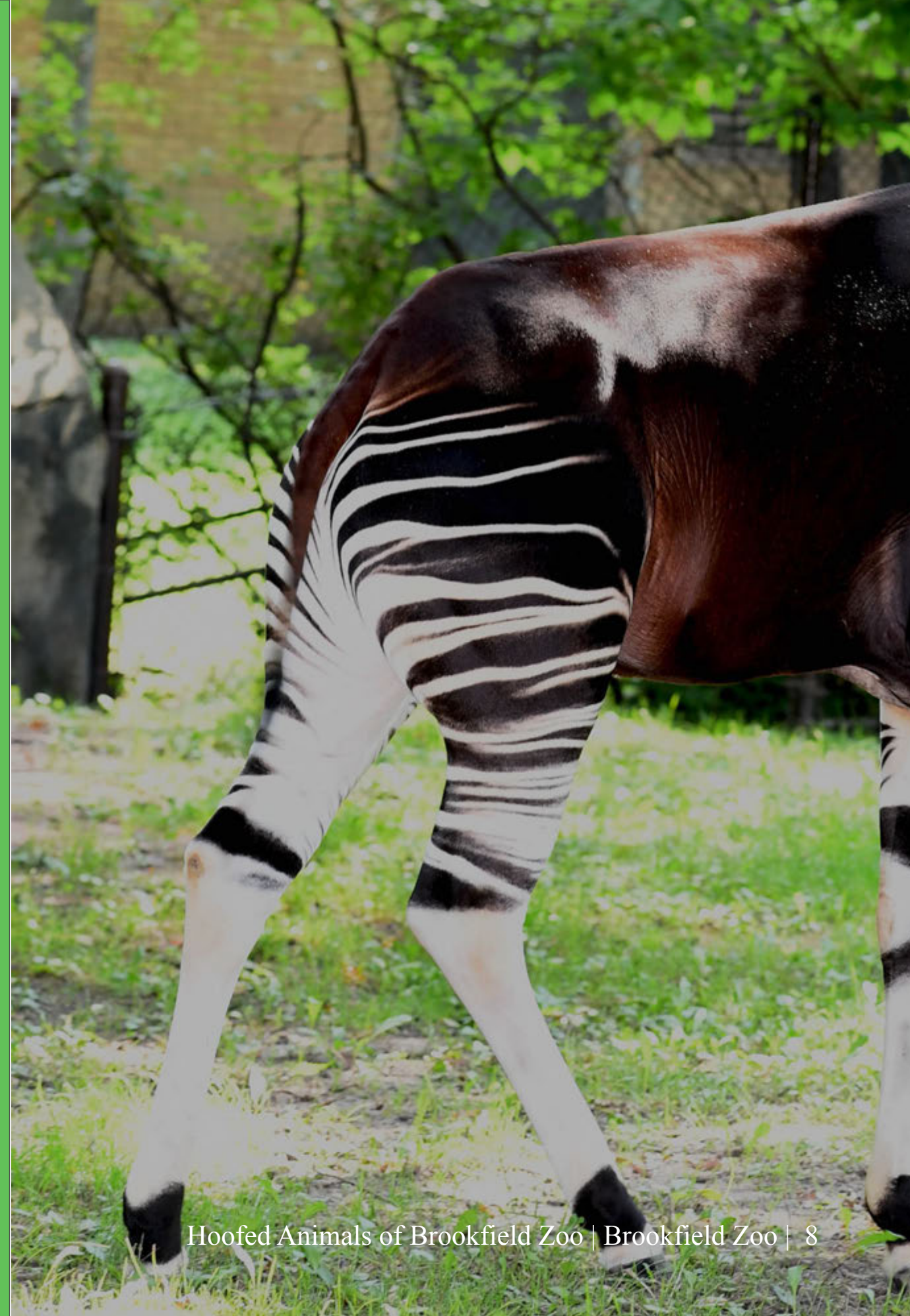
### K-2-ETS1-2 ENGINEERING DESIGN

Students who demonstrate understanding can:

Develop a simple sketch, drawing, or physical model to illustrate how the shape of an object helps it function as needed to solve a given problem.



# Pre-Zoo Activities







I am an okapi, one of the **hoofed** animals. Before we go on a field trip to Brookfield Zoo, we are going to learn how to make **observations**. Turn the page to get started with our lesson.



# Making Observations



*Learning Targets:*

*I will define what observations are.*

*I will learn how to make and record observations.*

What is an  
**observation?**

An **observation** is something you notice when you pay close attention to something. You learn information by observing something. When you make observations, you use your **senses**.



How do  
you make  
**observations?**

Your teacher will model how to make observations of an object. Carefully listen and watch as he or she shows you how to do this.



How do we  
keep track of  
our  
**observations?**

When we write down our observations, this is called collecting **data**. Data are information we gather while making observations.



How did your teacher record his or her observations? What did this look like?

One way to make observations is to use a **magnifying glass**.

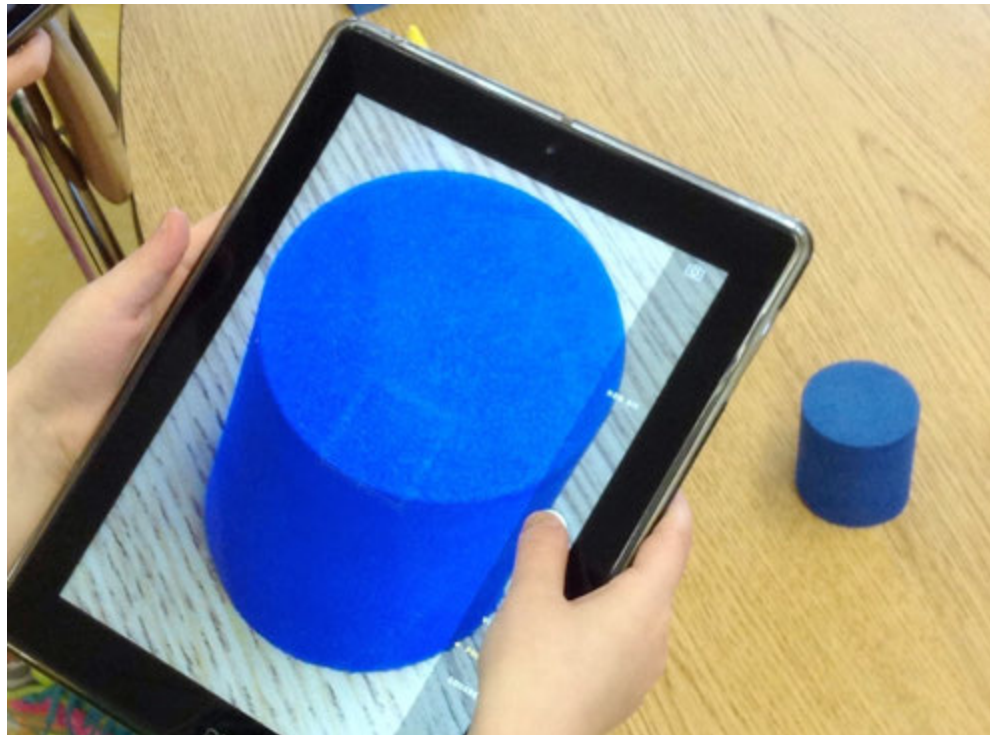
Now it is your turn to practice making observations. Each small group is going to get an object. You will have five minutes to record your voice or write down your **data**.





## Using the iPad Camera

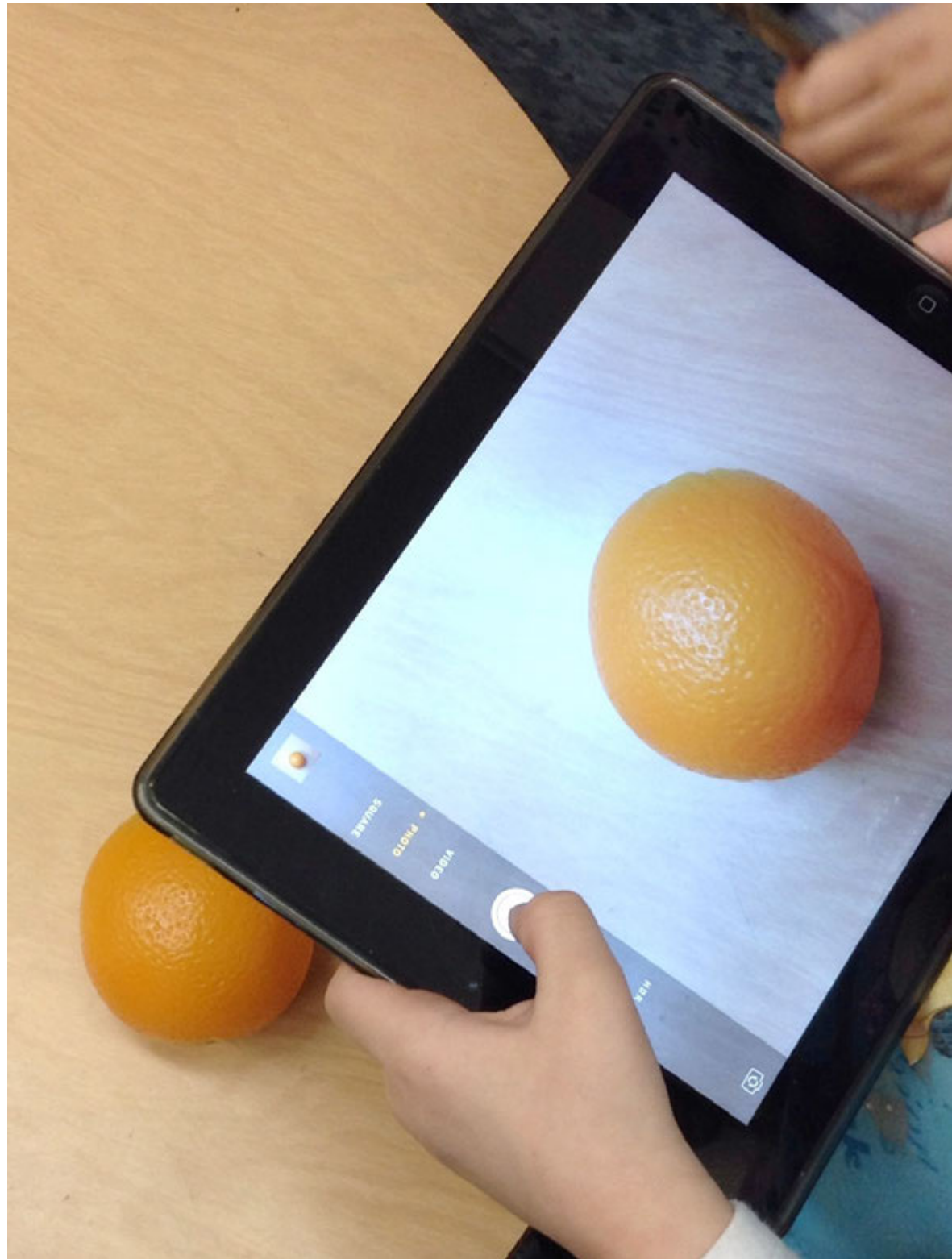
One way we can capture observations is by using the iPad camera. When we get to Brookfield Zoo, you might take photographs of the animals you see.



Here are some things to remember:

1. Hold the iPad steady with both hands before you take the picture.
2. Move closer to the object or back up before you take the picture.
3. Tap the screen to help focus your object.

Let's practice taking three photos of your object with the iPad.

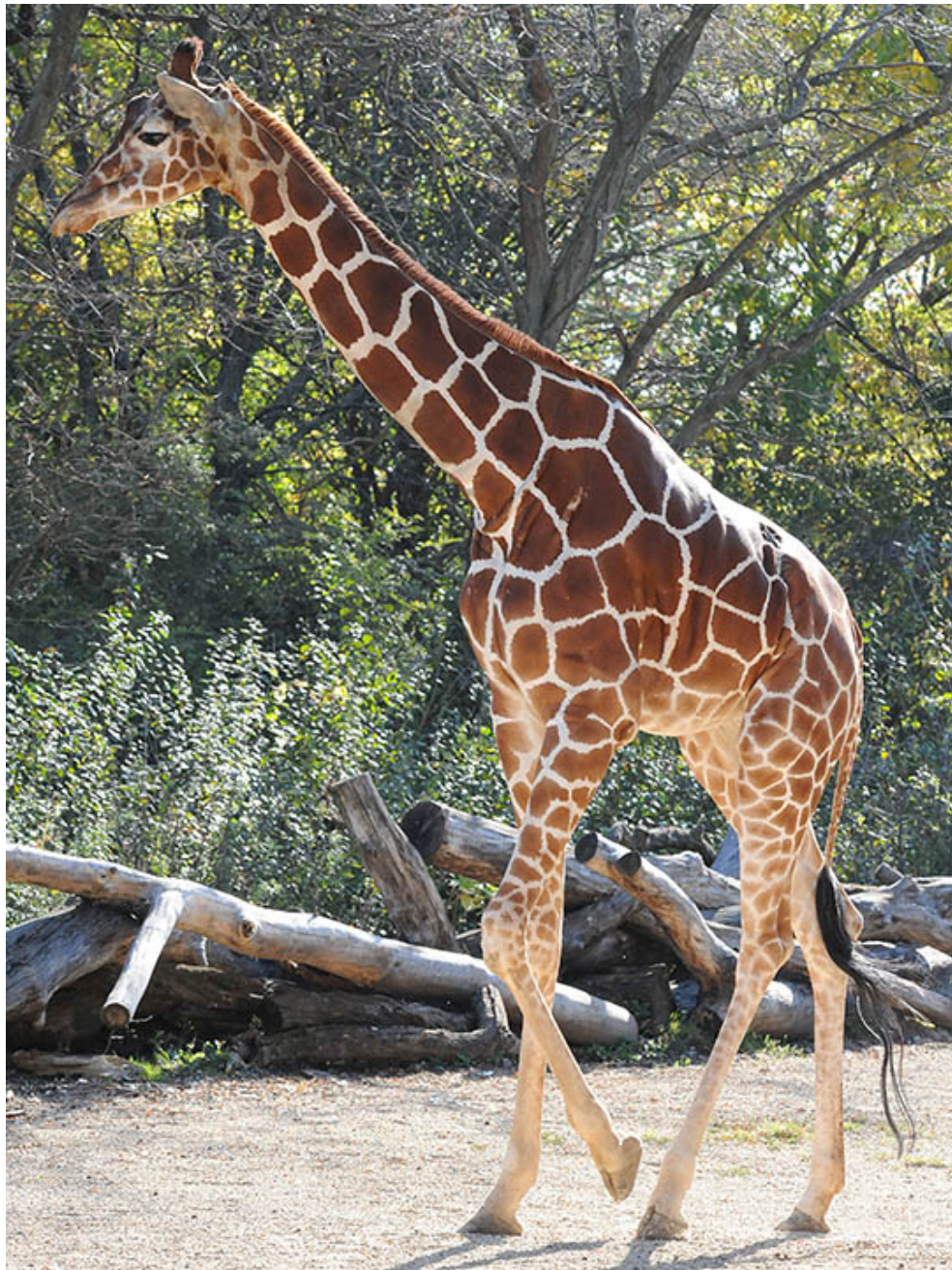


Look at your three photos.  
Which one is the best?  
Why is it the best?

Let's learn  
how to **crop**  
a photo!



## Identifying the Hoofed Animals



*Learning Target:  
I can identify hoofed animal  
species at Brookfield Zoo.*

What animals might we see on our field trip? Swipe to the next page to see the hoofed animals of Brookfield Zoo.



Interactive 2.1 Identify the Hoofed Animals of Brookfield Zoo



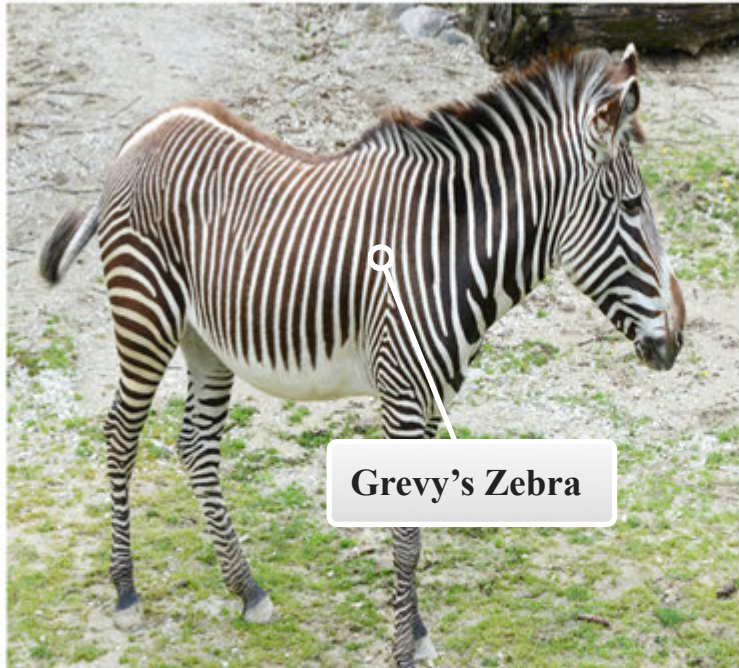
Bactrian Camel



Przewalski's Horse



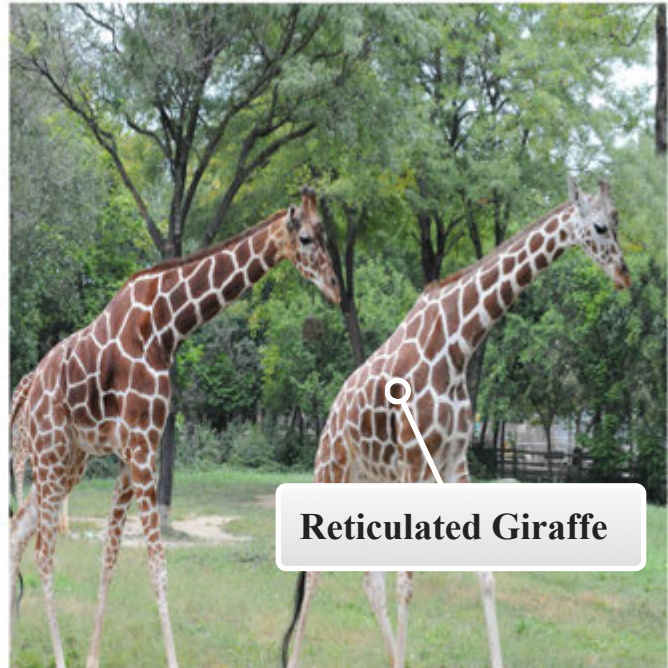
Addax



Grevy's Zebra



Okapi



Reticulated Giraffe



1

2

3

4

5

6





## Using the Map of Brookfield Zoo



*Learning Target:*

*I can find specific objects on a map.*

Before we arrive at Brookfield Zoo, let's learn how to read and find objects on the map. Turn the page to explore the **map** together as a class.



This is a map of Brookfield Zoo. Tap on the blue link below to view it as a PDF. Then, tap on the PDF to “Open in” another app to draw and circle objects on the map.



Tap on this link to open up the map.



# Welcome to Brookfield Zoo





We have arrived at Brookfield Zoo! Before we make our way to the hoofed animal habitats, let's learn about our activities for each stop. For each animal, we will do the following:

**1. Observe**

**3. Wonder**

**2. Take  
Photos**







When you get to an animal habitat with your group, you are going to make **observations**. You might have a certain thing you will observe for each animal. Your teacher will explain how you will keep track of your **data**.



Next, you will take three good photographs of an animal in the habitat with your iPad camera. Make sure you hold the iPad steady with both hands as you take your photographs.



### 3. Wonder

The last step is to think of one thing you wonder about that animal. Your teacher will explain how your group will keep track of your wonders.



Before we visit the first **habitat**, do you have any questions about our activities?





# Bactrian Camel

## 1. Observe

If you are on a virtual field trip, view the photos below to make observations of the Bactrian camel.

### Gallery 3.1 Bactrian Camel



Bactrian Camel





## Movie 3.1 Bactrian Camel



If you are on a virtual field trip, watch the video and make observations.



### Interactive 3.1 Write or draw your observations for the Bactrian camel.





Take three good photographs of the Bactrian camel with your iPad camera.



What is one thing you wonder about the Bactrian camel?



# Przewalski's Horse

## 1. Observe

If you are on a virtual field trip, view the photos to make observations of the Przewalski's horse.

### Gallery 3.2 Przewalski's Horse



Przewalski's Horse





## Movie 3.2 Przewalski's Horse



If you are on a virtual field trip, watch the video and make observations.



### Interactive 3.2 Write or draw your observations for the Przewalski's horse.



A large, light gray rectangular area for drawing or writing observations. It contains two dark gray, hand-drawn, wavy lines that resemble stylized 'Z' or 'N' shapes.

Small Medium Large

Black Red Green Brown Blue Eraser Clear



Take three good photographs of the Przewalski's horse with your iPad camera.



What is one thing you wonder about the Przewalski's horse?



# Addax

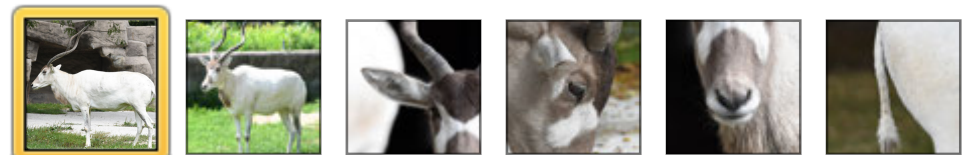
## 1. Observe

If you are on a virtual field trip, view the photos below to make observations of the addax.

### Gallery 3.3 Addax



Addax





## Movie 3.3 Addax



If you are on a virtual field trip, watch the video and make observations.



### Interactive 3.3 Write or draw your observations for the addax.



A large, light gray rectangular area for drawing or writing observations. It contains two dark gray, hand-drawn, wavy lines that resemble stylized 'Z' or 'N' shapes.

Below the drawing area is a toolbar with the following buttons:

- Small
- Medium
- Large
- Black
- Red
- Green
- Brown
- Blue
- Eraser
- Clear



Take three good photographs of the addax with your iPad camera.



What is one thing you wonder about the addax?



# Grevy's Zebra

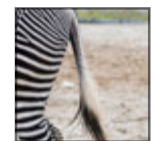
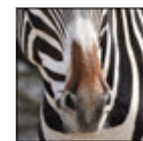
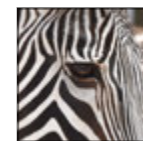
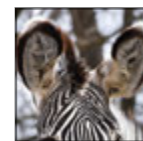
## 1. Observe

If you are on a virtual field trip, view the photos below to make observations of the Grevy's zebra.

### Gallery 3.4 Grevy's Zebra



Grevy's Zebra





## Movie 3.4 Grevy's Zebra



If you are on a virtual field trip, watch the video and make observations.



### Interactive 3.4 Write or draw your observations for the Grevy's zebra.



A large, light gray rectangular area for drawing or writing observations. It contains two thick, dark gray, hand-drawn wavy lines that resemble stylized zebra stripes.

Small Medium Large

Black Red Green Brown Blue Eraser Clear



Take three good photographs of the Grevy's zebra with your iPad camera.



What is one thing you wonder about the Grevy's zebra?

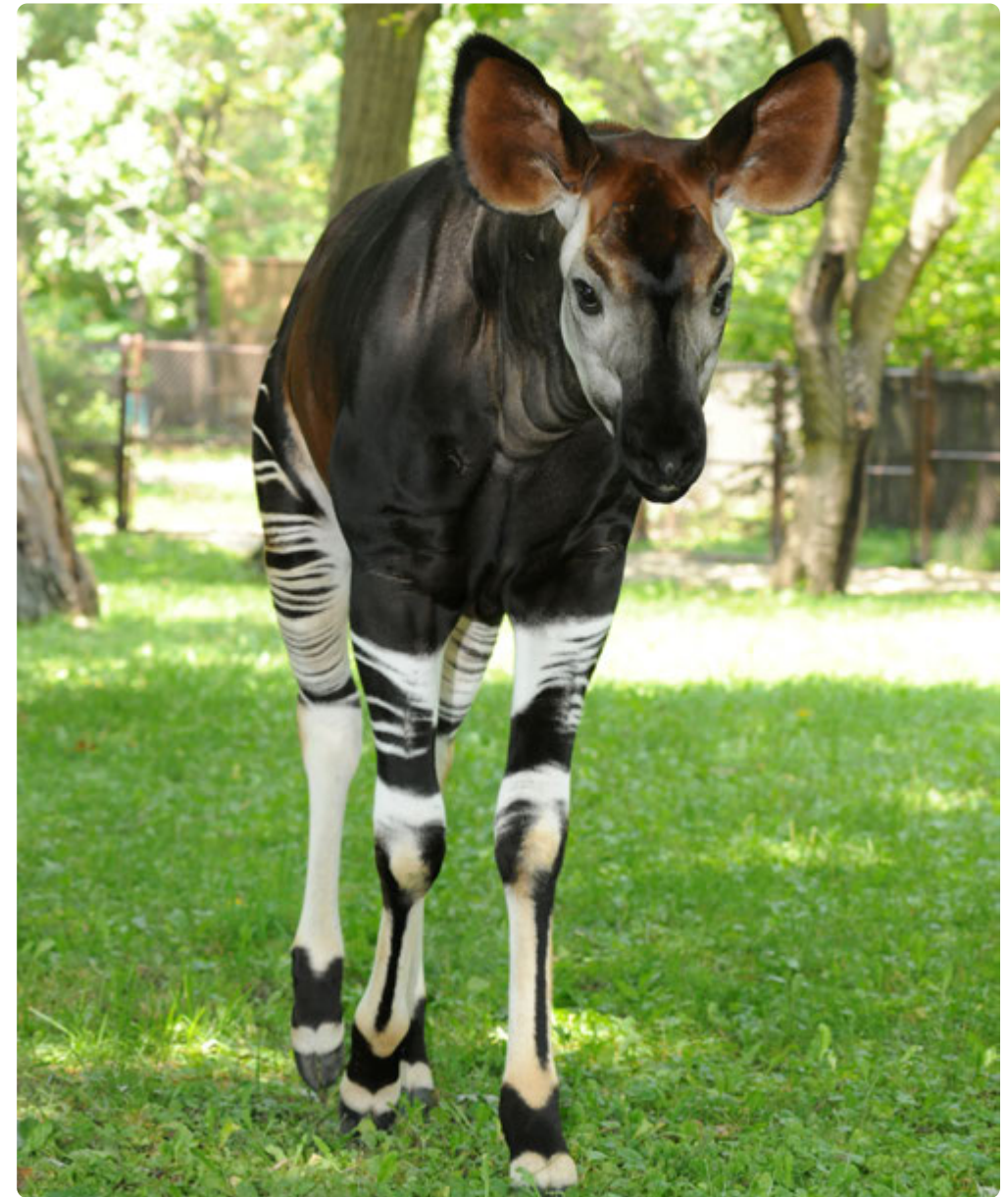


# Okapi

## 1. Observe

If you are on a virtual field trip, view the photos to make observations of the okapi.

### Gallery 3.5 Okapi



Okapi





## Movie 3.5 Okapi



If you are on a virtual field trip, watch the video and make observations.



### Interactive 3.5 Write or draw your observations for the okapi.



A large, light gray rectangular area for drawing or writing observations. It contains two dark gray, hand-drawn, wavy lines that resemble stylized 'Z' or 'N' shapes.

Small Medium Large

Black Red Green Brown Blue Eraser Clear



Take three good photographs of the okapi with your iPad camera.



What is one thing you wonder about the okapi?

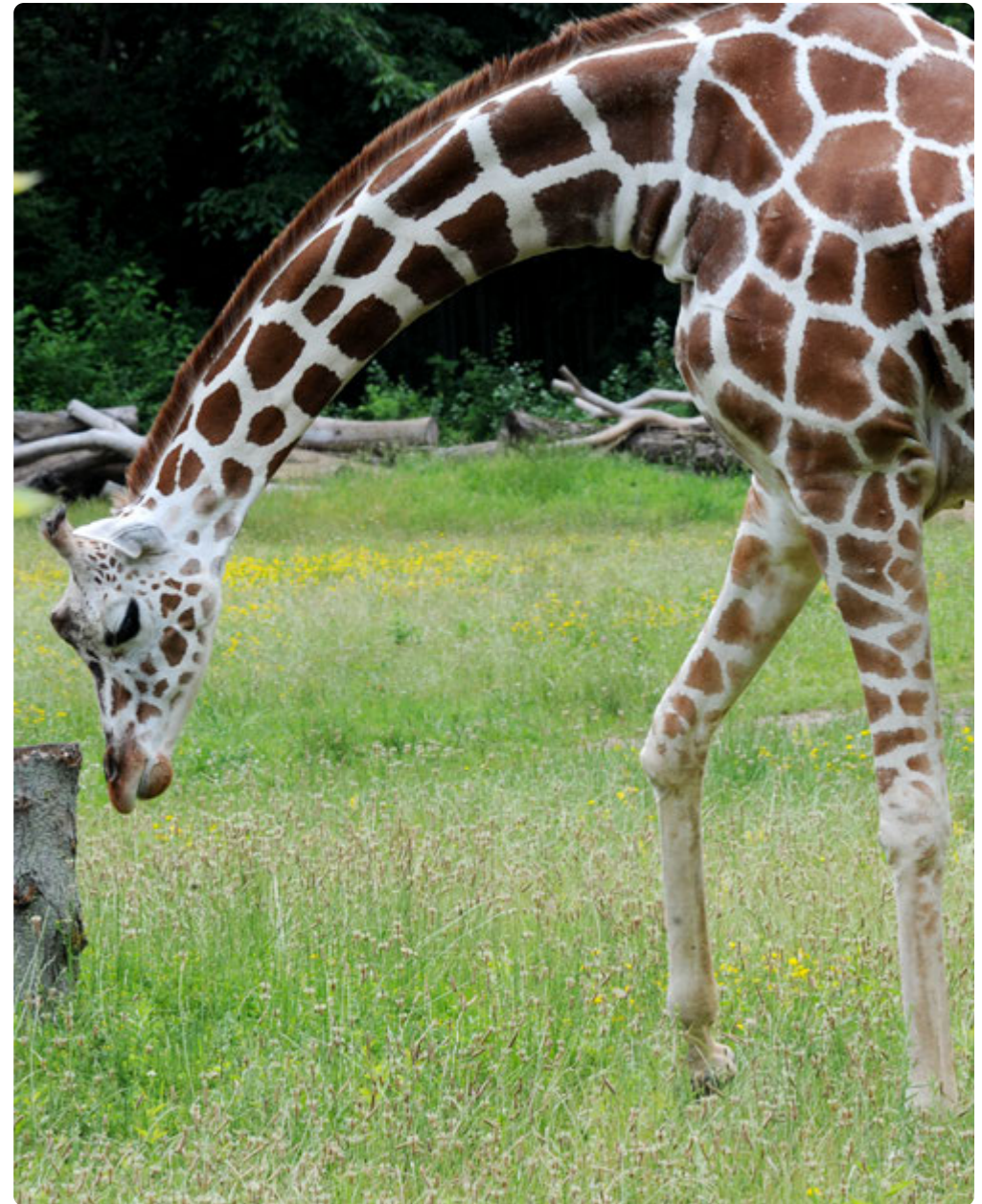


# Reticulated Giraffe

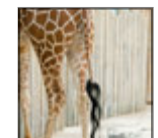
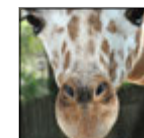
## 1. Observe

If you are on a virtual field trip, view the photos to make observations of the reticulated giraffe.

### Gallery 3.6 Reticulated Giraffe



Reticulated Giraffe





## Movie 3.6 Reticulated Giraffe



If you are on a virtual field trip, watch the video and make observations.



### Interactive 3.6 Write or draw your observations for the reticulated giraffe.



Small Medium Large

Black Red Green Brown Blue Eraser Clear



Take three good photographs of the reticulated giraffe with your iPad camera.



What is one thing you wonder about the reticulated giraffe?



# Back in the Classroom







Welcome back to the classroom. This chapter contains a post-field trip lesson. Tap on your grade to take you to the lesson.

**Kindergarten**

**1st  
Grade**

**2nd  
Grade**



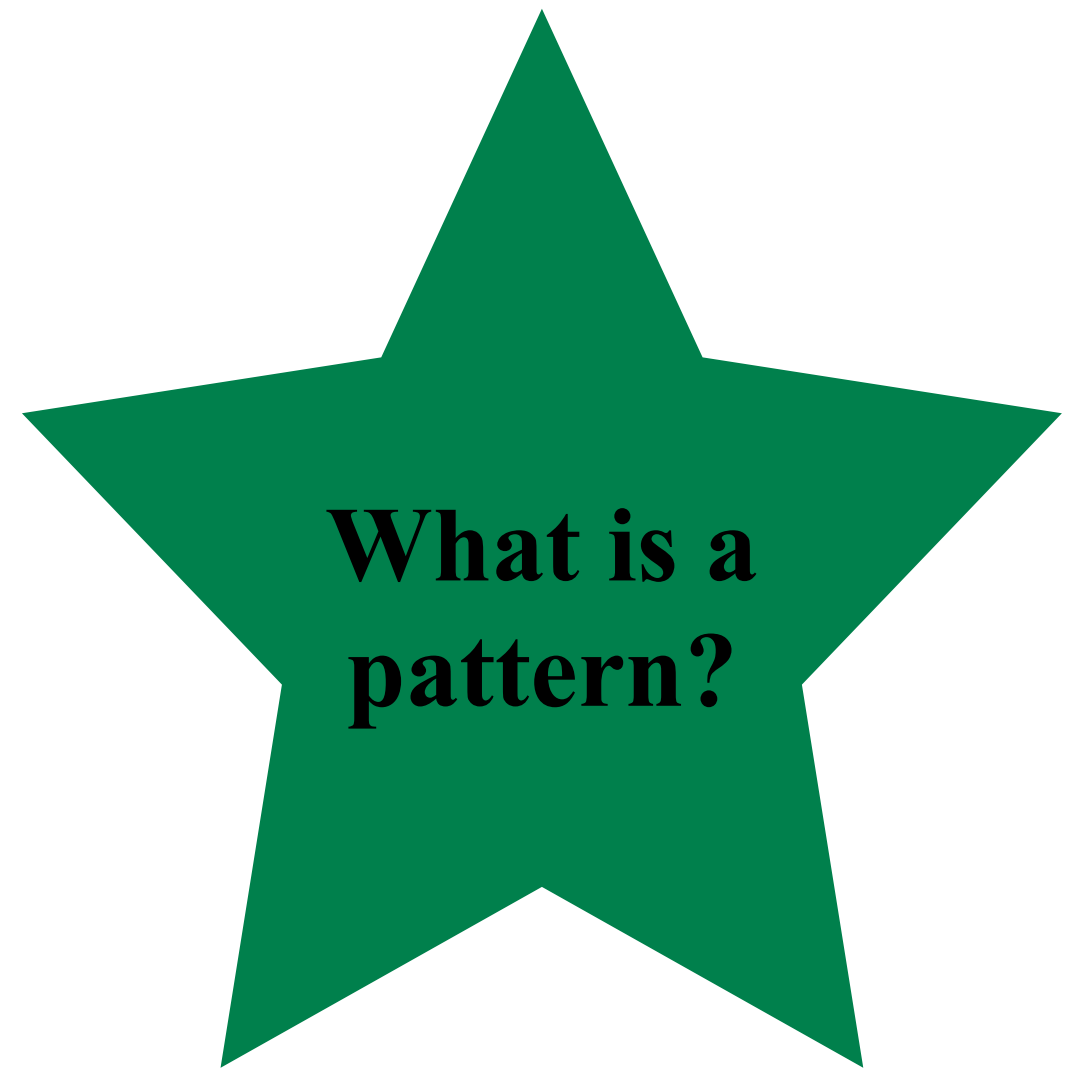
# Kindergarten



*Learning Target:  
I can use my animal  
observations to describe  
patterns of what animals  
need to survive.*

**What is  
survival?**

What do animals and humans need or use to **survive**? Think of some examples that you have seen over and over. Your teacher will write down class ideas and examples.





Let's compare and contrast the necks of two hoofed animals.  
Look at the Venn diagram below.



**RETICULATED  
GIRAFFE**

- Neck is long and lean
- Can be up to 8 feet so the giraffe can eat leaves in the tall trees

**BOTH**

- Length of the neck helps to obtain food

**PRZEWALSKI'S  
HORSE**



- Neck is much shorter than the giraffe's to reach grass

Meet with your expert group from the field trip.

1. Look through your data and photographs for the okapi and the Grevy's zebra.
2. Compare and contrast the body parts for the two animals.



For example, if you are the eye expert group, here are some questions to ask yourself:

- How are the eyes alike and different between the two animals? What patterns do you see?
- How do the eyes help the two animals to **survive**?





# 1st Grade



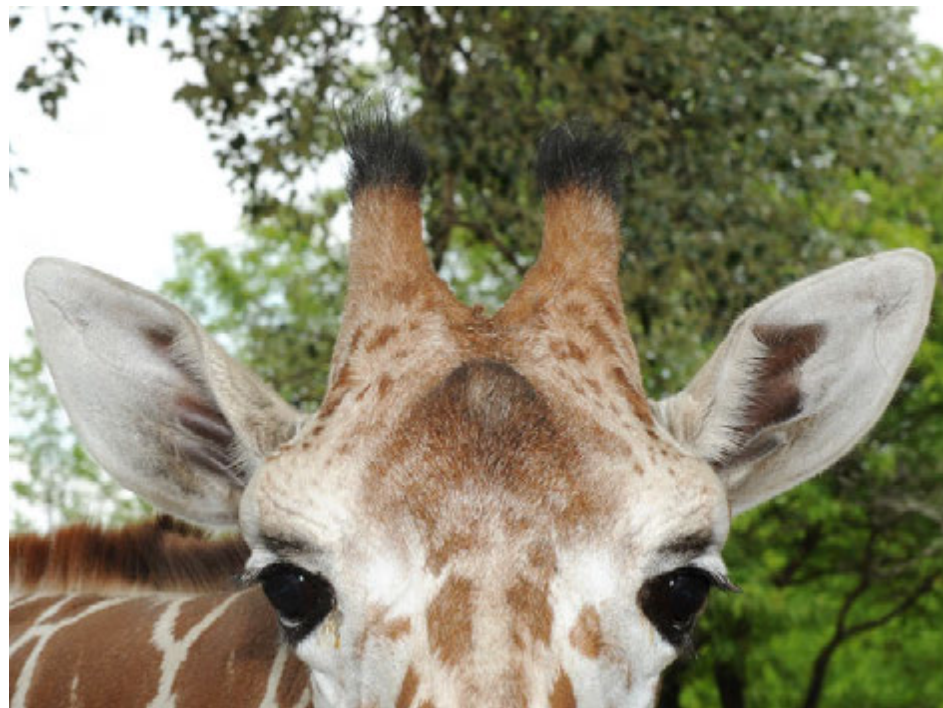
*Learning Target:*

*I can create a solution to a human problem that **mimics** how animals use their external body parts.*

**Give  
examples of where you  
have seen  
something  
mimic another  
thing.**



All organisms have **external** body parts. External parts are ones that you can see on the outside of the body. The external parts help the organisms to survive, grow, and meet their needs.



When we were on our field trip, expert groups made observations on animal external body parts. Let's share some of our **observations.**



You are trying to  
enjoy a beautiful picnic  
lunch outside with your friends.  
Flies that are trying to get to your  
food are bothering you. Use what you  
observed on the field trip with your  
partner to solve the problem of insects  
bothering you. Think about the animals we  
saw and how they used their external  
body parts. Your solution should mimic  
the animal's ability to fight off  
insects. Be ready to share your  
solution with the class.



## 2nd Grade



*Learning Target:*

*I will design an animal that can survive in a certain habitat.*

**What is survival?**

**How do animals use their body parts to survive?**



Meet with your expert group from the field trip.

1. Look through your field trip photos on your iPad photo roll.
2. Choose one or two of the group's favorite photos from each hoofed animal habitat.
3. Tap on the heart to mark the photos as your favorites. These will be shared with your teacher.

4. Look through the rest of the data you collected during the field trip.
5. Think about some of the things you noticed as you observed each of the hoofed animals.
6. Make sure your group has one expert observation to share about each animal.



Based on what you learned about the different body parts of the hoofed animals, your goal is to create an animal that can survive in your assigned **habitat**. Use the shared photographs from all of the expert groups as a resource to help design your animal. Be ready to share your animal design with the class.



As you create your animal, think about:

1. How would you describe your animal's **habitat**?
2. What body parts did you use for your animal?
3. How does the shape of the body parts help the animal survive in this habitat?



# About the Authors







This was created as an extension of the Apple Distinguished Educators Community Engagement project in order to enhance the self-guided field trip experience for teachers and their students while at Brookfield Zoo.



**Megan Ryder:** Educator. Mrs. Ryder started her educational career on figure skates, teaching basic skills to skaters of all ages while working on her Bachelor's of Science degree at Western Michigan University. She completed her Master's in Curriculum and Instruction, Instructional Technology from Lewis University in 2012. After teaching 5th grade for seven years, she became an instructional coach for two elementary schools and one middle school. She is also an Apple Distinguished Educator, Class of 2015.

**Agnes Kovacs:** School, Groups, and Teacher Program Manager, Chicago Zoological Society. Agnes Kovacs has been the director of for-profit and not-for-profit child care centers, including corporate-owned and the State of Iowa's model day care. She has worked as the Executive Director of the Elgin Area Childcare Initiative, Administrator of Home Based Care Corporation, and a day care home DCFS licensing representative. She has been adjunct faculty at several colleges and universities. Agnes gives numerous workshops and trainings in the greater Chicago area. She has served as a member of the National Association for the Education of Young Children's center accreditation validation team and as a lead literacy coach for the Chicago Public School System. Her Master's in Elementary Education is from the University of Iowa. She currently works as the Senior Manager of the School, Groups, and Teacher Programs at the Chicago Zoological Society/Brookfield Zoo, managing five educational programs for the Zoo.

**Marjorie Baker:** School Programs Coordinator, Chicago Zoological Society. Ms. Baker manages the Institute of Science Teaching Excellence, develops and teaches classes focusing on NGSS, provides in-classroom coaching, and collaborates with school and community partners, as well as supervises instructors for school classes at Brookfield Zoo. A former science teacher in the Baltimore (MD) County Public Schools and Chicago Public Schools, Ms. Baker also served as Outreach Specialist at the National Aquarium. She holds a Master's in Secondary Science Education and a Bachelor's of Science in Marine Biology from the University of Maryland and is a certified public school teacher in both Maryland and Illinois.

A special thank you goes to Chicago Zoological Society/Brookfield Zoo's School Group and Teacher Department and the Creative Services Department.

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# Crop

When you **crop** a photo, you remove the outer edges of the photo. This helps to get rid of unwanted area.

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## Related Glossary Terms

Drag related terms here

---

**Index**

Find Term

Chapter 2 - Making Observations

# Data

**Data** are information you gather when you make observations.

---

## Related Glossary Terms

Drag related terms here

---

## Index

Find Term

- Chapter 2 - Making Observations
- Chapter 2 - Making Observations
- Chapter 2 - Making Observations
- Chapter 3 - Welcome to Brookfield Zoo



# External

All organisms have **external** body parts. External parts are ones that you can see on the outside of the body. The external parts help the organisms to survive, grow, and meet their needs.

---

## Related Glossary Terms

Drag related terms here

---

**Index**

Find Term

Chapter 4 - 1st Grade

# Habitat

A **habitat** is a place where an animal lives. This is where it finds food, water, shelter, and space.

---

## Related Glossary Terms

Drag related terms here

---

**Index**

### Chapter 1 - Interactive Features

Chapter 3 - Welcome to Brookfield Zoo

Chapter 4 - 2nd Grade

Chapter 4 - 2nd Grade

Chapter 4 - 2nd Grade



# Hoofed

A **hoof** is the tough material that covers and protects the foot of some animals.

---

## Related Glossary Terms

Drag related terms here

---

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# Magnifying glass

A tool used to make an object look larger.

---

## Related Glossary Terms

Drag related terms here

---

**Index**

Find Term

Chapter 2 - Making Observations



# Map

A picture that shows certain objects in an area. A **map** can show buildings, streets, bodies of water, and more. Maps can have a key and a compass rose to show directions and special features.

---

## Related Glossary Terms

Drag related terms here

---

**Index**

Find Term

Chapter 2 - Using the Map of Brookfield Zoo

# Mimics

To copy what something looks, sounds, or acts like.

---

## Related Glossary Terms

Drag related terms here

---

**Index**



# Observation

An **observation** is something you notice when you pay close attention to something. You learn information by observing using all five senses.

---

## Related Glossary Terms

Observations

---

## Index

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Chapter 2 - Making Observations

Chapter 2 - Making Observations

# Observations

**Observations** are things you notice when you pay close attention to something. You learn information by observing using all five senses.

---

## Related Glossary Terms

Observation

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Chapter 2 - Making Observations

Chapter 3 - Welcome to Brookfield Zoo

Chapter 3 - Przewalski's Horse



# Pattern

A **pattern** is something that is repeated multiple times. Patterns help us to ask questions about why and how things occur.

---

## Related Glossary Terms

Drag related terms here

---

**Index**

Find Term

Chapter 4 - Kindergarten

# Senses

Touch, taste, sight, smell, and hearing are all **senses**.

---

## Related Glossary Terms

Drag related terms here

---

**Index**



# Species

A group of closely related organisms (like plants or animals) that are very similar to each other. This group is able to reproduce.

---

## Related Glossary Terms

Drag related terms here

---

## Index

Find Term

Chapter 2 - Identifying the Hoofed Animals

Survive

To continue to live.

---

**Related Glossary Terms**

Drag related terms here

---

**Index**

**Chapter 4 - Kindergarten**