Chapter 1

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.

Interactive Image
Tap on labels to learn more information.

**Gallery 1.1 Practice Photo Gallery**

Roosevelt Fountain

**Interactive 1.1**

- Feathers and Scales Building
- Birds Swimming in the Formal Pool
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.

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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

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.

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.
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.
SECTION 1 - LESSON 1

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

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

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.

Let’s share 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
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.
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
2. Take Photos
3. Wonder
1. Observe

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.

2. Take Photos

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.
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?
SECTION 1

Bactrian Camel

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

1. Observe
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?
1. Observe

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

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

1. Observe

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.
2. Take Photos

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

3. Wonder

What is one thing you wonder about the addax?
If you are on a virtual field trip, view the photos below to make observations of the Grevy’s zebra.

1. Observe
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.
2. Take Photos

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

3. Wonder

What is one thing you wonder about the Grevy’s zebra?
1. Observe

If you are on a virtual field trip, view the photos to make observations of the 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.
Take three good photographs of the okapi with your iPad camera.

What is one thing you wonder about the okapi?
Section 6

Reticulated Giraffe

1. Observe

If you are on a virtual field trip, view the photos to make observations of the 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.
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
SECTION 1

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?
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.
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.

Let’s share our data!
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?
CHAPTER 5

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.
Crop

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

**Related Glossary Terms**

Drag related terms here
Data

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

**Related Glossary Terms**

Drag related terms here

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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

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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

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Chapter 1 - Interactive Features
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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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Find Term

Chapter 2 - Pre-Zoo Activities
Magnifying glass

A tool used to make an object look larger.

Related Glossary Terms
Drag related terms here

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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
Mimics

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

Related Glossary Terms
Drag related terms here

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Chapter 4 - 1st Grade
Observation

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

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**Related Glossary Terms**

Observations

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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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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**

Chapter 4 - Kindergarten
Senses

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

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Chapter 2 - Identifying the Hoofed Animals
Survive

To continue to live.