Virtual Field Trip Teacher's Guide

OVERVIEW

Welcome to a virtual field trip to the Bernard Family Hall of North American Mammals! This field trip is designed for grades 3-5 students to explore habitat dioramas to learn how animals must be adapted to an environment in order to survive in it.

This activity is modular to give teachers flexibility in how they assign components to their students. The Virtual Hall Tour and Student Investigation are the core assignment. The extension activities are meant to provide opportunities for deeper student engagement and could be assigned over several days.

Common Core State Standards:
W.3-5.2, W.3-5.8, W.3-5.9
RI.3-5.1, RI.3-5.2, RI.3-5.4, RI.3-5.10

New York State Science Core Curriculum:
LE 3.1c

Next Generation Science Standards:
PE 3-LS4-3
DCI LS4.C: Adaptation
For any particular environment, some kinds of organisms survive well, some survive less well, and some cannot survive at all.

CORE ACTIVITY

Virtual Hall Tour and Student Investigation

Students will use Google Arts and Culture to take a virtual tour of the Bernard Family Hall of North American Mammals to explore habitat dioramas. Students will observe three dioramas: Black-Tailed and Antelope Jackrabbits, North American Beaver, and Dall Sheep. Teachers may also engage students in a coloring book activity to learn more about the animals. Then students will select one of these three dioramas to observe closely and complete a worksheet describing the animal and its adaptation to its environment using the Museum's website.

Supports for synchronous instruction:

- Jigsaw: Assign teams for each of the three dioramas and have students on the same team discuss their findings in breakout groups. Once they have completed their worksheets, have each group (or a representative from each group) present their findings to the rest of the class.

Supports for asynchronous instruction:

- Have students create a Flipgrid recording talking about what they learned about the animal in their diorama; encourage them to use images of the animal and diorama to illustrate their points.

Instructional Modalities

This activity was designed for both synchronous or asynchronous instruction.

For **synchronous instruction**, we recommend a platform that allows both for whole class discussion and for students to interact in small groups.

For **asynchronous discussion**, we provide suggestions for teachers to provide additional video support for the activities and for students to share their work with each other.

EXTENSION ACTIVITIES

To deepen student engagement with this content, you may choose to add one or more of the following extension activities:

Reading Assignment

This part of the activity engages students in reading a nonfiction text about how animals must be adapted to an environment in order to survive in it. The reading will prepare students for their visit by introducing them to the topic and framing their investigation.

Supports for synchronous instruction: Student Reading

- "Chunking" the reading can help keep students from becoming overwhelmed by the length of the text. Present them with only a few sentences or a single paragraph to read and discuss before moving on to the next "chunk."

- Provide "think-time" for students after you ask a question. This will allow time for students to search for textual evidence or to more clearly formulate their thinking before they speak.

- The following questions can be used for a class discussion:

  What is an adaptation? *(Answers may include: adaptations are behavioral or physical characteristics that help plants and animals survive in their environment)*

  Give one example of a physical adaptation and one example of a behavioral adaptation. *(Examples of physical adaptations: the tree's protective bud scales, the snowshoe hare's color-changing coat, the grouse's foot fringe that enables it to walk in the snow. Examples of behavioral adaptations: hibernation, the caribou's migration, the pika's storing of hay for the winter.)*

  What happens if plants and animals are not adapted to their environment? *(Answers may include: They are unable to survive and will eventually die out.)*

  Can individual plants or animals change their adaptations at will when habitat or environment changes? *(Answers may include: Adaptation happens over long periods of time. When an environment changes, some plants and animals survive better than others. Those that cannot survive die out.)*

Supports for asynchronous instruction: Student Reading

- Film a video of yourself reading "Winter is on the Way…." This will allow students to pause or relisten to the reading so that they have time to take notes, paraphrase important information, or write down questions that they have.

Writing Task

This informational writing task asks students to draw on the reading and observations recorded during the virtual field trip, to write an illustrated essay about animals and their adaptations. The writing task should only be assigned as culminating work, if students have also completed the reading and answered the questions from the student investigation. A student checklist and teacher rubric are included.

Based on the article "Winter is on the Way..." and your virtual visit to the Bernard Family Hall of North American Mammals, write an illustrated essay in which you:

- define "adaptation"
- explain why animals must be adapted to an environment in order to survive in that environment.

Be sure to include examples of three animals. For each animal:

- Describe at least one adaptation and explain how it helps the animal live in its specific habitat.
- Draw and label an illustration of the animal's adaptation(s)

Support for your discussion using evidence from your reading and the Bernard Family Hall of North American Mammals.

While referring to the writing prompt, have students underline or highlight all relevant passages and information from the reading, and their notes from the hall, that can be used in their response to the prompt.

Supports for synchronous instruction: Writing Task

- Re-read "Winter is on the Way..." with students. Ask students for examples from the hall of adaptations that help animals survive in their environment.
- Allow time for students to read their essay drafts to a peer and receive feedback based on the Student Writing Guidelines.

Supports for asynchronous instruction:

- Ask students to re-watch the video of the teacher reading of "Winter is on the Way...." While they view it, ask them to take notes on examples from the hall of adaptations help animals survive in their environment.
- At the end of the lesson, invite students to post their essays on Padlet.

ANSWER KEY

Student Worksheet: North American Beaver

Look at the North American Beaver diorama on the website and in the Virtual Hall and fill in the answers below. You can also explore the animals in the North American Mammals Coloring Book.

Describe the environment shown in the diorama:

It's a forested area near a pond. There are trees all around and a dam in the background. The beavers are gnawing on trees near the pond.

List two traits or abilities that the North American Beavers have that help them survive in their environment. Answer the questions for each feature.

Trait 1: *Thick fur*

How does Trait 1 help Beavers in their environment?

Their thick fur keeps them warm in cold weather and when they swim in cold water.

What problems could Beavers have without Trait 1?

Without thick fur, the beavers might be too cold to swim in the water and live in this environment.

Trait 2: *Sharp teeth*

How does Trait 2 help Beavers in their environment?

The sharp teeth are used for cutting trees to build their home.

What problems could Beavers have without Trait 2?

Without sharp teeth, the beavers might not be able to cut down trees and build their home.

ANSWER KEY

Student Worksheet: Dall Sheep

Look at the Dall Sheep diorama on the website and in the Virtual Hall and fill in the answers below. You can also explore the animals in the North American Mammals Coloring Book.

Describe the environment shown in the diorama:

It is cold and high up in the mountains. There is snow all around and the sheep are standing on a rocky peak.

List two traits or abilities that the Dall Sheep have that help them survive in their environment. Answer the questions for each feature.

Trait 1: *White fur*

How does Trait 1 help Dall Sheep in their environment?

The white fur helps them blend in with the snow.

What problems could Dall Sheep have without Trait 1?

Without white fur, they might be easier for predators to spot.

Trait 2: *Hooves*

How does Trait 2 help Dall Sheep in their environment?

The hooves help them climb steep cliffs to high places.

What problems could Dall Sheep have without Trait 2?

If they could not climb to mountain-tops it might be easier for predators to get to them.

ANSWER KEY

Student Worksheet: Jackrabbits

Look at the Black-tailed and Antelope Jackrabbits diorama on the website and in the Virtual Hall and fill in the answers below. You can also explore the animals in the North American Mammals Coloring Book.

Describe the environment shown in the diorama:

Desert environment with cacti and rocks. There are mountains in the background.

List two traits or abilities that the Jackrabbits have that help them survive in their environment. Answer the questions for each feature.

Trait 1: *Long ears*

How does Trait 1 help Jackrabbits in their environment?

Long ears help keep them cool.

What problems could Jackrabbits have without Trait 1?

Without long ears to keep it cool, they might have a hard time living in such a hot environment.

Trait 2: *Brown fur*

How does Trait 2 help Jackrabbits in their environment?

Brown fur helps them blend into the environment.

What problems could Jackrabbits have without Trait 2?

Without brown fur, they might be easier for predators to spot.