Lesson 3 – Chimpanzee Behavior

In this lesson, students will learn the basics of animal behavior, observational methodology, and the importance of data collection at Chimp Haven.

Crosscutting Concepts – patterns, cause & effect

NGSS Reference – MS-LS4-2 Biological Evolution: Unity and Diversity
Clarification Statement: Emphasis is on explanations of the evolutionary relationships among organisms in terms of similarity or differences of the gross appearance of anatomical structures.

Vocabulary:

- **Activity Budget** – a collection of data that shows how much time the chimpanzees spend doing certain behaviors or activities
- **Behavior** – the way an animal acts
- **Culture** – Socially-transmitted and learned behaviors in a group of animals (not an entire species) Or Behaviors that are carried on by learning and imitation, not genes
- **Diurnal** – during the day
- **Enrichment** – an item, activity, or behavior that enhances the quality of life of an animal
- **Ethogram** – a table of recorded actions or behaviors
- **Fission-fusion** – fission means to split and fusion means to come together, fission-fusion means to split then come back together over time
- **Instinctive behavior** – inherited behavior that a species doesn't have to learn to do
- **Learned behavior** – a behavior learned by experience
- **Observation** – actively watching something with the purpose of understanding it better
- **Species-typical behavior** – acts that are shared by a species

Time	Teacher	Student
Engage 25 mins	Discuss the key term behavior with students. Engage students by explaining that they'll watch a video compilation of chimpanzees exhibiting different behaviors at Chimp Haven. Before they watch explain the difference between instinctive (nature) and learned (nurture) behaviors. Ask them to consider the following while watching the video: • "What are some of your instinctive behaviors?" • "What are some of your learned behaviors?" • "What do you think some "species typical" behaviors are for chimpanzees and for humans?" It's important to note that a lot of behaviors that people think are instinctive to chimpanzees are actually learned (climbing trees, learning to be mothers, etc.) Chimpanzee Behavior Video	**Nature vs. Nurture Activity** After watching the video have students fill out the worksheet.
Explore 20 mins	Observations from the video. • Ask students to share their answers and why they chose them. Then share the correct answers for the worksheet. • Behaviorists at Chimp Haven study different facets of chimp life at the sanctuary from social hierarchy to how the chimps are utilizing their spaces. • Explore the remaining key terms and have students collect data through observational methodology by following the worksheet and watching the video. Habitat Exploration Video	**Observational Methodology Activity** Have students watch the video and follow the worksheet to record observations.
Explain 30 mins	Observations from the video. • Ask students to share some of the behaviors from the video as a class. Was there anything that they saw often that was not listed on the ethogram? • Watch the video again with narration to aid in the discussion. Habitat Exploration Video **(with audio)** • Chimpanzee culture is studied in the wild to see how different behaviors are passed on among groups. It's important for wild chimpanzees to pass down their culture because certain behaviors increase the chance for survival - just like humans. Another important part of behavioral data is creating activity budgets based on observations. Activity budgets show how much time the chimpanzees spend doing certain behaviors or activities. The behavior team is tasked with finding enrichment strategies that keep the chimpanzee groups active.	**Activity Budget (optional math extension)** Using the collected observation data create an activity budget for Flora's group.

Elaborate 30 mins	Ask students to reflect on their activity budgets using the questions below as a guide. • "In the context of the video what types of behaviors were performed most often?" • "Think about what your activity budget would look like for a 24 hour period. How is it similar and how is it different from a chimpanzee?" • It is important when working with chimpanzees to understand their behaviors. Taking the time to understand them helps caregivers create special relationships with the chimps. It also helps them get to know the chimpanzees as individuals and better understand what their "normal" is and what may be out of character. This might help us to know when a chimpanzee isn't feeling well or needs more to do.	**Discussion Questions** Have students work in small groups or individually to complete the discussion questions.
Evaluate 20 mins	Discuss small group answers to the discussion questions.	**Discuss** Have students discuss the questions as a class or one on one with you.

Chimpanzee Behavior – Nature vs. Nurture

Consider the difference between an instinctive and learned behavior. Think about actions that are taught and what you do naturally without instruction. The table lists both chimpanzee and human traits (we share a lot!). For each items on the table put a check mark in the “instinctive” or “learned” columns.

Behavior – the way an animal acts

Instinctive behavior – inherited behavior that a species doesn’t have to learn to do

Learned behavior – a behavior learned by experience

Behavior	Instinctive	Learned
Crying		
Sleeping		
Climbing Trees		
Yawning		
Using Tools		
Communicating		
Reading		
Grooming		
Breathing		
Eating		

Chimpanzee Behavior – Observational Data Collection

There are several ways to collect data, from field note collection to special software designed to track certain aspects of chimpanzee behavior. Behaviorists track chimpanzee characteristics using an ethogram, which is often based on "what do we want to know." Different researchers may categorize things differently and this may be based on a particular question they are trying to answer.

In the video you'll see Flora's group of 20 chimpanzees in their forested habitat. The group is down by the moat foraging for snacks and enjoying the nice weather. Act as a behaviorist by watching the video and collecting data through observational methodology. Use tally marks to indicate how many times you see the behavior.

Species-typical behavior – acts that are shared by a species

Ethogram – a table of recorded actions or behaviors

Observation – the act of noticing something

Behavior	Times Observed Doing Activity
Sunbathing	
Sleeping	
Climbing Trees	
Using Tools	
Foraging	
Grooming	
Playing	
Drinking	
Walking only on two feet (bipedal)	
Other	

Chimpanzee Behavior – Activity Budget

Activity Budget – a collection of data that shows how much time the chimpanzees spend doing certain behaviors or activities

Behaviorists at Chimp Haven create activity budgets to track how residents spend their days. The data help the team identify what types of behaviors are most common in the group, and how they can help provide different stimuli to encourage other positive behaviors they see less often. Create an activity budget for the observational data you collected for Flora's group during the previous activity.

Convert your data into a bar graph with percentages. At the bottom of your graph include what you've concluded from Flora's group based on your observation.

Observations:

Chimpanzee Behavior – Discussion Questions

1. What is the difference between instinctual and learned behaviors? How are chimpanzees different than some other species?

2. How do you think the behaviors in Flora's group would differ depending on the weather, the group make up, and the time of day?

3. Why is it important to study the behavior of chimpanzees?

4. How can you use observational methodology in your day to day life?

Chimpanzee Behavior – Nature vs. Nurture (Answers)

Consider the difference between an instinctive and learned behavior. Think about things that are taught and what you do naturally without instruction. The table lists both chimpanzee and human traits (we share a lot!). For each items on the table put a check mark in the "instinctive" or "learned" columns.

Behavior – the way an animal acts

Instinctive behavior – inherited behavior that a species doesn't have to learn to do

Learned behavior – a behavior learned by experience

Behavior	Instinctive	Learned
Crying	●	
Sleeping	●	
Climbing Trees		●
Yawning	●	
Using Tools		●
Communicating		●
Reading		●
Grooming		●
Breathing		●
Eating	●	

Chimpanzee Behavior – Discussion Questions (Answers)

1. What is the difference between instinctual and learned behaviors? How are chimpanzees different than some other species?

Instinctual vs. Learned Behavior

- Instinctive behavior is inherited behavior that a species doesn't have to learn to do
- Learned behavior is behavior learned by experience

Chimpanzees vs. Other Species

- Larger and smarter than some species
- They use tools
- They can't swim

2. How do you think the behaviors in Flora's group would differ depending on the weather, the group make up, and the time of day?

- Examples may include that they may seek shelter depending on weather, they would act different if the alpha was different, they may be sleepy or less active depending on the time and temperature, etc.

3. Why is it important to study the behavior of chimpanzees?

- Can teach us more about human origins
- Learn how to protect the endangered species
- Learn about the species' significance to the population
- Learn more about them in relation to other primates and mammals
- Learn how to improve their quality of life at Chimp Haven

4. How can you use observational methodology in your day to day life?

- Encourage creativity!
- Examples may include modifying behavior based on observations, learning more about other humans and animals around you, recognizing patterns, etc.