

Lesson 2 – Chimpanzee Habitats



In this lesson, students will learn about habitats, ecosystems, and the basics of structural and behavioral adaptation.

Crosscutting Concepts – cause & effect, patterns, stability & change

NGSS Reference – MS-LS2-1 Ecosystems: Interactions, Energy, and Dynamics

Clarification Statement: Emphasis is on cause and effect relationships between resources and growth of individual organisms and the numbers of organisms in ecosystems during periods of abundant and scarce resources.

Vocabulary

- **Adapt** – to change or adjust to a new situation
- **Adaptation** – a change in an organism that occurs to help it survive and reproduce
- **Behavioral adaptation** – a change in the way an organism acts
- **Ecosystem** – collection of organisms living and interacting with each other in a specific geographic location
- **Endangered** – facing a high risk of extinction
- **Extinct** – no longer in existence
- **Forage (n)** – a mixture of shelf-stable food staples that the chimpanzees enjoy and that encourages them to search and gather
- **Forage (v)** – to search for and gather items (can be indoors or outdoors)
- **Habitat** – an organism's natural environment
- **Organism** – a living creature that is a plant, animal or single-celled life form
- **Structural adaptation** – physical features of an organism that helps it survive in its environment



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Time	Teacher	Student
<p>Engage</p> <p>15 mins</p>	<p>Engage students by explaining that they're going to watch a video about Chimp Haven habitats. Before students watch have them consider the three questions below and fill out the K-W-L chart.</p> <ul style="list-style-type: none"> • "What makes a livable habitat for you or for other animals?" • "What would you do if you had to adjust to a new habitat?" • "Have you ever moved habitats (to a new house)? If so, what are some things you did to adapt?" <p>Chimp Haven Forested Habitats Video</p>	<p>K-W-L Chart</p> <p>Before watching the video have students think about the topic questions and fill out the "know" and "want to know" sections.</p>
<p>Explore</p> <p>30 mins</p>	<p>Observations from the video.</p> <ul style="list-style-type: none"> • Have students complete the K-W-L chart then go over the terms. . • Share that all organisms have a habitat. Within each habitat there are many organisms that affect each other called an ecosystem. All organisms need to adapt to their habitat in order to survive. • Discuss chimpanzees in the wild and their natural habitats. Have students read through the education pages to learn more. <p>Chimp Haven Education Web Page</p> <ul style="list-style-type: none"> • While Chimp Haven's habitats differ from those in the wild the sanctuary site was chosen with chimpanzee needs in mind. The climate, natural vegetation, and usefulness of the space to the species were all determining factors in whether or not the location would serve as the best space for the retirees. • Since the chimpanzees at Chimp Haven have lived in captivity all their lives, they do not have the experiences and skills they would need to succeed in the wild. At Chimp Haven, our goal is to provide them with many of those experiences in an environment that is safe and designed especially for them – including large, dynamic social groups, various types of enclosures and habitats to roam and explore, and daily enrichment to mimic the skills and behaviors of their wild counterparts. Since many of our chimpanzees also have chronic illnesses, it's important that they have access to the expert veterinary team at Chimp Haven to keep them healthy and thriving. At Chimp Haven, they get to experience life lived on their terms while still having the support they need in their daily care. 	<p>Initial Reaction</p> <p>Have students share their reactions to the story. What are some of the adaptations the group made upon being in the habitat? What were some things that they had to adjust to?</p> <p>K-W-L Chart</p> <p>After watching the video have students fill out the "learned" section of the chart.</p>



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	<ul style="list-style-type: none"> Chimp Haven residents have access to natural vegetation, places to rest, play, and explore. A key difference between sanctuary life and the wild is that care staff provide food, water, and veterinary care for groups while in the wild groups are self-sustaining. Have students read the blog post about Hobbes's group in the habitat for the first time. <p>Hobbes and Friends in the Habitat Blog</p>	
<p>Explain</p> <p>20 mins</p>	<p>Describe adaptations that can occur in various ecosystems and relate the changes to the ability of an organism to survive. For example, a toad can camouflage itself in order to blend in with its surroundings. Ask students why they think that would benefit the toad.</p> <p>Explain structural and behavioral adaptation as they relate to both humans and animals. Visit the key terms before moving to the worksheet.</p>	<p>Adaptations Activity</p> <p>Have students fill out the adaptation worksheet in small groups or individually then discuss.</p>
<p>Elaborate</p> <p>1 hour</p>	<p>Explain that chimpanzees are an endangered species. Read through the web page or have students read through on their own. Have students consider "Why are chimpanzees endangered?"</p> <p>Conservation Web Page</p> <p>Use the endangered guide or have students identify an animal that has been declared endangered. Note that while extinction is a natural occurrence the current rate at which species are experiencing decline is rapid. Have students consider the following factors.</p> <ul style="list-style-type: none"> Why do you think the animal is endangered? What do you think some of the effects of their decline or possible extinction is having or could have on the ecosystem? <p>After the exercise have students design a sanctuary habitat using their learnings.</p>	<p>Endangered Species Worksheet</p> <p>Assign an endangered animal to students from the list provided, or have students identify their own. Have students conduct research on their animal and fill out the worksheet.</p> <p>Habitat Activity</p> <p>Have students work in their small groups or individually to design a sanctuary habitat.</p>
<p>Evaluate</p> <p>25 mins</p>	<p>Hold a classroom discussion with the aid of the provided questions. Visit Chimp Haven's webpage to review more including ways to help the species.</p> <p>Conservation Web Page</p>	<p>Discuss</p> <p>Have students discuss the questions as a class or one on one with you.</p>



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Chimpanzee Habitats – K-W-L Chart



Habitat – an organism’s natural environment

Know

Want to know

Learned



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Chimpanzee Habitats – Chimpanzee Adaptation

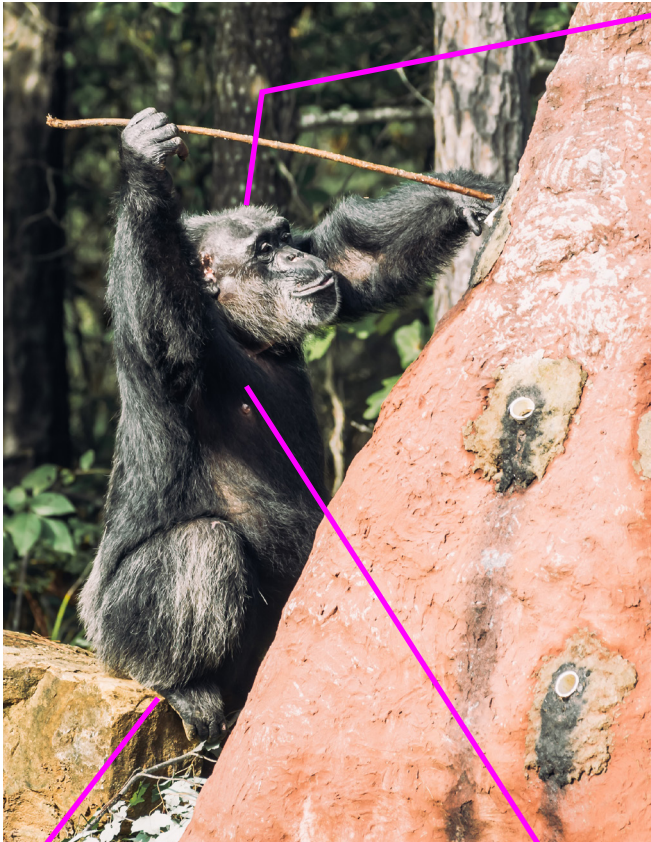


Like other species, chimpanzees adapted, or went through changes to help them survive and reproduce in their natural environment. Classify each adaptation in the photograph as structural or behavioral.

Adaptation – a change in an organism that occurs to help it both survive and reproduce

Structural adaptation – physical features of an organism that helps it survive in its environment

Behavioral adaptation – a change in the way an organism acts



Having a large brain helps chimpanzees form relationships.	
Chimpanzees have likes and dislikes just like you and me.	
Color vision helps chimpanzees notice details in their environment.	
Forward facing eyes means binocular vision, which helps chimpanzees accurately judge distance.	
A good sense of smell helps chimpanzees find food and hear other chimpanzees pant hoot.	
Large ears give chimpanzees great hearing, and the ability to hear things far away.	
Chimpanzees get excited when they hear other chimpanzees making a pant hoot or food grunt.	

Flexible toes and an opposable big toe help chimpanzees pick up and hold objects.	
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Long arms help chimpanzees climb trees.	
Long fingers and short thumbs allow chimpanzees to brachiate and swing through tree branches.	
Chimpanzees are social and do things together and apart.	
Chimpanzees problem solve with and without tools.	

Endangered Species Worksheet



An animal species is classified as endangered when they are facing a high risk of extinction. Research your endangered animal and complete the questions below. Consider the impact that a decline in your animal's population has on its environment.

Animal:

Causes of Endangerment

Effects of Endangerment



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Endangered Worksheet – Guide



Eastern Lowland Gorilla

- Current population: Unknown
- Habitat: Forested habitats

Sumatran Rhino

- Current population: 80
- Habitat: Tropical and sub-tropical forested habitats

Red Panda

- Current population: Less than 10,000
- Habitat: Temperate forests

Sumatran Orangutan

- Current population: Less than 15,000
- Habitat: Tropical forests

Tiger

- Current population: Less than 4,000
- Habitat: Forested habitats, swamps, grasslands and savannas

Whale Shark

- Current population: Unknown
- Habitat: Ocean

Bonobo

- Current population: 10-20,000
- Habitat: Forested habitats



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Chimpanzee Habitats – Design a Sanctuary



What types of conditions do animals need to survive within their habitat? Within your group select an animal and take 10-15 minutes to research the species. Once you've collected your ideas work with your team to design your ideal sanctuary habitat! Consider space, shelter, physical characteristics of the animal to name a few things. Here are a few questions to consider as you build your design.

Animal:

Description of natural habitat

Food

Water

Shelter

Space

Draw your sanctuary!



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Chimpanzee Habitats– Discussion Questions



1. What do you enjoy doing in your habitat that you couldn't do in a chimpanzee habitat?
2. What is the difference between a structural and behavioral adaptation? What are some of your human adaptations? Are they behavioral or structural?
3. What are some of the things Hobbes' group did when they were introduced to the forested habitat?
4. What are some of the threats that chimpanzees face in their natural habitats and what could you do to help them?
5. What are some of the threats that humans face in their natural habitats and what could you do to help?
6. Discuss the consequences of human activities on other ecosystems.



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Chimpanzee Habitats – Adaptation (Answers)

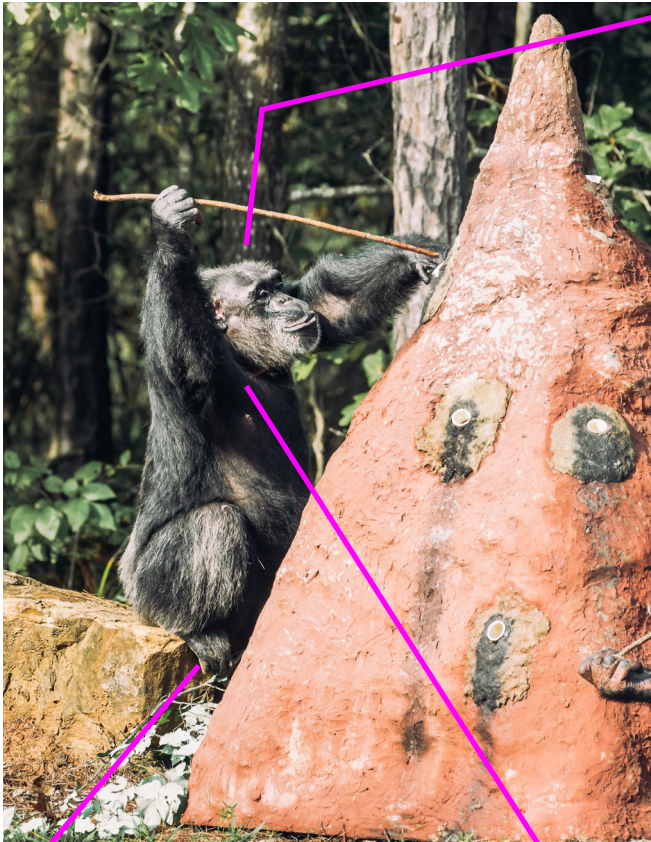


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Having a large brain helps chimpanzees form relationships.	Behavioral
Chimpanzees have likes and dislikes just like you and me.	Behavioral
Color vision helps chimpanzees notice details in their environment.	Structural
Forward facing eyes means binocular vision, which helps chimpanzees accurately judge distance.	Structural
A good sense of smell helps chimpanzees find food and hear other chimpanzees pant hoot.	Structural
Large ears give chimpanzees great hearing, and the ability to hear things far away.	Structural
Chimpanzees get excited when they hear other chimpanzees making a pant hoot or food grunt.	Behavioral

Flexible toes and an opposable big toe help chimpanzees pick up and hold objects.	Structural
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Long arms help chimpanzees climb trees.	Structural
Long fingers and short thumbs allow chimpanzees to brachiate and swing through tree branches.	Structural
Chimpanzees are social and do things together and apart.	Behavioral
Chimpanzees problem solve with and without tools.	Behavioral

Chimpanzee Habitats– Discussion Questions (Answers)



1. What do you enjoy doing in your habitat that you couldn't do in a chimpanzee habitat?

- Examples may include cooking, watching TV, or going shopping, etc.
- Encourage creativity!

2. What is the difference between a structural and behavioral adaptation? What are some of your human adaptations? Are they behavioral or structural?

Structural vs. Behavioral Adaptation

- structural adaptation involves the animal's body
- behavioral adaptation is a change in the way an animal acts

Human Adaptations

- examples of human structural adaptation include walking upright on two feet, swimming
- examples of human behavioral adaptations include using tools

3. What are some of the things Hobbes' group did when they were introduced to the forested habitat?

- climbing trees
- using tools
- drinking from a moat
- patrolling through a forest
- foraging

4. What are some of the threats that chimpanzees face in their natural habitats and what could you do to help them?

Threats

- logging
- hunting
- mining
- infectious diseases

Ways to help

- Recycle cell phones, computers and other electronics
- Reduce, reuse, recycle
- Read and learn about chimpanzees

5. What are some of the threats that humans face in their natural habitats and what could you do to help?

Threats

- extinction of animals
- loss of ecosystems
- food insecurity
- chemical pollution
- decline of natural resources
- disease
- climate change

Ways to help

- talk about the issues with friends, family, and classmates
- read and learn
- reduce, reuse, and recycle
- take care of yourself and your health
- respect your environment and other animals

6. Discuss the consequences of human activities on other ecosystems.

- loss of natural habitats
- loss of oxygen producers
- pollution
- overuse of non-renewable resources
- extinction of animals



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