Ecosystem

Life Science | Lesson Guide

Kindergarten

Photo Description

This picture shows a big forest with lots of green trees from high up in the sky. There is a road going through the forest where cars are driving. You can see open fields and more trees far away.

Scientific Phenomena

The Anchoring Phenomenon is a mixed landscape showing different habitats where plants and animals live. This represents how living things need different places to survive - some animals live in forests, others in open fields, and some can move between these areas. The forest provides shelter, food, and homes for many creatures, while the road creates a pathway that can help or sometimes make it harder for animals to move around.

Core Science Concepts

1. Habitats - Different places where plants and animals live and find what they need to survive
2. Living vs. Non-living - Trees and plants are living things that grow, while roads and cars are non-living things made by people
3. Basic Needs - All living things need food, water, shelter, and space to live
4. Human Impact - People change the environment by building roads and houses

Pedagogical Tip:

Use concrete examples from your local area when discussing habitats. Ask students to identify places near their school or home where different animals might live, making the concept more relatable and observable.

UDL Suggestions:

Provide multiple ways for students to express their understanding by allowing them to draw pictures, act out animal movements, or use gestures to show how different animals use their habitats.

Zoom In / Zoom Out

1. Zoom In: Inside the soil under the trees, tiny roots are growing and spreading to get water and nutrients. Small insects and worms live in the dirt and help make the soil healthy for plants.

2. Zoom Out: This forest is part of a much bigger ecosystem that connects to other forests, rivers, and habitats across many miles, creating pathways for animals to travel and find food throughout the seasons.

Discussion Questions

1. What do you think animals in this forest need to survive? (Bloom's: Understand | DOK: 1)
2. How might different animals use the trees, ground, and open spaces differently? (Bloom's: Analyze | DOK: 2)
3. What would happen if all the trees were cut down? (Bloom's: Evaluate | DOK: 3)
4. How do you think the road affects the animals living in this forest? (Bloom's: Analyze | DOK: 2)

Potential Student Misconceptions

1. Misconception: "All animals live in trees in the forest."
   Clarification: Different animals live in different parts of the forest - some in trees, some on the ground, some underground, and some in streams or ponds.

2. Misconception: "Roads don't affect animals."
   Clarification: Roads can make it hard for some animals to move safely from one place to another to find food and water.

NGSS Connections

- Performance Expectation: K-ESS3-1: Use a model to represent the relationship between the needs of different plants and animals and the places they live
- Disciplinary Core Ideas: K-ESS3.A
- Crosscutting Concepts: Systems and System Models

Science Vocabulary

* Habitat: The place where an animal or plant lives and gets everything it needs
* Forest: A place with many trees growing together where animals live
* Environment: All the living and non-living things in a place
* Shelter: A safe place where animals can hide and rest

External Resources

Children's Books:
- A Tree Is Nice by Janice May Udry
- The Great Kapok Tree by Lynne Cherry
- In the Forest by Marie Hall Ets

YouTube Videos:
- "Animal Habitats for Kids" - Educational video showing different animals in forest habitats: https://www.youtube.com/watch?v=uOqRTWVeAfY
- "What Do Animals Need to Survive?" - Simple explanation of animal needs in different habitats: https://www.youtube.com/watch?v=cE0SveAFTz4