



PLANIT
TEACHERS

Exploring Ecosystems: Biodiversity and Environmental Conservation

Student Name: _____

Class: _____

Due Date: _____

Introduction

Welcome to this homework assignment on exploring ecosystems, biodiversity, and environmental conservation. This activity is designed for 14-year-old students and is expected to be completed within 30-40 minutes. Through a series of engaging activities, you will delve into the world of ecosystems, exploring the intricate relationships between species and their environments, and the critical role biodiversity plays in conservation efforts.

What is biodiversity, and why is it important in maintaining healthy ecosystems?

Biodiversity refers to the variety of different species of plants, animals, and microorganisms that live in an ecosystem or on Earth as a whole. It is essential for maintaining healthy ecosystems because it ensures that ecosystems are resilient to environmental changes and can recover from disturbances.

List three examples of different ecosystems and the variety of species found within them.

1. Forest ecosystem: trees, insects, birds, mammals
2. Desert ecosystem: cacti, snakes, lizards, insects
3. Marine ecosystem: fish, coral, seaweed, dolphins

How do human activities impact biodiversity, and what role can conservation play in mitigating negative impacts?

Human activities such as deforestation, pollution, and overfishing can significantly impact biodiversity by reducing the number of species and disrupting the balance of ecosystems. Conservation efforts such as protecting natural habitats, reducing pollution, and implementing sustainable practices can help mitigate these negative impacts.

Complete these concept checks:

1. Define and give an example of biodiversity.

2. Explain the importance of biodiversity in maintaining healthy ecosystems.

Activity 1: Ecosystem Web of Life

Instructions:

1. Draw a large circle on a piece of paper to represent an ecosystem (e.g., forest, ocean, desert).
2. Write the names of different species (plants and animals) within this ecosystem around the circle.
3. Draw lines to connect each species to others that it interacts with (e.g., predator-prey, symbiotic relationships).
4. Color code the lines to differentiate between types of interactions (e.g., red for predator-prey, green for symbiotic).

Questions:

1. How does the removal of one species affect the entire ecosystem?

2. What are some examples of symbiotic relationships in your ecosystem?

Activity 2: Biodiversity Case Study

Instructions:

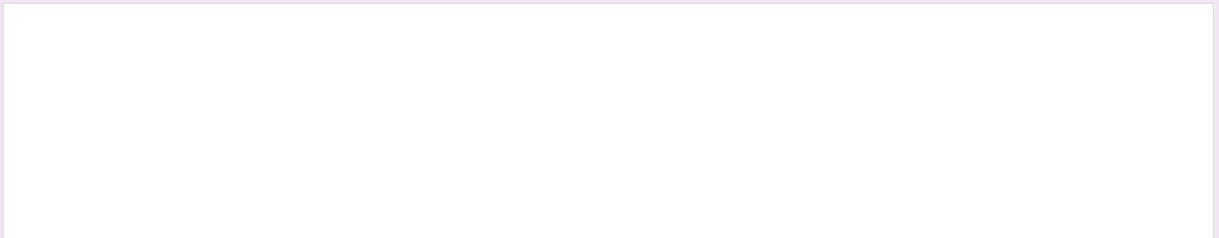
1. Research a specific ecosystem (e.g., Amazon Rainforest, Great Barrier Reef) and its biodiversity.
2. Write a short case study (about 250-300 words) on the ecosystem, including:
 - A brief description of the ecosystem.
 - The variety of species found within it.
 - The importance of biodiversity in this ecosystem.
 - Threats to biodiversity and potential conservation efforts.
3. Include at least two visual aids (images, diagrams, or charts) to support your case study.

Questions:

1. What can individuals do to contribute to the conservation of biodiversity in the ecosystem you studied?



2. How do human activities impact the biodiversity of the ecosystem you studied?



Activity 3: Conservation Debate

Instructions:

1. Choose a controversial conservation topic (e.g., reintroduction of wolves into an area, use of GMOs to enhance crop resilience).
2. Prepare arguments for both sides of the debate (in favor of and against the conservation strategy).
3. Write a balanced essay (about 250-300 words) presenting your arguments. Consider the potential effects on biodiversity, ethical implications, and practical feasibility.

Questions:

1. How do human activities influence biodiversity, and what role can conservation play in mitigating negative impacts?

2. What are some potential benefits and drawbacks of the conservation strategy you debated?

Choose any combination:

1. Create a Public Service Announcement (PSA) about the importance of biodiversity and conservation.
2. Create a diorama of an ecosystem, showcasing its biodiversity. Include a key to explain the different species and their roles within the ecosystem.

Questions:

1. What did you learn about biodiversity and conservation through these activities?

2. How do you think biodiversity impacts your daily life and the environment?

Success Criteria

Demonstrates a clear understanding of biodiversity and its importance in ecosystems.

Successfully completes two main activities, ensuring all instructions are followed.

Shows evidence of reflection on the activities and critical thinking about biodiversity and conservation.

Work is well-organized, neatly presented, and submitted on time.

Parent/Guardian Notes

Encourage your child to ask questions and seek help when needed. Guide them in managing their time effectively to complete the assignment within the given timeframe.

Discuss with your child how biodiversity and conservation efforts impact your community and daily life.

Ensure your child has access to necessary resources such as internet for research, paper, colored pencils, and any other materials required for the chosen activities.

Encourage your child to reflect on their learning and provide feedback on the assignment to their teacher.