



Introduction

Welcome to this lesson on understanding human impact on ecosystems!

In this activity, we will explore the significant effects of human activities on the environment through real-world case studies and graphic organizers. This lesson is designed for 14-year-old students and aims to promote STEM literacy, critical thinking, and problem-solving skills.

Case Study: Deforestation

Read the following case study on deforestation:

- *Deforestation is the clearance of forests, usually as a result of human activities like agriculture or urbanization.*
- *The Amazon rainforest is experiencing deforestation due to farming and logging.*
- *Deforestation leads to loss of biodiversity, increased greenhouse gas emissions, and disrupted water cycles.*

1. What are the main causes of deforestation?
2. How does deforestation impact local ecosystems?
3. What are some potential solutions to mitigate the effects of deforestation?

Graphic Organizer Activity

Use the following graphic organizer to analyze the case study on deforestation:

Causes	Effects	Solutions

1. Identify the causes of deforestation and fill in the corresponding section of the graphic organizer.
2. Describe the effects of deforestation on local ecosystems and fill in the corresponding section.
3. Propose potential solutions to mitigate the effects of deforestation and fill in the corresponding section.

Group Discussion

Discuss the following questions in small groups:

1. How do human activities impact ecosystems?
2. What are some ways to reduce our environmental footprint?
3. How can we promote sustainability in our daily lives?

Reflection and Conclusion

Reflect on what you have learned about human impact on ecosystems.

Individual Reflection:

1. What was the most surprising thing you learned today?

2. How will this learning change your actions in the future?

3. What questions do you still have about environmental impact?

Assessment and Homework

Complete the following assessment:

1. Write a short essay on the importance of understanding human impact on ecosystems.
2. Create a public service announcement (PSA) about the effects of deforestation.

ELL/ESL Support Strategies

For ELL/ESL students, the following support strategies can be used:

- *Provide visual aids and simplified language to explain complex concepts.*
- *Offer one-on-one support and peer assistance.*
- *Use bilingual resources and encourage students to use visual elements to communicate their ideas.*

Conclusion

In conclusion, understanding human impact on ecosystems is crucial for promoting sustainability and conservation.

Through the use of case studies and graphic organizers, students can develop a comprehensive understanding of the complex relationships within ecosystems and how human actions can affect these balances.

By incorporating ELL/ESL support strategies, we can ensure that all students have the opportunity to engage deeply with the material and develop a lasting appreciation for the natural world.

Additional Resources

The following resources can be used to support this lesson:

- *National Geographic's Interactive Ecosystems*
- *Science News for Students*
- *MindMeister (digital graphic organizer tool)*

Glossary

The following terms are used in this lesson:

- *Ecosystem: a community of living and non-living things that interact with each other in a specific environment.*
- *Biodiversity: the variety of different plants, animals, and microorganisms that live in an ecosystem.*
- *Sustainability: the ability to maintain or support a process without depleting natural resources.*

