

SUBJECT AREAS:

Natural science – Environmental Sciences, Biology, Ecology

ACTIVITY DESCRIPTION:

Lecture, discussion, watching a video on the effects of deforestation.

OBJECTIVES:

Students will be able to explain the greenhouse effect and its connection to climate change.

Students will be able to describe how trees absorb and store carbon dioxide.

Students will be able to analyze the role of trees in mitigating climate change.

MATERIALS:

Pictures, diagrams, video, internet (optional), handouts.

GRADE/LEVEL:

Secondary school (15-18)

DURATION:

Preparation time: 20 min.

Activity time: 25 min.

PLACE:

Classroom

AUTOR:

Civil Society Organization Eco Logic - Republic of North Macedonia

The Role of Trees in Mitigating Climate Change

INTRODUCTION:

Briefly discuss the videos related to climate change and deforestation. Ask students "What are some of the consequences of climate change?" List their answers on the board. State the lesson topic.

<https://www.youtube.com/watch?v=myZAvqqp9Jc>

<https://www.youtube.com/watch?v=lc-J6hcSKa8>

BACKGROUND:

Climate Change and the Greenhouse Effect:

Our planet naturally traps some heat from the sun, keeping it warm and habitable. However, human activities like burning fossil fuels release excessive greenhouse gases into the atmosphere. These gases act like a blanket, trapping more heat and causing the Earth's temperature to rise – this is climate change.

Trees as Carbon Sinks:

Trees are like natural vacuum cleaners for carbon dioxide, a major greenhouse gas. Through photosynthesis, they use sunlight, water, and carbon dioxide to produce food (sugar) and release oxygen. The carbon is stored in the tree's trunk, branches, and leaves. As trees grow, they continue to absorb and store more carbon dioxide.

The Role of Trees in Mitigating Climate Change:

Carbon Sequestration: Forests act as massive carbon sinks, absorbing and storing significant amounts of carbon dioxide from the atmosphere. This helps to mitigate the effects of climate change.

Reduced Emissions: Healthy forests also contribute by reducing our reliance on fossil fuels. Wood products can be used as sustainable alternatives to materials with higher carbon footprints.

FUN FACTS:

- *A mature tree can absorb up to 48 pounds of carbon dioxide per year and store it for centuries.*
- *Planting trees is one of the most cost-effective and sustainable ways to combat climate change.*
- *Large-scale global reforestation efforts are underway to increase carbon sequestration and mitigate climate change.*

ASSESSMENT:

Short quiz about the greenhouse effect and the role of trees in carbon sequestration.

<https://www.unclearn.org/quiz/test-your-climate-change-iq/>

Persuasive essay arguing for the importance of tree planting initiatives to combat climate change.

EVALUATION:

Reflect on the effectiveness of the lesson by considering student engagement, understanding of the concepts, and completion of the assessment tasks.