

"What is Your Carbon Footprint?" September 2024 Lesson Plan -High

Objective:

Students will gain an in-depth understanding of what a carbon footprint is, its environmental impact, and explore effective strategies to reduce their carbon footprint on an individual and community level.

Time:

1 hour 15 min + optional extension activities

Materials:

- Computer/Projector for video
- Internet access for research
- Chart paper and markers
- Worksheet: **What Is the Paris Agreement**
- Access to carbon footprint calculators
- Books and articles on climate change (optional)

Vocabulary:

- Carbon Cycle
 - Dynamic equilibrium
 - Paris Agreement
-

Introduction (15 minutes)

1. Captivating Intro:

- **Video:** Show an engaging and informative video on carbon footprints such as "[Climate Change: Your Carbon Footprint Explained](#)" by BBC News
 - **Discussion:** After the video, lead a discussion with questions like:
 - What are the main contributors to a carbon footprint?
 - How does reducing our carbon footprint benefit the environment?
-

Lesson (30 minutes)

1. In-Depth Explanation:

- Define carbon footprint: “A carbon footprint is the total amount of greenhouse gasses (including CO₂ and methane) that are generated by our actions.”
- Discuss major sources of carbon footprints: transportation (cars, planes), energy use (electricity, heating), food consumption (meat production, food transport), and consumer goods (manufacturing, packaging, waste).
- Explain the concept of carbon offsets and carbon neutrality.

2. Interactive Lecture:

- Use graphs showing the carbon footprints of different activities and their impact on climate change. Example can be found here: <https://www.easel.ly/blog/do-you-know-your-carbon-footprint-a-case-study-infographics/>
 - Discuss the Paris Agreement and global efforts to reduce carbon emissions. (Students may read about the Paris Agreement and answer discussion questions with the **What Was the Paris Agreement?** worksheet.
 - Highlight individual actions versus systemic changes in reducing carbon footprints.
-

Group Activity (30 minutes)

1. Research and Presentation:

- Divide students into small groups.
 - Assign each group a specific topic to research (e.g., renewable energy, sustainable transportation, food sustainability, waste management).
 - Each group will create a detailed presentation or report covering:
 - How their topic contributes to or reduces carbon emissions.
 - Current technologies or practices being used to address the issue.
 - Proposed solutions and their potential impact on reducing carbon footprints.
 - Groups will present their findings to the class.
-

Individual Activity (25 minutes)

1. Personal Carbon Footprint Calculation:

- Provide students with access to online carbon footprint calculators (e.g., [Carbon Footprint Calculator by the EPA](#), Carbon Footprint Calculator by Nature Conservancy).
 - Have students input their daily activities to calculate their personal carbon footprint.
 - After completing the calculation, ask students to analyze their results and write a reflection on their findings, including three actions they can take to reduce their carbon footprint.
-

Extension Activities

1. Community Action Project:

- Encourage students to develop a project aimed at reducing the carbon footprint of their school or community (e.g., starting a recycling program, organizing a carpool initiative, promoting energy-saving practices).

2. Research Papers:

- Assign students to write research papers on topics such as the impact of climate change on biodiversity, the role of policy in reducing carbon emissions, or the economic benefits of sustainable practices.
-

3. Books and Articles to Read:

- "This Changes Everything: Capitalism vs. The Climate" by Naomi Klein
 - "The Uninhabitable Earth: Life After Warming" by David Wallace-Wells
 - "The Omnivore's Dilemma" by Michael Pollan
 - Articles from scientific journals on climate change and sustainability
-

Closing Activity/Statement (15 minutes)

1. Reflection and Sharing:

- Have students share their personal carbon footprint results and the actions they plan to take to reduce their footprint.



- Discuss as a class how these individual actions can collectively make a significant impact and explore ways to support each other in these efforts.

2. Class Pledge:

- Create a “Class Green Pledge” where each student commits to specific actions to reduce their carbon footprint. Write the pledges on a large poster and display it in the classroom, school, or somewhere in the local community.

3. Closing Statement:

- “Understanding and reducing our carbon footprint is crucial for the health of our planet. Each action we take, no matter how small, contributes to a larger effort to combat climate change. Let’s be proactive in making sustainable choices and encouraging others to do the same.”

By the end of this lesson, high school students will have a comprehensive understanding of their carbon footprint and practical strategies to reduce it, fostering environmental stewardship and community involvement.