



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

### Objective:

Students will understand what a carbon footprint is, the environmental impact of carbon emissions, and explore ways to reduce their carbon footprint.

### Time:

1 hr 40 minutes + optional extension activities

### Materials:

- Computer/Projector for video
- Chart paper and markers
- **Carbon Footprint Green Pledge** worksheet for individual activity
- Internet access for research
- Books on the topic (optional)

### Vocabulary:

- Greenhouse gas
  - Carbon emissions
  - Climate change
  - Global warming
- 

### Introduction (15 minutes)

#### 1. Captivating Intro:

- Video: Show an informative video on carbon footprints such as ["Planet Aid Scholar's Club - How to Lower Your Carbon Footprint."](#) ["The Carbon Footprint of a Sandwich" by NPR's Skunk Bear](#), ["Carbon Footprint" by National Geographic](#) or ["What is a Carbon Footprint?" by The Guardian](#).
  - Discussion: After the video, lead a brief discussion with questions like:
    - What surprised you about the video?
    - How do everyday activities contribute to carbon emissions?
- 

### Lesson (25 minutes)

#### 1. Explanation:

- Define carbon footprint: “A carbon footprint is the total amount of greenhouse gasses (including CO<sub>2</sub>) that are generated by our actions.”
- Discuss sources of carbon footprints: transportation (cars, buses, planes), energy use (electricity, heating, cooling), food consumption (meat production, food transport), and consumer goods (manufacturing, packaging).

## 2. Interactive Lecture:

- Use the [slideshow](#) to visually present the concept of carbon footprints. Use the discussion questions on the bottom of each slide to guide discussions and further understanding.
  - Explain how reducing carbon footprints can mitigate climate change.
- 

## Group Activity (25 minutes)

### 1. Carbon Footprint Investigation:

- Divide students into small groups.
  - Assign each group a specific topic to research (e.g., transportation, energy use, food production, consumer goods).
  - Each group will create a presentation or poster showing:
    - How their assigned topic contributes to carbon emissions in their state.
    - Ways to reduce the carbon footprint associated with their topic.
  - Groups will present their findings to the class.
- 

## Individual Activity (20 minutes)

### 1. Personal Carbon Footprint Calculator:

- Provide students with a worksheet or direct them to an online carbon footprint calculator (e.g. [Carbon Footprint Calculator for Kids](#)).
  - Have students input their daily activities to calculate their personal carbon footprint.
  - After completing the calculation, ask students to reflect on their results and identify three actions they can take to reduce their carbon footprint.
- 

## Extension Activities

### 1. At-Home Activities:

- Energy Audit: Students can perform an energy audit at home to identify ways to save energy (e.g., using energy-efficient bulbs, reducing heating/cooling usage).
- Sustainable Diet: Encourage students to incorporate more locally-sourced foods into their diet. Have them research sustainable brands, produce stands, farms, etc. in their area.
- Waste Reduction: Challenge students to minimize waste by recycling, composting, and reducing single-use plastics.

## 2. Research Projects:

- Have students research and present on renewable energy sources (solar, wind, hydroelectric) and their benefits over fossil fuels.
- Encourage students to investigate the carbon footprints of different countries and discuss global strategies for reducing emissions.

## 3. Books to Read:

- “How to Reduce Your Carbon Footprint: 365 Simple Ways to Save Energy, Resources, and Money” by Joanna Yarrow
  - “No One Is Too Small to Make a Difference” by Greta Thunberg
- 

## 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.

### 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 or use the **Carbon Footprint Green Pledge** worksheet.

### 3. Closing Statement:

- “Understanding our carbon footprint is the first step towards reducing our impact on the environment. Each small change we make can lead to a larger positive effect. Let’s work together to protect our planet for future generations.”



**SOLAR**one

By the end of this lesson, middle school students will have a deeper understanding of their carbon footprint and practical steps they can take to reduce it, promoting environmental stewardship.