



## **I'm Creating a CO<sub>2</sub> "Monster" (Part Two)**

60 – 90 minutes

In this lesson, students learn about the positive steps they can take to reduce their CO<sub>2</sub> emissions. They will use an emissions calculator to quantify the impact of their personal transportation choices and write a poem or rap song about the solutions available to them.

### **Objectives**

- Students will identify transportation-related choices that minimize or eliminate CO<sub>2</sub> emissions.
- Students will make personal commitments to reduce their CO<sub>2</sub> emissions.
- Students will calculate a class total of the pounds of CO<sub>2</sub> emissions avoided by certain individual transportation choices.
- Students will compose a poem or rap about the positive steps individuals can take to reduce their CO<sub>2</sub> emissions.

### **Materials**

None

### **Background**

Since the burning of fossil fuels is a large contributor to the climate change problem, it is time to discuss ways we as regular citizens can solve this problem. The Environmental Protection Agency website used in this lesson is a user friendly place for student can visit, whether at home or school, to find out more about the environmental problems we are facing and what we can do in our daily lives to make the future world a better place. As students evaluate the choices they have available to them, be sure to be positive and encouraging of the contributions they make to address the emissions challenge. A student might not be able to replace driving with walking, but may be able to carpool or make changes to energy use in the home.

### **Advance Preparation**

You will need computers with internet access for this lesson. Bookmark the following website for students: <http://www.epa.gov/climatechange/kids/calc/index.html>.

### **Do Now**

Have students respond to the following question in their notebooks: *What are some of the ways we can address the harmful effects of the CO<sub>2</sub> "monsters" in our stories?*



### Mini-Lesson

1. Place students in pairs and have them share their Do Now responses with their partners. Invite volunteers to share their responses with the class.
2. Tell students that they are going to learn about the various strategies and solutions that they can apply in their daily lives to reduce their CO<sub>2</sub> emissions. They will start by using an emissions calculator to assess the impacts that their personal choices can have on reducing CO<sub>2</sub> emissions.
3. Assign each student to a computer and have them load the following website:  
<http://www.epa.gov/climatechange/kids/calc/index.html>. Read through the instructions for the emissions calculator together as a class. Click on each section to show students the different ways they might reduce their emissions, explaining that they will focus on transportation-related choices in this lesson.
4. When students get to the section titled, "Stretch Those Legs," have them complete the information for this section. Then, have students complete the "Travel Together" section. (**Note:** Consider having students complete the other sections of the calculator that deal personal choices that are not related to transportation. This will give them a comprehensive idea of the other ways they can make choices to positively impact the environment.)
5. Have students skip to the "Your Summary" section so they can see how their individual commitments can help combat the CO<sub>2</sub> "monsters" from their stories. Be encouraging and positive of each contribution, making sure that the class understands that not all students live close enough to school or other destinations to safely walk or bike.
6. Have students line up at the front of the class to share the number of pounds of CO<sub>2</sub> emissions they will avoid each year by consciously making certain choices. One by one, have students write their number on the board. Reaffirm the importance of these commitments by encouraging the class to clap and cheer as each student reveals his or her number.
7. Have students calculate the total amount of CO<sub>2</sub> emissions the class will avoid as a result of their commitments. Consider creating a class chart to record when students take the actions they committed to in this activity. Calculate a running total so that students can quantify the impact of their personal choices on the environment.

### Activity

1. Explain to students that they are going to work with a partner to compose a short poem or rap song about the positive choices they can make to reduce their CO<sub>2</sub> emissions.
2. Place students in pairs and review the guidelines for their poems or rap songs. Students should include at least eight lines and a clever title. Examples of titles include: *Americans Idle*, *CO<sub>2</sub> Blues*, *My Car Pools*, *No Idle Rap*, *Taking My Feet For a Walk*.
3. Monitor pairs as they work on their poems or rap songs. Afterward, invite volunteers to read their poems or perform their raps.



### Assessment

Have students complete an exit slip in which they identify at least one specific step they plan to take to reduce their CO<sub>2</sub> emissions and explain how they expect to make this change.

### Modifications

- Pre-teach unfamiliar vocabulary concepts to **English Language Learners**. Give them a list of important words from the lesson and have them work with a partner to create an illustrated glossary of terms. Each term should include a definition and a simple visual. Consider the following terms for this lesson: emissions, idling.
- For the Mini-Lesson, create heterogeneous pairs to provide additional support for **Students with Special Needs**. Partners should work together to complete the emissions calculator.

### Extensions

- Extend this lesson by having students examine the difference in emissions between a single driver in a car versus carpooling, and the difference between a partially-full school bus and a full school bus.
- Extend this lesson by having students propose actions that move beyond their individual actions. For example, they might gather data on the number of minutes that cars and busses idle at the start and end of the school day, and suggest a “no idling zone” policy to the administration.