

WHAT IS A CARBON FOOTPRINT?

A carbon footprint is the total amount of Carbon Dioxide (CO₂) this released into the atmosphere as a result our daily activities such as driving, heating the classrooms and using lights.

HYPOTHESIS

I believe Montera's carbon footprint is around 8.5 million pounds of carbon dioxide per year. One reason to believe this is because the average kid emits 5000 pounds of carbon dioxide a year (Down to Earth Guide to Global Warming, David and Gordon). However, this estimate is from being at home, doing daily activities and going to and from school. In addition, I believe even 2000 more pounds of CO₂ are emitted per kid just by a kid going to school!

Another reason to believe that that much carbon dioxide is being emitted is the plus factor of our low-emitting school buses. That lowers the amount of carbon dioxide.

Another reason for my prediction is the bad problem of classrooms leaving the door open when the heaters on inside, leaving the heater on too long and almost every light in the school is left on all night.

I believe that cars will be the leading source of CO₂ because there is so many of them. I believe the least polluting source will be electricity since some runs on renewable energy.

The last reason for my prediction is that some of Montera's student's walk to school. That also lowers the amount of CO₂ emitted.

If everyone drove to school, I would estimate that there would be a good deal more carbon dioxide in the air.

PROCEDURE

My procedure was very simple. The following steps show what I did:

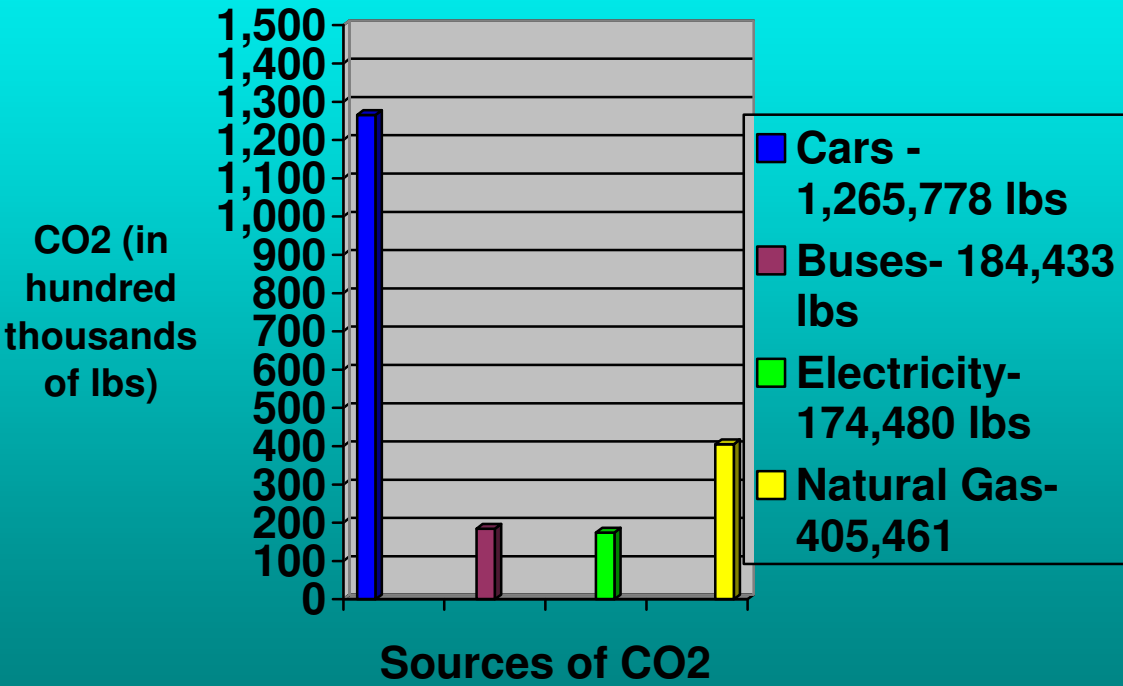
1. First, I found a method to measure how much carbon dioxide was emitted into the air by Montera. It's called DriveNeutral.com.
2. The second thing I did in the project, was find out the number of kids going to Montera and the number of school days in our school year.
3. Third, I gave out a survey to be filled out by 10% of the kids from each grade. The survey asked the students how many times a week did they take a mode of transportation such as by car, bus or walking, to and from school and how many miles did they travel to school.
4. Next, I added up the miles and times per week and the way the kids I surveyed get to school, for each grade. Since I collected 88 surveys which are almost exactly ten percent of the school's student population, I multiplied my results by ten. Out of that data, I found what percent of students get to school by car, bus or walks, what the average number of trips per kid was, and what the average one-way trip length was.
5. After that, I contacted the OUSD office of Buildings and Grounds and I asked for Montera's gas and electricity bills for 2007. I could see how many therms, units of natural gas, and MWh (megawatts) of electricity Montera consumed. I waited about two long weeks for the information to come.
6. Then, I typed the data into the carbon calculator. The calculator showed how much CO₂ was emitted at Montera. The CO₂ was obtained by multiplying an emission factor by the data.

CONCLUSION

I had a big surprise when I saw my results. My hypothesis was way wrong. Montera puts out **1,265,778.96 pounds of carbon dioxide per year!** That's 632.89 tons of the stuff. I think I got those results because I must have calculated how much a person emits wrong. I had another surprise. I was right about how cars ruled the roost with carbon dioxide emitted. Cars put out **501,403.30** pounds of CO₂, buses emit **184,433.63** pounds, electricity emits **174,480.36** pounds and natural gas burns **405,461.67** pounds of the stuff.

From my project, I learned that Montera has a CO₂ problem. We could change that by making a carbon offset which is about buying credits, like planting trees and making an agreement on the maximum amount of CO₂ released in a period of time. And just practicing conservation! **Montera could decrease its carbon footprint!** We could know our carbon footprint by having the school conduct one of these surveys every year. I believe that because of my project, **Montera can make a change!**

TOTAL CARBON DIOXIDE EMISSIONS AT MONTERA



HOW MONTERA KIDS GET TO SCHOOL

