

# Dream Car Stoichiometry Extra Credit Project Due 4-13-17 will NOT be accepted late

The purpose of this project is to calculate the environmental impact of your dream car compared to any other car ... the other car could be the car you drive now, or the car your parents drive, or a car you would think would be environmentally friendly.

Calculate the amount of CO<sub>2</sub> each car produces following the steps below.

**YOU MUST SHOW ALL YOUR CALCULATIONS WITH UNITS AND CHEMICAL FORMULAS!!!! CIRCLE OR HIGHLIGHT YOUR ANSWERS**

POINTS	Task
2	1. Choose your <b>dream car</b> and print a picture off the Internet.
3	2. Insert a photo of yourself into the driver's seat
2	3. find the miles per gallon your car gets on the highway and record it on poster
5	4. Balance the equation for the combustion of octane $\text{C}_8\text{H}_{18} + \text{O}_2 \rightarrow \text{CO}_2 + \text{H}_2\text{O}$
3	5. Assume you drive 15,000 miles in one year calculate the number of gallons your car using in one year
3	6. Convert gallons to mL. (1 gallon = 3785.4 mL)
2	7. Look up the density of octane and use it to calculate the mass of octane you would use in one year.
10	8. calculate liters of CO <sub>2</sub> at STP from grams of octane
3	9. calculate number of 2 liter bottles would be needed to contain all the CO <sub>2</sub> your dream car produces.
33	<b>10. Repeat all steps and calculations for one other car [#1-9]</b>
5	11. write a thoughtful explanation (50 words minimum) describing why you would want to know how much CO <sub>2</sub> your dream car produces
4	12. Create a neat, organized and colorful final product [poster] with all information included.
<b>75 TOTAL</b>	<b>TOTAL POSSIBLE POINTS 75</b>