

Personal Energy Use & Transportation Choices Assignment (BIO181 Energy & Thermodynamics, BIO182 Ecosystem)

Week I:

- Fill your gas tank at your usual gas station, note the pump
- Clear your odometer
- Drive normally for the week

Week II:

- Refill your gas tank at the same station & pump
- Record mileage then clear your odometer
- Calculate miles per gallon (mpg)
- This week – try to improve your fuel efficiency! (below)
- At the end of Week II refill your tank @ same station & pump, record mileage and calculate MPG

Tips to Improve the Fuel Efficiency of your Car

http://sierraclub.typepad.com/greenlife/2007/05/filling_up_for_.html

Improve Your Driving Behavior:

- 1. Slow Down!**
- 2. Maintain a Constant Speed / Cruise Control as much as possible**
- 3. Slowly Accelerate from stops**
- 4. Maintain a Safe Distance between Cars**
- 5. Coast into stops**
- 6. Close your windows & use AC at speeds over 40 mph**
- 7. Avoid carrying extra weight**

Car Maintenance:

- 1. Properly inflate your tires (save up to 12¢ per gallon)**
- 2. Use the right grade of motor oil (save up to 8¢ per gallon)**
- 3. Install a clean oil filter (save up to 40¢ per gallon)**
- 4. Keep your engine properly maintained (save up to 16¢ per gallon)**

Personal Energy Use & Transportation Choices Assignment Part III

Write up the results of your experiment. Due date:

Paper should be no longer than one page (typed, double-spaced).

Include:

1. Week One: Total miles driven, total gallons of gas used & mpg
2. Week Two: Total miles driven, total gallons of gas used & mpg
3. Explain: Difference in mpg between Week One vs. Week Two
 - a. Driving differences? Car maintenance?
 - b. Link to Thermodynamics
4. Cost versus Benefit Analysis
 - a. How much \$\$\$ did you save Week Two versus Week One?
 - b. Were there any increased costs to your driving Week Two? (Time to reach destinations?)
 - c. Were the immediate benefits greater than the costs? Explain
 - d. Carbon Dioxide is the primary greenhouse gas implicated in Global Climate Change. Given the additional long-term costs of CO₂ as a pollutant, how does that affect your Cost-Benefit Analysis?
5. What changes, if any, do you plan to make in your future driving/transportation choices?

For Hikers, Bikers, Bus Users:

1. Total miles traveled and method of transport.
2. Total miles traveled and method of transport.
3. Skip
4. Cost versus Benefit Analysis - Based on \$.445 / mile for Car
5. Same as above

[Next page can be printed on bright paper (e.g. yellow), cut in half and handed out. Students can place it on their dashboard for easy reference.]

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