*APPLICATION ACTIVITY*

# Road Trip


## The Challenge

Energy is required to transport you from place to place. In the United States, the transportation sector consumes 29 percent of total energy supply and is responsible for about one-third of the greenhouse gases emitted each year.

Plan a four day road trip vacation. Where would you go? What stops would you make along the way?

1. Select a vehicle make and model for your trip, then find its fuel economy ratings at www.fueleconomy.gov. Fill in the information below.

   Vehicle Make and Model: _____

   Fuel Type: _____ Fuel Economy (MPG): _____

2. In the chart's left hand column, plan out each segment of your trip. Use the data and formulas provided below to calculate how many gallons of fuel will be required, and the amount of $CO_2$ emissions produced.

**The EIA uses the following $CO_2$ emission values. Circle the value you will use in your calculations.**
**Gasoline $CO_2$ Emissions = 19.6 pounds/gallon**
**Diesel $CO_2$ Emissions = 22.4 pounds/gallon**
**Miles Driven/MPG = Total Gallons Consumed**
**Total Gallons Consumed x $CO_2$ Emissions lbs/gal = Total $CO_2$ Emissions (lbs)**

| TO | FROM | MILES | GALLONS CONSUMED | TOTAL $CO_2$ EMISSIONS |
|---|---|---|---|---|
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## Answer the Following Questions

1. Why did you choose the vehicle you chose?
2. What is the total amount of $CO_2$ emissions associated with your trip?
3. What is the price of fuel in your area? How much will fuel cost for the entire trip?
4. Are there ways you can reduce your fuel consumption on this trip? Explain.
5. Are there some portions of your trip where you can use public transportation? Why or why not?
6. How would using public transportation compare to driving your own personal vehicle?
7. A 2014 Volkswagen Jetta using diesel fuel is rated to get mileage of up to 42 MPG. A 2014 Volkswagen Jetta using regular gasoline gets 26-36 MPG. Which car would be better to take on your road trip? Use data to explain your reasoning.
8. Can you find a less expensive, less carbon intensive vehicle than your first vehicle choice? Find at least two alternatives and explain how they compare to your original vehicle.

**Resources:** For more information on alternative fuel vehicles, visit the U.S. Department of Energy's Alternative Fuels and Advanced Vehicles Data Center at www.afdc.energy.gov/fuels/.