# Commute Project, Part 1

For this project, you are going to analyze your morning commute. This is part of the climate justice component of the class.

For your own commute, please **estimate**:

* The **path length** of the commute (Google Maps or your car's odometer will help with this)
* The **distance** from your home to your destination (This is trickier, but Google Maps, when viewed on a computer, shows a scale)
* The **displacement** from your home to your destination (Estimate the direction from Google Maps)
* The **position** of your destination (For your privacy, I won't ask the position of your home, but you would also need that for a complete description)
* The **time** of your departure
* The **time interval** of your commute

Please spend less than 1 hour on finding these estimates.

I would also like you to estimate the CO2 emissions from your commute. It is okay if this is a very rough estimate. Here are some resources you may find helpful:

* Biking: [How much CO2 does Cycling really Save? | ECFLinks to an external site.](https://ecf.com/news-and-events/news/how-much-co2-does-cycling-really-save)
* Driving: [Greenhouse Gas Emissions from a Typical Passenger Vehicle | US EPALinks to an external site.](https://www.epa.gov/greenvehicles/greenhouse-gas-emissions-typical-passenger-vehicle)
* Bus: [Bus Fuel Consumption and Travel | Bureau of Transportation Statistics (bts.gov)Links to an external site.](https://www.bts.gov/content/bus-fuel-consumption-and-travel) gives 7.4 miles per gallon for a bus, the driving link gives 8887g of CO2 per gallon, and you should divide this by an estimate of the number of people riding the bus to find the amount of CO2 from your commute. If your bus is electric, the emissions will be lower.
* Feel free to find another resource

Please spend less than about 30 minutes on this part.

Please hand in (either on Canvas or on paper)

* A document with the 6 descriptions of your commute,
* The CO2 emissions you estimated, and a brief description of your method
* A couple of sentences about anything you noticed, any concerns you have, or a difficulty you ran into (I just want you to reflect on this a little).

When I grade this, I will be looking for:

* Whether your descriptions of the motion are correct and consistent (for example, do the vectors have directions, and do the distances seem plausible)
* Does your method of estimating the CO2 seem reasonable?

We will be building on this later, so try to do a good job with this.