



ESA21

Environmental Science Activities for the 21st Century

Ozone: Capstone Activity

Capstone Activity

Nitrogen Oxide Calculator

You have already analyzed your emissions of smog-forming compounds from your vehicle, but it's important to realize that this is not your only contribution of these pollutants. Nitrogen oxides and hydrocarbons are also released by coal-fired power plants, natural gas combustion, gas-powered lawnmowers, and other sources. In the Capstone Activity for this module, you will be analyzing your nitrogen oxide emissions from these sources, combining them with your vehicle's emissions, and estimating your total emissions of smog-forming NO_x.

We will have you determine the nitrogen oxide emissions from a variety of sources. To do this, use our [Online Nitrogen Oxide Calculator](#).

Online Nitrogen Oxide Calculator:

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|----|--|
| 1. | Enter the emissions from driving from the Personal Ozone Impacts activity (http://esa21.kennesaw.edu/activities/smog-cars/smog-cars.pdf). |
| 2. | Enter your values for the listed factors, and obtain your total emissions. |
| 3. | Print the Calculator page and complete the related questions on the Capstone Activity Sheet. |

Internet Addresses of Linked Sites:

Online Nitrogen Oxide Calculator: <http://esa21.kennesaw.edu/activities/ozonecapstone/noxcalculator.htm>

ESA 21: Environmental Science Activities

Ozone
Capstone Activity Sheet

Name:

Professor:

Attach your runs of the Online Nitrogen Oxide Calculator to this sheet.

Online Nitrogen Oxide Calculator:

(a.) List your total annual emissions and the driving equivalent in the table below.

Total Annual NO _x emissions (lbs.)	Driving Equivalent (mi.)

How do your NO_x emissions compare to those of the average American? If your emissions are appreciably higher or lower than the average, explain why *you* think yours is higher/lower.

(b.) Make one reasonable change in your lifestyle that affects one of your two largest categories of NO_x emissions (likely driving and electricity), and run the calculator again. If the change involves driving or electricity, you should revisit the appropriate web site and run the calculator again with your change. Describe the change below, and how it affected your total emissions. Repeat this process for two additional lifestyle changes and evaluate the results.

Change	Percent reduction in NO _x emissions