

Air Pollution Math

Lesson Plans: Planting Trees

<http://education.arm.gov/teacherslounge/lessons/planting.stm>

Objective

The objective is to estimate roughly the number of trees to be planted in a year as a carbon sink to compensate for the usage of a car.

Materials

Each group of students will need the following:

- Paper
- Pencil and pen
- Calculator

Important Points to Understand

It may be interesting to calculate the number of trees you would need to plant in order to absorb the carbon dioxide from a single car over a year. We need to know the approximate distance traveled by our car in a year (e.g., 20,000 km). The approximate number of liters of fuel consumed in order to travel this distance is also necessary to know (if you know the rate of fuel consumption of your car, such as 12 km per liter or so, you may simply convert the distance traveled to liters of fuel used). And, you need to know that each liter of petrol used by a car releases about 2.36 kg of carbon dioxide.

It has been estimated that a hectare of growing trees (1,000 trees) takes up about 20,000 kg of carbon dioxide each year.

Procedure

- 1 Estimate the total distance traveled by your car in a year.
- 2 Try to calculate the total liters of fuel consumed by your car in that time.
- 3 Calculate the amount of carbon dioxide released by your car in a year.
- 4 How many trees do you need to plant in a year to compensate for the release of carbon dioxide from one car?
- 5 How many trees do you have to plant each year to compensate for the number of additional cars arriving at your island? (Say 50 more cars are imported every year and 20 are wrecked!)



Pollution sources-ohio: (graph of each pollutant)

http://www.k12science.org/curriculum/airproj/pm_sources.html

<http://www.k12science.org/curriculum/airproj/3dchart/3D.asp?state=oh>

Carbon

