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Curriculum Units by Fellows of the National Initiative

2008 Volume VII: Urban Environmental Quality and Human Health: Conceiving a Sustainable Future

The Effect of Vehicular Emissions on Human Health

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Air pollution can be caused by the release of small particles into the air or by noxious gases being released into the atmosphere, whether by natural or fabricated sources. These gases include methane, carbon monoxide, sulfur dioxide, nitrogen oxide, or chemical vapors. The gases can also lead to a chain-reaction event that includes acid rain, smog, and the greenhouse effect. If left unchecked, the chemical aspect of air pollution could become the largest contributor to premature death in the world, higher than the rate of cancer, AIDS, automobile accidents, or any other cause of unnatural or premature death. Most people make the assumption that the greatest single cause of air pollution is the big factories that dot our landscape, especially in our big cities, however, the greatest single contributor to the pollution problem facing not only the United States but also the entire world is automobile emissions which come mainly from cars and other types of automobiles, as well as off-road vehicles. In 2006, the United States was responsible for 21.3% of all cars registered in the world, with a total of 135,047,000 cars. It was also responsible for 42.7% of all the trucks registered in the world, with 108,975,000 trucks registered. This curriculum explores, in depth, a number of the specific pollutants and their resulting health issues released from on- and off-road vehicles, and is designed for use in the mainstream high school classroom.

Developed for Life Science, Grade 7; recommended for Biology I and II and Chemistry, grades 9-12, Health Sciences and Environmental Science, grades 8-12)

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