Curriculum Units by Fellows of the Yale-New Haven Teachers Institute
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Engineering Solutions to a Changing Climate

Guide for Curriculum Unit 18.02.03
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My first experience teaching climate change came after a unit covering the mechanisms and impacts of climate change. After this unit, I realized students may have a pessimistic outlook on the future. However, in the past humans have successfully reversed some major environmental problems. One example is banning the use of DDT (dichloro-diphenyl-trichloroethane) as an insecticide which caused birds egg shells to be too thin. Another example is a global agreement to stop the use of chlorofluorocarbons (CFC) which caused a hole in the ozone layer. Also the banning of lead in gasoline was another environmental success. The unit presented here is a engineering solutions oriented unit focused on climate mitigation. The mitigation strategies considered are carbon sequestration and alternative energies. This unit will cover the engineering design process with activities to practice this process while learning about carbon sequestration or wind energy. Information provided here includes background on climate change, information on the engineering design process, and different alternative energies or carbon sequestration.

(Developed for College Phy-Chem and Honors Phy-Chem, grade 9; recommended for Environmental Science, grades 9-12)