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Curriculum Units by Fellows of the National Initiative
2007 Volume V: Renewable Energy

Solar energy: Using Carbon Dioxide from the Atmosphere to Produce a Viable Fuel Source

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In the time of dire predictions about climate change, there are questions we must ask about renewable technologies. Which technology can shift our carbon-based economy to one that reduces carbon dioxide in the environment? How will we meet energy demands, and do we actually have the technology to do so? Teaching students about renewable energy is crucial to help them understand the potential and reality of these energies in their lives.

Solar energy may hold the greatest potential for replacing fossil fuels as our primary energy source, since enough energy from the sun strikes the Earth in one hour to supply all the energy consumed by humans in one year. My curriculum unit focuses on the biological sources of solar energy including biomass, which incorporates solar energy through photosynthesis and is then burned or converted into fuel. While biomass is a renewable technology, use of biomass is not always a benefit to the environment. Combustion of biomass does release carbon dioxide, and the growing and transport of biomass is also a emissions concern.

Students need to have knowledge and experience with the new renewable technologies so that they will be more likely to incorporate viable technologies into their lives.

(Developed for Biology, grades 9-10, and Environmental Science, grades 9-12; recommended for Life Science and Environmental Science, grades 6-8, and Earth Science and Biology, grades 9-12)

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