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Energy for the Future, Superheroes Need Not Apply

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Is the idea of inexpensive and environmentally safe energy only a dream? My curriculum unit will address the issues surrounding global energy supply. The curriculum unit will explore the physical laws associated with the production of energy alternatives, energy degradation, and energy density. Students will research energy alternatives and the global energy supplies and develop a plan to provide a country with safe, clean energy for the next twenty-five years. The curriculum unit will address objectives from the International Baccalaureate (IB) physics course including revisiting energy topics addressed in the first year of IB Physics, such as forms of energy and the laws of thermodynamic as they relate to creation of work in a cyclical process. Students will learn about and discuss energy degradation. They will construct and analyze energy flow diagrams and identify where the energy is degraded. Students will research and understand the different world energy sources comparing energy density, direct and indirect costs, environmental impact and advantages and disadvantages of each source of energy.

(Developed for IB Physics III, grade 12; recommended for IB Physics III, grade 12)