



## Energy

*Off-Grid | Energy Efficiency | Heating and Cooling | Natural Resources | Climate Change*

★ **The Energy Pathway must be addressed by every school applying for a Green Flag award.**

The nation's school districts spend more than \$7.5 billion a year on energy. Schools are the largest energy consumer in many municipalities. But up to 30 percent of that energy is used inefficiently or unnecessarily.<sup>4</sup>

By implementing energy-conservation measures and using energy-efficient technologies, schools can significantly cut their energy use. The result is financial savings as well as a reduced environmental impact.

Through simple changes in people's behavior, schools have found that a 10% reduction in energy usage can be achieved quickly and easily. In fact, a school that engages in good energy practices can end up using over one-third less energy than the average school. Efforts usually focus on heating and lighting systems, but excessive use of technology can be addressed too.

This is vitally important because using 1 kWh of electricity in the U.S. results in between 1.22 and 2.17 pounds of carbon dioxide being emitted (pounds of carbon is dependent on school's fuel source).<sup>5</sup> To visualize a pound of carbon imagine a large exercise ball. Each full exercise ball is equivalent to a pound of carbon.

### Driving Questions

- ✓ How can we, as geoscientists, better understand the benefits of renewable resources for use in our community and work with the city council on plans to include affordable access to those sources of energy, via residential and commercial mechanisms to collect, store, and use solar, wind, hydro, and/or geothermal energy?
- ✓ How can we, as members of the community, conserve energy and educate others about energy conservation and its environmental and economic benefits?
- ✓ How can we, as landscape architects, use land cover, rooftop gardens and living walls to reduce heating and cooling needs at our school and provide other schools in our district with the results of our research?
- ✓ How can we, as power (electrical) engineers, design heating and cooling systems for the vulnerable members of our community that are safe and rely only on renewable energy?

<sup>4</sup> <http://www.nrel.gov/docs/fy02osti/31607.pdf>

<sup>5</sup> <http://www.eia.gov/tools/faqs/faq.cfm?id=74&t=11>



### TOOLS AND RESOURCES

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