



# Electricity & the Environment



**Guiding questions, grades 4–5:** How is electricity generated? How can we use electricity efficiently?

**Guiding questions, grades 6–10:** How can humans generate electricity? How can we use efficiency to decrease the environmental impacts of electrical generation?



**An introduction to electricity and how it connects to our environment.** Teachers and students are led through a guided discovery approach to building the basic concepts of electrical energy generation. They participate in hands-on explorations of generating electricity with hand-crank generators and flashlights. Using schematic diagrams, students apply what they learned to discover and explain how electricity is generated using fossil fuels, nuclear, solar, biomass, wind, water power and methane from landfills and dairy farms. They discuss advantages and disadvantages of each method.



The culminating activity is riding the VEEP Energy Bike to compare the human pedal-power needed to light two incandescent bulbs with the power needed to light two equivalent light-emitting diode (LED) bulbs. Students discover that LEDs are energy efficient and that energy efficiency means doing the same or more work with less energy.

Students learn that it is important to become energy efficient in our selection of behaviors and technologies to help slow the rate of global warming. Finally, they brainstorm ways to reduce CO<sub>2</sub> emissions.

**Contact us at [info@veep.org](mailto:info@veep.org) or 802-552-VNRG for more information on bringing this workshop into your classroom.**