

Overview of the Content of Generation Conservation

Lesson 1 – EnerToys – An Introduction to Forms of Energy

Students use wind-up toys to investigate what energy is, how it is stored and how it is transferred.

Lesson 2 – Turbine Fan – The Applications of Energy

Students conduct hands-on investigations with a model wind powered turbine - which can also become a fan – using a small electric motor to explore how it works with a battery and then how the motor can be reversed to generate electricity.

Lesson 3 – Energy Explorers – An Examination of Energy Sources

Working in groups, students study different forms of energy sources – hydro, gas, coal, solar, wind, nuclear, etc. They explore the differences between renewable and non-renewable sources.

Lesson 4 – Appliance Tester – The Amount of Energy Appliances Really Use

Students use a Kill-a-Watt meter to measure the actual amount of electrical energy used by small appliances. They investigate the differences between energy-efficient and traditional appliances. Students calculate the cost of using appliances over their lifetime, comparing the most energy-efficient devices to their current home appliances.

Lesson 5 — Energy at Home - The Amount of Energy Used in Households

Students conduct an audit of the energy use in their home. They also keep an energy use diary to chronicle how family members use energy at home. These are used to identify key “energy hogs” that should be the focus of conservation activities.

Lesson 6 – Energy Savers – An Introduction to Energy Saving Devices

Students use a Kill-a-Watt meter to evaluate traditional lighting as opposed to compact fluorescents and LEDs. The students use a math activity to compare how much money can be saved using energy-efficient devices and technologies. They are asked to determine ways to communicate the benefits of using CFLs and LEDs over incandescent lights.

Lesson 7 - Smog City - Connections Between Energy Use and Air Quality

Students use a royalty-free computer simulation game – Smog City – to explore how energy use effects the environment, particularly air quality. They develop tips on improving the air quality where they live and develop posters to communicate these tips.

Lesson 8 –Energy Peaks – Exploring Changing Demands for Energy (Smart Meters)

Students interview their family members to determine the times of day at which they use the most energy in order to determine their families’ peak energy use. They apply strategies to conserving energy and shifting the times when some of the energy is used. They develop an understanding of the concept of peak energy use - which will prepare them for the introduction of smart meters and time-of-use pricing.

Lesson 9 – Energy Mix - The Mix of Energy Needed for a City

Students work together in groups as energy companies to develop a mix of energy sources that will provide the electricity required to meet the needs of their community. They evaluate the amount of energy that can be provided by each source. The students must develop an energy mix that is reliable and as environmentally friendly as possible.

Lesson 10 – Generation Conservation Action

Students develop their own Personal Energy Plan – citing the personal behaviours they will modify to conserve energy. They also schedule ways to enhance the conservation technology in their homes. As well, students develop two 30-second Public Service Announcements that encourage others to conserve energy.

Follow-Up – Earth Day - April

Students estimate the energy they have conserved by executing their Personal Energy Plans over a 2-4 month period. As a class, students are officially certified as members of Generation Conservation. They receive “Gen Con” t-shirts or certificates.