

GETTING STARTED WITH ENERGY - SUPPORT PACKAGE



Living Off Grid

Electricity is all around us, yet we rarely pay much attention to it. Electricity doesn't magically appear in our light switches and wall sockets. First, it must travel through a series of transformer stations and power lines known as the power grid. This grid makes it very convenient to wash and dry our clothes, refrigerate our food, play video games, and make coffee in the morning. However, not all homes are connected to the grid. Some people have decided to take energy into their own hands and make it themselves. A house that is not connected to power lines is considered 'off grid'.

Living off the grid isn't for everyone because it requires lifestyle adaptation. Those who have chosen to rely on off grid energy sources have a unique perspective on energy consumption and have a lot to teach us about how we use and think about energy.

Action Plan

Step 1- Learn about how electricity is generated and distributed in Nova Scotia by using the Green Schools NS Getting Started with Energy slideshows for any grade level: [Primary-2](#), [Grades 3-5](#), [Grade 6 \(curriculum\)](#), [Grades 7-8](#), [Grade 9 \(curriculum\)](#), [Grades 10-12](#).

Step 2- Watch the Green Schools NS mini documentary [Life Off Grid - Generating Clean Energy in Cape Breton](#).

Step 3- Discuss the differences between off grid homes and those on the traditional power grid using these questions as starting points:

What are the three ways the people in the video produced their own power?

- *Micro hydro, wind turbine, solar panel*

What unique items did they use in their homes?

- *Wood stove, diaper wash bucket, composting toilet, LED light bulbs, hot tub, battery storage, solar pop can furnace*

What items do they use that are the same as any other home?

- *Fridge, kettle, power tools, freezer, the internet, computer, cell phone*

In your own home, what appliances or energy behaviour would you need to change if you lived off grid?

- *Types of light bulbs, toaster, blender, clothes dryer, hair dryer, other high-energy appliances, awareness of how many items are using electricity simultaneously, knowledge of how many Watts are used by each device*

What would you gain by living off grid?

- *No power bill, power would stay on during a power outage, learn to fix your own power system, spend more time outside, independence, self-reliance*

How can you use less energy in your own home, even if you don't live off grid?

- *Learn how many Watts are used by different devices, unplug unused appliances/electronics that use power even when they're turned off (phantom power), look for energy star symbols when shopping for devices, support companies that use renewable energy sources to produce goods and services*



Step 4- Look around the classroom for items that use energy. Check the stamp or sticker on the bottom of these items to discover how many Watts are used. What are the greediest items in your classroom? You can test these items by using your Green Schools NS energy meter.



[Save on Energy, 2017](#)



[Halton Hills Library, 2015](#)

Step 5- Design an island community with the class. How would energy be produced on this island? How would this energy be delivered to each customer? What rules would need to be in place to ensure everyone had access to sufficient electricity? What are some ways each home could prevent energy loss while still living comfortably?

Thanks to Grade 4-6 science teacher Doug Beane at Munro Academy for this idea.

Other Resources

[Green Schools NS Build A Solar Energy Cell Phone Charger](#)

[Build A Miniature Wind Turbine](#)

[Build A Solar Oven](#)

[Build A Solar Air Heater](#) *IDEA: Lockeport Regional High School built this and used it for a school fundraiser.

[KidWind Project](#)

Videos

[The Electrical Grid 101](#)

[The Story of Electricity in Nova Scotia](#)