

Community Walk

Energy Revealed
Grab & Go Activity
Grade Level 4-12



Main Objectives

Learners will examine and record energy use in their community, they will estimate energy usage in a variety of contexts, map energy-creating a visual representation of energy consumption in their community and present data in meaningful context (map) and develop strategies for energy savings.

Learning Outcomes

By the end of this activity, learners will:

- Identify and estimate energy inputs and outputs for example devices and systems, and evaluate the efficiency of energy conversions.
- Describe and discuss the societal and environmental implications of the use of electrical energy

Length of Activity

7-10 hours over 3 days

Materials List

Internet-enabled device
Paper both legal and letter size
Pencil and 3 different colour markers
Map printout of perimeter or route

Activity

Day 1: Brainstorm and Record

- a. Brainstorm various types of energy use in the local community.
 - i. Groups of 3-5 learners list where they believe they will see energy use.
 - ii. Have learners think about the areas where energy use may not be as obvious.
 - i. Heating and cooling of empty houses
 - ii. Pools, hot tubs, washer, dryer, dishwashers
 - iii. Electronics that have been left on- tv's, home monitoring systems, computers, business signs, even a fish tank in someone's home.
- b. Talk about the different types of energy you use in your community. For example, the different types of energy used in a building, vs the energy it takes for cars, trucks, and busses to move.
- c. Have the learners make predictions on where they will find the most energy use and record.
- d. In advance, decide on the walking route you would like to take. For junior learners you may decide to show them the route on Google Maps.
- e. Consider the time you'd like to allocate for the walk, as well as what is going to give you the best idea of energy use in the community.

For example, having a route that has a variety of businesses is going to be more interesting than going through a subdivision (although going through a subdivision you could extrapolate how many lights are in each house, how many cars each house has, estimate square footage of each house, etc.)

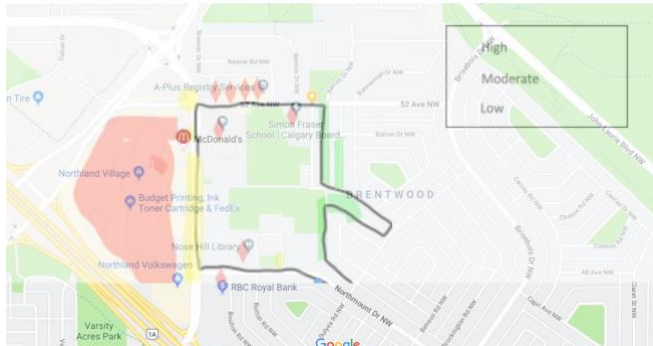
- f. Decide what you will want the learners to look for in terms of energy- or have older learners decide. For example, you may want to break them into groups and have one group recording the number of cars and trucks they see, while another group looks for the number of street lights, while another one calculates the number of houses, and another one looks at the number of businesses they pass (and what type they are).

Day 2: The Walk

- a. Ensure that each learner has a copy of the route. This will be used for graphing/plotting energy use.
- b. Go on the walk and look for the identified types of energy. Have learners plot on their map low and high energy use areas. Example: if your walk has both residential and business use, learners on their map can colour code areas where they believe the amount of energy use is high or low. If residential learners can then point out houses where they believe someone is home, or they see signs of more or less energy use (lights on or off- air conditioner running- signs of heat loss on a roof).
- c. Note any other types of energy you did not identify before you went out.
- d. Using the clipboard and map, note areas of high-med-low energy use. Colour the map areas accordingly (red-high, yellow-med, green-low).

Day 3:

- a. After returning from the walk, in groups of 3-5 learners create a good copy of their map.
- b. Groups can present their findings to the rest of the class.
- c. As a class compare their maps then create a master map of energy use in their community.
- d. Learners brainstorm ways that areas of high energy use could reduce energy consumption.



Extension Activities

1. Social Studies- give the learners a local perimeter for the walk, then have them map their own route. Have the learners follow appropriate mapping rules. Learners can use google maps to plan their route and then make notations on the print out of high and low energy use. Further if the outdoor walk is not feasible, learners could map the school energy use while creating a map of the school.
2. Before you plan the walk contact a local business and ask them if the class can stop in on their walk to look at the type of energy it uses (different machinery, etc.) If they take energy efficiency measure, have them highlight them to learners.