

Electrical Audit

This lesson is part of a series of short / informal lessons to be used at the McCall Outdoor Science School during field programs

1. Write the definition of electricity on the board.
 - **Electricity** – a type of energy produced by the flow of electrons¹
2. Ask all students to place a pen and a blank piece of paper (or science notebooks) on their desks.
3. Have students do an energy audit on electrical items at MOSS using the Watts Up Pro.
4. Have your group fill out the MOSS Appliance Energy Usage Chart. Allow about 15 minutes for exploration and 15 for discussion.

Discussion

1. What item you test used the most energy? The least? Were any of these surprising?
2. Where does the energy for our electricity come from? (In Idaho: hydropower)
3. What are other sources of electrical energy? (Nuclear, biomass, coal, geothermal, natural gas, solar, wind)
4. What are potential energy sources we can use here at MOSS? What are the pros and cons of these uses?

Energy Source: Biomass

BIOMASS is recently living organic material from plants and animals that can be burned to produce electrical energy. Because plants and other photosynthesizing organisms, like algae, convert sunlight energy into stored energy, they can be used as a source of fuel. Some examples of biomass include: wood and materials made from wood, animal waste, plants such as corn or jatropha, algae, and biodegradable trash. Biomass is considered to be a

¹ Ibid

WIND ENERGY is produced by the uneven heating of the earth's surface by the sun. Because different surfaces absorb or reflect sunlight in different amounts, the atmosphere is warmed unevenly, creating wind. This wind energy can be converted into electricity with wind turbines. Wind turbines can be installed on land or offshore. Flowing wind causes the blades of a turbine to turn which causes an electric generator to turn and produce electricity.

MOSS Appliance Energy Usage Chart

Item plugged into Watts Up Pro	Prediction if it will be higher or lower then the first tested device	Reading (watts)	Device turned on? (yes/no)
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			

10.			
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