

EDST 451

Issues and Frameworks in  
Environment Education

**David Suzuki Foundation Curriculum**

*Connecting with Nature*

**Lesson H - Gone with the Wind**

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## **PART II**

### **Lesson H - "What To Do" Evaluation**

Energy conservation is one of the most relevant topics in environmental education for students in the intermediate grades from 4 to 6. It is addressed through the subjects of language arts, science, math and health and career in the BC Curriculum. This lesson clearly presents how energy can be wasted through inefficient buildings while students can come up with strategies to reduce energy misgauge. The class activities suggest three levels of solutions to the problem of heat loss: (1) energy conservation, (2) energy efficiency and (3) renewable energy.

Making observations, constructing a draft detector and engaging in class discussions are the main components of "what to do" as part of the experiential learning in this lesson. In the BC Curriculum, students from Grades 4 to 6 learn about data management and probability in Math, healthy living skills in Health and Career, as well as oral communication and reading in Language Arts. However, the emphases are different upon the subject of Science as students learn about habitat and communities in Grade 4, conservation of energy and resources in Grade 5 and electricity and renewable versus non-renewable energy in Grade 6, which are essentially interconnected. It would be necessary for BC teachers to focus upon different areas of lesson for matching their students' interests to the appropriate learning outcomes of the grade level.

Reflection questions in the lesson plan are helpful for students to connect heat loss to their scientific observation and new findings. As described in Bai and Romanycia's article (Reading 10), school is a place where "re-normalization" takes place -- as educators, we reshape the system that people used to think, act and believe so that we could reduce harm and increase well-being. It would be imperative for environmental educators to encourage critical thinking from students and engage in social action starting from classrooms to bring about inspiration for a necessary societal change. Especially from the Grade 5 learning outcomes, students can understand about the concept of heat loss through infiltration of cold air through cracks and holes in buildings. Equipped with scientific language and skills, students can find a common ground to start a social dialogue about unsustainable use of energy and ways to change the present environmental issues. Teachers would also have to go beyond the parameters of science to connect with social studies to discuss about human behaviours. By constructing a draft detector with tissue paper, students can make use of resources around them to create instruments that present problems more visible for many others so that they pay attention to the existing problem of heat loss.

As described in Smith's and Hacking, Cutter-Mackenzie and Barratt's articles, students are encouraged to become active researchers about the environmental problems in where

they immediately live and find ways to solve them. By focusing on the process, students engage in authentic learning to build a meaningful and rich experience by combining both outdoor and classroom lessons together in place-based education. A "mini-fieldtrip" around the school building visiting the outside and the furnace room would allow students to see effectively what and where the problems exist. They can collect data, make prediction, make presentations and discuss about their findings. As suggested by the curriculum, teachers can facilitate the discussion about solving the heat loss problem, such as caulking and weatherstripping, and analyze the future viability of fossil fuels as an energy resource. As a class project, teachers and students can come up with solutions to make their schools 'greener', or finally 'carbon neutral', by engaging in different levels of participation. According to the Hart's ladder of participation, students increase their level of participation by mastering their understanding and engagement in environmental learning. Teachers can share decision-making with students and eventually let students take on a lead where the topic of interest directs. School administrators, parents and possibly community partners are also stakeholders and supporters because 'greening schools' is a social responsibility that requires consensus to turn students' efforts into a possible reality. Some additional suggestions are to organize a 'Sweater Day', 'Carbon Footprint Calculation' an 'Energy Plan' for the class so that everyone can start the 'greening' process within oneself and thereby affect others through their common practice from their research findings. Some possible research questions are: *How can we reduce our personal consumption of energy in our daily carbon footprint? How can we make a difference in bringing more greens to our living environment? How can we design a school or home that is green and energy-efficient?*

### **Adding New Lesson Objectives and Activities**

Raising an awareness of unsustainable practices is a very effective way to teach environmental education amongst young people and thereby encouraging problem-solving together as a school community. On the other hand, the piece of connecting to nature in this lesson may require a bit more elaboration on how heat loss contributes to the climate change in a wider and more global setting. The guiding question for this lesson is -- "*How does reducing the amount of energy you use to heat your home or school help nature?*" This would require a lot of scaffolding to explore the concepts of energy management through waste control, efficiency and renewable energy. For environmental educators, it would be crucial to link the concept of carbon footprint with students so that they start examining the use or misuse of energy. Then, students acquire the foundation to discover about new technological approaches with energy-efficient tools and appliances. They can later move on to distinguish between non-renewable (eg. oil, coal and nuclear) and renewable (eg. solar, wind, geothermal, hydro and biofuel) energy resources as outlined in the learning outcomes for Grade 6 students.

Personally, I think that it would be important to cultivate and highlight the impact of human actions and individual changes over the advance of technology. It might be

possible to address a new topic of social responsibility and stewardship in educational issues for students from Grades 4 to 6 through social studies that deals with sustainable resources, technology and socio-economic development. Some learning activities may involve field trips to visit environmentally-sustainable buildings in the community and invite expert guest speakers to talk about energy conservation and renewable energy for addressing the most current problems locally regarding to climate change issues.

At the school level, the BC Green Building Code would be helpful in addressing environmental impacts and reducing ongoing energy consumption, thereby contributing to the health and productivity of building occupants. It would be very interesting to see how school communities in BC develop ecological literacy and environmental practices that leads to the status of EcoSchool in Canada.

"Gone with the Wind" can be reversed because the new technology of windmill generates renewable energy that contributes positively to the environment. Alongside with human creativity and technological innovation, the climate in nature can work for us rather than against us.

### **Bibliography**

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