



ANEE

Newsletter of the Ontario Association of
Outdoor Educators of Ontario

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Newsletter Editor	Sheila Mudge	92 Aylesworth Ave., Scarborough, Ont. M1N 2J6	(H)416-690-2269 (B)416-439-4773

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Ad Hoc Member

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Government Liaison	Dorothy Walter	Min. of Culture and Recreation 8th Flr., 77 Bloor W. Toronto, Ont. M7A 2R9	

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ANEE, the newsletter of the Council of Outdoor Educators of Ontario is published seven times each school year. The publication is mailed to C.O.E.O. members only. Membership can be arranged through the membership secretary whose address appears opposite.

ANEE (AH-NEE) IS AN OJIBWAY WORD USED AS A GREETING OF FRIENDSHIP, IT IS USED AS A CORDIAL SALUTATION AMONG FRIENDS MEETING INFORMALLY. OUTDOOR EDUCATION IS A DISCIPLINE WHICH HAS AS ITS FOUNDATION A DESIRE TO LIVE IN HARMONY WITH THE ENVIRONMENT; THE TRADITIONAL WAY OF LIFE OF OUR NATIVE PEOPLE CHERISHED THIS ATTITUDE. ANEE IS A MEANS OF COMMUNICATING AMONG OUR MEMBERS WHO ARE SCATTERED ACROSS A LARGE PROVINCE. IT IS HOPED THE GREETING -ANEE- IS FELT THROUGH THESE PAGES.

Printed on de-inked recycled paper.

FROM THE EDITOR'S DESK

I'm rapidly beginning to have a great deal of respect for homeowners'. As a long-time high-rise resident, the perils and problems of real estate have seemed to be pretty remote. However, now in early December (printing and mailing this magazine take about a month) with the closing date only a week away on the purchase of my first house, I'm not sure that I ever will take possession. My life has been one continued crisis for the past two months. (It's no wonder I made the colossal blunder of calling Volume 10, #1 the September issue, when everyone knows full well that they received it in November.)

First, there were the termites. Just as I was beginning to feel rather smug about the great deal I'd pulled off, getting a clean, well-cared-for home at a price I could afford, my lawyer notified me that it was in a termite district, of all things! Let me tell you I did some rapid research on termites.

Then, for want of a cheque stub, the finance company which has purchased the mortgage was harassing my employer and threatening to refuse to close the deal, without ever talking to me.

However, the real crisis have been crisis of conscience over my conservation ethics. Will there be a boy scout knocking on the door monthly to collect my old newspapers for recycling. Is the house as well insulated as it should be? The furnace is new, and burns natural gas, as does the water heater. What sort of stove is best then - hydro or gas? Is the energy expenditure to run timed lights to make the house look occupied a good investment? Is my one north-facing window air-tight and thermopane?

Well, as I say, for all those of you who've been through this before, my hat goes off to you. Wish me luck!



Sheila Mudge,
Editor, Anee

FUTUREGAZE; Educating for Tomorrow

"A new civilization is emerging in our lives, and blind men everywhere are trying to suppress it. This new civilization brings with it new family styles; changed ways of waking, loving and living; a new economy, new political conflicts; and beyond all of this an altered consciousness as well. Pieces of this civilization exist today.

Millions are already attuning their lives to the rhythms of tomorrow. Others, terrified of the future, are engaged in a desperate, futile flight into the past and are trying to restore the dying world that gave them birth.

The dawn of this new civilization is the single, most explosive fact of our lifetimes."

So speaks the futurist, Alvin Toffler, in his recent book "The Third Wave." He believes that humanity has passed through the "first wave" of the agricultural revolution, the "second wave" of the industrial revolution and now enters a new revolutionary phase. The idea is not new. Members of the grass-roots futures movement, "Global Village" societies, scientists, new-age collectives and social researchers throughout the world have been identifying the components of our global transition for some years - helping themselves and others to "attune their lives to the rhythms of tomorrow."

In the broadest sense, this goal - of present and future "attunement" - is the ultimate goal of education. Ideally, the process of education allows us to live harmoniously as physically, mentally and spiritually developed beings. Ideally, education allows us not just to cope with the world, or be effective "reactors." It can enable us to be active, effective participants and directors of a healthy, ever-evolving society

So much for ideals.

Education - as defined in schools and institutions - has received increasing criticism during the 60's and 70's for failing to meet the needs of students, or failing to serve the needs of our quickly changing turbulent society. Educators - teachers, publishers, the media, clergy, etc., have experienced increasing difficulty in achieving - or even identifying their true goals. The gap between educational goals and educational achievements has often been felt to be a gulf.

One group of educators - calling themselves variously outdoor, experiential, or environmental educators - have, in contrast, been experiencing a growing success and support, even in the recent times of public criticism and budget restraints. Ontario, certainly, has seen the development of a strong network of outdoor and environmental educators, centres, programs and associations. The variety, depth and professionalism of the Ontario network has become respected as one of the leading in North America.

As we begin the second new year of the 1980's, perhaps it's appropriate to be asking: Where are we heading? What have we been doing well? If we have been playing an effective and important part in education and how do we continue to do so? How to take the next step into the future and be ready to meet and enjoy the Third Wave?

To answer some of these questions, we can consider some of the things we've been doing well, and look at other areas to which we could make more serious commitments.

Ecological Awareness

As a "global society" continues to evolve, the opportunity to interact with and understand the natural environment will be increasingly important. As cities become super-cities and hardware of technology enters more aspects of our lives, the opportunity to "touch the earth" in all of its fullness and variety will be an increasing human need. Even if we all move to the moon, our desire for interaction with what we now consider the natural world is likely to persist for some time. This feeling of connection to the biosphere can simultaneously encourage a clearer awareness of ourselves, along with a sense of responsibility for all environments. How can we continue to encourage ecological principles - and do so more effectively?

Recreation and Leisure Skills

As technology and economic realities reduce the amount of time we spend working, the need for meaningful low-cost leisure skills increases. All recreational pursuits - from skiing to batik, wilderness tripping to yoga, hang gliding to scuba diving - will be in greater and greater demand. The need for skilled and environmentally responsible instruction in these areas will continue to be important.

Adventure Education

The need to challenge ourselves will always be. As technology and the media expose us to more and greater life options, the need we feel for personal accomplishment grows. In a society where more and more things are done for us, there is a need to feel we can still accomplish something worthwhile - perhaps something magnificent - by our own strengths alone. The physical and mental challenges that have traditionally been offered in the name of "adventure education" allow this kind of opportunity: to appreciate and extend our talents and limits; to see more of ourselves and of each other. Are the inner and inter-personal resources used in challenge situations stressed effectively enough? Are we enabling people to transfer the confidence they gain from adventure education to other areas of their lives?

Special Needs Groups

As the values of outdoor and experiential education have gained recognition, the demand for activities and programs catering to the needs of special groups has grown as well.

The alternative educational approach and programs developed in the name of outdoor/experiential education can serve the educational needs of

these groups directly. Groups of the disabled, people of different languages and cultures, senior citizens will no doubt continue to seek professionals with outdoor/experiential education background to serve their special needs.

Group Process/Leadership

If futurist's predictions are correct, Canadian society will necessarily become more decentralized. More political and economic decisions will be regionalized. People will need to "think globally, but act locally." Individuals will need skills in making decisions cooperatively to direct the destiny of their communities in conjunction with national and inter-national needs. The basic insights students gain toward these ends in activities such as initiative tasks or group process work can be invaluable. How could this facet of learning be emphasized and extended further?

Education for the Conserver Society

As the use and exploitation of natural resources has mushroomed during the 20th century, so has the need for conservation and environmental management.

Some of the problems are clear: the depletion of fossil fuels is envisioned, the production of nuclear energy may increase danger, the building of hydro electric dams can disturb delicate ecologies, the pollution or death of lakes, forests, soils and air quality has occurred globally.

As educators in, for, and of the environment, both natural and human, we can perhaps begin to extend our role in educating for future conservation and development of healthy environments.

The term "conserver society" sparks a variety of interpretations. To some, the words conjure up images of counter-culture communes, experiments with back-to-the-country lifestyles, and vegetarianism. To others, it means freezing in the dark with no cars, T.V. or radios. For others, it means the professional management of water, land and forest resources. To others, it means simply "turn off the lights." None of these images can be wholly correct, all contain some grains of truth about the conserver society.

A National Survival Institute publication offers this:

"At the heart of a conserver society is human integration into the biosphere we live in. Far from being an idealistic goal....once we've allied with nature, social harmony, economic progress, or whatever goals our society decides to strive for can be more realistically pursued.

The long-term resolution of current resource and environmental issues will not depend only on government policy and industry incentives. Successful solutions will depend equally on the individual choices and attitude changes made by each citizen in each sector of society. How can we better assist those we work with to adjust from the "consumer society" of the past and present, to the "conserver society" of the future?

A primary component of any social behavioural change is attitudinal change. Unfortunately, the underlying values in our society still favour the notion that "bigger is better", "more means progress." The bottom-line management of money-flaw in an economy still pursues an ever larger GNP. The GNP has not traditionally had room for calculations of quality.

Well, we won't change entrenched economic tunnel vision overnight. But, we can modify on even the smallest scale, the individual choices we make and educate accordingly. To do this, we require unbiased, accurate information. It is sometimes hard to recognize the abnormality in the things we consider most normal. We need to seek a balanced perspective of information from other educators, business, government, industry, environmental groups, the media.

Attitudes and behaviour don't change with information alone. In the best traditions of experiential education, we learn by doing - by participating in and experiencing the reality and quality of the conserver life-style. Educators can play a key role in allowing that experience.

We can begin by examining the structures we live, work and teach in. Are they energy-efficient and resource-conservative? What structural changes could be made to make them more so?

We can examine those habits of an everyday teaching life-style. Are we encouraging the "throw-away" ethic and sending garbage to the dump, or are we actively involved in resource recycling? Are we purchasing goods with attractive but unnecessary packaging, or buying bulk goods with minimum packaging? Are we encouraging young people to pursue prime energy-efficiency in their diet, or are we serving sugar-loaded, over-processed foods through our cafeterias, kitchens and outtrun houses? Are we conservative in our daily uses of water, electricity, oil and gas?

The existing valuable programs of outdoor recreation, native interpretation, math applied geography, etc., could be extended by incorporating practical conserver skills. It's one thing to study the parts of a tree, and another to learn to plant and manage a reforested area. It's one thing to learn about a decomposer, and another to be recycling food wastes and eat vegetables grown in the rich compost soil. We may learn about solar energy, but we might also build and daily use a solar-shower. We can practice no-trace camping, but can also conduct site-regeneration projects. We can turn off the lights to save electricity from a public grid, but might in addition, help build a windmill generator for the centre or community.

Skills that used to pass as hobbies, pioneer ways, or the privilege of a few, may now be reconsidered as a vital part of life-style education: gardening, carpentry, food preserving, animal husbandry, small-scale farming. We might also create, conduct and share values sessions on the choices, changes, risks and problems of the consumer vs the conserver society.

None of us - as educators for the future - can know precisely what

the future holds. Perhaps we won't freeze in the dark, but will already be living and working in environments heated and lit by the sun, biomass or solar satellite. Perhaps we won't starve when agricultural land is scarce and soils deplete: we'll have learned to farm the sea. Perhaps sulfuric acid won't kill all lakes, rivers and forests, as industries clean up their act and research discovers how to rejuvenate. Perhaps nuclear radiation or warfare will not ensue. Perhaps we won't continue to deplete earth's resources, as we become more aware of the quality resources in our conserver society. Perhaps all of us can continue to do our part - in new ways - to help make this so. Tomorrow begins now.

Catherine Fletcher

NATURAL RESOURCES CLAUSE SHOULD BE ADDED TO NEW CONSTITUTION ACT, 1980

A NEW CLAUSE SHOULD BE ADDED TO THE CONSTITUTION ACT SUPPORTING THE FUNDAMENTAL ROLE NATURAL RESOURCES PLAY IN CANADA'S DAILY LIFE. THAT IS THE CONCLUSION OF THE CONSERVATION COUNCIL OF ONTARIO*. BY A RESOLUTION OF THE NOVEMBER 26, 1980 MEETING OF THE CONSERVATION COUNCIL, A RECOMMENDATION WAS FORWARDED TO THE SPECIAL JOINT COMMITTEE OF PARLIAMENT ON THE CONSTITUTION OF CANADA THAT THE FOLLOWING CLAUSE BE ADDED TO SECTION 31. (1) RESPECTING THE COMMITMENT OF PARLIAMENT AND THE PROVINCIAL LEGISLATURES:

" (A) ADVANCING THE MANAGEMENT AND USE OF CANADA'S
NATURAL RESOURCES TO MEET THE NEEDS OF SOCIETY
IN PERPETUITY;"

IT IS THE CONSERVATION COUNCIL'S BELIEF THAT SUCH AN ADDITION IS A VALUABLE AND NECESSARY ONE.

*THE CONSERVATION COUNCIL OF ONTARIO IS A NON-GOVERNMENTAL, NON-POLITICAL PUBLIC SERVICE BODY BRINGING TOGETHER REPRESENTATIVES OF 35 PROVINCIAL ASSOCIATIONS HAVING CONCERN FOR CONSERVATION AND INDIVIDUAL EXPERTS IN VARIOUS PHASES OF ENVIRONMENTAL AND RESOURCES MANAGEMENT. THE COUNCIL PROVIDES FOR EXCHANGE OF INFORMATION AND OPINION, IS AN ADVOCATE DEVELOPING CONSERVATION STRATEGIES, AND PLAYS A ROLE AS A PUBLIC EDUCATOR.

Arthur M. Timms



Is Canadian Agriculture Energy Inefficient?

by

Bessel J. VandenHazel

Nipissing University College
North Bay

It has been said that Canadian farms are less energy-efficient than those of China, India and Nigeria. The first reaction of Canadians to this statement would be to strongly disagree and to point out the tremendous productivity of our farmers per hectare of land or per man-hour of work.

Energy-efficiency and productivity, however, are not the same thing and need to be investigated separately when agriculturists chart the path of the immediate future which is characterized by rapidly rising costs of fuels, machinery and fertilizers.

Farm productivity is often defined as the ratio of the number of full-time farmers to the total number of workers in a country. In Canada this ratio is 5 to 100. This means that 5 percent of the population not only grows most of the food we eat, but also produces grain and fruit for export. In developing countries, as in the early days of Canadian settlement, 50 to 90 percent of the population may be actively involved in the growing of food. The figure for India is estimated to be 70 percent and for Nigeria 90 percent. It is obvious that Canadian farmers produce huge volumes of food per man/hour of work, and are therefore extremely productive.

Another way of expressing agricultural productivity is by looking at the crop yields and the labour input per unit of land. Farming statistics reveal that corn yields have increased 200 percent in the period from 1945 to 1970, while labour input per hectare (2.5 acres) decreased by more than 60 percent. This was done through mechanization and the use of chemical fertilizers and pesticides. However, each of these three production factors requires large inputs of energy in the form of natural gas, petroleum and electricity. When the yields of corn and their energy inputs were analysed it was found that while the yield had increased 200 percent in the period of 1945 to 1970, the energy input per unit of land has increased 300 percent. Some ten years ago, therefore, agricultural researchers began to look at the ratio of the amount of energy present in a crop (output) to the amount of energy used to produce this crop (input.) It was then

found that the 1945 ratio of output to input was 3.2 to 1 and that this ratio had dropped to 2 to 1 in 1970. In other words modern mechanized farming requires ever larger quantities of fossil fuels to have fewer farmers produce more food.

When so-called primitive agricultural systems in Asia and Africa were analyzed the ratios of energy output to input were found to range from a minimum of 5 to 1 to a maximum of 50 to 1!

Chemical Fertilizers

Chemical fertilizers are generally credited with about 50 percent of the crop yields in modern farming. But chemical fertilizers are energy-intensive, that is, they require considerable quantities of fossil fuels to produce. The energy used to manufacture nitrogen fertilizers ranges from 50 to 100 units (expressed in megajoules) per kilogram, phosphorous fertilizers take 10 to 20 units per kg and potash fertilizers require 3 to 10 units of energy per kg. Stanfield, a U.S. agriculturist, has pointed out that between 1950 and 1970, fertilizer energy-input increased from 36 to 250 energy units per hectare of land, but, that the energy content of crops increased from 910 to 1950 units per hectare. In other words a seven-fold increase in energy input resulted in a twenty fold increase in the capture of solar energy by crops.

Before we become too complacent about these achievements we should read about what Professor M. Perlman of the California State University has come up with. He calculated that the energy of the food crops consumed by North Americans is roughly equal to the energy used to power all farm tractors. Non-mechanized farming in tropical and subtropical countries such as China are, of course, heavily reliant on annual labour and are therefore far more energy-efficient than the mechanized North American farm industry. For one unit of energy expended by a Chinese wet-rice farmer, he may expect to receive a return of up to 50 units, while for each unit of fossil fuel used on modern farms much less than half a unit of energy is produced.

Effects of Increasing Energy Prices on Farming in Ontario

What effects will rising energy prices have on agriculture? At the moment farmers must compete with other energy consumers for gasoline, natural gas and electricity. It is a well-known fact that the price of many forms of energy has tripled in the last decade. As a result of this the cost of producing food is becoming more and more dependent on the price of energy. A rapid rise of Canadian energy prices to

world levels could have these possible effects:

- (1) A gradual shift from the growing of crops and the raising of animals that require large fuel inputs to those that require less. Some farmers in Central Canada might find it necessary to change from beef and dairy operations to grain and hay.
- (2) A more direct marketing of food between farmers and urban consumers.
- (3) A greater public acceptance of the use of agricultural and urban organic wastes on farmland. The cities and towns in the province of Ontario now spend hundreds of millions of dollars treating residential sewage in water pollution control plants that then release water enriched with nitrates, phosphates and potash compounds into waterways. This water could be used in fish farming operations or to irrigate fields near the lake. Fortunately the sludge of the pollution control plants is now spread on farm fields and lowers the need for chemical fertilizers. High metal levels that make continued use of this sludge on the same fields undesirable, may force the provincial government to place stricter controls on wastes released by metallurgical industries.
- (4) By guaranteeing farm workers a sufficient income and an annual vacation, more workers might be encouraged to stay on the farm rather than migrate to the cities.
- (5) A shift from long-distance transportation of farm produce to increased local production. Increasing transportation costs may make it more economical to substitute regional farm products for imported ones. Energy-efficient underground storage in bedrock could readily be created in Ontario.
- (6) A return to a crop rotation system, whereby corn crops are alternated with legumes, which act as a green manure and lower the need for chemical nitrogen fertilizers. This farming practice is hundreds of years old but has been forgotten in the corn belts of southern Ontario and the American mid-west.

The Next Decade

If major new sources of energy are developed as a result of advanced fission and solar technology, farming may see major changes. The price of fertilizers may drop and tractors may run

on hydrogen or methane fuels. It is also porrible that new sources of food will make major contributions to the world's food needs. Perhaps plants will be developed with a photosynthetic process twice as efficient as what nature has produced so far.

For the next decade, however, conventional agriculture will continue to grow most of the food needed in Canada. In case of skyrocketing fuel prices or actual fuel rationing, city dwellers will have to make do with less energy in order to keep the food producing sector in Canada working.

- References:
1. Energy in Society, A Resource Guide for Teachers, Ontario Ministry of Education, Toronto.
 2. Aggricultural Energetics, R. Fluck and C. Baird, Avi Publishing Company, Westport, Connecticut.
 3. Environment and Man, R. Wagner; W. Norton and Co., New York.
 4. "Energy and Agriculture," a research paper by C. Downing and M. Feldman, Research Branch, Agriculture Canada, Ottawa.

Help Wanted

Sheila Mudge has notified the Advisory Board that she intends to resign as Anee editor, effective at the annual meeting, 1981. We are, therefore, actively searching for a new editor.

If you are interested in assuming this vital role in C.O.E.O., now is the time to start learning the ropes. Please contact:

Sheila Mudge,
92 Aylesworth Ave.,
Scarborough, Ontario.
M1N 2J6
(416) 690-2269

MOVING?

If you are moving, John Aikman needs your new address in order to keep Anee coming to you. Please send your name, your previous address, your new address and your moving date to:

John Aikman,
47 Rama Court,
Hamilton, Ont.
L8W 2B3

Do not send change of address information to the newsletter editor, please. This will just slow things down.

POT POURRI

ROBIN DENNIS AWARD

As a final tribute to Robin Dennis, the Boyne River Natural Science School and the Toronto Island Natural Science School annually present an award to the person or program contributing most to outdoor education in Ontario. This year, Bob Pieh was the recipient. Bob is well known in the province for his outstanding leadership in outdoor activities and of course is particularly well beloved by the students, past and present, of the Faculty of Education, MacArthur Hall, Kingston.

Congratulations, Bob!



Ralph Ingleton presents the award to Bob Pieh. Peter Herlihy from the Island School looks on.

POT POURRI

NEW LEGISLATION TO ENCOURAGE OUTDOOR RECREATION

In an attempt to increase outdoor recreational opportunities for residents of and visitors to Ontario, the Ontario Legislature has enacted two new laws. The new legislation came into effect September 8, 1980.

The Occupier's Liability Act and the Trespass to Property Act will clarify and simplify earlier laws governing an owner's or occupier's legal liability for the safety of entrants to his property, while increasing an owner's or occupier's protection from trespassers. The Acts are intended to encourage owners and occupiers to permit access to parts of their land suitable for recreational activities.

Under the new laws, an owner of property bears a basic duty of care towards all who enter his land. That duty is to take care that in all reasonable circumstances, persons entering his property are reasonably safe while on the property. This basic duty of care does not extend to situations where the entrant willingly assumes the risk of being on another's property, or where the entrant is, under the new legislation, deemed to have assumed such risk.

Similarly, the new laws deem that the basic duty of care by the owner does not apply to those who enter his property with the intention of committing a criminal act. Also excluded from the owner's basic duty of care are non-paying recreational entrants on most rural land.

Under the old law, there often existed confusion regarding the liability owners carried towards different kinds of entrants. This confusion and doubt often weighed against an owner agreeing to allow any recreational use of his land. With the clarification provided by the new legislation, and the reduced duty of care for non-paying recreational entrants, it is hoped that many more landowners, such as farmers, will agree to allow selected parts of their property to be used for recreation.

If a landowner receives a benefit from a non-profit organization, such as a hiking or trail association, the owner does not lose the benefit of the entrants' assumption of risk. For instance, if a trail association provides a farmer with an honorary membership or an invitation to a "thank-you" dinner and dance, the farmer does not lose the protection of having it deemed that all non-paying recreational entrants to his property have assumed their own risks.

This approach attempts to preserve and expand the relationship of cordiality and mutual respect which has traditionally existed between benevolent owners of rural land and non-profit recreational clubs whose members volunteer their time and effort to create outdoor recreational benefits for all. Retention of existing trails and development of more trails depend upon that continued co-operation.

It is hoped that the clarification and increased protection provided by the new legislation will increase such beneficial co-operation. For instance, two new marking systems have been created to facilitate control of recreational activities by owners and recreational associations activity under agreement with the owners.

The first system, which is general, is simple colour coding. Red markings on trees, fence posts, or immovable rocks prohibit all entry. Yellow markings mean the owner will permit some recreational activity, but that is the duty of the entrant to find out, from the owner, what activity is permitted.

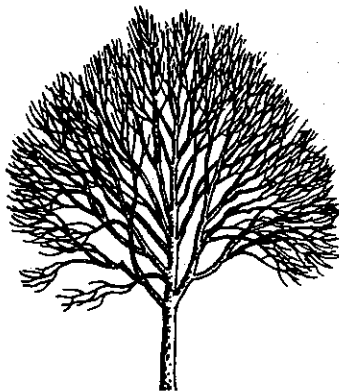
A second system has been devised to allow an owner to indicate easily which activities he will allow on his property. A sign naming or graphically representing an activity (for example, hiking or camping) indicates that this activity and only this activity is permitted. The same kind of sign with an oblique stroke through it means that activity and only that activity is prohibited.

Under the Acts, the fine for trespass has been increased to \$1000. In addition, an owner may recover up to \$1000 in compensation for proven damages and the entrant, upon conviction, may be held liable for reasonable costs of prosecution. The intention of this new legislation is to deter and punish those irresponsible few who jeopardize continued and increased recreational opportunities for the many.

Further information is available in the pamphlet "Property Protection and Outdoor Opportunities." Write to:

Communications Office,
Ministry of the Attorney General,
18th Floor,
18 King Street, East,
Toronto, Ontario.
M5C 1C5

Reprinted from: The Wilderness Canoeist--- Autumn 1980.



Chairman's Award

In 1979, a new award, presented by the Chairman of C.O.E.O., was instituted to honour a person who has made an outstanding contribution to the Council. This year, its recipient was Dorothy Walter.

Dorothy's is a well-known face amongst us. She is a past executive member of the advisory board and continues to serve in an Ad-Hoc capacity as Government Liaison. As Camping Consultant with the Ministry of Culture and Recreation, Dorothy has her own large following of Bark Lakers.

Congratulations, Dorothy!



Schoolyard Activities

Math=Science Integration

Ronald Frenette

Introduction = During an informal teacher led discussion, students in groups of 2 or 3 will be asked to respond to a number of questions. Then, after listening to other opinions, generally uninformed, each group will be asked to commit themselves to answers which will be kept in a personal record. This information is to be retained for future comparison.

- Q.1: How many cars (small trucks, big trucks, buses, and motorcycles) go through the intersection of x and y in a 15 minute period?
- Q.2: How could we find out? Does the time of day matter?
- Q.3: Consider only automobiles. What do you think would be the average number of passengers, including the driver?
- Q.4: On the average, how many kilometers do you think a family car (small truck, big truck, bus) travels in one year?
- Q.5: How many litres of gasoline do you thnik your family vehicle uses in one month? One year? How can we find out?
- Q.6: How many cars (trucks, vans, big trucks, buses) do you think there are in Metro Toronto?
- Q.7: Is there lots of gasoline? Have you or your family been turned away from buying gasoline? Have you heard of people anywhere not being able to buy gasoline?

Q.8: What does gasoline cost for us to buy? Is this an important item for people to buy? Could we do without gasoline? What would your family do if there were no gasoline?

Answers, or partial answers to these and other questions will be topic for our next few weeks in Mathematics. (Assumption here that review work has been done and students are capable of producing bar and circle graphs.)

SPECIFIC CONCEPTS FOR THESE LESSONS

- A. Graphs and charts are devices for "showing" a number of items (data) gathered over a period of time in one or more places;
- B. There are certain conventions to follow when constructing these visual presentations;
- C. Accuracy in collecting data and subsequent representation is crucial for acceptance by others;

Note: As the reader peruses the list of lesson topics further in this paper one will see there are a number of important associated concepts. Although these could be delineated, these are omitted to avoid confusion with the stated concepts. A teacher using this unit in isolation from other topics would be missing many opportunities.

Method

1. Assign the first tally sheet (Appendix 'A') and go through it for understanding. Discuss safety rules then proceed to corner of x and y streets to collect data. Homework assignments will be identical data collections however the locale and times will change. All this activity will be carefully orchestrated by the teacher to ensure a variety of data.
2. Upon return to the classroom, students will discuss what will go on the two axes, the scale to be used, the style of graph, then they will be constructed on large size paper.

Discussion

Groups will explain their topic, display their chart and explain findings. Groups should be prepared to defend the data, the chart produced, and, to a degree, interpretation of the graph.

Follow Up

Students will make individual graphs for their own records and reference on standard metric notebook paper. Students will be assigned to collect further data (on Appendix 'A') at different locations and times and to produce appropriate graphs.

VII

REFERENCE MATERIAL

1. Mathematics: Strand Development (Primary, Intermediate, Junior) (1976)
Metropolitan Separate School Board
Curriculum and Special Services Department
146 Laird Drive, TORONTO, Ontario.
2. Maps and Graphs - A Support Document to 'The Formative Years'
Ontario Ministry of Education Document #74-75/4124

APPENDIX 'A'

VEHICLE COUNT IN OUR NEIGHBOURHOOD

Group # _____ Team Members _____

Date _____ Location _____

Data Collection Times From _____ to _____

[illegible]

Totals

APPENDIX 'B'

HOW FAR DOES THE AVERAGE VEHICLE GET DRIVEN IN ONE YEAR?

Group # _____ Team Members _____

Date _____ Locale _____

Vehicle #	Type of Vehicle (Car, Van, Lt. or Heavy Truck, Bus)	Age of Vehicle (Years & Months)	Average Number of Kilometers Driver Per Year
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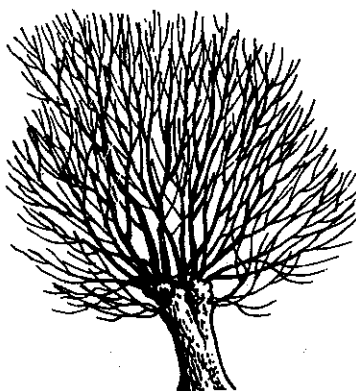
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DATEBOOK

Northern Illinois University's Faculty of Outdoor Teacher Education will offer a three week study program in York, England, July 4-26, 1981. In cooperation with the College of Ripon and York St. John, British specialists in outdoor and environmental education will serve as lecturers, field teachers, and trip leaders. Three or six hours of graduate or undergraduate credit may be earned. A maximum of twenty five persons can be accomodated with a fee package that includes tuition, insurance, accomodations and meals, transfer by coach between London and York, and transportation for various field trips to schools, centers and study sites.

The program will provide an overview of outdoor education in England, and will be highlighted by: trips to community sites, resident, day and pursuits centers; lecturers and demonstrations on the English education system, environmental problems, outdoor teaching approaches, and outdoor lessons. Dr. Morris "Bud" Wiener, Professor of Outdoor Teacher Education will serve as director of the program.

For application form and complete details of daily program schedule, arrangements, requirements and costs, contact Dr. Orville Jones, International and Special Programs, Lowden Hall 203, Northern Illinois University, DeKalb, Illinois 60115. (315) 753-1988.





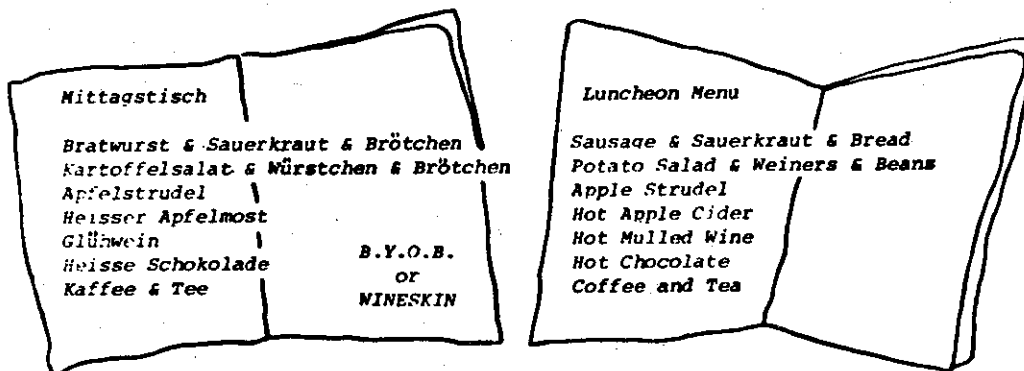
1ST VOLKS - SKILAUF

FEBRUARY 7, 1981

10 A.M. - 5 P.M.

CEDAR GLEN, BOLTON, ONTARIO

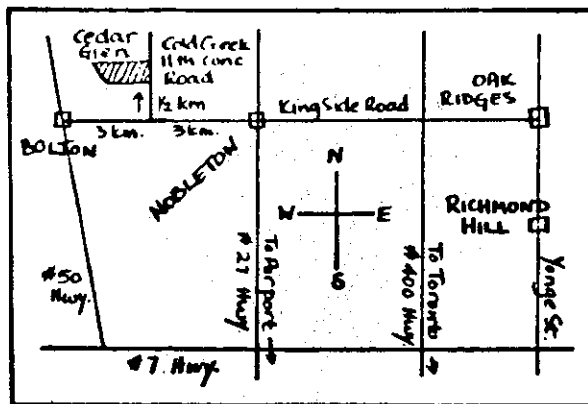
Come and join us for a family cross-country ski day at the Glen. Groomed and marked trails lead skiers up and down the Caledon Hills, finishing at a lodge with a warm fire, a hearty meal, and friendly folks. Your registration fee includes equipment (if necessary), lunch, a button, and a variety of hot drinks.



COEO members: Adults \$ 6.00
Children \$ 4.00
Family Rate \$20.00

Non-members: \$ 8.00
\$ 5.00
Family Rate \$25.00

Pre-registration is a must as numbers are limited.
Make cheques payable to: Central Region COEO
Address registration forms to: Judy Simpson
Forest Valley O.E.C.
60 Blue Forest Drive
DOWNSVIEW, Ontario
M3H 4W5



A VOLKS-SKILAUF - WHAT'S THIS?

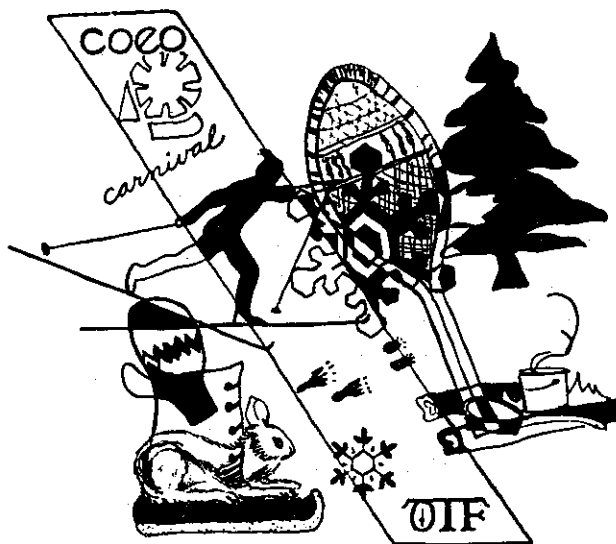
The name "Volks-skilauf" is German, meaning "people's cross-country skiing. This is the winter variation of the better known activity called a "Volksmarch" or "people's walk." In Europe the very popular Volksmarch takes place both days of most weekends in Germany, France, and Switzerland. People of all ages pay a registration fee to go on a hike of either 10 or 20 kilometres. Trails are set up by different towns in each of these countries and the profits go to a local charity. Check points throughout the walk provide assurance that walkers are going in the correct direction, as well as offering food and refreshments and a good chance to rest and talk with other walkers. At the end of the walk, participants receive a unique medal showing the location and date of their day's exercise. Music and refreshments complete the day's activities in a large hall or tent back at the starting point.

The first C.O.E.O. Volks-skilauf takes place on February 7, 1981 at Cedar Glen. This family day of X-country skiing is an adaptation of the European activity. As trails are marked, checkpoints will not be necessary. Buttons instead of medals will be included in the registration fee. A lunch will be served at noon and hot drinks will be available for participants throughout the day back at the recreation centre.

As good skiing weather has been ordered, the day promises to be enjoyable for all. For further information see the application form in Anee or contact Judy Simpson at Forest Valley - 630-6263.

.....
Names _____ COEO no. _____
Address _____ Phone no. _____
No. of people attending: Adults _____ Children _____
Equipment required: Yes _____ No _____ Fee enclosed _____

In the event of cancellation due to inclement weather, a \$1.00 administrative fee per person will be retained, and the balance refunded.



MAKE PEACE WITH WINTER II

A WINTER CONFERENCE/WORKSHOP

PRIMARILY FOR TEACHERS

SPONSORED BY
THE
COUNCIL OF OUTDOOR EDUCATORS
OF ONTARIO

IN COOPERATION WITH
THE ONTARIO TEACHERS FEDERATION
AND
THE NORTH YORK BOARD OF EDUCATION

TOPICS

OUTDOORS

Cross Country Skiing
Snowshoeing
Survival in Winter
Snow Studies
Wildlife Management
Ice Fishing
Winter Photography
Visual Arts
Winter Carnival
Eco games
Inuit games

INDOORS

Energy Education
An Arctic Experience
Acid Precipitation
Endangered Species
Moving Out with Math
Outdoor Films

DATES: 7:00 p.m. Friday, January 30 until 1:00 p.m. Sunday, February 1, 1981

LOCATION: The Leslie M. Frost Natural Resources Centre, Dorset, Ontario
(140 miles north of Toronto)

FEE: \$65.00, students - \$55.00. This covers registration, accommodation,
Friday evening wine and cheese party, 3 meals and evening snack on
Saturday, 2 meals on Sunday and social activities.

IF YOU CANNOT ATTEND, PLEASE PASS THIS ALONG TO SOMEONE WHO MIGHT.

PRE-REGISTRATION A MUST - REGISTRATION LIMITED

REGISTRATION FORM: COEO CONFERENCE - MAKE PEACE WITH WINTER II

NAME _____

SCHOOL _____

HOME
ADDRESS _____

(include postal code)

TELEPHONE
School/Business _____ Home _____

ROOMS: Accommodation is 2 per room. If you wish to be booked in a room with another
delegate you know, please indicate the name of the other delegate

PLEASE ENCLOSE YOUR FEE WITH THIS FORM AND MAIL TO: OTF Curriculum Project,
1260 Bay Street, Toronto, Ontario. M5R 2B5

Fees - Regular \$65.00, Student \$55.00. Full-time student at _____

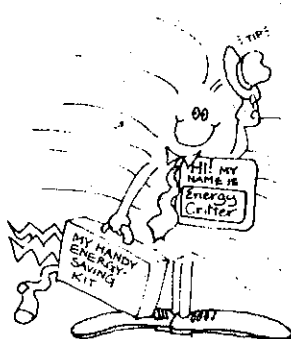
(Cheques should be made payable to the Ontario Teachers' Federation)



Eating and Energy – A Part of Every Day

This document was prepared to assist teachers and students with the study of energy. To make this topic "real" for children, the units were developed using the themes that are most relevant to a child's everyday life experiences. The themes, all basic needs of life – food, water, shelter, clothing, and transportation – incorporate energy concepts that relate to the satisfying of these needs. Several activity sets also include values related to lifestyles and ideas related to electricity.

Each activity set is designed to increase the "energy consciousness" of students and to assist them in formulating ideas and patterns of behaviour related to the conservation and effective use of energy.



Food is a basic necessity of all forms of life and one of the most important components of a child's daily life. The following activity sets provide opportunities for the student to better understand how the satisfaction of food needs depends on the expenditure of energy. At times, the energy referred to will be the physical human energy used to run machinery or to package, process, store, market, advertise, or deliver a food product to consumers. At other times the energy referred to will be the nutritive value of food that is the energy source for our bodies.

The food system can be more or less complex. Our ancestors who raised, preserved, and stored their own food had a fairly simple system. The system was labour intensive and provided many staple foods. However, changes in weather conditions and the difficulty of maintaining quality growing soil and of preventing disease or insect damage often made food production unreliable. The food on our dinner tables, on the other hand, is part of a complex ecosystem that requires hundreds of individuals to perform specialized functions so that eventually we can obtain food to eat!

Ours is an industrial system. It employs energy-consuming machinery, scientific research, computers, marketing boards, fertilizers, pesticides, preservatives, natural resources, and all forms of transportation. There are many problems associated with such a highly specialized system. For example:

1. There are limits to the amount of food that can be produced on the available arable land.
2. Our technology is built and organized around a non-renewable fossil fuel base.
3. The increasing consumption of animal protein is expensive, unnecessary, and inefficient in view of the fact that proteins are readily and more cheaply available in plant material.
4. The increasing consumption of processed food that has a low-fibre, high-sugar/salt content not only is very energy-intensive, but carries with it *health* implications as well.
5. The processing, packaging, storage, transportation, advertising, and preparation of food drain resources and create waste-disposal problems faster than we can solve them.

With your guidance, students can examine the inputs, outputs, and wastes in a food system and understand the "trade-offs" we accept with each decision we make. They should appreciate how important it is for us to fully consider the consequences of our choices. For example, if we select a convenience food (e.g., a TV dinner), a tremendous number of resources – food, chemicals, metal, paper, energy for cooking, energy for freezing, energy for reheating, energy for transporting – are used as inputs. The intended output is simply a quick meal! In the process, fossil fuels are consumed, escaping heat goes unused, and great quantities of solid wastes are produced. Your students can consider all of these factors and then decide what is "convenience".

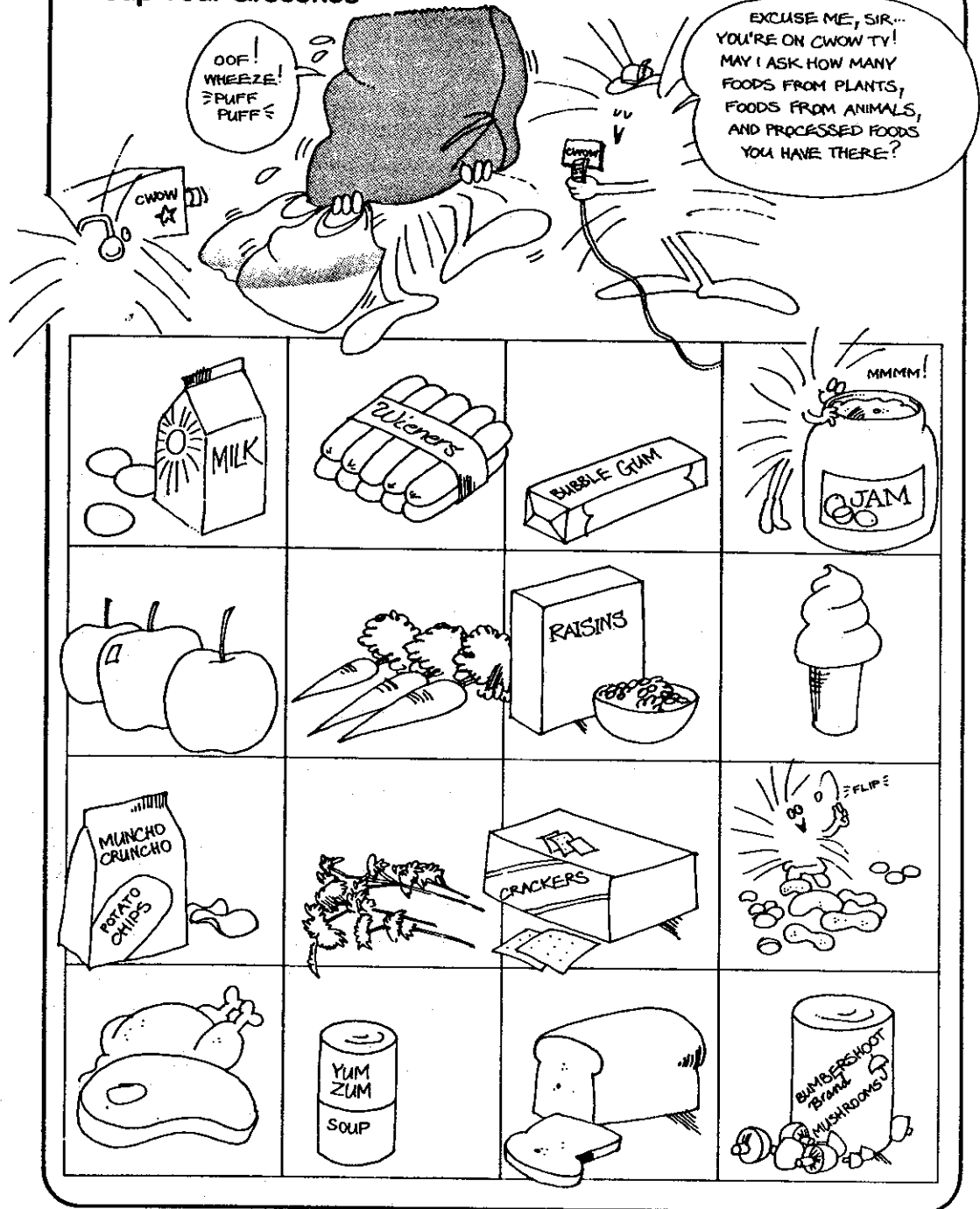
People in the advertising industry realized a long time ago that children had the power to influence the demands of the market. If students understand the alternatives available to them and the energy-related aspects of these alternatives, they can influence their own and their family's buying patterns. If these choices become more and more ecologically sound, we can only profit by the effort.

The objective of the following activities is to develop in students an awareness and appreciation of each individual's role in the food system so that they will become energy-wise, energy-responsible participants in society.

Activity Set 1: Group Your Groceries

Name: _____

Group Your Groceries



Group Your Groceries

Notes

People today are faced with an ever-expanding selection of foods. These foods range from natural, organic products to those made from totally synthetic materials. This introductory activity set will allow students to examine, in a concrete way, the variety and qualities of food forms available to them so that they can fully appreciate the kinds and quantities of energy used in the food-production system. The concept of finite, non-renewable resources is also introduced in this section.

As well as coming in fresh, natural forms, foods can be endlessly processed with additional expenditures of energy. Our food choices are affected by sensory appeal, price, and availability. This introductory classification activity will allow you to observe the level of awareness and reasoning power of your students in relation to food. You can then decide which of the following activities to use, adapting where necessary to suit individual children.

Provide grocery bags for your students. Draw lines on each bag to divide it into three sections. Your students can then cut pictures of foods from their activity sheets and paste them onto the bags under the following categories: Food From Plants, Food From Animals, and Processed Food.

Have the students draw or list all of the foods that they ate on the previous day on the other side of the paper bag. Ask them questions such as the following about the foods they ate: How many were fresh? Packaged? Which were foods from animals? Plants? Which needed to be cooked? Kept in a refrigerator?

Provide a selection of foods that students can sort and classify in a variety of ways. (Include organic – grown – and non-organic – processed – foods in your selection.) They might sort according to their likes and dislikes, to things we cook and things we eat raw, or to fresh food and packaged food – the classifications are to come from the children for the most part. Students can discuss their reasons for particular groupings.

Encourage the children to discuss and continue to refine their classifications. For example, they might place all boxed foods in one group and all canned foods in another. These two groups might be further reclassified into four – boxed soups, boxed cereals, canned fruit, and canned vegetables.

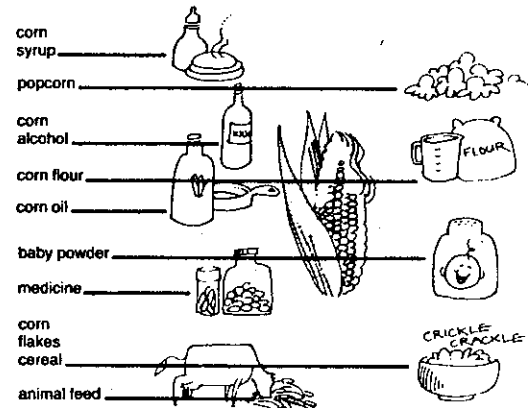
Follow-up Activities

1. Help students understand the very real fact that food supplies are finite. Use a handful of peanuts or an apple to draw an analogy. The peanuts can represent the world's food supply. Some people get more than others (give some students one or two peanuts), and some don't get enough (don't give any peanuts to one group). Explain that even with all the scientists and farmers working together, we still can't provide food to some people in the world. Discuss spoilage, systems of sharing and transporting, and the problems of hungry people.

Explain that some countries give their surplus food to other places in the world where the people aren't able to grow enough food for themselves. For example, Canada has sent grain, powdered eggs, and powdered milk to needy countries. Be careful. This exercise is not meant to make children feel guilty or somehow responsible for starvation on the planet, but only to illustrate briefly a fact of life which, perhaps through their generation's wisdom, can be improved.

2. Have students examine, describe, and identify samples of different grains in bowls. Wheat, corn, and rice are the most important, but you might like to extend this activity to include oats, barley, rye, and even soya beans and legumes. Have your students visually link products to a particular cereal grain. (They might use pictures of grains or the real thing.) They can thus understand how one grain is related to its products.

Figure P2.1: Products Made From Corn



3. Have your students record all of the things they did one day (e.g., on Saturday). Write down one student's responses on a chart as he/she dictates. The class can then identify the forms of energy that were needed to do the different activities. All of the activities will use food or body energy. Some activities will require other fuels too, such as oil, coal, and electricity.

Related Ideas

1. Set up a centre with books and filmstrips about corn – our gift from the Indians. The books will illustrate how people used corn in the past, and how our techniques of production and storage were developed and refined.

2. The Indians had an energy-conserving means of growing the ingredients for succotash. They simply planted bean seeds in soil beside sprouting corn and, as the bean vines grew, they entwined themselves around the tall growing stalks of corn! Your class can try this protein-rich, meatless stew by following this recipe:

Ingredients: 185 mL milk	15 mL salt
30 mL flour	pepper
30 mL butter or margarine	sugar
375 mL cooked fresh or frozen corn	
375 mL cooked fresh or frozen lima beans	
(Add any other cooked vegetables to the mixture.)	

Combine milk and flour until smooth. Add butter and heat, beating constantly with a wire whisk until mixture thickens. Add seasonings. Add cooked corn and beans. Heat through gently without boiling. Serve.

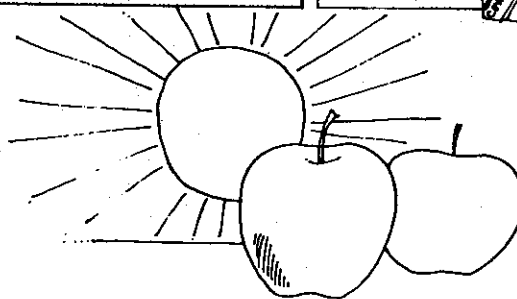
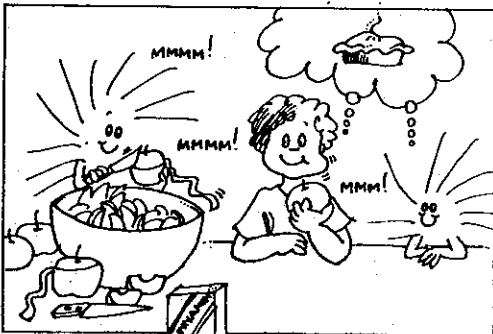
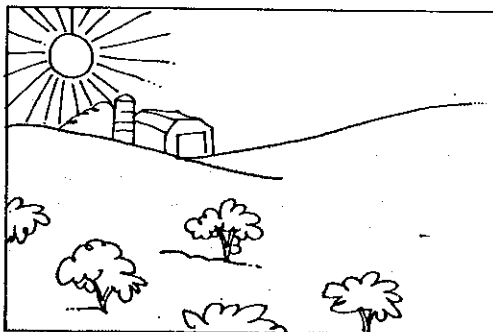
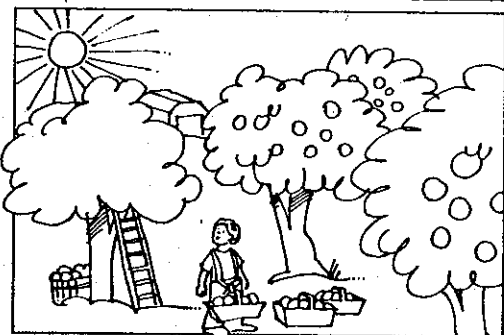
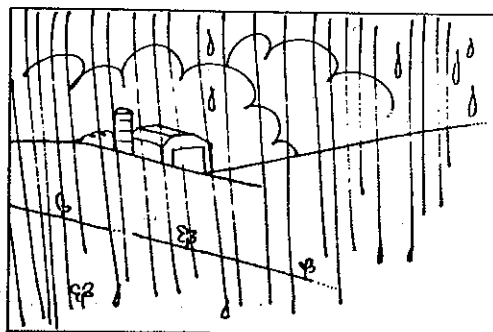
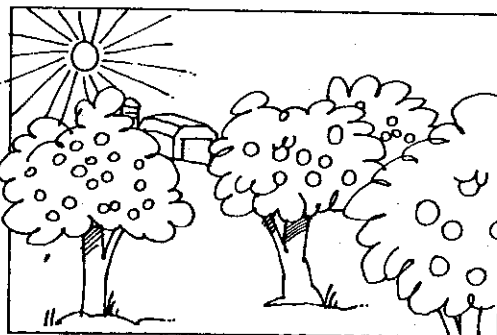
Source: Adapted from Lila Perl, *Slumps, Grunts and Snickerdoodles: What Colonial America Ate and Why* (New York: Seabury Press, 1975), pp. 27-28. Reprinted by permission.

3. Discuss with your class the dangers of eating certain plants and substances in the home and in the outside environment (e.g., poisonous mushrooms, poisonous plants such as dieffenbachia, narcissus, oleander, lily of the valley, and mistletoe).

Activity Set 2: Thank You, Sun!

Name: _____

Thank You, Sun!



Thank You, Sun!

Notes

No food, whether intended for animals or humans, will grow without the sun's energy (or a substitute). Plants use, or convert, this energy in order to grow. This activity set will provide opportunities for students to observe a natural energy-conversion system.

Primary students should be able to grasp a simplified explanation of the concept of the food chain. Plant and animal needs are all interrelated and dependent on each other. Sun energy warms our earth, provides the conditions for plant photosynthesis to occur, and interlocks with the water cycle. Plants, in turn, provide animals and humans with food both directly and indirectly. Grade 3 students might examine the sun's effect on an aquatic food chain.







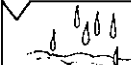



Use a selection of colourful food pictures or concrete examples of food with the children. Through questioning, attempt to trace the foods back to their original source. For example:

- pineapple slices → from a pineapple plant, which grows in the earth
- corn-on-the-cob → from a cornstalk, which grows in the earth
- raisins → from grapes → from a vine, which grows in the earth
- cereal → from grain, which grows in the earth
- turkey meat → from a bird → bird eats grain/grasses, which grow in the earth
- milk → from a cow → cow eats plants, grain, and grass, which grow in the earth

After students have grasped the concept that everything we eat ultimately has been made possible through plant growth, the requirements for plant growth (i.e., water, air, soil, and sun) can be studied.

The pictures on the activity sheet can then be cut and pasted into their proper sequence. Students can use the back of their sheets to explain why we need the sun to grow our food. As an alternative, Grade 3 students could use the food they eat as concrete material for this activity.

Table P2.1: Sun Source

Food		
Source of food		
Kind of food the source feeds on		
Conditions		
Sun		

Plan to have all the students bring a nutritious bag lunch to school (maybe on a cold winter day). Before lunch, develop a sample chart, tracing foods back to the sun as the key energy source. (See Table P2.1 for an example.)

After the lunch-hour break, provide time for the students to draw pictures and to label a chart to show where some of the foods in their lunches came from.

Follow-up Activities

1. Students can do the following experiment to see how the sun does its work: Cut openings from the sides and ends of three similar shoeboxes, leaving enough cardboard for strength. Put equal amounts of soil in the bottoms of the boxes. Put a thermometer on the soil in each box. Cover one box with plastic wrap. Put two boxes in a sunny place that is sheltered from the wind. Put one box where there will be no direct sunlight. Check the temperature of the soil in each box before and after a one-hour period. Discuss any changes and how temperature change can help plant growth.

2. a) Soak some lima beans overnight. In the morning have your students peel them open to discover the easily seen miniature plant inside.

b) Have your students each bring to school and eat a piece of fruit (for recess). They should save and then plant the core, pit, or seeds. Focus some attention on the plant's requirements for growth (i.e., air, water, sun, and soil). If your students eat their fruit in class, take advantage of this opportunity to develop their vocabulary. They can use descriptive language to express all their sensory reactions to their fruit.

3. a) Trace one locally produced food from its source to our homes, focusing on all the energy-consuming transportation methods involved. For example, turkeys are taken by truck from the farm to a processing plant, then by refrigerated truck to a cold-storage warehouse and then on to grocery stores, and later by family vehicles to our homes.

b) Trace one food from another part of the world. (The use of a globe will help children figure out transportation modes.) Examine rail, ship, and truck methods of shipping (i) Hawaiian pineapples to Canada or (ii) Canadian wheat overseas.

Related Ideas

1. Ask your students what parts of plants we eat. Tell them the names that are given to plant parts and give them several examples of foods we eat for each part. For example, we eat the flowers of broccoli and cauliflower.

2. Use the story of "Jack and the Beanstalk" as an introduction. Ask your students to think of and describe foods that have magical properties. Ask them what they would be able to do if they ate the food. (Examples are bionic bread, mini-milk, and stretch strawberries.)

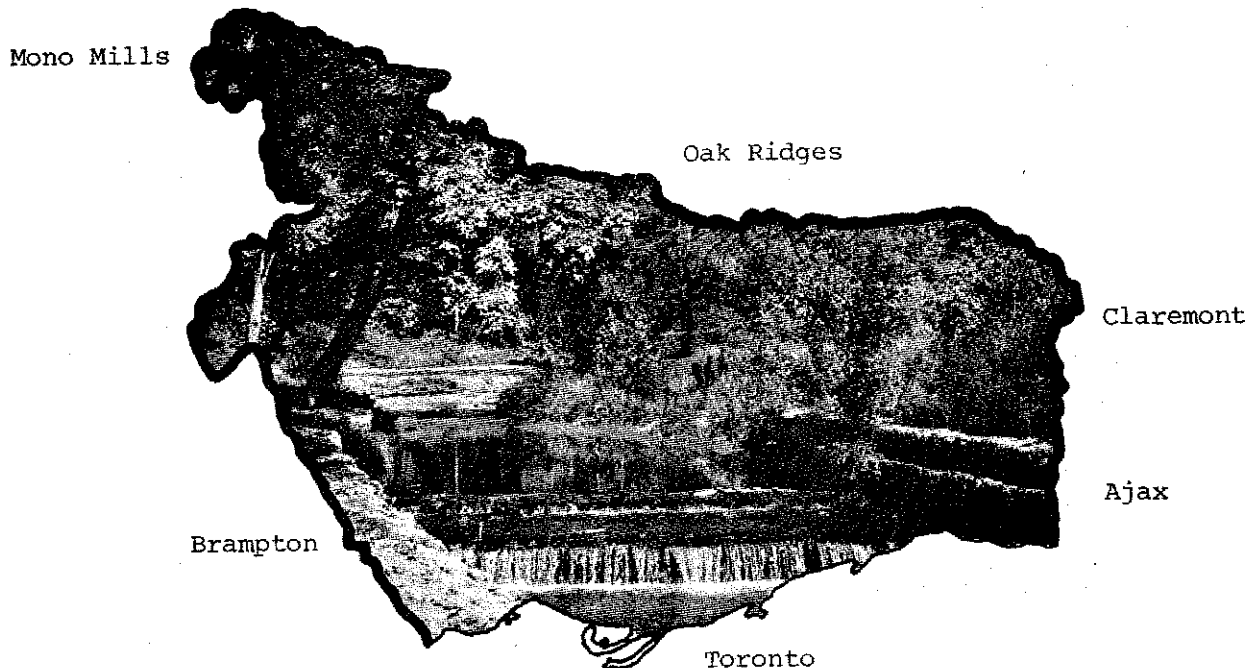
3. Have your students make pictures or bar graphs of the foods eaten for lunch at school. Ask them to find the most common food and to determine what energy is needed to make and then to transport it.

4. Have your students plant seeds and allow them to germinate. Some of the plants should be placed in a dark place and the rest in sunlight. Perhaps some of the students can predict the outcomes. (Which plants look the healthiest? What does the sun's energy do for the plants? Will the plants bend towards the sunlight when turned to various positions?)

Reference

Free publications on most food industries (in bulk quantities if desired) are available to teachers only from Agriculture Canada in Ottawa.

APPLY FOR CONSERVATION SCHOLARSHIPS



THE METROPOLITAN TORONTO AND REGION CONSERVATION FOUNDATION
WILL ACCEPT APPLICATIONS FOR THREE \$600.00 B. HARPER BULL
CONSERVATION FELLOWSHIP AWARDS UP TO FEBRUARY 20, 1981.

THE SCHOLARSHIPS ARE AVAILABLE TO ENCOURAGE AND ASSIST
UNIVERSITY AND COLLEGE STUDENTS RESIDING OR STUDYING IN THE
METROPOLITAN TORONTO REGION, AND WISHING TO BROADEN THEIR
KNOWLEDGE OF CONSERVATION THROUGH STUDY, TRAVEL AND
PRACTICAL EXPERIENCE.

FOR FURTHER INFORMATION AND APPLICATIONS WRITE:

THE CHAIRMAN,
THE METROPOLITAN TORONTO AND REGION
CONSERVATION FOUNDATION,
5 SHOREHAM DRIVE,
DOWNSVIEW, ONTARIO.
M3N 1S4



AN INVITATION TO JOIN . . .

COEO COUNCIL OF OUTDOOR EDUCATORS OF ONTARIO

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COMPLETE AND SEND WITH REMITTANCE TO ADDRESS BELOW

NAME (mr.)(mrs.)(miss)(ms) _____

HOME ADDRESS _____ MAILING ADDRESS IF DIFFERENT FROM HOME _____

POSTAL CODE _____ POSTAL CODE _____

TELEPHONE NUMBER (where you can be most easily reached) () _____
If applying for a FAMILY MEMBERSHIP, please list persons who will be using the membership _____

YOUR POSITION _____ EMPLOYER _____

UNIVERSITY OR COLLEGE ATTENDING FULLTIME IF A STUDENT _____

I am in the _____ Region of COEO (see listing below)

FAR NORTHERN Patricia, Kenora, Thunder Bay, Algoma, Cochrane, Sudbury, Rainy River, Timiskaming.
NORTHERN Parry Sound, Nipissing, Muskoka, Haliburton, North Bay, Simcoe County
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CENTRAL Niagara South, Lincoln, Hamilton-Wentworth, Halton, Peel, York, Ontario, Metro Toronto
EASTERN Victoria, Durham, Peterborough, Northumberland, Hastings, Prince Edward, Lennox and Addington, Renfrew, Frontenac, Leeds, Grenville, Ottawa-Carleton, Dundas, Russell, Stormont, Prescott, Glengarry, Lanark
OUT OF PROVINCE Any area in Canada outside of Ontario

OUT OF CANADA

THE C.O.E.O. MEMBERSHIP YEAR IS FROM SEPTEMBER 1 TO AUGUST 31. ANY MEMBERSHIP APPLICATIONS RECEIVED AFTER MAY 1 WILL BE APPLIED TO THE FOLLOWING YEAR

Please check Type of membership NEW _____ RENEWAL _____ Give current membership number _____

Fees attached: Regular \$15.00 _____ Student \$8.00 _____ Family \$25.00 _____
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Make your cheque or money order for the appropriate amount and payable to the COUNCIL OF OUTDOOR EDUCATORS OF ONTARIO and mail with this form to

John Aikman,
Membership Secretary,
47 Rama Court,
Hamilton, Ontario.
L8W 2B3