

Connections

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Thinking Outside the Toy Box:
A Case for Environment-Based Preschool Education
Promoting a Sense of Place for Children in Natural Areas



Rabbit Kettle Lake, NWT

The newsletter of the Global,
Environmental & Outdoor
Education Council



To promote involvement in
quality environmental and
outdoor education

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Cover photo by Lara Fenton

Editorial

What GEOEC Does

GEOEC is an interdisciplinary council of passionate educators committed to linking environmental, global and outdoor education initiatives. Specifically, we provide quality professional development that connects with our youth through workshops and conferences. In partnership with the Canadian Teachers' Federation, we offer a workshop on global citizenship titled "Change the World." It explores the concepts of democracy, environment, peace and solidarity. The annual GEOEC conference links Alberta educators with experts in the field and provides an opportunity to build relationships and share experiences. Past conference themes have been "Many Streams, One River" and "Trails to Sustainability." We create globally and environmentally aware citizens today who will be leaders tomorrow.

A Message from the Editor

Hello, readers of *Connections*!

Welcome to another issue jam-packed with valuable material. This issue's focus is children and nature experiences. Within, you will find curriculum connections and practical resources from Green Street, Suzanna's book review, Project Wild, GEOEC's Five-Minute Field trips and Habitat in the Balance. This issue includes two featured articles. In "Thinking Outside the Toy Box," Cara Linzmayer provides a research rationale for the importance of connecting children to the natural environment as early as possible, and some practical implications thereof. The second featured article, "Promoting a Sense of Place for Children in Natural Areas," by Glen Hvenegaard, explores emotional attachment to particular places, why sense of place is so important and how it is created. Last, but certainly not least, check out information about our upcoming conference, in Canmore, on May 6–8, 2010, and consider submitting a proposal. This unique event will draw educators from all over Alberta to interact and gather ideas about engaging global citizens.



Editor Lara Fenton

As this is my first foray into the editorial realm, I am going to take a moment to introduce myself by way of my experiences this past summer. From mid-June to mid-July, I spent four weeks guiding trips in Nunavut. My first 14-day trip was on the Burnside River, where we travelled by raft. The second was on the Coppermine, and we travelled by canoe. Both rivers empty into the Arctic Ocean, via the Bathurst inlet and Coronation Gulf, respectively. This part of Canada is known as the tundra, where tree growth is limited or absent—not necessarily because of low temperatures, but because of the long periods of darkness. Whatever trees there are conserve energy and focus on growing roots and leaves instead of producing tall and thick trunks. In addition, permafrost does not allow the root system of trees to grow deep enough to support any height. Trees grow to be small and spindly looking (see Chris Pielou's *A Naturalist's Guide to the Arctic*).

The Burnside River travels through a treeless landscape. When you look up and around, the tundra is seemingly endless. However, when you look down during the summer, it is difficult to believe that this area is often called the barrenlands, because the plant life is so bountiful. Plants of the tundra are designed to make the most of their blooming period: they stay close to the ground to protect themselves from wind and the exposed landscape.



Burnside River, Nunavut

With no trees to break up the landscape and only the river cutting through the land, the undulating hills seem to be far closer than they actually are. It is disorienting in a way, and it is scary to think of how alone we are, but it is also very beautiful. On one of our afternoon hikes we sat overlooking the river watching an unusually large herd of 13 muskox. Suddenly a wolf crested the horizon, cautiously circled around them, then curiously circled around our small group. Amazing. It took my breath away. I could

feel him staring me right in the eye as he passed by. Moments like these change people. No one would know more about this than famous conservationist Aldo Leopold. He details the exact moment when his land ethic changed, as he watched the “green fire” die in the eyes of the wolf he had just shot. This moment changed his ideas about stewardship and the land forever.

On the Coppermine, we ended our canoe trip by paddling into the village of Kugluktuk and camping on the edge of town. Tired after a long day, we hit the hay around 11 PM. Around 1 AM, voices pierced my sleep. “Hello! Anybody here? Hellllllloooooo!!!” When my attempts at ignoring the voices did not bring the desired effect, I unzipped my tent and peered out. Three young kids on bicycles were staring down at me. We chatted for a bit—they were excited to see visitors, and I was curious as to why they were still up at this time of night. They replied that they hadn’t been to bed in two or three days. Wow. Our paddling group had maintained a relatively similar schedule on our trip to what we maintained at home—to bed at 11 PM and up at 7 AM, in spite of the constant daylight. The people in this town are far more tied to the cycles of the sun—awake when the sun is awake, and enjoying its presence. I could understand why: it wouldn’t be much longer before darkness would descend for 24 hours a day.

It was with great sadness that I boarded the plane in Kugluktuk and returned to Edmonton and my PhD studies. It took great effort to resume my schedule of reading and writing and sitting for hours at a time at my desk. However, the spirit of the tundra stays with me—the memories of the wolf and the different ways that people are connected to the earth’s cycles inspire me to reconnect to the natural environment in more urban ways, as on my walk to school. Reflection on these instances makes me wonder how to create these kinds of moments for other people on a smaller scale and in urban contexts, because next semester I will be working with soon-to-be teachers in outdoor education. I think what follows in our featured articles and practical activities helps: within are ways to engage students and spend time in the natural environment, and inspirational features that provide a rationale for why we do what we do. With that said, I hope you find this issue insightful and share the nuggets with friends. I look forward to meeting you in Canmore at our upcoming conference, in May. Save the date and read on!

—Lara Fenton

Reference

Pielou, E C. 1995. *A Naturalist’s Guide to the Arctic*. Chicago, Ill: University of Chicago Press.



The woolly lousewort pictured here is about 10 cm tall.



Our group paddles into Coronation Bay, Arctic Ocean. The village of Kugluktuk, Nunavut, is in the background.

Schedule for Submissions

Connections seeks articles on the following topic:

Theme: Sustainability and Social Justice

Deadline for Submissions: April 1, 2010

Sustainability is a term that often refers to the environment and ecologically responsible behaviour. However, in recent years the meaning of *sustainability* has expanded to include such ideas as social justice, peace, solidarity, democracy and personal spiritual renewal. We would welcome submissions on this broader definition of sustainability. For example, how does the accessibility of clean water become an issue of social justice and sustainability? How does slowing down the pace of life become a sustainability issue?

Connections also requires submissions for the following regular features:

- What's happening (and where)—events and programs related to global, environmental and outdoor education
- Resource features—highlighting resources related to global, environmental and outdoor education, including people and organizations with resources available to teachers
- Photographs of the natural world, people and children in nature, global friends and neighbours, and education in action

How to Make a Submission

Sending submissions by e-mail is ideal, but you may also submit articles, artwork and photographs by regular mail (on disk or as hard copy). Please include a short biography and your mailing address. You must receive parental permission to print student work or photographs of children (see the form at the end of this issue). Send submissions to Lara Fenton, 10961 71 Avenue, Edmonton AB T6G 0A2, or lfenton@ualberta.ca.

The Atco Challenge: Celebrating Excellence

Deadline: January 5, 2010

Alberta students in Grades 4 through 12 are invited to submit a composition in their own words on how they pursue leadership and strive for excellence in sports, arts, culture, education or community involvement. Two students (one male and one female) from each of Alberta's 83 constituencies will be randomly drawn and rewarded with a trip of a lifetime to the Vancouver 2010 Olympics!

For more information, visit <http://www.atco.com/celebratingexcellence>.

GEOEC Business and News

GEOEC Conference 2009— One World: Infinite Diversity

Erin Couillard

The annual GEOEC conference was held at the beautiful Parks Canada Palisades Stewardship Education Centre, in Jasper National Park, on April 24–26, 2009. The conference was a great success, with enthusiastic participants, inspiring keynote speakers and workshop facilitators, breathtaking scenery, and delicious food. Highlights from the conference included a keynote address from Bradley Stewart Young, director of the Aboriginal Involvement Program at the Foothills Research Institute, in Hinton, Alberta. He regaled the audience with stories from his youth and how he combines his First Nations heritage with current scientific

research on land use. Many conference attendees also had the opportunity to spend time with him in the workshop he presented.

Another crowd favourite was Jasper local Ben Gadd. Author of *The Handbook of the Canadian Rockies* and, his latest release, *Geology Road Tours of the Canadian Rockies*, Ben inspired the audience with anecdotes from his many years of teaching and guiding in the Rockies. His keynote address was presented in conjunction with a full-day workshop in which he led a group of amateur geologists on an educational field study of the Jasper area.

To bring in the global education perspective, we were thrilled to have

Janice Eisenhauer, volunteer executive director and cofounding member of the national office of Canadian Women for Women in Afghanistan, address the conference delegates. Her speech was heartfelt and moving, and reinforced the importance of educating girls and women in Afghanistan.

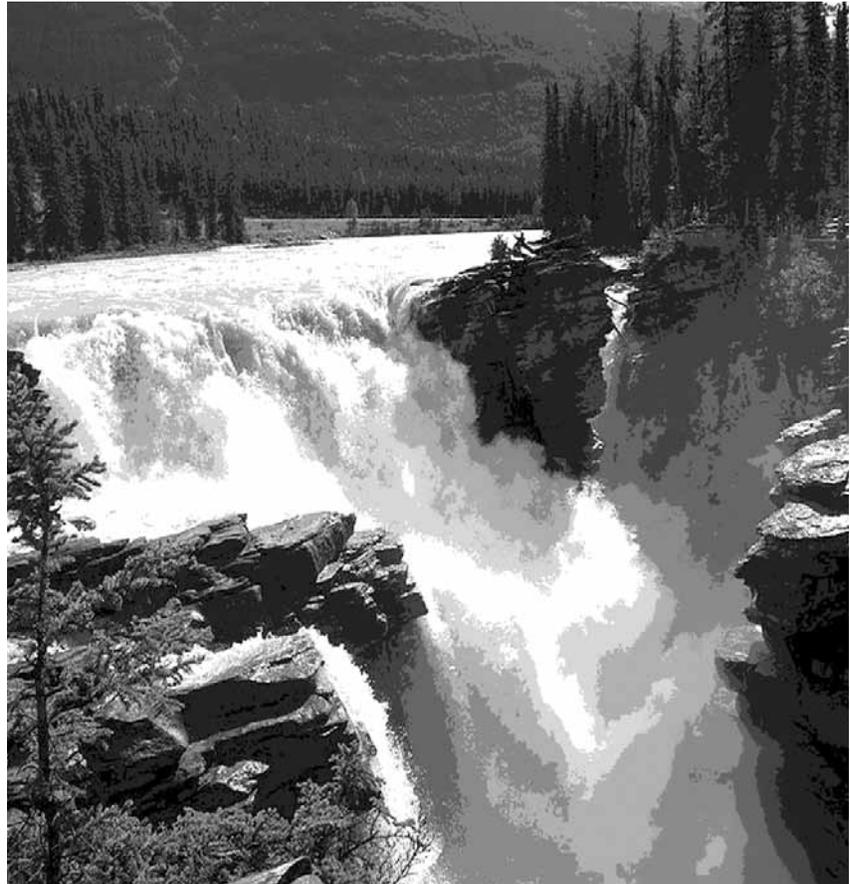
As always, the weekend was filled with images of friends reuniting, new friendships being formed, music making, dancing and dining. For everyone involved, it was a chance to reflect, renew and reimagine; to celebrate the richness and challenges of our lives as educators and our commitment to the care of Mother Earth and her people.

Mountain WIT— Great Edutainment!

Participants at the GEOEC Conference, in Jasper, on April 23–25, were treated to a performance by Parks Canada Mountain World Heritage Interpretive Theatre (WIT) of “Water ... On the Rocks.”

Clowns Squidge and Piddle were abandoned on the platform at the Jasper train station, desperately in search of “wa-wa” (water) after their long journey inside a trunk. Fortunately, Daddy had also made the trip, and when the two youngsters were able to find his trunk and open it, they went off on an adventure that took them more than a billion years into the past.

The three talented actors quickly morphed from clowns, to snake oil sellers, to key explorers and adventurers, to trout. In the process, they educated the crowd in the formation of the Rocky Mountains (using cleverly labelled suitcases), glaciers, avalanches and ecology. The discovery of the Cave and Basin Hot Springs sparked a vaudeville show, and an entire segment played devilishly clever with Shakespearean prose. A cameo appearance by Castor the beaver provided evidence of the importance of wetlands. Even a wrestling match between the native Bull Trout and interloper Brookies provided important facts while entertaining the crowd.



And you can have this performance (or one like it) come to your school for *free!*

Parks Canada supports the Mountain WIT, which performs regularly in Banff. In the spring and fall, the show goes on the road and will play at your school at no charge. The program is just under an hour long and moves along at a crisp and lively pace that will keep your students enthralled. The show would be most popular in

elementary schools, and certainly addresses the science and social studies curriculum at several levels.

If you are interested in booking a performance, visit the Parks Canada website at www.pc.gc.ca/pn-np/ab/jasper/edu/edu17_e.asp, or contact Laurie Schwartz at laurie.schwartz@pc.gc.ca.

The spring tour is completely booked, but spots are still open for a fall tour of “Faces of Fire.”

Call for Award Nominations

At its annual conference, the Global, Environmental and Outdoor Education Council of the ATA honours those people who have contributed to global, environmental and outdoor education. As a member of the council you have the opportunity to nominate a deserving person for recognition. There are three categories of award:

- **Appreciation of Service Award**

The Appreciation of Service Award is presented to member and nonmember individuals and organizations in acknowledgement of service contributing to the professional growth of GEOEC members.

Considerations include service, events, hosts, materials, sponsors, affiliate organizations and departments that have been of significant benefit to the council.

- **Award of Merit**

The Award of Merit is presented to member and nonmember individuals and organizations in recognition of exemplary teaching, leadership or service in the field of global, environmental and outdoor education.

Considerations include teaching, leadership or service representing a significant commitment of effort and time; effective influence on the development of global, environmental and outdoor education in a region, province or nation; contribution to the awareness and understanding of an environmental ethic; or extension of teaching practice, research, legislation or funding in global, environmental and outdoor education.

- **Distinguished Fellow Award**

The Distinguished Fellow Award is presented to a member in acknowledgement of outstanding achievement and distinguished service in the field of global, environmental and outdoor education. Considerations include years of service, significance of achievements, effect of leadership, and commitment to the Council's development and operations.

How to Nominate

Please contact GEOEC past president Rita Poruchny at reporuchny@cbe.ab.ca, prior to February 28, 2010.

Join the GEOEC Executive and Make a Difference

All positions except past president and president are open for election annually. If you are interested in seeking one of these positions, please contact Past President Rita Poruchny at rporuchny@cbe.ab.ca.

Elections will be held at the annual general meeting (AGM) during the 2010 conference. The PEC liaison and ATA staff advisor positions are appointed by the ATA's Provincial Executive Council.

Past President

- Act as advisor to the president and the executive board in general.
- Ensure that the executive operate in accordance with the constitution.
- Act as keeper of the historical records as the council historian.
- Solicit nominations from membership for each of the table officer positions.
- Coordinate the GEOEC's recognition of individuals and organizations, and solicit recommendations and nominations for awards at least two months prior to the AGM.
- Report annually and maintain a registry of awards presented by the GEOEC.

President

- Maintain liaison with ATA personnel, PEC representative and staff officer assigned to the GEOEC.
- Call, set agenda for and chair all meetings of the table officers and executive board.
- Arrange for the old and new executive board to meet near the end of term of office to pass on information and receive files.
- Submit an annual written report about GEOEC activities to the ATA.
- Attend annual seminar for presidents of specialist councils.
- Submit written reports at executive meetings as required.
- Keep executive informed of developments.
- Become past president on July 1, 2012.

President-Elect

- Assist the president as required and act in the absence of the president.
- Maintain liaison with committee chairs and report to table officers.
- Become president on July 1, 2012.

Secretary

- Take minutes of all table officer and executive board meetings.
- Send minutes and action plans to executive, ATA staff advisor, PEC representative and GEOEC community liaisons.
- Have copies of previous year's AGM minutes available at the current AGM.
- Handle correspondence and communication in conjunction with president.

Treasurer

- Take charge of all money received and/or collected by the council, and disburse funds as authorized by the table officers.
- Keep accurate record of the financial affairs of the council for both the account held at Barnett House and the current account.
- Provide a statement of account to each meeting of the table officers.
- Have books ready for audit by Barnett House at the end of each fiscal year (June 30).
- Attend annual seminar for treasurers of specialist councils.
- Present audited financial statement to the AGM.
- Provide consultative services to the conference director.

Professional Development

- Assess needs, make recommendations and provide inservice opportunities to GEOEC members in addition to annual conference.
- Establish, maintain and recommend a list of resource people.
- Submit a report of PD activities to the AGM.

Public Relations/ Membership

- Deal with issues relating to the image of the GEOEC and environmental education focusing specifically on outside groups.
- Actively promote membership among interested members of the public.
- Work with the conference committee to ensure that they have an up-to-date membership list and that the conference is promoted to nonmembers.
- Coordinate the development, interpretation and implementation of public relations policies.
- Submit a report on PR/membership activities to the AGM.

Publications

- Coordinate and act as editor for any publications that pertain to the goals and objectives of the GEOEC.
- Attend the annual seminar for specialist council editors.
- Submit a report of publications activities to the AGM.

Conference Director (2011)

- In consultation with the table officers, plan and carry out an annual conference program that is to be outlined in the fall and published at least two months prior to the conference.
- Keep a conference file. Pass this file on to the conference director-elect.
- Attend annual seminar for conference directors of specialist councils.
- Submit an audited financial statement to the table officers within two months following the conference. Present this statement to the executive board at the first fall meeting.
- Submit all financial records to Barnett House on or before June 30 for auditing.

Conference Director-Elect (2012)

- Serve as a member of the conference steering committee in preparation for the following year.
- Assist the conference director as required.
- Note: It is not essential that this person attend executive meetings.

Community Liaison (two positions)

- This is a nonvoting appointed position, created to facilitate sharing of experience and knowledge between community (nonformal) and school-based (formal) educators. It acknowledges the significant contribution of nonformal educators to global, environmental and outdoor education.

GEOEC Executive Retreat

Palisades Centre, Jasper National Park

October 2009

Through the mists of snow, travelling over mountain passes and down deserted highways, the weary executive members converged on the Palisades Centre, in Jasper National Park, on a cold and dark Friday night in October. After quick hellos and catch-up conversations, most of the members retired to sleep in preparation for the next day's activities.

We awoke to elk grazing in the field below and occasional sightings of the mountains through the cloud-covered sky. After a quick activity to get acquainted with new members, it was down to work. The morning's meeting was filled with discussions regarding the upcoming conference in May, publication planning, memberships and member reports. The afternoon consisted of professional development training for a global education initiative through the Green Street organization.

We ended our retreat with informal discussions of summer adventures and renewed passion for making a difference in the world. We contributed money to support a cause with the Kiva Foundation (www.kiva.org) after Erin's inspiring slideshow about travels and volunteer work in Africa. The executive members headed home from the Palisades Centre with an increased sense of dedication to global, environment and outdoor education in Alberta.

We hope to meet you all at the conference in May.

Articles and Features

Thinking Outside the Toy Box: A Case for Environment-Based Preschool Education

Cara Linzmayer

Abstract

Preschools are becoming increasingly responsible for meeting the developmental needs of young children and the child care needs of working families. The need for high quality preschool education induces early childhood educators, administrators and policy makers to start thinking outside the toy box to more effectively deliver education that best meets the developmental needs of children. This paper argues that environment-based learning is an effective and appropriate approach to early childhood education. Suggestions for change at the practice and structural levels are offered.

Introduction

Preschool programs have traditionally been a means for improving outcomes for disadvantaged children and compensating for missed

opportunities at home. Preschools are becoming increasingly responsible for meeting the developmental needs of young children and the child care needs of working families. The major social risk facing Canadian families is the working society in which both parents are required and expected to work. This places more importance on child care and preschool programs to deliver educational and developmental opportunities to children (Jenson 2004). According to US statistics, over 65 per cent of four-year-olds and over 50 per cent of three-year-olds attend preschool, markedly higher than in previous generations (Barnett and Yarosz 2007). New brain research establishes the critical importance of the early years in terms of child development and learning, which highlights the need for high quality preschool programming (McCain and Mustard 2002).

Preschool Objectives

The need for high quality preschool education induces early childhood educators, administrators and policy makers to start thinking outside the toy box to find more effective ways to deliver education that best meets the developmental needs of children. This paper argues that environment-based learning is an effective and appropriate approach to early childhood education. Ernst (2007) defines environment-based education as learning in which the natural environment is used as a context for providing real-life and integrated learning experiences and is distinguished from other types of environmental education, such as field trips, that are not as integrated or continuous but more isolated. When practitioners and researchers discuss the importance of the environment for early childhood

education, most refer to the social environment or the built environment. Kellert (2002, 118) critiques many fields for “almost exclusively employ[ing] the terms *ecology* and *environment* to consider family relationships, human social contexts, and the built rather than natural environment.” For example, the licensing and best practices manual of Alberta Children’s Services (2007, 43) acknowledges the importance of the physical environment and notes that “care facilities need to provide an age-appropriate environment ... that encourages growth in children’s individual stages of development.” That document outlines the environment in detail but restricts discussion and regulation of the physical environment to floor space, furniture, equipment and other abiotic domains. Outdoor play area regulations focus on security and supervision but neglect any discussion of how to promote opportunities for independent and modelled exploration. A false dichotomy is created between outdoor exploration and safety.

Why Is Nature Important?

Children and families have never been so estranged from the natural world. Wilson (1996) estimates that average Americans spend 95 per cent of their time indoors. Canadians are likely not much different. Families and children are becoming more and more overscheduled with less time available to just be in nature. Also,

nature and children’s access to it are rapidly diminishing (Faber-Taylor and Kuo 2006; Kellert 2002). For a whole generation of families, direct experiences in the backyard or park have been replaced by indirect learning through computers and television. As we get more connected electronically, we become more disconnected from each other and the world around us. A widening circle of researchers believes that the disconnection from nature has enormous implications for human health and child development (Louv 2006; Kellert 2002). Louv (2006) links this alienation from nature to such disturbing childhood trends as rises in obesity, attention deficit disorder and depression. Developing a healthy attachment to nature can serve both protective and restorative resiliency functions for children, which in turn have important implications for children who face increased stress with decreased resources (Besthorn 2005).

Nature and Preschool

Environmental education contributes to improved academic skills, higher levels of student engagement and enthusiasm for learning, and fewer behavioural problems than regular educational programs (State Education and Environment Roundtable 2005). While this approach remains relatively on the fringes of mainstream grade school education, it is even further distanced from mainstream early childhood

education. Moore and Cosco (2000) argue that nature should be considered a key variable in the design of all childhood habitats including preschools. With more children spending more time at preschool, this variable becomes even more critical. Researchers argue the preschool years are a crucial period for children to develop a sense of respect and caring for the natural environment (Tilbury 1994; Wilson 1996). This paper will show that an environment-based approach to preschool education is an effective way to meet children’s developmental needs and reconnect children to their natural environment, which can have lasting positive effects for both the children and the environment. The remainder of this paper will examine how preschools can and should use the environment to meet children’s developmental needs, which are defined as physical, intellectual, creative and social-emotional (Alberta Children’s Services 2007).

Developmental Needs of Preschoolers

Physical Needs

Physical needs are defined as the “development of appropriate physical skills in a safe and healthy manner” (Alberta Children’s Services 2007). In a time when obesity rates are reaching epidemic levels in young children, preschools are seen as having both the

opportunity and responsibility to meet the physical needs of children. Finn, Johannsen and Specker (2002) found that physical activity programs in preschools and other child care centres were the number one predictor of physical activity levels among young children. Alberta Children's Services (2007) encourages structured outdoor play—specifically, games and sports that require a variety of toys. Yet, unstructured, child-led outdoor exploration is not encouraged, and the opportunities that our natural environment affords for gross motor activity are not acknowledged. Preschool children have the highest physical activity levels while engaged in outdoor play (Burdette and Whitaker 2005). The best predictor of a preschool child's fitness level is how much time he or she spends outdoors (Louv 2006). The physical exercise that children enjoy when they play in nature is more varied and less time-bound than organized sports. Moore and Cosco (2000) found in a study of Swedish forest schools that daily interaction with nature improves physical development. The versatility afforded by the natural environment helps develop physical competence (Chawla 2006). Similarly, children who had regular access to natural areas performed better in such motor skills as balance and coordination, because the play in these areas was more active, versatile and creative (Fjortoft 2001). "The topography, like slopes and rocks, afford natural obstacles that children have to cope with" (2001, 111).

Intellectual Needs

Intellectual needs of children are defined as "exploring, observing, knowing and understanding objects and events in their daily environment" (Alberta Children's Services 2007, 44). Alberta Children's Services encourages environmental exploration; however, it is the indoor environment that is favoured. The outdoor environment is characterized as unsafe and too risky. Most of the research on the cognitive skills gained through preschool education focuses on vocabulary, focused attention and self-discipline, which are considered more important for school readiness than content knowledge (Belsky et al 2007; Diamond et al 2007; Peisner-Feinberg et al 2001). Natural environments contribute significantly to cognitive and social development by providing "opportunities for the child to manipulate elements in ways that are not possible or permissible in the home, such as construction with found objects and playing in dirt and puddles" (Wilson 1997, 192). Conning and Byrne (1984) and Hazen (1982) found that self-directed exploration led to higher degrees of spatial knowledge and understanding in young children. A study of Swedish forest schools showed that daily interaction with nature improves concentration (Moore and Cosco 2000). Faber-Taylor et al (1998) state that play allows for the acquisition and use of important cognitive skills, including language and problem solving. The problem solving that children engage in outdoors may promote executive

function (Burdette and Whitaker 2005). Perhaps the most significant effect of nature on cognitive functioning is "attention restoration" (Kaplan and Kaplan 1989). This refers to how being in nature affects children's ability to restore focused attention, a regular challenge of preschool-aged children. Referring to these restorative effects of nature, Maxwell (2007, 232) states that children can become overwhelmed or cognitively fatigued by overstimulation of environments. She continues:

When this occurs, further learning and the development of competency are both compromised. To combat cognitive fatigue, children need the opportunity to engage in activities that do not require focused attention, such as watching birds at a feeder or fish in a tank. Such experiences provide a child with time away from active play and interaction with other people. The child is still engaged, but little cognitive effort is required. Once restored, the child can again engage in more active play.

Faber-Taylor and Kuo (2006) and Faber-Taylor, Kuo and Sullivan (2002) found additional support for the attentional restoration of nature in findings that show that natural settings are effortlessly engaging and draw on involuntary attention in children. Wells (2000) found that access to nature improved children's ability to direct their attention.

Creative Needs

Creative needs are defined as the “use of experiences to produce new ideas, self-expression, creative problem solving, and discovery” (Alberta Children’s Services 2007). Russ (1998) writes that creative problem solving, a crucial skill for coping and adjustment, is developed through play. Pretend play, she states, is an important link between cognitive and emotional development. Russ quotes studies in which make-believe play with objects was found to contribute to divergent thinking in preschoolers. When children were encouraged and invited to use their imagination in play, they discovered more affordances for play objects. Russ cites further evidence of a link between play and other skills, such as flexibility and improved problem solving. Russ concludes that creative problem solving leads to better adjustment and coping abilities in children in the long term. Children play more and play more creatively, dramatically and imaginatively in outdoor, natural places than in indoor, built spaces (Faber-Taylor et al 1998; Kirkby 1989; Moore 1989). It is the diversity of these environments that afford more creative play than built environments. Sebba (1991) found that shapes of the natural environment are infinitely varied and inspire creativity. Burdette and Whitaker (2005) found that outdoor play does not limit activity so it induces curiosity and use of the imagination. Olwig (1991) found that memories of being in nature contribute significantly to creativity and aesthetic appreciation later in life.

Social–Emotional Needs

Social needs are defined as developing social skills through interaction with peers and adults (Alberta Children’s Services 2007). Emotional needs are defined as self-awareness and self-regulation that are developed through feelings of acceptance and a sense of belonging (ibid). Alberta Children’s Services separates social needs from emotional needs, yet young children cannot master social skills until they have reached some mastery of self-regulation and managing their emotions (Boyd et al 2005; Denham et al 2004). “Self-regulation underlies the ability to undertake every task, so that it has implications for not just how children get along with one another but also how they can focus and learn in the classroom” (Boyd et al 2005, 3). New brain research confirms a physiological link between emotional and cognitive self-regulation (ibid). Social-emotional development not only assists in school readiness but also promotes cognitive development.

Social Skills

Play in nature promotes the development of social skills in young children. Outdoor play allows children to acquire prosocial skills by confronting and resolving emotional crises and managing conflict (Faber-Taylor et al 1998). Moore (1986) found that man-made play areas generated conflict and stress, whereas natural settings engendered a harmonious relationship between children of all types. Burdette and Whitaker

(2005) concur that outdoor play develops more social skills than indoor play because playing outdoors involves other children. Faber-Taylor and Kuo (2006) found that interactions between children and animals helped develop empathy in children, a key ingredient in positive social relationships. Through its opportunities for social interactions, the natural environment has a positive influence on the development of social competence.

Self-Regulation

Outdoor play is linked to improved self-regulation and better mental health (Burdette and Whitaker 2005). Autonomy is a contributing factor to a child’s development of emotional regulation skills (Denham et al 2004). Autonomy relates to the ability of the physical environment to maximize choice and minimize constraints by providing adequate variety, complexity and flexibility (Maxwell 2007). Maxwell identifies several prerequisites for autonomy, which includes “a variety of toys and play materials and variety in color, shape of the space, change in floor level and/or ceiling height, textures (all nonabrasive), floor covering, amount of light, and displays in the classroom space” (p 232). Variety is critical, but the sameness of many child care environments does not provide the sensory stimulation required for optimal, healthy child development (Wilson 1997). Cosco and Moore (1999, 4) argue that nature does provide the needed variety,

“outdoors, we find vegetation, ground covers, places to gather, topographical changes, aquatic settings, all manner of loose parts, drinking fountains, storage, etc.” Nature can offer a little or a lot, depending on the social-emotional needs of each individual child. Chawla (1992, 145) states: “Children can explore and manipulate the natural environment with a liberty denied them amid constructed places and possessions.” Besthorn (2005) and Chawla (2007) argue that man-made environments cannot provide this diversity of affordances. Kellert (2002, 140) agrees, “nature is intrinsically and qualitatively different from anything the child confronts in the human built world, no matter how well stimulated, technologically sophisticated, or ‘virtual’ these manufactured representations may be.” Sensory stimulation is another vital factor in the development of self-regulation. *The Early Years Study* reports that “the quality of early sensory stimulation influences the brain’s ability to think and regulate bodily functions” (McCain and Mustard

1999, 31–32). Information received through the senses helps to stimulate and develop neural structures in critical areas of the brain. Sebba (1991) found that stimuli of the natural environment stimulate the senses in a way the abiotic environment is simply unable to do. “Playing with objects that provide sensory stimulation and allow the child to figure out something supports optimal early brain development (McCain and Mustard, 41). The man-made environment does not require adaptation and therefore does not engage awareness in the same, beneficial way (Sebba 1991). Chawla (2006) explains this by saying that in nature, nothing is the same twice. Nature seems ideally suited to supporting and facilitating the social and emotional development of preschool children.

Putting Theory into Practice

Practical Implications

As the literature illustrates, the natural environment provides better

opportunities than the mostly plastic, manufactured environment to meet the developmental needs of preschool children. At the practical level, providing environment-based preschool education appears easily achievable. Providing time and opportunities for safe, self-directed exploration of natural areas can provide the most benefits developmentally. Skilled and educated preschool teachers should be able to facilitate this exploration. More structured activities are also beneficial and relatively easy to provide with some basic skills and training. Nature walks to seek out colours, shapes, even letters (see photos below) are easy to facilitate. Conducting and recording regular year-round visits to a tree can engage children in discussions of continuity, change and adaptation. A gardening project invites conversations about self-care, nutrition, physiology and relationships. Interactions with animals can provide important lessons on expressing emotions and communication. To achieve this, teachers need to change their philosophy toward teaching.



Stevenson (2007) argues that instituting a change of teaching methodology is often too demanding, given the limited resources of teachers and the inherent complexity and rigidity inherent in the dominant educational system that often views environment-based educational models as conflicting with its goals. Critical theorists argue, therefore, that change to an environment-based educational philosophy must happen structurally (Gruenewald 2005). "The challenge lies in finding ways to alter the regularities that constrain the introduction of teaching and learning approaches that could contribute to the potentially revolutionary shifts in cultural beliefs and practices that may be required if the goals of social justice and ecological sustainability that inspired the early proponents of environmental education are to be realized" (Smith 2007, 190).

Structural Implications

Staff Training

Powers (2004) asserts that the quality of program staff is crucial in developing and sustaining sound environment or place-based education programs. Current child care regulations in Alberta have no minimum education or training requirements for preschool teachers (Canadian Legal Information Institute 2000). Foran (2005) argues that effective learning experiences in nature do not just happen by default; teachers require

skills in modelling how to be in nature. A report by the National Institute for Early Education Research found that teachers with more education provide more effective preschool environments (Barnett 2004). Teachers with at least a bachelor's degree were found to have responded more sensitively, warmly and positively to students and were more actively engaged with the children (ibid). A redefinition of priorities by Alberta Children's Services needs to reflect that "children's development of intelligence depends on social interaction with human beings—not videos, toys or flash cards, but nurturing interaction with adults" (Hoffman 2007, 38).

Policy Change

A significant challenge in implementing environment-based preschool education lies at the policy level. It is uncertain how environment-based pedagogy fits in a government bureaucracy that places more importance on toys than on the instructor's training. Wilson (1997, 192) argues:

Required building inspections, focusing primarily on safety issues, should be viewed as only one dimension of a school environmental survey. Other dimensions should focus on the aesthetic qualities of the school environment and ways in which a "sense of place" is fostered.

Place and nature must be returned to the preschool curriculum. Baker (2005) argues for the rediscovery of landfulness where education invites active exploration that encourages the development of

a relationship, an emotional attachment, to the environment. The homogenization of our child care settings is clear—almost everyone has the same manufactured play equipment and the same toys from the recommended list. We have to embrace that nature is profoundly pedagogical (Kemp 2006). Natural places provide optimal opportunities for developing physical, intellectual, creative and social-emotional skills. Environment-based education's long-term benefits include making learning meaningful and engaging, and inviting children to see the relevance of what they are learning to their everyday life (Powers 2004). Do preschool children not deserve these opportunities?

Conclusion

We know now that the preschool years comprise a critical developmental window of opportunity for children. As Wilson writes, "A warm, nurturing, stimulating environment tells children that they are valued and that their way of learning is understood and respected" (1997, 191). Alberta needs to take a leading role in valuing our early childhood learners by providing them with the best possible learning environments. Through environment-based preschool education, children develop improved physical, intellectual, creative and social-emotional skills as well as motivation and excitement about learning. Governments need to redefine their best practices to reflect current research. Teachers

need to look outside the toy box and integrate nature into their teaching. Mostly, children need to reconnect and build positive attachments to nature.

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Promoting a Sense of Place for Children in Natural Areas

Glen Hvenegaard

Childhood experiences in nature play a key role in developing positive environmental attitudes and behaviours in adults (Wells and Lekies 2006). However, children are losing opportunities to make meaningful connections with the natural world, due to urbanization, dwindling natural spaces and a fear of the outdoors (Louv 2005). At the same time, children have alternative access to nature through electronic media, many competing demands for their time and parents who are increasingly safety conscious (Charles et al 2008). Thus, children fail to develop a sense of place in the remaining natural areas.

Why Is Sense of Place Important?

Sense of place suggests an emotional attachment between people and a location or area (Williams and Stewart 1998). Other terms have been used to explain this relationship. For example, *geopiety* means a human relationship with place that is characterized by reverence, pity, compassion, affection, gratitude, respect and reciprocity (Tuan 1976). Alternatively, *topophilia* suggests strong affective ties between humans

and places (Tuan 1974). Regardless of the term used, sense of place requires first-hand interactions in which children are able “to love the places [they] can see, touch, smell, and experience” (Orr 2004, 147).

Why should teachers promote children’s sense of place through outdoor experiences in natural areas? First, from a *classroom perspective*, this approach can improve children’s academic achievement. An American study showed that students in schools with place-based education had higher scores in reading, mathematics, science and social studies (Sobel 2005). Students were able to “do science” (p 28) rather than read about science. Moreover, as students were more engaged in learning, there were fewer classroom discipline problems.

Second, from an *environmental perspective*, place-based education can increase stewardship of local natural and cultural features. People who are emotionally attached to places, especially because of regular interactions in nature with adult mentors, will act to protect those places (Kaltenborn and Williams 2002). With a sense of place, children view that place as a set of

relationships, rather than as a set of *things* (Hay 1992). In turn, as adults, they will manage resources in the context of *communities*, rather than *commodities* (Rolston and Coufal 1991).

Third, from a *health perspective*, outdoor activities in nature are recognized as being critical to normal childhood development (Louv 2005). Moreover, children and teachers who have regular access to green spaces have less stress and recover faster from mental fatigue (Charles et al 2008). Children in a Scandinavian “Outdoors in All Weather” program



Discovery of small creatures helps create new types of bonds with nature.

had 80 per cent fewer infectious diseases than children in regular indoor programs (Sobel 2005).

Fourth, from an *awareness perspective*, Wendell Berry says “You can’t know who you are until you know where you are” (quoted in Harwell and Reynolds 2006). Having a sense of place in the natural world and how it shapes us is critical today as many environments are undergoing rapid change, and as most children are losing direct connections with nature. Sense of place will encourage deeper awareness of ourselves, natural features and processes upon which human survival depends.

Last, from an *intrinsic perspective*, developing a sense of place allows us to respond to our natural tendencies. *Biophilia*, literally a *love of life*, is an innate need for human beings to affiliate with other living beings (Kellert and Wilson 1993). Teachers should capitalize on this natural love of life and desire for learning by, for example, incorporating outdoor field trips and projects on wild animals into the curriculum.

How to Develop a Sense of Place in Children

Children can develop meaning in natural places in many ways. Brooks, Wallace and Williams (2007) identify four key contributors to sense of place. First, children need *physical interactions in a place*. These interactions can include spontaneous play or ritualized activities, but a longer history with a

place encourages deeper connections. Second, *social interactions in a place* include any type of shared experience with others, such as family members, friends or teachers. The shared experience encourages different types of interactions, a collective memory of the activities and a reason for future discussion of those activities. Third, *physical interactions with a place* include, for example, sensory contact and lessons learned from good and bad experiences. Children especially want tactile experiences, such as digging dirt, smelling flowers or building forts. Finally, *satisfaction about a place* suggests feeling good about one’s time there; positive memories of that place and time enhance one’s attachment to place.

In designing nature experiences for children, David Sobel (1996) encourages teachers to consider a child’s stage of development. He suggests that we should develop in children a sense of awe for nature before a sense of concern about the fate of nature. “If we want children to flourish, to become truly empowered, then let us allow them to love the earth before we ask them to save it” (p 39). Thus, for children aged 4–7, teachers should promote empathy with the natural world; for example, through activities that emphasize animals

(eg, imagination through dress-up or imitation). On outdoor field trips, connection is primary, whereas proper identification of natural features is secondary. For children aged 8–11, teachers should focus on exploration of the natural world by emphasizing, for example, stream courses, pathways and forts. For children aged 12–15, the emphasis can shift to social action, so that teachers can build on each child’s increasing feeling of connectedness and responsibility to the world. Projects could include recycling, reclamation, contributions to community decisions or whatever local opportunities arise.

Sobel (2008) recognizes seven key principles of children’s interaction with nature. Teachers should take advantage of these tendencies in developing teaching plans and projects to promote sense of place for children. With a little imagination, the applications are endless.



Sense of place develops positive relationships and a community perspective with the natural world.

- *Adventure* suggests excitement, novelty and action, all of which develop interest in and connection with a place.
- *Fantasy and imagination* promote creative play, deeper understanding of abstract concepts, a sense of purpose and fun. Isn't that what children want most?
- Encouraging interactions with *animal allies* can [create] empathy for the natural world. Children can imitate, anthropomorphize, and play with animals, both real and imaginary. What a great way to develop love and caring.
- *Maps and paths* allow children to explore their local areas in meaningful ways.
- *Special places*, such as forts, are important places in which children can hide, socialize with friends and retreat from the "other" world. Special natural places can help develop children's desire for sustainability.
- *Small worlds*—children are intrigued by miniature worlds and microscopic organisms. The fragility of small worlds can enhance children's concern for sustainability.
- Our natural desire for *hunting and gathering* promotes attention to detail and takes us back to our primitive past and the excitement of discovery.

Conclusion

Developing a sense of place is important for childhood development and adult concern for the environment. Teachers and parents have important roles to play in providing time and space for

children to interact with nature in ways that are natural to them and that develop meaningful connections. We should follow research-supported design principles that build on children's natural tendencies toward play and the natural world.

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Resources

Green Street: Engaging in Our Communities as Global Citizens— An Educator’s Workshop

This workshop actively engages educators in environmental learning and global education. It encourages teachers to promote student personal responsibility for the environment and fosters a commitment to sustainable living. Solidarity, peace, democracy and the environment are explored in depth throughout the unit. Activities are inquiry based and interactive, and teacher resources and student materials are provided. The unit has possibilities of implementation in all subject areas. “Engaging in Our Communities as Global Citizens” connects schools in Canada to national environmental education organizations. It is sponsored by Green Street, the Canadian Teachers’ Federation and the ATA’s Global, Environmental and Outdoor Education Specialist Council.

To book a workshop for your school or area, contact Rita Poruchny at reporuchny@cbe.ab.ca.

Ideas for Teaching About the Local Environment

The following are some ideas for looking at the local environment and what individuals and groups can do in their community. We would appreciate your sharing your ideas, activities and recommended sources for teaching in our natural world. Please e-mail Fran Galbraith [at fgalbraith@interbaun.com] or Kim Wrathall [at educ8tr@telus.net].

This article first appeared in Issues, Events and Ideas No 123, September 2009.

- Read Barbara Cooney's *Miss Rumphius* (Viking, 1982) with your students. (See the sidebar for one teacher's experiences with using this book in the classroom.)
- Check out the book *Last Child in the Woods: Saving Our Children from Nature-Deficit Disorder*, by Richard Louv (Algonquin Books of Chapel Hill, 2008).
- Examine your local environment to determine ways to incorporate your community into your teaching.
- Visit Gail Bartel's blog at <http://thatartistwoman.blogspot.com> for artistic ideas for exploring the natural world.
- Visit websites such as DLTK's Crafts for Kids (www.dltk-kids.com) or ABCteach (www.abcteach.com) for worksheets and activities related to the environment.

Miss Rumphius, by Barbara Cooney, tells the story of a lady who, as a little girl, wanted to go off and explore the world. She was challenged by her grandfather to make the world a more beautiful place. After reading this story with my students, I put forward this challenge for them: What will you do to make the world a more beautiful place?

I used this story in my Grade 2 class to introduce the idea that people can make positive changes in their community. As we learned about important people from Edmonton's past, I challenged my students again to think about the positive changes they could make in our community.

Carrie Knight



Cool Websites! Check It Out!

www.green-street.ca/en

Green Street provides access to high-quality education programs and funding opportunities. Through this website you can find out what schools and community partners are doing across the country to support environmental sustainability and student engagement. In addition, you can connect to a learning community and join with others in building a movement for change.

www.fanweb.ca

Great resources from the Federation of Alberta Naturalists. The website contains recent studies on bear populations, teaching resources and information materials on a wide variety of subjects including water issues, birding, flora and fauna.

Where to Go for Council Resources: www.geoec.org

Are you looking for the latest in lesson plans or just curious about links to affiliated organizations? The GEOEC website is there for you. Our award-winning website has updated information about the council and its programs, as well as links to other global, environmental and outdoor education sites. As part of our commitment to reducing the amount of paper generated by council activities we are making an effort to put more material on our website. Note that the most current information will almost always be found there.

Book Review

Early Literacy Links in the Alberta Social Studies Curriculum, Kindergarten to Grade 3

Suzanna Wong

(With permission to adapt from Dr Amy Von Heyking)

Guji Guji

by Chih-Yuan Chen

Wellington, NZ: Gecko, 2004

Guji Guji was raised from an egg by Mother Duck, and he is quite happy with his life as a duckling, even though he doesn't look anything like his brothers and sisters. Then, one fateful day, he meets up with three grinning crocodiles who not only convince him that he too is a crocodile, but also try to persuade him to deliver his fat, delicious duck relatives for their dinner! What's a "crocoduck" to do? Young students will cheer for this unlikely but endearing hero as he figures out a way to save both the day and the ducks.

The Name Jar

by Yangsook Choi

New York: Dragonfly Books, 2001

Unhei has just arrived from Korea, and her classmates at her new school are having trouble pronouncing her name. She decides to pick a new name that will be easier for her new life in America, and her classmates put their suggestions in a glass jar. When the time comes to introduce herself to the class with her new name, she surprises herself as well as them with her choice.

Five-Minute Field Trips

The activities in *Five-Minute Field Trips* have been grouped into three sections: “Awareness,” “Understanding” and “Action.” We feel that sequencing activities in this order is a natural flow for learning about our world.

How does it work? Begin your nature studies with *awareness* activities: outdoor activities that are sensory and experiential. Such activities give kids a chance to reconnect with the earth, to become a bird or a tree, to smell the dandelions and imagine the wind.

After having some fun oooing and ahhhhing with the natural world, lead the group into the *understanding* activities, which are more exploratory and inquiry based. For instance, investigate a tree from its bark and leaves to the functions of various parts. Examine and record the insects that live in a shrub; or locate and make a temporary habitat for insects that live in a nearby pond.

After the students have had a chance to reconnect with and explore the natural world, they’re ready to look for a local *action* project. In schools, we often overlook the action component of education. This is the opportunity to give students valuable citizenship skills while guiding them towards shaping a more ecologically sound, sustainable community. Please don’t overlook the significance of small, local habitat projects. From our experience, small projects teach kids how to have a positive impact on their local world, and afterwards they get to live with the beautiful change. Take our advice—try it—you’ll love it! It’s some of the most meaningful education you’ll ever do.

One activity from each of “Awareness,” “Understanding” and “Action” follows. For more activities and an outline of the curriculum connections, please see our website, www.geoec.org.

Five-Minute Field Trips was produced through a partnership between the Canadian Parks and Wilderness Society, the Calgary Zoo and the GEOEC. More information on the annual conference, workshops and online website-based resources for teachers can be obtained from our website (www.geoec.org). To request a workshop for teachers on *Five-Minute Field Trips*, or to give us your valuable feedback, you can contact the authors through Gareth Thomson (e-mail gthomson@cpawscalgary.org, or telephone 403-678-0079). Thanks to Alberta Ecotrust for their support of this project.

AWARENESS ACTIVITY

Nature Trust Walk

This exercise shows students just how much they rely on the sense of sight, that a lot of information may be conveyed by the other senses - and that it is important in this life to be both trusting and trustworthy!

Time Required: One hour

Materials Required: blindfolds (one per pair of students)

Instructions: Before this activity, tell students that during this activity that they will be blindfolded; not only will they have to trust the person who will be leading them in the trust walk, but the sighted person has to be *trustworthy*.

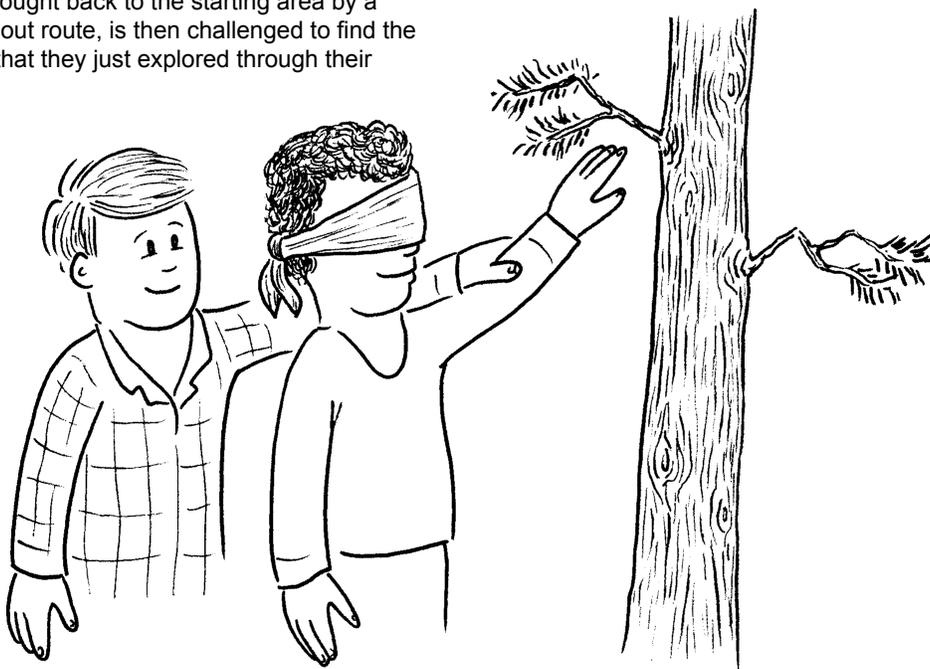
Divide students into pairs. Have one of the pair blindfold their partner, and have the "sighted" partner slowly lead their "blind" partner to a unique feature in the area: an old stump, perhaps, or an interesting patch of moss, explaining to them what it is they are touching and smelling. The blindfolded partner, after being brought back to the starting area by a roundabout route, is then challenged to find the feature that they just explored through their

senses. Next, have the two students switch roles.

Important: natural areas contain many hazards for unsighted students. Caution students to remain trustworthy, and don't hesitate to have any unruly students sit this activity out if they can't show their "trustworthiness."

Discussion: The importance of trust and of effective communication can also be introduced into the discussion.

Variations: If you are studying trees, this activity can serve as a valuable sensory tour of different species of trees and shrubs.



UNDERSTANDING ACTIVITY

Nature Charades

Students find out about the characteristics of living things as they choose a favourite living thing found in one of Alberta's Natural Regions - and then apply what they have learned in the enjoyable and well-known game of Charades,

Time Required: One hour (not including research time)

Materials Required: Posters or information on animals.

Instructions: Tell students that they will be playing nature charades, a game in which they have to act out something found in nature. Have students choose a plant or animal found in one of the Natural Regions of Alberta*, and begin by finding out some 'Biofacts' about their choice: i.e. where it lives, what it eats, its family structure, etc. This could be done in poster form with a drawing and recording of Biofacts.

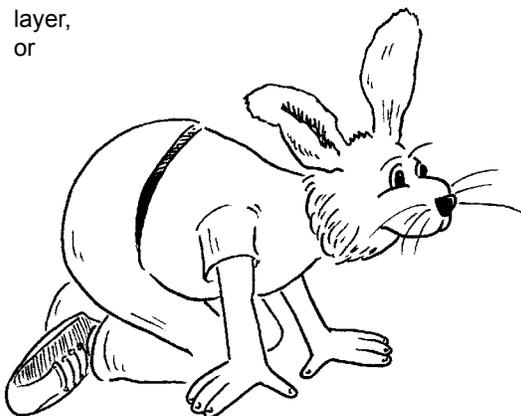
Next, have students do charades, and have other students wait at least 15 seconds before they attempt to guess the plant or animal. When students have guessed, have the acting student show their poster and tell one or two Biofacts.

Extension: This can also be done using communities instead of individuals: a rotten log, a pond, the humus layer, or

the treetop canopy are all examples of communities. Introduce these communities to students and then have groups of students (with one narrator) act out the community.

Another variation of the above activity is to divide the class into two groups and challenge each group to come up with a "Frozen Drama" in which each member of the ecosystem demonstrates their interactions with others. The tree might be standing with its arms outstretched, the cougar is preparing to pounce on a browsing deer, etc. One of the members of the group will be the only one who can talk; their job is to narrate the frozen drama to the "spectator" half of the class.

* Maps of Alberta's Natural Regions are available from Alberta Environment. See **Resources** section.



ACTION ACTIVITY

Naturalize your Schoolyard

Wouldn't it be awesome to have a natural site right on your school site? Go for it! There is a ton of community support for naturalization projects, no matter what the scale, and curricular goals can be met through every step of the project. Please refer to the Resources section for contact phone numbers, website resources, and a valuable Rationale document that summarizes why naturalization is such a powerful educational tool.

Process: From project vision and site inventory to design, fund-raising, ordering plants and media support, there are a number of interrelated tasks to complete. The following process should create a successful enhancement project:

Inventory and map the whole site. Record the main natural and human features. Research the site's human and natural history. Describe the site in as much detail, and as many ways as possible. Describe how the site is currently used by all stakeholders.

The educators need to brainstorm the potential curricular links for each subject area, through the various stages of the project.

Develop and distribute community surveys. What does the community want and need? Who can help with the project? Based on your research, native flora and fauna will the site

support? What does wildlife require? Refine and record your group's overall vision for the site. Record the project goals and objectives.

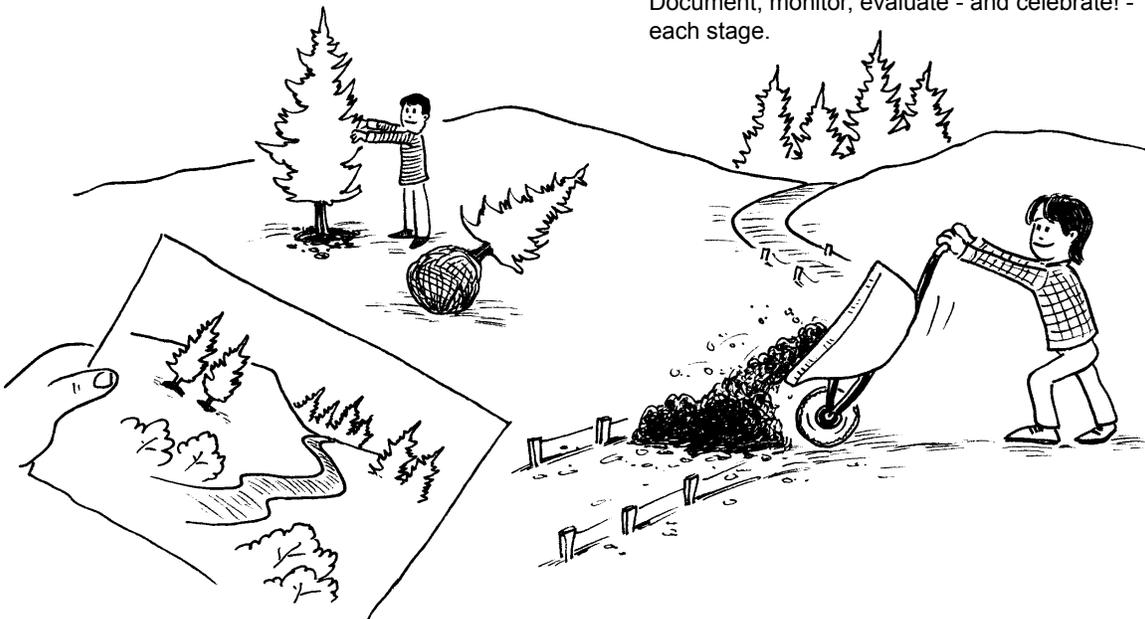
List the resources necessary to complete the project. Recruit volunteers for each stage of the project.

Develop a plan and a time line. What are the priorities? Who, will do what, how and by when? Remember to include all key participants. Build long-term project maintenance into the plan from the beginning.

Determine where resources will come from. How will funds be obtained ~ by grants, donations or fund-raising?

Plan for how the community and media will participate throughout the project.

Document, monitor, evaluate - and celebrate! - each stage.



Project WILD: Learning About Our Environment Across the Curriculum

Looking for fun, easy to use, learning activities to teach your students about the environment? Project WILD, Below Zero, and Fish Ways may be just what you need!

Each activity in these programs has a complete lesson plan. Using cooperative learning as a base, each lesson has been written **by teachers, for teachers**. The activities are hands-on and interdisciplinary, and support the provincial curriculum in areas such as language arts, math, physical education, health, social studies, music and, of course, science.

Project WILD and Below Zero each feature an activity guide for kindergarten to Grade 12; each lesson has been extensively field tested. They include ready-to-duplicate masters for student

investigation, learning games and puzzles.

These activities are well suited to the multilevel classroom. They work equally well in urban, rural and northern settings, including classrooms with multiethnic students and students of Aboriginal ancestry.

These and more programs for teachers are available through the Canadian Wildlife Federation, a charitable, nongovernmental organization focused on wildlife and wildlife habitat conservation. The programs are presented through half-day professional development workshops facilitated by experienced educators.

The activity guides are available free with the workshops, which focus on strategies for delivering the activities to your students to



supplement the curriculum. Fish Ways is currently being adapted for use across Canada. Free sample elementary activities may be downloaded from the Canadian Wildlife Federation website www.cwfEDUCATION.ca.

For more information, or to book a professional development workshop, please contact Lizabeth Nicholls, MEd, CWF western regional education specialist, at lizabethn@cwf-fcf.org.

Habitat in the Balance

An Online Program for Developing Students' Decision-Making Skills

Stephen Jeans and David Lunn

Teaching the skills involved in analyzing and understanding societal decision making can be difficult to work into regular science lessons. This difficulty is not as evident in social studies and geography. When it's possible to address these skills in close association with science subject content, students can advance toward both knowledge and skill learning outcomes at the same time. That's why the SEEDS Foundation developed the supplementary teaching resource called ...



Habitat in the Balance is an online educational resource for teaching about socio-scientific issues and process skills. This interactive decision-making program examines sustainable development issues in four topic areas—water, land, inhabitants and air.

Habitat in the Balance is a secondary school program that fits

with learning outcomes in Grades 7 to 12 science, social studies, geography and environmental studies. Over the next three years, twelve modules will be developed in the first three topics. The first two modules incorporate stories about water allocation and contaminants in waterways. The program is available at www.seedshabitat.ca.

While the program develops the students' skills in issue analysis and decision making, it also reinforces their understanding of subject content. Some of the stories are based on actual events and others are fictitious. Nevertheless, all of them are relevant and deal with current issues.

Each module may take three to five days of instructional time, depending on the use of class time and homework assigned. For example, a teacher may use one period to demonstrate the features of the program, another period for the students to use it, and another period for follow-up and discussion. Outside class time, students can

access their work via the web and continue to learn because the software stores their work online.

Print support for students and teachers, resources and background information on the issues, and exercises and assignments are available in PDF and Word document formats.

Other SEEDS Foundation resources are available at www.seedsfoundation.ca. SEEDS (Society, Environment and Energy Development Studies) Foundation is based in Calgary, Alberta. It is a not-for-profit educational organization that develops supplementary programs about energy and the environment for Canadian schools.

SEEDS Foundation welcomes your comments and suggestions. Please contact us by e-mail at info@seedsfoundation.ca, by fax at 403-221-0876, or by telephone at 403-221-0835 or, toll free, 1-800-661-8751.

Some selected Alberta curriculum correlations include the following:

Social Studies—Canadian and World Studies

www.education.alberta.ca/teachers/program/socialstudies/programs.aspx

Social Studies 9

Canada: Responding to Change

Economic growth and technological change affect the quality of life. Identify and evaluate alternative answers, conclusions, solutions or decisions regarding questions and issues used for inquiry and research on responding to change.

Social Studies 10

To what extent should we embrace globalization?

Does globalization contribute to sustainable prosperity for all people? Analyze the impact of actions and policies associated with globalization on the environment (land and resource use, resource development agreements, environmental legislation).

Social Studies 30

Political and Economic Systems

Political systems are organized to allocate political power that involves the authority to make and to implement decisions in society.

Logically defend a position on an issue or a problem.

Science

www.education.alberta.ca/teachers/program/science/programs.aspx

Science 7

Interactions within Ecosystems

Identify environmental, social, and economic factors that should be considered in the management and preservation of ecosystems.

Science 8

Freshwater and Saltwater Systems

Analyze human impacts on aquatic systems; and identify the roles of science and technology in addressing related questions, problems and issues.

Science 9

Biological Diversity

Identify impacts of human action on species survival and variation within species, and analyze

related issues for personal and public decision making.

Environmental Chemistry

Investigate and describe, in general terms, the role of different substances in the environment in supporting or harming humans and other living things.

Science 20

Changes in Living Systems

Analyze and investigate the cycling of matter and the flow of energy through the biosphere and ecosystems as well as the interrelationship of society and the environment.

Science 30

Chemistry and the Environment

Analyze, from a variety of perspectives, the risks and benefits of using chemical processes in meeting human needs and assess technologies for reducing the impact of chemical compounds on the environment.

Stephen Jeans, PhD, is an educational consultant to the SEEDS Foundation.

David Lunn is a program developer with the SEEDS Foundation.

Research Corner

Youth Day in Los Angeles: Connecting Youth and Nature with Technology

In 2007, the US Department of Agriculture Forest Service (USFS) hosted a recreation forum series across the United States. Regional in focus, the forums were meant to obtain information about needs and opportunities for success in meeting those needs from members of the public and outdoor recreation partners. During the Partners Outdoors Conference (Lake Arrowhead, California, in January 2007), more than 30 people participated in planning the regional forum to be held in Los Angeles in March 2007. Potential forum topics discussed included access, connecting Americans (especially youth and urban populations) to the outdoors, and volunteers/partnerships with nonprofits and others. One topic of interest was technologies and whether youth would be more likely to go outdoors if some technologies were available for their use outdoors. After considering the difficulties of having youth at the recreation forum, the planning committee established a subcommittee to pilot an effort to listen to kids and to develop a

process for others to follow. The result was Youth Day, in March 2007, in Los Angeles.

The need for active participation directed the actions taken on Youth Day. For the pilot, to determine if kids are attracted to the outdoors by technology, we offered four activities—two were dependent on technology and two were not: (1) camera safari, in which each child borrowed a digital camera and took pictures of things of interest as they took a short hike, (2) etching or rubbings on paper or natural surfaces of their choice, (3) geocache for treasure, in which each participant used a global positioning system unit to locate hidden treasure along a trail, and (4) nature scavenger hunt, in which each child had a list of items to locate along a trail. Each of the 38 youth (ages 6 to 17) participated in each activity. The City of Los Angeles Department of Recreation and Parks assisted with recruitment of participants.

We used cards (green, yellow and red) for the participants to rate each

activity. The participants used green to indicate if they liked the activity and red if they did not. Yellow indicated that they were undecided. We also had adults observing each group of children and reporting back what they had heard.

Green vote percentages were highest for the technology-dependent activities (geocache 92 per cent; camera safari 86 per cent) as compared to the non-technology-dependent activities (nature scavenger hunt 76 per cent; etchings 62 per cent). The adults noted that most youth were interested in the activities, and that most activities were easy for the youth to do. These results suggest the use of technology to get youth outdoors. More research is needed to confirm these results. For more information, please contact Debbie Chavez at 951-680-1558 or dchavez@fs.fed.us.

This material is reprinted from the website of the United States Department of Agriculture Forest Service, www.fs.fed.us. Minor amendments have been made to conform with ATA style.

GEOEC Executive 2009/10



*Back row: Peter Lenton, Lara Fenton, Don McLaughlin, Noel Jantzie, Rita Poruchny, Robert Twerdoclib.
Front row: Shashi Shergill, Chenoa Marcotte, Erin Couillard, Patrica Hamlin. Missing: Karen Whitehead.*

\$500 Bursaries to Improve Knowledge and Skills

The ATA Educational Trust is a charitable organization dedicated to the professional growth of Alberta teachers. The Trust encourages Alberta teachers to improve their knowledge and skills through formal education. The names of 30 (or more) eligible teachers who apply will be entered into a draw for bursaries of up to \$500 that they can apply toward tuition.

In January of each year, the Trust posts all application forms for grants and bursaries on its website. Visit [www.teachers.ab.ca/Professional Development/Grants, Awards and Scholarships/ATA Educational Trust](http://www.teachers.ab.ca/ProfessionalDevelopment/Grants,AwardsandScholarships/ATAEducationalTrust) for details.



AR-ETF-24

\$3,000 Project Grants Available

The ATA Educational Trust is a charitable organization dedicated to the professional growth of Alberta teachers. The Trust awards a number of grants of up to \$3,000 to help Alberta teachers or others involved in education and teaching develop innovative resources that support curriculum, teaching or learning. Individuals or groups planning to undertake such a project must submit a detailed proposal on or before May 1, 2010.

In January of each year, the Trust posts all application forms for grants and bursaries on its website. Visit [www.teachers.ab.ca/Professional Development/Grants, Awards and Scholarships/The ATA Educational Trust](http://www.teachers.ab.ca/ProfessionalDevelopment/Grants,AwardsandScholarships/TheATAEducationalTrust) for details.



**The ATA
Educational Trust**

AR-ETF-25

\$300 ATA Specialist Council Grants

The ATA Educational Trust is a charitable organization dedicated to the professional growth of Alberta teachers. The \$300 grant program offers teachers who otherwise do not have access to sufficient funds the opportunity to be entered into a draw for \$300 towards the cost of an ATA specialist council conference.

In January of each year, the Trust posts all application forms for grants and bursaries on its website. Visit [www.teachers.ab.ca/Professional Development/Grants, Awards and Scholarships/ATA Educational Trust](http://www.teachers.ab.ca/ProfessionalDevelopment/Grants,AwardsandScholarships/ATAEducationalTrust) for details.



**The ATA
Educational Trust**

AR-ETF-23

Global, Environmental and Outdoor Education Council

Mission Statement

To promote involvement in quality global, environmental and outdoor education

Objectives

- To provide a vehicle for Alberta teachers for professional development and communication in global, environmental and outdoor education
- To study and make professional recommendations about global, environmental and outdoor education issues
- To network with other provincial organizations that have similar concerns

Membership

- Regular member—Active and Associate members of the Alberta Teachers' Association, as specified in ATA bylaws, are entitled to full privileges of council membership including the rights to vote and to hold office.
- Student member—Student members of the ATA are entitled to all benefits and services of council membership except the right to hold office.
- GEOEC members may also choose to belong to the Canadian Network for Environmental Education and Communication (EECOM) for an additional fee.
- ATA members may sign up for a GEOEC membership through the ATA website as their choice of one free specialist council membership included in the ATA annual fee.
- ATA members and subscribers may also sign up for a GEOEC membership and pay a fee determined by the GEOEC executive. From time to time the executive may decrease the fee to provide incentives for membership recruitment.

Subscribers

- Persons who are not ATA members as specified by ATA bylaws receive all the benefits and services of

council membership except the rights to vote and hold office. Subscribers do have the right to serve as Community Liaisons on the Council Executive.

Publications

- The GEOEC recognizes the wide range of interests among members and strives to foster the exchange of ideas and provide information and articles relating to the various components of the elementary and secondary curricula through the publication of Connections.
- The GEOEC maintains a website in order to publish timely information and provide access to like-minded organizations and individuals.

Annual Conference

- The annual conference features a blend of activities, indoors and outdoors, ranging from hands-on workshops to social gatherings. All grade levels are represented in sessions. The emphasis is on practical information and application. The annual general meeting of the GEOEC is held in conjunction with the conference.

Executive

- Volunteer teachers are elected to serve on the GEOEC executive.
- Contact the president or past president of the GEOEC through the ATA office if you are interested in seeking a position.
- Elections take place at the annual general meeting during the annual conference.

Workshops

- Various activities and workshops are organized by the GEOEC either as stand alone events or in conjunction with other organizations

Join now and become involved in the Global, Environmental and Outdoor Education Council

Name _____ Alberta Teaching Certificate No _____

Address _____ Postal Code _____

School or Employer _____ Grade Level/Specialty _____

New Membership Renewal of Membership

\$25.00 Regular Membership

\$12.50 Student Membership

\$30 Subscription

\$10 EECOM Membership (in addition to Council Membership)

Make cheque payable to the Alberta Teachers' Association and mail it with the application to the Association at 11010 142 Street NW, Edmonton AB T5N 2R1.

Permission for Use of Photographs or Student Work

The Alberta Teachers' Association (ATA) requests the permission of parents/guardians for the reproduction of photographs depicting their children and/or the reproduction of work assignments completed by their children. The photograph/work will be reproduced in the Global, Environmental and Outdoor Education Council (GEOEC) newsletter, *Connections*, and is intended for teacher professional development.

Name of student _____

I, _____ (printed name of parent/guardian of student), agree to the use of this photograph/work for the purpose stated above.

Signature _____

Relationship to student _____

Address _____

Postal code _____

We have recently begun posting archived issues of *Connections* on the GEOEC website (www.geoec.org/newsletter). Are you willing to have your child's written work posted on the Internet as well?

- Yes, I agree to have my child's written work posted on the GEOEC website.
 - Yes, I agree to have my child's written work posted on the GEOEC website, using a first name only.
 - No, I do not want my child's written work posted on the GEOEC website.
-

Please fax or mail forms to

**Karen Virag
Publications Supervisor
The Alberta Teachers' Association
11010 142 Street NW
Edmonton T5N 2R1
Phone 780-447-9491
Fax 780-455-6481**



The Alberta Teachers' Association

GEOEC Executive 2009/10

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