

**ESD Innovation and Leadership Questionnaire Summary**

Provide the Title of the project or program.	Who is the target audience?	What are the goals of the project/program?	What was the start date and end date of the project/program?	Provide a description of your project/program.	Explain how your project/program meets two of the criteria for being innovative or providing leadership and why you think it is innovative.	List the steps that you undertook to develop/implement your project or program – highlight specific things we're looking for such as partnerships.
Open-Ended Response	Open-Ended Response	Open-Ended Response	Open-Ended Response	Open-Ended Response	Open-Ended Response	Open-Ended Response
Integrated Multi Credit Programs	secondary school alternative program delivery model	<ul style="list-style-type: none"> <li>Provide a learning context at the secondary school level for interdisciplinary instruction, where student leadership development is a major focus</li> <li>Enhance student engagement in learning; learning about and for the environment</li> <li>Use a broad range of instructional strategies consistent with experiential learning and provides a greater capacity to link learning to the neighboring community</li> <li>Highly flexible and out of the confines of traditional schooling. Instructional freedom is high. There is no conflict with other courses when setting up field trips.</li> <li>These programs adapt to match teacher strengths, interest and abilities</li> <li>Working with the same group of peers for 4 months and the same teacher(s) creates a community of learners that over time becomes a powerful positive affective influence. As such greater affective changes are experienced by participating students and noted by their parents</li> <li>Greater opportunity is provided to immerse these students in the local community and the natural world</li> <li>Teachers get to know the whole students and adjust learning to match.</li> <li>Learn</li> </ul>	<ul style="list-style-type: none"> <li>Integrated 4 credit programs have been in operation in secondary schools in Ontario and several other provinces since 1981 to present</li> </ul>	<ul style="list-style-type: none"> <li>Integrated 4 credit programs can be grouped into those with a leadership development focus and those with a stay in school focus.</li> <li>Most of these programs have some aspect of the environment that is the integrating theme and the focus for the program.</li> <li>Students select to enroll in these programs for one semester and get a set package of up to 4 credits depending on the program, taught by one or two teachers working together</li> <li>Many of these programs operate in a setting outside the host secondary school and therefore are less influenced by school practices that interfere with learning (change of classes every 70 minutes, difficulty scheduling field trips, learning in the community)</li> <li>Some programs feature peer teaching where the secondary students deliver an environmental school program to elementary students through a field trip approach.</li> <li>Subject and courses selected vary considerably and the degree of integration of the subjects can range from 4 distinct courses to a blending of the courses based on learning projects.</li> </ul>	<ul style="list-style-type: none"> <li>4 credit program provide a context through which higher levels of instruction can be achieved including: interdisciplinary study, learning relevant to the interests of the student, learning relevant to the community in which they reside, addressing citizenship engagement, examining social, environmental and economic issues in depth, directing learning to and audience beyond the classroom, consideration of alternatives.</li> <li>Based on environmental and related themes these programs usually address key sustainability themes: climate change, food and agriculture, citizenship and government ....</li> <li>Most of these programs take place in a natural setting or have students experience natural settings through extensive outdoor wilderness experiences.</li> <li>These programs provide opportunity for growth of the whole student in the context of a learning community comprised of individuals with shared interests and motivation. As such they contribute to the development of an identity of self consistent with sustainability. Often students are expected to work as a group to support operation of the program and in so doing they plan meals and cook, do housework, pee</li> </ul>	<ul style="list-style-type: none"> <li>-not applicable, these program have evolved over the last 25 years -steps to start a new 4 credit program can be identified</li> </ul>
Alternative Energy Array (AEA)	K-12 Students and local community	<p>We have three goals:</p> <ol style="list-style-type: none"> <li>1] to implement an innovative, four-stage AEA project. We hope to encourage other schools and institutions to implement their own sustainable projects similar to our AEA project.</li> <li>2] to provide educational tools to promote sustainable development within our school and community. We plan to inform, inspire, instruct, and involve today's generation of youth to adopt sound environmentally friendly practices.</li> <li>3] to be a blueprint for other schools through outreach activities by demonstrating the viability of alternative energy.</li> </ol>	2005 to present	<p>The Alternative Energy Array will eventually consist of the following components installed on the roof of the school:</p> <ul style="list-style-type: none"> <li>small-scale wind turbine</li> <li>solar cells</li> <li>green roof</li> <li>green house</li> </ul> <p>The green house will be heated in the winter by the renewable energy created by the turbine and solar cells. Vegetables grown in the green house will then be sold in the school's cafeteria. Each of these components will be installed on the roof of the school over a span of four years. Students will have the opportunity during each of these stages to undertake invaluable educational experiences such as:</p> <ul style="list-style-type: none"> <li>Presenting the project</li> <li>Researching alternative energy in general</li> <li>Researching AEA components before purchasing</li> <li>Fundraising</li> <li>Meeting with and consulting with engineers and installers</li> <li>Organizing open houses</li> <li>Conducting tours of the AEA</li> <li>Growing vegetables in the green house</li> </ul> <p>The AEA is designed to resemble a closed-loop production system where clean, renewable energy is used to heat the greenhouse in the winter. The only "waste" produced within this system are the vegetables grown</p>	<p>Criteria:</p> <ol style="list-style-type: none"> <li>1. Build a world where all people have sufficient food for a healthy and productive life. A long-term goal of our AEA project is to grow vegetables on-site. These vegetables will be grown in a greenhouse that will be heated in the winter by energy produced from the wind turbine and solar cells. This will provide students with a real-world experience from a number of perspectives such as: <ul style="list-style-type: none"> <li>Factors that relate to food production</li> <li>Physical conditions needed to grow food</li> <li>Food production areas</li> </ul> </li> <li>2. Assess, care for and restore the state of our Planet. Our goal for the AEA project has always been to demonstrate the importance of stewardship in the preservation of the Earth's complex environment. It is also important to show students the implications of personal choices regarding natural resources. Hopefully our AEA project can encourage youth to regard alternative energy not as "alternative" but as "mainstream".</li> </ol>	<p>2005:</p> <ul style="list-style-type: none"> <li>Permission from Superintendent</li> <li>Installation of weather station</li> <li>Weather data gathered, tabulated and displayed on school's web page.</li> <li>Finish feasibility study</li> <li>Determine overall plan for project</li> <li>Call for interested students to join Sustainable Development Committee</li> <li>Submission of grants requesting support for wind turbine</li> </ul> <p>2006:</p> <ul style="list-style-type: none"> <li>Approach suppliers for quotes on prices etc.</li> <li>Distribute flyers to local businesses to gain donations and community awareness</li> <li>Community Consultation Meeting</li> </ul> <p>2007:</p> <ul style="list-style-type: none"> <li>Apply for necessary permits (electrical, engineering)</li> <li>Research for appropriate wind turbine</li> </ul> <p>2008:</p> <ul style="list-style-type: none"> <li>Installation of AEA</li> <li>Data display on school's web page and in school hallway showing instantaneous information and diagrams on the systems' details such as daily CO2 reductions and kW/h. generated.</li> <li>Media, local businesses, interested parties invited to Open House.</li> <li>Submission of grants requesting support for solar cells</li> <li>Research for appropriate solar cells</li> <li>Purchase and installation of solar cells</li> </ul> <p>2009:</p> <ul style="list-style-type: none"> <li>Submission of grants requesting support for green roof</li> <li>Purchase and installation</li> </ul>
Science Buddies	K - 6	<p>There is a valuable opportunity to partner with local elementary schools and encourage student leadership with the Science Buddies program. The overall goals are:</p> <ul style="list-style-type: none"> <li>To support and enhance the exposure to science according to the provincial curriculum outcomes for each grade (Primary to gr. 6).</li> <li>To introduce and support environmental topics that are prominent in the curriculum, such as resource use, ecological implications, waste management and sustainability issues</li> <li>To instill an appreciation of nature, habitats and the importance of protecting the environment</li> <li>To support and promote experiential learning in exciting ways and in potentially greater depth due to our resources.</li> <li>To develop empowered and effective student leaders, supporting their growth as responsible and informed citizens</li> </ul> <p>Inherent to the program is a multi-layered approach in developing skills to be an effective Science Buddy (leader) –</p> <ul style="list-style-type: none"> <li>High school students assist in the research, development and designing of learning experiences</li> <li>Co-operate in decision making and gathering of resources, and be a team player</li> <li>Learn how to propose and present their ideas in creative program</li> </ul>	April 2000 - June 2007	<p>The Science Buddies Program is a unique outreach group which involves a dedicated group of high school students, grade 9 to 12 as "peer educators", mentors and facilitators of science. It follows the Pan Canadian curriculum guidelines and outcomes for elementary students from Primary to Gr. 6, with a particular emphasis on environmental issues. The Science Buddies present hour-long or more sessions to an entire elementary school population over the course of a day, so that every student is involved, from Primary to Grade 6. There are 26 modules or units from the primary to gr. 6 level, and we have 25 of them fully developed with several options for each unit. Teachers are always approached first to find out what topics they would like covered, and multi-age classes have been easily accommodated by this program. The elementary students experience the various perspectives of science in an engaging manner which involves curiosity, inquiry and simple fun. Generally we have presented to six schools a year, and have visited Gaspereau, Hanrsport, Wolfville, Port Williams, New Minas, KCA, and L.E.</p>	<p>This project is unique – at least in NS, as no other high school provides a leadership outreach program quite like this.</p> <ul style="list-style-type: none"> <li>It involves high school students as "peer educators", mentors and facilitators of science; following curriculum guidelines for elementary students from Primary to Gr.6</li> <li>Science Buddy participants have the important learning experience of developing and delivering creative, learner-centered programs – and determining what was successful or not to a challenging audience! The personal and interpersonal skills involved in this process are numerous and they become effective mentors and leaders – through their skill development and experiences, the participants become empowered and self-confident.</li> <li>We present our sessions to the entire elementary school in a day, with experiential hands-on science as the focus, and every student is involved. The sessions provide students with knowledge and age appropriate action skills and strategies for developing into future environmentally responsible and aware citizens.</li> <li>We have an opportunity to partner and collaborate with our local elementary schools, ar</li> </ul>	<ul style="list-style-type: none"> <li>Set up initial meetings to recruit new Science Buddy members; get organized into sub-groups for planning and brainstorming sessions</li> <li>Plan schedule for the first term school presentations; decide on necessary presentation materials, apparatus, chemicals etc.; props for skits or plays; gather/ prepare/ organize into kits</li> <li>Finalize preparations, session plans and pack up all kits for classes. Work within designated groups to practice presentation ideas and process of delivery. Do trial runs of experiments as required.</li> <li>Do presentations to schools – each presentation will involve specific sessions to involve every student from Primary to grade 6</li> <li>Arrange for transportation to and from schools; cost-share basis.</li> <li>Schools cover the cost of all consumable materials required for the various sessions, and pay for my substitute teacher.</li> <li>Ongoing assessment of leadership skills and presentation styles. This also involved identifying factors that could be detrimental.</li> </ul>
ESD Lighthouse School	Grade 9 to 12, 1000 students, learnings from the project are shared in the larger school district community	<p>Vision: To use Stouffville Secondary School as a 'lighthouse' of education for sustainable development (ESD) to inspire and inform the effective integration of excellent ESD practices in schools across Canada. Goals:</p> <ol style="list-style-type: none"> <li>1. Foster the development of the knowledge, skills, attitudes and values required for a sustainable future within all Stouffville staff and students.</li> <li>2. Facilitate the development of a school that is a model of sustainability with respect to all four pillars of the school: course work/curriculum, operations/organization, culture, physical surroundings.</li> <li>3. Develop the practices that support an effective whole school approach to Education for Sustainable Development.</li> <li>4. Share SDSS's experiences with others to encourage the adoption of sustainable policies and practices in schools locally and globally.</li> </ol>	Spring 2006 to present (no end date specified)	<p>Teri Burgess, education consultant, works in the school half time to encourage sustainable changes in all four dimensions of school life:</p> <ul style="list-style-type: none"> <li>curriculum/course work (for example, the integration of authentic action opportunities into class work, the inclusion of ESD-related knowledge, skills, attitudes in as many different subject areas as possible in all grades, etc.);</li> <li>organization/operations (for example, we are moving toward sustainable paper use and electricity consumption etc.);</li> <li>physical surroundings (we are developing an indoor seating area that inspires respect for all humans, other animals and plants, near and far, now and in the future; we are developing an outdoor classroom)</li> <li>school culture (for example, creating a culture of respect for diversity; building stronger bridges with the larger community, etc.).</li> </ul>	<p>The program is innovative because it addresses all four dimensions of school life: curriculum, culture, building, operations. Moreover, the existence of a half-time, in-school facilitator, distinguishes this program from many other projects which rely on the ability of people in already defined roles to promote ESD in addition to their other responsibilities. The program addresses the second criterion because the approach in the school is holistic. All staff and students are asked to apply the following question to their work: does it demonstrate respect for all humans, other animals, and plants, near and far, now and in the future? The work of the ESD steering committee involves initiatives that are traditionally viewed as environmental education as well as those that have been traditionally viewed as character education.</p>	<ol style="list-style-type: none"> <li>1. The need for a lighthouse school was identified through a Learning for a Sustainable Future visioning process.</li> <li>2. An existing relationship with the York Region District School Board was leveraged to create the partnership that resulted in this project.</li> </ol>

Provide the Title of the project or program.	What were your critical (prerequisite) success factors?	What support have you had in developing/offering this program? List the type of support (financial, in kind, release time, etc.) and the individual or groups that were involved in the project/program and briefly describe their role (e.g. Financial - Trillium Foundation – sponsor. In kind - community volunteers – parents helped gather resources, organize and participate in the project).	Choose the statement that best describes the policy situation you encountered in developing and implementing your program or project (within your own organization).						List the outcomes or achievements and how you measured or evaluated the project/program.	List the challenges you faced in implementing the project/program.
Open-Ended Response	Open-Ended Response	Open-Ended Response	policies were in place that enabled you to complete your program/project	policies were in place but they hindered your project/program	policies were not in place and this enabled you to complete your program/project	policies were not in place and this hindered your project/program	Do not know	Please describe:	Open-Ended Response	Open-Ended Response
Integrated Multi Credit Programs	(not given)	(not given)							<p>-there is a literature research base that supports the 4 credit instructional model -alternately instructional practices that are identified as "higher standards of Instruction" are often found in use in these programs</p>	<p>-participating teachers face many challenges in that they are setting up and administering a program outside of the school -in essence they are taking on an additional position to the teaching role -obtaining sufficient resources is an ongoing challenge since these programs have to pay rent and transportation costs -many other challenges have been identified...</p>
Alternative Energy Array (AEA)	Have permission and support from the respective parties listed above; have adequate funding in place to access supplies and equipment	<p>- Mr. Phil Saurette, Former Power Smart Energy Manager for PTSD - Mr. Ted Fransen, Asst. Superintendent, PTSD - Mr. Graham Bruce, Asst. Superintendent, PTSD - Mr. Gord Howe, Building Supervisor for PTSD - Mr. Rick Martin, Principal, Vincent Massey Collegiate - Mr. Barry Hamilton, Head Custodian, Vincent Massey Collegiate - Dr. Christina McDonald, Sustainable Development Coordinator, School Programs Division - Ms. Karen Warren, Special Programs Officer, Conservation, Programs Division Pollution Prevention - Ms. Holly Poklitar, Fund Officer, Pollution Prevention Branch - Mr. Peter Kidd, Building Systems Specialist. P. Eng., Manitoba Hydro - Mr. Michael McKernan, TeTRES consulting - Mr. Bob Spensley, Sequioa Energy - Mr. David Therrien, Windcor Power Systems - Mr. Bill Elliott, President, CEO; Fort Whyte Alive - Dr. Jino Distasio, Director Institute of Urban Studies (U of M)</p>							<p>• An ongoing commitment will be established to maintain the AEA • Tours demonstrating the AEA and its importance will be arranged. • Data such as wind speed, kilowatts generated and CO2 reductions will be gathered and analyzed. • Vincent Massey is part of the UNESCO school network. We will invite our partner schools to observe and perhaps emulate the AEA. The outcomes are being met as the project gets underway - we will be addressing the following in the curriculum: The Manitoba Grade 10 Social Studies curriculum requires that students be able to do the following: i) Explain the importance of stewardship in the preservation of the Earth's complex environment. ii) Describe sustainability issues related to natural resource extraction and consumption. iii) Be willing to consider diverse views regarding the use of natural resources. iv) Be willing to consider the implications of personal choices regarding natural resources.</p>	<p>• Making changes to the existing infrastructure of the school has been a challenge. Many recently built schools have many environmentally friendly features such as triple-paned windows but there continues to be many challenges retro-fitting older schools. • Challenges were and still remain procuring necessary funds to purchase &amp; install an AEA. \$25,000 minimum is required.</p>
Science Buddies	* Having the support of administration and school board financially and with transportation; participation of high school students; elementary schools willing to have us present to them and taking ownership of the day's experiences.	<p>The Science Buddies program was conceived, developed and facilitated by me, but it would have been impossible without support of others - 1. The Annapolis Valley School Board for their support of my work, in granting me a study leave initially for program development, and then providing a preparation day for each presentation day. Without the invaluable and crucial support of time, this would not have been possible. 2. Lynn Cavanagh – my #1 Substitute teacher – again, without her extremely capable abilities to take over my classes as needed, I would not have been able to maintain the program. 3. My principal for supporting me, and my fellow teachers, for accommodating the Science Buddies being absent from school and rescheduling tests etc. 4. Barry Corbin (Programs and Services Director AVRSB) who highly recommended the Science Buddies program to various elementary schools 5. Clarica and NSEFS for their significant financial support. 6. My mother, who along with her encouragement was always collecting plastic bottle tops and other assorted knick-knacks we used in our various projects: try finding 75 milk caps</p>							<p>To deliver experiential hands-on science and teach environmental issues to elementary students, with age-appropriate and creative learning opportunities, to every student from primary to gr. 6, in local elementary schools. To promote and develop solid leadership skills in high school students, gr. 9 – 12 To promote responsible citizenship and empower people with appropriate action skills • Success will be initially and obviously apparent by the attention (or lack of) given by the elementary students to the Science Buddies – are they actively engaged? • Success will be measured by the improvement in leadership skills and organizational abilities demonstrated by each individual Science Buddy. • This would also encompass communication skills, information gathering, problem solving, and helping to co-operatively design curriculum-based activities, public speaking, and facilitating sessions. • In this manner, success is measured qualitatively in the Science Buddies through observing the increase in self-confidence and apparent ease with people of all ages, leading and guiding students through many different activities</p>	<p>I have learned that organizing a project of this caliber requires far more time than I would have initially thought, but it is unquestionably worth the time it takes to get organized with a group of keen students, assisting them in their development as leaders, and planning and preparing the session to present. However, the time this program consumes is immense, and I have often spent weekends at school finalizing the packing up of kits and "theme" boxes, not to mention countless hours after school over the years – making up newsletters, researching ideas, refining theme sheets, organizing, scheduling sessions, etc. Financial challenges were easy to overcome, as was getting support from the administrators and community.</p>
ESD Lighthouse School	Not given	<p>Arlene Smith, Principal and Beverley Madigan, Vice-Principal—participate in weekly strategizing and decision-making as well as visioning at monthly executive committee meetings. John Havercroft, Superintendent of Education with Character Education portfolio (retired January 2008)—secured half of funding for project and participated in visioning at monthly executive committee meetings. Pam Schwartzberg, Executive Director of Learning for a Sustainable Future—secured half of funding for project and participated in visioning at monthly executive committee meetings. Teri Burgess, Education Consultant—works in school 2.5 days per week to facilitate changes in all four key areas of the project (curriculum, culture, building, operations). Participates in weekly strategizing and decision-making meetings as well as visioning at monthly executive committee meetings.</p>	Do not know						<p>Cultivated a culture of understanding about ESD and goals of whole school approach. Established good working relationships in a unique situation in an organization in which roles and relationships are traditionally well-defined with little room for changes to roles. Many examples of changes to curriculum and culture can be seen in the attached monthly project reports; changes to physical surroundings and operations are happening slowly. Compiling all resources and learnings for sharing and application in other schools.</p>	<p>Uncertainty of funding Disjointed approach to ESD already existed in the school district (for example, separate superintendents for: outdoor education, environmental education, character education). Staff attrition (eg. retirements, transfers, etc.) Pre-existing overloaded nature of the roles of key people: principal, vice-principal, teachers, etc.</p>

Provide the Title of the project or program.	What would you do different?	Who did you have to influence to develop and deliver the project/program? Describe whom you had to influence, the decision you required and the process you used to achieve the decision.	How could this be transferred to another group or region?	What would make it difficult to transfer the project/program to another group or region?	Are there particular skills or knowledge one would need to replicate this program?	What other questions could we have asked to better capture the innovative aspect of your project/program?
Open-Ended Response	Open-Ended Response	Open-Ended Response	Open-Ended Response	Open-Ended Response	Open-Ended Response	Open-Ended Response
Integrated Multi Credit Programs	(not given)	-each school administration has to support these programs for them to start	by training teachers to administer the different approach in teaching, and having supportive school boards/timetabling	n/a	(not given)	not sure
Alternative Energy Array (AEA)	• Due to the project's novel nature, we have lacked a blueprint that may have been helpful in the planning stages. Perhaps more research into this area may have helped initially.	Fortunately the Pembina Trails School Division and the Vincent Massey Collegiate have been very supportive. It has been also very important to consult with the school's custodial staff on a continuing basis as any future maintenance may rest with them. Vincent Massey Collegiate has also organized two conferences dealing with sustainability issues. These conferences brought together experts in the field of sustainability at the provincial as well as the national level. These conferences became an ideal environment share ideas as well as to request support our AEA project	Easily - once partnerships are identified and established, and financial supports in place, other schools and communities could follow this general format and process.	A lack of viable space, partnerships, support or financial supports; areas with very short growing seasons.	It would be very helpful to have a background in horticulture, meteorology and solar cells, but one could start from scratch and learn along the way.	n/a
Science Buddies	If I was starting over again, the one key factor that would be different would be to have another adult to work with – preferably another teacher, or a parent who could come in on lunch hours, when we'd have our planning and preparation meetings. The time that would be saved by sharing preparation tasks and working with the kids would be significant. Unfortunately, I was not able to find such an individual over the years. I would also teach more Science Buddies about the set-up and packing process of the theme boxes, and where to find everything in my back prep room, so that they could take even more ownership and responsibility for the program.	I presented the idea initially to my Science Consultant in the NS Dept of Education, who enthusiastically supported the concept. I then went to my school board's Director of Services and Programs, and described my idea and plans for the Science Buddies program. At the school board level, I received permission to go ahead with the project, and was told to apply for a study leave to develop it further. I applied for a 28 day study leave, with the unusual stipulation that I could determine when I'd take the days granted throughout the year, so as to not impact my own classes greatly, and to spread out the research and development process. The leave was approved, and the program was undertaken. The first Science Buddies presentation occurred in April, 2000 at Wolfville School, and continued from there.	This program has been a model for the newly developed EcoBuddies program of the Atlantic Chapter of the Sierra Club - demonstrating that the idea can be adapted and used in many different capacities. The actual Science Buddies program idea requires the background work to develop lessons and gather supplies (lots of time) but is usable anywhere.	The lack of support for teacher time and/or finances to get started.	Good management skills, creative brainstorming and curriculum knowledge from K - 6...	What awards or other recognition has been granted? For example - The Science Buddies program has received several significant financial grants, as well as receiving provincial and national recognition. o Clarica granted the Science Buddies Program two \$5 000 awards. Just 16 out of 40 accepted projects Canada wide were given this top amount, and only 3 projects were given this twice! The project criteria involved "creative, innovative approaches to leadership, and to inspiring our young people to become leaders. Projects should build students' abilities to make good things happen in their school or community." o The Nova Scotia Educational Facilities Society granted the program an award of \$1 200 for supporting student leadership in the school and community. o The Annapolis Valley Regional School Board recognized my work, particularly with this program, by presenting me with the "Teaching Excellence in Science" for Provincial Education Week, 2004. o The Nova Scotia Association of Science Teachers presented me with the Provincial "Science Teaching Excellence A
ESD Lighthouse School	Allow schools to nominate themselves (this school was chosen by the superintendent who took the leadership role in initiating the project). Choose a school from the self-nomination pool that was already demonstrating leadership in the area of ESD	It appeared that the people that needed to be influenced to initiate the program were: · John Havercroft, Superintendent of Education, Character Education portfolio · Principal and Vice-Principal of Stouffville Secondary School In hindsight, other people that should have been involved at the start of the project were: · Senior people from the building development department of the school district. · The director of the school district (so as to work toward synergizing this project with other environmental, social justice and outdoor education initiatives in the district).	generally follow the same approach as outlined above	Lack of support from key members of schools, school boards	be clear on goals of ESD and how to implement ESD practices within the various curriculum of schools	not sure