The Sustainable High Schools Kit

A Guide to Improving the Social and Ecological Well-Being of Your School

From the Sierra Youth Coalition and The Sierra Club BC Education Program
About This Kit

The 2007 edition of the original High School Sustainability Assessment Framework (HSSAF) was written by Nicolas Parent with input from Aqueela Nanji, Emma Banks, participants in the Sustainable High Schools Symposium, members of the Sustainable High Schools Steering Committee and Sustainable Campuses Project staff Kerri Klein, Shari Hayne and Anjali Helferty.

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The sustainable high schools kit www.sustainablehighschools.ca
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Introduction

Welcome to the Sustainable High Schools Kit, a joint effort of the Sierra Youth Coalition and the Sierra Club of Canada, BC Chapter Education Program!

This Kit is designed to support high schools involved in the Sustainable High Schools (SHS) Project. This innovative and dynamic program was created to help members of high school communities work together to envision, assess and take action to improve their school’s level of sustainability. It empowers students with the resources and skills to work with their school staff to LEAD successful classroom projects, policy creation, and infrastructure upgrades.

SHS aims to help youth generate greater social equity, ecological integrity and economic vitality in our communities by transforming Canadian high schools into models of sustainability.

What Is In This Kit?

1. The Sustainable High Schools Story: where it came from and what it’s all about
2. How to get involved in the SHS Project
3. A guide to Taking Action
4. Detailed Indicators and Calculators to assess your school’s sustainability
5. Appendices with further resources and tools to help you measure and improve your school’s level of ecological and social well-being
About the Sierra Youth Coalition

The Sierra Youth Coalition (SYC) is a national, diverse non-profit organization, run by youth for youth. We formed as the youth branch of the Sierra Club of Canada in 1996 with a vision of involving Canadian youth in pressing environmental issues. Since then, we have grown into a national youth environmental coalition with members, volunteers and local groups operating out of schools, universities, and communities across the country.

Through our successful national Sustainable Campuses Project, SYC has worked with over 45 post-secondary campuses, providing students with resources, research, networking and national coordination for campus sustainability across Canada. Our Community Youth Action Project has meanwhile enabled us to empower high school youth to build awareness, community and leadership skills for environmental and social justice through camps, events and skills-building workshops. We are delighted to bring the strengths of these two programs together in the Sustainable High Schools Project.

To join or learn more about SYC, please visit our website at www.syc-cjs.org.

About the Sierra Club BC Education Program

Created in 1998 in response to teacher requests for environmental education materials, our Education Program has grown into one of B.C.’s most effective Environmental Education providers. We know that a sustainable future relies on teaching today’s youth about ecological processes and about our interactions with the environment. We want young people to take stewardship action towards environmental issues but we want such action to be grounded in sound knowledge.

Since our inception, over 65,000 students from Kindergarten to Grade 12 have participated in our interactive classroom programs. Today, we provide in-class programs to more than 10,000 students a year, investigating key ecological concepts, environmental issues, and stewardship solutions. We strive to connect B.C. teachers to learning resources such as curriculum guidebooks, Professional Development workshops, and monthly e-newsletters, setting a high standard for inspiring environmental action in our classrooms and communities.

For more information on our Education Program please visit www.sierraclub.bc.ca/education.
What is Sustainability?

In 1987, the United Nations Brundtland Report, titled “Our Common Future”, defined sustainable development as meeting “the needs of the present without compromising the ability of future generations to meet their own needs”. Since then, the general understanding of sustainability has grown to emphasize a balanced integration of three key components:

1. **Ecological integrity**
2. **Social equity**
3. **Economic prosperity**

The Sustainable High Schools Project integrates the three spheres of sustainability by encouraging a triple bottom-line approach to the decision making and operation of educational institutions.

A Sustainable High School...

Is a centre of education that inspires its members to consider the ecological and ethical implications of their daily routines. Sustainable schools are models of innovation – acting upon their local and global responsibilities to ensure the health and well-being of their communities.

How Sustainable are Canadian Schools?

No one knows! We do not currently measure the state of sustainability in high schools. However, we can assume that most schools have to cope with bullying, send organic waste to the landfill, and could probably save money by using their heating more efficiently. When viewed through the SHS framework, most schools are already making some great progress – but are also capable of significant improvement.
Why Does It Matter If Schools Are Sustainable?

Every high school is an economic unit which consumes resources, buys products, and emits waste. By challenging schools to make the links between daily choices and their effects, we can make real change on a large scale possible...

Many different people care deeply about the social conditions, environmental impact and/or economic viability of their schools and would like to see change, but feel limited in their capacity to act or make a difference.

Canadian schools are the foundations of our society. Schools nurture, educate, and train the next generation of Canadian citizens and leaders; behaviours learned there will be carried on into every home and workplace of the future.
What Makes High School (Un)Sustainable?

The Sierra Youth Coalition Sustainable Schools Symposium was held from April 1 to 2, 2006 in Victoria. It brought together a group of 25 student and teacher representatives from around Southern Vancouver Island and Vancouver, and they were asked to put together a list of the things that they loved about their schools as well as those that needed some work.

**what i love**

- learning! energy and acceptance between students, staff & teachers
- feeling of equality
- recreational opportunities
- opportunity to have school, facilities, room to do stuff, creativity all in one place
- diversity! Potential to interact with diverse groups, brings diverse people together
- interacting with other people
- lots of different groups/clubs interested in different issues
- cooperation between school clubs
- having resources and help to accomplish our goals
- smaller schools more connected
- clubs in big schools have more people to involve in activities
- having connection with other schools and students through programs like sports
- welcoming, supportive community, parent involvement, participation in actual education
- incorporating sense of community, educational tools, more people that can help, mentor and support
- need more connection with like-minded students from other schools

**what i dislike**

- not enough time, want to be able to take more courses
- misplaced priorities of people: not paying attention to relevant things like sustainability
- wasted energy and time on administrative dogma, filling out forms… (planning 10), adults telling you to do things that seem meaningless
- people feel obliged to volunteer instead of really wanting to
- need better communication in a big school; things that student council advertises a lot are stupid, and cool things aren’t advertised
- competition between groups, stress between leadership class and clubs
- paper waste: paper towel, no composting, not enough recycling, too much litter
- obsessed with cleanliness
- the physical environment: bad air, central heating vs. individual rooms: too hot or too cold – can’t control (therefore waste) the heat; needs plants, more water fountains; learning environment is flat and inhibiting
- food waste!! no compost; need food growing programs, healthier food in vending machines and cafeteria
- automatic flushing urinals – water waste – school knows there is a problem, but won’t do anything if solution is not in their face
- general apathy, people use stereotypes, mocking, bullying, labelling us as hippies/environmentalists
- advertising
- need more connection between subjects, learn about hands-on practical issues, not just exams, lots of pressure by gov’t. through standardized tests
- (as alternative educator) hard to connect with schools, very challenging – if teachers are pushed to their limit just with curricular responsibilities it’s hard to do more
Students at Lester B. Pearson World College share a passion for food and food security! They created a social enterprise based on the common passion of their particular community - as a world college, they have students who are experts in cooking food from all over the world. They put together a recipe book that honours all of their cultures, and sell it to fundraise for student initiatives.

Success Story: Pearson College’s Passion for Food... and Food Security!

**School Sustainability**

A **sustainable school community** acts upon its local and global responsibilities to protect and enhance the health and well-being of all humans and ecosystems. It actively engages the knowledge of the school community to address the ecological and social challenges faced both today and many years from now.

**Key Term**

**Academic freedom** provides the ideal conditions for **inspired innovation**

**Why Should I Get Involved?**

Youth today are often portrayed as lazy, troublemakers, silly or apathetic. At best, we are seen to excel in sports, tests, and hold down a $6 per hour job – at worst, to skip school, do drugs, and throw our future down the drain. Yet there must be something more than this picture of escapism, indulgence, emptiness. There is!

We don’t always hear about it, but youth are constantly doing amazing things across Canada and around the world. WE are realizing our power, our choices, and our options – we are taking responsibility for the consequences of our own choices and actions, and are taking a leadership role in our communities. Each one of us is unique, with different experiences, passions, and concerns, but we don’t have to accept the world as it is, whether it’s given to us on a silver platter or seems to be closing in around us. By choosing to inform ourselves and to get involved, we are helping to evolve past the carbon age and create the kind of world we want to live in.
Sustainability Is For YOUth!

As youth, we have the most to gain and lose when it comes to working for a sustainable future. First among the many threats to the lifestyle we take for granted, the spectre of climate change demands we take action. Scientists believe that we have a twenty-year window to make the move to a sustainable lifestyle or we will be stuck with having to adapt to a climate that the Earth hasn’t experienced in over 350,000 years.

It is our generation, the people in high school right now, who will have to deal with the realities and consequences of our current unsustainable practices. We face huge challenges, and we see many of them in our schools – waste, lack of connection, injustice, and short-sightedness. Yet we also have the greatest power to create change; we have the knowledge, the technology, the wealth and the conviction to make real change. We haven’t yet committed ourselves to our path – most of us don’t have mortgages, kids, or careers – we are not yet invested in an unsustainable lifestyle. As adolescents, we are figuring out what the world is about, who we are, and where we fit in.

We are perfectly placed to be the people who can see the challenges clearly, face them without fear, and learn to work together to solve them. It will be our decisions on what to study, where to live, who to work for, what to buy, and who to vote for – in short our choice of who we want to be and what we want to do with our lives – that will make all the difference.

The question is, what kind of a difference do you want to make?
What Can I Do?

By participating in the **SHS Project**, you can help create a vibrant national network of high schools that are sharing tips, success stories and lessons learned while pursuing sustainability!

One of our major lessons in the movement for sustainability is the critical importance of **taking action** in ways that combine what you really like to do with something you really want to change. We’ve included resources on how to foster sustainable behaviour change and how to plan and implement school-wide projects in this guide because:

- If you only do fun or easy things, you won’t necessarily make the world a better place… you might even be making it more unsustainable without knowing it.
- If you only focus on trying to save the world, you might burn yourself out or get discouraged. In the long run you’ll create less change than if you did something that was personally gratifying, and therefore more personally sustainable.
- If you do things that you like in order to make the world a better place, you’ll make a positive difference while making friends, building skills, and gaining experience that will help you earn a sustainable livelihood and create a resilient community in which to live. Others who enjoy or care about the same things will want to help you, making it easier to accomplish your goals (and more fun and rewarding).

**Success Story: Adam’s Bio-Diesel-Fueled Band Tour**

Adam Iredale, Grey and Ryan Boeur created a plan at the Youth Action Gathering in 2005 to bring people together through their passion for music and concern about climate change. Their idea became Dreamseed, a 3 day event with diversity of youth and featured tons of local bands, open mic, and an info fair that included fun, interactive workshops on how to reduce GHGs. Adam was then able to convince his band, The Gruff, to tour Canada in a van converted to biodiesel. Using recycled vegetable oil from restaurants along the way, they saved over $3,000 in gas and hugely reduced their CO2 emissions.
Section 1
The Sustainable High Schools Project

What is it?

The SHS Project is based around something called the High School Sustainability Assessment Framework (HSSAF). This framework provides a balanced approach to measure indicators of progress in high school sustainability, involving your high school in three important steps during your sustainability assessment.

Step 1 Establish a Sustainability Advisory Committee. Work with other student leaders, teachers & administrators to envision and create the kind of school you’d all like to be a part of.

Step 2 Complete the Sustainability Assessment. Use 30 “Sustainability Indicators” (measuring everything from bullying to water use) to calculate the sustainability of your school.

Step 3 Start Action Planning. Create fun and meaningful projects and policies to improve your school’s sustainability!

The Sustainable High School Process

Implementation of recommendations
Build Advisory Committee
Step 3 Take action!
Step 1 What’s happening now?
Recommendations, feasibility studies and action plans
Step 2 What has to be done?
Assessment
Where Did SHS Come From?

SYC’s Sustainable Campuses Project has supported over 45 universities and colleges working for sustainability with conferences, mentors and the Campus Sustainability Assessment Framework over the past eight years.

In the fall of 2005, three SYC members, Nik Parent, Emma Banks, and Aqueela Nanj learned about the project, and frustrated with the unsustainable way their high schools were run, asked SYC staff to help them adapt the Sustainable Campuses project to make it available for use in high schools. Working together via phone and email for over a year, we presented what we had come up with to about 25 BC students, teachers and parents at SYC’s Sustainable High Schools Symposium in April 2006. The participants got super excited about the project!

They formed the basis of the current Youth Steering Committee of the Sustainable High Schools BC pilot project, working together to strategize how to make it work in their schools and across the province.

SYC partnered with the Sierra Club BC Chapter’s Education Program to launch the BC pilot project in five schools in January 2007. This project was expanded in 2008 to include 19 schools.
Why Does SHS Exist?

Just like post-secondary students, high school youth wanted a way to improve the state of the communities where they spend most of their time: their schools! We have found that students across Canada are experiencing the same problems:

- Youth are finding it difficult to be taken seriously or to communicate with teachers, administration, parents and peers about environmental/social issues;
- There is no place to share and evaluate successful strategies for change;
- Youth need resources, tools, contacts, and advice to make long lasting change;
- Youth leaders need a tool to help get the entire school community involved.

As with the Sustainable Campuses project, we hope the SHS project will grow to be a national movement for school sustainability.

**Indicator**
A measuring rod of our current state.

**Curriculum-linked**
Programming that ties directly to provincial prescribed learning outcomes for a high school course.

**Next up**
Find out more about the tool we’ve created to help solve each of these challenges! The Sustainable High Schools Process details why you would:

1 → Build a **Sustainability Advisory Committee**
2 → Complete a **Sustainability Assessment** ... and the best part...
3 → Create an **Action Plan** for projects to increase sustainability at your school!
The Sustainable High Schools Process

Step 1 Building Your Sustainability Advisory Committee
Bring diverse members of your high school community together to guide the improvement of your school’s sustainability.

Working With the Community

Sustainability is a collaborative process…

- Being inclusive of all school community members creates a cooperative and respectful foundation to identify and strive towards common goals.
- Real sustainability requires ongoing commitment and active, equitable group participation.
- To create lasting positive change, sustainability projects need buy-in from:
  - People making decisions. (administrators, politicians)
  - People implementing decisions. (teachers, staff)
  - People who are affected by the decisions made. (students)

Why Is Collaboration Important For Sustainability?

Working with people, understanding different perspectives, and balancing each against the other is very important for creative problem solving and engaging a critical mass of high school community members to work together for change. This is a challenging and rewarding process!

Success Story: GNS collaborates to create a collective vision for conservation!
Junior and Senior students, staff and parents at Glenlyon Norfolk School held the first school-wide sustainability forum to share their results from the SHS Take Action Class Challenge and create a Spring to Fall plan to model sustainability when they host schools from around the world at the Round Square 2008 conference. GNS classes reduced CO2 emissions by over 12,000 Kg, water consumption by over 60,000 Litres and shifted over $4,000 to a sustainable and just economy. Small groups involving 100 people identified common priorities for change: local and ethical sourcing and production of all cafeteria food, making GNS a bottled-water free zone, encouraging alternative transportation, and reducing waste, water and energy consumption. They shared project ideas GNS could take on in the next month, year and five years and 21 students, 7 staff and 7 parents of all ages joined their multi-stakeholder “Sustainability Advisory Committee” to coordinate the planning and implementation of these initiatives.
By inviting and including representatives of all stakeholders (people with a vested interest in a particular community, decision or policy) to participate, it is much more likely that your project will succeed.

- Bringing diverse people together who share something in common (a desire for sustainability!) builds a resilient and respectful community.
- Any one group acting in isolation from others will be less successful than a community working together.
- Long-term projects need buy-in from authority figures as well as people or groups affected by the decisions.
- You need a process where stakeholders can have input into the decisions which will impact them. This will also help create greater commitment from each stakeholder.

**Different High School Community Members Have Different Perspectives**

**Students**
- Only at the school for 4 years
- Want to see change….now!
- Often do not have decision-making authority
- Sometimes are not taken seriously
- May feel like they have to be at school, but would rather not be

**Teachers, Staff and Administration**
- All are very busy, possibly overworked
- Environmental/social solutions are often seen as expensive or difficult
- May seek such solutions but are trumped by demands of course curriculum, lack of support and other various factors
- May not consult very much with students and each other
- May lack a common vision of school that includes environmental and social values
- Experienced and invested in current systems and the status quo

**Goal of a Sustainability Advisory Committee**

An organized and representative body that can develop, guide and direct the sustainability initiatives of the high school community. This committee ensures the ongoing success of the project by recruiting new members each year and orienting them to the project. This ensures that despite students graduating or staff retiring, the project will have active, informed leadership from year to year.
Who Should Be Involved?

- Students at large
- Student government
- Clubs: Environmental/Social Justice/Global Issues, etc.
- Classes: Leadership, Geography, Sciences, Social Studies, Math, etc.
- Teachers
- Staff (Custodians, cafeteria staff, secretaries, etc.)
- Administrators (Principal, Vice Principal)
- Parent Advisory Committees
- School Board members
- Others? This can include parents, trustees, alumni, chaplain, coaches, and many others

For more detailed information to set up your Sustainability Advisory Committee, please refer to Appendix 2: Building Your Sustainability Advisory Committee.

Step 2 Assessing School Sustainability with the High school Sustainability Assessment Framework

Understand which aspects of your high school do or do not need improvement by measuring indicators of sustainability in each of the HSSAF’s 10 categories. This gives you a quick but comprehensive picture of what and how you are doing.

Why Bother Measuring and Researching?

What we measure matters! We make decisions based on what we know, whether what we “know” is impressions, values or hard facts. In our society, we often measure our wealth and well-being in terms of money and possessions, even though without good health, supportive relationships, and the knowledge and ability to shape our lives we would not find much happiness or fulfillment. Without clean air and water, renewable ecological resources, and a stable climate we will have none of the above.

School administrators often know very well how the school is doing in terms of money and grades, but without a way of measuring how well the school is doing socially or ecologically, it can be hard for them to make decisions that uphold these important values as well.
“You Can’t Manage What You Can’t Measure!”

- Governments, institutions, companies, and individuals tend to define their wealth by how much money they have.
- We know that there are many valuable things that increase our well-being – knowledge, health, culture, clean water, biodiversity, predictable climate – and some of these things do not have a price tag.
- Probably everyone knows how much money they have in bank… but do you know how many greenhouse gases you emitted today?

**Benchmark**
Vision of where we want to be (i.e. 100% renewable energy, no bullying, etc.).

**Assessment**
Where we are now.

**Indicator**
A measuring rod of our current state.

**Why are assessments important?**

- We need to have a starting point to address important issues.
- Regular assessments enable us to monitor progress overtime.
- Assessments allow us to compare results between schools using common language.
- We can learn from measured success and challenges.
- Assessments engage the community in the process of measuring and improving the school.

**Success Story: SMUS Energy Audit Powers Energy Conservation**

Once Saint Michael’s University School completed an energy audit, they used the results to identify which electrical appliances could be upgraded or unplugged - including all the mini fridges in each residence, as they discovered they were running all year long to just keep a couple cans of pop cold. SMUS replaced lights and water fixtures, and knows exactly how much money and resources they are saving thanks to their assessment.
The Sustainable High Schools Project HSSAF Indicators

Sustainability lies in the ongoing interdependent connection between all the members of our ecological and human communities. The complexity of such dynamic relationships is really hard to measure, understand and act upon! By identifying major issues of high school sustainability and calculating quantifiable indicators of these issues, we can get a quick but comprehensive picture of how we are doing.

There are charts on the next two pages. The first one shows the Community Indicators (i.e. people-related issues) and the second shows Ecological Indicators (i.e. not just people). There are more details on the hows and whys of each of them later in the HSSAF (page 14), but for now you can get a sense of the range of sustainability issues you can measure through the SHS Project.
### High School Sustainability Assessment Framework: Community Indicators

<table>
<thead>
<tr>
<th>Area</th>
<th>Indicator</th>
<th>Method of Calculation</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Health &amp; Well-Being</strong></td>
<td>HW-1 Incidents of Assault</td>
<td>Total annual number of reported incidents of verbal, physical, emotional, mental and sexual abuse, divided by the total number of SCMs.</td>
</tr>
<tr>
<td></td>
<td>HW-2 Sick days</td>
<td>Total annual number of sick days taken by SCMs, divided by the total SCMs.</td>
</tr>
<tr>
<td></td>
<td>HW-3 Substance Abuse</td>
<td>Total number of SCMs who use alcohol, cigarettes, marijuana or other addictive substances once a week or more according to survey results, divided by total survey respondents.</td>
</tr>
<tr>
<td></td>
<td>HW-4 Physical Activity</td>
<td>Total number of SCMs who are physically active according to Canada’s Healthy Living Strategy, divided by the total number of survey respondents.</td>
</tr>
<tr>
<td></td>
<td>HW-5 Nutrition</td>
<td>Total sales of “junk” food (products with high sugar, fat, salt, caffeine or low nutrient content as defined by the Canadian Food Guide to Healthy Eating) divided by total food sales.</td>
</tr>
<tr>
<td><strong>Community</strong></td>
<td>C-1 Volunteerism</td>
<td>Total annual number of SCMs who volunteer at least 2 hours per week divided by the total number of SCMs, and multiplied by 100. Double counting of people should be avoided.</td>
</tr>
<tr>
<td></td>
<td>C-2 Sense of Community</td>
<td>Total number of SCMs who feel a very strong sense of belonging, confidence, and engagement in your school community according to survey results, divided by total respondents.</td>
</tr>
<tr>
<td><strong>Knowledge</strong></td>
<td>K-1 Sustainability Literacy</td>
<td>Average percent improvement on a sustainability literacy survey between first semester and last semester of attending high school.</td>
</tr>
<tr>
<td></td>
<td>K-2 Sustainability in Course Content</td>
<td>Total number of courses that have “substantial sustainability content,” divided by total number of courses.</td>
</tr>
<tr>
<td><strong>Governance</strong></td>
<td>G-1 School Staffing for Sustainability</td>
<td>Total number of staff responsible for the management of the issues below, divided by total number of listed issues. Each staff member should be counted once, even if responsible for more issues.</td>
</tr>
<tr>
<td></td>
<td>G-2 Student Government Working Groups</td>
<td>Total number of active clubs or working groups reporting directly to the student council, Sustainability Advisory Committee, or the board of directors divided by the total number of groups/clubs.</td>
</tr>
<tr>
<td><strong>Economy &amp; Wealth</strong></td>
<td>EW-1 Ethical &amp; Ecological Investing</td>
<td>Total annual dollars invested (for example by teacher pension plans) in ethical and environmentally responsible companies, divided by the total annual invested dollars.</td>
</tr>
<tr>
<td></td>
<td>EW-1b Ethical &amp; Ecological Purchasing</td>
<td>Total annual dollars spent on goods, services and infrastructure investments, (for example on team uniforms, food services, portable classrooms) purchased from ethical and environmentally responsible companies, divided by the total annual dollars spent.</td>
</tr>
<tr>
<td></td>
<td>EW-2 Locally Purchased Goods &amp; Services</td>
<td>Total annual dollars spent on locally (within 200km) provided, harvested, or manufactured goods and services divided by the total dollars spent on goods and services.</td>
</tr>
<tr>
<td>Area</td>
<td>Indicator</td>
<td>Method of Calculation</td>
</tr>
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<td>-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Water</td>
<td>W-1 Potable Water Consumed</td>
<td>Total annual volume of potable water consumed by your school for all uses (in litres), divided by the total number of School Community Members (SCM’s).</td>
</tr>
<tr>
<td></td>
<td>W-2 Efficiency of Fixtures</td>
<td>Total number of new water fixtures installed annually that are of highest possible water efficiency rating for that year, divided by the total number of new fixtures installed in that year.</td>
</tr>
<tr>
<td></td>
<td>W-3 Pollution</td>
<td>Total volume of non-biodegradable and toxic cleaners and other fluids disposed of into water system, divided by total number of SCMs.</td>
</tr>
<tr>
<td></td>
<td>W-4 Drinking Water Quality</td>
<td>Percent of classrooms that are less than 20 meters from a source of free water that meets or exceeds Guidelines for Canadian Drinking Water Quality.</td>
</tr>
<tr>
<td>Materials</td>
<td>M-1 Paper Consumption</td>
<td>Total pieces of paper (of all types) purchased by the school each year, divided by the total number of SCMs.</td>
</tr>
<tr>
<td></td>
<td>M-1b Enviro-Friendly Paper Consumption</td>
<td>Calculate percentage of environmentally-friendly paper purchased by dividing quantity of non-chlorine bleached, recycled, tree-free paper by total paper purchased.</td>
</tr>
<tr>
<td></td>
<td>M-2 Solid Waste Reduction</td>
<td>Percent of waste reduced per capita over previous years’ waste production.</td>
</tr>
<tr>
<td>Air</td>
<td>A-1 Lead, Asbestos and Mould</td>
<td>Total square meters of indoor spaces contaminated with lead, asbestos and mould, divided by the total indoor square meters.</td>
</tr>
<tr>
<td></td>
<td>A-3 Greenhouse Gas Emissions:</td>
<td>Total tonnes of GHGs emitted during the year as a result of transportation by SCMs to and from school, divided by total number of SCMs. Extrapolate from averaged survey results from 2 separate weeks in the year, one during a cold month (below 5ºC) and one during a warm month (above 5ºC).</td>
</tr>
<tr>
<td></td>
<td>Transportation</td>
<td></td>
</tr>
<tr>
<td>Energy</td>
<td>E-1 Greenhouse Gas Emissions:</td>
<td>Total energy (of all types) consumed (in GJ) annually for heating, cooling, ventilation, and electrical systems, converted into GHG equivalent (tonnes), and divided by total square meters of interior built space. Note: energy used in outdoor uses (lighting, signage, etc.) should not be included in calculation, but still assessed relative to interior space.</td>
</tr>
<tr>
<td></td>
<td>Buildings</td>
<td></td>
</tr>
<tr>
<td></td>
<td>E-2 Reduction in Energy Consumption</td>
<td>Total change in energy consumption in GJ for buildings in current year over previous year.</td>
</tr>
<tr>
<td></td>
<td>E-3 Renewable Energy Source</td>
<td>Energy consumed that comes from renewable sources divided by total energy consumed.</td>
</tr>
<tr>
<td></td>
<td>E-4 Appliance Efficiency</td>
<td>Total number of appliances with high Energy Star efficiency rating divided by total number of appliances.</td>
</tr>
<tr>
<td>Land</td>
<td>L-1b Green space</td>
<td>Total hectares of permeable green space, divided by the total school grounds (greyspace, managed and natural green space, including all built or non-permeable spaces) at your school.</td>
</tr>
<tr>
<td></td>
<td>L-2 Pesticides</td>
<td>Total volume of solid and liquid pesticides (including both plant and animal poisons of all types) used annually (in litres), divided by the total hectares of managed green space.</td>
</tr>
<tr>
<td></td>
<td>L-3b Native Plant Cover</td>
<td>Total square metres of native plants growing in managed green spaces, divided by total area of managed green space. Use quadrants and field guide to identify and estimate native plant cover.</td>
</tr>
</tbody>
</table>
Step 3 Take Action

Action visioning, planning and mapping. Use your passion and knowledge to improve your school’s sustainability through creating fun and meaningful projects.

Be the Change You’d Love To See in Your World!

Once your class, club, or Sustainability Advisory Committee has calculated your school’s level of sustainability through the HSSAF assessment, you’ll have the facts you need to know which aspects of your school are sustainable and which are not. You may have learned about things you are concerned about, things you would like to change or things that may be threatened and you want to save. You can do this by learning how to plan a classroom project or school-wide event, creating a school policy, or asking the school board to upgrade your school’s infrastructure. The Sustainable High Schools Project offers several sets of resources to help you, your class, your club, your Sustainability Advisory Committee or your whole school or school district to Take Action! See Appendix III for taking action by changing behaviour on an individual level and Appendix IV for an Action Planning Package that will help you work with others to plan group projects. We are always coming up with new tools which you can check out at www.sustainablehighschools.ca

### A. Action Visioning

What do you want to change, and how can you have fun while you be that change?

**1. Identify your passions**

- What do you like to do?
- What do you love?
- What are you good at?
- What makes you feel good?
2. **Identify your concerns**
   - What is happening in your school that you do not like?
   - What do you think would make life in your school/family/community/ ecosystem better?
   - What do you think is not right or fair in the your school or the world right now?

3. **Identify possible project ideas** that you’d like to do because they combine what you enjoy doing with an action that will address one of your concerns.

   **For example**
   - **Music/Art + Racism** = Hold a multi-cultural concert & art show to celebrate your school’s diversity.
   - **Playing basketball + Nothing for kids to do after school** (except drugs and bullying) = Host a 3-on-3 basketball tournament every Wednesday after school.
   - **Writing + Torture of political prisoners** = Start a monthly Amnesty International letter-writing club.
   - **Camping + Clear-cut logging of old growth forest** = Organize a camping trip to a threatened forest with your friends, then take photos and give a presentation to your class on the need to use recycled paper.
   - **Watching movies + climate change** = Host a film festival with movies such as Oil on Ice, Inconvenient Truth, and End of Suburbia.

4. **Find out what other people are interested in.**
   - Do they share your passions & concerns?
   - Ask your friends and classmates or find out if there are any school clubs or community groups that you could join or support. Maybe they haven’t thought of your idea before or could really use your energy to build on an existing project.
B. Action Planning

Pick a project idea to develop and focus on.

Make sure it’s Fun & Real: it needs to be realistic & make a real difference. The best projects are DAFT!

- It will make a Difference in your life AND community – however you want to define “community” (ecosystem, family, school, city, world, etc.).
- It’s Achievable: you can conceivably do it, once you break it down. There is no point planning to climb Mount Everest if you don’t know how to walk yet – keep Everest in sight, but start off with the hill in your backyard first. You will learn the skills you need and be motivated by your success to tackle bigger projects next.
- It’s Fun! If you enjoy it, you’ll stick with it; if others enjoy it, they’ll help you make it happen.
- It’s Targeted. Make sure you know what you are trying to achieve, how you will achieve it and why.

**“We’re going to ______________ so that ______________.”**

Planning the 5 W’s

Once you have chosen your project and are sure it’s DAFT, brainstorm:

- **What do you want to do?** Now is the time to dream big, think about the possibilities, and make connections with other events/groups/campaigns already happening.
- **Why do you want to do it?** Think of all the reasons why this is a good project – for you, your family, your friends, your community, the world… If you know exactly why you are doing your project, it will be easier to keep the project going and to convince others to get involved and support you.
- **Where is your project going to take place?** Where would be the best place to reach the people you need to affect the change you want to see to see change happen? On the internet? At your school? In front of the Parliament building? On T.V.?
- **When is your project going to start and finish?** Think of a timeline that will allow you to develop your project, spread the word, gain support, make it happen, and celebrate! Evaluate with the other folks involved (share feedback, success stories and lessons learned so that you can make it even better next time), and tell people about it so that others can learn from and be inspired by what you did.
- **Who do you want/need to be involved?** Volunteers, mentors, funders, the public, etc.
C Action Mapping

Now that you know how to make your project a success, create a map to help make it happen.

1. Discussion
   
   **What is a map?**
   - A map is a visual picture of a place, idea, path.

   **What are they used for?**
   - Maps help us get from one point to another.

   **What do they show?**
   - Maps show barriers (like mountains & rivers) and ways to get around or past them (like passes or bridges).

   **What do they look like?**
   - Maps often use symbols, colours, numbers, labels, lines, etc. to store or convey information.

   **How can making a map help us?**
   - Maps help you prepare for and avoid potential challenges before you even start your project.

2. How to make a useful map

   Once you have completed visioning and planning your project, it’s time to get it down on paper.

1. Get everyone involved in mapping the project to gather around a big piece of paper, and make sure everyone has a couple of colourful markers. Have the 5 W’s of your action plan handy so you do not forget any aspect of your project.

2. Discuss the things you want your map to show, such as important dates and deadlines, tasks you will need to accomplish, who is going to do what, barriers you may face, and actions you will take to overcome such challenges.

3. Get creating! As ideas are suggested, draw them on the map, using symbols, words, different colours, labels etc to brainstorm how you are going to get where you want to go from where you are now. Make sure everyone is involved, and have fun!

4. Check it over to see if anything is missing, and ask your mentors for feedback.
3. How to use your map

- **Keep it handy!** Post it where you will see it and refer back to it to keep you on track.

- **Hold regular meetings** where each person involved reports what they have done and what they are going to do next. Make sure to check off what you’ve done and celebrate overcoming any major hurdles.

- **Don’t give up!** Challenges will come up, and to overcome them, you will need to use creativity, be resourceful and get the support of people who can help you out. There are tons of great guides, manuals and handbooks out there too, such as SYC’s Group Kit and others in the Resources section of this Kit. The Sustainable High Schools website at www.sustainablehighschools.ca has most of the best ones available online to download.

- Use your map to write a **report/article/zine/guide** when you are done so you can teach and inspire others with the story of how you did it!

### Next up

What we’ve all been waiting for – the **High School Sustainability Assessment Framework** (HSSAF)!

Now that you understand the SHS project and know how to:

1 → **Build a Sustainability Advisory Committee**
2 → **Complete a Sustainability Assessment**
3 → **Take Action** both personally and by creating action plans for projects to increase sustainability at your school

... you are ready for a more detailed look at how to calculate each indicator in the HSSAF, the central tool of the project. There is a page or two for each indicator with ideas for discussion, key questions and tips on how to measure it that you can print or photocopy and give to each person working on it.
Section 2
The High School Sustainability Assessment Framework (HSSAF)

The High School Sustainability Assessment Framework (HSSAF) is a comprehensive tool adapted for use in high schools from the original Campus Sustainability Assessment Framework (CSAF). CSAF was written in 2003 by Lindsay Cole as a master’s thesis, conceived to support the sustainability initiatives of College and University campuses involved in the Sierra Youth Coalition’s Sustainable Campuses Project.

As with the CSAF, the HSSAF enables a diversity of high school community members to work together to measure their school’s sustainability in ten major areas using a “Participatory Action Research methodology”. The original CSAF offers users 169 indicators of sustainability, from which we have selected 30 indicators we think most appropriate in the high school context. The authors of these two documents encourage the broad use of this document for research, learning, teaching, and other non-profit uses, and hope that users are respectful in recognizing and referencing the ideas herein. The authors retain the sole right to use this research product for consulting and other potentially for-profit uses.

The HSSAF Sustainability Model

This figure represents the model employed by the HSSAF to assist in assessing schools and the space they occupy in the world. The human system lies within the ecosystem, representing its supporting function. Each of these systems must be healthy in order for the whole system to function, and each has a series of indicators to measure school sustainability, organized into Principles of Sustainability, each of which include several indicators of sustainability which you, your student club, class or Sustainability Advisory Committee can calculate.
Which Indicator Should I Start With?

The HSSAF indicators and the accompanying tools and tips will help you succeed in assessing your school’s sustainability, but it will require a fair bit of effort, resourcefulness, forethought and commitment on your part. Some indicators will seem very easy for you and your school, while others may present quite a challenge. It is important to set yourself up for success by identifying what you are most interested in doing and what you can actually do – it is not mandatory to do the whole assessment, especially not all at once or by the same people. At the same time, once you get the hang of it, you may find it easier than it looks. Good luck, ask for help when you need it, and have fun!

Check for the following symbols on each indicator to see if it is best assessed by a club, class, or a Sustainability Advisory Committee (SAC) and whether we think it may be easy, more difficult or challenging.

Easy  More Difficult  Challenging

We have also added a Survey symbol to those indicators you may want to include all at once in an annual school-wide survey.

Your Feedback is Important!

Even though this version of the HSSAF is considered complete, there is still a great deal of work, research, and testing that needs to be done in order to fully develop the SHS Kit. Benchmarks set throughout this assessment may not be realistic, and may differ from school to school. To fully complete this document, we need to receive reports of results and feedback from the schools who use it – your successes, challenges and advice will help us make the SHS Kit more useful for everyone!
Key Terms and Abbreviations

There are several key terms used throughout the HSSAF you will need to know to begin.

SCM
School Community Member. The total of all full-time equivalent (FTE) students, staff and faculty from all departments at your school.

Benchmark
A vision or goal for where we want to be in a certain time frame (i.e. 100% renewable energy, no bullying, etc.).

Assessment
A calculation which shows where we are at now.

Indicator
A measure of our current state.

Resources
For each of the ten sustainability categories in the HSSAF, you will notice an intro page which includes additional resources for researching, learning about and calculating the indicators selected to explore that issue. Look for this symbol to tell you where you can find Resources to help you with the indicators.
The Principles of Sustainability

- Principle 1: Health and Well-being
- Principle 2: Community
- Principle 3: Knowledge
- Principle 4: Governance
- Principle 5: Economy and Wealth
- Principle 6: Water
- Principle 7: Materials
- Principle 8: Air
- Principle 9: Energy
- Principle 10: Land
A healthy and happy school is very important in ensuring a school’s ongoing success as a learning institution, as well as its strength and viability as a community where high school teachers, students and staff spend most of their waking hours. As high school students are in their growth spurts, and forming habits that will be present most of their lives, the level of safety, health, substance abuse, quality of food and physical activity available there is crucial to our concentration, growth, and well-being. Staff can help students learn coping strategies that do not rely on substances, aggression or junk food and the best way to do this is to model healthy behaviours themselves. Nevertheless, sometimes health and well-being can be quite hard to monitor and to evaluate. We encourage schools to first develop accurate reporting methods and then begin working to improve them, especially in the case of incidents of assaults.

**Issues**

**Health and Well-being Resources**

- [www.hc-sc.gc.ca/fn-an/index_e.html](http://www.hc-sc.gc.ca/fn-an/index_e.html) **Health Canada** is the Federal department responsible for helping Canadians maintain and improve their health, while respecting individual choices and circumstances. It publishes Canada’s Food Guide to Healthy Eating.
- [www.youthcope.150m.com/#Activities](http://www.youthcope.150m.com/#Activities) **Youthcope** is a website created by youth concerned about substance abuse, offering information on the various types of drugs youth are most likely to come across or have to make decisions about.
- [www.nms.on.ca/Elementary/10_tips_to_healty_eating_and_phy.htm](http://www.nms.on.ca/Elementary/10_tips_to_healty_eating_and_phy.htm) **10 tips** for a healthy lifestyle.

**This principle has 5 indicators**

- HW-1: Incidents of assault
- HW-2: Sick days
- HW-3: Substance abuse
- HW-4: Physical activity

**Principle 1: HEALTH and WELL-BEING (HW)**

This principle has 5 indicators
**HW-1: Incidents of Assault**

**Indicator and Benchmarks**

<table>
<thead>
<tr>
<th>Measurement Units</th>
<th>Short-Term Goal</th>
<th>Long-Term Goal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total annual number of reported incidents of verbal, physical, emotional, mental and sexual abuse, and other similar events; divide by the total number of SCMs*; multiply by 100.</td>
<td>Accurate, safe reporting</td>
<td>Zero</td>
</tr>
</tbody>
</table>

*SCM = School Community Member

**Discussion**

Often referred to as “bullying” in high schools, many abuse incidents go unreported, as victims are ashamed or scared of reprisals by perpetrators, and do not seek help until a pattern of abuse has escalated to intolerable levels. This indicator is fairly easy to accomplish with data available from the vice-principal, but the real challenge will be discovering whether the data available represents what is really happening. We hope HW-1 will encourage schools to design systems to safely and effectively monitor and respond to every incident.

**Core Questions**

1. Where are physical and verbal incidents of assault reported at school?
2. How many physical or verbal assaults were reported during the past year?
3. Are the reported incidents a good indication of reality? If not, what is the estimate of assaults that go unreported each year? Is there adequate reporting and policing of assaults?
4. Do you feel that incidents of assault are a significant issue at your school?
5. Do you feel that there is adequate support for people who have been assaulted on school grounds?

**Survey Questions**

1. Have you ever been physically, sexually, mentally or verbally assaulted while at school?
2. If yes, what kind of assault was it? Was it related to your gender, ethnicity/race, age, sexual orientation, size or other aspect of who you are? Did you report it? Why or why not?
3. If you reported it, how was the situation addressed? What were the consequences for the person who assaulted you? What kind of support did you receive?
4. Do you feel safe (physically, sexually, mentally and emotionally) at your school?
   *Questions 1-4 are for all SCMs

**Tips for Sample Design and Data Collection**

- Many incidents of assault go unreported – do your best with this one. You may find the records of all reported incidents through your head counselor or vice principal.
- You can survey school community members to see if they think there are a lot of unreported incidents, which will tell you the school needs a safer reporting system.
- Other sources of information could be the teachers’ union, or groups focusing on inter-racial bullying, girls’ self-defense, gay-straight alliance, Indigenous program, etc.

**Developing Recommendations**

To find out the nature and type of assaults, it is recommended that you survey or discuss with students, staff, school and community groups what they think leads to assault on your school (i.e. prejudice, insecurity, etc). You might notice that your school has one predominant type of assault; if so, it is important that the administration know so they can act upon it.
## HW-2: Sick Days

### Indicator and Benchmarks

<table>
<thead>
<tr>
<th>Measurement Units</th>
<th>Long-Term Goal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total annual number of sick days taken by SCMs, divided by total SCMs.</td>
<td>Zero</td>
</tr>
</tbody>
</table>

### Discussion

There are two ways to interpret indicator HW-2. It is best to subtract “sick days” which actually are out-of-school activities (such as sports, community events or an outing with a class), as these don’t involve actual sickness and could be considered a sign of well-being and community participation. Try to separate excused absences from skipped classes/days. On the other hand, some may find it impossible to separate this data.

### Core questions

1. Are there any physical health care services at your school?
2. If so, how many full-time certified health care professionals (nurses etc.) are available?
3. How many full sick days did school faculty and staff take in the last year?
4. Why is the number of sick days taken is at the level it is? Is this considered high or low?
5. Do you feel that the physical health care system at your school is sufficient to meet the needs of your school’s community? If not, how could it be improved?

### Survey Questions

1. Do you feel that the physical health care services provided at your school are of high quality? If yes, why? If no, why not?
2. Have you taken any sick days off in the last year? Why did you need to take the day off (sickness, stress, dissatisfaction, family, other)?

### Tips for Sample Design and Data Collection

- This indicator is relatively straightforward to assess.
- In most schools, the data for this indicator will be found at the office, along with the motives for absences (school outing, other activities or actual sickness); You can also use teachers as a source of information.

### Developing Recommendations

Sick days are hard to understand since they can be taken for a wide range of reasons. They may be legitimate illnesses or related to stress, dissatisfaction, lack of motivation, etc. Try to understand your school’s sick day leave system, and verify if any surveys have been done recently that relate to health issues. Once you have found the reason for sick days, you can try to develop solutions such as making flu shots available, staff working shorter hours, or even making sure that the school environment is a healthy one (air quality, nutritional food, effectiveness of cleaners, etc). A high rate of sick days might indicate of the presence of environmental problems (bad air quality, etc.) as well as social problems (lack of motivation, depression, insecurity, stress, etc.).
HW-3: Substance Abuse

Indicator and Benchmarks

<table>
<thead>
<tr>
<th>Measurement Units</th>
<th>Long-Term Goal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total number of SCMs who use alcohol, cigarettes, marijuana or other addictive substances once a week or more, divided by total number of SCMs; multiply by 100.</td>
<td>Zero</td>
</tr>
</tbody>
</table>

Discussion

Patterns of addiction and substance abuse often start early in high school, impacting the path of a student’s life and the functioning and well-being of the entire school community. Fun and challenging extra-curricular school programs and activities are a key part of a community’s resources that provide youth with opportunities to learn, grow, push their boundaries, assert their independence, be a part of a group and enjoy themselves. A lack of these opportunities means youth may see the use of illegal substances as a way to explore these aspects of being an adolescent. It may also be illuminating to investigate the impact of substance-related waste (eg. cigarette butts) on the school environment.

Core Questions

1. Is substance abuse a threat to the well-being of students and school community?
2. When and why do students start to use substances?
3. Are certain groups of SCM’s more likely to abuse substances? If so, why?
4. Do substance users know the consequences of substance abuse?
5. Do substance users want to quit, and if so what do they think would help them the best?
6. Are there substance abuse/addiction support programs available to school community members, either within the school or in the wider community?

Survey Questions

Do you use alcohol, cigarettes, marijuana or other addictive substances once a week or more? If so, which ones, how often, and where do you use them? (home, school, parties)
1. Why do you use this substance(s)? (eg. it’s a habit, when I’m bored, lonely, hanging out with friends, to feel good, to get away from it all)
2. Do you think you are addicted?
3. Do you want to quit or use substances less? Why or why not? What would help you?

Tips for Sample Design and Data Collection

- Reported incidences of substance abuse are unlikely to truly reflect student or staff behaviour, and because use of most addictive substances is illegal for adults, let alone youth, voluntary reporting is unlikely to be accurate unless SCMs are convinced there will be no personal repercussions for responding honestly.

Developing Recommendations

Substance abuse is an aspect of sustainability in a community with many causes and consequences, which may differ from school to school. If results from the assessment of this indicator show it is a significant threat to school well-being, collate by grade level to allow for development of a program that targets the age group most likely to use or abuse substances. Survey results about the why, when or how of substance abuse may lead to better policies and programs. Having the people most impacted by the policy (substance abusers themselves) participate in action-planning to improve this indicator could be crucial to its success.
HW-4: Physical Activity

Indicator and Benchmarks

<table>
<thead>
<tr>
<th>Measurement Units</th>
<th>Long-Term Goal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total number of SCMs moderately active for 1hr 7 days a week or intensely active for 30 min. 4 days a week, divide by the total number of SCMs; multiply by 100.</td>
<td>100%</td>
</tr>
</tbody>
</table>

Discussion
In the past several decades, youth have become much less physically active, while rates of obesity, eating disorders, ADHD, and low self-esteem have gone up. Youth are growing up leading increasingly urban, sedentary lifestyles, with less physically active means of playing, communicating, being entertained, learning, living and contributing to the family’s livelihood. Inactive kids and youth often grow up to be inactive adults. This poses such great risk to Canadians’ health and well-being, let alone to our health care budget, that the federal government has recently introduced tax credits for families who ensure their kids are active!

Core Questions
1. What percentage of SCM’s are participating in a minimum level of physical activity?
2. Are there any particular groups of SCM’s who do not participate in any type of physical activity, and if so, why not?
3. In what kinds of activities do most SCMs participate?
4. How can your school encourage or ensure SCM’s are physically active enough?
5. How inclusive and non-threatening are the available extra-curricular physical activities?

Survey Questions
1. Are you moderately active for at least 1hr 7 days a week or intensely active for 30 min. 4 days a week? (moderate activity is walking, vs. intense activity is playing soccer, working out etc).
2. If not, how active are you? (what kinds of activities do you do and for how long)
3. What kind of activities would you like to do more, and what holds you back from doing so?

Tips for Sample Design and Data Collection
- There is currently no nationally accepted standard for measuring fitness, but you may find your PE. department has a standard measure, such as the "beep test" or a 6-lap run. Records on how many students are taking PE. classes and are on sports teams may give you insight into the level of physical activity at your school.
- As the above data would not give any idea as to the physical activity of students and staff outside of school activities, we thought survey might be best in measuring whether SCM are meeting the minimum according to Canada’s Healthy Living Strategy.

Developing Recommendations
The Healthy Living Strategy recommends a minimum of 60 minutes moderate activity (walking 6.5 km per hour), 7 days a week or 30 min intense activity (jogging), 4 days a week. This goal can be reached for example by a combination of PE or extra-curricular sports plus walking or biking to school. Not everyone enjoys or can do these two things, however, so schools may be able to boost participation levels by offering a variety of activities, such as a dance team, aerobics classes, hiking trips, 3-on-3 basketball tournaments, building a skateboard park, etc.
HW-5: Nutrition

Indicator and Benchmarks

<table>
<thead>
<tr>
<th>Measurement Units</th>
<th>Long-Term Goal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total sales of “junk” food (products with high sugar, fat, salt, caffeine or low nutrient content) divided by total food sales.</td>
<td>10%</td>
</tr>
</tbody>
</table>

Discussion
In Canada, we have a wide variety of high quality, low cost food available from all over the world. Yet many people, youth included, are getting most of their calories from processed foods with high fat, sugar, salt, and caffeine content and low amounts of the nutrients we really need from our food. The Canada Food Guide to Healthy Eating suggests that no food is inherently “bad” for you, as we do actually need certain types of sugar, salt, and fat in our diet for our bodies and brains to function properly. We need between 3.8 and 5.8 grams of salt per day, and we should get 45-65% of our calories from carbohydrates, 10-35% from protein, 20-35% from fat, and no more than 25% from sugars. The sugars and fats that do us the most good come from whole fruits and non-saturated sources such as vegetable oils, not pop and the deep-fryer. The key is to have a balanced diet, with a variety of foods that have high levels of the nutrients we need most.

Core Questions
1. What kinds of food at your school are more than 35% fat, 25% sugar, have more than 1 gram of salt per serving or over 200mg of caffeine?
2. How much money is spent annually on these types of food?
3. How much money is spent in total on all types of food?
4. What types of food are purchased most often at your school and why? (good deal, etc.)
5. Is the school in charge of food production and purchasing, or does a company control that contract? (And thus, how much power do SCMs have to change the menu?)

Survey Questions
1. What kind of food/drink do you buy most often at school? Why do you buy it?
2. Do you think that the food at school is healthy? Why or why not?
3. What kind of food would you like to be able to buy at school that you would consider healthy and that tastes good?

Tips for Sample Design and Data Collection
- Brainstorm all the types of food available in your school and identify who is responsible for ordering it. (vending machines, cafeteria, staff room, home economics, bake sales, etc.)
- Ask your administration/cafeteria management for food sales records and check the labels of each type of food to assess the nutritional information of the food offered at your school.
- Add up all the sales of items with low nutrient quality and divide it by total food sales.

Developing Recommendations
Once you have identified the major sources of food sales with low nutrient quality, you may want to focus on one of them. For example, the pop available in the vending machine may have a lot of sugar in it, but you may notice that more people are buying fries everyday, and not eating much else for lunch because there are not other tasty and healthy options available. On the other hand, if you can get the Home Economics classes and cafeteria staff on board, you may have enough people power to improve the sources of food in your school.
Principle 2: community

This principle has 2 indicators
- C-1: Volunteerism
- C-2: Sense of Community

Issues

Community is one of the most important aspects of sustainability. A healthy community is one where people are active, involved and help each other. Signs of a healthy community can be seen in behavior and in the general feeling that people have towards the community (in this case, the school institution). Also, sustainability within a school community involves having a diversity of programs, courses and activities. These indicators measure the strength of the school community, as well as the relationships within it.

Community Resources

- www.bchealthycommunities.ca/content/home.asp
  **BC Healthy Communities** is part of the international Healthy Cities/Healthy Communities movement. BCHC provides info on resources, tools, Healthy Community initiatives and facilitates community meetings that engage diverse sectors.

- www.youthactioncentre.ca
  The **Green Street Youth Action Center** offers Canadian youth a monthly e-newsletter, internship opportunities, resources, guides, links, and tons of ideas for environmental stewardship and youth empowerment. It’s a great place to find out how other youth are taking action to make change across Canada!

  Additionally, www.greenstreet.ca is an access point for students and teachers to find out about high quality, curriculum-linked programs with Canada’s premier environmental education organizations.

- www.youthcore.ca
  **Youthroots** is an initiative in Victoria, BC that helps youth map the services and community resources they find important, such as safe spaces, education programs, jobs, entertainment, recreation etc. It crosslinks Google mapping with a calendar, directions, websites and videos introducing services to youth that may be new to them.
C-1: Volunteerism

Indicator and Benchmarks

<table>
<thead>
<tr>
<th>Measurement Units</th>
<th>Short-Term Goal</th>
<th>Long-Term Goal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total annual number of SCMs who volunteer at least 2 hours per week divided by the total number of SCMs, and multiplied by 100. Double counting of people should be avoided.</td>
<td>At least 30%</td>
<td>100%</td>
</tr>
</tbody>
</table>

Discussion
There is a debate in terms of picking an indicator for community volunteering; do we draw the line at exclusively sustainability-oriented groups or do we choose all groups since they could all contribute to the community? We chose to accept all group engagements, except those that go against the principles of sustainability (i.e. car racing clubs, racial discrimination groups, etc.) or sports teams, as the involvement of students in their community through sports is more accurately reflected under Physical Activity in Health and Well Being. Volunteering can be with one, or several different groups working on any issue/need but must be based on or out of the school, and must be for the benefit or improvement of the school, community or world, not just the individual themselves.

Core questions
1. How many volunteer based groups are there in your school? Of these, how many actively work against the principles of sustainability?
2. How many SCM’s volunteer at least 2 hours per week with volunteer based school groups?
3. How much money was given to volunteer based groups this year?
4. Does your school promote volunteerism with groups inside your school?
5. Are students, as well as teachers, encouraged to do volunteer work?
6. How are funds for volunteer based groups raised (grants…etc.)?
7. Is there a significant level of volunteerism based outside the school? (This may affect the amount of time that SCMs commit to school-based volunteerism.)

Survey Questions
1. Do you volunteer with one or more organizations at your school? How many hours do you volunteer per year? How many different groups do you volunteer with? What kinds of work do they do?

Tips for Sample Design and Data Collection
- This indicator is uncomplicated to assess.
- High schools usually track students’ volunteer hours- you can usually find this information with the awards committee or through the office.
- If this information is not already tracked at your school, a survey may be used.

Developing Recommendations
It is recommended that schools encourage volunteerism among students, and advocate why it is important for the community. As for teachers, many workplaces have started to recognize the value of volunteerism. To help with this, employers can make office hours more flexible and allow teachers to use office infrastructure (fax, phone, internet, etc.) for volunteer work. These little things will not be costly for the school, but can give a great deal of support to the community.
C-2: Sense of Community

Indicator and Benchmarks

<table>
<thead>
<tr>
<th>Measurement Units</th>
<th>Short-Term Goal</th>
<th>Long-Term Goal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total number of SCMs who feel a very strong sense of belonging, attachment, confidence, and engagement in your school community according to survey results; divide by total survey respondents; multiply by 100.</td>
<td>At least 75%</td>
<td>100%</td>
</tr>
</tbody>
</table>

Discussion
Indicator C-2 uses a qualitative measure. This indicator is easy to use, and is very strong since it gives exact data. We found it necessary to include such an indicator because it’s a good way of knowing how much work needs to be done in order to make sure every SCM feels safe, welcome and happy at their school.

Core questions
1. When was the most recent student council election?
2. If voter rates are considered low, what are some of the possible reasons for this? (This may differ by school, depending on whether voting is compulsory.)

Survey Questions (For survey prototype, see the Survey on the next page)
1. Did you vote in the most recent student council election? Why or why not?
2. Do you participate in any school teams, clubs or activities? If so, which ones?
3. If not, why not?

Tips for Sample Design and Data Collection
- This indicator is relatively easy to assess, but may take a fair bit of coordination and time. You will need to print and distribute the survey, collect responses and analyze the data.
- Appendix IV describes a suggested set of questions to help you assess this indicator. However, you will most likely need to change, adapt or modify some of these questions since it is difficult to develop a generic survey that can assess sense of community of all high schools. While doing so take into consideration the type of school (rural/urban), the diversity of your school community, level of events and activities at your school, and the nature of your student population; for instance, do many students skip their classes? Many other factors can be taken into consideration. To do so, it is very good to partner with specialists like a community planner or social worker that are familiar with the school community to help you develop these questions.

Developing Recommendations
As for indicator C-2, we recommend that in your survey you include questions that ask what can be improved in your school. Student council, Leadership class or Planning classes may want to take leadership in consulting SCM’s to improve this one. This data will help you determine what needs to be changed in your school to make it a healthier and happier place.
C-2: Survey & Calculator

**Sense of Community Survey**
As you will notice in indicator C-2, you must pass out a Sense of Community Survey. All FTE individuals (staff and students) should answer this survey.

**Below is an example of the Sense of Community Survey filled in by one participant.**

<table>
<thead>
<tr>
<th></th>
<th>Disagree (worth 10%)</th>
<th>Slightly Disagree (worth 30%)</th>
<th>Feel Neutral (worth 50%)</th>
<th>Slightly Agree (worth 70%)</th>
<th>Agree (worth 90%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>I feel respected at my school</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>My concerns are listened to</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>There is an efficient support system to help student initiatives</td>
<td></td>
<td>X</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>There is a strong sense of willingness within the community</td>
<td></td>
<td></td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Staff and faculty are involved in student initiatives</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>I feel welcomed in my school</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>People respect who I am (ideologies, race, gender, sexual orientation, beliefs, religion, etc.)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>There are no “cliques” or gangs in my school</td>
<td></td>
<td>X</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>People are never persecuted for who they are (ideologies, race, gender, sexual orientation, beliefs, etc.)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>There are programs to promote and educate about multiculturalism and diversity</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>There are individuals in my school that I feel comfortable to confide in</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>The school institution gives me space to express myself (student newspaper, painting wall, etc.)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>There is a sense of community at my school</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>X</td>
</tr>
</tbody>
</table>

**Note:** This survey is designed for students only, you will need to adapt it for the teacher survey.

**How to Calculate Your Survey**
Add up the percentage amount from each question in the survey, and calculate the average as in the example below:

\[
\frac{70 + 50 + 30 + 70 + 10 + 50 + 90 + 10 + 30 + 70 + 30 + 50 + 90}{13} = 70.76\% \text{ (average)}
\]

An average between 60% and 100% is considered a “good sense of community.”
Principle 3: knowledge

This principle has 2 indicators
- K-1: Sustainability Literacy Survey
- K-2: Courses with Sustainability Content

Issues

A major function of a high school community is enabling youth to gain the knowledge, understanding and critical thinking skills they need to participate in and contribute to our society. Yet students can currently graduate with little understanding of their connection, interdependence and impact on the local and global communities which they are a part of. These indicators measure whether the curriculum and the way it is interpreted by school administration and teachers equip students with the ecological and global literacy necessary to participate in sound decision-making at all levels of our society as we learn to live, work and play more sustainably.

Knowledge Resources

www.ecohealth101.org
EcoHealth – Environmental Change and Our Health. Offers science-driven information, images, links, student projects, classroom activities, and lesson plans on climate change, ozone depletion, globalization, genetic engineering, and a general overview of how human actions can disturb the balance of nature.

www.enviroliteracy.org/teachers-index.php
The Environmental Literacy Council is dedicated to helping citizens, especially young people, develop environmental literacy (an understanding of the systems of the world), with the skills needed to weigh scientific evidence and policy choices. Expert advisors provide practical teaching resources in a wide variety of projects.

Other information-rich web resources:
- www.dcplanet.org/content/cool.htm
- www.ase.org/section/audience/educators
- www.freewebs.com/gaeaaware/sources.htm

Key Term

Sustainability-Focused Course
This is a course that has at least 20% of its teaching hours dedicated to sustainability issues, including consideration of both human and ecosystem issues. Both of these issues must be addressed in an integrated way to meet this definition. This definition is somewhat open to interpretation, but hopefully in the analysis of the courses offered it will help to determine which courses meet this definition and which do not.
K-1: Sustainability Literacy Survey

Indicators and Benchmarks

<table>
<thead>
<tr>
<th>Measurement Units</th>
<th>Short-Term Goal</th>
<th>Long-Term Goal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average percent improvement on a sustainability literacy survey between first semester and last semester of attending that high school. *Note: Use the Sustainability Literacy Survey on the next page.</td>
<td>40% - 49% improvement in scores</td>
<td>50% or greater improvement in scores</td>
</tr>
</tbody>
</table>

Discussion
K-1 is a very unique indicator. It is relatively easy to use, and calculates accurately the percentage of sustainability literacy in the student community. It was chosen to be in this framework because we believe that it is important to acknowledge how much people know about sustainability before taking action; this ensures that students will not feel confused or alienated by the initiatives.

Core Questions
1. Are any other surveys conducted in your school regarding understanding of/or habits toward sustainability? Are the results publicly available?
2. See the next page for a sample Sustainability Literacy Survey.

Tips for Sample Design and Data Collection
This indicator could be quite challenging to assess.
- Develop a series of sustainability literacy survey questions, designed to measure the school population’s theoretical and practical understanding of sustainability issues, their level of commitment to living sustainably, their actual behaviour relating to sustainability, and their knowledge of local place (i.e. where does water come from).
- Ask the secretary, counselor or principal if there is anyone in charge of conducting student surveys – and if you can conduct one. (You may want to include the survey questions from all of the HSSAF indicators, and thus just conduct one survey in the year.)
- An effective strategy is to get the support of teachers and administrators through presenting your survey at a staff meeting, picking a date and time for all of the classes to take the survey at the same time for 10 minutes or so, then have a student from each class deliver the envelope of survey responses back to the Office.
- You can target first year and graduating students in order to compare the sustainability knowledge of incoming and outgoing students to evaluate how much sustainability knowledge they have acquired.

Developing Recommendations
Recommend that your institution conduct sustainability literacy surveys for students upon beginning and completing their studies. An administrative person in charge of student surveys or a teacher can administer this initiative, but if there is no institutional support, you can create a student committee specifically in charge of completing this task.
K-1: Survey

Sustainability Literacy Survey
A survey like this should be done in the first semester of their first year and the last semester of their last year at that school. This test will evaluate whether the students are gaining knowledge on sustainability, and according to the results, certain topics may need to be focussed on in courses to improve results.

To calculate the differential between the two evaluations, subtract the average first year, first semester score on sustainability literacy test from the average final year, final semester score.

You may want organize your Survey according to the ten Principles of Sustainability. In this way you’ll be able to get a sense of which indicators are more familiar to the students at your school. Below are some sample questions. For easier assessment, you may want to make the questions into a multiple choice format.

For example:
What is the number one way families and individuals contribute to climate change?
   a. power consumption
   b. transportation
   c. garbage being sent to the landfill
   d. use of chemicals for gardening, cleaning etc

Sample Sustainability Literacy Survey Questions

**Principle 1: HEALTH & WELL-BEING**
1. Do you know who to talk to if you are being bullied?
2. Do you know how alcohol affects memory?
3. Do you know, on average, how much physical activity must be performed before you start to burn calories?

**Principle 2: COMMUNITY**
1. Do you know the connection between volunteering and life expectancy?
2. Do you know how classmates that live near you get to school?
3. Can you name an organization that your school has helped fundraise for?

**Principle 3: KNOWLEDGE**
1. In the last 2 months have any of your teachers used the word “sustainability”?
2. In the last 2 months have any of your teachers discussed “stewardship” or “sustainability?”
3. Do you feel comfortable discussing the environment in classes besides science?

**Principle 4 & 5: GOVERNANCE & ECONOMY & WEALTH**
1. Do you know how many janitors work in your school and their names?
2. Do you know if the food, clothing and supplies your school purchases are ethical or sustainable?
3. Do you know who your principal reports to if s/he needs to renovate a part of the school?
**Sustainability Literacy Survey cont’d.**

**Principle 6: WATER**
1. What is approximate ratio of fresh water in the world versus salt water?
2. How do ocean currents influence the climate?
3. Can the temperature of water affect aquatic species?
4. Can you name a local aquatic species that is being impacted by climate change?
5. Do you know what problems acid rain causes?
6. Can you explain what causes acid rain?
7. Name a chemical that would be unhealthy to have in your drinking water
8. What are pesticides?
9. How are pesticides harmful to the food web?

**Principle 7: MATERIALS**
1. What is paper made from?
2. Can you explain how paper is made?
3. Can you name a chemical used to make paper with?
4. What is better to use: paper or plastic bags?

**Principle 8: AIR**
1. Have you heard of “Green house Gases?”
2. Can you name 1 green house gas
3. Can you name 2 more greenhouse gases
4. What is something a human could do that would contribute to greenhouse gases in our atmosphere?
5. What is the number one way families and individuals contribute to climate change?
6. How many degrees do you think our earth’s average air temperature has to change before 90% + species go extinct?

**Principle 9: ENERGY**
1. Can you name an example of electromagnetic radiation?
2. GHG’s absorb different wavelengths. Is it visible or electromagnetic radiation that is absorbed?
3. Can you name a renewable energy?
4. What is thermal energy?
5. Will a dark or a light surface absorb more heat?

**Principle 10: LAND**
1. Do you know what an ecosystem is made up of?
2. Do you know what the biosphere is?
3. Can you define photosynthesis?
4. What is a greenspace?
5. Can you explain why trees/ greenspaces are important to human health?
6. What is bioaccumulation?
7. Have you heard of sustainability
8. Can you define sustainability?
9. Do you know 3 sustainable actions you can take?
10. Have you heard of stewardship?
11. Do you know the difference between sustainability and stewardship?
12. Can you explain how exotic plants negatively impact the local ecosystem and native plants?
13. Do you know how forestry practices can affect fish?
14. Have you heard of BC’s mountain pine beetle?
15. Can you explain how climate change contributes to the pine beetle’s success?
K-2: Courses with Sustainability Content

Indicator and Benchmarks

<table>
<thead>
<tr>
<th>Measurement Units</th>
<th>Short-Term Goal</th>
<th>Long-Term Goal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total number of courses that have “substantial sustainability content”; divide by total number of courses; multiply by 100.</td>
<td>At least 25%</td>
<td>75%</td>
</tr>
</tbody>
</table>

Discussion
Indicator K-2 is one that is considered as complex and challenging, but nonetheless crucial to incorporating sustainability teachings in the educational institution. Determining benchmarks and long-term goals for this indicator were somewhat difficult, as is how to define and rate “substantial sustainability” content.

Core Questions
1. How many courses include substantial sustainability content?
2. What is the total number of courses offered in the academic year you are considering?
3. How many students are enrolled in courses with sustainability content?
4. How many students graduated in the academic year you are considering?
5. How many courses include substantially unsustainable content?

Tips for Sample Design and Data Collection
• This indicator will likely be quite challenging to assess. This indicator will demand much reading and looking through different documents.
• Obtain course calendars and/or the provincial curriculum of expected learning outcomes for each course. Read through all the course descriptions to identify which ones have sustainability content (20% of the course content needs to be dedicated to human or ecosystem well-being). If the course description does not give you enough information about the course, ask the teacher in charge of it for more details.

Developing Recommendations
To improve sustainability literacy at your school, recommend that a sustainability course be integrated in your school. This may be difficult, so it is recommended that you get student, teacher, administrative and parental support, and find a teacher interested in teaching the course. Ask that this course be piloted for a semester, and that it go under evaluation in order for it to be introduced in your school permanently the next year. You can also write up examples of course descriptions to help your administration understand the nature of your initiative. If they aren’t keen on your idea, discuss with your principal about the possibility of inserting more sustainability content in current courses.

Unsustainable Content
Courses that teach the theory and/or skills of systems, institutions or practices that contribute to social inequity, ecological degradation or economic poverty, without teaching sustainable alternatives.
Principle 4: Governance

This principle has 2 indicators
- G-1: School Staffing for Sustainability
- G-2: Reporting of Student Government Working Group

Issues

Effective governance (leadership and decision-making) of group initiatives and group projects is a key element in sustainability. It is very important that we see staff involved in sustainability initiatives. With help, support and consent from staff, it is much easier to work toward a sustainable institution. Since the student government (also known as student council) is well placed to help in projects, it is important to monitor its links with other groups found at your school.

Governance Resources

- www.iisd.org/youth/ysbk000.htm
  The Youth Sourcebook contains information on youth’s concerns with sustainable development issues, case studies of youth action, together with advice on how to organize for action, useful resource lists, and a directory of international and regional youth organizations.

- www.apathyisboring.com
  A great site for revitalizing democracy and destroying apathy from the inside out.

- eya.ca
  The Environmental Youth Alliance has lots of guides and programs on youth empowerment in decision-making.

  The Youth Friendly Guide to Intergenerational Partnerships is a one-stop shop for adults who want to support youth in getting involved in decision-making.

- www.syc-cjs.org
  The Sierra Youth Coalition works to create space for youth in decision making, training and sending delegates from across the country to important regional, national and international conferences and events. SYC’s Sustainable Campuses, Sustainable High Schools and Community Youth Action project all work to give youth the opportunities, skills and support to learn how to be heard in their schools, communities, and on the world stage.
G-1: School Staffing for Sustainability

Indicator and Benchmarks

<table>
<thead>
<tr>
<th>Measurement Units</th>
<th>Short-Term Goal</th>
<th>Long-Term Goal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total number of FTE staff responsible for the management of the issues below; divide by the total number of issues in the list (11); multiply by 100.</td>
<td>At least 50%</td>
<td>100%</td>
</tr>
</tbody>
</table>

2. Sustainability in Facilities Management
3. Equity and Anti-oppression
4. Environmental Health and Safety
5. Transportation Demand Management
6. Wellness
7. Community (in and beyond school)
8. Ethical and Ecological Purchasing
9. Ethical and Ecological Investment
10. Sustainability in Teaching and Education
11. High Level Administrator for School-wide Sustainability

Discussion
Indicator G-1 is meant to assess whether a school has staff responsible for actively ensuring the main aspects of sustainability. Typically a school will have staff that volunteer or are paid to help build one aspect or other, or even have a staff member who is responsible for addressing many of them, or all.

Core Questions
1. How many FTE managing positions are there for the list of issues?
2. What is the total number of staff working in the areas listed (both full- and part-time)?

Tips for Sample Design and Data Collection
- This indicator should be quite easy to assess.
- Go to your school principal (or head of administration) and ask which individuals (staff) are involved in or are responsible for the 11 issues named in the indicator. They should be able to give you an answer, but might pass you over to another individual who will be better equipped to answer your questions.
- There may be some people who act on these 11 issues, but do not get full recognition for it. To find this out, tour the different committees, clubs and groups in your school to observe which staff members act on sustainability.

Developing Recommendations
The areas listed in G-1 are very important for your school. It is important to have someone in charge of each area (with help from several individuals). We recommend that if one or more of these issues is not being addressed, that you put pressure on your school’s administration to establish a good foundation for them. Also, even though the implications of these issues may not be in teacher or staff mandates, it is important that your school realise why such engagement is necessary for a more sustainable school community.
G-2: Reporting of Student Government Working Groups

Indicator and Benchmarks

<table>
<thead>
<tr>
<th>Measurement Units</th>
<th>Short-Term Goal</th>
<th>Long-Term Goal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total number of active working groups or clubs reporting directly to the student council president, the sustainability advisory committee, or the board of directors; divide by the total number of active working groups; multiply by 100.</td>
<td>At least 50%</td>
<td>100%</td>
</tr>
</tbody>
</table>

Discussion
Indicator G-2 is quite straightforward. This one aims to build stronger links between independent groups and the student government, and to encourage the student government to be involved in initiatives that improve school sustainability in more ways than only school spirit/sense of community.

Core Questions
1. What are all the student clubs, committees, councils and classes that are active in making decisions or running events, programs or projects at your school?
2. What is the reporting process for clubs, groups and the committee to the executive members of the student government, if any?

Tips for Sample Design and Data Collection
- Make contact with one of the student representatives or teachers in charge of the student council. They should be able to give you most of the information you need to assess this indicator.
- It is likely that your school’s student council will not include a diversity of stakeholders, as membership tends to be primarily election-based, if it is a leadership class, students will have chosen or been chosen to take the course.

Developing Recommendations
If a student government exists, but does not include engagement by diverse stakeholders, approach the chair of the council to discuss the possibility of expanding or modifying the current membership. Explain why it is important that the student council be based on a multi-stakeholder model and include representation from the other student groups and clubs working to improve your school community. Ask to modify policies or constitutions that may prevent this kind of change to happen within the student council. Remember to be positive when presenting these ideas, and constantly remind the council how they will profit from a multi-stakeholder committee format.
Principle 5: Economy and Wealth

This principle has 3 indicators
- E-1a: Ethical and Ecological Investing
- E-1b: Ethical and Ecological Purchasing
- E-2: Locally Purchased Goods and Services

Issues

Teacher pension plans, which make up a big part of institutional investments, often invest in companies that impede global sustainability. Schools are also purchasing more and more from large multi-national corporations, with supplies, food and clothing products coming from around the world, without ensuring labour and environmental standards are upheld. By purchasing and investing in products that are certified “Clean” (sweatshop-free), “Green” (organic, non-GMO), “Cruelty-Free” and “Fair”, schools can use these indicators to promote vibrant, just and sustainable economies, both locally and abroad. By buying local, we can avoid emitting greenhouse gases and contributing climate change.

Economy and Wealth Resources

<table>
<thead>
<tr>
<th>Website</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><a href="http://www.newdream.org">www.newdream.org</a></td>
<td>New American Dream offers resources that make it easier to live consciously, buy wisely, and join with others trying to make a difference.</td>
</tr>
<tr>
<td>ibuydifferent.org</td>
<td>ibuydifferent.org offers a variety of tools and materials to help you explore how your purchases affect the environment and take actions that make a difference.</td>
</tr>
<tr>
<td><a href="http://www.iisd.org/youth/ysbk123.htm">www.iisd.org/youth/ysbk123.htm</a></td>
<td>Educational materials on global and economic issues from the International Institute for Sustainable Development.</td>
</tr>
<tr>
<td><a href="http://www.checkyourhead.org">www.checkyourhead.org</a></td>
<td>Check Your Head is a youth organization in Vancouver, B.C. which provides education, resources, training and support on issues of globalization and social justice.</td>
</tr>
<tr>
<td><a href="http://www.zumer.com">www.zumer.com</a></td>
<td>zumer.com provides an interactive database that ranks companies on social and environmental responsibility.</td>
</tr>
</tbody>
</table>
Sustainable Ethical and Environmentally Sound Investment and Purchasing
Investing or purchasing from in companies which are of benefit to society and the environment and avoiding companies that are involved in the arms trade, third world exploitation, child labour, animal testing, tobacco, pornography, oppressive regimes, environmental destruction, non-renewable energy sources, or gambling. (Source: www.ethicalinvestments.co.uk/whatisei.php)

Certified Organic
Plant or animal based products that have been cultivated and processed without synthetic chemical pesticide, herbicide, synthetic fertilizers, genetically engineered seed, hormones, anti-biotics or artificial additives inputted into the agricultural system. “Certified Organic” means that the food has adhered to a uniform set of production methods for growing and processing and has regularly passed third-party verification inspections. To find out more visit the Canadian Organic Growers at: www.cog.ca/standards_regs.htm or for BC specific info check www.certifiedorganic.bc.ca/aboutorganic/organicwhat.htm.

Genetically Modified Organism
Animals and plants whose genetic makeup has been directly altered by humans inserting DNA from other species and other transgenic techniques. The Sierra Club of Canada has more information on their website at www.sierraclub.ca/national/programs/health-environment/food-agriculture/index.shtml.

Fair Trade
A trading partnership based on dialogue, transparency and respect, and that seeks greater equity. It contributes to sustainable development by offering better trading conditions to, and securing the rights of, marginalized producers and workers, especially those in developing countries. Key elements of fair trade include: creating opportunities for economically disadvantaged producers; transparency and accountability; promoting independence; payment of a fair price; gender equity; decent conditions of work; respect for the environment; and promoting fairer trade. (Source: www.ifat.org)

Cruelty-Free
There are different accreditation schemes but many exclude companies or products that contain ingredients derived from an animal killed specifically for the extraction of that ingredient; tested on or forcibly extracted from a live animal in a manner that occasioned pain or discomfort; derived from any wildlife; that are by-products of the fur industry; or that are slaughterhouse by-products of a commercially significant value. (Source: www.choosecrueltyfree.org.au/criteria.html)

Local
Within a 200 kilometer radius of the school.
EW-1a: Ethical and Ecological Investing

Indicator and Benchmarks

<table>
<thead>
<tr>
<th>Measurement Units</th>
<th>Short-Term Goal</th>
<th>Long-Term Goal</th>
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<tbody>
<tr>
<td>Total annual dollars invested (for example by teacher pension plans) in ethical and environmentally responsible companies, divided by the total annual invested dollars; multiply by 100.</td>
<td>At least 20%</td>
<td>100%</td>
</tr>
</tbody>
</table>

Discussion

Most high school teachers and their employers contribute to teacher pension plans which are invested in companies all around the world. Some independent high schools also have endowment funds that they invest, using the interest to run the school each year. These investments often support the expansion of major oil, weapons and tobacco companies, undermining sustainability by fueling climate change, war and health problems. Do you think it important educational institutions help drive the shift towards a sustainable economy through investing in ethical and environmentally responsible companies?

Core Questions

1. What is the investment policy of the teacher pension plan? Does it include any socially responsible or local investing criteria?
2. How are funds invested? Are investment firms hired to manage funds? Which ones?
3. Which companies are being invested in? Are they ethical or local?

Tips for Sample Design and Data Collection

• Investments held for less than one full year should be pro-rated according to length of investment (i.e. a $100,000 investment made for only 3 months would be worth $100,000 x 0.25 year = $25,000.)
• Remember, before asking any questions about investments, have a clear idea in your head as to what is a socially responsible, ethical and/or local investment.
• Ask a supportive teacher about their pension plan, and your principal about whether the school has any other investments. Your first objective is to find out who makes decisions about these investments: Are these investments managed by a private investment firm, government or the teachers’ union?
• Second, you want to find out if there is an ethical investment policy, and how and where investments are made (the companies invested in). Ask or write a letter to your principal or the teacher’s union, explaining your project and the information you need help finding. Keep in mind that this may be considered sensitive information, so be respectful and diplomatic!

Developing Recommendations

For EW-1, you could research the impacts of the companies the school community is currently supporting as well as the companies supported by an ethical investment portfolio that you’d like decision-makers to switch to. You could write a letter to decision makers summarizing your research, asking them to invest in socially responsible and environmentally sound companies. Ask supportive students and staff to sign it too!
### EW-1a: Calculator

**Calculating Your High School’s Ethical Investment**

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</table>

Total investment in local companies: ____________________________

Total cost of ethical investments: ____________________________

Divide by total cost of all investments: ____________________________

Divide by total of all investments: ____________________________

Multiply by 100 = percentage of investments that are local: %

Multiply by 100 = ethical purchasing: %

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<th>Task</th>
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**Section Two: The High School Sustainability Assessment Framework**
**EW-1b: Ethical and Ecological Purchasing**

**Indicator and Benchmarks**

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<th>Measurement Units</th>
<th>Short-Term Goal</th>
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Total annual dollars spent on goods, services and infrastructure investments, (for example on team uniforms, food services, portable classrooms) purchased from ethical and environmentally responsible companies, divided by the total annual dollars spent.

**Discussion**

Much as in the case with investing, we vote with our dollars – the types of goods and services institutions like our schools support are those that flourish in our society. This indicator measures the role schools play in building viable, equitable and sustainable local and global economies.

**Core Questions**

1. What is the purchasing policy of the school and school district? Does it include any socially or ecologically responsible criteria?
2. How are purchases made? Are school supplies distributors hired to manage purchases? What are the names of the firms?
3. What types and quantities of goods and services are being purchased? What percentage of these purchases are for ethical and ecological products?

**Tips for Sample Design and Data Collection**

- You will need the active support of your administration and school board to effectively calculate this indicator.
- Ask permission to review the school’s purchasing records and make a table which shows what companies the products were purchased from and if the products are certified union-made, fair trade, organic, and/or locally produced etc.

**Developing Recommendations**

It can be very effective to encourage your school to create a purchasing policy which incorporates ethical and ecological priorities into all purchasing decisions. You can strengthen your recommendation by finding out what ethical suppliers your school could use and what the cost of doing so would be. Find out if other school purchase ethically and you can recommend going to the same supplier. Some purchases are done by the school district, so you may need to find out what their needs are in a supplier – perhaps the school district could get a good deal for all the schools by ordering in bulk!

**Table**

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<th>Measurement Units</th>
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</table>

Total annual dollars spent on goods, services and infrastructure investments, (for example on team uniforms, food services, portable classrooms) purchased from ethical and environmentally responsible companies, divided by the total annual dollars spent.
EW-2: Locally Purchased Goods and Services

Indicator and Benchmarks

<table>
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<tr>
<th>Measurement Units</th>
<th>Short-Term Goal</th>
<th>Long-Term Goal</th>
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</thead>
<tbody>
<tr>
<td>Total annual dollars spent in locally (within 200 km) provided, harvested, produced and/or manufacture goods and services divided by the total annual dollars spent on goods and services; multiply by 100.</td>
<td>At least 30%</td>
<td>100%</td>
</tr>
</tbody>
</table>

Discussion
For indicator EW-2, not many schools calculate this on a regular basis. If this indicator is met, it will contribute greatly to the environmental and social sustainability of your school.

Core Questions
1. Are purchases centrally administered or decentralized?
2. Is there a local purchasing policy that places preference on local purchases?
3. How much money does the institution spend on goods and services each year?
4. What criteria are used when making purchasing decisions? Are purchasing decisions made primarily based on cost?

Tips for Sample Design and Data Collection
- This indicator should be relatively easy to assess.
- In high schools, there is usually one person in charge of purchases (usually one of the secretaries), but they will not usually give this information out without the consent of the principal.
- Ask your principal for the expense records, explaining why your initiative is important to your school’s sustainability and why buying locally is healthier for our planet.

Developing Recommendations
We suggest that you recommend that your school adopts an expense policy which favours local goods and services purchases. Find out what local suppliers your school could use and what the cost of doing so would be, and try to use the same supplier as other schools. As for Indicator EW-1b, for purchases done by the school district, the school district could get a good deal for all the schools by ordering in bulk.
## EW-1b & EW-2: Calculator

### Calculating Your High School's Ethical & Local Purchasing

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<th>Group:</th>
<th>Contact:</th>
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<tr>
<th>Purchase Type</th>
<th>Product Name</th>
<th>Distributor</th>
<th>Manufacturer</th>
<th>Brand / Model Number</th>
<th>Price per unit</th>
<th>Total $ Cost</th>
<th>Local? (200km)</th>
<th>Fair Trade?</th>
<th>Cruelty Free? Fair Trade?</th>
<th>Non-GMO? Organic?</th>
<th>Ethical?</th>
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Total cost of local products: ________________

Total cost of ethical products: ________________

Divide by total cost of all products: ________________

Divide by total of all products: ________________

Multiply by 100 = percentage of purchasing that are local: ________________

Multiply by 100 = ethical purchasing: ________________

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Principle 6: Water

This principle has 4 indicators
- W-1: Potable Water Consumed
- W-2: Efficiency of Fixtures
- W-3: Pollution
- W-4: Drinking Water Quality

Issues

Water is the one substance all life needs to survive and flourish. In BC there is a “myth of abundance”. British Columbians use 490 litres of water per person per day, while Canadians on average use 343 litres (Americans use 300 litres; Europeans use 125-150 litres). There are many actions your school can take to achieve sound water usage, and the first step is learning what your current impact is!

Water Resources

- www.thirstthemovie.org/summary.html
  Is water a human right for all people? Or is it a commodity to be bought, sold, and traded in a global marketplace? “Thirst” tells the stories of communities in Bolivia, India, and the United States that are asking these fundamental questions. A guide to the Film for Teachers and Discussion Leaders is at www.thirstthemovie.org/study.html.
  The Council of Canadians works on a lot of water issues.
- www.nrdc.org/greensquad/library/intro.asp
  The Green Squad library has fact sheets on water quality, consumption and conservation.
- www.safewater.org
  Safe Drinking Water Foundation offers schools water testing kits.
  The Canadian Drinking Water Guidelines can be found on the Canadian federal government’s website.
- www.sustainablehighschools.ca
  The Sierra Club of Canada, BC Chapter has published a Watershed Guide.
W-1: Potable Water Consumed

Indicator and Benchmarks

<table>
<thead>
<tr>
<th>Measurement Units</th>
<th>Long-Term Goal</th>
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<tbody>
<tr>
<td>Total annual volume of potable water consumed by your school for all uses (in litres), divided by the total number of SCMs.</td>
<td>The least possible</td>
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</table>

Discussion
Water consumption is a big issue: it has been predicted that the wars of the next century will not be fought over oil, but water. By reducing water waste we can help ensure that all ecological and human communities have access to clean healthy water, with a sustainable supply of it in the future. The first step to achieve sound water usage is learning what your current impact is!

Core Questions
1. Who maintains water consumption records for your school? Is it done through a centralized office? Does the school or supplier maintain these records?
2. At what spatial scale is water consumption recorded? (whole school/per building)
3. At what temporal scale is water consumption recorded? (monthly, annually)
4. Is your water consumption and wastewater metered? Where are the meters located?

Supplementary Questions
1. Does your school currently have a water management plan or strategy? Is water conservation recognized as a priority under such a plan? Why or why not?
2. Who supplies water to your school (e.g. municipality, region)?
3. How are the water supplies priced for your school? (by volume or at a flat rate)

Tips for Sample Design and Data Collection
- Water costs money, and many schools are required to pay for their water by volume. Your principal should possess records that show expenditures and water consumption at your school. If not, you can always find out who supplies/sells water to your school, and they will probably make this information available upon request.
- If your school’s water supply is provided at a fixed cost, volume of consumption will be more complex to assess. Ask your Head Custodian for metering information.
- Your school may obtain its water from different suppliers. Be sure to identify all suppliers and to include all of them in your calculations of water consumption, such as bottled water.

Developing Recommendations
If your school does not already do so, start by recommending that they begin keeping track of their water consumption. Since they stand to benefit if your school can conserve water, ask your local governments to supply your school with or subsidize the price of implementing a metering program. If the administration is unsure or uneasy about the initiative, you can argue that this will lower utility costs, especially if your school pays for its water on a pay-per-use basis.
W-2: Efficiency of Fixtures

Indicator and Benchmarks

<table>
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<tr>
<th>Measurement Units</th>
<th>Short-Term Goal</th>
<th>Long-Term Goal</th>
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<tr>
<td>Total number of new water fixtures installed annually that are of highest possible water efficiency rating for that year, divided by the total number of new fixtures installed in that year, multiply by 100. *Note: Use the Calculator on the next page to calculate the efficiency of your school’s water fixtures.</td>
<td>At least 50%</td>
<td>100%</td>
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</table>

Discussion
The difficulty with indicator W-2 is that many schools do not keep track of their water fixtures. We strongly encourage these institutions to start doing so; this way it will be much easier to evaluate the school’s water sustainability. However, in the meantime you will find that toilets are often marked with their tank volume per flush, and you can measure the flow of other appliances through timing how long it takes to fill a litre-sized container.

Core Questions
1. How many new water fixtures were installed during the previous year?
2. What proportion of new water fixtures installed during the previous year possessed the highest possible efficiency rating?

Tips for Sample Design and Data Collection
- The head of custodial services (head janitor) should maintain a record of purchased water fixtures and equipment. Ask to obtain a list of fixtures purchased over the previous year.
- In order to determine whether such fixtures are of the highest efficiency, you will need to do a bit of research. Start with the list of fixtures and visit the manufacturers’ websites. It should be easy enough to determine if more efficient models are offered through the same manufacture. Also, there might be more efficient ones from other manufacturers.

Developing Recommendations
Replacing all inefficient water fixtures with more efficient ones may not always be the best solution if all the old ones will go to a landfill. It will cost a lot, and next year, even more efficient fixtures may become available. The goal of these initiatives is to move your school forward in water conservation, so replacement should probably only be done as the old fixtures break or wear out. Be aware that your school may have an exclusive agreement with a certain manufacturer to supply all such products at your school. You can pressure this manufacturer to improve their efficiency and/or research alternatives for when your school’s contract with them ends.
## W-2: Calculator

### Calculating Your High School’s Water Fixture Efficiency

<table>
<thead>
<tr>
<th>Location</th>
<th>Fixture Type</th>
<th>Quantity</th>
<th>Manufacturer</th>
<th>Brand</th>
<th>Model #</th>
<th>L / min</th>
<th>Usage hrs /week</th>
<th>L water / year</th>
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**W-3: Pollution**

**Indicator and Benchmarks**

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<th>Measurement Units</th>
<th>Long-Term Goal</th>
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<tbody>
<tr>
<td>Total annual volume of non-biodegradable and toxic cleaners and other fluids disposed of into water system, divided by total number of School Community Members. Note: Use the Calculator on the next page to assess your school’s water pollution.</td>
<td>The least possible</td>
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</table>

**Discussion**

This indicator examines the volume of toxic and non-biodegradable pollution released by your school into the environment through the water system. It can be used to increase awareness about where wastewater from your school goes and who may see the downstream effects of pollution released by your school.

**Core Questions**

1. What toxic and non-biodegradable cleaners are used in your school?
2. What volume of each is used in one year? (how many bottles purchased yearly multiplied by their volume)
3. Do all cleaners and toxics end up down the drain or does your school dispose them safely?
4. Determine a rate of pollution per school community member by dividing the total volume of toxic/non-biodegradable cleaner used by the total number of students and staff in the school.

**Tips for Sample Design and Data Collection**

- Who can you talk to at your school that will have information on how much of each toxic fluid is used each year? (custodian, accountant, art teacher etc)
- Your school keeps records of expenses - check to see what cleaners were bought when.
- Get a tour of the supply closet by the head Custodian and inventory the volume left of each cleaner.

**Developing Recommendations**

- If your school does not have a pollution policy, use your research to propose one.
- Work with your art and science teachers and cafeteria and custodial staff to identify which chemicals can be replaced by ecologically responsible alternatives.
- Work with the accountant/principal to identify sources to buy these alternatives and create a pollution-free purchasing policy.

*A diagram to give you an idea of how each part of a watershed is connected.*
## W-3: Calculator

### Calculating Your High School's Water Pollution

<table>
<thead>
<tr>
<th>Location</th>
<th>Type of Product</th>
<th>Product Name</th>
<th>Manufacturer / Distributor</th>
<th>Toxicity (PPM safe level)</th>
<th>Biodegradable?</th>
<th>Total Volume Disposed / year</th>
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**W-4: Drinking Water Quality**

**Indicator and Benchmarks**

<table>
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<th>Measurement Units</th>
<th>Short-Term Goal</th>
<th>Long-Term Goal</th>
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<tbody>
<tr>
<td>Percent of classrooms that are less than 20 meters from a source of free water that meets or exceeds Guidelines for Canadian Drinking Water Quality.</td>
<td>50 %</td>
<td>100%</td>
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</table>

See the next page for further testing instructions.

**Discussion**

Despite being one of the most crucial aspects of our health and well-being, no one jurisdiction in Canada is responsible for ensuring healthy water quality. As responsibility is shared between federal, provincial, municipal and regional authorities, with no set standards which must be met, microbial outbreaks and heavy metal contamination are not just a possibility in Canada, but a reality. Bottled water is offered by private companies as the solution to unease, but bottled water is not only often thousands of times more expensive than publicly provided tap water, it can also be unhealthier and less tasty.

**Core Questions**

1. How many water fountains are there at your school, and how many classes are farther than 20 meters from any of them?
2. Do any samples of water from these fountains not meet standards outlined in the Guidelines for Canadian Drinking Water Quality? If so, do any of the samples meet the guidelines?

**Tips for Sample Design and Data Collection**

- Get a floor plan of your school from the head custodian or principal and mark all the water fountains
- Measure the distance from these fountain to the classrooms around them, identifying any classrooms that do not have a water fountain within 20 meters
- Take samples from several of the fountains and get a science class involved in measuring them for temperature, pH and presence of bacteria.
- Your school can get a comprehensive water testing kit through the Safe Drinking Water Foundation’s Water Drop Education Program (www.safewater.org) in order to test for other parameters of water quality under the Guidelines for Canadian Drinking Water Quality, which can be found at: www.hc-sc.gc.ca/ewh-semt/water-eau/drink-potab/guide/index_e.html.

**Developing Recommendations**

If your school does not have a water management plan or strategy, we recommend that a focus group of students, parents and staff be created. This committee can deal with purchasing more efficient fixtures, planning alternative water systems for new buildings, creating a pollution policy or lobbying government to improve water quality.
W-4: Drinking Water Quality

Testing Your Water

**Operation Water Drop**
Visit the [Safe Drinking Water Foundation](http://www.safewater.org) website at www.safewater.org to obtain your Operation Water Drop water testing kit. Once you have obtained your kit, follow the instructions below and in the kit for your water testing indicator.

**Objectives**
To allow students to run tests on five different sources of water. Students are expected to collect three samples of water: Urban and Rural treated waters, and a Raw Source Water (i.e. from a lake, creek, or stream). A drinking Water Guideline sample will be provided with the Operation Water Drop Kit. The guideline sample is for quality control purposes (was the test performed properly?). This will also be a reference to see what a sample would look like if it meets the Canadian Drinking Water Guideline.

**Additional Materials**
Although the kit is complete, there are a few things that will be needed to ensure analyses are performed with ease and accuracy.

**Each group should have:**
- A permanent marker for test tube labelling
- Masking tape for labelling pipettes
- A 25mL and a 50mL measuring device (preferably a graduated cylinder)
- A test tube rack
- A fume hood or well-ventilated area for the arsenic test
- Protective gloves, goggles, and apron for the arsenic test

**Space Requirements**
Students should be in a room with sufficient bench or desk space to work comfortably in small groups to conduct their tests. The arsenic and alkalinity test should be done in either a fume hood or in a well-ventilated area.
Testing Your Water cont’d.

Directions
The students will be testing water for the following parameters:
Approximate time for each test to be completed (minutes)

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Time (min.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Alkalinity</td>
<td>20</td>
</tr>
<tr>
<td>2. Ammonium</td>
<td>20</td>
</tr>
<tr>
<td>3. Arsenic</td>
<td>40</td>
</tr>
<tr>
<td>4. Colour</td>
<td>10</td>
</tr>
<tr>
<td>5. Copper</td>
<td>10</td>
</tr>
<tr>
<td>6. Total hardness</td>
<td>5</td>
</tr>
<tr>
<td>7. Iron</td>
<td>5</td>
</tr>
<tr>
<td>8. Manganese</td>
<td>5</td>
</tr>
<tr>
<td>9. Nitrate</td>
<td>5</td>
</tr>
<tr>
<td>10. pH</td>
<td>5</td>
</tr>
<tr>
<td>11. Residual chlorine</td>
<td>5</td>
</tr>
<tr>
<td>12. Sulfate</td>
<td>20</td>
</tr>
<tr>
<td>13. Heterotrophic plate count</td>
<td>20</td>
</tr>
</tbody>
</table>

The classroom should be divided into 4 separate groups; each group will be running tests on all five water samples, including a Canadian Guideline Limit Sample that is supplied with the water testing kit. The following distribution of the tests among the students will take approximately 60 minutes.

**Group 1**: Will do arsenic alone.
**Group 2**: Will do alkalinity, copper, manganese, and total hardness.
**Group 3**: Will do heterotrophic plate count, ammonium, and pH.
**Group 4**: Will do sulphate, colour, nitrate, residual chlorine, and iron.

The arsenic test is the biggest time consumer.

These tests have been set up so that students can get exposure to doing laboratory work, testing their water, and comparing different water qualities to the Canadian Drinking Water Guidelines.

**Group Size**
The optimum size for Group 1 would probably be 4 students; the other groups could be as large as 6-8 students.
Principle 7: Materials

This principle has 3 indicators
- M-1a: Paper Consumption
- M-1b: Enviro-Friendly Paper Consumption
- M-2: Solid Waste Reduction

Issues

Most institutions, especially schools, use copious amounts of paper to answer its daily needs (photocopies for classes, administrative paperwork, etc). Paper consumption in institutions has an immense impact on the environment. Schools also generate huge amounts of solid waste. To encourage the process of reducing these solid wastes, we have included in this framework an indicator that measures your school’s progress in waste reduction.

Materials Resources

www.wrwcanada.com/schools.htm
Waste Reduction Week in Canada has resources to help schools reduce the amount of waste they are producing as well as providing students with valuable curriculum based lessons that can become habits of a lifetime.

www.rcbc.bc.ca or www.compost.org
The Recycling Council of B.C. and the Composting Council of Canada have lots of info and tips on reducing and diverting waste from landfills.

www.nrdc.org/greensquad/library/intro.asp
The Green Squad library has great fact sheets on paper, food and plastic consumption & conservation.

www.toronto.ca/compost/index.htm
The City of Toronto has a great city-wide composting program.
**Tree-free Paper**
Paper produced using non-tree based fiber products like hemp, kenaf and agricultural waste.

**Chlorine-free Paper**
There are three more ecologically-sound paper-bleaching processes now available instead of chlorine bleaching.

- The first is "elementally chlorine free (ECF)" which uses chlorine dioxide as the bleaching agent as it does not produce as many dioxins, the pollutant problem associated with traditional bleaching.
- The second is "totally chlorine free (TCF)" which uses ozone, hydrogen peroxide, and peracids (enzymes) in the bleaching process. Recycled fibers cannot be used in this process, as they cannot be guaranteed to be chlorine free.
- The third type is "process chlorine free (PCF)" which is similar to TCF but does use recycled fibers. Proponents of this type of paper argue that the harm in chlorine bleaching comes in the processing of it, not in its reprocessing or reuse.

All three of these types of paper qualify as "chlorine-free paper" for the purposes of the HSSAF. (Source: www.pneac.org/compliance/Ink-Paper/chlorinefreepaper.cfm)
M-1a: Paper Consumption and
M-1b: Enviro-Friendly Paper Consumption

Indicator and Benchmarks

<table>
<thead>
<tr>
<th>Measurement Units</th>
<th>Short-Term Goal</th>
<th>Long-Term Goal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total pieces of paper (of all types) purchased by the school each year, divided by the total number of SCMs.</td>
<td>n/a</td>
<td>Approach Zero</td>
</tr>
<tr>
<td>Calculate percentage of environmentally-friendly paper purchased by dividing total quantity purchased of non-chlorine bleached, recycled, tree-free paper by total paper purchased, multiply by 100.</td>
<td>25%</td>
<td>100%</td>
</tr>
</tbody>
</table>

Discussion
With indicators M-1 and M-1b, we encourage the monitoring of paper consumption to change institutional practices that are unsustainable.

Core Questions
1. How is paper purchased in your school? Are there any policies in place that govern the purchase of paper? Is it all done through one person, or do they have another purchasing system?
2. How much paper did your school purchase in the previous school year?
3. How much environmentally-friendly paper (non-chlorine bleached, recycled, tree-free) paper did your school purchase during the school year?
4. What kinds of paper reduction methods are currently in use at your school? Are there policies that encourage the use of electronic communications, double-sided copying and printing, minimization of in-school mail outs, or others?

Tips for Sample Design and Data Collection
- This indicator could be quite hard to assess as schools use so many types of paper.
- Ask your secretary or principal who is responsible for purchasing paper and ask her/him to see the purchase records of paper from the last year.
- Paper is sold in packages or “reams”. Determine how many pages of paper are in each one of the packages to calculate this indicator in pieces of paper per school community member.
- Calculate total environmentally-friendly paper purchased while researching M-1.

Developing Recommendations
Remember that money talks. A cost cutting initiative such as reducing paper consumption is a great way to encourage positive, ecologically-sound behaviours and discourage wasteful practices, and can be used to fund changes that cost a bit, such as buying environmentally-friendly paper instead of conventional unsustainable paper. Ask your administration to encourage its staff to print double-sided sheets. Ask teachers how they print, how much paper they use, and why they use paper in this way. This will give you a better idea of how you can improve paper consumption in your school. After you have done this research make your suggestions to your school principal. Remember that the more professional and passionate you are will often determine how your ideas or research are received. Displaying your research and data in a presentable format, such as a short report that you can leave with the decision-maker, may elicit more serious consideration.

M-2: Solid Waste Reduction
## Indicator and Benchmarks

<table>
<thead>
<tr>
<th>Measurement Units</th>
<th>Short-Term Goal</th>
<th>Long-Term Goal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Percent of waste reduced per capita over the previous year’s waste production. <em>Note: use Calculator on the next page.</em></td>
<td>0% to 5% change</td>
<td>Positive Percent Change</td>
</tr>
</tbody>
</table>

### Discussion

M-2 can be challenging to calculate as most waste disposal companies employed by schools charge by number of trips, not quantity.

### Core Questions

1. Has your school ever done a waste audit? (If so, get a copy of the results).
2. How much solid waste (in kilograms) did your school produce in the last school year?
3. How is solid waste managed at your school? Who is responsible for collection, disposal, recycling, waste reduction, billing, and for contracting waste disposal/removal companies?
4. How much money did your school spend on waste removal last year?
5. Does your school have a waste management policy that encourages reduction?
6. How can we find ways to encourage material reduction at our school?

### Tips for Sample Design and Data Collection

- This indicator provides a measure of improvement in waste management practices by comparing the quantity of waste sent to landfill for two consecutive years. The calculator on the next page should help you to assess this indicator.
- The data needed for this may at first appear to be quite difficult to obtain, but it is really quite easy. Because schools are quite big, they must pay money to have waste removed from their grounds. Ask your school’s head custodian to see the waste removal records for the previous year.
- You will need the total annual weight (in kilograms), but the bills might only indicate the cost. If this is the case, find out what waste removal service your school uses, and ask them how much it costs per kilogram. Then, you can simply make the conversion from dollars to kilograms.
- Unfortunately, in some schools, the removal service is billed per trip, regardless of how full the dumpster might be. In this case, you will have to ask custodial staff about their observations or measure the dumpster for several weeks to estimate the average volume of solid waste per trip.

### Developing Recommendations

After determining whether there is excessive waste at your school, you can determine what types of waste need to be reduced significantly. You can do a waste audit, collecting and categorizing all the waste generated in a day by your entire school to determined the types of items that are disposed and could be diverted (returnables, soft plastics, cardboard, styrofoam, paper, food, etc.). Think of efficient solutions with your work group. You may want to organize an assembly to educate the school about its waste diversion system, put recycle bins beside every garbage can, organize soft plastics recycling or developing a compost system to divert school’s waste.
**M-2: Calculator**

**Solid Waste Reduction Calculator**

Create this table in a new Excel document, fill in the values, and set up the function effects so the final category is calculated for you.

<table>
<thead>
<tr>
<th>INDICATOR M-2: Solid Waste Reduction</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tonnes waste disposed previous year</td>
</tr>
<tr>
<td>FTE SCMs previous year</td>
</tr>
<tr>
<td>Tonnes waste/FTE previous year (previous per capita)</td>
</tr>
<tr>
<td>Tonnes waste disposed current year</td>
</tr>
<tr>
<td>FTE SCMs current year</td>
</tr>
<tr>
<td>Tonnes waste/FTE current year (current per capita)</td>
</tr>
<tr>
<td>Percent improvement in waste disposal efficiency/FTE (i.e. reduction in per capital consumption)</td>
</tr>
</tbody>
</table>
| \[
<table>
<thead>
<tr>
<th>\frac{(1 - \text{current year})}{(\text{previous year})} X 100</th>
</tr>
</thead>
</table>

**Note:** FTE = Full Time Equivalent; SCM = School Community Member
Principle 8: Air

Issues

This principle has 3 indicators

- A-1: Lead, Asbestos and Mold
- A-2: Chemical-Free Cleaning
- A-3: Greenhouse Gas Emissions - Transportation

Indoor air quality has emerged in recent years as a critical issue of concern; being the cause of a variety of respiratory problems. Older buildings tend to have poor ventilation, leaky pipes, mould and other contaminants such as lead paint and asbestos that may cause chronic health problems for students or staff, including permanent brain damage! These indicators were included in this framework to protect human health inside the institution. We hope that researching these indicators will encourage your administration to perform regular air quality tests throughout the school to obtain this data, and upgrade infrastructure where necessary to remove sources of contamination.

Air Resources

www.hc-sc.gc.ca/ewh-semt/air/in/index_e.html#indoor
The Health Canada website has lots of info and an action toolkit on air quality.

www.oee.nrcan.gc.ca/idling/idling.cfm
Canada’s Office of Energy Efficiency offers anti-idling tips and resources.

www.bc.lung.ca/association_and_services/information_resources.html
The Lung Association is a good source of info and consultations.

Key Term

Idling
Keeping a parked vehicle running for more than 10 seconds.
A-1: Lead, Asbestos and Mold

Indicator and Benchmarks

<table>
<thead>
<tr>
<th>Measurement Units</th>
<th>Short-Term Goal</th>
<th>Long-Term Goal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total square meters of indoor spaces contaminated with lead, asbestos and/or mold, divided by the total indoor square meters; multiply by 100.</td>
<td>20% or less</td>
<td>0%</td>
</tr>
</tbody>
</table>

Discussion
Short-term benchmarks were quite hard to create for this indicator, and the one suggested is likely to change and adapt over time and depending on the institution. It may also be hard to find the information concerning this indicator, but it is hoped that air quality checks and other air quality tests will be administrated throughout the school to obtain this data.

Core Questions
1. What is the total indoor space in square meters?
2. Do any inventories exist of asbestos, mould, or other harmful substances present in your school? If so, does the data indicate which areas include hazardous rankings of each?
3. Are there any policies in place to minimize or eliminate these air-borne contaminants?
4. Is your school old enough to have any lead-based paint? If so, are SCM’s exposed to it?

Tips for Sample Design and Data Collection
- Firstly, you will need to ask the principal or head custodian for the total square meters of indoor space. To determine how much of the space is contaminated, ask the custodian if it has ever been inventoried. Some provinces require that public institutions keep inventories.
- Look for lead contamination by checking for cracked paint, revealing old lead paint underneath, especially around windows. Renovations also can reveal contaminants.

Developing Recommendations
Depending on your findings, you may recommend creating a policy on having annual mold, lead and asbestos inventories, or infrastructure upgrades where it seems appropriate (e.g. asbestos removal, painting over or removing lead paint, replacing leaky pipes and water damaged walls). Another option would be to create an air quality task force; including students, teachers, and custodial staff, that would be in charge of creating a comprehensive policy with various standards of good indoor and outdoor air quality (based on provincial/federal standards or other certification methods).
A-2: Chemical-Free Cleaning

Indicator and Benchmarks

<table>
<thead>
<tr>
<th>Measurement Units</th>
<th>Short-Term Goal</th>
<th>Long-Term Goal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total square meters of indoor space always cleaned using a chemical free system,</td>
<td>At least 50%</td>
<td>0%</td>
</tr>
<tr>
<td>divided by the total interior square meters; multiply by 100.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Discussion

Chemical-free cleaning is an interesting area to explore, as the school needs to balance the need to keep the school clean and free of dangerous microbes with the need to reduce negative impacts of toxic, anti-bacterial, and non-biodegradable cleaners on the high school community and wider ecosystem it depends on. A-2 is best measured along with W-3, or one of them can be chosen.

Core Question

1. Does the janitorial service at your institution use any chemical free cleaning products? If so, how much space (in square meters) is cleaned using the chemical free cleaning?

Tips for Sample Design and Data Collection

- As in A-1, find out the total number of square meters of indoor space in your school.
- Ask custodial staff to list all the cleaning products they use in which areas of the school, or if the janitorial services are contracted out, contact the company, and ask to talk to the person that deals with product information. Look at the labels on each cleaning product.
- Make a table of the cleaners, evaluating whether they are biodegradable, phosphate-free, non-toxic, and whether they contain anti-biotic or anti-bacterial components.

Developing Recommendations

Toxic cleaners often leave residues that can be inhaled, threatening the well-being of all school community members, especially custodial staff. By calculating the volume of cleaners used, you will know how often cleaning is happening and how much cleaner is being used each time – offering insight into where toxicity can be reduced. We suggest you research non-toxic, biodegradable alternatives and recommend that your school implement a chemical-free cleaning policy.
A-3: Greenhouse Gas Emissions - Transportation

Indicator and Benchmarks

<table>
<thead>
<tr>
<th>Measurement Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total tonnes of GHGs emitted during the year as a result of transportation by SCM’s to and from school, divided by total number of SCM’s. Extrapolate from averaged survey results from 2 separate weeks in the year, one during a cold month (below 5°C) and one during a warm month (above 5°C).</td>
</tr>
</tbody>
</table>

Discussion

Transportation choices impact air quality, respiratory health of school community members and climate change. Drivers idling while dropping off or picking up students create daily traffic jams around schools, with an increased risk of students getting hit. In addition, vehicle accidents are the number one killer of youth in Canada, so supporting alternative methods of transportation that are fun, safe, cheap, easy and cool are critical for their well-being.

Survey Questions

1. How do you travel to school? (provide a list of options: bus/subway, drive alone, carpool, get a ride, bike, walk, etc.)
2. How far do you travel approximately?
3. If you travel in a car, what kind is it? (SUV/Van, medium car, or fuel-efficient car) What kind of fuel does it use? How many minutes, if any, does your car idle while picking you up or dropping you off?

Tips for Sample Design and Data Collection

- Create and conduct a transportation survey of all SCM’s twice during the year, one during a cold month (below 5°C) and one during a warm month (above 5°C), gathering info on transportation methods and distances traveled during a week for each respondent.
- Calculate total tonnes of GHGs emitted during each of the 2 weeks surveyed as a result of transportation by SCM’s to and from school, divided by total number of SCM respondents.
- Calculate average of two weeks, then multiply by total of weeks SCMs travel to and from school.

Developing Recommendations

There are many ways to reduce transportation-related GHG’s at your school. Use your indicator investigations to identify the biggest fuel consuming and GHG producing transportation activities at your school and develop strategies to reduce those. It is helpful to try to understand why unsustainable transportation methods are chosen. Is it a matter of awareness, time, safety, status, cost? Research possible alternative transportation projects (such as subsidizing bus passes, building more secure bike racks, or charging more for parking) your school could create to encourage students and staff to reduce their impact.
principle 9: Energy

This principle has 4 indicators
- E-1: Greenhouse Gas Emissions - Buildings
- E-2: Reduction in Energy Consumption
- E-3: Renewable Energy Sources
- E-4: Appliance Efficiency

Issues
These indicators measure the source, efficiency and intensity of your school’s energy consumption, in addition to energy-related greenhouse gas emissions. Energy consumption has a huge impact on our ecological and human communities, as energy production, distribution and consumption often comes at the cost of habitat destruction, displacement of homes and communities, pollution, and most notably the production of greenhouse gas emissions, which are causing global climate change. It is imperative that our generation learn to cut down our energy consumption to deal with this very real threat to the sustainability of our communities and lifestyle.

Energy Resources

www.yorku.ca/ecoschl/multimedia.asp
EcoSchools offers guides, curriculum links, multimedia presentations and supporting material on fossil fuels, alternative energy sources, climate change & solutions for students.

www.ase.org/section/program/greenschl
Alliance for Energy’s Green Schools Program engages students in creating energy-saving activities in their schools, through basic changes in the operations, maintenance, and individual behaviour.

www.energyquest.ca.gov
Energy Quest is an interactive website with a variety of energy and environmental education materials.

www.nrdc.org/greensquad/library/intro.asp
The Green Squad library has great fact sheets on energy consumption and conservation.

www.campusclimatenetwork.org is an online community where high schools and post secondary institutions can share successes, challenges and resources for leading their schools to go beyond carbon neutral.
E-1: Greenhouse Gas Emissions: Buildings

Indicator and Benchmarks

<table>
<thead>
<tr>
<th>Measurement Units</th>
<th>Short-Term Goal</th>
<th>Long-Term Goal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total energy (of all types) consumed each year, converted into CO₂ equivalent (tonnes), and divided by total square meters of interior space.</td>
<td>Tonnes CO₂e / m²</td>
<td>Tonnes CO₂e / m²</td>
</tr>
</tbody>
</table>

*Note: Use Calculator provided after Indicator E-2.

Note: energy used outdoors (lighting, signage, etc) should be included in the energy use calculation, but will still be assessed relative to square meters of interior space.

Discussion

For E-1, it is usually easy for one person to collect total energy consumption information from your principal or school board, but you must have up to date “Emission Factors” (EF) for your region’s different energy types in order to calculate greenhouse gas emissions (GHGs) in tonnes of Carbon Dioxide Equivalent (CO₂e). Electricity in particular can have a very different EF depending if its generated through hydro dams, nuclear, coal or gas powered plants. This indicator only deals with the energy consumption by buildings since high schools usually do not have a fleet of vehicles. Travel-related emissions are calculated under Air, as they also affect air quality.

Core Questions

1. How much energy (in GJ) did the school consume in the past year?
2. What fuel types, and in what volumes provided this energy?
3. Does your school have any building energy retrofit programs in place that are working towards greater energy efficiency?

Tips for Sample Design and Data Collection

- Your task is to collect the total amount of energy used by school buildings for all heating, ventilation, air conditioning, refrigeration and signage.
- Identify all of the fuel types and their uses, then find their volumes used in the school year that you are assessing. If not in BC, consult your school district facilities manager, electricity and/or gas provider or government website to find your region’s EFs.
- Use the SHS GHG Calculator to find your school’s total GHG emissions in CO₂ equivalent tonnes by multiplying each type of fuel by its Emission Factor.
- Get a floor plan of your school from your principal or head custodian and calculate the interior space of all buildings at your school in square meters.
E-2: Reduction in Energy Consumption

Indicator and Benchmarks

<table>
<thead>
<tr>
<th>Measurement Units</th>
<th>Short-Term Goal</th>
<th>Long-Term Goal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total change in energy consumption in GJ for buildings in current year over previous year. *Note: Use the Calculator on the next page to calculate your school’s energy use reduction.</td>
<td>0%-5% change. (i.e. no more than 5% increase)</td>
<td>Positive percent change (i.e. reduction made)</td>
</tr>
</tbody>
</table>

Discussion
Climate change is a symptom of the unsustainable nature of our energy consumption and is becoming widely acknowledged as a threat to the viability of our way of life. Our society has grown addicted to cheap, plentiful fossil fuels in the past fifty years and we have designed our buildings, communities, food, and transportation systems based on this assumption. The generation currently in high school is both particularly at risk and in a place of opportunity to learn how to respond effectively to the complex challenges we are currently facing and evolve past the carbon age. In BC, high schools and all other public institutions have been mandated to become carbon neutral by 2010 (zero net GHG emissions). By calculating your schools’ trend in energy consumption, you can find out if your school is moving towards this target.

Core Questions
1. How many GJ of energy were consumed last year?
2. How many GJ of energy were consumed in the previous year?
3. Does your school run any greenhouse gas reduction campaigns urging your school community members to change their behaviours?
4. Does your school encourage video and tele-conferencing rather than air and vehicle travel to participate in meetings and conferences?

Tips for Sample Design and Data Collection
• This indicator should be straightforward to assess.
• When collecting the energy consumption, make sure that you are assessing the same buildings each year, but if you are adding new buildings to your calculations (due to of renovations, etc.), make sure to note this because your calculations will not be consistent with the previous year.
• Once you have collected your data, use the calculator provided to determine the energy consumption difference between the two assessment years.
• From the data collection, which will give you GJ (gigajoules) values, you can see what consumes the most energy (whether its cooling, heating, refrigeration, lighting, etc.). Once you know this, you will have a better idea onto what needs to be improved in terms of energy consumption.

Developing Recommendations
There are many ways to reduce energy consumption and related greenhouse gas emissions. Use your indicator investigations to identify the biggest energy consuming and GHG producing activities at your school and develop strategies to reduce them through creating awareness programs, infrastructure investments, or school policies.
### Calculating Your High School’s GHG Emissions (E-1) & Energy Consumption (E-2)

<table>
<thead>
<tr>
<th>Steps</th>
<th>Information to collect</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Calculate floor area of all school buildings</td>
<td>from copy of school blue print, calculate total m²</td>
<td>2007 2006 2005</td>
</tr>
<tr>
<td>2. Collate annual energy consumption data</td>
<td>- gas GJ</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- oil L</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- electricity kWh</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- other</td>
<td></td>
</tr>
<tr>
<td>3. Multiply consumption data x Emission Factor to find GHG emissions</td>
<td>- gas GJ x 48.5 B.C. EF</td>
<td>tonnes eCO²</td>
</tr>
<tr>
<td></td>
<td>- oil L x 0.002828 B.C. EF</td>
<td>tonnes eCO²</td>
</tr>
<tr>
<td></td>
<td>- electricity kWh x 0.1136 B.C. EF</td>
<td>kg eCO²</td>
</tr>
<tr>
<td></td>
<td>- other x EF = eCO²</td>
<td></td>
</tr>
<tr>
<td>4. Calculate total eCO²</td>
<td>sum of all eCO² in tonnes</td>
<td></td>
</tr>
</tbody>
</table>

**E-1 Indicator Assessment:** GHG emissions per square metre of interior space: eCO²/m²

**Calculating Your High School’s Energy Consumption**

<table>
<thead>
<tr>
<th>Steps</th>
<th>Information to collect</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>5. Convert consumption data to GJ (Giga Joules - a unit of energy)</td>
<td>- gas 1000 m³ x 0.03820</td>
<td>TJ</td>
</tr>
<tr>
<td></td>
<td>- oil 1000 m³ x 41.73</td>
<td>TJ</td>
</tr>
<tr>
<td></td>
<td>- electricity GWh x 3.6</td>
<td>TJ</td>
</tr>
<tr>
<td></td>
<td>- propane 1000 m³ x 25.36</td>
<td>GJ</td>
</tr>
<tr>
<td></td>
<td>TOTAL</td>
<td></td>
</tr>
</tbody>
</table>

**E2 Indicator Assessment:** Total change in energy consumption in GJ for buildings in current year over previous year: Total GJ 2007 - Total GJ 2006

### Optional Benchmarks

<table>
<thead>
<tr>
<th>Steps</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>6. Determine number of full-time SCMs</td>
<td>Students staff, other</td>
</tr>
<tr>
<td></td>
<td>TOTAL Full Time Equivalent SCM</td>
</tr>
<tr>
<td>7. Collate annual energy costs (Optional - good data for admin)</td>
<td>- gas $</td>
</tr>
<tr>
<td></td>
<td>- electricity $</td>
</tr>
<tr>
<td></td>
<td>- other $</td>
</tr>
<tr>
<td></td>
<td>TOTAL</td>
</tr>
<tr>
<td>8. Collate Annual Heating Degree Day (HDD) for your locality- to compare nationally</td>
<td><a href="http://www.ec.gc.ca">www.ec.gc.ca</a></td>
</tr>
<tr>
<td></td>
<td>HDD: Environment Canada’s total of days with temperatures in your region that need cooling/heating</td>
</tr>
</tbody>
</table>
E-3: Renewable Energy Sources

Indicator and Benchmarks

<table>
<thead>
<tr>
<th>Measurement Units</th>
<th>Short-Term Goal</th>
<th>Long-Term Goal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Energy consumed that comes from renewable sources divided by total energy consumed.</td>
<td>25%</td>
<td>100%</td>
</tr>
</tbody>
</table>

Core Questions
1. Does all of your school’s energy come from one source? (electricity, gas...)
2. Is this source renewable?
3. What percentage of your school or electric company’s energy consumption is filled through renewable sources?

Tips for Sample Design and Data Collection
- Brainstorm who at your school would know if you have any special energy projects (solar panels or water heating, a windmill, a tidal generator, etc.) and whether all your school’s energy comes from the same source.
- Find out your local power company (this may be a private company, crown corporation or public utility) and research what kind of sources they get their energy from. Find out if energy from all sources feeds the whole power grid or if a certain type of source can be traced for your school or community’s power.
- Evaluate whether or to what degree the energy sources are renewable and sustainable (energy from fossil fuel sources such as coal and natural gas are not whereas solar, wind, tidal power, and bio-fuels generally are. Hydroelectricity is in between; you’ll have to research and evaluate the impact your hydro generation has on the watersheds it uses.

Developing Recommendations
Research possible alternative energy generation projects your school could create to supply some of its energy needs so that you no longer rely as much on non-renewable energy sources. Would solar panels, a solar water heating system, a solar wall or using skylights to use natural light energy be appropriate? What about installing a generator of wind, micro-hydro, geo-thermal or a tidal power?
E-4: Appliance Efficiency

**Indicator and Benchmarks**

<table>
<thead>
<tr>
<th>Measurement Units</th>
<th>Short-Term Goal</th>
<th>Long-Term Goal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total number of appliances with high Energy Star efficiency rating (within top 15% of appliances of that type) divided by total number of appliances.</td>
<td>25%</td>
<td>100%</td>
</tr>
</tbody>
</table>

**Core Questions**

1. How many appliances and fixtures are used in your school?
2. Which of these fixtures and appliances have an Energy Star efficiency rating?
3. What proportion of these fixtures are highly efficient compared to other appliances of their type? (in the top 20% of those available)

**Tips for Sample Design and Data Collection:**

- Brainstorm a list of all the types of appliances and fixtures that use energy at your school (lights, computers, refrigerators, etc.).
- Your head of custodial services (head janitor) or the person who budgets and purchases school supplies may maintain a record of energy appliances, fixtures and equipment, either as they are purchased or maintained. If so, ask to obtain this list. If not, you will have to get a lot of volunteers or a class to do a fair bit of leg work to make your own inventory.
- Create a chart so that for each type of energy fixture, you know how many are in the school, what their wattage is, and if it is efficient according to Energy Star.
- In order to determine whether such fixtures are of the highest efficiency, you will need to do a bit of research. Start with the list of fixtures and visit the manufacturers’ websites. It should be easy enough to see if the fixtures have an energy star rating and determine if more efficient models are offered through the same manufacturer. Also, there might be more efficient ones offered from other manufactures or companies.

**Developing Recommendations**

In your research you will discover which appliances waste the most energy, which are used the most, and which will be the most cost-effective to replace. Make a list of the order you think they should be replaced as replacing all inefficient appliances/fixtures with more efficient ones at once may not always be the best solution if all the old ones will go to a landfill. It will cost a lot, and next year, even more efficient fixtures may become available. The goal of these initiatives is to move your school forward in energy conservation, so replacement should probably only be done as the old fixtures break or wear out. Be aware that your school may have an exclusive agreement with a certain manufacturer to supply all such products at your school. You can pressure this manufacturer to improve their efficiency and/or research alternatives for when your school’s contract with them ends.
Principle 10: Land

This principle has 3 indicators
- L-1: Green space
- L-2: Pesticides
- L-3: Native Plants

Issues

Land is an important part of sustainability in terms of human and ecosystem well-being. Green space that is well managed creates healthy soils and natural systems, as well as spaces where classes can be held outdoors and high school community members can relax, exercise and explore. However, certain poisons (like pesticides) that are used to make our laws, gardens and flower beds “look nice” negatively impact human health and our communities. Managed and unmanaged landscaping with native plants can reduce the amount of toxins and water deemed necessary to maintain your school’s green spaces, and can also support the insects, birds and animals that make up a more healthy, complex and pleasant ecological community.

Land Resources

- www.evergreen.ca/en/lg/lg.html
  Evergreen’s Learning Grounds program helps schools create outdoor classrooms and naturalization projects.
- productcare.org
  Safe disposal of pesticides.
- www.toolbase.org/Technology-Inventory/Sitework/permeable-pavement
  Permeable road surfacing and pavement: info on types, costs, benefits and manufacturers.
- www.countrysideinfo.co.uk/howto.htm
  Ecological sampling methods, such as quadrats.
**Permeable Surface**
Any surface that water can drain through to the water table, such as soil, gravel, fields, and paving stones. Non-permeable surfaces include buildings, pavement, etc.

**Green Space**
This includes all permeable surfaces on school grounds including lawns, landscaped beds (with both native and non-native plant species), gardens, agricultural lands, gravel walkways, etc. It also includes non-managed, natural areas.

**Natural Areas**
This includes all permeable spaces on school grounds that are in a natural or semi-natural state. Both degraded and healthy ecosystems should be included, as well as those areas with a higher degree of human maintenance due to habitat restoration activities.

**Native Plants**
Plants that have inhabited a particular region for thousands of years. This definition implies long-term stability and co-evolution of that plant in its vegetative community, and adaptation to and ability to persist the unique environmental characteristics of the region (Source: www.nazflora.org/meaning_of_native.htm)

**Inorganic Fertilizer**
A fertilizer derived from non-organic chemicals (like phosphorus), as opposed to organic materials (like compost).

**Quadrat**
An ecological sampling unit, usually consisting of a square frame, the most frequently used size being 1m². Quadrats are used to count the number and types of species within the frame in order to enable comparable samples to be obtained from different areas.

**Success Story**
SHS Youth Steering Committe members Felicity Wilson from Reynold Secondary and Angharad Wylie from Saint Michael’s University School in Victoria, BC have been working with LifeCycles’ Growing Schools Program to build a community garden at their school. You can too! Check out www.lifecyclesproject.ca/initiatives/growing_schools.
L-1: Green Space

Indicator and Benchmarks

<table>
<thead>
<tr>
<th>Measurement Units</th>
<th>Long-Term Goal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total hectares of green space, divided by the total school grounds (greyspace, managed and natural green space, including everything that is built upon or that is non-permeable) at your school; multiply by 100.</td>
<td>As much green space as possible.</td>
</tr>
</tbody>
</table>

Core Questions
1. How much of your school’s land area consists of managed green space?
2. How much consists of natural areas?
3. How much consists of greyspace (impermeable parking lots, etc.).
4. What is the total area of managed green space and natural areas combined?
5. What is the total amount of non-permeable surfaces?

Tips for Sample Design and Data Collection
- Obtain an aerial view map of your entire school’s property with accurate scales. The head custodian, principal or your municipal government should have this map.
- Ask your school janitors about what green space is managed on the school property.
- Separate clearly what is managed, and what are natural areas of green space.

L-2: Pesticides

Indicator and Benchmarks

<table>
<thead>
<tr>
<th>Measurement Units</th>
<th>Long-Term Goal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total volume of solid and liquid pesticides (including both plant and animal poisons of all types) used annually (in litres), divided by the total hectares of managed green space.</td>
<td>Zero</td>
</tr>
</tbody>
</table>

Core Questions
1. How much pesticide was used for exterior purposes in the year being considered?
2. Does your school have a policy promoting alternatives to using chemical pesticides?

Tips for Sample Design and Data Collection
- These indicators should be relatively straightforward.
- The head of custodial services should be able to tell you which pesticides, fertilizers, herbicides, etc. are used on your schools property, and in what amounts they are used. For this indicator you are only interested in the use of these chemicals outside.
- If the head custodian cannot give you this information (whether they think it is private information or that they do not keep track) try to track down the person in charge of purchasing the janitorial products. Here, you should find the quantities of pesticides have been purchased.
- Use Appendix III: Guide to Unit Conversions to convert all weights/volumes of pesticides used to one common unit.
L-3: Native Plants

Indicator and Benchmarks

<table>
<thead>
<tr>
<th>Measurement Units</th>
<th>Short-Term Goal</th>
<th>Long-Term Goal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total number of native plants installed (number of individual plants) annually in managed green spaces, divided by the total number of plants, installed in that year; multiply by 100.</td>
<td>At least 50%</td>
<td>100%</td>
</tr>
</tbody>
</table>

Discussion
Short term benchmarks, as well as the long term goals, were quite hard to determine. These three indicators are quite flexible, and completely depend on the schools’ willingness to address these important issues. The ideal for these two would be firstly, to have as much green space as possible, secondly, to have no pesticides on these green surfaces, and thirdly, for these green spaces to be dominated by a native, drought-resistant plants that form a sustainable ecological community.

Core Questions
1. How many plants were installed in the school year being considered? How many were native plants?
2. Does your school have a policy promoting the use of native plants on school grounds?
3. What percentage of all the plants on your school grounds are native?

Tips for Sample Design and Data Collection
- Begin by determining whether your school has a policy or practice of preferentially planting native plants in managed green spaces. Speak to the head of custodial services to understand the plant selection and purchase process.
- See if your school kept records for the number and types of plants purchased and installed over the year.
- Use the definition of native plants provided in the key terms to help you determine which plants are native and which are not. Evergreen [http://www.evergreen.ca] also has a search engine so that you can research plants native to your area. With this, you should develop a plant list of native species found in your area so you can assess this indicator more efficiently.
- Another thing you can do is ask your biology teacher to bring their class for a trip on the school grounds and determine with their students the different types of plants on your school property. This can be measured accurately by using quadrats (see Key Terms in the introduction to Principle 10: Land).

Developing Recommendations
Policies are a great way to promote more sustainable management of green spaces. Creating a policy to promote use of native plants or to discourage use of pesticides may be a good option to recommend to your school’s administration. You can also organize a school-wide “Broom pull” to reduce the number of invasive species, such as Scottish Broom, or a day of planting native species to rehabilitate a degraded area.
Completing your High School Sustainability Assessment - some Inspiration!

As you look through the HSSAF framework, it may seem like a lot of... well... work. It can also be interesting, fun, challenging, and rewarding, especially if you work on it with other people. For those that have, like the ESCAPE club at Esquimalt High School in Victoria, B.C., completing their HSSAF assessment has brought a great sense of accomplishment and achievement – the students know it has the potential to make a huge difference in how their school is run. They are leaving a legacy by starting a whole new phase in their school’s development, and the projects they created have made obvious improvements to the social and ecological well-being of their community.

Success Story: ESCAPE Weighs In On How To Escape Their School’s Waste

When Esquimalt Students Caring About Peace & the Environment calculated Indicator M-2, Solid Waste Reduction, they did a “Waste Weigh-In,” getting the whole school involved in sorting and weighing the types of “garbage” usually sent to the landfill, that could actually be diverted through recycling. By doing a little work they created awareness among staff and students about the fact that over 99% of the stuff they were sending to a landfill could be recycled, composted, or returned! They set up a new waste diversion system which enables students to separate compost, returnables, paper, cardboard and soft plastics, and recycle these types of items. Each container is decorated by a collage of the types of items that belong in it! They set a goal to make their cafeteria zero-waste by the end of 2008 and their school zero waste by 2012!

This is an inspiring example of effort that is truly worthwhile for many reasons, especially to address climate change as it:

- **Reduces the amount of methane** (a greenhouse gas 21% more potent than CO2) produced in landfills
- **Reduces the amount and weight of trips** made by waste collection trucks, reducing transportation-related CO2 emissions
- **Reduces the amount of mining, logging and petroleum production** associated with making all those pizza boxes and pop bottles by recycling them
- **Creates jobs in waste-diversion and recycling industries**, enabling BC and Canada to become a leader in this field
- **Produces compost**, reducing the need for petroleum-based fertilizers

Esquimalt is one of the leading schools in the SHS Project. With teachers and student members of its ESCAPE and Interact clubs attending the SHS Symposium in April 2006, Esquimalt students have formed the backbone of the SHS Youth Steering Committee. These students have edited and provided feedback on the SHS Kit, the HSSAF Indicators, and guided the project’s development, not only acting as courageous guinea pigs in piloting the B.C. project at their school, but also leading the project as a whole across the province. To get in contact with Esquimalt staff or students for advice on how to compete your assessment, email shs@sierraclub.bc.ca.
Sharing your Assessment Results

Once you have calculated indicators of your school’s sustainability - whether you chose one indicator or completed them all - you will want to think of an effective way to present your findings to your high school community and get feedback from them on the results. This may take a variety of forms such as:

- A school e-newsletter or zine
- A formal policy report
- A power point presentation
- A newspaper article
- A public event!

Please report your findings not only to your administration, school and community, but to us as well! We need such results in order to improve the HSSAF and the SHS Kit. In addition, with your permission, we will post your results on a profile page for your school at www.sustainablehighschools.ca so that other students and schools can learn and be inspired by your experience. On this website, you can also download SHS Success Story submission and Indicator Report forms.

Please send us a report of both any indicator assessment results and also projects that you have done to improve your school’s sustainability. We will be giving out annual awards, prizes and recognition for outstanding schools working for sustainability. You can enter your class, club or school into our Sustainability Action Challenge by sending us the following info:

- Name of school and club or class
- People involved in project
- Which indicator(s) did you complete?
- Indicator assessment results
- Sustainability project done. Was it fun? Did it make a difference?
- Successes, challenges and lessons learned

Send your report to:

Sustainable High Schools Coordinator
Sierra Club BC
#302-733 Johnson St.
Victoria BC V8W 3C7

Email: shs@sierraclub.bc.ca
Tel: (250) 386-5255 ext 245
Fax: (250) 386-4453
Appendix 1: Surveying School Sustainability

While many of the Sustainability Indicators in the HSSAF can be calculated with facts and figures available through your administration, school board, custodial staff or others, some of them will need to be assessed by asking students and staff questions through a survey.

Why Survey?

Surveys are used throughout our society as a means of gathering information on respondents’ behaviours, opinions, and experiences that often cannot be measured any other way. Governments, universities, news agencies, service providers and businesses use polls, censuses, and questionnaires all the time to make sure they are doing their job. Many of these agencies do not gather information from youth under age 18, whether by law to protect the privacy of youth and children or because they believe the opinions and experiences of youth are unimportant. The job of schools, however, IS all about the behaviours, opinions and experiences of minors, and without access to this type of information, your school cannot make more effective decisions, policies and programs – especially in the area of social sustainability.

Can Schools Survey?

Schools often do surveys, perhaps even annually, because they are trusted by students and parents to treat information about students with respect and confidentiality. If you want to gather the type of information that will help your school become more sustainable, you will need to get permission from your school and follow its policies on how to do so and what can be done with the information. It is best to work with the administration representative on your Sustainability Advisory Committee.

What about the SHS Survey?

Some of the suggested survey questions in the Sustainable High Schools Kit are fairly harmless and non-controversial, such as questions regarding transportation choices or volunteering activities. Others need to be treated with care, confidentiality and even
anonymity – such as substance abuse and incidents of assault. Both types are equally important and critical in improving your school’s sustainability, so we encourage you to make every effort to find a way to calculate them, without hurting those you are trying to help.

**How do we do a Survey?**

If your school already runs an annual survey, ask to add your sustainability questions to it. You may be able to prepare the whole survey, and then if you work with your administration cooperatively, they may – you guessed it! – administer the survey, and tabulate the results. However, if your school doesn’t ever run surveys, you will have to create the process with teachers and administration representatives on your **Sustainability Advisory Committee**. It is best to start by picking which suggested survey questions in the HSSAF you want to include. You may want to separate the questions into more than one survey – for example, one which has to be anonymous and kept confidential while being counted, and another that student volunteers can count. Anonymous survey are best administered by a whole school or grade doing the survey at the same time in their classes, with students placing their own responses face down in an envelope marked only with the class’ grade on it, the envelope sealed in front of the class, then collected and collated by representatives of the **Sustainability Advisory Committee**.

**Other Survey Options!**

- **Questionnaires**: mail home to include parents; a prize raffled off to respondents will provide an incentive so you receive results!
- **Paper Box Poll**: provide respondents with piece of reused paper for them to choose which of several clear boxes labeled with answer options to drop their vote.
- **Dotmocracy**: provide respondents with coloured stickers so they can select options written on a wall poster
- **Online Survey**: quickly and easily create, distribute and analyze results from internet-based forms at www.sureforms.net via email, a link on your school’s website or free online social networks such as facebook.

**Remember!**

This symbol means a Survey is associated with the Principle of Sustainability.
Appendix II

Building Your Sustainability Advisory Committee

This appendix focuses on helping you set up your “multi-stakeholder” HSSAF Sustainability Advisory Committee. First, you need to find students, teachers, administrators, school board trustees, parents, etc. who are interested in sustainability and the SHS project that you wish to implement in your school. Always remember that you want diversity of students and faculty in your committee; this way, your group will function with a multi-stakeholder process, and therefore, work in a way that all groups around the school are well represented and respected.

Key Multi-stakeholder Contacts

It is important to have occasional participation from the following key stakeholders who do not necessarily have to participate actively in the committee:

1. **School Principal or President**: takes care of finances, institutional operations, academics, public relations/communications and internal conflicts (teachers)
2. **School Vice-Principal or Vice President**: Equity, internal conflicts (students) and school community programs/projects
3. **Head of Facilities Management**: Building problems (leaks, floods, messes, etc.), cleaning, ground and building management and supervises janitorial staff
4. **Head Counsellor/Student Services**: Course selection, course content, student aid and post secondary education information.

There are many different ways to get people to become members of your committee:

- Organize an information session over lunch for the students and teachers that are interested.
- Hold a workshop/event/speaker on the importance of sustainability to introduce the subject.
- Send “call-out” e-mails or an announcement to teachers, student interest groups and school friends asking whether they are interested in joining a focus group to increase school sustainability.
- You can also make posters, flyers, buttons and postcards to attract more people.
Building an Effective Sustainability Advisory Committee (SAC)

This guide includes strategies to help you build an inclusive and efficient Sustainability Advisory Committee (SAC) that essentially will drive the SHS Project at your school, ensuring those who are impacted by decisions or have to implement decisions work well with those who make decisions. Use this guide to support student leadership in coordinating successful initiatives throughout your school and throughout the year!

In the following pages we will explore:

1. Booking Meetings
2. Facilitation Strategies
3. Sustainability Asset Mapping
4. Sustainability Visioning
5. Identifying Priorities to Assess Sustainability
6. Completing Your Sustainability Assessment
7. Evaluation Assessment Results
8. Identifying Priorities to Improve Sustainability
9. Action Planning
10. Evaluation Success

1. Booking the meeting(s)
   a. **Who to invite?** Invite your friends, teachers, principal, head custodian, leaders of other student clubs, student council members, counsellor, students from leadership class - anybody who is interested in environmental or social sustainability or who makes or implements decisions that affect your school’s sustainability.

   b. **Where and when to hold the meeting?** When you first ask people if they are interested in getting involved, ask them when they are available. Coordinating around everyone’s busy schedule will be difficult – but persevere! Lunch times, after school, professional development days, or even a day when not as much is going on (Monday?) may work for everyone. If you make the meeting into an event by screening a film or having a speaker, evenings will work. The important thing is to find a time when the key people you want at the meeting are available, then give everyone plenty of notice (at least 2 weeks) to plan to come.

   c. **How to advertise?** Put reminders into the daily announcements, put up posters, ask people to RSVP and confirm they are coming. It can be effective to collect emails of interested people and then remind them 2 days before the meeting. Making jokes and being sincere in your outreach is more effective than guilting people into it.

2. Facilitation Strategies
   a. **Hosting the meeting:** “Facilitation” means the process of helping a group work together to achieve their common goals. It’s best to find someone who is comfortable running meetings to facilitate, such as a student club leader. If you’d like to brush up on your skills, check out the book *The Facilitators’ Guide to Participatory Decision Making* (New Society Publishers, 1996).
Building an Effective SAC cont’d.

a. **Setting the Meeting Agenda:** Generally you will want to design and send out a meeting agenda ahead of time with the place, time, length of the meeting and the topics you wish to discuss, so people know what they are getting themselves into. Ask people to make recommendations of agenda topics they would like to add/change and post the agenda during the meeting so that you stay on topic and on track for the amount of time that you have during the meeting.

b. **How to begin, middle and end your meeting:**
   i. **Intro Round:** At the beginning of the meeting, get each person to say their name, what they do and why they are there, including you! You can go first and welcome everyone to the meeting. Don’t forget to mention the people who wanted to come but couldn’t, and the best way to include them in the next meeting.
   ii. **Updates:** Different people may have progress to report on the various things the group is trying to accomplish. During the first meeting, there may not be any “updates” to report; people might want to first start by introducing their schools and/or any current school projects.
   iii. **Action Items:** Before the end of the meeting, make sure each person has something to do before the next meeting, and that everything that needs to be accomplished before the next meeting has been taken on by someone. You can identify due dates if you wish.

3. **Sustainability Asset Mapping**
   a. **What is a Sustainability Asset?**
      i. An asset is something of value that you currently have, so in this case, an asset could be a program, policy or type of infrastructure that is making or could make your school more sustainable. It could also be specific knowledge, skills, decision-making power, and access to money, equipment, information or people that could help make your project a success. It could even be an attitude of willingness or enthusiasm amongst particular groups of school members.
Building an Effective SAC cont’d.

a. How would we map assets?
   i. As members of your committee introduce themselves, keep track of what
      assets they bring to the table. Then encourage the group to brainstorm
      and draw or write down more of your school’s sustainability assets.
   ii. You can break your committee into groups of three, mixing students
      and adults together. Give each group a piece of paper or space on a
      chalkboard to brainstorm and draw (and label) a picture of what they
      think is sustainable about your school now. Each small group can then
      share their map with the larger group, and you can make a common
      list of everything that already contributes to making your school more
      sustainable.

4. Sustainability Visioning
   a. Visioning is a process where you imagine and discuss how your school could
      be or how you would ideally like it to be. By visioning together, you can see
      where different people have both similar and different ideals. You can then
      create a common idea of what kind of school you all want to build together.
   b. It is helpful to lead this process right after the asset mapping by getting your
      small groups to then brainstorm and draw/write what their ideal sustainable
      school would look like beside their idea of what their school is already like.

5. Identifying Priorities to Assess Sustainability
   a. Once your committee has compared your school’s collective current and ideal
      states of sustainability, make a list of the sustainability issues your committee
      would most like to get more information about. Consult the HSSAF Summary to
      see which issues the Sustainable High Schools Project can help you research.
   b. Decide how many and which indicators you would like to assess. This is best
      done by going through each issue and seeing how many people think it should
      be assessed. You may find there are one or two issues in the HSSAF that people
      are not interested in pursuing, or you may find there is an issue your school
      cares about that is not related to anything in the HSSAF. (Please let us know if
      this happens!) Consider which issues are the most important to your committee
      (check your visioning), and which would be easiest to do this year (check your
      assets).
   c. Re-order your list so that the most important and easiest indicators to measure
      are at the top, and ask the committee who would like to take a leadership role
      in calculating each indicator that you prioritize.

6. Completing your Sustainability Assessment
   a. For each indicator or related group of indicators your committee decides
      they want to measure, you can form a “working group” of people who
      want to focus on this issue. It is helpful if each working group has both
      students and adults in it. Get each group to decide on a time and a place
      they will meet regularly to plan and implement their indicator assessment.
Building an Effective SAC cont’d.

a. Host another meeting so that your Committee’s working groups can report their progress, share their successes and ask each other for support/advice.

b. Identify one person responsible for collecting the working groups’ results and formatting them into a complete report – your {insert school name} High School Sustainability Assessment! Contact shs@sierraclub.bc.ca or check out www.sustainablehighschools.ca to learn how to submit your results.

c. Once your committee has completed the report, get another person to edit it for spelling and grammar and to check the calculations.

d. Organize a creative and exciting way to present your assessment to your school community. You may want to have an assembly, host an event, print a summary in your school newspaper, post it on your website, announce it to the media and please remember to send it to your local SHS Project Coordinator!

7. Evaluating Assessment Results

a. Make an executive summary of your results. You may want to compare your results with other schools in the SHS Network to see if your school is above or below average in each indicator.

b. Go back to your sustainability asset map and your ideal sustainable school vision. Add any new information, supporters and contacts made during the completion of the HSSAF to your assets and any new ideals you have developed to your vision. By comparing the two pictures, you can see where you only need to make small/easy changes and where there are bigger/more challenging changes to be made.

8. Identifying Priorities to Improve Sustainability

a. Once your committee has compared your school’s collective current and ideal states of sustainability, and has made a list of big and smaller changes that it could make to improve your school, decide which changes are the most important to make (check your visioning), along with identifying which ones would be easiest to do this year (check your assets).

b. Re-order your list so that the most important and easiest changes to make are at the top, and ask the committee who would like to take a leadership role in making each change.

c. For each change your committee decides they want to make, you can form a “working group” of people who want to focus on this issue. These may be the same groups who calculated the indicator in the first place. Make sure each working group has both students and adults in it. Get each group to decide on a time and a place they will meet regularly to plan and implement the action or change they want to be responsible for leading.
Building an Effective SAC cont'd.

9. Action Planning

a. Check out the Action Planning section of the Sustainable High Schools Kit. In it, you'll notice we first recommend your Working Groups or your Committee as a whole brainstorm a list of their passions. These are things members of your committee like, love, enjoy, are good at etc.

b. Next, pull out your prioritized list of concerns your committee has about the sustainability of the school: what indicators did they want to improve?

c. Now, come up with potential project ideas that allow you to use your passions to address your concerns. Some project ideas allow you to incorporate a lot of people's passions or enable you to address more than one concern; other ideas will be a lot more specific. Either can work, as long as the projects are D.A.F.T.!

d. D.A.F.T. means the project would make a real Difference, it’s Achievable, it’s Fun, and it’s Targeted. Amongst your working groups and/or committee, decide which project(s) would be the best to do in order to improve your school’s sustainability. You may find some working groups want to combine their concerns and do one larger project together. For example, hosting a green film festival may improve your school’s Sense of Community AND lower your school’s total Energy Consumption AND transportation-related Green House Gas Emissions.

e. Each working group will want to make an Action Map (again, see Action Planning in the SHS Kit) so that they can make a plan of where they are at now, where they want to go, and how they are going to get there. Just like a road map, an Action Map enables you to avoid wasting time in dead ends by helping you figure out what obstacles might be up ahead and problem solve how to get around them before you even come across them.

10. Evaluating Success

a. Celebration! It is very important to celebrate with each other after all your hard work. Whether it’s through giving each other awards, thank you cards, making presents, throwing a party, telling someone you appreciate them, holding a potluck, going for dinner, doing the hokey-pokey, giving each other a smile… celebration helps you take a deep breath, realize everything you did, and makes it all worthwhile. Remember to plan a celebration in which everyone can partake – a dance might be fun for students, but will teachers join in or have to chaperone?
Building an Effective SAC cont’d.

a. **Evaluation:** Now that you’ve acknowledged and enjoyed your success, it’s time to reflect, so that next time, you can do it even better – or so that you can share lessons learned along the way with others who want to try the same thing. Good questions to ask each other and those that participated or were affected by your projects include:
   - Are you satisfied with the outcomes of the project?
   - Who benefited?
   - Did you accomplish your goals?
   - What would you have done differently?
   - What advice would you give to anyone doing the assessment in the future?

a. **Reporting and Sharing Your Success:**
   i. It is important to let the people who participated in your project and helped you along the way know the impact of their support. This makes them feel good and they’ll probably get involved again!
   ii. For those that weren’t directly involved, by learning about the results of your project, they may get inspired to support you in the future or take action themselves for sustainability.

And don’t forget to share your successes, challenges, opportunities and results with us! Whether you need support debriefing a challenging meeting you had, want advice, or would like us to speak at a school-wide SAC forum, we can’t wait to hear from you! We also value and appreciate any feedback you may have for us. This will allow us to better help you, and other high schools realize their vision for sustainability.

Once you have a representative group of individuals, it is important to assign roles and responsibilities so that each person feels as though they have a place in the group. With responsibilities to take care of, the level of motivation in your group will stay constant, whereas it will die down if the individuals get bored or feel out of the loop. Next, you’ll find a list of student and teacher roles and responsibilities that you can suggest.


**Sustainability Advisory Committee Member Roles**

**Student Roles**

1. **Sustainability Assessment Project Coordinator** (student chair):
   This person’s role is to bring together a range of key stakeholders from school, helping to coordinate the school’s sustainability initiatives and ensure student leadership in co-facilitating meetings and coordinating the school’s sustainability initiatives. This person must have a strong understanding of the concept of sustainability and a strong relationship with a diversity of people around the school (members of janitorial crew, teachers, administrative bodies and students).

2. **Student body representative**
   This person’s role is to represent the student body as a whole. Evidently, to do so, this person needs to have an extroverted personality that connects with a majority of the students. This person will also carry out the indicators that directly involve the students (eg: school survey). It is this person’s responsibility to create means of finding out what the students think about the topic (example: creating a project that aims to find solutions to effectively reduce paper consumption).

3. **Student group representative**
   As we know, schools communities are not only characterized by their students, but also by the different groups, clubs and committees that can be found on the school grounds. These groups have different interests, goals and areas of expertise and it is important that they be well represented in your sustainability assessment committee. The student group representative’s role is to ensure participation of these groups in the project. This person must have a good knowledge of the different groups in his/her school in order to complete this role.

4. **Research coordinator**
   After reading the High School Sustainability Assessment Framework (HSSAF) you will notice that data collection and research is necessary to complete this assessment. This person’s task is to monitor the progress of the HSSAF, encouraging SAC members to complete it and report results the Sustainable High Schools Project Coordinator. This person will also play the role of setting lists of things to do in order to complete indicators.

5. **Outreach and communications coordinator**
   A way to speed up the completion of the HSSAF as well as to create more initiatives and action for sustainability is to get as many people involved in the project as you can. Individual die-hard volunteers and clubs can take on individual indicators, but so can classes who have prescribed learning objectives that relate to particular indicators. It is important to create effective means of communication between everyone involved. This person’s duty would be to create means of communication (interactive page on school’s website, posters, post cards, flyers, etc.) that would act to update, advertise and explain your school’s progress on the sustainability assessment project. For this position, we highly suggest that it be someone who is computer literate, and at ease with communication technologies.
Faculty Roles

1. **Sustainability Assessment Project Coordinator** (teacher chair)
   Like the student chair, this person’s role is to bring together a range of key stakeholders from school, and to book and co-facilitate regular meetings. This person acts as the adult chair of the community, ensuring buy-in, comprehension and connection of adult stakeholders to the project. We think it is important to have a student and teacher share the role of chair in the committee, because in social institutions, the voices of youth often don’t get heard unless a person of authority shares the same view as them. This person must have a profound comprehension of the meaning of sustainability and have a good connection with a diversity of people in the school (members of janitorial crew, teachers, administrative bodies and students).

2. **Sustainability Specialist: Ecology**
   The HSSAF is divided into two overarching categories: ecology and people. This person’s role is to offer solutions on how to improve the school’s sustainability in the ecological context. The person that has this role should be a teacher in the natural sciences (chemistry, physics, biology, earth sciences), and should have a good understanding of the fundamentals of sustainability. This person will also act as the “go-to” person if the committee does not understand how a specific human action affects the ecological system.

3. **Sustainability Specialist: People**
   The HSSAF is divided into two overarching categories: ecology and people. This person’s role is to offer solutions on how to improve the school’s sustainability in the social context. The person that has this role should be a teacher in the social sciences (history, sociology, philosophy, etc.), or another staff with the same expertise, and should have a good understanding of the fundamentals of sustainability. This person will also act as the “go-to” person if the committee does not understand how a specific human action affects world social systems.

4. **Custodial Representative**
   Many indicators in the HSSAF involve getting data from custodial staff. The reason for this is that many of the indicators analyze the sustainability of the school’s buildings and grounds (both being the responsibility of the custodial staff). We think it is important to have a custodial representative on your committee since they are so important to the completion of the framework.
Appendix III

Guide to unit conversion

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Appendix IV

Alternative School Sustainability Calculators

1. **EcoSchools**

A comprehensive program that engages staff, students, and parents in taking leadership and action to help build a healthy and sustainable future. It’s a school greening program based in Ontario with a scope very similar to the ecological part of the Sustainable High Schools project. This website offers guides and an eco-certification process for schools in the Toronto District. Its student, teacher and parent resources are very useful and inspiring for other regions, and as the process is very similar to that developed through the SHS project, it demonstrates not only that this approach works, but that there is a national synergy of ideas and action for sustainability in schools!

**Introduction to EcoSchools and the Five-step Process**

This concise guide provides an overview of Toronto District School Board’s EcoSchools program and sets out a practical 5-step method for organizing a successful program at your school. Much like the Sustainable High Schools Project, the five-step process includes:

1. Establishing an EcoTeam
2. Assessing the school’s needs
3. Identifying priorities and developing an action plan
4. Implementing the action plan, and
5. Monitoring and evaluating progress.

The guide is available online at: [www.tdsb.on.ca/_site/ViewItem.asp?siteid=207&menuid=2311&pageid=1820](http://www.tdsb.on.ca/_site/ViewItem.asp?siteid=207&menuid=2311&pageid=1820)

To order print copies, please contact TDSB Library and Learning Resources at:
   - Phone: (416) 397-2595
   - Fax: (416) 395-8357
   - Email: curriculumdocs@tdsb.on.ca

2. **Healthy Schools**

[www.healthyschools.org/what_you_can.html](http://www.healthyschools.org/what_you_can.html)

A U.S.-based agency with many resources on making schools healthy and green.

[www.bced.gov.bc.ca/health/hsnetwork](http://www.bced.gov.bc.ca/health/hsnetwork)

A B.C.-based government network that enables teachers to assess and improve aspects of school health.
Alternative school sustainability calculators cont’d.

3. The Green Squad
An interactive website that teaches kids and youth about the relationship between their schools and environmental and health issues. The site is designed primarily for students in fifth through eighth grade, but also offers information for younger and older students as well as parents and teachers. The Green Squad is a project of NRDC, the Natural Resources Defense Council, a national U.S. environmental group with more than 500,000 members, and the Healthy Schools Network, an organization that works to protect children’s environmental health in schools.

www.nrdc.org/greensquad

4. Calculating your school’s ‘global footprint’
Is your school an institution actively promoting global citizenship? Are students and the whole school community aware of their responsibilities as global citizens? Do they realise what actions they can take to become more active global citizens? By taking the Global School Challenge you can find out whether your school is encouraging active global citizenship and whether you are treading heavily or lightly on the earth. The questions are divided into three areas: social, global and ecological.

www.globalfootprints.org/issues/footprint/councquiz1.htm
www.globalfootprints.org has additional activities and info on global issues.
Appendix V

SHS Project Registration

The Sustainable High School Project
Class Program Registration

The Sierra Club BC’s Education Program offers three sustainability education programs that are appropriate for grades eight to twelve. All programs are curriculum-linked and employ hands-on activities that invoke critical thought, group work, problem solving and team building. Each program includes multiple visits and mentorship during the school year, membership in the SHS Network, and online resources such as the Sustainable High Schools Kit.

Program Scheduling
Depending on where your school is located, program availability may be limited. Registration is on-going until all program spaces are filled. Our scheduling process is as follows:

1. Identify other classes, student clubs and committees at your school interested in participating in the SHS Project; select one person to coordinate your school’s registration process.

2. If you are the person coordinating your school’s registration, fill out our online registration form (visit www.sustainablehighschools.ca) to access scheduling and registration links.

3. If you fall within our school program delivery radius, dates for in-class visits will be confirmed and a Pre-Program Package will be sent to you two weeks prior to your program.

High School Class Programs Available in 2007-2008
To ensure curriculum-appropriate learning, we’ve created three topic-based modules for exploring sustainability in our lives, schools and society. To register with our Education Team for a multi-visit program please pick from the following three modules:

1. Water, water, everywhere…. Who gets to drink the drops?
Trace water from source to tap, learning what actions threaten water quality, accessibility and long-term sustainability, and which measures protect the one thing we all need to survive. Through participating in a dynamic simulation of a municipal public hearing and water utility bid proposal, students gain an understanding of the decision making process used to resolve the varied competing demands for water treatment and consumption. They will develop group problem solving skills while researching and designing a project to improve the sustainability of their school’s water source, treatment, consumption and waste.
SHS Project Registration cont’d.

2. Energy: We’ve got the power to make change in our global climate!
Students will get an overview of the science, causes and consequences of climate change in an open discussion of the sources, production and emissions of our energy consumption. Students will learn how oil, 300,000 year old ice bubbles, temperature graphs, extreme weather events and drowning polar bears are connected. They will develop their critical thinking skills while working together to deconstruct the myths, media and messaging surrounding climate change. Through calculating their school’s green house gas emissions based on researching its energy sources, consumption and efficiency, students will make recommendations for viable change in their schools.

3. Economy and Wealth: what’s school got to do with money?
We will explore different perspectives on the production and distribution of wealth through an experiential role-play of countries competing in the global economy and participating in decision making bodies such as the WTO. Students will learn how their purchase of a chocolate bar from the school’s vending machine can involve the use of pesticides, child labour in the Ivory Coast and contribute to green house gas emissions and cyclical debt for under-developed countries. While researching the ecological and social impacts of their school’s purchases and investments, students will analyze the choices individuals and institutions alike can make to build resilient, sustainable economies that do not threaten values that cannot always be measured in dollars.
### Appendix VI

**Sustainable High Schools Project**  
**B.C. Ministry of Education Curriculum Links**

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<th>Linked SHS Class Program</th>
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<td>Energy Economy &amp; Wealth</td>
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| Identify an issue, clarify an inquiry, gather and interpret information from primary, secondary and electronic sources; Assess and defend a variety of positions on controversial issues; Plan, revise, and deliver written and oral presentations; Demonstrate leadership by co-operatively planning, implementing and assessing a course of action that addresses the problem or inquiry. | Social Studies 8,9,10,11 Leadership | Water Energy Economy & Wealth | All HSSAF  
Action Planning  
Building a SAC |
| Assess dynamics of the ecosystem and current practices related to sustainable management of agricultural, fisheries, forestry, mining and energy production. Analyze the environmental, social, and economic significance at the local, provincial, and global levels. | Sustainable Resources 11,12 | Water Energy Economy & Wealth | Materials  
Land |
| Explain how different ethics relate to sustainability, climate change, human activities, resource management and population growth. Assess the consequences of the uneven distribution of fresh water and non-renewable resources and analyse the difficulties in proposing resource-management changes. | Geography 12 | Water Energy Economy & Wealth | Governance  
Materials |
| Explain the significance of temperature in world’s oceans and identify various changes in glacial features as well as identify human and non-human factors that affect productivity and species distribution in aquatic environments. | Science 8 | Water Energy | Knowledge  
Materials |
### SHS Project B.C. Curriculum Links cont’d.

<table>
<thead>
<tr>
<th>Curriculum Links</th>
<th>Course</th>
<th>Linked SHS Class Program</th>
<th>Other HSSAF Indicators</th>
</tr>
</thead>
<tbody>
<tr>
<td>Analyze the sustainability of ecosystems. Identify the effects on living things within an ecosystem resulting from changes in abiotic factors, such as climate change and water contamination. Assess the potential impacts of bioaccumulation. Evaluate the possible causes of climate change and its impact on natural systems.</td>
<td>Science 10</td>
<td>Energy Water</td>
<td>Air Materials Knowledge</td>
</tr>
<tr>
<td>Relate, evaluate and apply knowledge of power, energy and efficiency of mechanical systems and common electrical devices to make recommendations for reducing energy waste. Identify major factors, analyze interrelationships and apply problem-solving strategies to issues in science, technology, and society.</td>
<td>Science 10</td>
<td>Energy</td>
<td></td>
</tr>
<tr>
<td>Analyse the conditions under which clothing and textiles are produced and find local opportunities to renew and recycle clothing and textiles</td>
<td>Textiles 8-12</td>
<td>Economy &amp; Wealth</td>
<td>Materials</td>
</tr>
<tr>
<td>Identify and describe the benefits of active living as well as the relationship between physical activity and the development of self-esteem while working co-operatively.</td>
<td>Physical Education 8-10</td>
<td>Energy</td>
<td>Air Health &amp; Well-Being</td>
</tr>
<tr>
<td>Describe strategies for stress management and relaxation. Adapt physical activities to minimize environmental impact and select appropriate community-based recreational and alternative-environment opportunities.</td>
<td>Physical Education 11-12</td>
<td>Energy Water</td>
<td>Health &amp; Well-Being</td>
</tr>
<tr>
<td>Use a variety of resources to obtain background information and organize it in a variety of graphic forms. Interpret information from a variety of sources and use various strategies to resolve conflicts, solve problems, and build consensus. Acknowledge sources in written work and identify the purpose and audience for communications.</td>
<td>English 8-12</td>
<td>Water Energy Economy &amp; Wealth</td>
<td>Sense of Community Governance</td>
</tr>
</tbody>
</table>
## Appendix VII

### Take Action!

Identify one of the Sustainable Actions listed below that you would like to take. Then make a personal goal and track your success to see what kind of a difference you are making! You can download a copy of this chart from www.sustainablehighschools.ca.

School: ___________________________     Class: ____________________________
Teacher: __________________________       Month: ___________________________

<table>
<thead>
<tr>
<th>NAME</th>
<th>ACTION</th>
<th>PERSONAL COMMITMENT</th>
<th>MISSION ACCOMPLISHED</th>
<th>IMPACT (CO₂, L, $)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Example</td>
<td>Transit Tuesday</td>
<td>walk to school 4 days/week: cut 8 SUV trips</td>
<td>3 weeks x 8 car trips</td>
<td>2.5 x 24 = 60 kg CO₂</td>
</tr>
</tbody>
</table>

### AN ACTION A DAY KEEPS CLIMATE CHANGE AT BAY!

<table>
<thead>
<tr>
<th>Sample Actions</th>
<th>Sample Personal Commitment</th>
<th>I did it!</th>
<th>Impact</th>
</tr>
</thead>
<tbody>
<tr>
<td>Meatless Monday</td>
<td>Replace beef in meals with beans, lentils, nuts, seeds, dark green veggies, whole grains, and soy alternatives.</td>
<td>bar hours of meals x 21.8 kg CO₂ saved per meal</td>
<td></td>
</tr>
<tr>
<td>Transit Tuesday</td>
<td>Cut out car trips. Walk, bike, skate or stay where you are! Carpool or take the bus for longer trips.</td>
<td>bar 5km trips cut x 2.5 to 2.2kg CO₂</td>
<td></td>
</tr>
<tr>
<td>Waste-free Wednesday</td>
<td>Refuse anything you can’t compost, recycle, or reuse.</td>
<td>bar days waste-free x 1.6 kg CO₂</td>
<td></td>
</tr>
<tr>
<td>Thoughtful Thursday</td>
<td>Instead of watching T.V., discuss new ideas with someone after reading an article, attending a presentation or watching a green film together.</td>
<td>bar hours x $28/hr</td>
<td></td>
</tr>
<tr>
<td>Farmer’s Market or Fair trade Friday</td>
<td>Replace $10 of purchases of clothes and food with those certified fair trade, sweat-free, local and/or organic.</td>
<td>bar # purchases x $10</td>
<td></td>
</tr>
<tr>
<td>Staggered shower Saturday</td>
<td>Cut shower time in half or replace with low-flow shower head. Shut off the shower to soap up etc., turn on to rinse.</td>
<td>bar # of reduced showers x 0.5 (19 L x bar min of orig. shower)</td>
<td></td>
</tr>
<tr>
<td>Solar powered Sunday</td>
<td>Use only renewable energy! Use your own energy for transportation; eat local foods (no processed/frozen products), and play sports instead of computer games.</td>
<td>bar # of solar days x 14.2kg CO₂ bar # of solar days x 318 L water</td>
<td></td>
</tr>
</tbody>
</table>

Total Kilograms of CO₂ emissions reduced by our class this month:

Total Litres of Water saved and/or not polluted by our class this month:

Total $ shifted to a Just & Sustainable Economy by our class this month: