

How Do I Connect My Local Community to Science Education?

Grades 9 - 10



If you are interested in learning more, please provide your contact information and a brief summary of your interest. Email: xfazio@brocku.ca



Why Does This Matter?

- The students of today will become the citizens of tomorrow.
- Students require global competencies to participate actively in society in the future.
- It is crucial that students create meaningful connections to their local communities to help derive a passion for sustainability.
- When local issues are not addressed, they and communities remain vulnerable to those challenges.

What is the Issue?

- For students to become scientifically literate and participate in a continuously changing society, it is imperative that they explore relevant, localized socioscientific issues (SSI) that they will encounter in the future.
- The disengagement of students in science education threatens their understanding of critical sustainability topics.
- Science teachers often struggle to find ways to connect science curricula to their local community, alongside managing student behaviour, constraints of time and administration, interpreting mandated documents, developing novel teaching tools, ensuring universal practices, and more.

Ask Yourself...

- *How are SSI currently being addressed in the classroom? How are these topics being presented to students?*
- *What is the level of engagement from students with these issues?*
- *What is happening in our communities that allow for an actionable solution?*
- *What knowledge and skills do students need to help them to create change?*

Consider This:

A community-based curriculum helps create meaningful and authentic learning experiences that align with the science and technology curriculum standards. Utilizing locally relevant SSI can make abstract concepts concrete as presented in the Ontario Science secondary curriculum. For example:

- **HALTON:** [Debate on vaccinations](#) [Grade 9. Strand A, C/ 10. SA, B, C], [Pollinator species-at-risk and protection methods](#) [9. SA, B/ 10. SA, B, D], [Anti-coyote attack education program](#) [9. SA, B/ 10. SA, B, D], [Tackling climate change](#) [9. SA, B, C, D, E/ 10. SA, B, D]
- **PEEL:** [Ecological impact of Highway 413](#) [9. Strand A, B/ 10. SA, B, D], [Analysis of air pollution and social vulnerability](#) [9. SA, B/ 10. SA, B, C, D], [Regulating GMOs](#) [9. SA, C/ 10. SA, B, C]
- **NIAGARA:** [Restoration efforts for the Niagara River](#) [9. Strand A, B, C, D/ 10. SA, B, D], [Climate change and sustainability plans](#) [9. SA, B, C, D, E/ 10. SA, B, C, D], [Challenges in farming communities](#) [9. SA, B, C/ 10. SA, B, C, D]
- **HAMILTON:** [Air pollution](#) [9. Strand A, B, C, D, E/ 10. SA, B, C, E], [Loss of farmland](#) [9. SA, B, C, D/10. SA, B, C, D], [Biodiversity Action Plan](#) [9. SA, B/ 10. SA, B, D], [Sewage Spills into Harbourfront](#) [9. SA, B/ 10. SA, B, C, D]
- **BRANT-HALDIMAND-NORFOLK:** [Fragmentation of natural habitats](#) [9. Strand A, B, C, D/ 10.10. SA, B, D], [Turtle stewardship](#) [9. SA, B/ 10. SA, B, D], [Species at risk mitigation plan for municipal drainage works](#) [9. SA, B/ 10. SA, B, D], [Efforts to protect pollinators](#) [9. Strand A, B/ 10. SA, B, D], [Benzene emissions are causing illnesses in Indigenous communities](#) [9. SA, B, C/ 10. SA, B, C, D], [Climate Change Adaption Plan](#) [9. SA, B, C, D, E/ 10. SA, B, C, D]

As we face current societal challenges, we need to move beyond simply preparing students for higher education and careers to improve their awareness of the world around them.

Where You Can Start

- Develop a firm understanding of SSI and community-based education. SSIs are complex, real-world problems that involve the intersection of scientific knowledge, ethical considerations, and societal values. They require students to engage in informed decision-making as well as multiple forms of discourse. Examples include climate change, habitat loss and destruction, vaccinations, genetic testing, and water and air pollution. To enhance your knowledge, explore professional development opportunities, curricular and pedagogical resources (e.g. [Green Learning](#), [Earth Force](#), [LSF-LST](#), [EcoSchools](#), [NSTA](#), [OSEE](#)), different branches of the Ontario Teachers' Federation (e.g. [OSSTF/ FEESO](#)), Ministry of Education documents (e.g. [Environmental Education](#)), and evidence-based strategies that utilize SSI-based science education.
- Research your local school community. Check the news, do a community walk and reach out to community and education organizations (e.g. [Canadian Wildlife Federation](#), [Let's Talk Science](#), [STAO](#), [Ontario Nature](#), [Halton Environmental Network](#), [Oakville Green](#), etc.), read local government meeting briefs on topics of interest, and so on. Sometimes, students may bring particular issues that they have seen to your attention. You can also start small in your school's backyard with student-led initiatives (e.g. [Rooftop garden to reduce carbon footprint and encourage healthy eating habits](#)). This can be an excellent opportunity to connect curriculum to students' experiences.
- Invite experts into your classroom (e.g. farmers, members of local organizations and activist groups, scientists, farmers, and university, college professors) to help expand on curricular topics you are teaching and speak on issues they are facing. Prior to someone coming in, discuss what you are hoping they explain in their conversations with students and understand their perspectives.
- Ensure the SSI being addressed is manageable and actionable. Students may have a more difficult time maintaining interest if what they feel they are doing has no impact. The charge that science curriculums address civic, social, and political SSI to support sustainability becomes a tall order when factoring in the current constraints facing the field of education as well as the daily challenges of teaching. Remind your students that a solution may not be found quickly or at all, but small actions can help create positive change for the future. Seek out likeminded teachers and garner administrative support from the school and district.
- Incorporate an inquiry stance into your practice (see Figure 1). Allow students to engage in self-directed learning and offer opportunities for collaboration, discussion, argumentation, and debate. Encourage them to bring forward evidence to support their ideas and to look at the issue being addressed from a variety of perspectives.