

ENCOURAGING FIRST NATIONS LEARNERS' ENGAGEMENT IN SCIENCE

It is important to remember that there is as much diversity between First Nations learners as there is among all learners in BC. What work for one learner may not work for all learners. However, there are some general strategies that can encourage more First Nations learners' interest and participation in the sciences.

- Emphasize experiential hands-on learning opportunities outside the classroom.
- Make room for students to explore aspects of science that they are interested in, and that are based in the learner's own curiosity.
- Provide opportunities for students to work with, and learn from, Aboriginal role models who work in the sciences, or Aboriginal post-secondary students in the sciences.
- Ensure that the learning in the classroom can be connected to the learner's knowledge outside the classroom.
- Honour that there is valuable knowledge in the sciences that is held by First Peoples (i.e. TEK).
- When in the classroom, ensure rich lab-work opportunities.
- Focus on the application of knowledge.
- Ensure visible presence of Aboriginal peoples/cultures in the classroom.
- Incorporate project-based learning that is connected to traditional Aboriginal seasonal practices (i.e. food-gathering or harvesting, hunting).
- Honour cultural knowledge of the students, and help them make "bridges" between different types of knowing.
- Model respect for Indigenous peoples and cultures.
- Create opportunities for students to engage in science clubs outside of the classroom. Hooking learners into the application of science may lead them to develop more interest in the theory.

In *Encouraging Aboriginal Students in the Sciences – Student Perspectives*, Ann Tenning interviewed Aboriginal students who were engaged in the sciences. The following excerpts illustrate their perspectives about what encouraged them to pursue a science path.

- "I like how there's so many experiments you can do and it's challenging, but in the end, you feel like you gave your best and you feel happy that you found the answer to what you were doing. It gives you a sense of pride or something."
- "Inclusion of Indigenous Knowledge in science education would give all students a wider perspective about science."

- Indigenous Knowledge in science “would be a good way to learn things, especially for Aboriginal students – they’d get more into it, instead of thinking, ‘oh, this is boring’ and they’d maybe want to explore more sciences if they were learning about their own people.” [A student] explained that Western Science is “contradictory to what you’re taught at home, so it’s just reinforcing that ‘living in two worlds’ kind of thing.”
- Participants reinforced the importance of teaching to a variety of different student-learning styles.
- Students need to be given ample opportunities to explore topics that are of interest to them.
- Students are more likely to develop a deeper interest in science if it is an interactive, hands-on, creative experience, rather than a passive experience which places an emphasis on rote methods of acquiring knowledge, including lectures, notes and memorization. Such methods of instruction are in stark contrast with traditional Indigenous ways of learning (which includes, but is not limited to, learning situated in a natural environment, experiential learning, and collaborative learning) and this may further alienate Aboriginal students who bring with them a strong sense of cultural connection.
- Indigenous Knowledge should be included at every level of science education. Indigenous content should be included in all science courses, particularly at the senior-secondary level, which are formative years for students as they transition into adulthood.
- Strengthen the link between K-12 science and post-secondary science areas and science-related careers.
- Aboriginal students need opportunities to see that science education can help to empower Aboriginal people and communities.

One way to engage students in science is to allow students to explore their own scientific curiosity through an in-depth inquiry. On the following pages is one model that can be used with students at any age level, the Shared Knowledge Science Celebration.