

STEM Programs for High School Students

Here at WISEST (Women in Scholarship, Engineering, Science and Technology), we are thrilled to be able to serve young women and gender diverse individuals through our programming. We realize that sometimes, students aren't able to access our programming, and so we want to share a list of other STEM programs that are available to high school students in Canada. If you know of any other programs that would be a great addition to this document, please email wisest.outreach@ualberta.ca to let us know! If you would like to learn more about our program offerings, please visit our website at www.uab.ca/wisest.

*Links used in this document are external. While we do our best to ensure that all links are live, there might be circumstances where the links might be changed or removed.

STEM Programs for High School Students

Alberta

Geekstarter

mindfuel.ca/geekstarter/ | Grade 7-12, University



Geekstarter is a program based on student-driven hands-on research projects, multimedia presentation and entrepreneurship. Incorporates workshops and skill-building events and facilitates participation in prestigious competitions. Students may choose one of the UN sustainable goals to investigate.

Future Creators

uafc.ca/ | Grade 7-12



Future Creators is a free program connecting students grade 7-12 with University of Alberta engineering students, open internationally. Materials for projects are ordered off Amazon and shipped to the student's home, where they are mentored virtually.

STEM Fellowship: Edmonton Research Exploration Program

stemfellowship.org/research-programs/edmonton/ | Grade 11-12



A 5 day research experience for high school students during spring break at a University of Alberta lab. 50% of positions reserved for students from traditionally underrepresented backgrounds.

WILD Outside

cwf-fcf.org/en/explore/wild-outside/ | Ages 15-18



Canadian Wildlife Federation has developed a WILD Outside program for youth aged 15-18. The program is focused on leadership as well as conservation and recreation activities. It's free to join, is inclusive to all abilities, and has open registration spots available for the Edmonton area.

High School Youth Researcher Summer Program

ualberta.ca/current-students/ | Grade 11



HYRS is a 6 week paid summer program for Grade 11 students providing hands-on experience in biomedical and health research. Includes discussions with guest lecturers, tours, meetings with researchers, and an opportunity for students to present their research at the end of the program.

Ross and Verna Tate High School Internship Program in Computing Science



ualberta.ca/computing-science/explore/hs-internships/index.html |

Grade 10-12

This is a 6 week paid summer program for high school students in Alberta interested in computer science. Projects may encompass web design, operating systems, game development, machine learning and AI, and more.

National

Shad Canada



shad.ca/about-shad/ | Grade 10-11

Shad is a one month long program for grades 10-11 in July focusing on STEAM and entrepreneurship with mentors available. Students are placed at 1 of ~19 participating universities in Canada (including UCalgary). They typically offer on-campus residence and participation in research.

Youth Summer Program in Medicine or Law (UofT)



yssp.utoronto.ca/ | Grade 10-11

This is a four-week online program consisting of 4 one-week modules exploring either medicine or law for grades 10-11. It is open to all residents of Canada and includes live lectures, online labs, virtual field trips, and trivia contests. Financial aid is available through a general or Aboriginal application.

Helix Summer Science Institute (York University)



helix.science.yorku.ca/ | Grade 3-12

This is a series of weeklong intensive courses in advanced/interdisciplinary science topics. They accept students across Canada and internationally.

Blueprint (UofT)



outreach.engineering.utoronto.ca/pre-university-programs/ | Grade 10-11

Blueprint is a four week free summer program with year-long engagement for Black students across Canada in grades 10-11 interested in engineering.

Coast Guard College

ccg-gcc.gc.ca/college/index-eng.html

This is a four-year Officer Cadet program in Westmount, Nova Scotia that trains cadets in marine engineering or marine safety for a career with the Canadian Coast Guard. The program offers classroom and hands-on specialized training in ice management, engine repair, marine propulsion and more. Cadets receive a fully paid education, monthly pay and accommodation, and upon completion earn a Bachelor in Technology degree in nautical science, a Canadian Coast Guard College diploma, and commercial certification as a ship's officer. Applicants need to have completed their high school diploma as of June 30th of the intake year.

Canada

Young Women in Public Safety

publicsafety.gc.ca/cnt/bt/crrs/ywps-en.aspx

This is a summer program for high school girls interested in public safety and security careers, exposing them to relevant opportunities in fields such as intelligence analysis, policy development, and STEM. Participants meet and are mentored by women who demonstrate leadership and excellence in a law enforcement career.

Canada

Youreka Program

yourekacanada.org/ | Grade 9-12

This is a ten-week program at 6 Canadian university campuses providing high school students mentorship in a self-directed research project using open-source data, exploring topics like bioinformatics, public health, economics, and more alongside several workshops, seminars, and challenges. At its conclusion, students have the chance to present at a regional symposium and potentially publish a research paper.



DEEP Program

outreach.engineering.utoronto.ca/pre-university-programs/deep-summer-academy/ | Grade 9-12

DEEP is a summer program at UofT offering advanced study in a wide selection of courses covering subjects like urban planning, health technologies, physics, computing, and robotics. DEEP exposes high school students to concepts typically studied in upper year undergraduate degrees or graduate school. An optional residence program is available.



Perimeter Institute

perimeterinstitute.ca/issyp | Grade 11-12, First-Year CEGEP

This is a two-week online program for Canadian and international high school students with a drive for theoretical physics. The program includes interactive sessions and mini-courses, presentations from keynote speakers, career exploration panels, and covers topics like blackholes, quantum mechanics, cosmology, and more.



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Canada-Wide Science Fair

youthscience.ca/science-fairs/cwsf/virtual-2022/ | Grade 7-12

This is a week-long event for the largest science fair in Canada showcasing top STEM projects and ideas among grades 7-12 students. Visitors from the public and schools learn and interact with young scientists. Participants have the chance to compete for scholarships, medals, and exclusive opportunities.



CDL Apprentice Program

creativestructionlab.com/program/cdl-apprentice-program/ |

Ages 14-18

CDL is an online STEM entrepreneurship program for female-identifying individuals including nonbinary people aged 14-18 that seeks to support girls interested in technology or business careers or establishing a startup. It is delivered in 6 themed modules, covering artificial intelligence, renewable energy, biotechnology, therapeutics, among several other subjects.



Queen's Summer Research Academy (Queen's University)

queensconnections.ca/summer-programs/qsea-senior/ | Grade 9-11

QSEA is a week-long asynchronous program with synchronous check-ins for grades 9-11 introducing students to the disciplines and scope of engineering. Opportunities to explore bit coding, breadboarding, artificial intelligence, and more. Currently virtual. No fee to participate (deposit required).



Girls' Club (Queen's University)

queensconnections.ca/girls-programs/girls-club/ | Grades 9-12

Girls' Club is a free program for girls in grades 9-12 interested in engineering. Meetings are monthly in the evenings and currently virtual, covering a variety of topics such as water recovery in space, magnetism, virtual assistants, and career workshops.



Let's Talk Science

letstalkscience.ca/events

Variety of STEM-related online events for elementary, junior, and high school grades. There are opportunities to attend symposiums and participate in challenges.



Students on ICE

studentsonice.com/ | Ages 18-30



SOI is a program allowing high school and university students to go on expeditions to the Arctic and Antarctic, intending to foster a commitment to environmental responsibility and sustainability, engaging with Indigenous research and knowledge, and global citizenship. Students travel alongside scientists, elders, artists, and other experts on one of 2 annual ship-based journeys.

Other Provinces

Spark Lab Program (York University)

ourkids.net/camp/york-university-scix-science-explorations/841/session/8966 | Grade 9-12



York University's Spark Lab Programs are week-long sessions designed for students in grades 9 to 12 who want more "hands-on" science. Using experiment-based learning, students explore physics, biology and chemistry through lab work. Escape the traditional classroom and learn science by doing science.

Online High School Summer Programs (York University)

science-explorations.info.yorku.ca/online-summer-programs/ | Grade 3-12



These 4-5 day program feature topics including but not limited to immunology, pharmacology, sustainability, neurobiology and biochemistry. Other online programs are available for grades 3-8.

WISE-NL Student Summer Employment Program

wisenl.ca/your-wise-nl-view/secondary/outreach/ | Grade 11



This is a program for grade 11 girls offering a paid, hands-on research assistant experience in science and engineering in Newfoundland. Participants also receive networking opportunities, tours, specialized training, and personal development activities.

Canadian Nuclear Laboratories

cnl.ca/about-cnl/in-the-community/school-resources/ | Grade 11-12



These are full-day tours from September to June at CNL facilities in Ontario or Manitoba giving students an opportunity to observe interdisciplinary science at work and learn about nuclear technology. Students will explore one of three educational streams (energy, physics, and environment) at CNL.

Land Based Programming (UBC)

geeringup.apsc.ubc.ca/community-outreach/programming/land-based-programming/ | Grade 5-12



This is a one-week overnight outdoor camp for grades 5-12. It combines STEM with traditional Indigenous knowledge. Activities include canoe building, making pulley systems, and shelter building.

Geneskool

genomebc.ca/education/what-is-geneskool | Grade 9 +



Geneskool is a five-day summer program in BC for grades 9 and up allowing students to explore genetics and lab techniques in a forensic mystery-style context. Virtual programming is now available, providing guest speakers, guided workshops and free activity resources for parents, teachers, and students.

Indigenous Students

Verna J Kirness Program

vernajkirkness.org/ | Grade 11



This is a one week research shadowing experience at one of many participating Canadian universities for Indigenous high school students. The program includes a scholarship, learning about support systems on campus, and opportunities to meet role models.

SING Canada

indigenousts.com/sing-canada/



This is a one-week all-expenses paid intensive workshop providing undergraduate, graduate, postdoctoral, and community fellow Indigenous people with hands-on lab and field training in genomics, bioinformatics, and bioethics in Indigenous contexts.

Indigenous Internship Program by UBC Gearing Up Engineering

geeringup.apsc.ubc.ca/community-outreach/programming/indigenous-internship-program/ | Grade 11-12, First-year Undergraduate



This is a paid 2 month online internship preparing students to teach STEM topics. Mentors guide interns and help with personal/professional development goals.

SINEWS

nrcan.gc.ca/our-natural-resources/indigenous-natural-resources/sistering-indigenous-and-western-science-program/23938 | Undergraduate

SINEWS is a four-month summer program for female Indigenous and non-Indigenous students from other underrepresented groups to design and carry out a STEM research project in pairs. The projects are aligned with Natural Resources Canada (NRCan) mandates and address Indigenous issues with the aim of reconciliation.

Canada

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