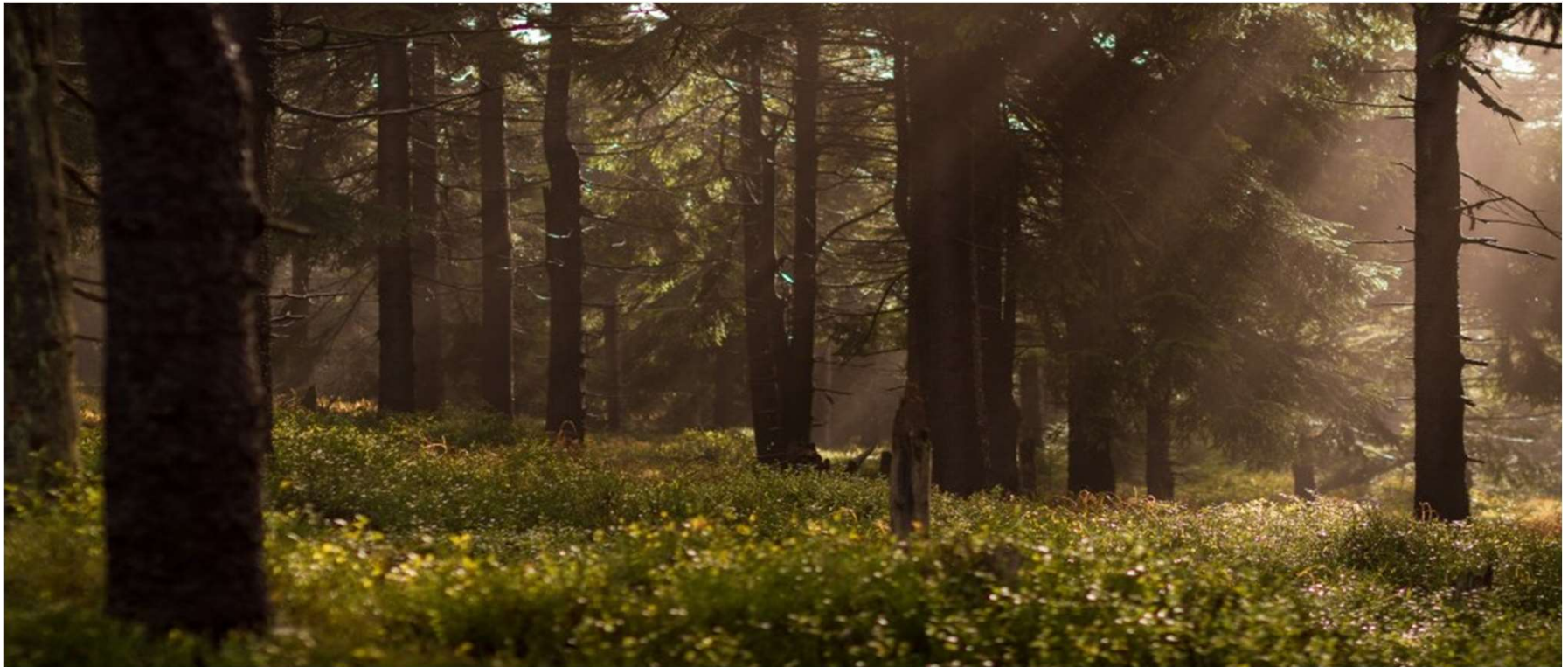


Leading to Bring STEM to Life!

Professional Learning Network # 1: Making
Connections to the New Elementary Science and
Technology Curriculum

Land Acknowledgement





MeasIntoAction
SCHOOL AND SYSTEM LEADERS

Exploring Five Core Leadership Capacities
Promoting Collaborative
Learning Cultures: Putting
the Promise into Practice

**Setting the Stage for
our Learning**



Today's Learning Goals

Understanding why we need a new Ontario Science and Technology Curriculum

Exploring of similarities and differences to our previous curriculum

Develop ideas to support first steps in implementation: ***Considerations for Principals right now***

Engage in Learning Conversations to share ideas and resources, make connections to our current work, gather feedback, and set next steps

The Numbers

17.9% of licensed engineers in Canada are women.

(Engineers Canada, 2020)

24.2% of undergraduate enrolment in engineering programs are women with the highest proportion in biosystems program, chemical engineering, and geological engineering. (Engineers Canada, 2020)

0.6% of undergraduate engineering students enrolled in accredited engineering programs in Canada identify as Indigenous peoples. (Engineers Canada, 2020)

94% of Black youth in Canada aged 15-25 said they would like to get a bachelor's degree or higher but only 60% thought they could. (Statistics Canada 2016 Census)

71,365 Black Canadians 25 years and older had a postsecondary certificate, diploma or degree in science, technology, engineering and mathematics (STEM).** (Statistics Canada 2016 Census)

<5% Women representation in many trades, including automotive service technician, electrician and carpenter. (Macleans, 2020)

**Total population 25 years and older was 25,043,315

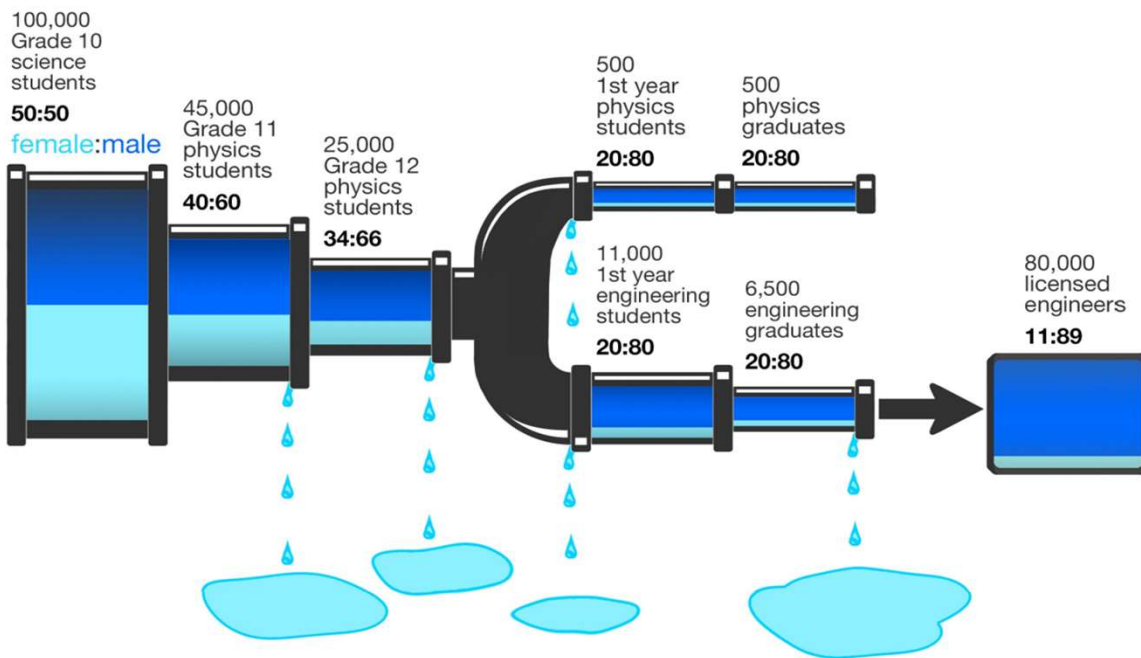
DECE

CATHOLIC
PRINCIPALS'
LEADERSHIP
DEVELOPMENT
ONTARIO

LEADERSHIP
EN ACTION

PRINCIPAL
ASSOCIATION
OF ONTARIO

Ontario's Leaky Pipeline of Women in Engineering Education

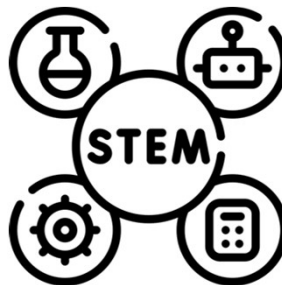


The ratios are presented as the proportion of females:males at different points in the pipeline. Developed using Ontario Ministry of Education Enrolment data from 2016 (M. Wells, M. Williams, & E. Corrigan, 2018)

53%
 of Black students in *Academic* stream in TDSB compared to 80% of other racialized students and 81% of white students.
 (Dr. Carl James, Toward Race Equity in Education, 2017)

43%
 of Black students in TDSB did not apply to any postsecondary programs compared to 26% of white students and 17% of other racialized students.
 (Dr. Carl James, Toward Race Equity in Education, 2017)

The shortage!



Approximately **70%** of Canada's top jobs now require some level of STEM. Yet most Canadian youth disengage from STEM studies before high school graduation. (Let's Talk Science, 2019)



Between July and September 2021, there were more than **330,000 unfilled jobs in Ontario**, many of which are in the skilled trades. (Ontario Government, Labour, Training and Skills Development, 2022)

Creating STEM pathways!



Elementary
School



Secondary School



Skilled Trades and
Apprenticeship Programs



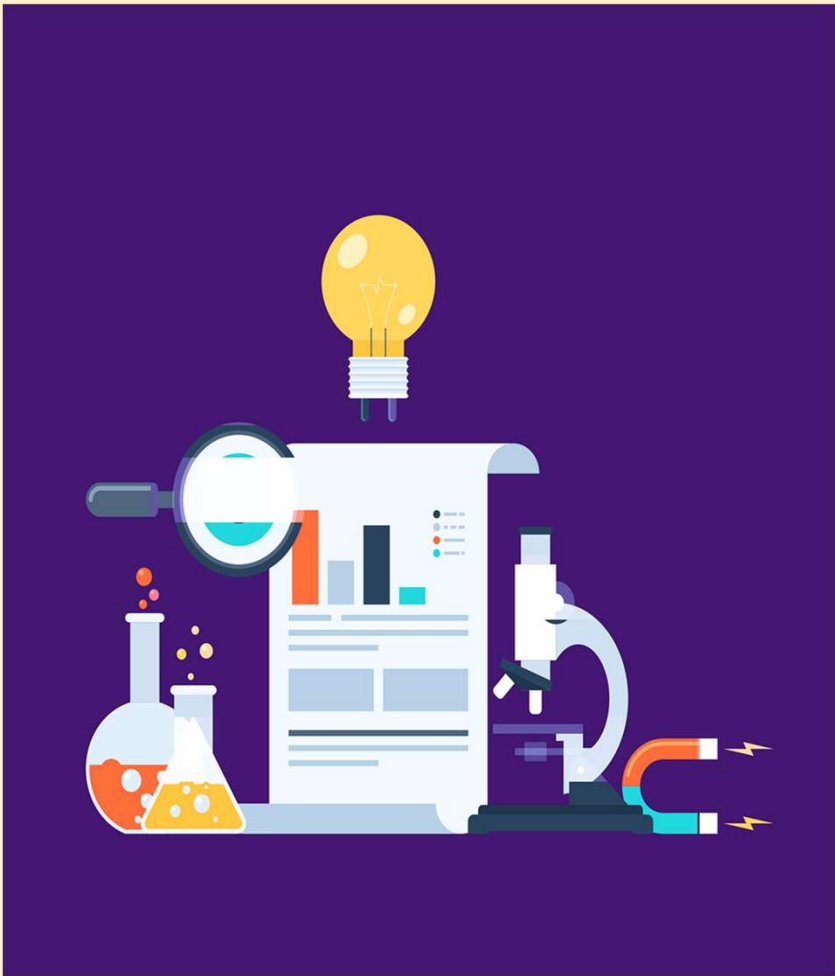
College



University

**Creating
Solutions
Together!**

In K-12 Ontario Education...



3,962
Elementary Schools

1,394,041
Elementary Students

871
Secondary Schools

631,217
Secondary Students

2,025,258
Students in Ontario

7696.43
FTE Administrators
(Principals and Vice-Principals)

130,923.28
Full Time Equivalent (FTE)
Teachers (including long term
occasional (LTO) and excluding
teachers on leave and teachers
in Education and Community
Partnership program facilities)

(Ontario Ministry of Education, 2020-2021)

In K-12 Ontario Education...

Science

10,106	551	35,642	1,994
Teachers with Basic Qualifications in Junior/Intermediate Science (English)	Teachers with Basic Qualifications in Junior/Intermediate Science (French)	Teachers with Basic Qualifications in Intermediate/Senior Science (English)	Teachers with Basic Qualifications in Intermediate/Senior Science (French)

Computer Science

269	3,250
Teachers with Basic Qualifications in Junior/Intermediate Computer Science	Teachers with Basic Qualifications in Intermediate/Senior Computer Science

In K-12 Ontario Education...

In 2020:

48,293

Teachers with Basic
Qualifications in Science



Science



1 Teacher : 42 Students



Computer Science



1 Teacher : 576 Students

2519

Teachers with Basic
Qualifications in
ComputerScience

Total number of students: 2,025,258
(Ontario College of Teachers, 2020)

Technology is created by humans

...FOR people...

...WITH people...

FOR people and the universe
(Earth and beyond) WITH people...



Diversity matters!

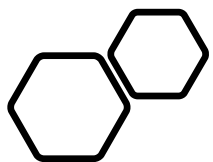
Innovative designs and solutions to complex problems requires diverse perspectives, skills, knowledges and experiences!

Science & Technology is everywhere! Creating opportunities to explore and learn will help youth to make informed decisions about their own futures.





How might
we design
with equity
and
inclusivity in
mind?



Overview of Key Changes

The Ontario Curriculum, Grades 1 to 8: Science and Technology, 2022 focuses on fundamental science and technology concepts and on STEM skills that are critical for all students to develop in our rapidly changing, scientific and technologically sophisticated world.



ELEMENTARY Science and Technology (2022)



Grades View all →

Grade 1

Science and Technology

Here you will find the expectations and learning for the five areas of study for Grade 1.

[Read online →](#)

Grade 2

Science and Technology

Here you will find the expectations and learning for the five areas of study for Grade 2.

[Read online →](#)

Grade 3

Science and Technology

Here you will find the expectations and learning for the five areas of study for Grade 3.

[Read online →](#)

New areas of learning

STEM Skills and
Connections

Contributions to
science and
technology

Climate change

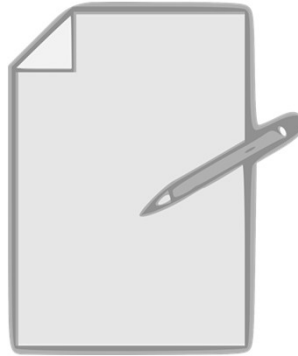
Food literacy

Coding

Indigenous
knowledges and
perspectives

Engineering
design process

Hands on
experiential
learning



Science Beyond the Textbook, Video Screen or Computer



Let's Explore the New Curriculum!

Leading the Implementation of the New Science and Technology Curriculum: What's Next?

Let's brainstorm and share ideas!

Go to: <https://bit.ly/PLN1SciTec>



Debrief



Resources to support

Ontario Science Centre
Science North
STAO
Let's Talk Science
Canada Learning Code

Link to google doc with resources:
https://bit.ly/PLN1_Resources

CONTACT US

- ADFO www.adfo.org
- CPCO www.cpco.on.ca
- OPC www.principals.ca



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