

Let's Talk Science STEM Careers Initiative

CANNEXUS20

National Career Development Conference

January 27 – 29, 2020

Ottawa, ON

Craig White

Why we do what we do

- ✓ Science and technology are reshaping our world
- ✓ Enhanced scientific literacy and critical skills/competencies are required to prepare Canadian youth for future jobs and global citizenship demands

Our Mission:

To help children and youth fulfill their potential, prepare for their future careers, and become engaged citizens in a rapidly changing world by supporting their learning and engagement through STEM.



STEM

is everywhere in
modern life and
is **transforming**
the nature of the
workplace.



let's talk 
science

| parlons 
sciences

...preparing youth for their future careers.



Staying in STEM

Why should you care?



SPOTLIGHT ON SCIENCE LEARNING:
*The High Cost of Dropping
Science and Math*

Our 2014 report noted three main areas of cost

- Financial
- Opportunity
- Societal

AMGEN®

let's talk  science
inspiring discovery

let's talk  science

Students who **opt-out of STEM** face **challenges**:

Getting into
post-secondary



Landing
a first job



Growing
their career



STEM graduates:

- enjoy 26% **higher earnings**
- experience **fewer** career **interruptions**
- have **shorter** employment **gaps**

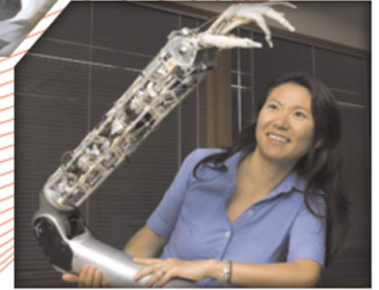
**without Grade 12 math
and/or science courses,**
doors close to half of university and college paths.



A high-performing economy relies on innovative people

70% of Canada's **top jobs** require STEM education

...including **skilled-trades**.



SPOTLIGHT ON SCIENCE LEARNING:
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Jobs that surprisingly require STEM



CHEF



WELDER



INDUSTRIAL
DESIGNER



EARLY CHILDHOOD
EDUCATOR



ACTOR

Top starting STEM salaries



DOCTOR



DENTIST



PETROLEUM
ENGINEER



DATA SECURITY
ANALYST



WEBSITE
DEVELOPER

Canada's top jobs



OIL & GAS
DRILLING
SUPERVISOR



HEAD NURSE &
HEALTH CARE
MANAGER



PETROLEUM
ENGINEER



ELECTRICAL &
TELECOMMUNICATIONS
CONTRACTOR



CHEMICAL
ENGINEER

In the next decade, over a million **skilled workers** will be needed in Canada...

...and **skilled-trades** increasingly require strong **STEM expertise**.



SPOTLIGHT ON SCIENCE LEARNING:
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Barriers to Youth Engagement

The OECD Global Science Forum (2006) identified barriers to youth engagement in science and technology

- Lack of subject expertise
- Curriculum appearing irrelevant
- (Negative) image of science and scientists
- Lack of awareness of careers
- Lack of role models



DAVEY

About me

I was born/grew up in: Mount Pleasant, Ontario Canada.

I now live in: Brantford, Ontario, Canada.

I completed my training/education at: Growing up, my family taught me to maintain the property we lived on. This included trimming and removing trees, as well as general landscaping practices. I have always been a



About me

When I was a student, I enjoyed:

- ☒ Art
- ☒ Drama
- ☒ Foreign Languages
- ☒ Food & Nutrition
- ☒ Technology
- ☒ Music
- ☒ Geography
- ☒ Literature & Language Arts

When I was a student, I would have described myself as someone who:

- ☒ Always wanted to be outside
- ☒ Liked helping people
- ☒ Wanted to be in charge
- ☒ Liked being given specific instructions
- ☒ Liked reading
- ☒ Was really creative
- ☒ Wasn't sure what I wanted to do



Heather Dover
Arborist



I am motivated by



My career path is

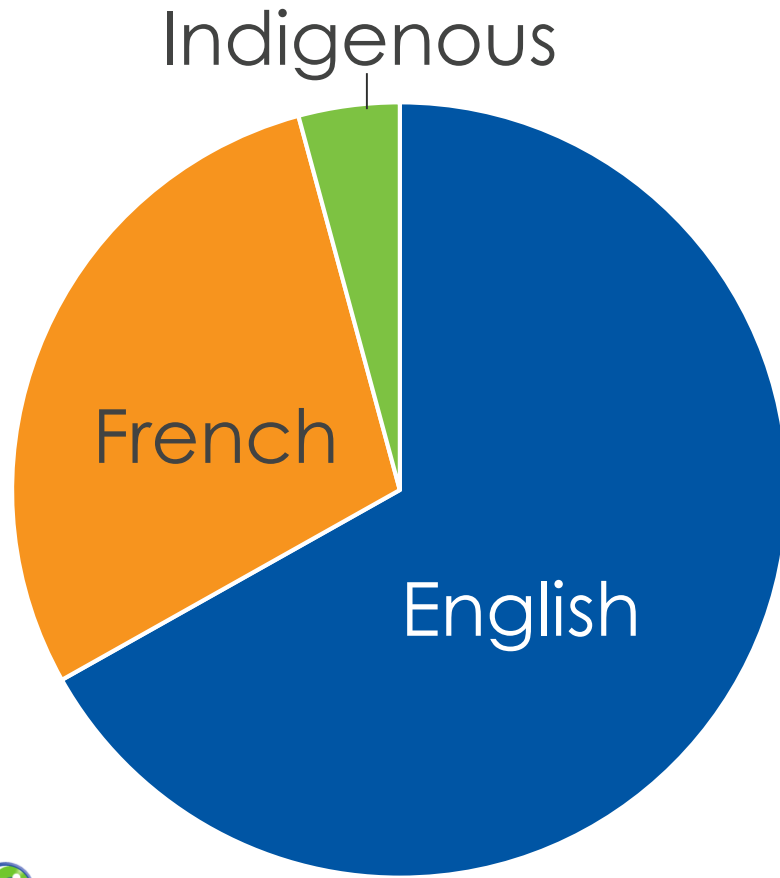


How I affect people's lives



My advice to others

This is the format of our career profiles using <https://letstalkscience.ca/careers/heather-dover> as an example.



Profiles show **cultural diversity**

ZINEB AHNOU GHOUILA - DIRECTRICE
SOLUTIONS D'AFFAIRES NATIONALES
CHEZ UNI-SELECT CANADA



Profiles show **sector diversity**

Our profiles showcase the connections of STEM to art, language, human services, skilled trades, and more. Many careers profiled are ones that youth may not have realized exist... and you can't prepare for something you don't know exists.



Professional Learning Audiences

Career Teachers and Guidance Counsellors

Aligned with the general topics of career programs across Canada.
One or more lesson plans developed for the following topics:

- Introduction to Career Development
- Employability Skills
- Essential Skills
- Career Adaptability
- Personal Management & Planning
- Life Style & Aspirations
- Career Preparations
- Occupational Clusters



Some samples of the lessons we have and what they look like on our site. These are accessed at <https://letstalkscience.ca/careers/lessons>

let's

The Skills Employers Look For

Grade: 7, 8, 9, 10, 11, 12

Province: AB, BC, MB, NB, NL, NS, NT, NU, ON, PE, QC, SK, YT

What Skills do I Need for the Workplace?

Grade: 7, 8, 9, 10, 11, 12

Province: AB, BC, MB, NB, NL, NS, NT, NU, ON, PE, QC, SK, YT

Your Personality and the Workplace

Grade: 7, 8, 9, 10, 11, 12

Province: AB, BC, MB, NB, NL, NS, NT, NU, ON, PE, QC, SK, YT

Lesson Format



The Role of Personal Skills and Interests (South_agency, iStockphoto)

Lessons

The Role of Personal Skills and Interests

Digital Programs Team | November 01, 2019

Format: **Text**
Grades: **7, 8, 9, 10, 11, 12**
Jurisdiction:
**AB, BC, MB, NB, NL, NS,
NT, NU, ON, PE, QC, SK,
YT**

Guidance & Careers

Career Development Career Exploration Essential Skills
Employability Skills

Summary

Students will further develop their understanding and appreciation of the importance of personal interests, skills, achievement experiences to the career development process.


Setting the Stage

Students will understand that certain jobs require specialized skills and education. Often they don't realize how personal skill experiences open employment doors, create opportunities for advancement, and ultimately lead to a fulfilling work life.

Details

 **Materials**

 **Preparation**

 **What to Do**

 **Assessment**

 **Downloads**

Classroom Teacher Audience

- Fewer teacher resources/development stage
- Mainly developing “virtual career fairs” for use in subject teachers’ classroom
- Goal is to help students recognize that the stuff they do in the classroom can link to careers
- Subject teachers have role to play in informing students about career options and possibilities
- Teachers are less likely to know of careers in sectors that are outside academia

Virtual Career Fairs for the Visual Arts Classroom

Summary

- Students will learn about careers, and career pathways, through their review of various career profiles.
- Students will relate topics being studied in the visual arts classroom with applications in the workplace.
- Students will recognize that skills developed in the study of visual arts are applicable and valued in the workplace.

Setting the Stage

Students often have a very narrow view of the types of careers available to them. The types of careers/jobs in which they see adults engaged informs their view. This information may come from TV shows, movies or real life experience with working adults (e.g., a visit to the dentist, a contractor hired to do work at their home, what their parents do). The less exposure young people have to the world of work, and workers in general, the more limited their view will be. To ensure students have the broadest perspective on careers available to them, they should be exposed to as many potential careers as possible.

One way for young people to become aware of the variety of occupations available in the world of work is by direct interaction with individuals who work in different occupations or careers. Teachers can ensure that students have such contact is by inviting people to visit the class to talk about their careers and their career preparation. Another method is to have students engage in job shadowing, work volunteering, or co-op placements. Or we can organize, and have students attend, a career fair where students can speak to people in careers that interest them and ask specific questions about those careers. Where attending a career fair is not possible, students can participate in a virtual career fair, which uses online information about people engaged in various careers.

Preparation

- Arrange for computer and internet access for students working individually or in groups.

What to Do

Identify and select the individual profiles you wish to include. These can be organized by career sector (e.g., health care, information technology, skilled trades), educational pathway (e.g., college, apprenticeship, university), by students school subject interest (e.g., visual arts, biology, home economics), or it can be a mix of sectors/interests.

A sample collection of career profiles, in which a visual arts background is required or beneficial, is available below. As they read each profile, students get to "meet" individuals who work in careers that use a visual arts knowledge.

Name & Career	Link
Tegan Mierle, Product Designer	https://letstalkscience.ca/careers/tegan-mierle
Jeremy Friedberg, Sponge Lab Interactive	https://letstalkscience.ca/careers/jeremy-friedberg
Shelly Sandford, Siconic Science Media	https://letstalkscience.ca/careers/shelly-sandford
Maya Bankovic, Cinematographer	https://letstalkscience.ca/careers/maya-bankovic
Maxyme Palement, Team Lead – TFO	https://letstalkscience.ca/careers/maxyme-max-palement
Kaylyn Roloson, Metal Fabricator	https://letstalkscience.ca/careers/kaylyn-roloson
Dino Pulera, Medical Illustrator	https://letstalkscience.ca/careers/dino-pulera
Rebecca Pilon, Background Artist	https://letstalkscience.ca/careers/rebecca-pilon
Graham Qually, President – Liquid Entertainment	https://letstalkscience.ca/careers/graham-qually

Individually, or in pairs, students could view the profiles provided. From the profiles provide, each student could select the career they found most interesting.

Teachers could use the following questions for think-pair-share activities or to stimulate whole class discussion.

- Did any of these "Visual Arts" careers surprise you? Did it challenge your definition of "visual arts career"? Explain.
- Explain.
- Which career did you find the most interesting? Could you see yourself doing this type of work? Explain.
- Without considering salary, what would be the features of your ideal career?
- Which career interested you the most? What other high school subjects would be necessary to get into this career?
- Do you think there are personality traits associated with visual arts careers? Do you see these traits in any of the individuals in these profiles? Explain.

Teachers could use the Virtual Career Fair Assignment sheet to structure students' thinking and reflection on the profiles they read. (see below)

Assessment

- Teachers could observe and make anecdotal notes while students are engaged in discussions.
- Student responses on the Virtual Career Fair Assignment could be collected and individual feedback provided.

Sample of printable student handout sheet of virtual career fair for the health science sector.

Name: _____ Date: _____ Class: _____

Introduction

In this assignment, you will participate in a Virtual Career Fair using a collection of online career profiles of people who work in a variety of healthcare careers. Using the information from these profiles, complete the assignment below.

Procedure

Read or view each of the profiles assigned to you or select five (5) profiles in career areas about which you would like to learn more. Make notes, summaries, etc., just as if you were in-person at a career fair. Use the information you collect to answer the questions that follow.

Career Profiles in Health Sciences Sector

David Charest - Director, Sector Development
Dean Simon - Registered Dietitian
Deena Al-Saad - Tissue Coordinator
Jennifer Gardy - Senior Scientist at the B/C Centre for Disease Control
Kathy Deuchars - Ontario Genomics
Kelly White - Registered Massage Therapist
Kona Williams - Forensic Pathologist

Rachel Gardiner - Optometrist
Samantha Stuart - Quality Engineering Intern, Synaptive Medical
Simon Cooke - Physiotherapist
Spencer Turbitt - CEO & Director of iApotheca Healthcare Inc.
Stephanie MacDonald - Organ and Tissue Donation Coordinator

Questions/Activities

1. List the names of the profiles you reviewed.
2. Which one of the careers, in the group provided, was most interesting to you? Explain why.
3. Use this career profile to answer the following questions.
4. What did you learn about this career? What surprised you about this career? Explain.
5. What transferable skills do you think are necessary to be successful in this career? What job-specific skills would be required?
6. Do you think you would enjoy working in a career like this? Why/why not? (consider the "typical day" statement)
7. What do you think would be the most exciting aspects of this career? Explain.
8. What do you think are the most challenging aspects about this career? Explain your thinking.
9. What personality traits do you have that are a good fit for this career? Which are not such a good fit?
10. What specific high school courses and activities would help someone prepare for this career?
11. What other questions do you still have about this career?
12. Where can you look to find more information about this career?

Sample collection of careers related to main areas of science (Biology, Chemistry, Physics, Earth Science)



Chemistry	Earth Science
<ul style="list-style-type: none"> Emily Stencil - Beauty Entrepreneur Clair Bartman - Quality Analyst Debi Larkin - Customer Inspired Innovation Leader Darcy Gentleman - Principal Consultant Lee Wilson - Professor Farah Halsaad - Industrial Chemist Jillian Croke - Pharmacist/Pharmacy Manager Iker Martin - New Product Development Manager Brendon Clouthier - Materials Technician Ethan Martin - Welder Amanda Deon - Senior Research Technician 	<ul style="list-style-type: none"> Heather Orr - Project Manager Joel Shank - Geoscientist Jordan Mallon - Research Scientist in Palaeobiology Bronwyn Azar - Precambrian Geoscientist Steph Halmhofer - Bioarchaeologist Bryan Wilson - General Manager Jason Carignan - Mine Technician Kelsey Privett - Exploration Project Geologist Alan Bezanson - Senior Meteorological Instructor Natalie Swanson - Petroleum Geologist Alexis Dorais - Remote Sensing Analyst
Biology	Physics
<ul style="list-style-type: none"> Stephanie MacDonald - Organ and Tissue Donation Coordinator Ben Sit - Registered Dietitian Emily Jobson - Environmental Specialist Tammy Barrett - Manager, Research & Development Simon Cooke - Physiotherapist Norbert Lake - Chiropractor and Healthcare Consultant Kona Williams - Forensic Pathologist Stephanie Good - Senior Fisheries Certification Manager Greta Chiu - Agricultural Technical Writer Dino Pulera - Scientific and Medical Illustrator Heather Dover - Arborist Carolyn Fitzsimmons - Research Scientist, Agriculture 	<ul style="list-style-type: none"> Jason Andrews - Civil Engineer Brigitte Potvin - Research Manager Jackie Frampton - Construction Electrician Samantha Stuart - Quality Engineering Intern Taleitha (Tia) West - Research and Development Laboratory Manager Chris Glover - Senior Software Engineer, Physics Chelsey Peutert - Agricultural Environmental Engineer Aaron Remisch - Project Officer, Critical Infrastructure Melissa Mathers - Technical Consultant, Watson AI Joseph Reimer - Controls Technician Allison Rumbolt - Helicopter Pilot

Questions?

Contact Us

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www.explorecuriosity.org

www.letstalkscience.ca



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