



# MindFuel Annual Report

## Developer's Guide

2017

**Wonderville**  
**Ignition Pack**  
**edacity**





# **“EDUCATION IS THE PASSPORT TO THE FUTURE, FOR TOMORROW BELONGS TO THOSE WHO PREPARE FOR IT TODAY.” — MALCOLM X**

Education is one of the most important investments we can make in our children, helping them to meet the demands of our rapidly-changing, technology-focused society. As a leader in education technology and STEM programming in Canada for nearly 30 years, MindFuel is a key component in helping to develop the engaged knowledge workforce of tomorrow. It's our responsibility as stewards of education to ensure the highest level of quality; to provide programming that is not only fun and engaging, but that is grounded in scientifically-accurate, unbiased facts. This is not a responsibility we take lightly—we truly believe that education is foundational to the health, wellness, and economic growth of Alberta, our nation, and the broader world in which we live.

In 2017, we reached more than 2.4 million students, parents, and teachers across more than 15,000 communities in Canada with our English and French STEM learning resources, as well as 177 countries around the world, including: 26,054 student learning sessions in computational thinking, robotics, information modelling, machine learning, and artificial intelligence; 27,150 learning sessions involving STEM Career Showcases, and girls and women in STEM; 101,782 learning sessions in synthetic biology and nanotechnology; 138,773 learning sessions in design thinking, innovation and entrepreneurialism; and 1,582,088 student learning sessions in biodiversity, energy and alternative energy, agriculture, and environmental and water management science.

We're not just about building educational games, we're actively engaging today's students with hands-on training experiences, with more than 68,000 hours of learning in 2017 in important skills development areas that include mentor-supported student research and real-world problem solving. Our Career & Technology Foundations (CTF) Accelerator Pilot Program—in partnership with the Calgary Board of Education—welcomed 182 students in seven classrooms across three Alberta middle schools who collectively spent more than 10,000 hours completing design challenges focused on today's pressing, real-world challenges.

In collaboration with the University of Calgary's Schulich School of Engineering, our PhysicsFuel project continues to seek to address the declining numbers of students—particularly female students—enrolling in post-secondary physics and engineering programs by helping high school students build the essential skills required to pursue a career in one of these critical fields.

As with all things, MindFuel does not exist in a vacuum—we rely upon community supporters and advocates, like you. We are grateful to our funders—including the Government of Alberta, Alberta Innovates, Canadian Heritage, and NSERC—for their continued investment in our mission to engage and inspire the leaders, innovators and problem-solvers of tomorrow.

Thank you for joining us on our journey to ensure that every Canadian student, regardless of race, gender, or background, has the opportunity to change the world.

Cassy Weber  
CEO

Shahauna Siddiqui  
Chair

Building a social platform for the future of STEM is no small task. It requires robust problem-solving skills, the ability to think critically about our world, its many systems, and how they interact. Not to mention a commitment to challenging conventional thinking in service of creating new opportunities.

Everyone who works with MindFuel—in our schools and throughout our communities—plays a vital role in developing this future state.

As a believer in the future of STEM, I will:

- Inspire a passion for science exploration and discovery in youth
- Foster science literacy and curiosity, and increase student interest in STEM topics
  - Encourage enrollments into STEM-related post-secondary programs
    - Help students in STEM-related post-secondary programs through to graduation
- Place a high value on problem-solving and critical thinking skills

As a MindFuel supporter, you're part of a forward-thinking team of individuals and organizations committed to the development of leading-edge programming to drive the future of STEM learning and discovery. Our award-winning resources and programs are designed to help students engage in real-world problem-solving and innovation across numerous crucial fields, reaching more than 15,000 communities across Canada in 2017 in both French and English, and used in 177 countries around the world.

Skills development area	Student learning sessions
Biodiversity, energy and alternative energy, agriculture, and environmental and water management science	1,582,088
STEM knowledge foundations (such as biology, physics, chemistry and earth sciences)	347,636
Health and related sciences	149,746
Design thinking, innovation and entrepreneurialism	138,773
Synthetic biology and nanotechnology	101,782
STEM Career Showcases, and girls and women in STEM	27,150
Computational thinking, robotics, information modelling, machine learning and artificial intelligence	26,054
Space and astronomy	16,442
Indigenous ways of knowing	13,321

Skills development area	Hours of learning
Workshops, mentor-supported student research and real-world problem solving	68,139 hours

## Key Inputs

**operating\_capital=** provincial+federal\_govt\_grants.exe  
 corporate+foundation\_contributions.exe  
 philanthropic\_endowments.exe

**gratitude+support=** govt\_ab\_ministry=economic\_dev+trade.exe  
 govt\_ca\_ministry=innovation+science+economic\_dev.exe  
 natural\_sciences\_engineering\_research\_council\_canada.exe











# Wonderville

**Launched in 2002**



## Format

Animations, games, real-world videos, experiments, puzzles and career showcases.



## Overview

Wonderville's award-winning, blended-learning platform offers a rich library of unbiased, scientifically accurate, curriculum-compatible digital STEM-learning resources. Students explore science's fun, experimental side. Distributes to 177 countries worldwide.



## Operational Requirements

- Grades K-12
- English or French



## Developer's Notes

- Comprehensive content library supplemented by lesson plans, project-based learning and assessments.
- Reliable, high-quality assets that present real-world topics including photosynthesis, nanotechnology, earth sciences, alternative energy and more.
- Subscription-based tools and resources developed by teachers and extensively tested in Canadian and American classrooms.
- Compatible with numerous curricula across Canada and the Next Generation Science Standards (NGSS) in the United States.

# MindFuel Developer's Guide 2017



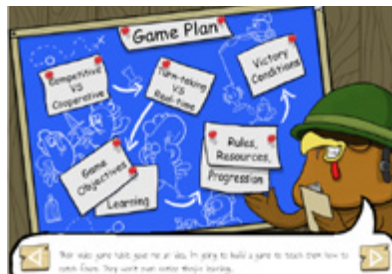
## Goals

- Support teachers as they cover complex STEM topics – such as biodiversity, water management science, synthetic biology, computational thinking and more – by providing scientifically unbiased, high-quality, blended learning resources for use in the classroom and at home.
- Deepen students' understanding of STEM concepts using challenging digital games, informative real-world videos and hands-on experiments.
- Continue to build brand recognition and support of MindFuel programs, including Wonderville, throughout Alberta, Canada and beyond.



## Outcomes

- Developed 49 lesson plans and assessments for teachers, which incorporated existing Wonderville resources.
- Designed and launched four games in English and French, including the highly anticipated *Chicken Coup: Design a Game/L'Assault Du Poulailier*, a game-based learning resources that teaches the components of successful game design.



- Created and launched two career videos featuring team members from BioWare – a video game development company based in Edmonton, Alberta – designed to introduce students to this exciting STEM-based career path.
- Platform development for the continual improvement of the Wonderville user experience.



## What's New

- Launched in June 2017 in both English and French, *Mission: Maple Leaf / Mission: Feuille d'érable* was created to celebrate the 150th anniversary of Canadian confederation. While playing the game, students learn about some of Canada's greatest scientific and technological achievements.
- Also launched in June 2017 in English and French, *Storm Chasers: Raging Skies/Chasseur de tempêtes: Un Ciel De Tempête* is a fun, exciting game about extreme weather and connects directly to the Alberta grade five curriculum.
- Launched August 2017 in English and French, *Sense of Duty/Sens du devoir* is a digital game that connects grade 8 Cells & Systems learning outcomes with a real-world scenario – that of a rookie firefighter searching for his fire chief, Captain Mack, who is trapped in a burning building during a fire drill.
- Also launched in August 2017 in English, the animated video, "What Are You Toxin About?" supports curriculum connections with grade seven Interactions & Ecosystems and grade nine Environmental Chemistry. Over the course of the video, students explore the quality of water in our ecosystems.
- Launched in March 2018 in English and French, *Chicken Coup: Design a Game/L'Assault Du Poulailier* is a game-based learning resources that teaches students the fundamentals of design thinking and key game design components.
- Also launched in March 2018, two career videos "Game Developers Journey" and "Game Developers Teamwork" feature team members from BioWare – video game development company based in Edmonton, Alberta. They share the journeys that brought them to video game design and the value of diverse skill sets in this growing STEM-related field. Both videos open students' eyes to the possibilities that await them after graduation.



**“It makes science fun.”**

Wonderville.org student user

---



**“I liked that we could fix our mistakes.**

**We are not the best but we need a second chance.”**

Wonderville.org student user

---



**“I liked the way I improved my science energy knowledge.”**

Wonderville.org student user

---



**“Can’t wait to explore Wonderville resources further, they are so entertaining and provide useful teaching tools.”**

Teacher participant at Design Thinking workshop,  
Calgary Regional Consortium

---



**“Wonderville has given me a new resource bank to look for new ways to teach science content.”**

Wonderville.org teacher user

---



**“These resources have sparked many ideas for me and highlighted a few new science facts already as I prepare for this new school year, and I expect these resources will save me much preparation and topic research time.”**

Jane, Grade 4 teacher, Wonderville.org user









# Wonderville Survey

Research Summary  
Teacher Responses

---

Through this Wonderville activity my students learned more about this science topic.

78%

---

This Wonderville activity helped me enrich and enhance my ability to teach the science topic.

76%

---

MindFuel is a credible source of STEM education support.

78%



```

```

```
<style type="text/css">  
  #gradient{gradient-start:#233TT0;  
            gradient-end:#DFG714;  
            }  
</style>
```

## game=

Mission: Maple Leaf

Mission: Feuille d'érable

It starts with a distress signal from a far-off planet. Together with your robot partner Ed, you'll take a journey through some of Canada's greatest scientific and technological achievements while trying to save the (other) world.

To celebrate 150 years of Canadian confederation and with funding support from the Government of Canada (Canadian Heritage), the Government of Alberta, and Alberta Innovates, MindFuel created a new digital learning resource highlighting Canada's rich history of innovation and invention.



### Developer's Notes

- Decodes how Indigenous people overcame challenges farming in Canada's climate.
- Updates knowledge about Canadian ingenuity in health and medicine, transportation, communications, agriculture, space exploration and more.



### Launch

Launched on June 20 in French and June 21 in English, more than 2,000 students from across Canada participated in a nation-wide launch via webinar made possible in partnership with Partners in Research.

**Special thanks to those involved in the beta testing and launch of Mission: Maple Leaf:** Dr. David Pantalony, Canadian science and Technology Museum | Dr. Jason Donev, University of Calgary | Glen Kathler, Southern Alberta Institute of Technology | Jerry Spring, Calgary Amateur Radio Association | Donna Rowley, Canadian Potato Museum | Joanne Schmidt and Katie Fisher, Glenbow Museum | Dr. Tricia Carmichael, University of Waterloo | Julie Legault, Amino Labs | Jonathan Wilcox, Renert School | Jamie Luedtke, Madeleine d'Houet School | Nicole Rabbit, Chilla Elementary School



# Ignition Pack

**Launched in 2012**



## Format

Curriculum-based comprehensive learning resource that supports the teaching of a whole unit of science, and engages students in learning fundamental scientific concepts through exploration, experimentation and critical thinking.



## Overview

Ignition Pack is a permanent classroom resource that transforms science class by combining the best of 21st century learning with hands-on and digital components. Students learn fundamental science concepts through exploration, experimentation and critical thinking.



## Operational Requirements

Enrolment in grade five (Wetland Ecosystems), seven (Interactions and Ecosystems) or eight (Mix and Flow of Matter; Freshwater and Saltwater Systems).



## Developer's Notes

- Each pack contains content needed to teach a full unit of science.
- Over 40 resources and 20-25 hours of teaching material.
- Designed and assembled in Alberta.
- Alberta-specific subject matter experts featuring applicable learning outcomes.





## Goals

- Provide teachers with high-quality, blended learning resources that enable them to teach a complete unit of science, aligned to the Alberta curriculum.
- Encourage students to engage and interact with complex science concepts through inspiring real-world examples and fun, hands-on activities.
- Expand MindFuel's reach into rural and urban Alberta schools by continuing to distribute more Ignition Pack kits.
- Connect recipient schools and funders through an Ignition Pack distribution gathering.



## Outcomes

- Content revision cycle for grade seven Interactions & Ecosystems and grade eight Freshwater & Saltwater Systems kits.
- Designed a real-world activity of water samples and maps to represent data and Alberta watershed to further develop the grade eight Freshwater & Saltwater Systems kits.
- Expanded our connection with Alberta teachers through conversations and surveys to better understand their current needs and how they are using their Ignition Pack kits.







## What's New

- In last year's release (v27), the goal was to install Ignition Packs in more classrooms across Alberta. In 2017, 56 additional Ignition Packs were distributed during the year to 11 communities: Anzac, Blackfalds, Bluffton, Calgary, Cessford, Chard, Edmonton, Fort McMurray, Grand Cache, Hanna and Niton Junction.
- Hosted an Ignition Pack event to distribute kits to teachers at 12 Calgary schools. In collaboration with three funders - Rotary Club of Calgary North, Rotary Club of Calgary West and Syncrude Canada - 24 kits were distributed.
- In progress: Planning two distribution events to two school districts in Fort McMurray to distribute 40+ Ignition Pack kits in October 2018, and coordinating shipment of 56 kits to all schools in the Northlands School Division in August/September 2018.





**“I love the hands on materials - especially the invertebrate lab, tectonic plate puzzle and iceberg/ice sheet lab. They help give students a window into what this science looks like in the real world. The narrated presentations/ videos also engage students in thinking of local and global topics. The kit helps guide and supplement teacher activities, which helps new and veteran teachers alike.”**

Grade 8 Science Teacher, Freshwater & Saltwater Systems  
Ignition Pack user

---



**“The wetland unit covered each curriculum objective clearly and completely. It is the most comprehensive, useful, convenient and complete science unit I have ever accessed. It is fantastic. The pictures and materials supplied are very excellent and had my students’ interest for the entire unit as we used them for various activities. I have recommended this excellent resource to any teacher I talk to who is asking for science resources that are teacher friendly.”**

Grade 5 Science Teacher, Wetland Ecosystems Ignition Pack user

---



**“Hands on pieces were fantastic for sparking curiosity and helping students visualize concepts. They aligned well with our authentic task design, and were used to enrich the program we developed.”**

Grade 8 Science Teacher, Mix & Flow of Matter Ignition Pack user





1  
2  
3  
4  
5  
6  
7  
8  
9  
10  
11  
12  
13  
14  
15  
16  
17  
18  
19  
20  
21  
22  
23  
24  
25  
26  
27  
28  
29  
30  
31  
32  
33  
34  
35  
36  
37  
38  
39  
40



## Developer's Notes

edacity is programmed in three parts:

### Career and Technology Foundations (CTF) Accelerator

- Course support for middle schools.
- Application of design thinking process, creating tasks based on real-world challenges.

### Career and Technology Studies (CTS) Innovation Bank

- For-credit course materials to teach ENT1010 (Dream It), ENT2010 (Build It), and ENT3020 (Expand It) to high school students.
- Project-based learning.
- Design thinking process and design challenges.
- Explores taking a product to market, as well as potential career pathways.

### geekStarter

- Student-led, project-based learning for middle, high school and collegiate students.
- Teams focus on solving real-world problems using emerging STEM fields, such as synthetic biology, nanotechnology, robotics and coding.
- Mentoring, lab setup, resources and travel support provided by MindFuel and our partners.



## What's New

Renewed focus on breaking down the barriers that prevent students from embracing these fields while making it our mission to foster a belief that we are all innovators.







edacity\_extension=

# geekStarter

Launched in 2012



## Format

Workshops, mentorship, project-based problem solving.



## Overview

geekStarter is an enrichment program based on student-driven, hands-on research projects. Students identify real-world problems and work to develop innovative solutions through emerging STEM fields.



## Operational Requirements

A team and a desire to change the world.



## Developer's Notes

### Goals

- Support teams and their research-based projects in their labs, workshops, and at prestigious international competitions such as First Robotics and iGEM (International Genetically Engineered Machine) Competition.
- Encourage post-secondary education and careers in cutting-edge STEM fields .
- Develop the next generation of innovators and problem-solvers.

### Outcomes

- Students work with new technologies that strengthen their academic understanding and develop skills and knowledge as life-long learners.
- Alumni typically pursue careers in the fields such as synthetic biology, nanotechnology, machine learning, artificial intelligence or robotics.



Alumni have turned their  
geekStarter experiences  
into startup companies,  
including Alberta-based  
FREDsense Technologies,  
Amino Labs, Synbiota Inc.  
and Nomadogen.

1 **edacity\_extension=**

2

# 3 geekStarter

4

5 **Launched in 2012**

6

7

---



## 10 What's New

- 11 - **University of Alberta iGEM Team (Edmonton):** Engineered bacteria to help screen & optimize drug selection for cancer treatment using buoyancy.
  - 12 - **University of Calgary iGEM Team (Calgary):** A bacterial system for making biodegradable plastics out of space bio-waste.
  - 13 - **University of Lethbridge iGEM Team (Lethbridge):** Developing an economically viable, cell-free kit for the detection of safe pathogens to serve a wide range of users, from EMS vehicles to space stations.
  - 14 - **Father Mercredi Community High School RSports Team (Fort McMurray):** Many projects including an underwater, remotely-operated vehicle to collect samples and video images of underwater life and conditions, and a robot bear to help train protection dogs for workers on oil sands sites.
  - 15 - **Ross Sheppard High School (Edmonton):** Remote-controlled drones with the final goal of getting aerial footage of their end-of-the-year school festival.
  - 16 - **UrbanTundra iGEM Team (Edmonton):** Exploring soil remediation and detoxification, with plans to optimize this using directed evolution in a bioreactor.
  - 17 - **Our Lady of the Snows Catholic Academy SynBio Team (Canmore):** Sorting device that bio-tags individual plastic types for automated sorting.
  - 18 - **Ted Harrison Junior High School (Calgary):** Engineering bacteria to break down pesticides in water systems. Developing a sugar-free product to use in with beverages for people with a sugar-free diet.
  - 19 - **APEX Robotics (Calgary):** Built a self-driving snow-cleaner to participate in the FIRST Robotics competition.
  - 20 - **NotreDame Collegiate (High River):** A natural family-planning device based on bacteria to sense three hormones present during ovulation: luteinizing hormone, estrogen, and progesterone.
  - 21 - **Lethbridge High School iGEM Team (Lethbridge):** Biological pigments to be used as ink and coloured products, cheaper and with a smaller environmental impact.
- 22
- 23
- 24
- 25
- 26
- 27
- 28
- 29
- 30
- 31
- 32
- 33
- 34
- 35
- 36
- 37
- 38
- 39
- 40



**“I loved how this workshop had entrepreneurs that went through the whole process and told us stories about their successes and failures. It really enhanced my knowledge.”**

Yazdaan, geekStarter: Startup Workshop student participant, Calgary

---



**“The key thing that I appreciated about this workshop was the notion that anyone can be an entrepreneur. My dad owns a company, so I had prior knowledge of what we talked about today, however, after the workshop I have an easier time putting myself in the shoes of a business owner.”**

Connor, geekStarter: Startup workshop student participant, Edmonton

---



**“I really enjoyed getting the opportunity to gain feedback from all of the judges. The breakout sessions were a good opportunity for us to see how others view our project and to encourage us to think outside of the box about the implications and impacts our projects have on the community.”**

Monica, aGEM collegiate participant, Edmonton



**“Working with professionals. Networking with other mentors, sharing ideas, listening to the youth speak about their experiences and ideas” were highlighted as benefits of the workshop in his survey feedback.”**

Tom MacIsaac, geekStarter: Startup Workshop, Team Advisor Father Patrick Mercredi Community High School, Fort McMurray

.....



**“The workshops and pre-competition jamborees organized by geekStarter provide intensive learning opportunities for our students, and real-world opportunities to practice new skills, connect with like-minded young scientists, and “do” real science. These opportunities are not easily recreated within the school!”**

Luc Arvisais, Team Advisor, Our Lady of the Snows Catholic Academy, Canmore



# geekStarter Startup Workshop

Survey Research Summary  
Student Responses\*

I LEARNED SOMETHING MORE ABOUT ENTREPRENEURIALISM



93%

THIS WORKSHOP MAKES ME MORE KNOWLEDGEABLE  
ABOUT ENTREPRENEURIALISM



86%

TEACHERS WHO OFFER THIS TYPE OF WORKSHOP HELP MAKE  
THEIR CLASSES MORE INTERESTING AND ENGAGING FOR STUDENTS

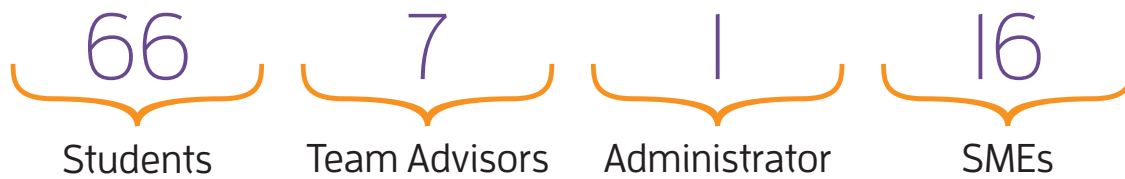


80%

<\*Survey research summary based on geekStarter Startup workshop (Dec. 2, 2017) />

## geekStarter\_extension= Startup Workshop

Held December 2, 2017 the geekStarter: Startup Workshop was one of four main events held for geekStarter teams in 2017-18. It sparked ideas, increased understanding about entrepreneurialism, and created new networking connections for current and potential geekStarter participants, as well as alumni. This day-long event empowered these future STEM leaders to fulfill their dreams through post-secondary studies, careers and entrepreneurialism in STEM, which will have the long-term benefit of helping to diversify Alberta's economy.



**Special guests:** Will Bunker, Co-founder, GrowthX | Julie Legault, CEO & Founder, Amino Labs | Kevin Chen, Co-founder, Hyasynth Bio | Jun Axup, Science Director, IndieBio | Emily Hicks, President & Co-founder, FREDsense Technologies | David Lloyd, CEO & Co-founder, FREDsense Technologies | Noren Hirani, Associate, Intellectual Property Law, Bennett Jones LLP | Patrick Wu, Community Ambassador, Startup Calgary | Rebecka Carroll, Technology Management Officer, TEC Edmonton | Zak Stinson, Director and Founder, Nomadogen | Steven O Connell, Associate Director & Program Manager, RebelBio

**geekStarter Supporters:** Alberta Innovates | NSERC/CRSNG | RBC | eHUB | TELUS Calgary Community Board | Motorola Solutions Foundation

**In-Kind Supporters:** Bennett Jones | Brookfield Asset Management

## geekStarter Startup Workshop Survey Research Summary Teacher Responses\*

"Through this geekStarter workshop my students learned more about this science topic."

92%

"MindFuel's geekStarter program contributes towards Alberta students' science literacy, curiosity and interest being more successfully developed and nurtured."

93%

"MindFuel is a credible source of STEM education support."

91%

\* Survey research summary based on geekStarter Startup workshop (Dec. 2, 2017)

## In Beta Testing



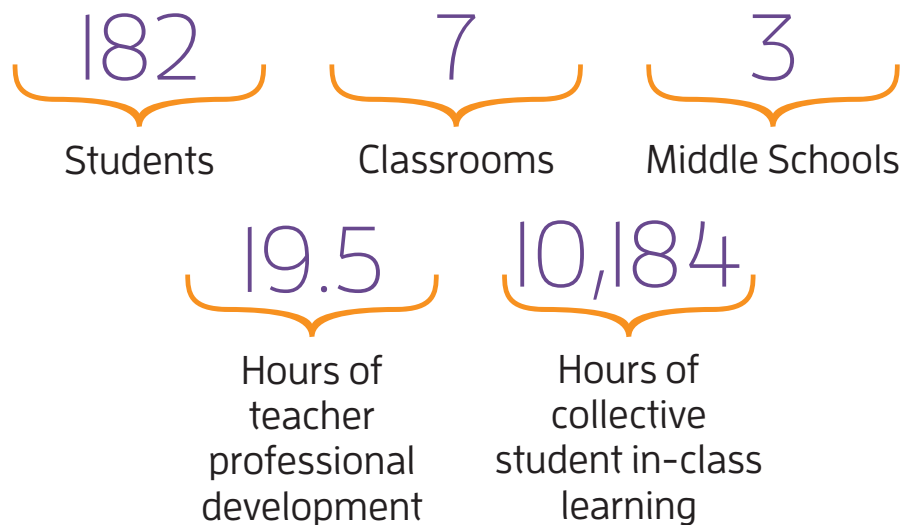
### Career & Technology Foundations (CTF) Accelerator Pilot Program

Currently piloting in seven Alberta classrooms

Developed in partnership with the Calgary Board of Education (CBE), beginning in January 2017, teachers in seven CBE middle school classrooms are participating in the pilot program to apply the design thinking process in the classroom.

Teachers take part in professional development and work collaboratively to create and trial for-credit (CTF) program resources for the classroom to help deepen and broaden the CTF curricular outcomes through:

- Task design encompassing real-world challenges.
- Integrated design-thinking mindsets and processes in task design, assessment and personalization of learning.
- A community of teachers, community members and experts to build capacity around the CTF essence statements.



# Accelerator Pilot Program

## Teacher Pre-Survey Research Summary

---

Today's session and edacity resources will help me enrich and enhance my ability to teach the CTF course.

84%

---

MindFuel is a credible source of STEM education learning resources.

84%

---

I plan on using MindFuel's edacity resources.

84%



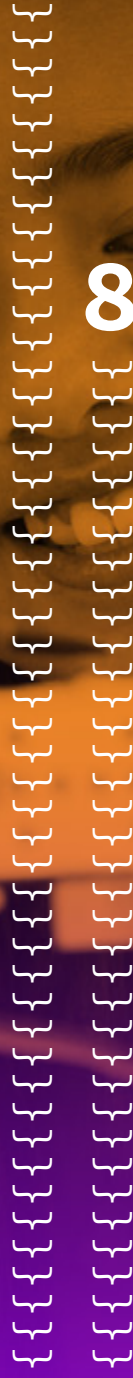
Pre-Survey  
Research Summary  
Student Responses

SCIENCE LEADS TO INTERESTING JOBS



82%

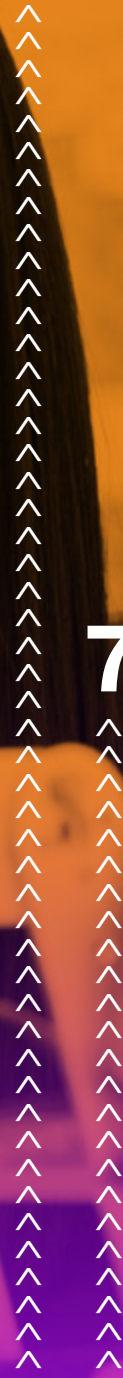
THERE ARE LOTS OF DIFFERENT CAREERS THAT USE SCIENCE



86%

THERE ARE JUST AS MANY GIRLS AS

THERE ARE BOYS IN SCIENCE CAREERS



71%



## plugin=

PhysicsFuel | Year two of a three-year research project.

---

Developed in collaboration between MindFuel and the University of Calgary's Schulich School of Engineering, with funding support from NSERC, PhysicsFuel fosters essential skills required to pursue post-secondary education and, ultimately, a career in engineering.



### Format

Direct research in three Calgary-based eighth grade classrooms.



### Developer's Notes

*PhysicsFuel goals:*

- Increase student engagement by changing prevailing attitudes towards physics.
- Energize student enrollment in physics courses at the high school and post-secondary levels.
- Promote diversity in physics and engineering courses.
- Increase female participation through relevancy and engagement of resources and tools.
- Build non-technical skills in combination with science, such as group planning, interpersonal communication and team-building, problem-solving and iterative learning.
- Highlight STEM post-secondary pathways and career opportunities.



### Findings

Both attitudinal perspectives, gender and, indirectly, learning and teaching style, impact student interest when choosing physics as a science field to study in high school.



### Next Steps

Connect physics through interdisciplinary approach by delivering digital learning resources, game creation and the design process to classrooms with a focus on learning styles to promote better understanding of the content.

# STEM Survey

## Participant Survey Research Summary

I LEARNED SOMETHING ABOUT STEM EDUCATION TODAY



100% 20

I ENJOYED THE SCIENCE CAFÉ FORMAT (SPEAKERS, INTERACTIVE DISCUSSION AND PANEL)



82%

I WOULD ATTEND ANOTHER MINDFUEL SCIENCE CAFÉ



80%

## plugin=

STEM to STEAM Science Café

---



### Format

Roundtable discussions, panel presentations.



### Overview

On May 16, to celebrate National Science Odyssey Week, MindFuel launched the **STEM to STEAM** Science Café, in partnership with NSERC, where educators, students, and community members explored the need for creativity in STEM.



### Developer's Notes

- The expert panel, which included two ninth grade students, explained ways to combine elements of the arts and sciences.
- MindFuel's manager of education shared interdisciplinary project-based learning activities and digital resources available on Wonderville.

1  
2  
3  
4  
5  
6  
7  
8  
9  
10  
11  
12  
13  
14  
15  
16  
17  
18  
19  
20  
21  
22  
23  
24  
25  
26  
27  
28  
29  
30  
31  
32  
33  
34  
35  
36  
37  
38  
39  
40

# 2017 Scholarship Recipients

**MindFuel offers five scholarships awarded to students graduating from Alberta high schools and entering their first year of STEM-related studies at an accredited Alberta post-secondary institution (university, collage or polytechnic).**

Launched in 2014 as part of MindFuel's 25th anniversary celebration, and supported through donations from our annual funding campaign, MindFuel's scholarships are an investment in Alberta's future and were created to honour the amazing work of three dedicated, long-time MindFuel supporters: Jim Gray, Anne Tingle and Dr. Arlene Ponting. In ensuing years, funding support from ASTech Foundation resulted in the ASTech Foundation Scholarship and the ASTech-GrowSafe Systems Scholarship (in memory of Dr. Terry Rachuk, PhD), added for 2018.

*The four scholarship recipients for 2017 are:*

## **Astha Burande**

*Award: Jim Gray*

*Scholarship (\$5,000)*

- Graduated from Sir Winston Churchill High School (Calgary)
- Studying at University of Alberta BSc program
- Goal: to become a surgeon



## **Tyler Bedier**

*Award: Anne Tingle*

*Scholarship (\$2,500)*

- Graduated from Notre Dame High School (Calgary)
- Studying at Mount Royal University Computer Info Systems program
- Goal: to become an IT investigator



## **Syed Rizvi**

*Award: Dr. Arlene Ponting*

*Scholarship (\$2,500)*

- Graduated from Sir Winston Churchill High School (Calgary)
- Studying at University of Calgary BSc biomedical sciences program
- Goal: to become a neurosurgeon



## **Chloe Devoy**

*Award: ASTech Foundation*

*Scholarship (\$2,500)*

- Graduated from Catholic Central High School (Lethbridge)
- Studying at University of Lethbridge BSc biological sciences program
- Goal: to become a biologist



# Scholarship Recipients' Testimonials



**“I am very grateful to MindFuel and Mr. Jim Gray for awarding me this scholarship to help me begin my post- secondary education at the University of Alberta in the Biological Sciences. This scholarship has assisted me in pursuing my education at an institution that I wanted to study at. Without this scholarship, I probably wouldn’t have gotten the chance to step into ‘new waters’. Also, it is helping me to get one step closer to my dream which is to be a doctor and help humanity. I may have an entire staircase to climb but at least I am on the first step now!”**

**Astha Burande, Jim Gray Scholarship Recipient, Calgary**

.....



**“I am truly honoured to have received this award. In addition to the financial assistance which is so greatly appreciated, it has inspired a new sense of confidence and a passion to explore information technology and all the future opportunities it holds. My hope is to one day use technology to better peace and security in our country.”**

**Tyler Bedier, Anne Tingle Scholarship Recipient, Calgary**



# Scholarship Recipients' Testimonials



**"I am grateful to MindFuel for presenting me with the Dr. Arlene Pointing Scholarship, and for continuing to support my pursuit in a competitive field like biomedical sciences. To me this scholarship is encouraging because it means there's someone else there who supports and believes in my abilities. I haven't had to spend as much time earning money for school and have been able to use that time to network with students and professors, and most importantly partake in research. This scholarship has given me the opportunity to pursue something I've been dreaming about doing since high-school. Having the opportunity to work in a lab, talk to people who share my passion, and research topics that I want to do is unbelievable, and for that I am extremely grateful."**

Syed Rizvi, Dr. Arlene Pointing Scholarship Recipient, Calgary

---



**"I would like to thank the ASTech foundation for all the opportunities they have provided me with over the last few years, as well as for the support they continue to give as I continue on to post-secondary education. They have helped ignite my passion for science and continue to fuel it. It is an honour to have received this scholarship and I plan to continue contributing to Alberta's STEM field."**

Chloe Devoy, ASTech Scholarship Recipient, Lethbridge

# Dev Team

## Board of Directors

James (Jim) K. Gray <i>Founding &amp; Honourary Chair</i>	Raja Panwar <i>Alberta Education (Retired)</i>
Lew Turnquist, <i>Chair – President, Orpyx Medical Technologies</i>	Justin Riemer <i>Assistant Deputy Minister, Alberta Health</i>
Cassy Weber <i>CEO, MindFuel</i>	Claudio Rodrigues <i>President, Retail Media Group</i>
Joon Chan <i>Partner, PwC Calgary</i>	Shahauna Siddiqui <i>Partner, DHR International</i>
Peter Kinash <i>CFO &amp; COO, India, Replicon</i>	Dr. Cindi Vaselenak <i>Superintendent, Evergreen Catholic</i>
Nancy Laird <i>Board, BDC</i>	Stephen Burns <i>Legal Counsel, Bennett Jones LLP</i>
Dr. Julian Martin <i>Policy Advisor</i>	

## MindFuel Team

Cassy Weber <i>Chief Executive Officer</i>	Danielle Ings <i>Education Specialist</i>
Alma Abugov <i>Director, Development &amp; Community Engagement</i>	Shannon McClennan-Taylor <i>Marcom Advisor</i>
Sabina Bauer Lewis <i>Grant Writer, Resource Development</i>	Magdalena Pop <i>Project Manager</i>
Brent Bawel <i>Director Programs</i>	Matthew Ford <i>QA Assurance</i>
Brad Bill <i>Executive Assistant/Office Administrator</i>	Ric Resch <i>Manager, Sales &amp; Marketing</i>
Gwen Cowan <i>Director, Finance &amp; Administration</i>	Sue Stevenson Brown <i>Senior Advisor, Resource Development</i>
	Erik Yuzwa <i>Full Stack Developer</i>

## SUPPORTERS Government



## Collaborator



## Strategic Partners

Alberta Science Network	Praxis
Alberta Education	Renert School
Beakerhead	STEM Learning Lab
Berkeley Program	TELUS Spark
Bio-Treks – Ars Biotechnica	TELUS World of Science
Calgary Board of Education	University of Alberta
Calgary Regional Teachers Consortium	University of Calgary, Haskayne School of Business
Chiila Elementary School	University of Calgary, Schulich School of Engineering
Cybermentors	University of Calgary, Werklund School of Education
First Robotics Western Canada	University of Lethbridge
Leduc #1 Energy Discovery Centre	West Island College
Madeleine d'Houet School	
Mount Royal University, Bissett School of Business	<b>Industry Partners</b>
Mount Royal University, Faculty of Science	Amino Labs
Mount Royal University, Institute for Innovation and Entrepreneurship	ASTech Foundation
National Film Board of Canada	Calgary Airport Authority
Partners in Science Education and Research	Careers in Calgary (Calgary Economic Development)
	Cybera
	FREDsense Technologies
	Imagination I50
	Partners in Research

## Gifts In-Kind

Bennett Jones LLP  
C&B Advertising  
Crowe MacKay  
Cybera  
DHR International  
Google  
Government of Alberta Infrastructure  
Hookano  
Kerkhoff Technologies Inc.  
Microsoft  
PwC  
SignCraft Digital Inc.  
Stone-Olafson  
Suncor  
UX Guys

## Donors

Alma Abugov  
Brent Bawel  
Brian & Jan McCook Family Foundation  
Alison Sunstrum & Camiel Huisma  
Canada Helps, Anonymous (1)  
Canadian Online Giving, Anonymous (4)  
Cassy Weber  
Charles Johnson  
David Hill  
Doug & Charlotte Annable  
James (Jim) Gray  
Jody Balko  
Julian Martin  
Lee Tasker Counselling Inc.  
Margaret Glover-Campbell  
Michelle Kasper  
Ontracks EAM Consulting  
Peter Kinash  
Robin Winsor  
Sabina Bauer Lewis  
Sue Stevenson Brown  
Suzanne Pichett

```
<!DOCTYPE HTML>
<HTML LANG="EN-CA">
<HEAD>
<STYLE>.CTA{}#CUSTOM-LINKS-
EDIT{}#CUSTOM-LINKS-EDIT-DIALOG{}.
    {}#DOOD{}.FKBX{}#FKBX-
TEXT{}.FLOAT-UP{}.HIDE-SF{}
    {}.LEFT-ALIGN-ATTR{}.
LIGHT-TEXT{}.MD-ICONS{}.MV-DOT{}.
MV-LEARNING-BG{}.MV-FOCUSED{}
    {}.MV-LOCTHUMB{}.MV-
LOCGRADIENT{}.MV-LOCTITLE{}.MV-
LOCFallback{}#MV-STEM{}
    {}.MV-X{}.MV-X-INNER{}.
BETA{}.PRM{}MAPLE-LEAF-MISSION{}.
PT{}.QUERY-SUGGESTION-CONTAINER{}.
RIPPLE{}.RIPPLE-CONTAINER{}.SPACE-
RIPPLE-EFFECT{}                {}@-
ENGAGED KEYFRAMES INIT HIDE {0%
{OPACITY:0}99%
```