

Cold Lake Makerspace

Alexander Cordes, January 14 2020

What Is A Maker Space?

- A maker space provides the tools needed to build and learn by doing.
 - First you learn to tinker and you tinker to learn
 - A skill we have as toddlers that we can relearn
- Makers learn what is needed to achieve their goal by designing, testing and iterating their design. They naturally learn how to use the engineering design process

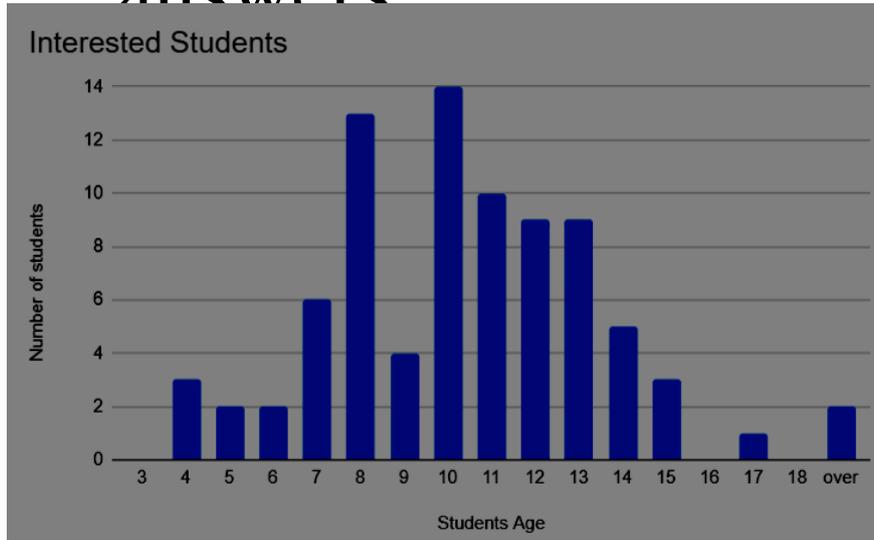
How Can Cold Lake Benefit?

- After school program for kids 8-18 to learn about engineering by designing and building things (age 4-8 with a parent attending)
- Focus on using recycled materials and green engineering
- Great way to get kids interested in engineering (go to university)
- Great alternative to after school sports programs
- Give back to the community with low cost/free classes for low income families

Initial Interest in Cold Lake

•83 people interested

– From a Facebook post on Cold Lake questions and answers



Alex Carl shared a link.
January 6 at 1:53 PM

Hi, I want to start an after school maker program where kids 8-18 years old learn about engineering by designing and building stuff (includes 3D printing, cars, planes, robots and programming and lots more). I am an engineer with 11 years of prototyping experience. The after school program is focused on using recycled materials when possible so students can bring their projects home. I had a similar program in Europe please see the link below.

Classes would be between 2 and 6 pm and on Saturday. One hour a week would be between \$50 to \$100 a month including supplies. Class sizes would be small.

If you are interested please just comment with the ages of the children so I can get an idea of how much interest there is here.

UNDEADENGINEERING.ORG
After school programs — Undead Engineering
"...we signed up for the fun to continue every Friday! My son loved it. Alex is just great with kids, I have never met someone who manages to answer every single question (and he gets

Caryl Lamothe, Cheryl Lamothe and 79 others

134 Comments

My Engineering Experience

• Total over 11 years of professional engineering prototyping experience over a wide range of fields

• Aerospace Engineering degree Ryerson University in Toronto

• Canada Bombardier

- Lead Landing gear test engineer C-series aircraft

• Mexico Engineering Consulting

- Low cost renewable energy solutions for third world countries
- Teaching English as a second language

• Czech republic Honeywell

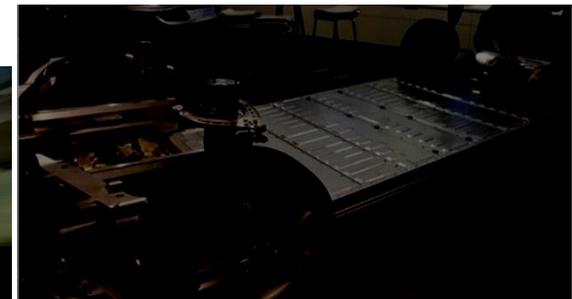
- Lead engineer for team creating Ferrari F1 Turbocharger prototype

• Austria AVL

- Lead Engineer for team developing robotic electric car battery testing concept

• Netherlands Hardt Hyperloop

- Senior Engineer for Hyperloop prototype



My Previous Maker space experience

- Ran After school maker program in Europe for 30 kids (age 6-14)
- Ran adult maker space at startup incubator
 - Collected enough interest was able to get free space
 - Engineers from different startups worked together and shared ideas



My Maker space Example Projects

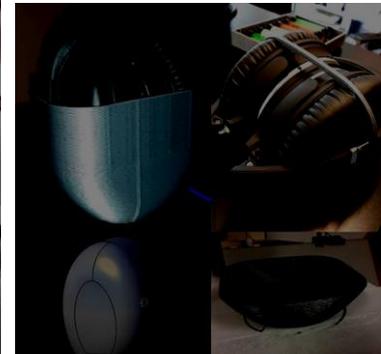
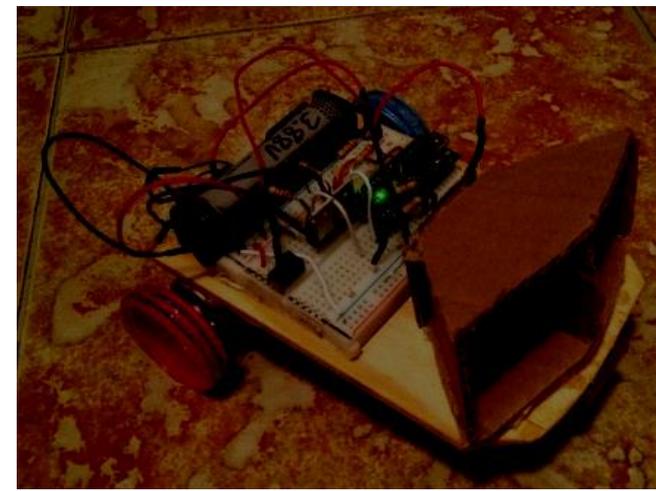
•Robots

- Arduino based robots that student program

•RC car

•RC airplane

- Can be made of cardboard

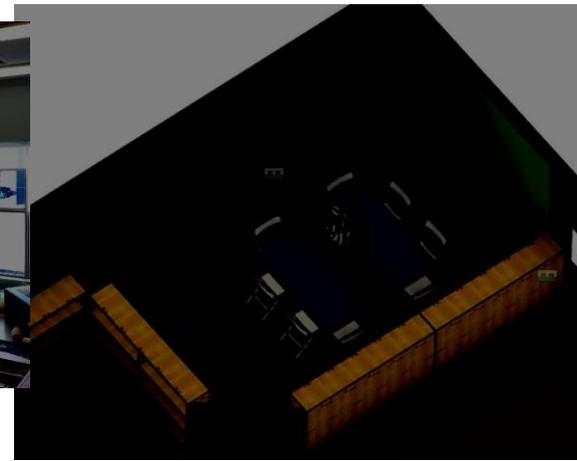


3D printing

Current Status

• Completed the following:

- Assessed interest in classes:
 - Initial Facebook post
 - Structured plan with start date and funding needed before more advertising
- Space, agreement with the Library
 - Library will supply a space, electricity,



Business Plan

Start Schedule

1) Three weeks of discounted introductory classes, starting March 2nd, 2020.

2) Unfortunately, there isn't enough time to be prepared for a March break camp, but will host one next year.

January						
Monday	Tue	Wed	Thu	Fri	Sat	Sun
		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		

February						
Monday	Tue	Wed	Thu	Fri	Sat	Sun
					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	

March						
Monday	Tue	Wed	Thu	Fri	Sat	Sun
						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					

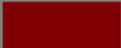
April						
Monday	Tue	Wed	Thu	Fri	Sat	Sun
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30			

Legend	
Planning	
Set up in space	
Introductory classes	
march break	
normal classes	

Program Hours

- Only possible during library opening hours
- I will start with after school and weekend programs
 - 18 hours per week, 6 students per class, 108

Time	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
10:00 AM	morning program	morning program	morning program	morning program	morning program	weekend program
11:00 AM	morning program	morning program	morning program	morning program	morning program	weekend program
12:00 PM	Class prep	Class prep	Class prep	Class prep	Class prep	weekend program
1:00 PM	Class prep	Class prep	Class prep	Class prep	Class prep	weekend program
2:00 PM	Class prep	Class prep	Class prep	Class prep	Class prep	weekend program
3:00 PM	Class prep	Class prep	Class prep	Class prep	Class prep	weekend program
4:00 PM	after school program	after school program	after school program	after school program	Class prep	
5:00 PM	after school program	after school program	after school program	after school program		
6:00 PM		after school program		after school program		
7:00 PM		after school program		after school program		

Legend	
after school program	
weekend program	
morning program	
Class prep	

Cold Lake Maker Space

- 6 student maximum under 12
- Students focus on designing, assembling and testing parts
 - Most of the manufacturing done by machines
- Machines designed and build by myself and students
 - Start with 4x 3D printers and 1x laser cutter

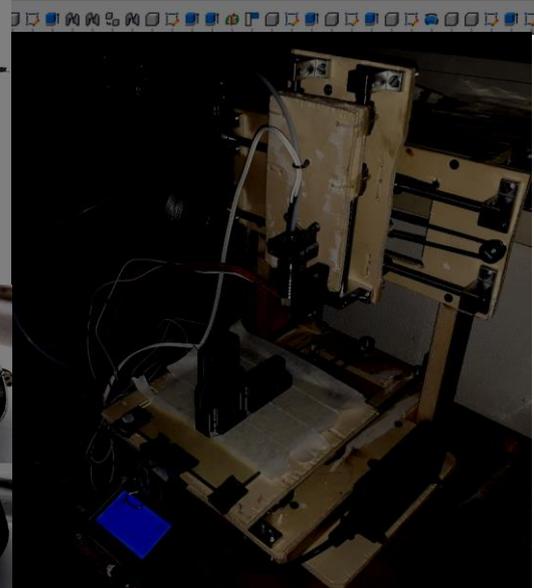
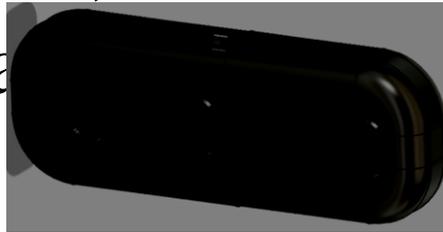
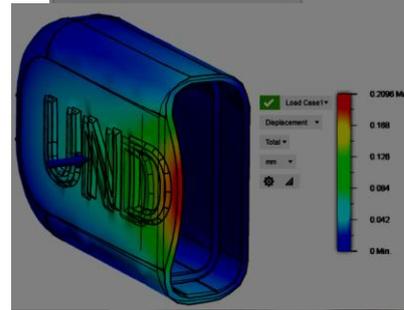
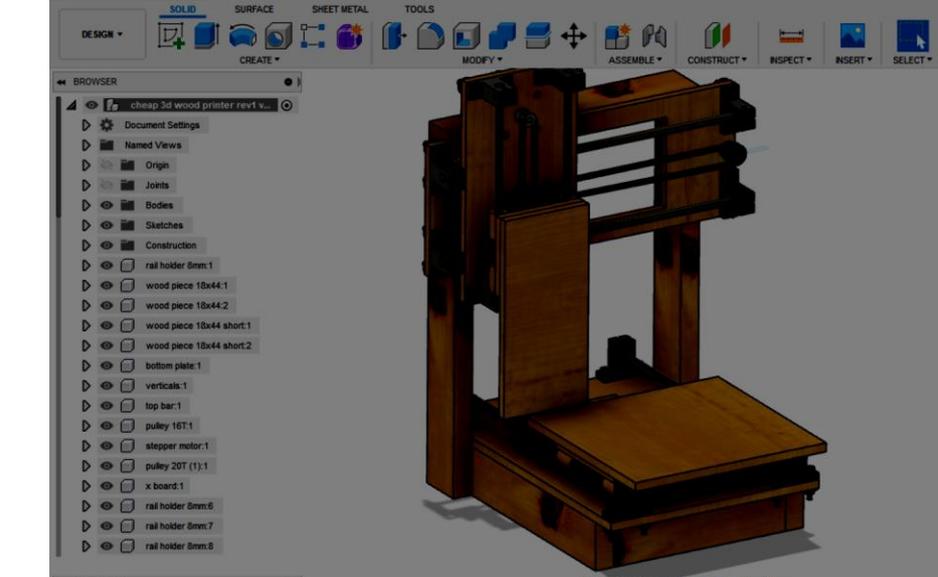
Next step is to build a CNC

Business Plan

- Cost \$70 per month one hour per week
 - Low cost options for low income at risk families

Professional Design Software

- Fusion 360 free for anyone to use
- After school program will teach students how to use software including how to design parts to 3D print, assemblies, stress analysis and much more



Grants

• Alberta Community Grant program January 15 deadline notify July

• Abcee

- Devon: STEM School Grants Designed to help educators provide strategic, inventive and hands-on science instruction to spark students' interest in science for junior and senior high schools. Amount: Up to \$5000. Deadline: Spring each year.
- Croud foungriner
- Gofund me, DonorsChoose, PledgeCents, IndieGoGo, Kickstarter

How Cold Lake City can help

1)Support to cover initial costs

2)Advertisement

- Newspaper, TV, Advertise in schools, list of after school activities

3)Help Identifying low income families

- Transportation from reserve?

4)Support with opening event

Summary

.Complete

- Interest for classes**
- Space**

.Still needed

- Funding for startup costs**
 - . Setup costs**

Questions???

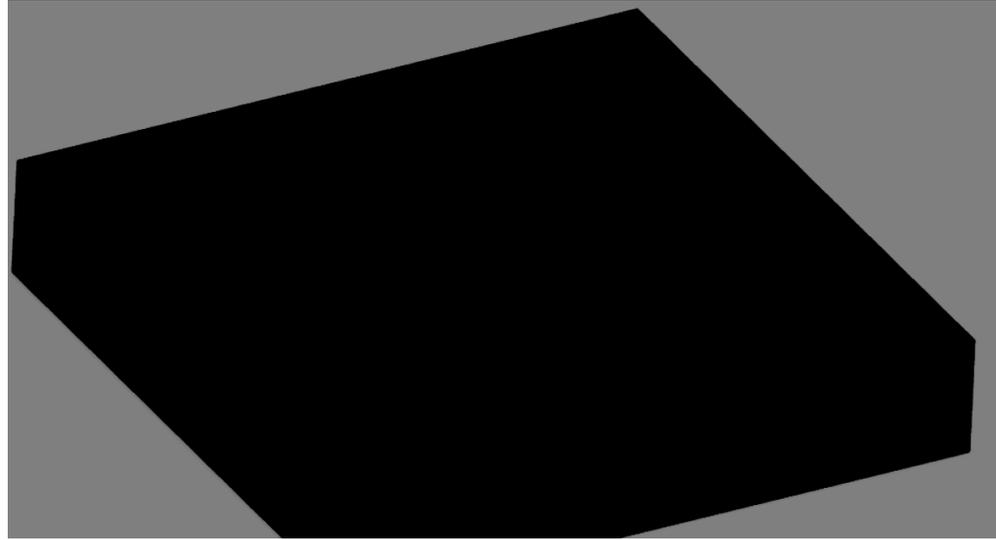
Extra

Contact So Far

- Bev elementary maker space and summer camp
- Director library
- Thriftology
 - Support by providing electronics for students to take apart

Library Space

- about 300 f²
 - 20x15ft
- Great central space
- Half height door to keep people out
- Get advertising people see space, kids and parent come



< January 2020 >

Calendar

List

Sun	Mon	Tue	Wed	Thu	Fri	Sat
29	30	31	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	1

6:00 PM
Council -
Regular
Meeting

6:00 PM
Council -
Corporate
Priorities
Committee

6:00 PM
Council -
Regular
Meeting

MAKER SPACE



D.I.Y. makerspace at the South Branch.

Supplies and instructions provided, bring your creativity.

10:00AM-2:00PM on:

Thursday July 4th

Thursday July 18th

Thursday August 8th

Thursday August 22nd

ADULT

CHILDRENS

MAKER SPACE

MANGA

NEW CANADIANS

SENIOR

SUMMER READING CLUB

ACTION STEPS

 My Tracpac Account

 New Books

 New Movies

 New Audio

<https://www.coldlake.com/content/public-participation-0>

Delegation Restrictions:

Delegates have a maximum of 15 minutes for their presentation, exclusive of questions from council
Any handouts must be included with the delegation application, including a hard copy of any power point presentations
An electronic copy of any PowerPoint presentations must be provided 24 hours in advance
Only two speakers per delegation are allowed
Delegations will not be heard:

How to make your delegation experience rewarding:

Be consistent in your message
Be patient with the process and respectful of the formality of the process and the time allotted
Be prepared for a non-answer: Council may request more information
Indicate the date and time you require support
Ask about next steps
Once a decision has been made, you will be contacted by the City.

Questions?

Additional information

1)Website

2)Instagram with projects

3)Linkedin

•Resume and job references

4)Facebook page