OSE Dev Team Meeting Agenda
Tues March 19, 2019
2 PM CST USA time

1. Agenda - Progress Reports
   a. **Marcin** - OS Golf Cart; Open Source Everything Store Collaboration Specification (governance)
   b. **Jen** - http://www.provident-living-today.com/Alternative-Refrigeration.html
   c. https://www.treehugger.com/kitchen-design/fifty-buck-fridge-keeps-your-food-cool-without-electricity.html
   d. C
   e. **Jon** - wrapping up D3D OH firmware and wiring (Still) 3/26 ABSENT AT DAY JOB update on continueous printing / ejection
   f. **Nathan** - Waiting for feedback on 1:20 model
   g. ping up wiring, getting firmware loaded. Some questions.
   h. **Abe** - D3D PVC Mini Assembly - top X-axis? - clamp
2. **Meeting Maintainer/Jen**
   i. Embed meeting on Dev Team Log, including YT, notes, and edit link
   ii. Insert current Effort Graph-
   iii. Post notes and video on OSE Workshops FB page
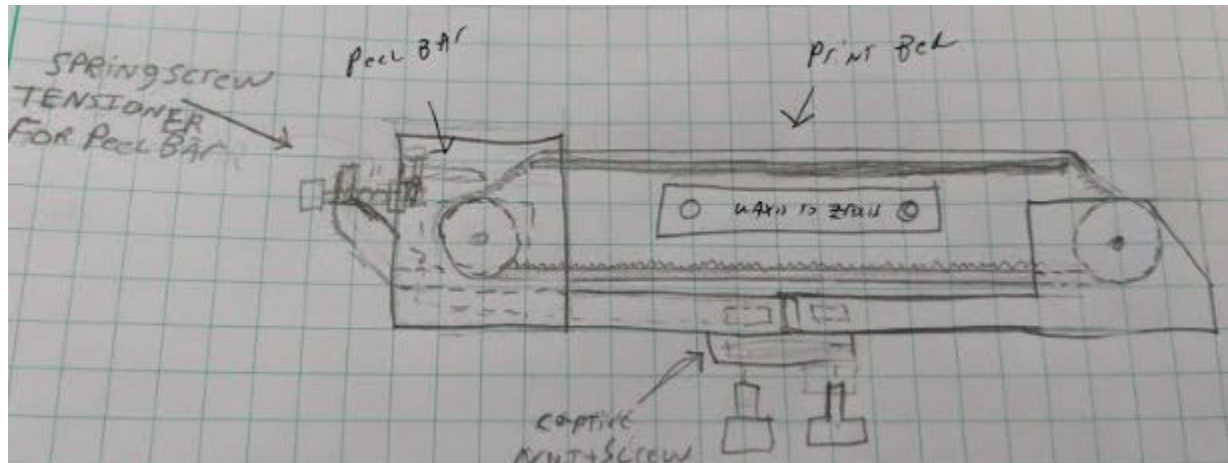
Insert current effort graph here

Manufacturing Execution Systems
With Jon Takacs

Small automated 3D Printer-based enterprise with 100% open source hardware and software toolchains.
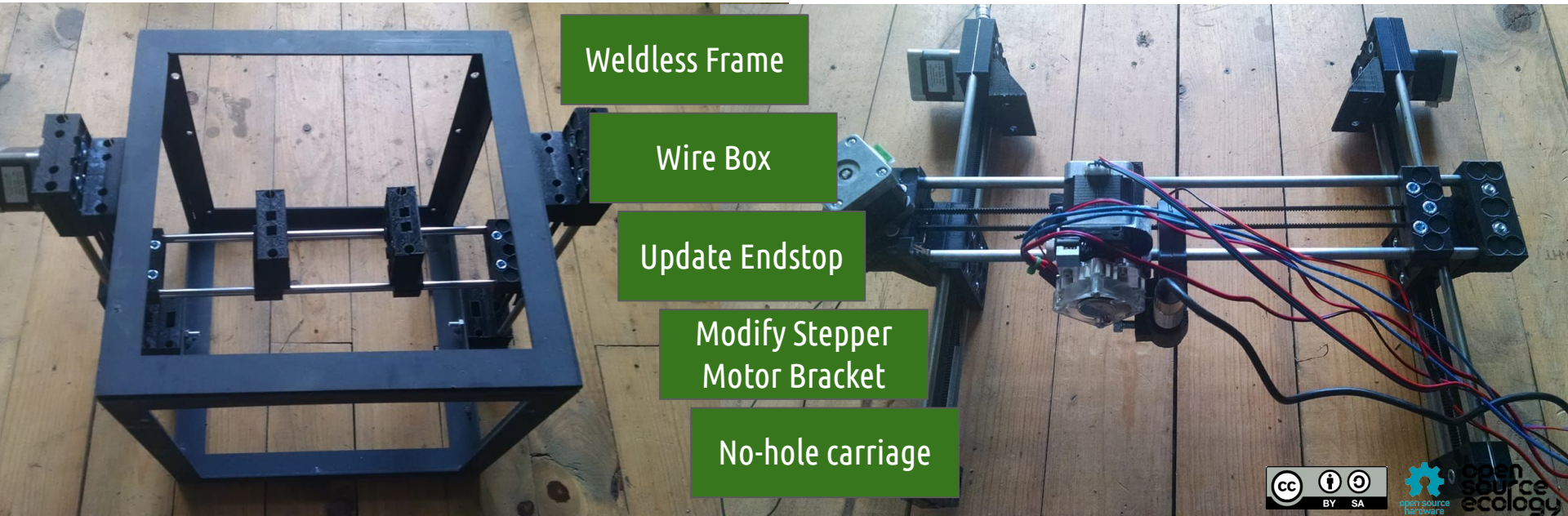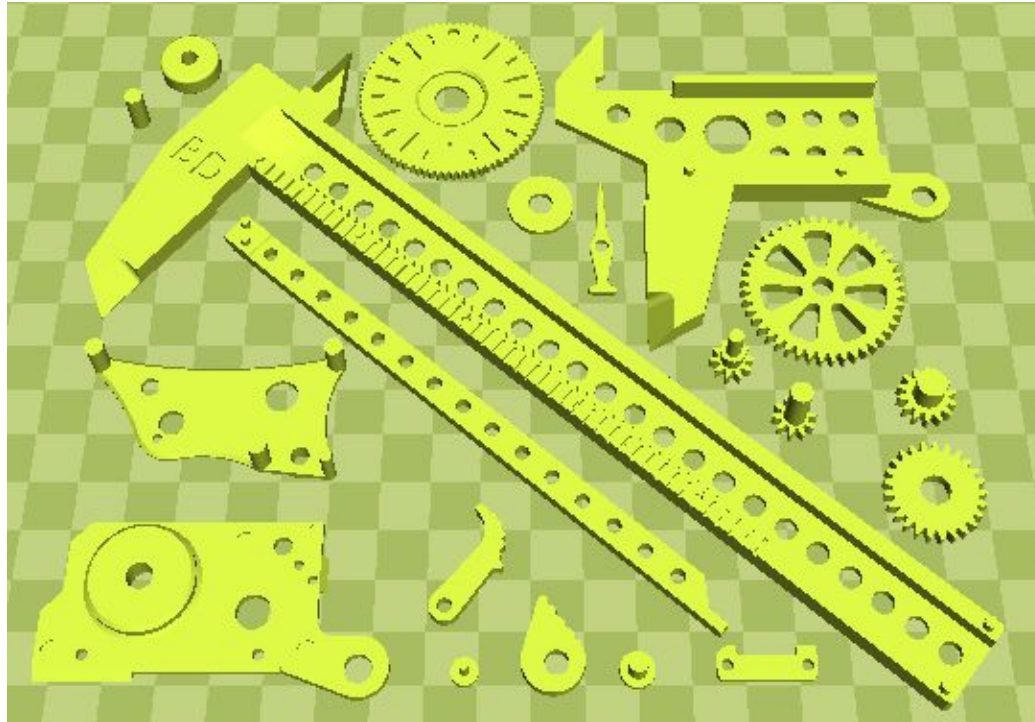
Concept peeler:

D3D v19.02 Production Engineering

- 12 printer 1-day production engineering
- Electronics Quality Control

Weldless Frame

Wire Box

Update Endstop

Modify Stepper Motor Bracket

No-hole carriage

Detail Prints - 3D Printed Calipers

- 12 printer 1-day production engineering
- Electronics Quality Control

3D Printer Production Engineering

Weldless Frame

Wire Box

Update Endstop

Modify Stepper Motor Bracket

No-hole carriage

Double Heater Block

3mm Rubber Extruder

Brackets that hold the corners. This assresses XY, but Z is in middle so it's weakly supported. This should not matter, and we can benchmark against a welded frame.

~~May be done as Spiralize Contour.~~ Holes are required. Can't do in Spiralize contour mode.

Printing without Cleaning

For getting wiring out of way of X endstop

Through wires didn't work

Update Build Instructions

Verify Detail Print

Verify Self-Replication with 0.8 mm nozzle

Update CAD

OSES Collaboration Specification

- MES
- Opensourcewarehouse.org
- Osmicrofactory.org
- Opensourceecology.org
- Wiki
- Buy vs Buy Production
- Distributive Enterprise
- [[OSE Specifications]]
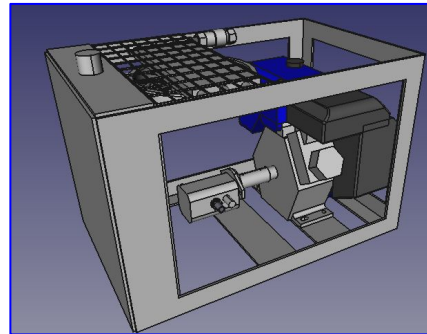
Open Source Golf Cart
design sprint Friday

Specs:
- Max speed 20 mph for
- 14 or 15 typical industry standard
- Walking is 3 mph

8'

5'

Golf Cart Body

Power Cube 20x20x30"

Standard Dimensions: 4'x8'

OSE skid steering golfcart: 5'x6'

Takacs log

- Auto eject - feature one is simple G code that we could custom make per print (to start)
  https://www.youtube.com/watch?v=KxU3ElVILPw
  - If this works great, great. Then I make a python post slice script for cura that checks the model for an area where the print does not occupy to lower the head a few cm to then drive forward and push it off.
- If this less complex method fails, I have a design here for an attachment to the print bed. Basically there will be a large PVA (or whatever that fancy plastic is) sheet that is expanded to have timing belt attached at the sides. This will be moved by stepper forward off the sheet and will be exposed to a peel bar to detach any print or bib material. Also opens up possibility for continuous printing head variants.
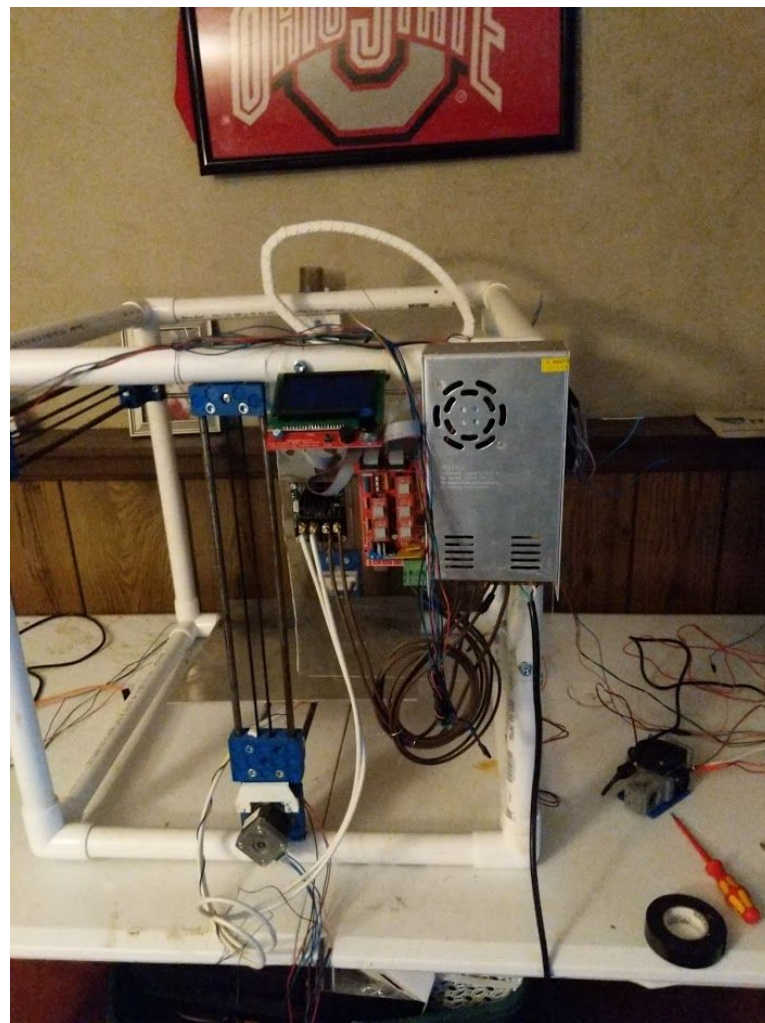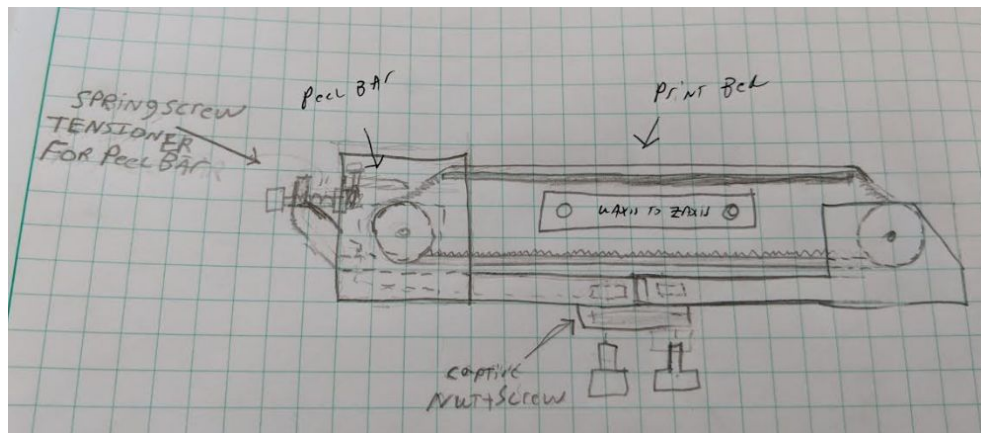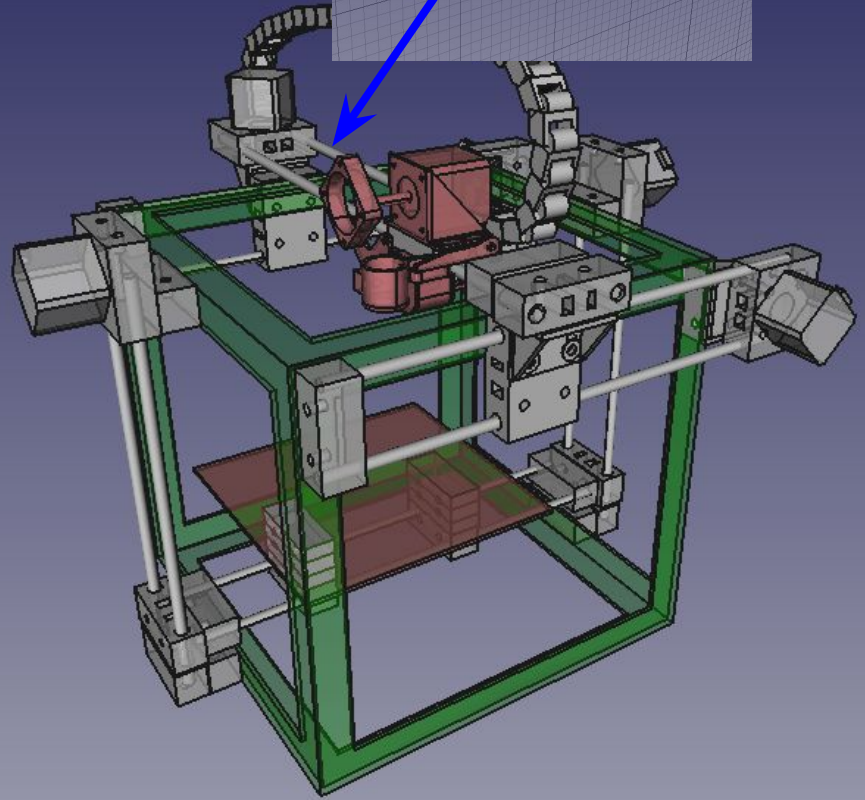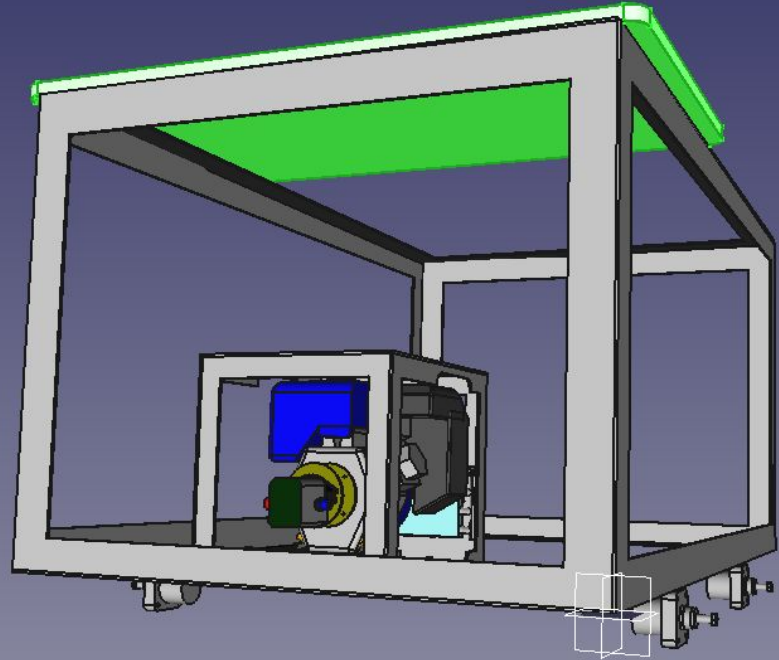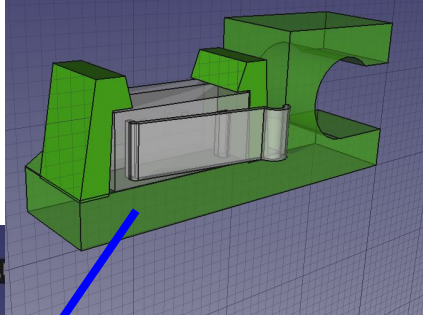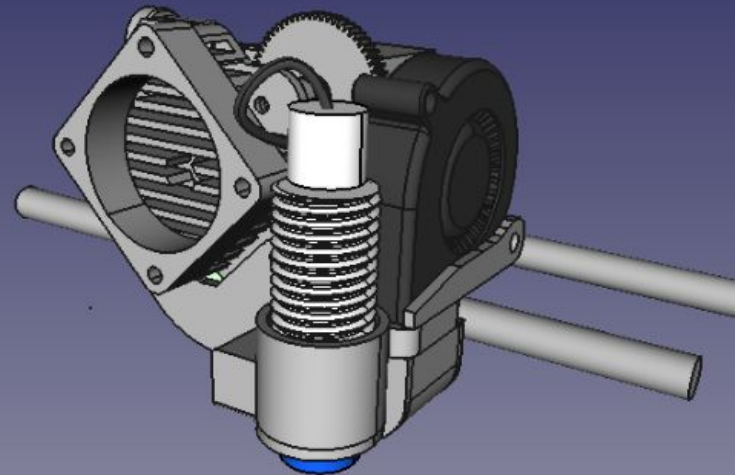
Notes

Marcin:
- [D3D v19.02](#)
- William - [open source simple extruder](#)
- [Clamp](#)

https://wiki.opensourceecology.org/wiki/D3D_v19.02

Abe

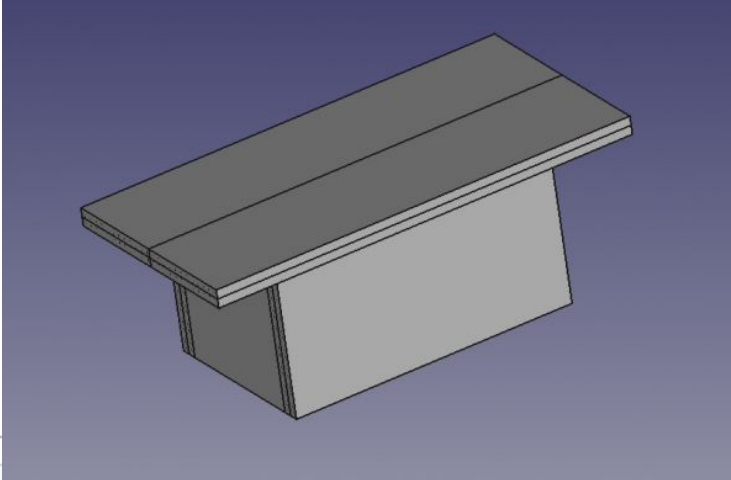- [Gitlab D3D Mini PVC Parts and Assembly](#)
- [Abe working doc](#)
  - Extruder options and upgradability of PVC/plastic frame D3D's.
  - Looking v19.02 parts for possible compatibility with Mini.
  -
- Next priorities
  - More D3D Mini PVC assembly testing in CAD
  - Continue exploring python for freecad
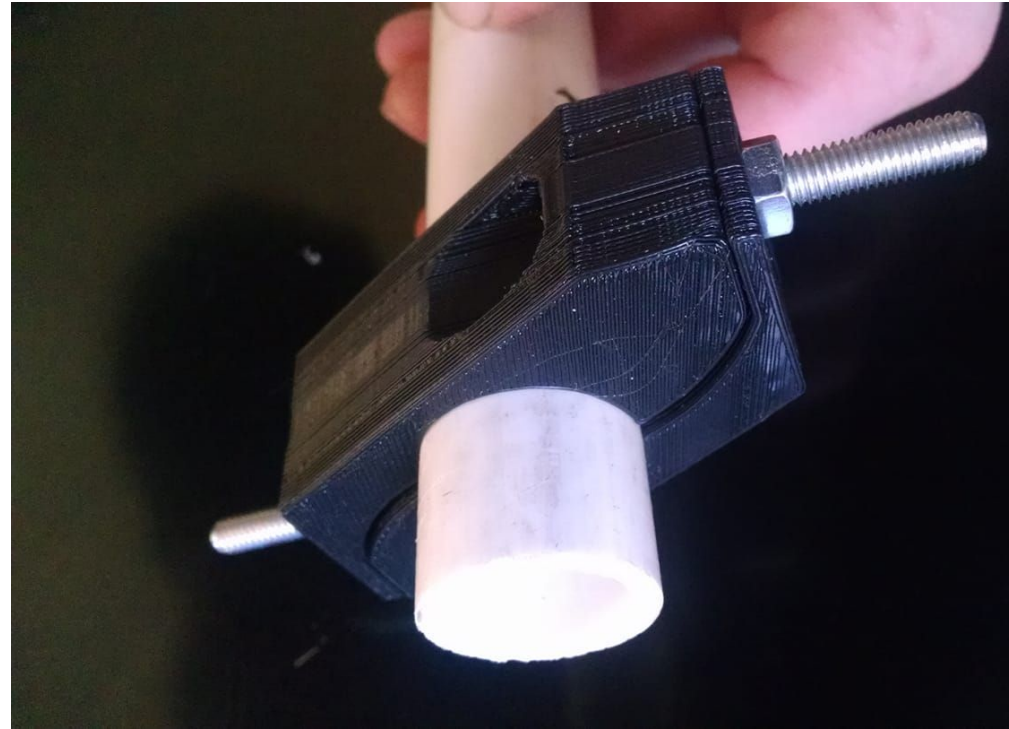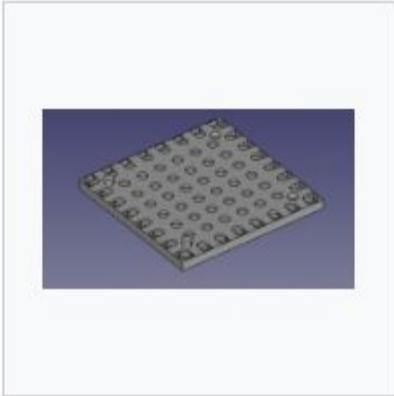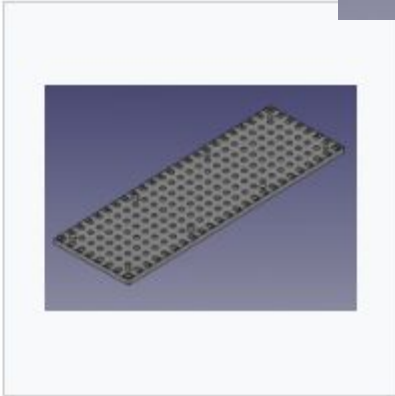
Nathan - Seed Eco Home Model

Part Library

My New House

Part Library [edit]

4x8x6.5" Insulated Exterior Wall File:Wall-4x8x6.5.fcstd

**4x4x6.5" Insulated Exterior Wall** File:Wall-4x4x6.5.fcstd

4x12x6.5" Insulated Roof Panel File:Roof-4x12x6.5.fcstd

Notes

- **Nathan** - 3D printable OBI house models
  - [Nathan Log](#)
  - [Small magnets as connectors](#)
  - Scale - is called ½" scale - ½" = 1'
- **Eric** - https://sciencefestival.msu.edu/Event/View/1165
  - Going to build volcano heater nozzle
  - 70C for bed adhesion
- **Jen** - homeschool programs to join project
  - Open source hackathon in North Seattle Community College
- **Abe**
  - [D3D Mini PVC](#)
  - Model to determine if axes are clear
  - Bolt length and nut catchers
- **Marcin**
  - [Book - Solar Car](#)
  - Golfcart open source. [Motors](#).
  - Control Code
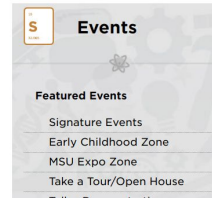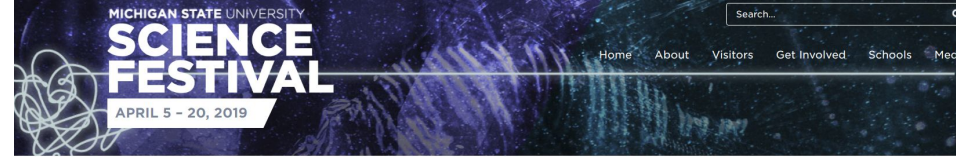
OSE Clubs

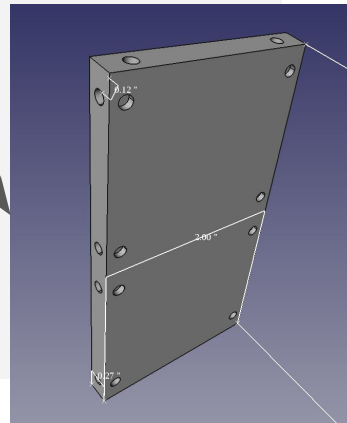1. **1 Year Online Curriculum for High Schools, Home schools, Universities**
    a. **Many participants**
    b. **Used to recruit for OSE Clubs, Dev Team, Workshops**
2. **Can we achieve 10% conversion to OSE Clubs?**
    a. **Market this actively to local high schools and beyond**

DC/DC Converter Module

● ~$35 for parts shown here
● 5V - 60V input and output (can change input by factor of ~3)
● 30A max current

Next steps:
● order parts and build prototype
● choose microcontroller and display
   ● ARM Cortex M0 with 7-segment display could work, cost ~$15
● write code for sensing voltage and controlling potentiometer

Instructable on Buck Boost Converter

https://wiki.opensourceecology.org/wiki/Adjustable_Power_Supply_v18.08#Buck-Boost_Converter

Can we measure here directly with Arduino?
- yes but input resistance of Arduino would be in parallel
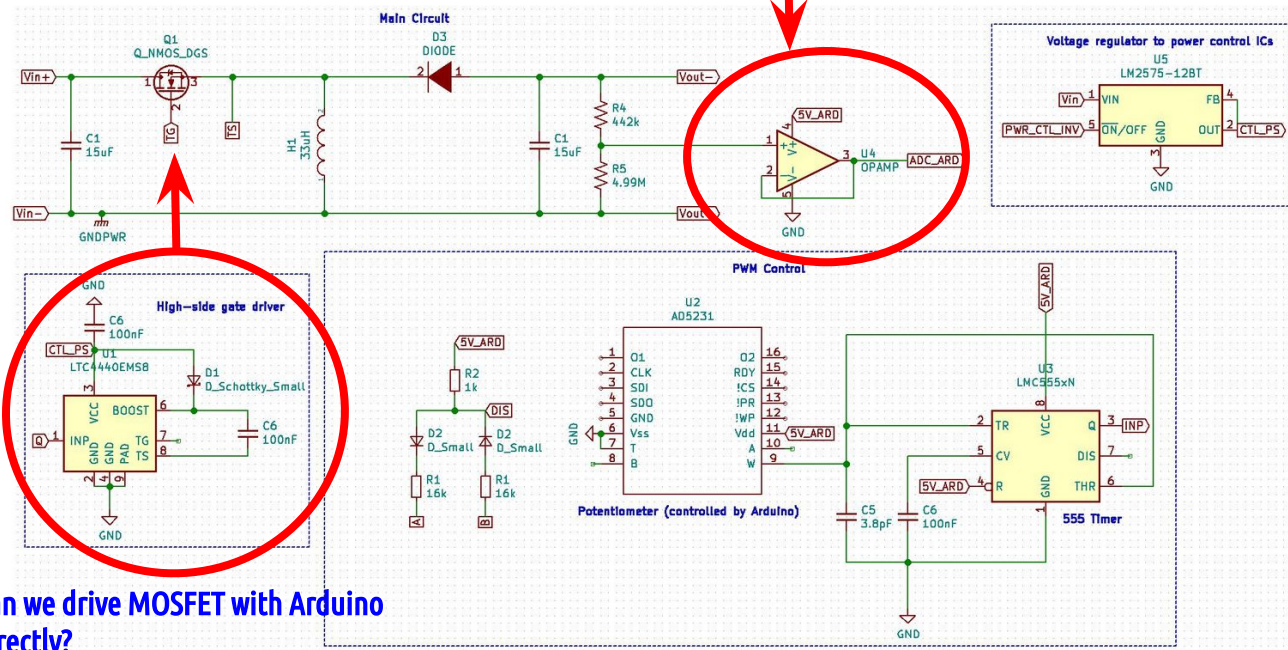
Can we drive MOSFET with Arduino directly?
- Maybe with P-channel FET, but they tend to be slower and have more resistance to current flow

Jen update and questions

Homeschool communications and progress report

Alternative economic and governance projects
1. Cultu.re- not financial, blockchain based, free associations of individuals- I would like to invite Toni Lane to speak briefly at a meeting soon- It seems she's done a lot of the self-governance legwork. WE have the hardware to build the civilization. Her project has the structure.
2. Michael Tellinger's Ubuntu project- Can mesh cashless with current governance systems
3. https://wiki.opensourceecology.org/wiki/Alternative_Economy_Projects

Eric/Poli

Successful prints. Hopefully get good prints again today.