Athenry

Notes by Michael Madden & Kevin Madden, CoderDojo Athenry, 2019

A HackerSpace in CoderDojo!

What the Hackers Do

Not About Law-Breaking!

- Hack things together
- Take apart to understand & improve

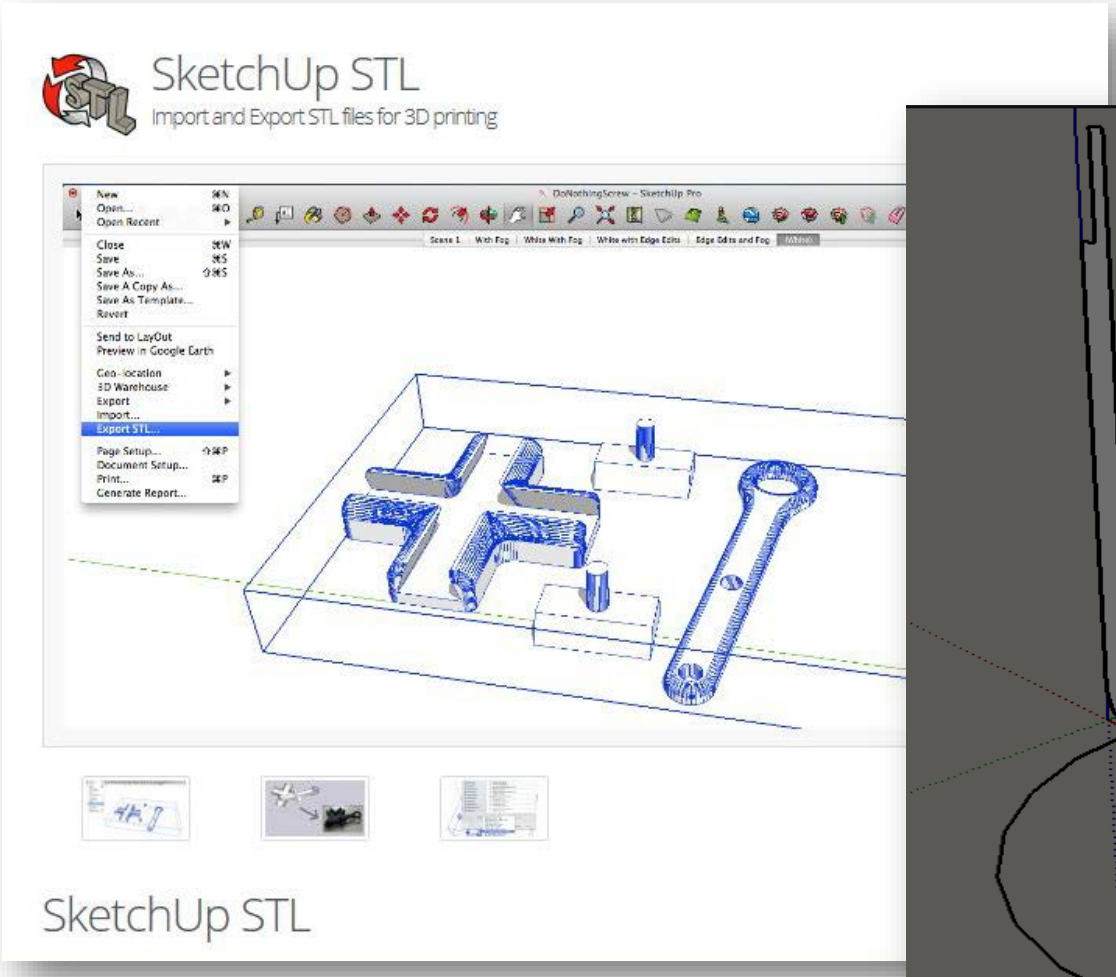
Work on Projects

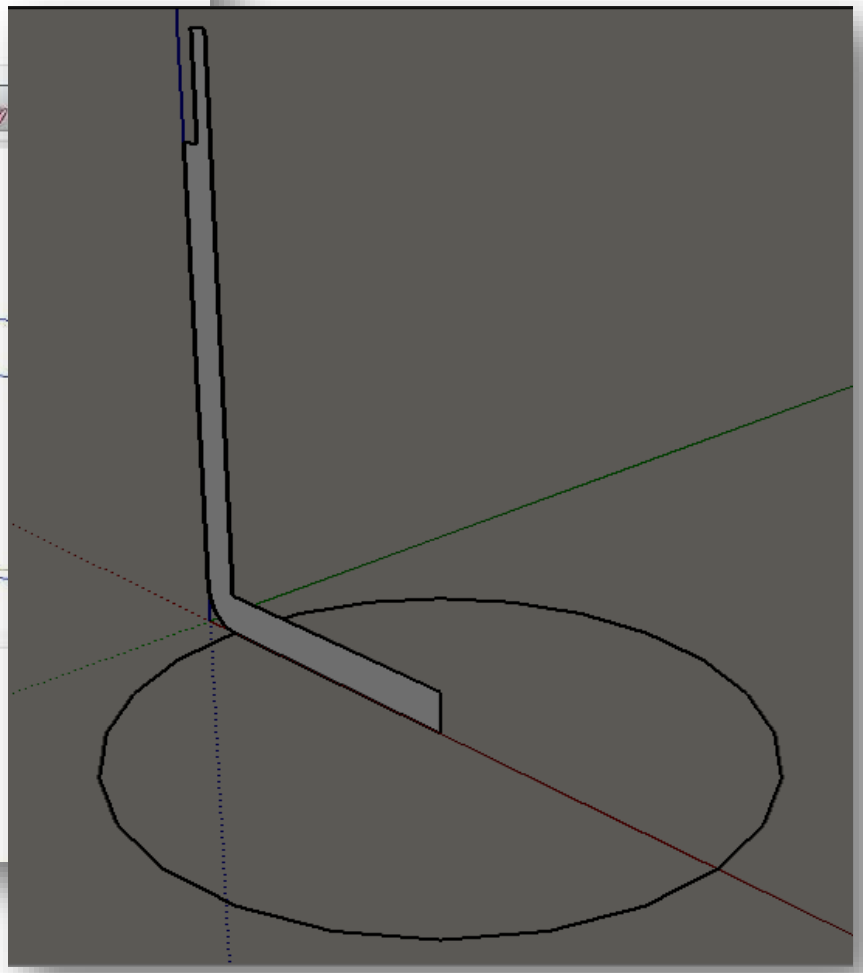
- Bring your ideas; we'll try to help
- NOT based on weekly tutorials

For Advanced Members

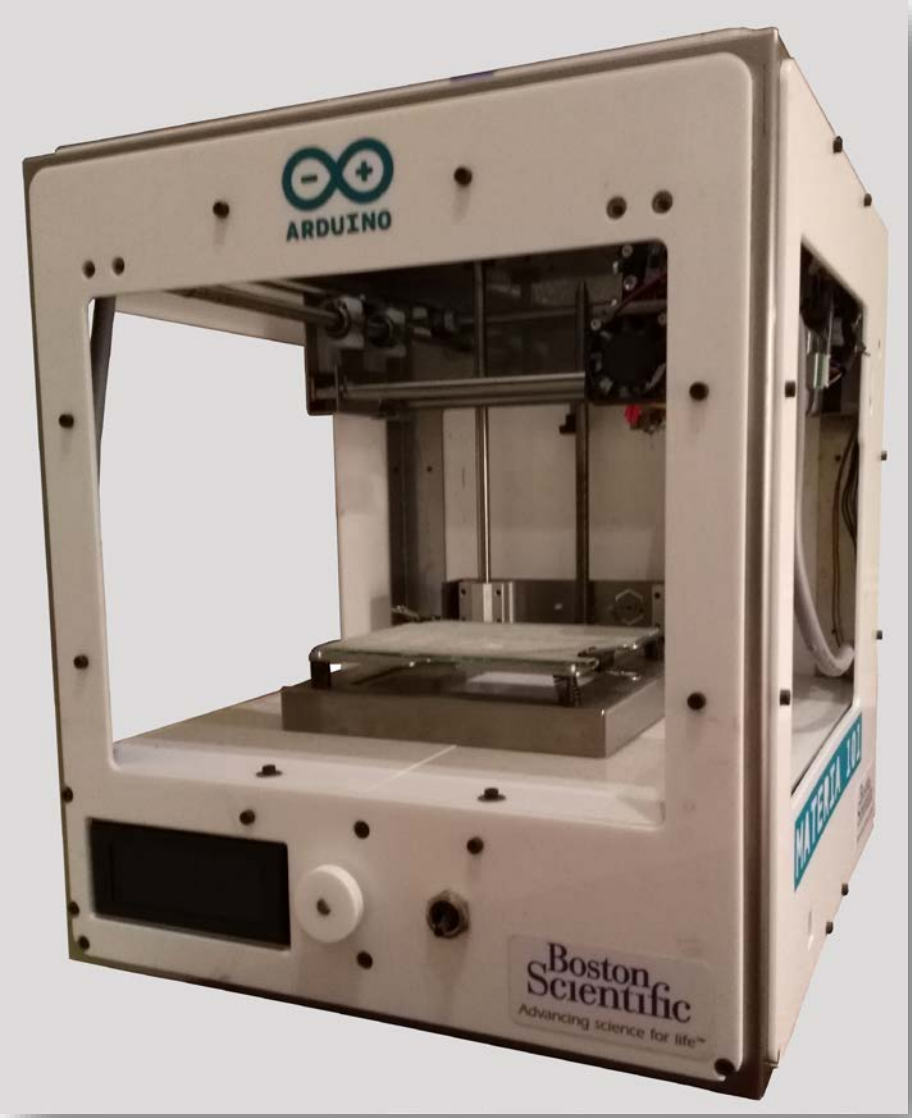
- Have completed most/all other groups
- Build on ideas from other groups

3D Modelling!



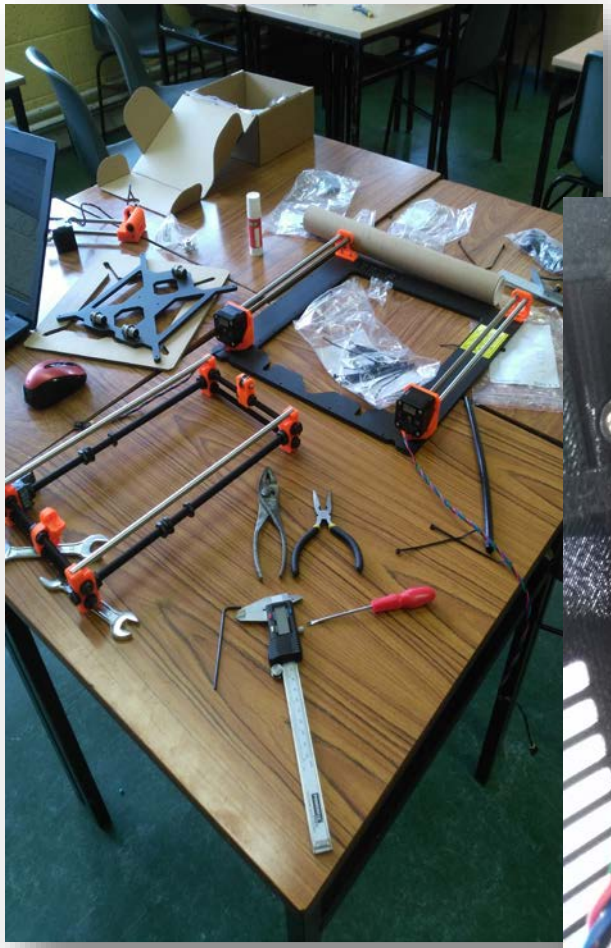


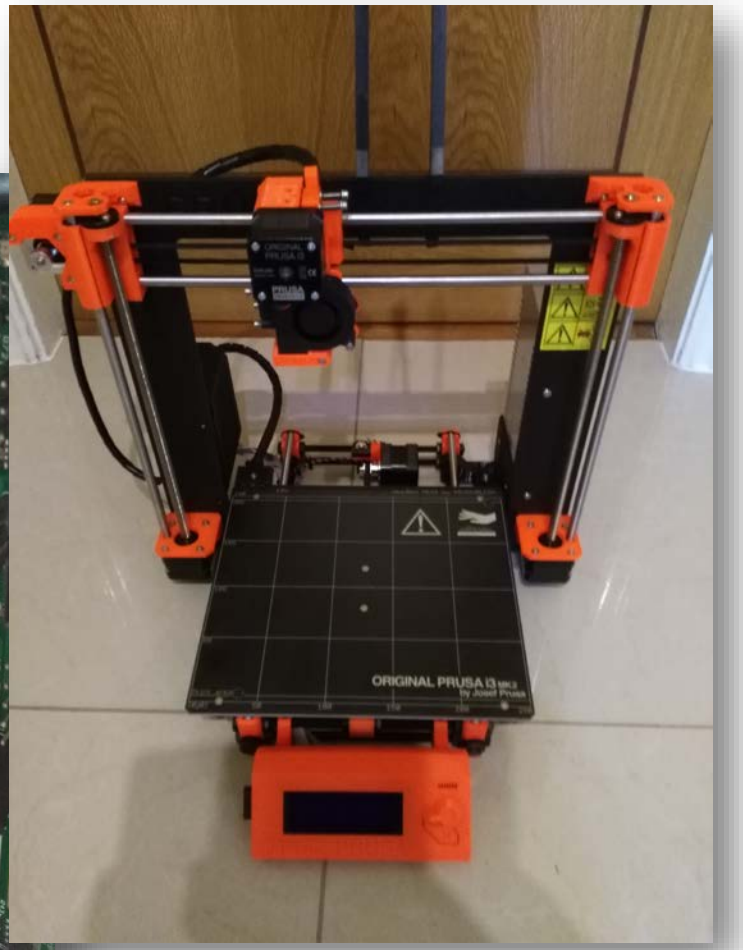
3D Printing!



Boston Scientific

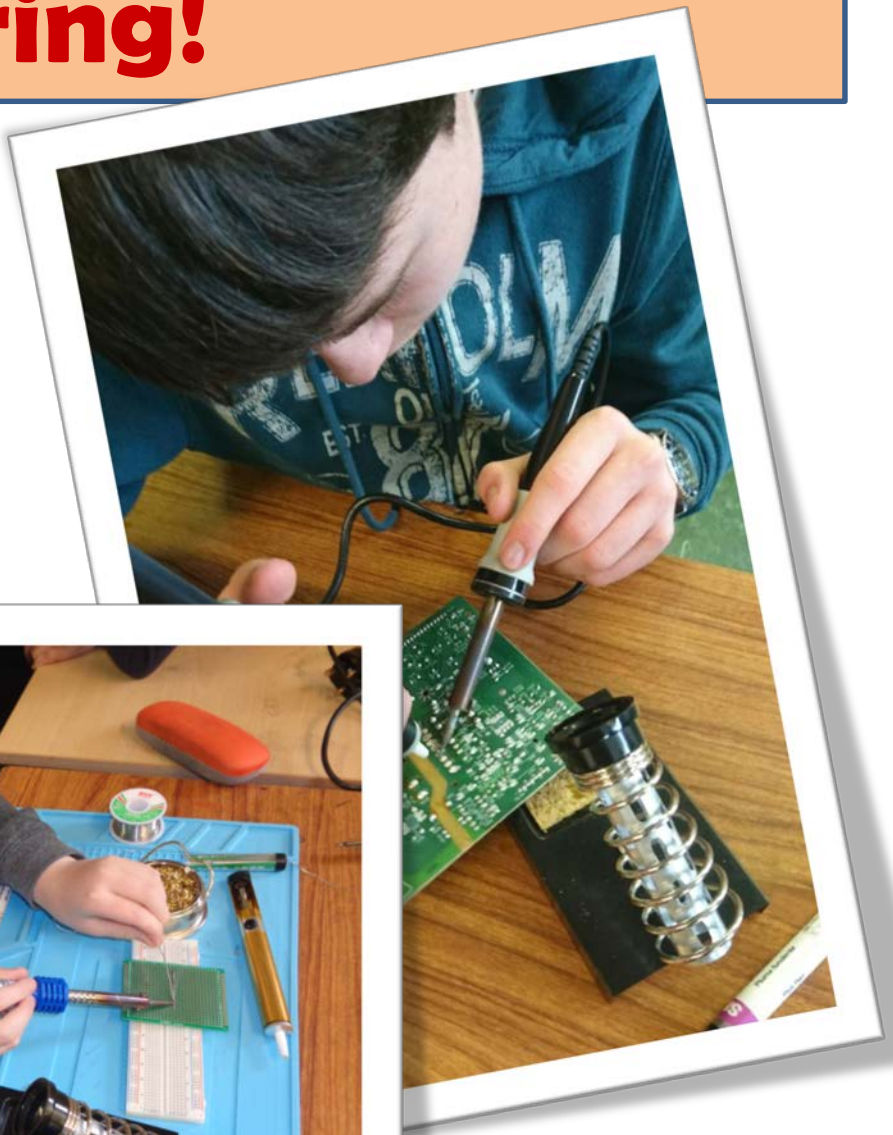
The 3D Printer Hackers Assembled!



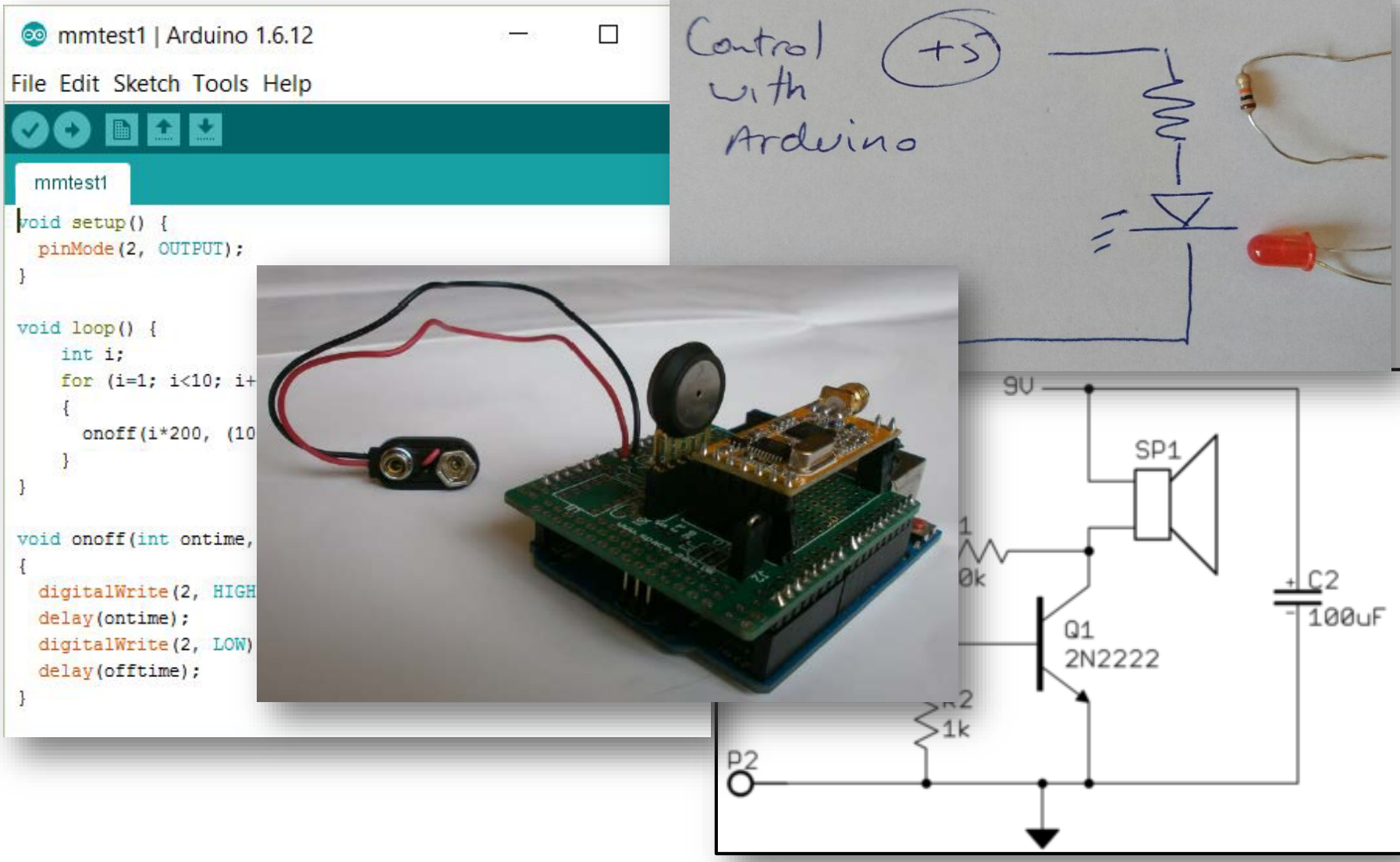


Disassembling Stuff!

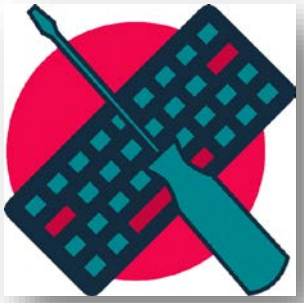
Soldering!

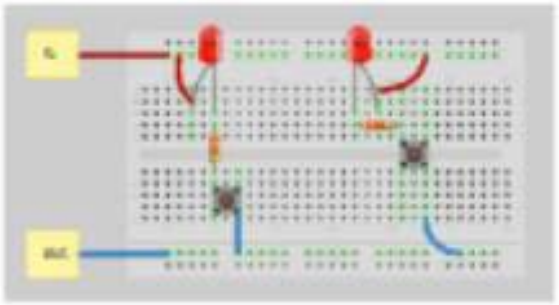


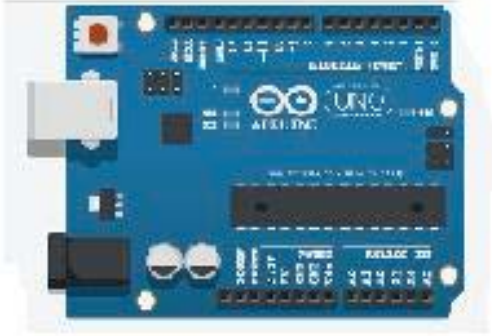
Arduino & Electronics!

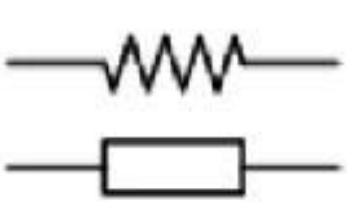


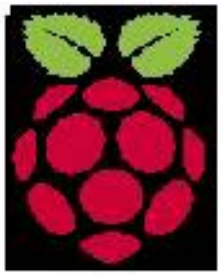
Bodging with Raspberry Pi!











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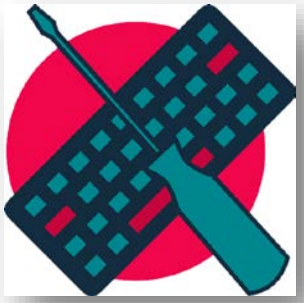
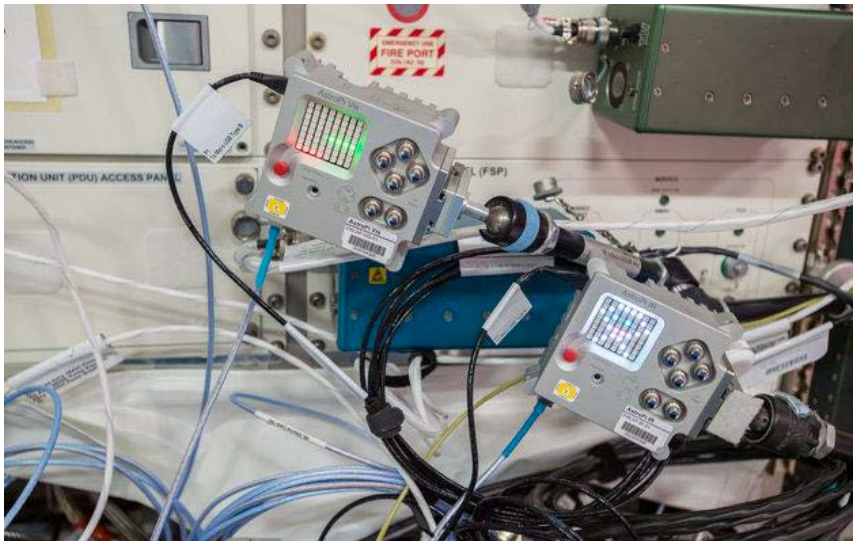
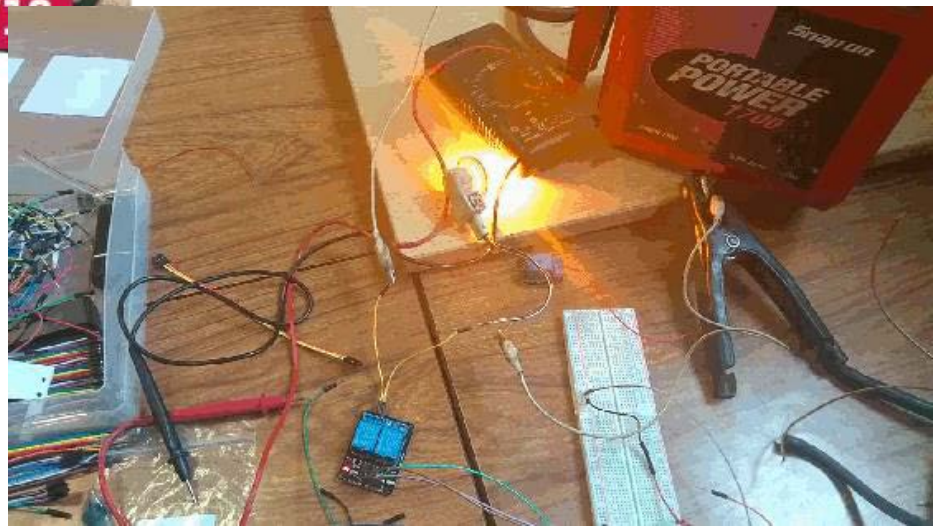






Making New Stuff!

2018-19: BattleBots

Both bots designed, built and coded from scratch by the CoderDojo Athenry Hackers!

Hider Bot:

- Human driver
- Had a balloon

Seeker Bot:

- Autonomous: no human driver
- Had a scalpel to pop the baloon

HiderBot

Arduino microcontroller

Human driver: RC transmitter & receiver

SeekerBot

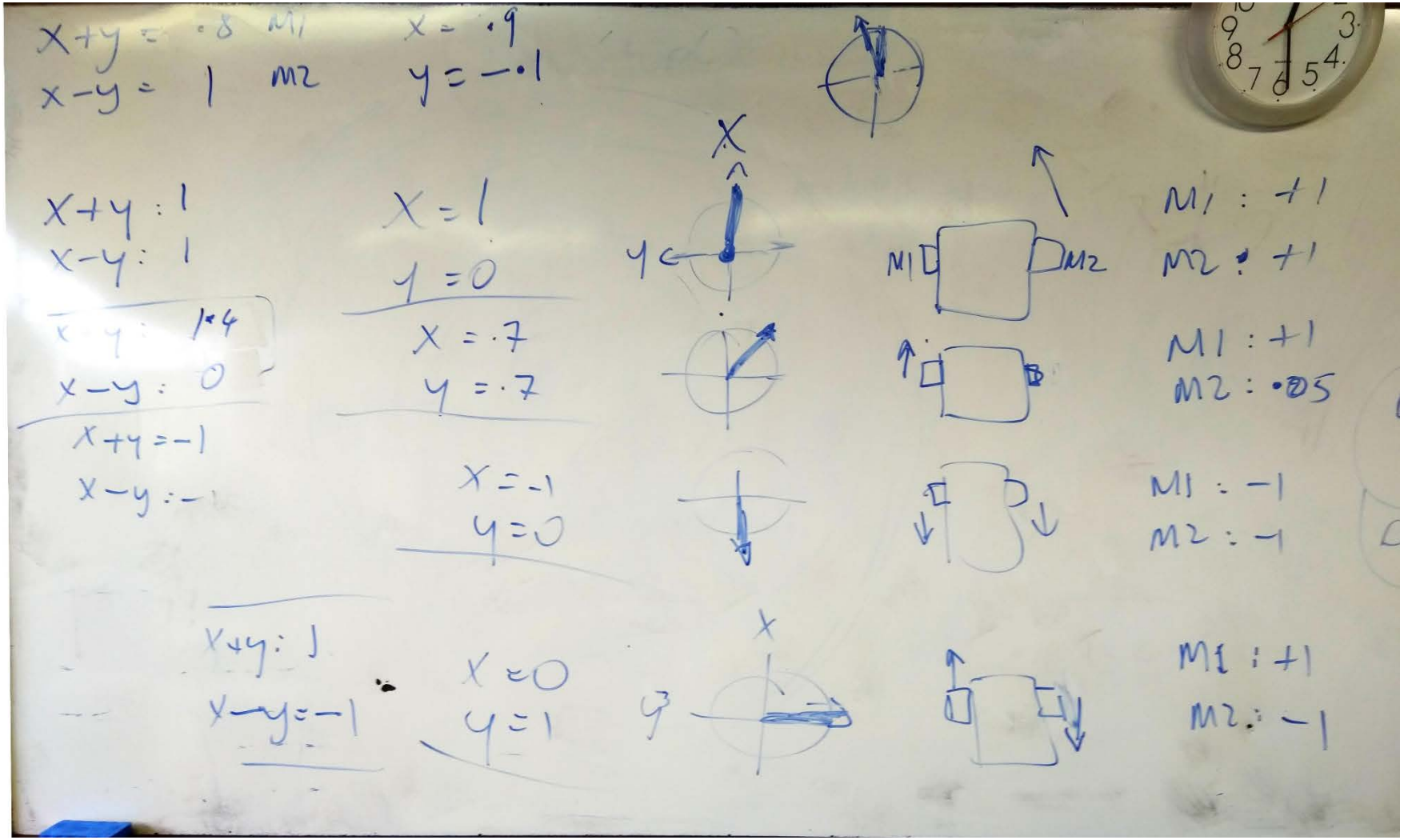
Autonomous, Raspberry Pi based

Uses camera to search for a specific colour

Skills From Electronics Principles to Teamwork & Planning

Task	Wk 1	Wk 2	Wk 3	Wk 4	Wk 5
Design and Planning					
Understand parameters, rules, restrictions					
Develop overall design concepts					
Gather info, set up communications					
Electrical & Electronic Components					
Identify and order all components					
Code to control motors from Arduino					
Code to work with radio receiver					
Weapon - design and motor					
Weapon - control code					
Chassis					
3D modelling of design concepts					
3D print of initial design					
Component Integration					
Assemble components					
Integrate code					
Initial battle tests					
Design Refinement					
Design of smart features					
Order components					
Code for smart features					
Integration and testing					
Battle Contests					
Battles!					

Who Knew Maths Could Be Useful??



New Year, New Ideas...

BT YOUNG SCIENTIST & TECHNOLOGY Exhibition

BT

Driven by innovation, delivered by BT

Hackers - Overall Goal

Develop Tech Skills Further

- Programming in new languages
- Working with new technologies

Teamwork and Collaboration

- Dividing up tasks
- Helping each other figure things out

From Ideas to Results

- Brainstorm and select ideas
- Try things out – fail – improve – fail better!