Intro to 3D Printing

“Manifesting Thoughts into Things”

Keynote / Live Demo

Actionable Steps

“Manifest Your Thoughts into Things”

EDEN
3D PRINTER

Thank You!

- 1st workshop
- Oversubscribed

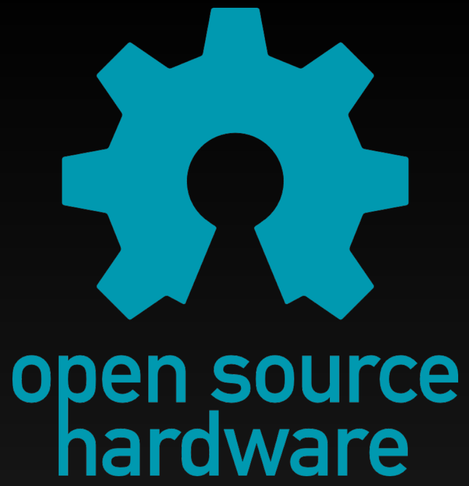
Thank You!

EDEN
3D PRINTER

@Supertestnet
@GeistLight

@RoninDojo

@ElCaptainYouth



3D Printing History

- 1981: first prototype
- 1984: first resin 3D printer, Chuck Hall, 3DSystems
- Akin to Computer Revolution
- 2004: RepRap (self-replicating), OSH
- Today: $250-$300 to start

Workflow

EDEN
3D PRINTER

- CAD / find design
- Slicer
- Prep 3D Printer
- Print
- Post-Printing Process

Workflow

Fusion360 OPTIONAL

Finalize .stp file

Export .stp to .stl file

Ultimaker Cura

Slice .stl into .gcode file

Printer

Load .gcode into printer

Tweak settings on printer

Level bed and load filament

3D file Websites

thingiverse.com

yeggi.com

cryptocloaks.com/file-factory

Guns.Team

Eden3DPrinter.com/Marketplace

CAD

- CAD - Computer Aided Design
- Fusion360, OpenSCAD, TinkerCAD, many more
- Manipulating Polygons (obtuse triangles)
- Output: 3D Rendered object (.stl format)
- Also import 2D images (vector .svg files)

EDEN
3D PRINTER

Demo

Slicer

- Slicer - Converts 3D object to G-Code
- PrusaSlicer, Ultimaker Cura, many more
- Coordinates for 3D printer to build object
  - i.e. XYZ movement, temp., supports, material, etc.
- Output: [filename].gcode

EDEN
3D PRINTER

Demo

Anatomy of 3D Printer

EDEN
3D PRINTER

- Hot End
  - Heating element, nozzle, PTFE tube (guides filament)
- Heated Bed
  - assists in maintaining part temp.
  - LEVEL YOUR BED
- Chassis (moves XYZ axis’)
  - Frame supporting stepper motors & belts, hot end and bed

Anatomy of 3D Printer

EDEN
3D PRINTER

- Monitor
  - Watch & input data
  - Edit on fly
- Spool Holder
  - Holds plastic filament in fixed, freely rotating position

EDEN
3D PRINTER

Demo

Prepare for Print

EDEN
3D PRINTER

- LEVEL BED!
- Load filament
- Check all motors / wires plugged in
- Remove any debris on bed / in way of hot end
- *Tip*: Wipe off bed with iso alcohol, apply glue stick
- Preheat to desired temp

Print!

EDEN
3D PRINTER

- load 3D file (either USB or microSD card)
- Select file you’re printing

Go!

Printing tips

EDEN
3D PRINTER

- Watch first few layers for any possible errors
- ˜20% of prints fail. Most common are;
  - bed not level
  - incorrect hot end temp.

Post-Print Processing

EDEN
3D PRINTER

- After cooling, remove part from hot bed
- Remove any bases or supports
- Clean off stray filament
- if desired, can sand, prep & paint

Manifested Thought into Thing!

Future: Eden3D Printer

- Streamlines entire workflow
- Full Desktop Computer, 3D Printer inside
  - Tesseract: 4D cube
- Enclosure for controlled environment
- Sketch, Design, Slice, Print, Share work
- If so chosen, accept Bitcoin for work derived

Future: Eden3D Printer

@Eden3DPrinter

Eden3D.io

GitHub.com/Eden3DP

Questions & Walk Around