Agenda

- What is the Arduino?
- What is 3D Printing?
- Introducing: Shapeoko
- How are these implemented in the library?
- How does this tie in?
Introducing the Arduino

- Uses a simple programming language to:
  - Send and Receive data
  - Handle variables
  - Carry out complex instructions
Examples of Arduino Applications
3D Printing

- Additive Manufacturing
  - Inkjet meets glue gun meets CAD
- Uses melted plastic to produce layers of material
- Produces physical object from a 3D model
Costs

Printer
• Ready to go - $2500 and up
• Self Assembled - $400 - $750
• Software maximizes best use of material

Material
• ABS - $50/kg
• PLA - $65/kg
• Specialties Available
  • Glow in the dark
  • Flexible
  • Dissolvable
• Software tells you weight of item BEFORE printing
Videos to See

- Makerbot Robohand Video
  http://youtu.be/WT3772yhroo

- CBS News Story on Robohand
  http://youtu.be/FGSo_I86_lQ
Shapeoko

- CNC
  - computer numerical control
- Operates in three axes
- Basis for 3D printers
- Can have multiple tools attached
- Can also activate and deactivate tool
Use in your library

Tulsa City-County Library Makerspaces
Makerspaces
For Children and Adults

- Exploration of creativity
- Education in
  - Engineering
  - 3D modeling
  - Architecture
  - History
  - Smithsonian

Blog.ponoko.com
Things already in libraries

- Gaming
  - Minecraft
- 3D Editing / Printing
  - Blender
  - Tinker Cad
- Programming
  - Scratch

University of East London
How does this tie in?

- STEM / STEAM
  - Science
  - Technology
  - Engineering
  - Arts
  - Mathematics