# Oshman Engineering Design Kitchen

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What is the

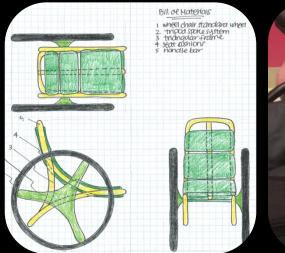


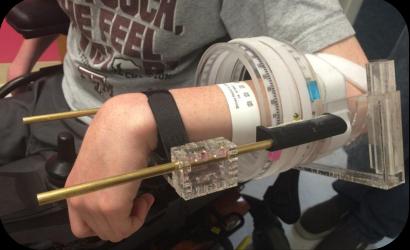


*Prototyping* is solving problems by creating physical objects.



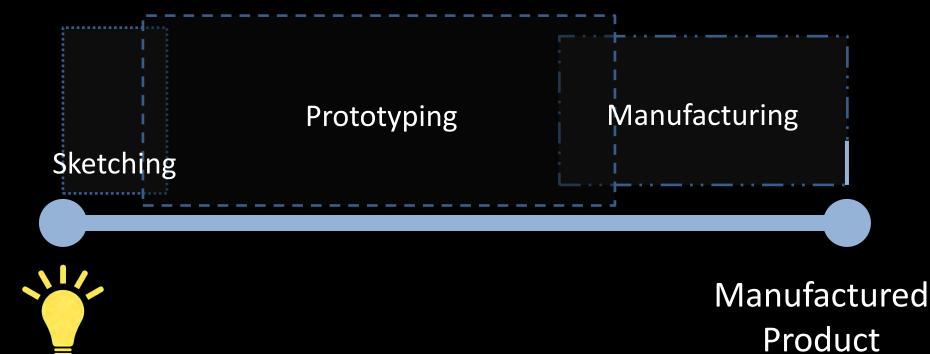


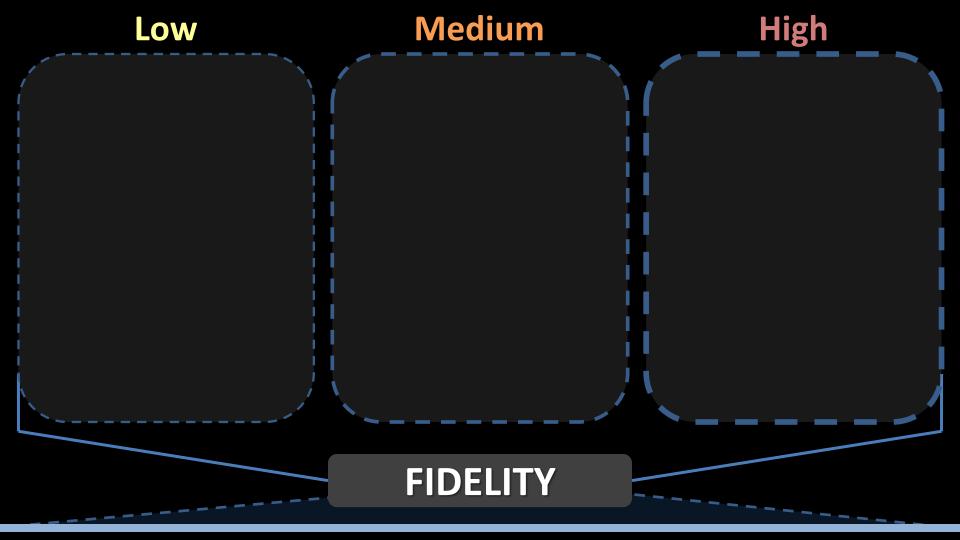






## Prototypes, like great ideas, evolve over time.













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Etsy





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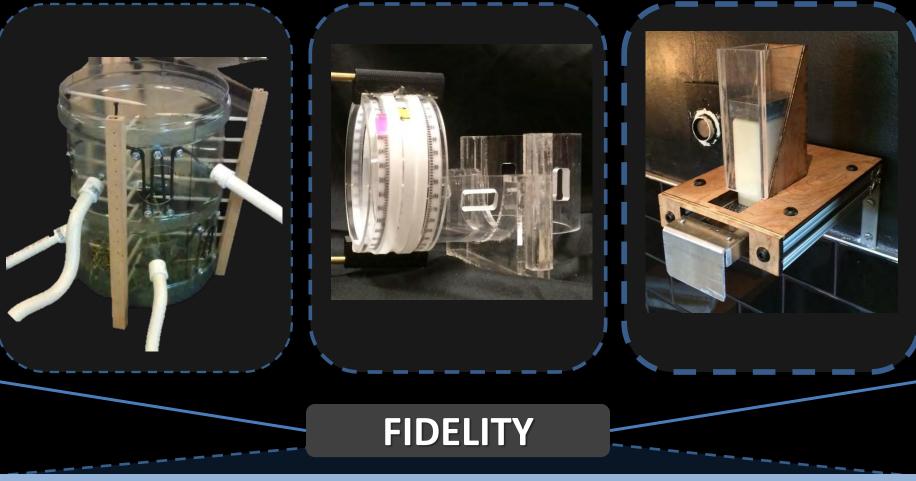












#### Low

### Medium

### High

Scissors Tape Glue Hand tools Laser cutters 3D printers Hand tools Power tools Drill press

**FIDELITY** 

3 or 4 Axis CNC Mills Lathes Sheet metal benders Plasma cutters Injection molding Excelling in Medium and High Fidelity Prototyping is heavily dependent upon access to materials and specialized training

#### Medium

Laser cutters 3D printers Hand tools Power tools Drill press

**FIDELITY** 

3 or 4 Axis CNC Mills Lathes Sheet metal benders Plasma cutters Injection molding







#### Low

Scissors Tape Glue Hand tools

Excelling in Low Fidelity Prototyping is heavily dependent upon *practical ingenuity* and *creative solutions* 











## Everyone can use practical ingenuity and creativity to solve problems. It is in us all.

Raw materials empower prototyping.

### What are some Raw Materials?





























## LOW FIDELITY PROTOTYPING WORKSHOP

- Complete the challenges at each table (in groups or alone)
- You might not get to do everything (this is ok)
- Have fun

# Prototyping Maxims

- Prototype quickly
- Prototype to learn
- Always start with rough, or, low fidelity prototype
- "Freely dive into prototyping"
  - When it makes sense
  - When you can't say it in words
  - When there are several options to evaluate
- "If a picture is worth 10,000 words, a prototype is worth 10,000 pictures" David Kelly of IDEO