

# What's next for you in 3D printing?

- ▶ Public library - read, read, read
- ▶ MAKE magazine - [www.makezine.com](http://www.makezine.com) & books, too
- ▶ Maker spaces -
  - ▶ Eugene Maker Space [eugenemakerspace.com](http://eugenemakerspace.com)
- ▶ Maker Faires and Mini Maker Faires
  - ▶ OMSI - Portland Mini-Maker Faire - Sept 13-14, 2014  
[www.omsiedu/maker-faire-pdx](http://www.omsiedu/maker-faire-pdx)
  - ▶ Salem Mini-Maker Faire - August
  - ▶ Eugene Mini-Maker Faire - June
- ▶ Internet searches, of course

# Explore more 3D software

Beyond Tinkercad ([www.tinkercad.com](http://www.tinkercad.com))...

- ▶ 123D suite, from Autodesk:
  - ▶ Design, Make, Catch, Circuits, Sculpt, Creature, Mesh Mixer ([www.123dapp.com/create](http://www.123dapp.com/create))
- ▶ Sketchup Make  
([www.sketchup.com/products/sketchup-make](http://www.sketchup.com/products/sketchup-make))
- ▶ 3dTin ([www.3dtin.com](http://www.3dtin.com))

*i.materialise*

## 3D Print and Sell\* Services

Shapeways\* (NYC) - [www.shapeways.com](http://www.shapeways.com)

i.Materialise\* (Belgium) - [i.materialise.com](http://i.materialise.com)

Sculpteo\* (France) - [www.sculpteo.com](http://www.sculpteo.com)

Ponoko\* (Oakland, CA) - [www.ponoko.com](http://www.ponoko.com)

3D Hubs (local printers) - [www.3dhubs.com](http://www.3dhubs.com)

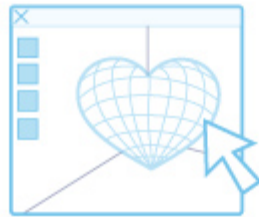
Staples (NYC & LA) - [www.staples.com](http://www.staples.com)

**Ponoko®**  
the world's easiest making system

shapeways★



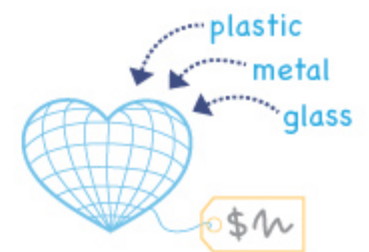
**Idea!**



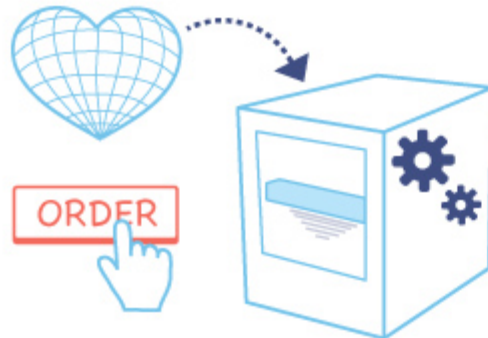
**Model your design.**



**Upload to Shapeways.**



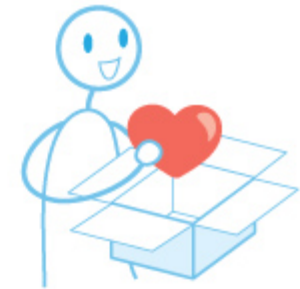
**Choose materials  
& get instant pricing.**



**We'll fabricate your order with  
3D printing awesomeness...**



**...and ship it  
anywhere in the world.**



**Your idea made real!**

# Materials – some examples

- ▶ **Polyamide:** A strong and flexible material with a high level of detail
- ▶ **Alumide:** A polyamide-like material with a distinctive look
- ▶ **Multicolor:** A full color plaster
- ▶ **High detail resin:** Lovely fine details on this photopolymer
- ▶ **Paintable resin:** Beautiful when painted. Water resistant. If it has to be flawless
- ▶ **Transparent resin:** See through
- ▶ **ABS:** Strong and tough with the highest level of dimensional accuracy
- ▶ **Titanium:** Light and the strongest 3D printing material in the world
- ▶ **Stainless steel:** Not your grandmother's stainless steel
- ▶ **Silver:** Sterling silver
- ▶ **Gold:** 14 carat solid gold
- ▶ **Prime gray:** Very smooth, detailed and "luxurious" to the touch
- ▶ **Brass Copper and Zinc:** united as one
- ▶ **Bronze:** What did you expect after gold and silver?
- ▶ **Ceramics:** A food safe material that shines like no other
- ▶ **High detailed stainless steel:** High grade stainless steel with a superb level of detail
- ▶ **Rubber-like:** A strong, high-flexible and durable material

The above list is from: <http://i.materialise.com/materials>  
See also, <http://www.shapeways.com/materials/material-options>

# Ponoko - offers distributed, on-demand manufacturing using laser cutters or CNC milling machines or 3D printers.

- ▶ What is laser cutting?
- ▶ Laser cutting is one of the digital making methods available through Personal Factory.
- ▶ Laser cutting is a type of **subtractive** manufacturing that cuts a digital design file into a piece of sheet material.
- ▶ A computer directs a high-power laser at the material. The material then melts, burns or vaporizes leaving an edge with a high-quality finish.



- ▶ Wood
- ▶ Leather
- ▶ Acrylic
- ▶ Metal



CUBE



Image from: [http://www.staples.com/Cube-3D-Printers/product\\_SS2044291#id=%27swatch\\_747780%27](http://www.staples.com/Cube-3D-Printers/product_SS2044291#id=%27swatch_747780%27)

# More Printers

Kits: Would you like to build your own printer...?

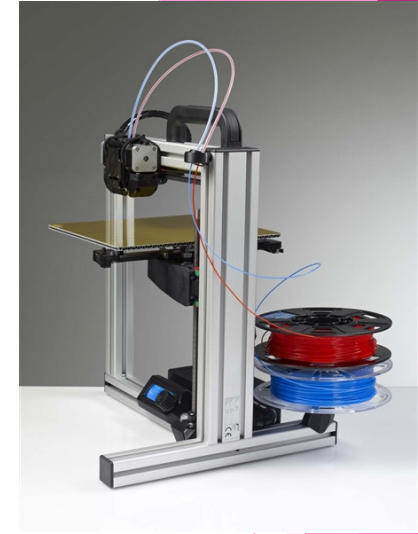
- ▶ Printrbot Simple Maker's Kit \$349.
- ▶ Others, such as Felix [www.makershed.com](http://www.makershed.com)

RepRap.org: variety of open source designs

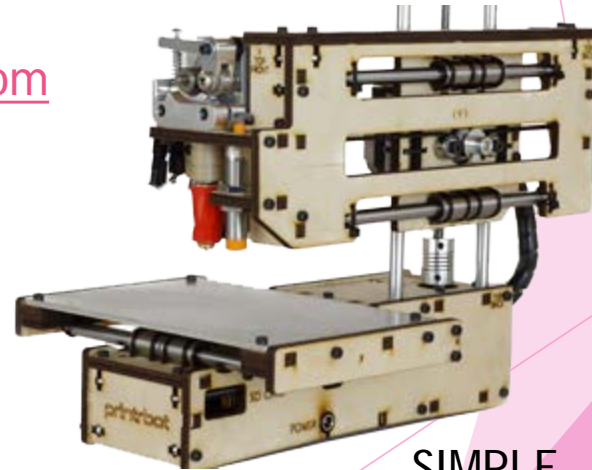
- ▶ [reprap.org/wiki/RepRap\\_Options](http://reprap.org/wiki/RepRap_Options)

Purchase, fully assembled:

- ▶ Staples- CUBE \$999
- ▶ Find more at Makershed.com



FELIX 3.0



SIMPLE

Image from <http://printrbot.com/compare-printers/>