

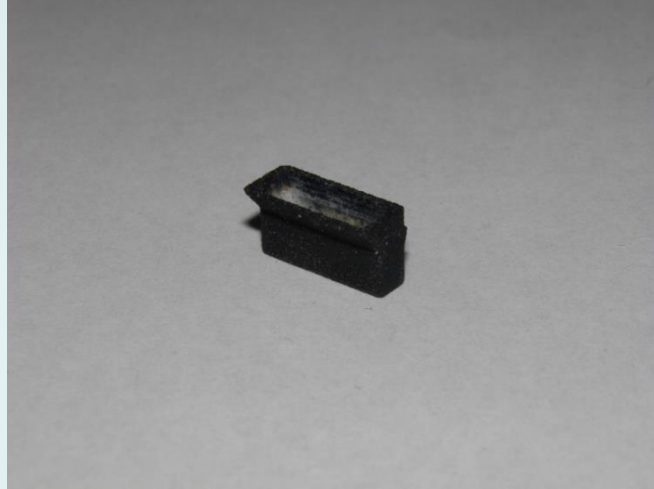
# An Introduction to Modeling via 3D Printing

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# Some Examples



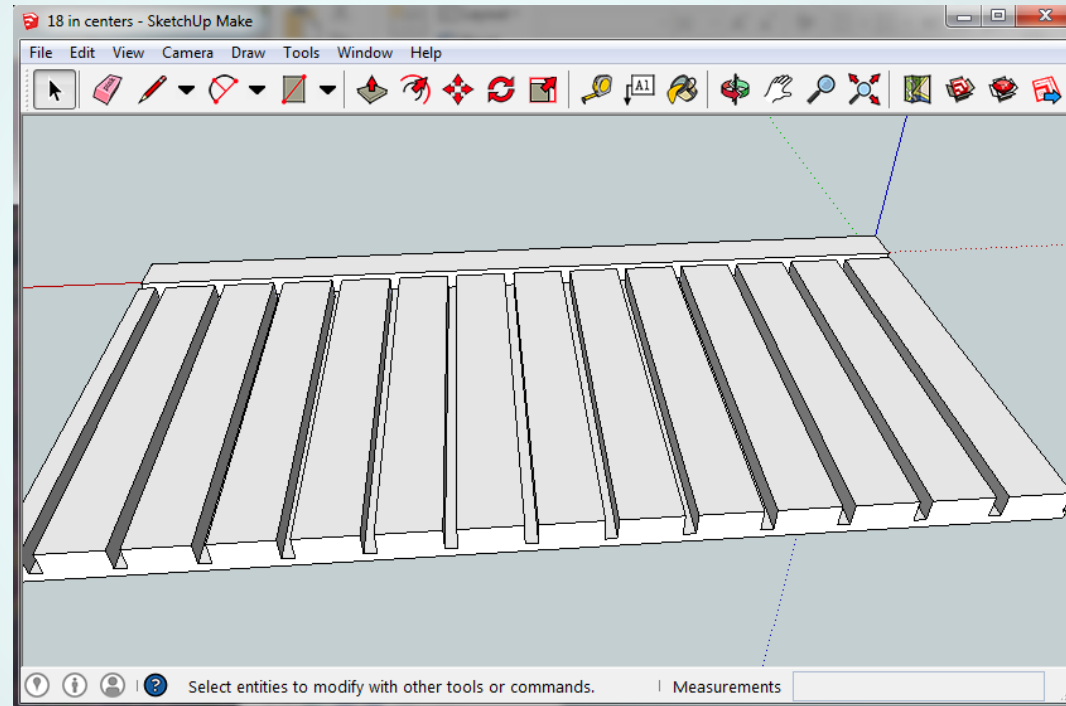
# Why 3-D Print?

- Quick turnaround
- High accuracy/resolution
- Large manufacturing runs not necessary
- Why Shapeways? ([www.shapeways.com](http://www.shapeways.com))
  - Don't want to buy a 3-D printer
  - Don't want to store the "ink"
  - Personal Preference

# Where to print?

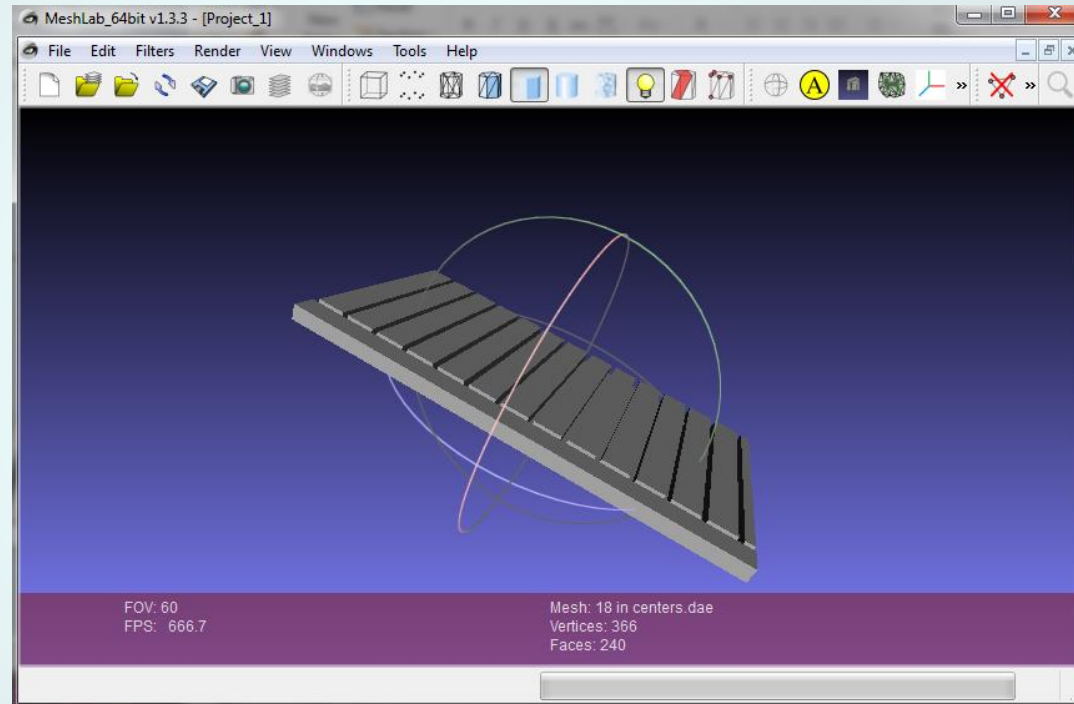
- How to on Shapeways and Sketchup:
  - [http://www.shapeways.com/tutorials/sketchup\\_3d\\_printing\\_export\\_to\\_stl\\_tutorial](http://www.shapeways.com/tutorials/sketchup_3d_printing_export_to_stl_tutorial)
- Necessary tools:
  - Sketchup Make (free) – for drawing
    - Available from <http://www.sketchup.com/>
  - Meshlab (free) – for conversion to STL
    - Available from <http://meshlab.sourceforge.net/>
  - Accutrans 3D (\$20 CAD) – for checking
    - <http://www.micromouse.ca/downloads.html>

# SketchUp Make



When finished, export as 3D data

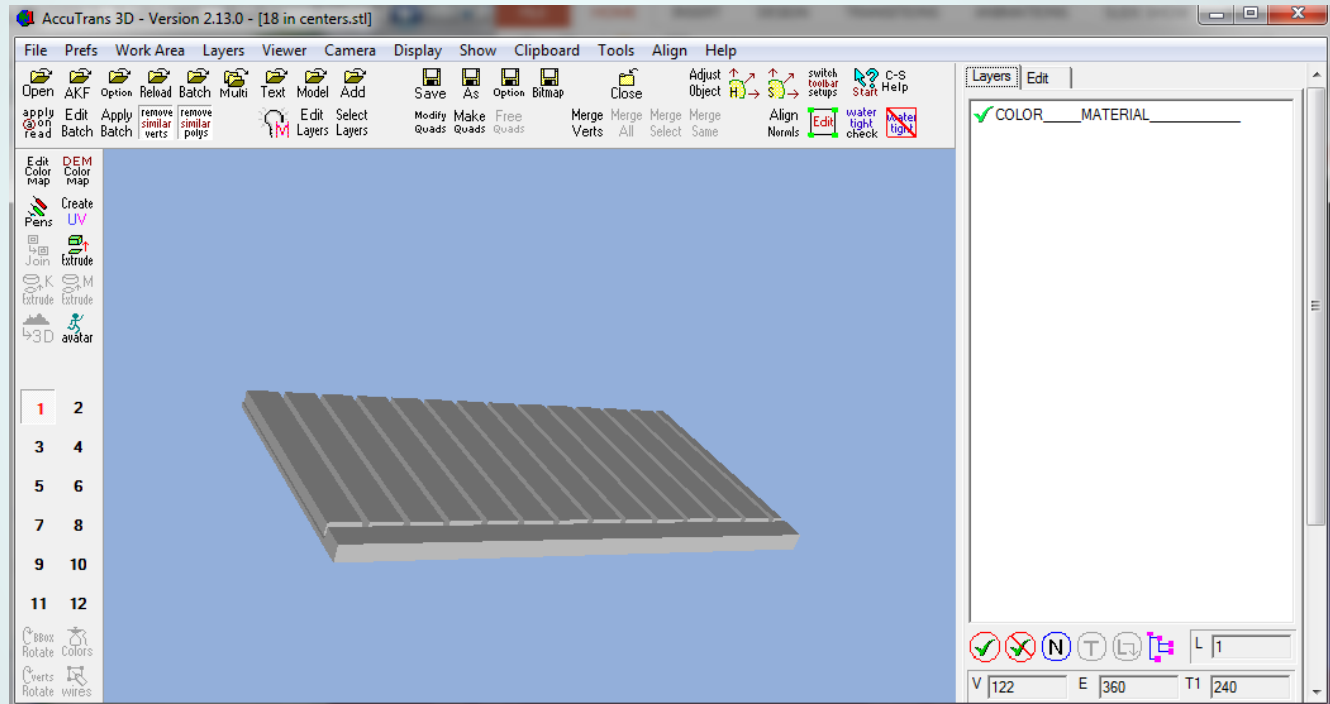
# Mesh Lab



Export as STL format



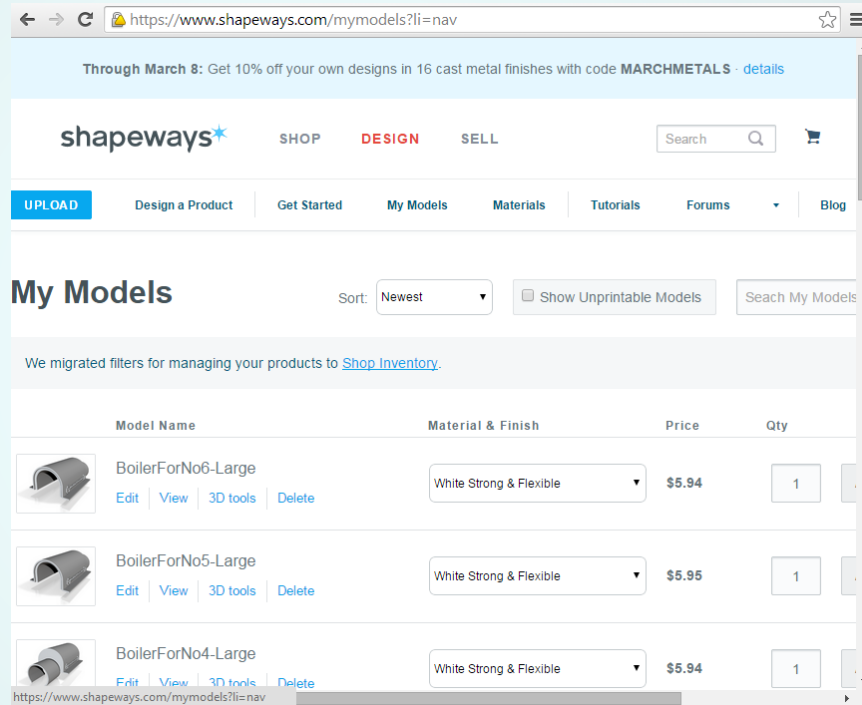
# Accutrans 3D



Testing for a watertight mesh via Tools->Check for watertight mesh

If you have a problem, go back and fix it

# Uploading Design to Shapeways



Through March 8: Get 10% off your own designs in 16 cast metal finishes with code **MARCHMETALS** - details




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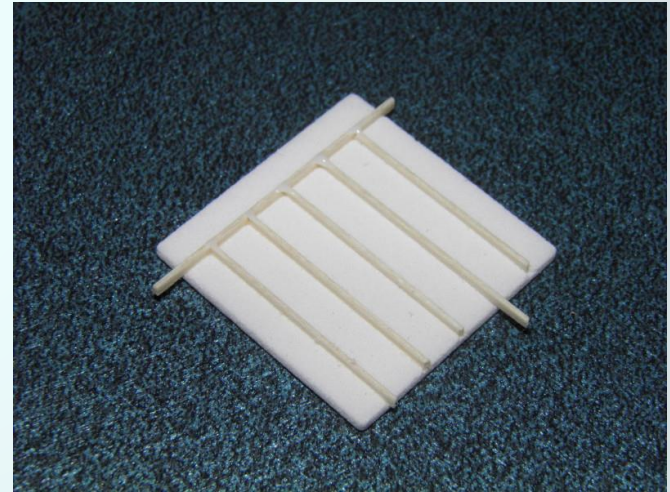
We migrated filters for managing your products to [Shop Inventory](#).

Model Name	Material & Finish	Price	Qty
 BoilerForNo6-Large <a href="#">Edit</a> <a href="#">View</a> <a href="#">3D tools</a> <a href="#">Delete</a>	White Strong & Flexible	\$5.94	1
 BoilerForNo5-Large <a href="#">Edit</a> <a href="#">View</a> <a href="#">3D tools</a> <a href="#">Delete</a>	White Strong & Flexible	\$5.95	1
 BoilerForNo4-Large <a href="#">Edit</a> <a href="#">View</a> <a href="#">3D tools</a> <a href="#">Delete</a>	White Strong & Flexible	\$5.94	1

STL file is dimensionless – take advantage of this!

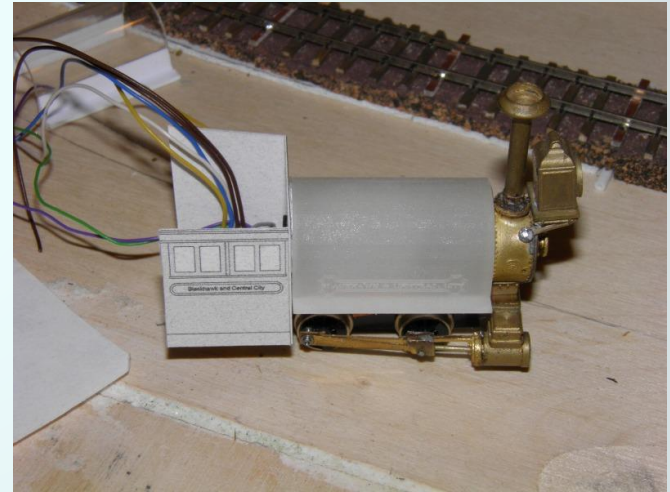


- Detailed Plastic
  - Supported walls to 1.0 mm thick
  - Unsupported walls to 1.0 mm thick
  - Details to 0.2 mm high and wide
  - Max dimensions: 250 × 250 × 200 mm

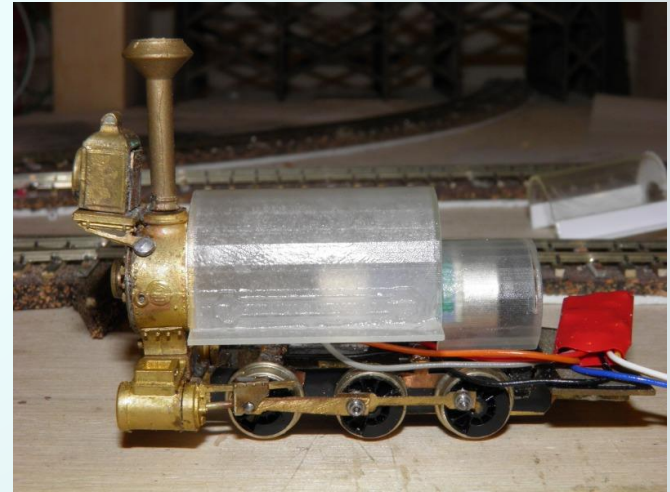


# More Material Options

- Frosted Detail
  - Supported walls to 0.5 mm thick
  - Unsupported walls to 0.6 mm thick
  - Details to 0.2 mm high and wide
  - Max dimensions: 284 × 184 × 203 mm

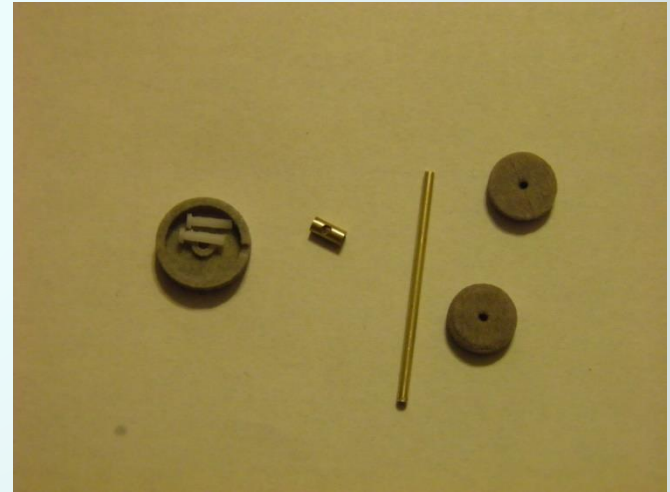


- Frosted Ultra Detail
  - Supported walls to 0.3 mm thick
  - Unsupported walls to 0.6. mm thick
  - Details to 0.1 mm high and wide
  - Max dimensions: 284 × 184 × 203 mm



# Yet Still More Options

- Full Color Sandstone
  - Supported walls to 2.0 mm thick
  - Unsupported walls to 3.0. mm thick
  - Details to 0.4 mm high and wide
  - Max dimensions: 250 × 380 × 200 mm

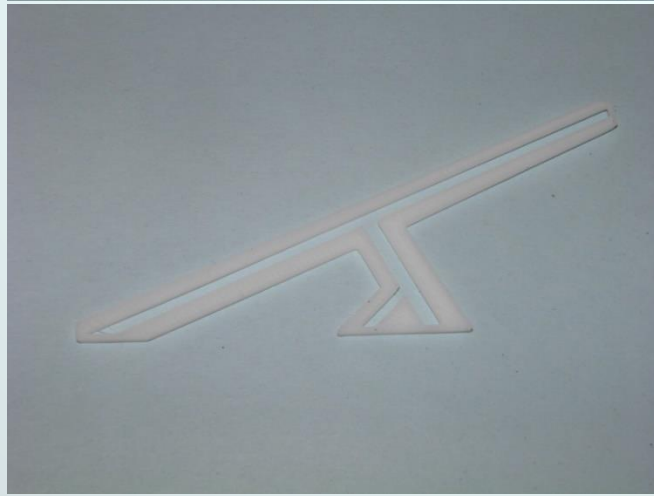
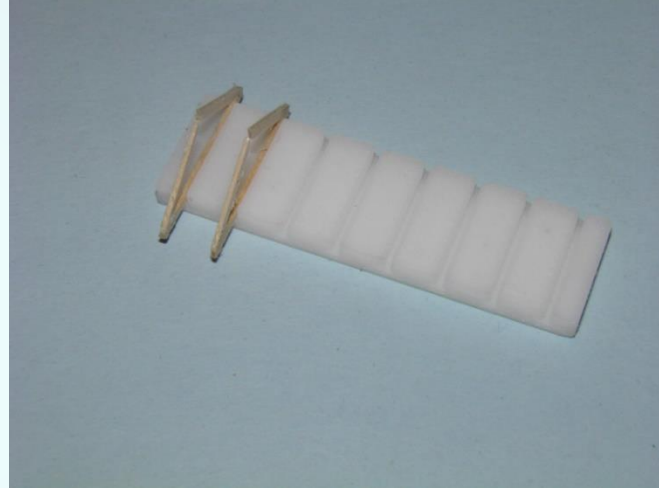
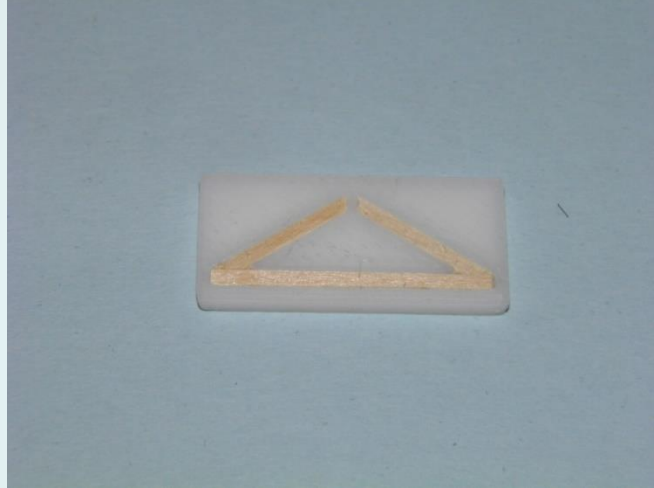




# Some More Examples



# Jigs, Too!





Questions?

- Thanks for listening!