



Makerspaces On A Budget

3D PRINTING

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MASTICS-MORICHES-SHIRLEY COMMUNITY LIBRARY



But 3D Printing is Expensive!

SHUT UP AND



TAKE MY MONEY!



What are the costs
associated with 3D Printing?

The Printer Itself!

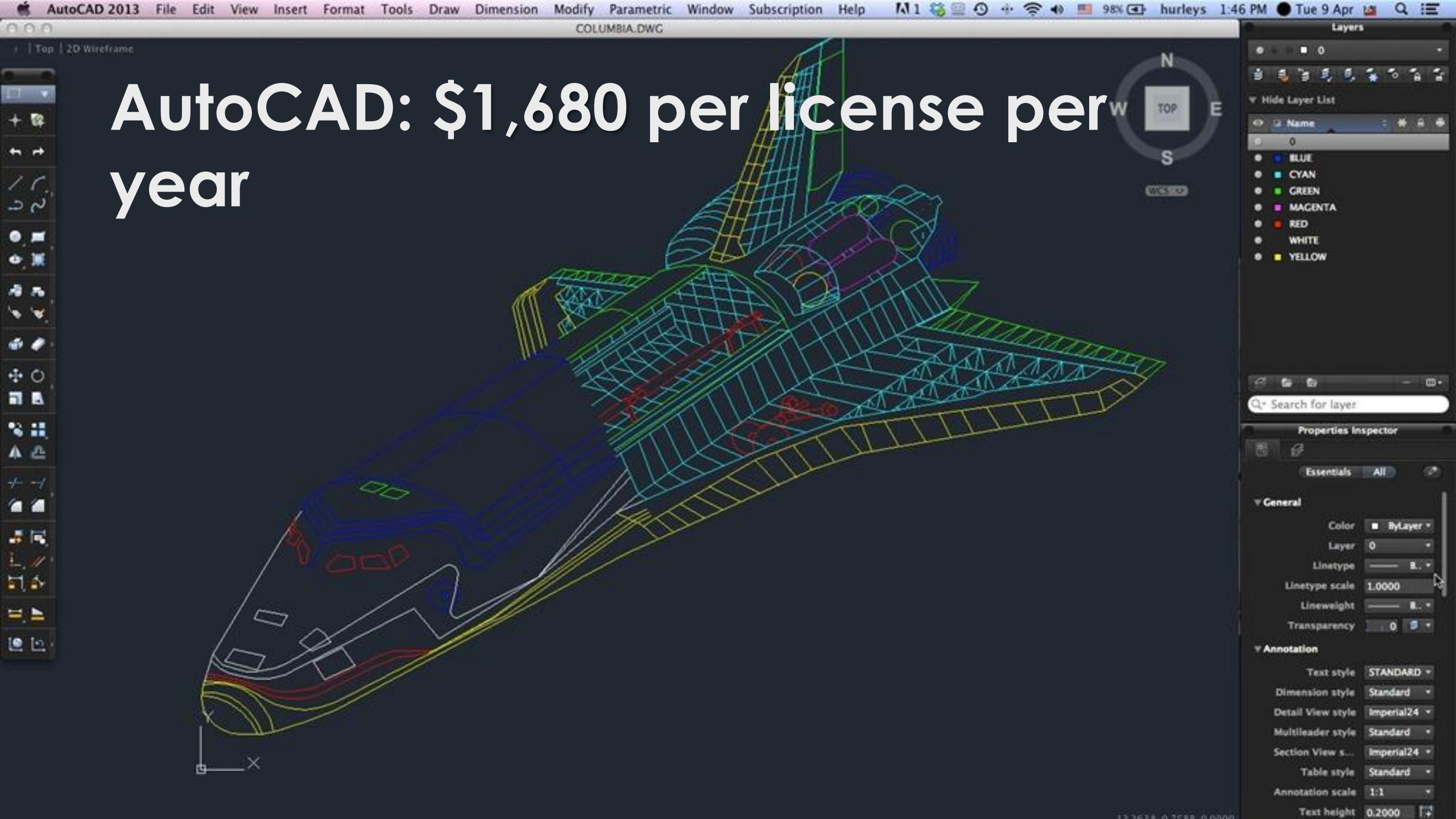


Sample Printer Prices

- ▶ Cube Pro: **\$2,799 and up**
- ▶ Makerbot Replicator: **\$2,499**
- ▶ Ultimaker 2+: **\$2,499**
- ▶ Lulzbot TAZ 5: **\$2,200**
- ▶ Flashforge: **\$1,099**



Software



AutoCAD: \$1,680 per license per year



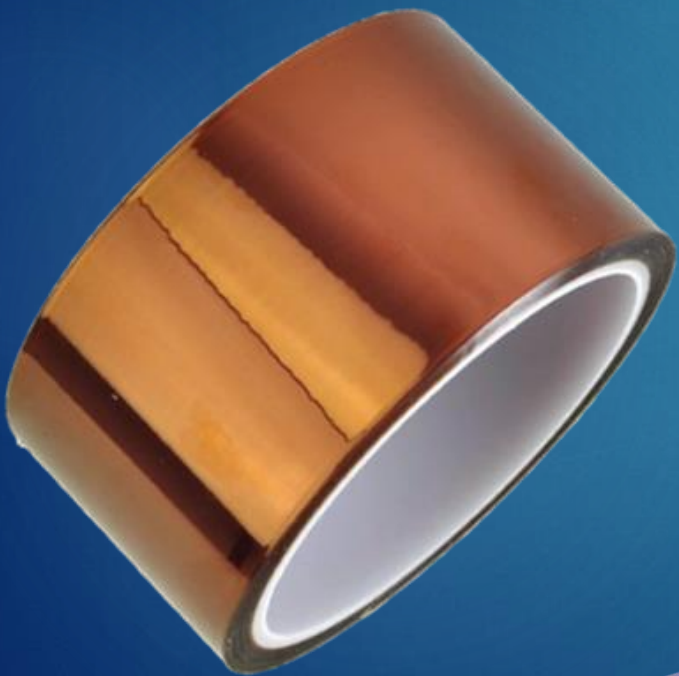
Consumables.





Not those consumables!

These consumables.



3D Printing Consumables

- ▶ Filament
- ▶ Tape (painters, Kapton, adhesives)
- ▶ Maintenance Kits
- ▶ Replacement extruders

**IM GOING TO HAVE TO START
SELLING CATNIP**



TO PAY ALL THESE BILLS

quickmeme.com



So how do we save money?

Manage Consumables

Open source printers can use non-proprietary filament



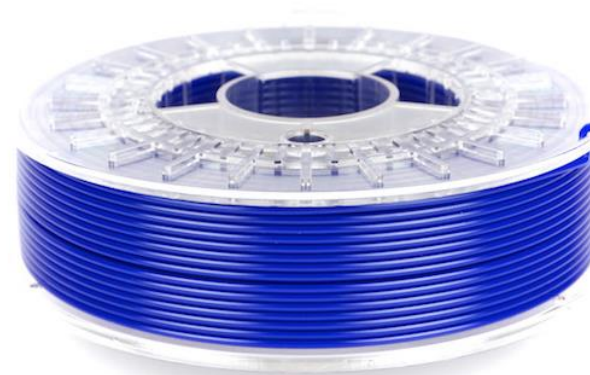
Official Ultimaker Branded PLA - Dark Blue

\$59.00

.75kg Official Ultimaker PLA Filament,
2.85mm, Dark Blue - 1pc

ADD TO CART

Estimated shipping: In stock. Orders ship same day if ordered by 3 pm EST.



ColorFabb PLA Filament
2.85mm (750 g)

European-made, finest quality

★★★★★ 3 Reviews

By ColorFabb

COLOR

Ultra Marine Blue

SIZE

2.85mm

\$ 39.00

1

ADD TO CART

AVAILABILITY: IN-STOCK NOW

Use Generics Whenever Possible!

Chat



MakerBot

Build Plate Tape
for MakerBot Replicator (5th Gen)

\$9.99 1

Add to Cart >



Zoom Wishlist

LOW PRICE GUARANTEE
WE WILL PRICE MATCH. [LEARN MORE](#)

3M Marine Blue Painters Mask Tape 2080 3/4

Product ID: ZZ20239 MFG ID: 80988

Availability: Usually ships within 24 hours

MSRP/MAP Price \$7.49 **Our Price \$4.95**

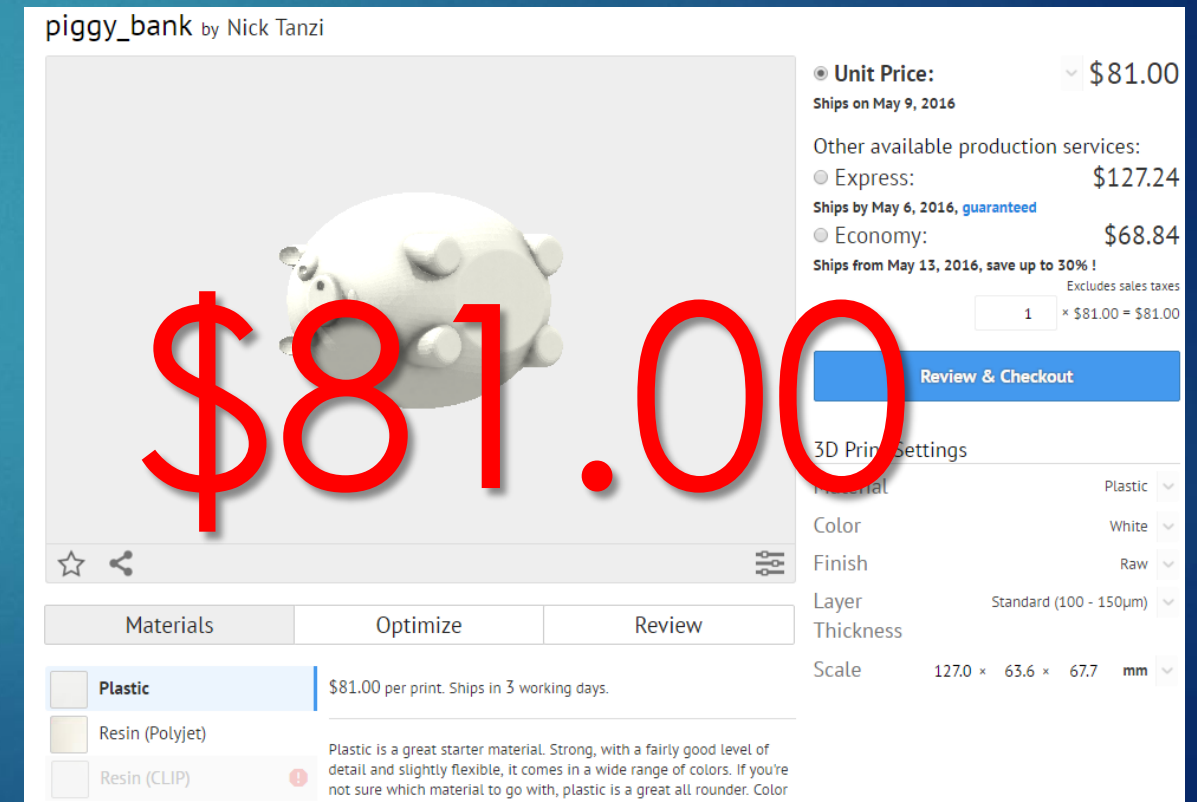
Qty: 1 **ADD TO CART**

Like 647 +0 +0

FEATURES RELATED PRODUCTS REVIEWS

Removes cleanly without adhesive transfer or surface damage for up to 60 days. Low-medium adhesion tape that is ideal for smooth, freshly painted surfaces.

Have Patrons Defer Costs





How Else Do We Manage Costs?

**YOU GET FREE SOFTWARE
& YOU GET FREE SOFTWARE**



EVERYONE GETS FREE SOFTWARE!

imgflip.com



Helpers



Workplane

Geometric



Box



Cylinder



Pyramid



Roof



Round Roof



Sphere



Wedge



Cone



Half Sphere



Hexagonal Prism



Paraboloid

Holes



Box Hole



Cylinder Hole

Letters



A



B

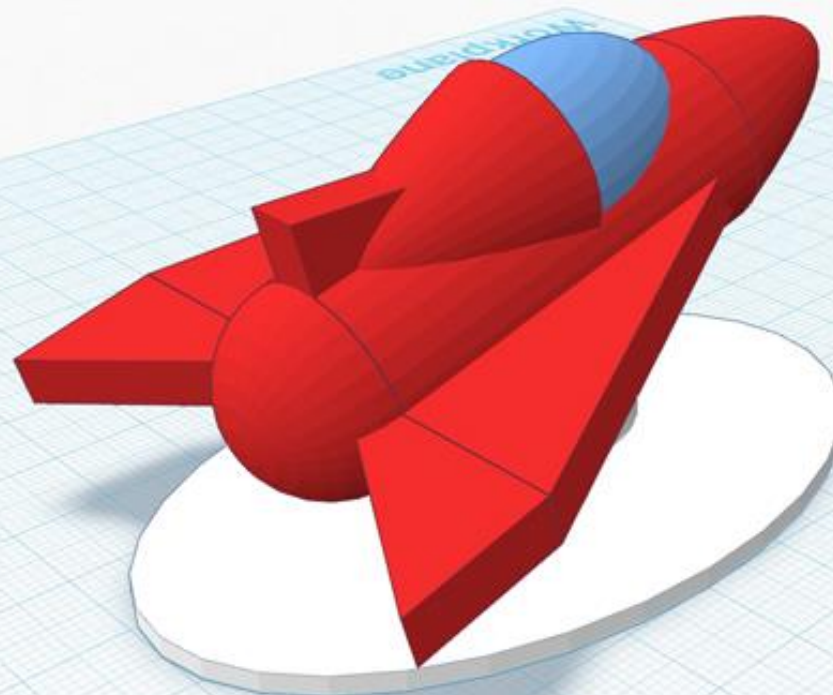


C

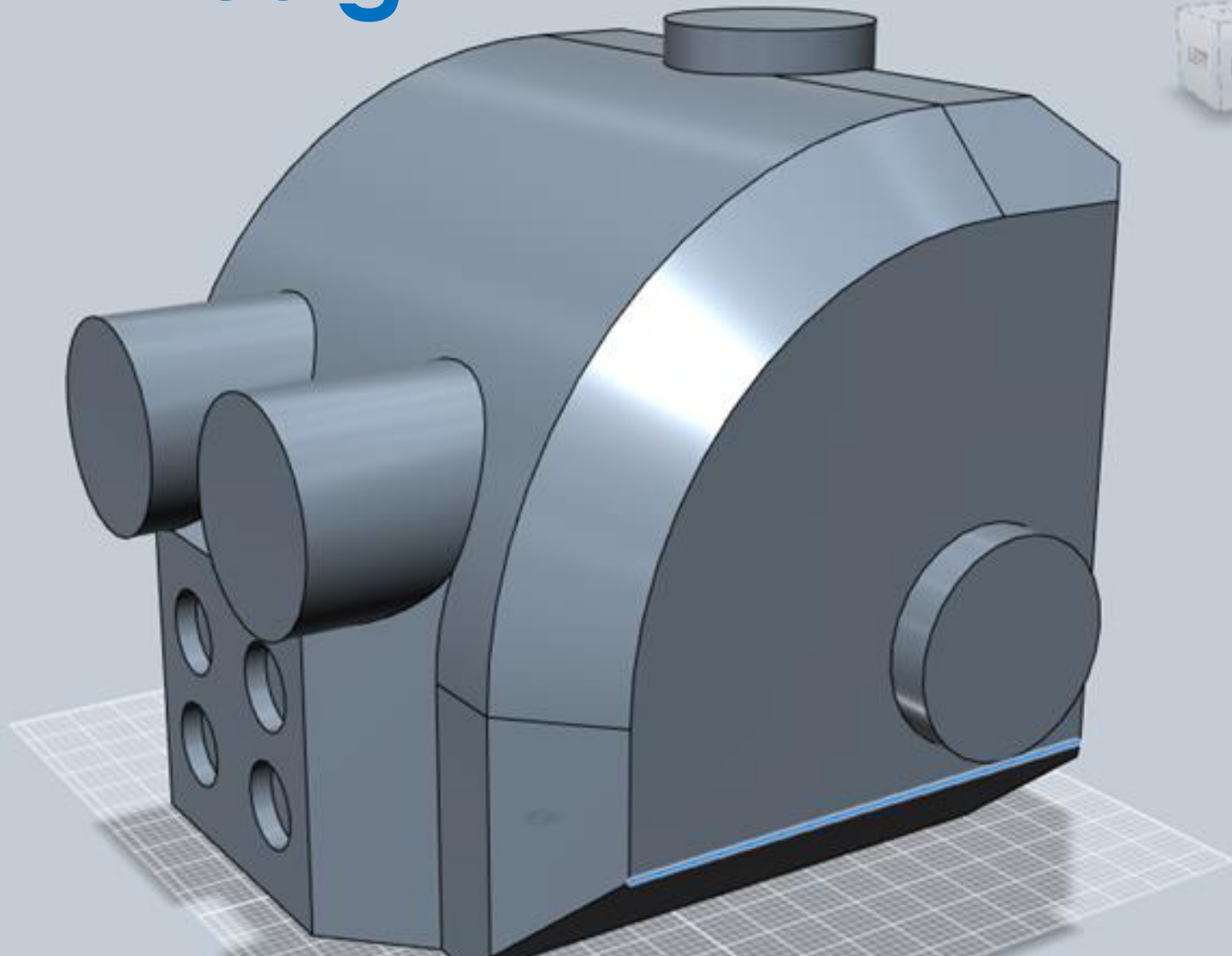


D

TinkerCAD



123D Design



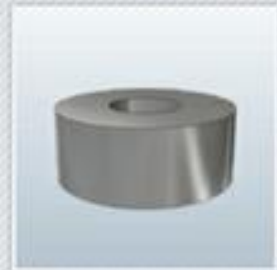
Robot



Radar 01
10/30/2012 by design...



Eye 02
10/30/2012 by design...



Eye 03
10/30/2012 by design...



Airbrush Lazy ☒ Invert [X]

Size Detail [Q]

Strength

SMOOTH

OPTIONS

BRUSH

MATERIAL

PAINT

☒ Enable `signs_green_flashlights`

Sculptris



Blender





Feeling Overwhelmed?





Take Advantage of Software
You're Already Paying for!



lynda.com



Atomic Training
Your How-To Learning Resource.


3D Courses Include:

- ▶ Sculptris
- ▶ TinkerCAD
- ▶ Blender
- ▶ 123D Design
- ▶ SketchUp
- ▶ ZBrush

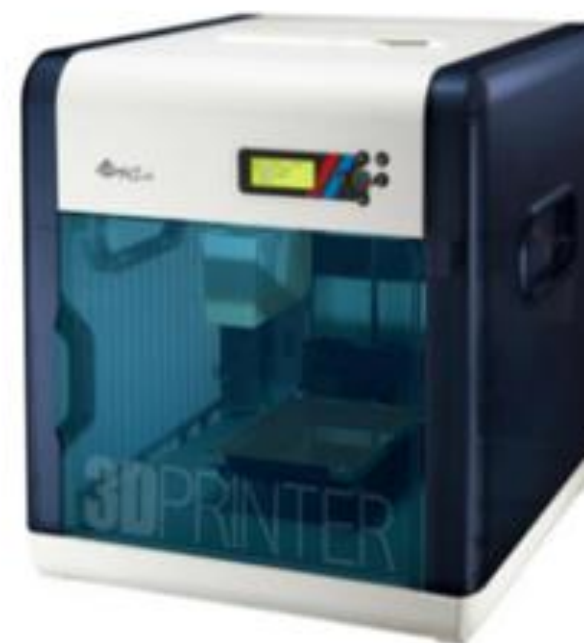


Save Me More Money!





Manage the Cost of Your 3D Printer



3D PRINTER GUIDE



2016



Investigate the Life of the Extruder



Investigate the Expected Maintenance

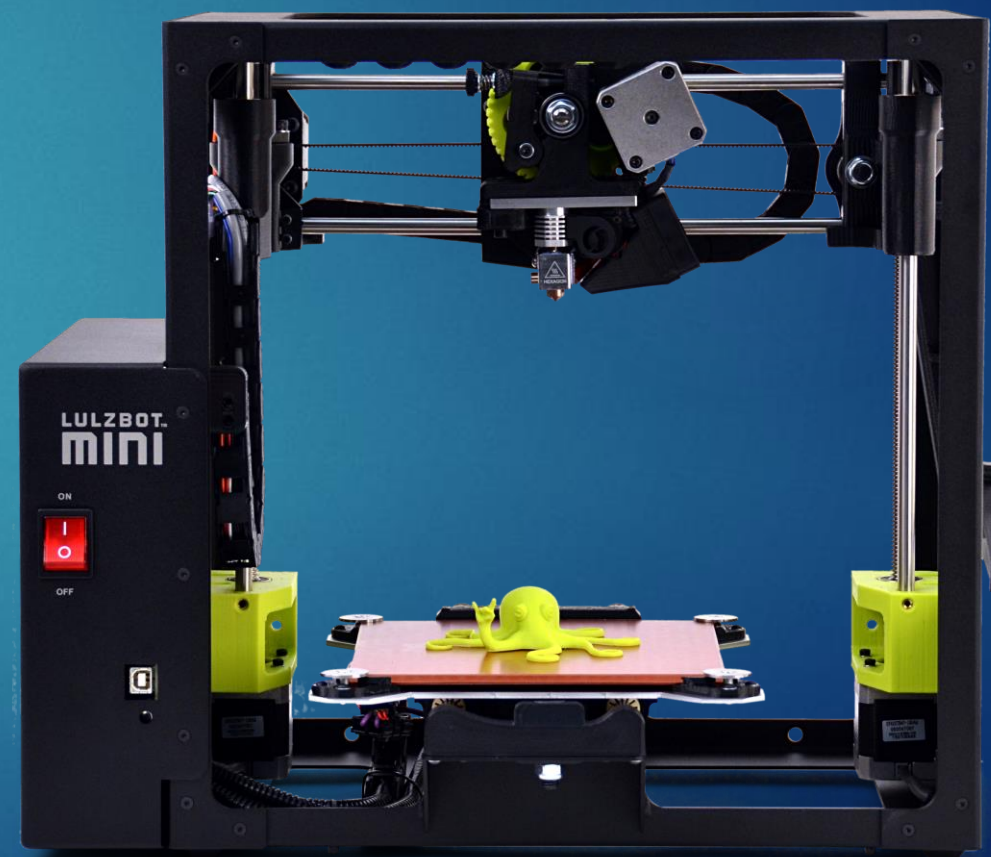




Go Smaller.



Miniaturized Printers





Maximize Your Investment



**MY ADVICE IS TO INVEST IN
TENNIS BALLS**

THEY HAVE A HIGH RATE OF RETURN

quickmemex.com



Plan A Usage Schedule
Ahead of Time. Such as...

Programs



MARTIN LUTHER KING, JR. COMMUNITY LIBRARY
TEEN SERVICES DEPARTMENT

BUILD NIGHT
3D
PRINTING
TUESDAY, OCTOBER 12, 6:00 PM - 8:00 PM

Probably the
Awesome

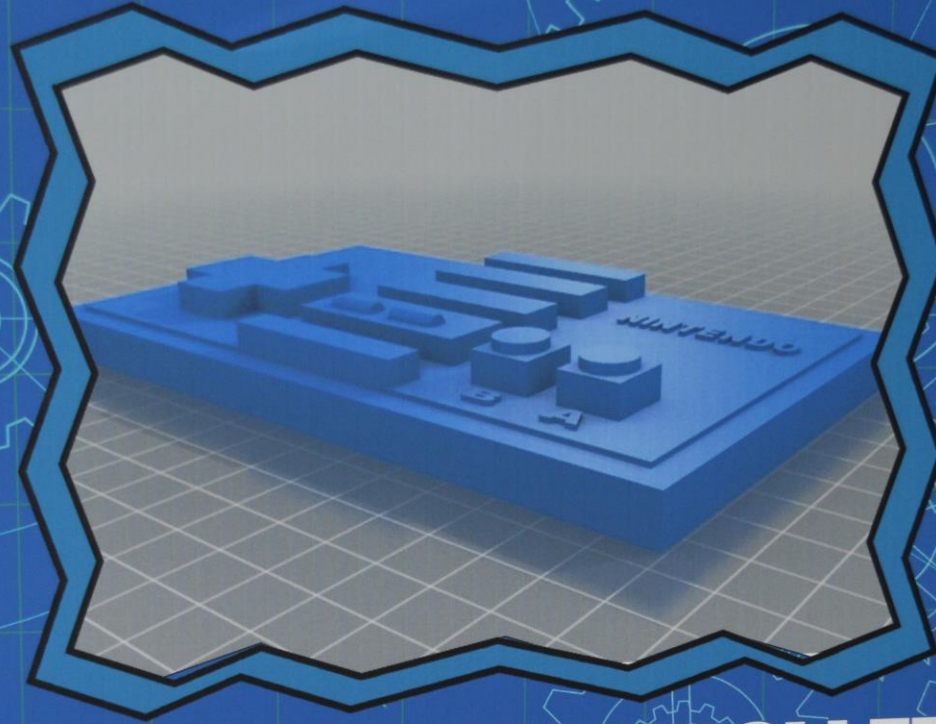
beat by





Exhibits & Art Shows

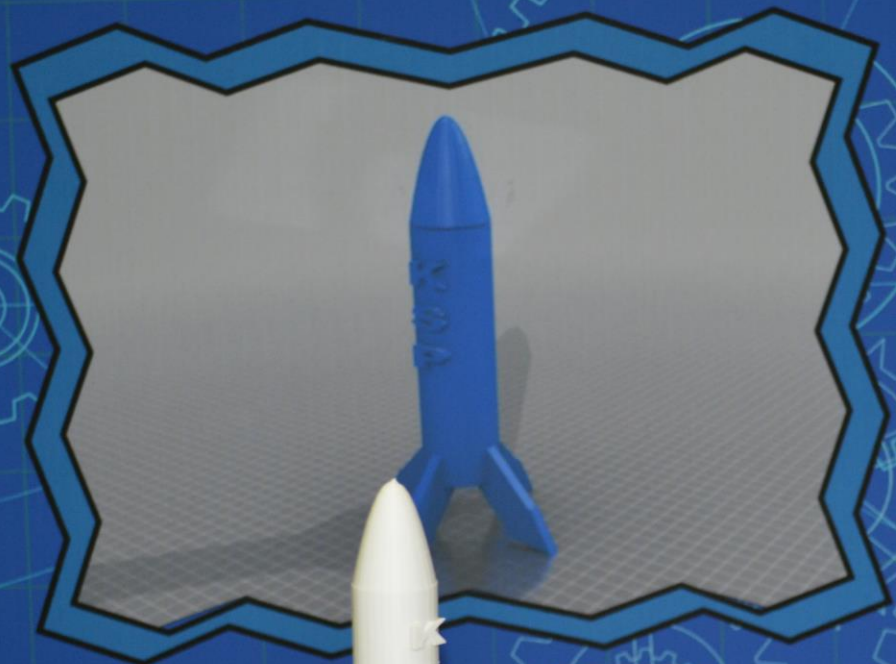
ERIC DIGIACOMO



NINTENDO CONTROLLER



DAVID BENDER



ROCKET SHIP

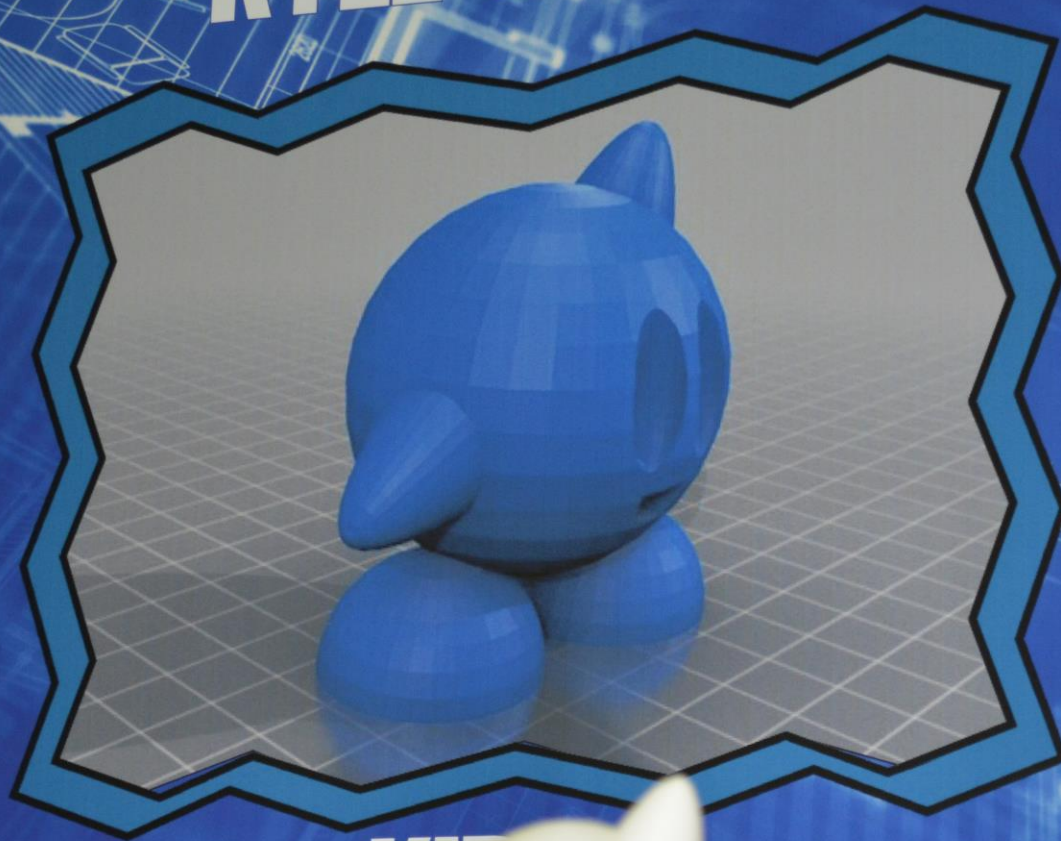


JO



MINE

KYLE GORDEN



KI

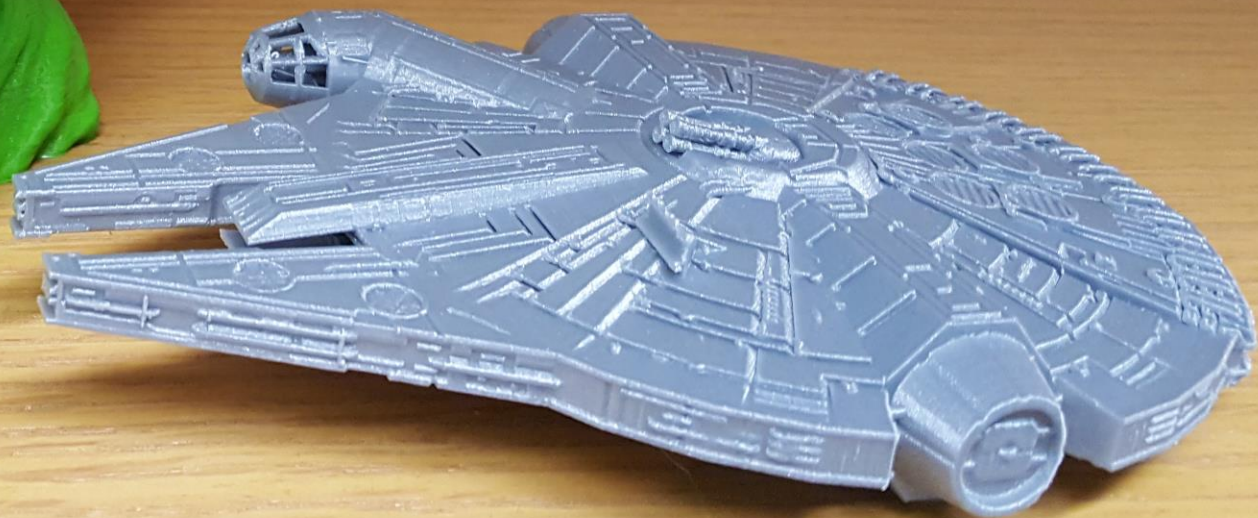
AS







Giveaways & Prizes





Split the Cost Between
Departments!

References

RUN A 3D PRINTING FACTORY ONLINE. (n.d.). Retrieved May 01, 2016, from <http://www.sculpteo.com/en/>

Replicator Desktop 3D Printer | MakerBot. (n.d.). Retrieved May 01, 2016, from <http://store.makerbot.com/replicator>

Hurley, S. (n.d.). Between the Lines. Retrieved May 04, 2016, from http://autodesk.blogs.com/between_the_lines/autocad_history/

ULTIMAKER 2 GO THE MIGHTY MINI 3D PRINTER. (n.d.). Retrieved April 25, 2016, from <https://ultimaker.com/en/products/ultimaker-2-go>



Shameless Plug!

MAKING THE MOST OF DIGITAL COLLECTIONS THROUGH TRAINING AND OUTREACH

Libraries Unlimited, 2016

"Libraries that are not yet offering digital services would be well served by Tanzi's book. Those wishing to enhance patron experiences with digital resources are guaranteed to find inspiration."

--Library Journal *Starred Review*

"Tanzi has written a very practical approach to increasing the visibility and use of digital collections...Even libraries that feel their digital collection is being well used could find ideas to further improve service by browsing this book."

--Voice of Youth Advocates Magazine

