DO I NEED/WANT A 3-D PRINTER

by

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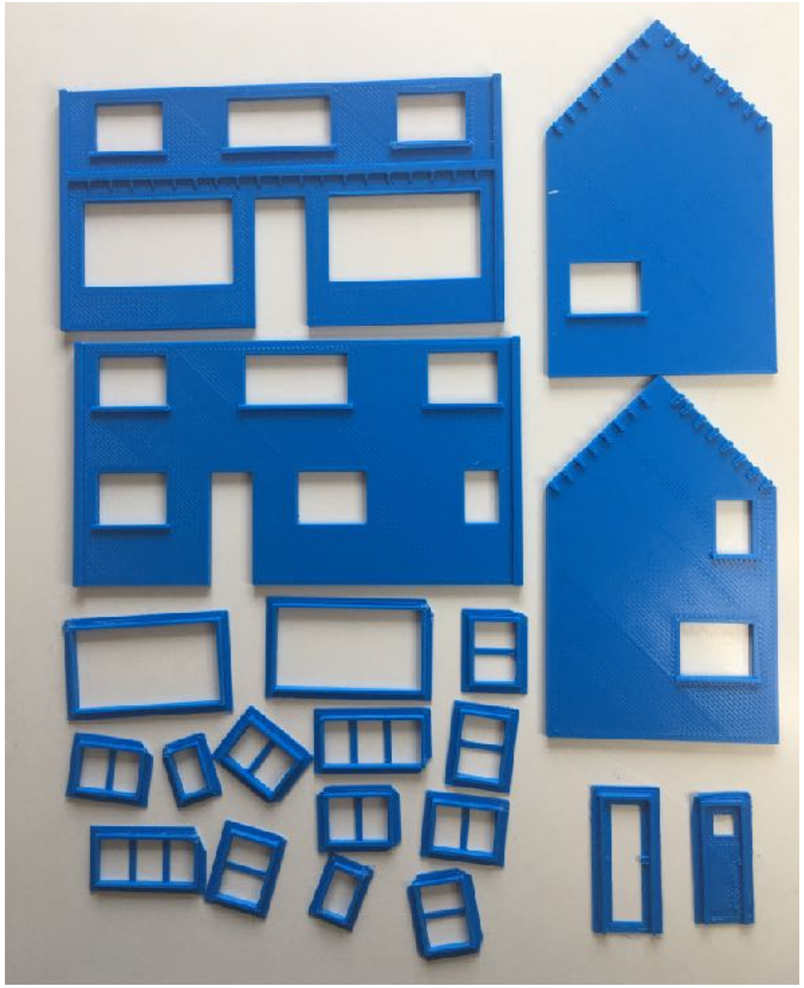
with consultation by Don Wolford

WHY DO I NEED A 3-D PRINTER

- Create items not commercially available
- Add detail to your vignette with custom buildings, like the one below.

Completed Building



Parts for Build (custom design)

- Make unique items like custom signage.
- Populate your vignette with multiple items.
- Save money making duplicate items.
- Make your vignettes more interesting.

When printing signs beware of Fonts

Trees of different scale

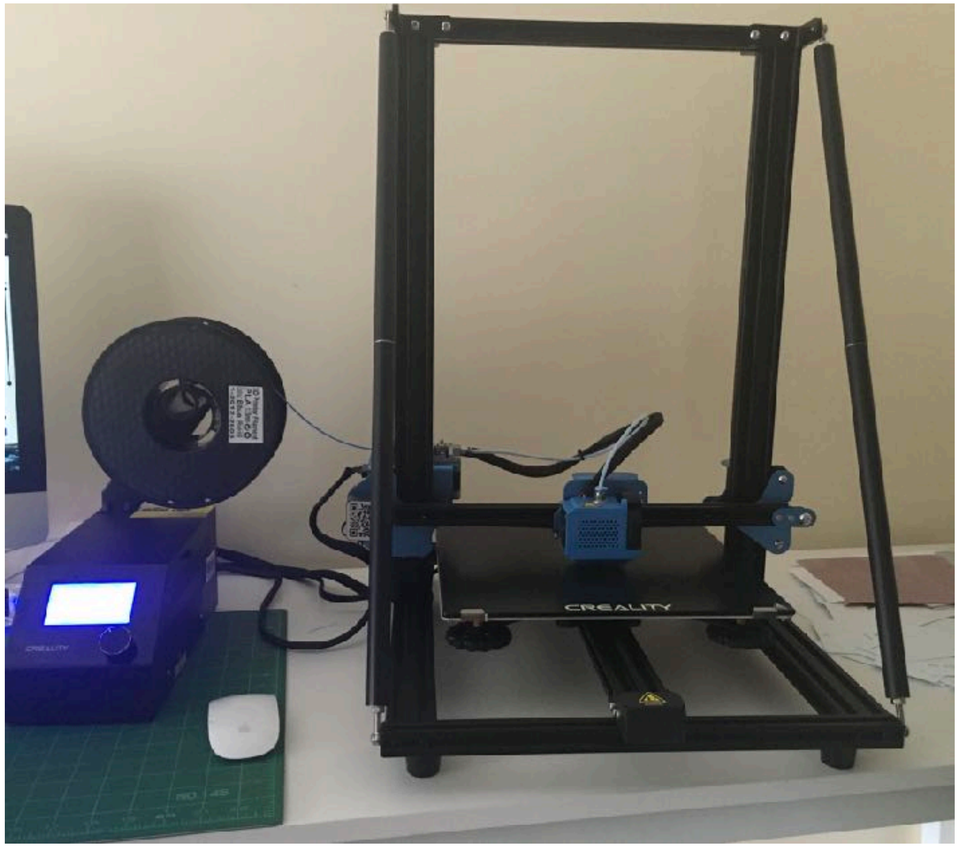
Barrels, garbage cans

HOW DIFFICULT CAN IT BE?

- There is a learning curve, depending if you design your own or copy others
- There are essentially 2 types of printers to choose from, Filament or Resin.
- Resin is good for very fine detail but Filament type satisfies most of our requirements.
- Do your research.

Typical Resin printer

Typical Filament printer



WHAT CAN I PRINT

- People are always in demand, but filament printers are really only good for figures taller than say 65mm, or 2 1/2”
- Items that are not too complex, but simple in shape print quite well.

3pc picnic table

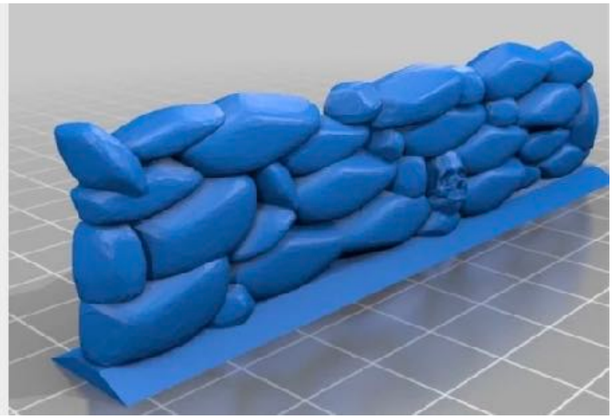
8 pc. Park bench

Period Figures hard to find

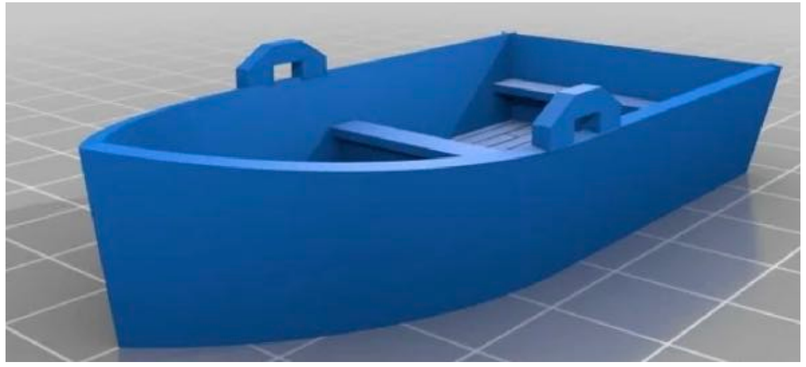
What Can You Print

The addition of small everyday items can bring uniqueness to your vignette and are easily found on the internet.

USERS OF 3D PRINTERS



- The model railway community
- Dollhouse enthusiasts
- Table top gamers
- Star Wars and SciFI fans



Plastic can be sanded and painted. Also filament and resin come in a variety of colours and materials.

THE PROCESS

- Find or create a file.
- Edit the file in a program like Tinkercad, SketchUp etc. (optional).
- Use the printers software to prepare the file for printing.
- Save the file to the thumb drive that came with your printer.
- Transfer the thumb drive to your printer and print the file

Resources:

- thingiverse.com (for free pre-made files)
- shapeways.com (to purchase items you want printed)
- all3dp.com (for general info and resources)
- wirecutter.com (source of printer reviews)
- yeggi.com. (search engine for pre-made files)
- meshmixer.com (editing and/or creating files)
- tinkered.com (free program for editing or creating files)
- cura.com (a free, widely used slicing program)

Printer Costs

Printers start around C$250-C$300 and up to several thousands of dollars.

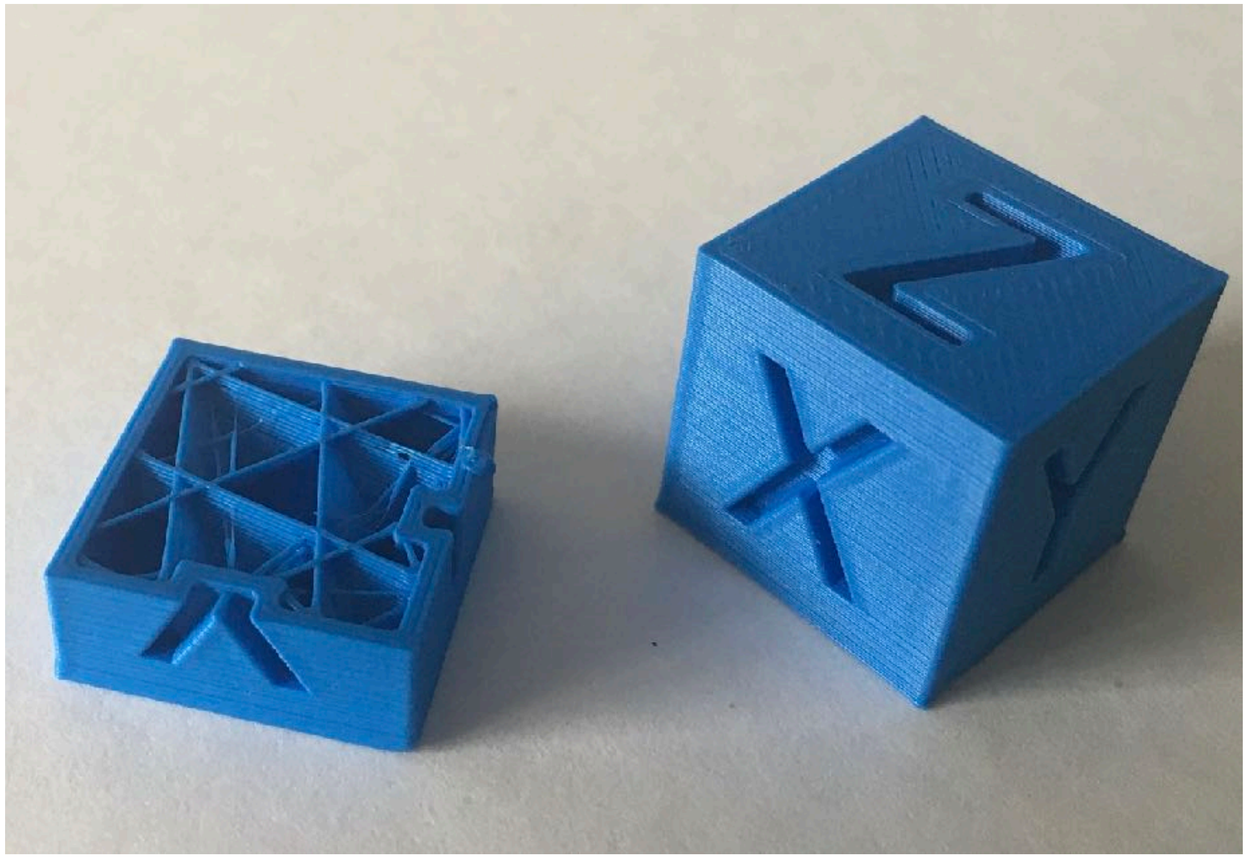
Do your research
and determine which
printer type
suits your needs

Printers shown are for illustration purposes only and are not intended to be a recommendation

Direct Costs

(For Filament Printers only)

1.75mm diameter PLA, polylactic acid, the most common material used by 3D printers. This PLA is available in several colours, however economically speaking, it is cheaper to buy the product in 1kg reels, or approx. 250m of product, for C$25 - C$35/ reel. Roughly C$0.03/gram



This 20mm Calibration Cube object can be very light as seen in the cutaway sample, with a ~1mm thick skin and a complex internal webbing provides the necessary strength. This characteristic can be altered In your printers Slicer program

This 72mm tall woman, on the right, has a two problems. Small contact area of the foot to the ground and an unsupported right arm. Additional support could be added with the file editing program or use the slicer program to automatically add the necessary supports, as illustrated by the figure on the extreme right.

Additional supports, shown on the left, can be easily removed with a common array of tools like a hobby knife, wire utter, etc.

This 72mm tall woman weighs in at 3g,
the additional support weighs 3g.
So your material cost, based on C$0.03/gram,
for the figure is 9 cents and 9 cents for the support.

Time to print:

Of the 4 print qualities available, on the Cura alicer used,
the coarsest, 260 layers prints in 1hr-2min
the finest, 608 layers prints in 2hrs-19min.
Both print qualities use, approximately, the same amount
of material so does affect the print material costs.

Examples of costs to make

8” Oak Tree (shown)
15 hours to print
Cost C$2.91

4” Oak Tree
4 hours to print
Cost C$0.63

Park Bench (8 pieces)
1hr-40min hours to print
Cost C$0.33

Picnic Table (3 pieces)
2hrs to print
Cost C$0.30

Hopefully now you know a little more about 3D printers

Any Questions

Of the 2 oak trees shown, the left one is straight off the printer, while the tight one has been painted & flocked

If you have any questions or comments please feel free to contact me, Barry Jack, at "barryj.12@outlook.com"