# 3D Printer at the Carberry Library

If you’re curious about 3D printing come out to our branch and see our new printer in action. If you’re interested in using this printer we’ve put together a starting guide to answer some of the questions you might have. Feel free to call or email the branch if you have other questions.

# How does a 3D printer work?

* 3D printers create a three-dimensional solid object from a digital file by adding successive layers onto a flat print bed. Each layer can be seen as a thinly sliced cross section of the object.

# What do I need to use the 3D printer?

* A library card
* A digital 3D model in an .stl file format

# How do I use the printer?

* Bring your .stl file on a USB or send it by email to [laurie@wmrl.ca](mailto:laurie@wmrl.ca)
* Come into the library and we’ll walk you through how to lay out and slice your file for our printer.
* Leave us your contact info and we’ll be in touch when your print is ready.

# Where can I get an .stl file?

* Download pre-made .stl files from a reputable website (thingiverse.com, MyMiniFactory, TurboSquid, are a great place to start)
* Make one yourself using design software (for free online options try: Tinkercad, SketchUp Free, BlocksCad)

# How much does it cost to use the 3D printer?

* $1 to start a print and $0.05/g for the finished print (including supports). If you’re printing a design that has more than one piece it’s $1 to start and we’ll weigh all the pieces together at the end. See our samples for an idea of how much different kinds of prints might cost.

# Things to consider:

* Supports – because 3D printers print in layers many prints require supports (for example a figure with an outstretched arm). You can create your own supports if you are building your own design or we can add them for you. The supports are included in the final weight of the project and they will need to be removed from the finished print.
* Density – how dense do you want your finished project to be? For most hobby projects minimal infill density works fine (and limits the cost of your final print) but if you’re printing something for a practical use that needs to be stronger you may want to think about a denser infill. Talk to us about this!
* Time – 3D printing takes a long time. A very small print can be completed in 30 minutes, larger prints can take 20 hours. Our printer has a queue and we’ll contact you when your print is ready.

# What kind of filament does this printer use?

* PLA (polylactic acid) – a common thermoplastic that is easy to print, biodegradable, inexpensive, and derived from renewable resources. We have lots of colours of PLA filament (red, orange, yellow, green, blue, purple, pink, silver, gold, translucent, black). PLA also takes acrylic paint very well so you can paint your finished print too!
* ABS (acrylonitrile Butadine styrene – another common thermoplastic, it is not as easy to print as PLA but it is a good choice if you plan to drill or sand your print. It is more resistant to temperatures and impact than PLA and so it’s a good choice for prototypes or practical applications. Please be aware that it does have a tendency to warp. We have limited colour choices for ABS filament (black).