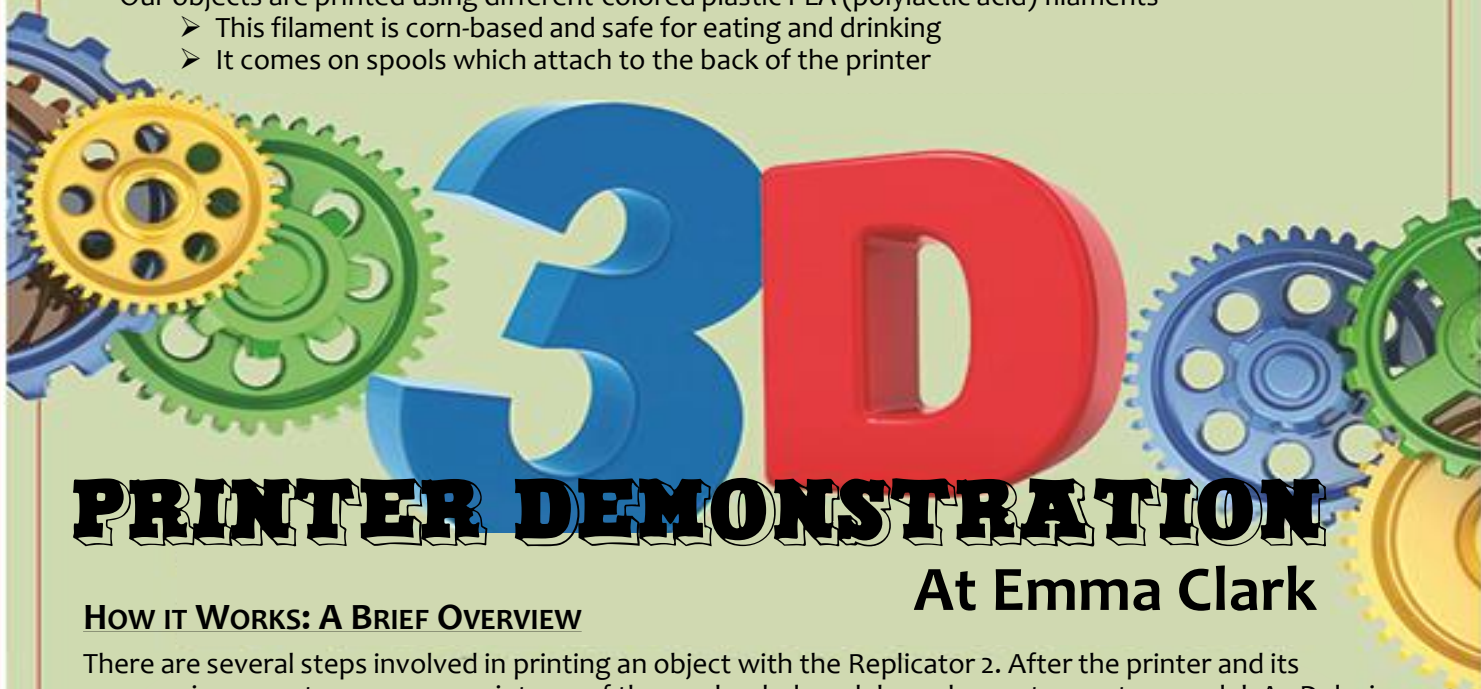


A 3D printer can create a multitude of useful objects for just about anyone in any field. It has become particularly helpful in the medical field, creating anything from casts to functional organ replacements. For the library's purposes, however, we are staying small but fun – providing a glimpse at the power of these amazing machines and the extraordinary progress of technology.

ABOUT THE 3D PRINTER: QUICK FACTS

- This 3D printer and its accessories are on loan to us for a month from the Suffolk Cooperative Library System which provides services to the public libraries of Suffolk County
- This printer was created by MakerBot Industries, based in Brooklyn
 - The model is the Replicator 2
- Attaching an all-in-one desktop computer with the proper software to the printer allows users to create and customize designs
- An additional attachment available is the MakerBot digitizer which is able to scan objects and create digital 3D models that may be saved, resized and printed
 - The digitizer works best when there is minimal disturbance while it scans
 - Movement or light reflection can hinder scanning accuracy
- 3D printers are moderately expensive; this particular model costs about \$2500
- Our objects are printed using different-colored plastic PLA (polylactic acid) filaments
 - This filament is corn-based and safe for eating and drinking
 - It comes on spools which attach to the back of the printer



PRINTER DEMONSTRATION

At Emma Clark

HOW IT WORKS: A BRIEF OVERVIEW

There are several steps involved in printing an object with the Replicator 2. After the printer and its accessories are set up, you can print any of the pre-loaded models or choose to create a model. A 3D design must be created on a computer. The design can be scanned in with the digitizer or downloaded from MakerBot's online library of 3D models. Using appropriate software, a 3D model is downloaded, edited and saved onto an SD card which is then placed into its proper slot on the Replicator 2 allowing the user to choose the design and begin the printing process. This is where the fun begins...

The printer's extruder will heat up to 230°C (~445°F), melt the PLA filament and then begin to print the design. It prints layer after layer of the plastic in a honeycomb pattern that provides stability for the object. The printing process can take anywhere from 15 minutes to 10 hours or more, depending on several different factors such as the size, shape, density and complexity of the object being printed.

After the job is done, the object almost immediately cools down and can be gently lifted from the build plate. You now have a fully functional 3D object!

Please note: Our 3D printer is for demo purposes only and meant solely to demonstrate new and innovative technologies to our community. We cannot make objects on request.



Emma S. Clark
Memorial Library

120 Main Street, Setauket, NY 11733

"The Heart of the Three Village Community"

Phone: 631.941.4080

Online: emmaclark.org

Email: askus@emmaclark.org

