
HELPFUL DESIGN RESOURCES

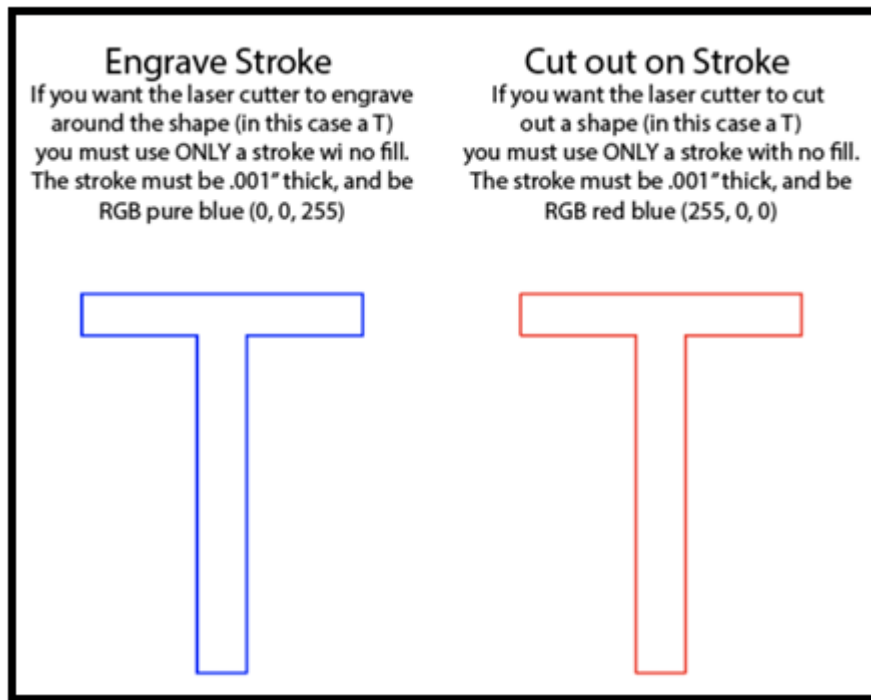
The DESIGN PHASE is the most important and time-consuming phase in creating a product for fabrication with a 3D Printer or a Laser Cutter! So, here are some helpful resources that introduce the technology and the design software.

3D Printing

- Introduction to 3D Printing (4 min): [How does a 3D Printer work? - YouTube](#)
- In order to 3D print an item you must use a CAD software program to digitally design your items. The following are free, entry level CAD programs:
 - [TinkerCAD](https://www.tinkercad.com/)
 - [Fusion 360 Student and Education Software | 1-Year License | Autodesk Education Community](#)
 - [Video tutorials](#)
 - [Fusion 360 | Design Academy \(autodesk.com\)](#)
 - [Getting Started in Tinkercad: A Tutorial for Complete Beginners - YouTube](#)
 - [Virtual STEMinar - Create a Bubble wand using TinkerCAD - YouTube](#)
- Items to keep in mind:
 - The items will be printed with PLA, a type of “bioplastic” made from plant starches, on a MakerBot Replicator 3D Printer.
 - Be sure that your dimensions are accurate in your digital design, because that it is how your item will print.
 - Maximum filament allowed: 200 grams (software estimates the quantity before printing)

Laser Cutting/Engraving

- Introduction to Laser Cutting (4 min): [Laser Cutting - YouTube](#)
- Must use a vector drawing program, such as Adobe Illustrator or Inkscape, to digitally design your items.
 - [Inkscape](#) - a high-quality, free drawing software <https://inkscape.org/>
 - [Helpful video tutorials](#)
 - [VIDEO - Culinary Applications of Laser Cutting](#)
 - [VIDEO – Using Inkscape to Design a Cake Topper: A Tutorial](#)
 - [Virtual STEMinar - Part 1: Intro to Inkscape - YouTube](#)
 - [Virtual STEMinar - Part 2: Intro to Inkscape - YouTube](#)
 - [Virtual STEMinar - Part 3: Intro to Inkscape - YouTube](#)
- [Items to keep in mind:](#)
 - Sheet Materials Available for Laser processing:
 - 1/8” Clear Cast Acrylic sheet 12” x 24”
 - 1/4” Baltic Birch Plywood 12 x 12” (Long grain)
 - 1/8” Colored Cast Acrylic 12” x 12” (available colors; black, white, red, blue, yellow)
 - Cardstock 12” x 18” (available colors; black, white)
 - Maximum materials allowed:
 - Two sheets of 12” x 24” sheet material
 - Use the stroke width and color settings noted in the image below for engraving or cutting.



EXAMPLES OF MATERIALS AND PROCESSES:

