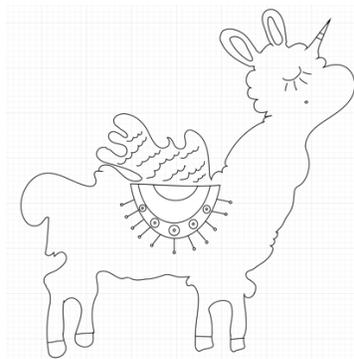
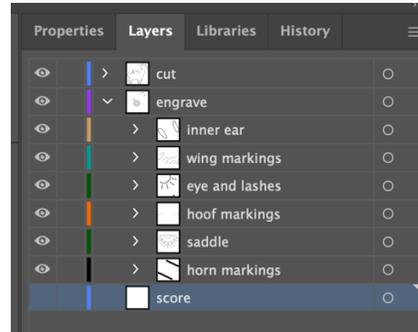


## GlowForge How-To:

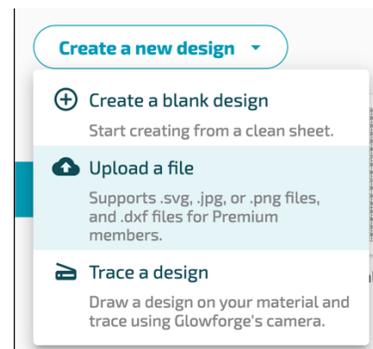
1. The first step is to make your design! Let's first look at drawing your own design using a vector drawing app such as **Adobe Illustrator** (*note: you can also use a raster-based application such as **PhotoShop** or **Krita**, you will just need to vectorize your design before uploading to the GlowForge app – separate tutorial [HERE](#)*). If you're using a pre-made design, then you can skip to step #5 after importing/uploading your design into the GlowForge app.

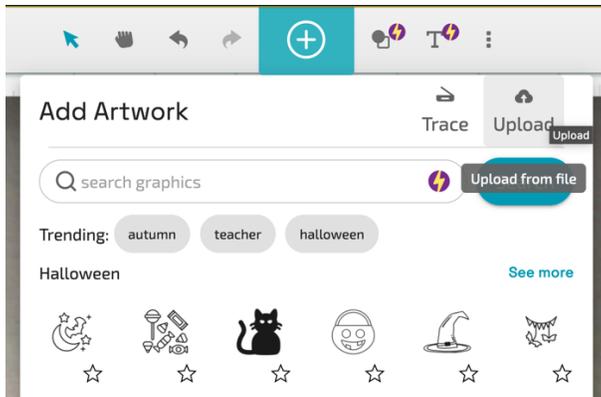
2. In your drawing app, create a **separate layer for each function** that you'd like to utilize: **cut**- *completely cut out part of a design*; **engrave**- *engrave a design on your creation*; and **score**- *outline a design on your creation*.



3. **Export each layer separately as a PDF.** Repeat with each layer, showing and hiding each in turn, so you have a separate PDF for each layer of your design. Once this is done, you have the three functions of your design when it's printed.

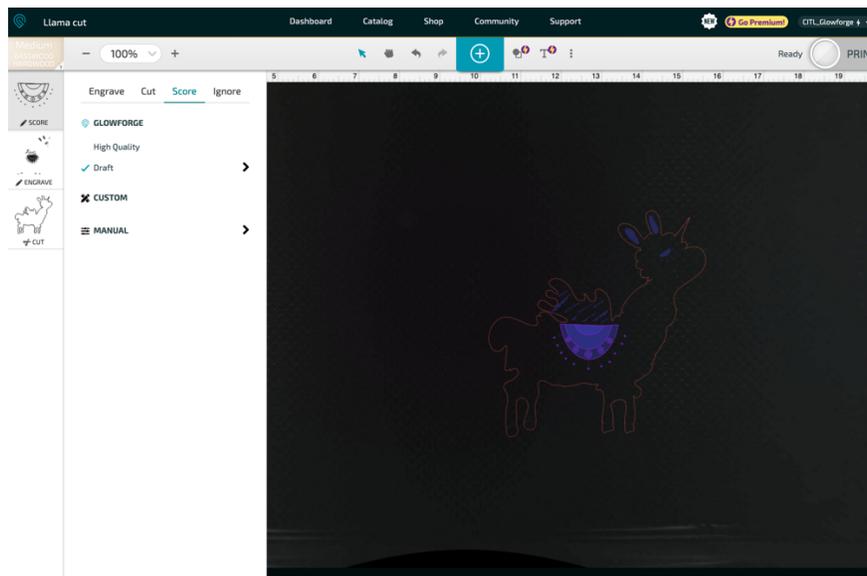
4. Open your browser and go to [app.glowforge.com](http://app.glowforge.com), (if the account isn't already logged in, contact a staff member/intern) click **"create a new design,"** and choose 'Upload a file' for your first PDF (usually the cut layer (outline of the design)).





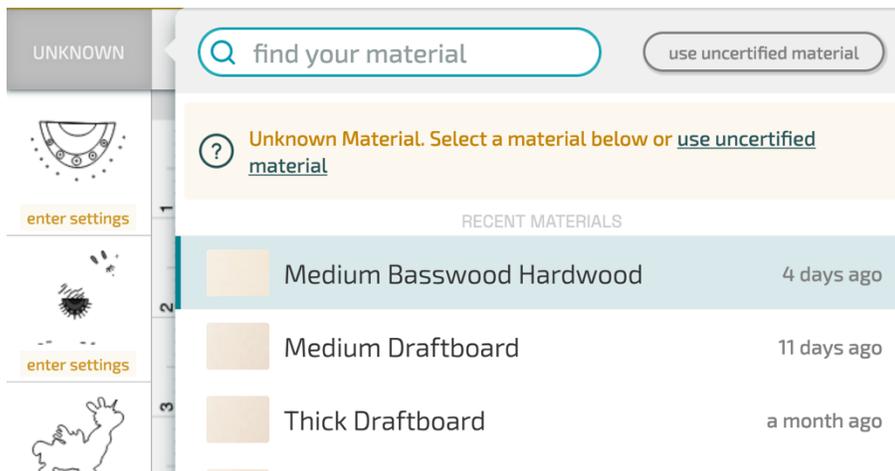
Then, add each additional layer as a new element using 'Add Artwork.' It will automatically be added in the right spot. You can drag a bounding box around the entire design to move it and drag a corner handle to re-size.

5. Assign **“cut”** **“engrave”** or **“score”** to each layer so the GlowForge knows what to do with your design:



## TO PRINT/LASER CUT YOUR DESIGN:

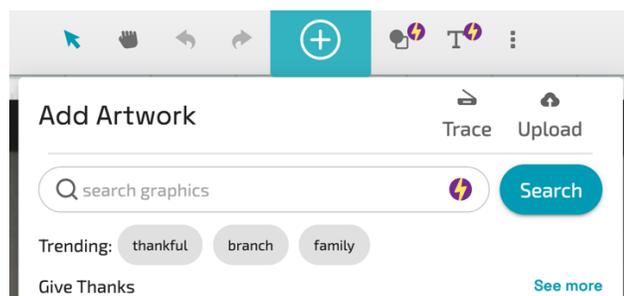
6. Now it's time to turn on the GlowForge! Find the switch on the back right-side of the machine and flick it, then find the **fan dial** on the exhaust unit and turn that on as well (a clockwise quarter turn). It will take the GlowForge a few minutes to **center and calibrate**.
7. **Select your material** and place it in the GlowForge bed. Each time you open and close the top, it takes a new photo of the bed, which will be updated to show your material in the app. The QR code on the material will immediately be read and automatically set (you can also input that info manually in the upper-left corner where it says **“unknown”**).



8. **Place your design** on the material where there's space for it to be cut out and double check that each of your layers is set to the correct cut, engrave and/or score function.
9. **Click print!** It will take a few minutes to calculate how long it will take, once it's done the button should glow **blue**. Press it and watch the magic happen.
10. Once the print is done, you must let it **cool** until the screen says it's safe to open the lid. Take out your design and peel off the fire-retardant paper on both sides of it.

## IF YOU ARE DRAWING ON PAPER AND TRACING YOUR DESIGN:

1. Draw your design on paper and place paper inside the GlowForge Bed. Then, in the GlowForge app, choose **"Create a new design > Trace design."**



2. The Trace Design space will open (you may need to choose 'refresh' from the content menu). Drag a square around the entirety of your design and, when prompted, click in the white space inside your design. This will define the part of your design that should be cut out from the rest. If any additional part of the design is to be cut, then click on that white space too. The regions that will be cut out will be highlighted pink.

STEP #2 (OPTIONAL): CLICK THE WHITE AREAS YOU WANT TO CUT AWAY (USE CTRL-Z OR THE UNDO ICON ABOVE IF YOU MAKE A MISTAKE)



3. Click **“Place Artwork.”** Your design will then appear in the design space. Make sure all your non-cut lines/areas are set to ‘Engrave’ (you cannot score in Traced images, since they are bitmaps).
4. Go up to step #7 above to choose material and print your design.

**NOTE:** if you want to scan a handmade drawing and convert it to a vector drawing, here is a great tutorial for doing so: <https://youtu.be/3vwN2bc8gbw>.

### **FINALLY, THE CLEAN UP PROCESS:**

Remove excess material from the GlowForge bed (if it’s CITL material, a staff member will return it to storage). Clean up any scrap fire-retardant paper after you peel it off; turn off the fan and Glowforge.