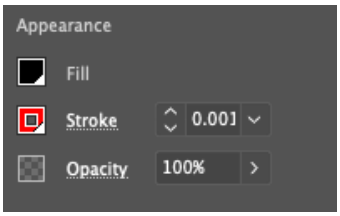
Using Adobe Illustrator to Make Designs for Laser Cutter

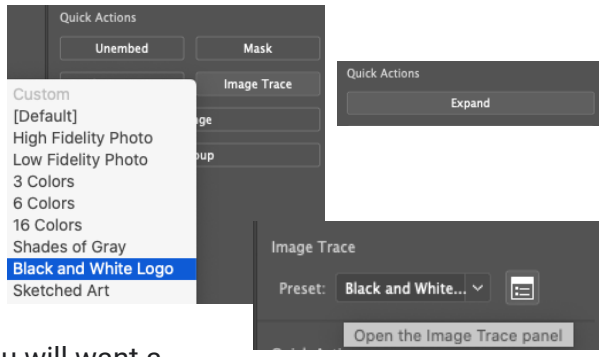
Note: If you ever feel your mouse is behaving strangely, make sure you are set to **Selection Tool** on the toolbar. *If you want to edit individual vector paths, switch to the **Direct Selection** tool.*



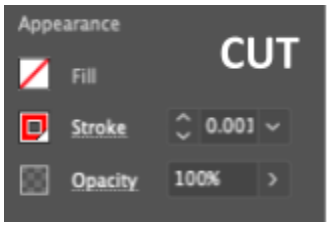
1. Open the laser cutting template in Adobe Illustrator - this has the preset stroke weight (0.001) and colors (black - raster, blue - engrave line, red - cut line) needed for laser cutting designs

2. Add images to your artboard - you can open the files in Illustrator, or you can copy the files from Google Images or other websites. *To paste on a Mac, hold ⌘+V. To copy an image from Google Images, hold Ctrl and click the image, then select 'Copy Image' from the menu.*

3. When the image is selected, open the **Properties** tab and select **Image Trace** and **Black and White Logo.** Click **Expand** to complete the trace.
   *Note - if you are unhappy with the trace results, you can adjust settings after by opening the Image Trace panel and adjusting settings like **Threshold** or **Paths.***



4. Set the colors of your paths - **in general** for engraving, you will want a **black object** with a **blue stroke** outline (the blue engraved outline will make your image pop). If you are **cutting out** an object, it should have a **red stroke** and a **transparent or white fill. ALL STROKES should have a weight of 0.001 pt.**
   *Note - if you want to make particular paths **red (cut)** versus **blue (engrave),** you can switch to the Direct Selection tool (see top of page) to select individual sub-paths of an image*



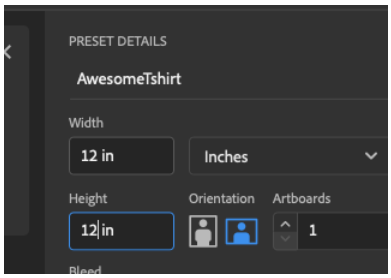
5. Add text, customize the appearance and arrange your images. *Remember if you add text or shapes - set the stroke to **blue (engrave)** or **red (cut)** and the fill to **black (raster engrave)** or **transparent** (**no laser).***

6. BEFORE YOU SAVE, click each part of your design and examine the **Properties** tab - **DOUBLE CHECK THAT ALL STROKES ARE SET TO 0.001 weight.** Black should be for engraving, and red and blue should only be used for **OUTLINES.**

7. Save your design as a *.PDF file on a USB flash drive.

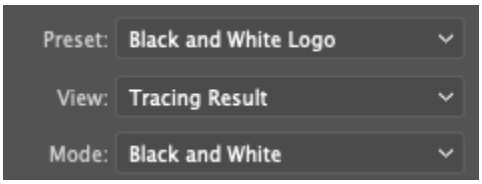
Using Adobe Illustrator and the Roland Vinyl Cutter

Note: If you ever feel your mouse is behaving strangely, make sure you are set to **Selection Tool** on the toolbar. *If you want to edit individual vector paths, switch to the **Direct Selection** tool.*



1. Create a new file in Illustrator (⌘+N), and set the dimensions to match your piece of vinyl *(for example, width: 12 in, height: 12 in)*

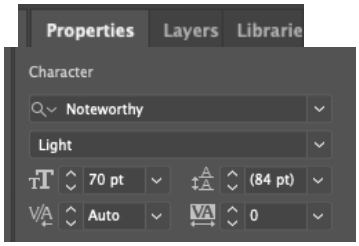
2. Add images to your artboard - you can open the files in Illustrator, or you can copy the files from Google Images or other websites. *To paste on a Mac, hold ⌘+V. To copy an image from Google Images, hold Ctrl and click the image, then select 'Copy Image' from the menu.*



3. From the **Window** menu, select **Image Trace** - set **Preset** mode to **Black and White Logo**. Set **Mode** to **Black and White**. Adjust the threshold until it appears as you like.

4. Expand your trace lines - select the image, then from the **Object** menu select **Image Trace** and **Expand.**

5. Add text, customize the appearance and arrange your images.

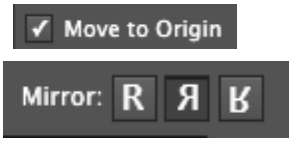


6. Delete any unwanted paths - use the **direct selection** tool from the toolbar to click and delete individual paths.

7. Open the Roland CutStudio extension - from the **Window** menu, select **Extensions** and then **Roland CutStudio.** Set the **model** to **GS-24** - if you do not see 'Ready', double check that the vinyl cutter is plugged into the computer and powered on.

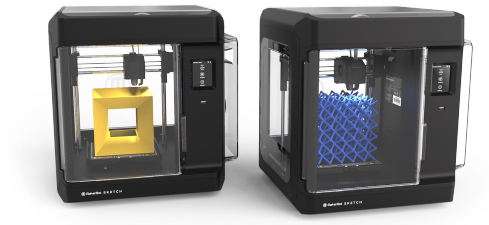
<u>BEFORE YOU CUT</u>

- Trace any text - select the text and the click the **Outline Text** button on the CutStudio extension
- Double check the preview - you can use the **Direct Selection** tool to delete lines you want to get rid of
- Check the **Move to Origin** box unless you know you should not
- **IMPORTANT:** If you are using **heat-transfer vinyl**, make sure to **MIRROR** your design on the CutStudio extension.



LOADING VINYL: Rollers should be on edge of material, but also within white boxes. Pull lever to hold and release vinyl. Select **Roll** or **Piece** with the arrow keys and hit **Enter.**

NOTE: Pen force is different for different materials. Ask for help unless you know what you are doing.

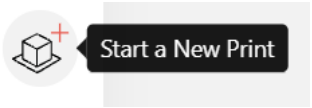


3D Printing with Makerbot Sketch Printers - 1 Pager

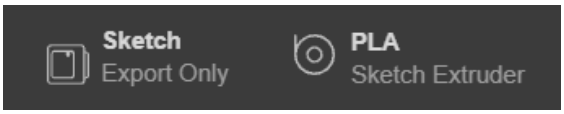
Slicing Models and Preparing the Printer

Your model should be a *.stl or ***.obj file.**

1. Sign into **cloudprint.makerbot.com**. Click **Start a New Print.**



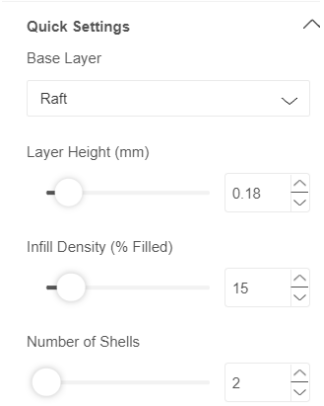
2. Change the type of printer to **Sketch** and make sure the material type is set to **PLA.**

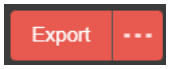


3. Click **'Add Model'** then **'Add File'** and select your model (.stl or .obj file).

4. Adjust the size and placement of your model

5. Adjust other settings -
    a. **Rafts** help your print stick to the surface and are a good idea unless you are printing something very flat
    b. **Supports** are required if your print has any long pieces that overhang the side of the model
    c. Increasing the **infill density** increases how sturdy your model is - however it also increases the time and material use of your print. Get Ms. Abid or Ms. Born's permission before increasing this.
    d. Increasing the **layer height** will make your print faster, but also reduce the level of detail.



6. When you are done, click **Export** 

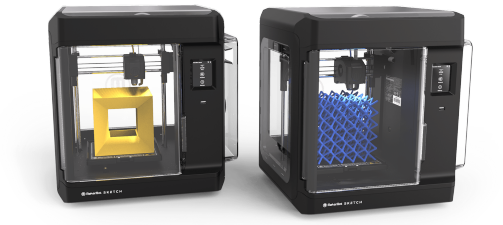
and add you file to a USB drive.

Settings on the Sketch Printers

Calibrate the Z-axis. From the main menu, press **Settings**, then **Utilities**, then **Calibration**. Once the extruder is homed and touching the build plate, slide a piece of copy paper underneath, and adjust until you can slide the paper back and forth with just a little resistance.

Change the Material. From the main menu, press **Material**, then **Unload.** Rewind the spool slowly. Make sure your new spool is not tangled and the filament end is level (snip with scissors). Press **Material**, then **Load** and follow the instructions on the screen - note it may take a minute for the new filament to reach the nozzle and extrude out, and some old filament will still be in the nozzle at first.

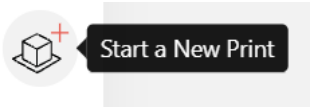
To Print - from the main menu, select **Print,** insert the USB drive and select **USB** and then your file.



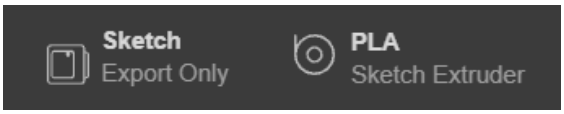
Impresión 3D con impresoras Makerbot Sketch -
Rebanar los modelos y preparación de la impresora

Su modelo debe ser un archivo *.stl o ***.obj.**

1. Inicie sesión en **cloudprint.makerbot.com**. Haga clic **en Start a new print**



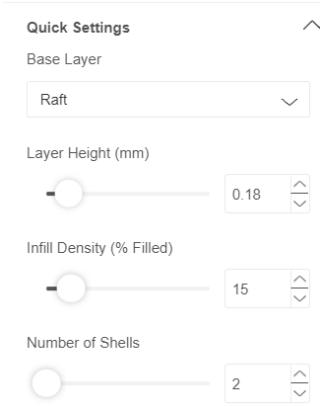
2. Cambie el tipo de impresora a **Sketch** y asegúrese de que el tipo de material esté configurado en **PLA.**



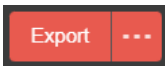
3. Haga clic **en 'Add Model',** luego **en 'Add File'** y seleccione su modelo (archivo .stl u .obj).

4. Ajuste el tamaño y la ubicación de su modelo.

5. Ajuste otras configuraciones:
    a. **Rafts** ayudan a que su impresión se adhiera a la **build plate** y son una buena idea a menos que esté imprimiendo algo muy plano
    b. Usa **supports** si su impresión tiene piezas largas que sobresalen del lado del modelo
    c. Aumenta la **Infill Density** aumenta la solidez de su modelo; sin embargo, también aumenta el tiempo y el uso de material de su impresión. Obtenga el permiso de la Sra. Abid o la Sra. Born antes de aumentar esto.
    d. Aumentar la **Layer Height** hará que su impresión sea más rápida, pero también reducirá el nivel de detalle.



6. Cuando haya terminado, haga clic en **Exportar** y agregue su archivo a una unidad USB.



Configuración en las impresoras de bocetos

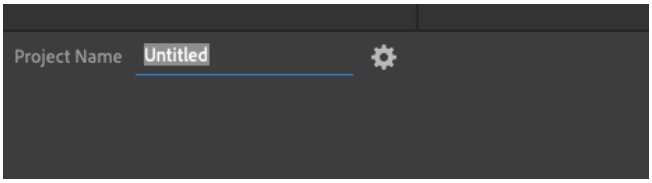
Z-Calibration. Desde el menú principal, presione **Settings**, luego **Utilities**, luego **Calibration**. Una vez que la extrusora esté en su posición inicial y tocando la placa de construcción, deslice un trozo de papel de copia debajo y ajústelo hasta que pueda deslizar el papel hacia adelante y hacia atrás con solo un poco de resistencia.

Cambia el material. Desde el menú principal, presione **Material** y luego **Unload.** Rebobine el carrete lentamente. Asegúrese de que su nuevo carrete no esté enredado y que el extremo del filamento esté nivelado (corte con tijeras). Presione **Material**, luego **Load** y siga las instrucciones en la pantalla. Tenga en cuenta que el nuevo filamento puede tardar un minuto en llegar a la boquilla y salir, y algunos filamentos viejos todavía estarán en la boquilla al principio.

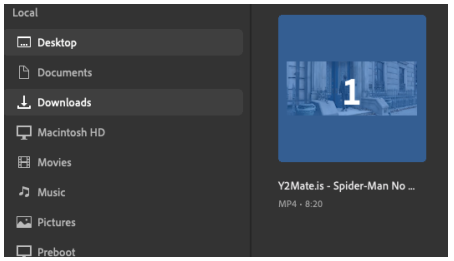
Para imprimir: desde el menú principal, seleccione **Imprimir,** inserte la unidad USB y seleccione **USB** y luego su archivo.

Video Editing with Adobe Premiere <u>RUSH</u>

Premiere Rush: simple projects (clips and sounds, no effects)
Premiere Pro: complex projects (color editing/effects, greenscreen)



1. Open Adobe Premiere Rush (hint: hold ⌘**Space,** then search for Rush). Give your project a name at the bottom of the screen.



2. Select any video or audio files you want to include in your project.

3. Use the functions below to split and splice together, add in transitions, effects/graphics, audio tracks, or alter the speed of clip.

4. **WHEN YOU'RE DONE:** Click 'Share' at the top of the screen, select 'Local', name your file, and click 'Export' to create an MP4 file on your computer that can be emailed, uploaded to Google Drive, or uploaded to Youtube.

KEY FUNCTIONS:

SPACEBAR Play and pause video.	***RIGHT ARROW*** Move forward in clip 1 frame at a time	***LEFT ARROW*** Move backward in clip 1 frame at a time
Snip - place playhead at position in clip you need to split clip **SHORTCUT: *S***	**Add Media -** add sound or video files to project **SHORTCUT: *Y***	**SEPARATE AUDIO** - separate sound from clip, to delete or edit separately **SHORTCUT: *E***
Graphics - add titles and graphics before, after, or layered over a clip **SHORTCUT:** ⌘**1**	**Effects -** add transitions, zooms, fadeouts, and adjust length **SHORTCUT:** ⌘**2**	**Speed** - change clip speed (slow or fast motion) **SHORTCUT:** ⌘**3**
 **Zoom -** click and drag circle at bottom to zoom in and out of clips	**Crop and Rotate**: crop, flip, zoom in, rotate, or make video transparent **SHORTCUT:** ⌘**4**	**Audio-** adjust audio clip volume and/or modify stereo output **SHORTCUT:** ⌘**5**