DIY Cave Bend/oregon

Glowforge Proficiency Test Instructions

- 1. Turn on room ventilation (switch is on boss laser).
- 2. **Start Glowforge** (there is a toggle switch on the back lower right corner of the machine). It takes several minutes for it to run through its start up cycle.
- 3. Open the glowforge software.
 - a. Open Firefox web browser labeled glowforge on desktop ------
- 4. Load a glowforge file. The glowforge uses .svg, .jpg, and .png files. Here we'll be using a .svg file.



- a. Click "Create a new design" in upper left corner for drop down menu.
- b. Select "Upload a file"



- c. Navigate to the .svg test file on the Desktop called "Proficiency Test File.svg" and select it. Click Open.
- 5. Load material into machine. Choose a piece of ¹/₈" Baltic Birch from the scrap bin with a blank space at least about 3" square where your test graphic will print. Baltic Birch is a light in color, lightweight plywood. If you aren't sure, ask a steward.
 - a. Measure using digital calipers in black plastic box (see photos below). $\frac{1}{8}$ " = 0.125



- b. Place the scrap of birch into the glowforge and close the lid. The software will show "scanning" as it uploads an image of the project area.
- 6. **Tell software what kind of material you are using**. Although we know we are using Baltic Birch, this exercise will show you how to change all settings as if you didn't know the type of wood.
 - a. Choose "unknown" on the upper left and then "use uncertified material".

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	S Proficiency Test File				
\langle	UNKNOWN Q Find your material Use uncertified material				
	enter settings O Unknown Material. Select a material below or use uncertifing				ow or use uncertified
	40% RECENT MATERIALS				
	enter settings			Light Basswood Plywood	5 days ago
	20%			Thick Maple Plywood	5 days ago
	enter settings	3		Thin Maple Veneer	8 days ago
	100%	4		Thick Natural Leather	2 months ago
	enter settings			Medium Red Acrylic	2 months ago
	80%	5		Medium Walnut Hardwood	3 months ago
	enter settings	9		Thick Black Acrylic	3 months ago

b. Enter material thickness. Enter number gathered in step 5.

7. Move test graphic to desired printing location.

a. Click on the test graphic (upper left hand corner) to activate then drag it over to the print area aligning it onto the birch, leaving approximately ¹/₈" of room or more around the edges. The image location highlights in light blue on the rulers along the outside of the work are so you can see how far away the test graphic is from the edges of your material. Notice the change from "No Artwork" to "Ready" in the upper right hand corner next to the print button when you drag the test graphic into the printable area.





8. Adjust order of print actions.

a. The items in the left column are the actions the glowforge takes during printing, starting at the top of the list. Each action is separated by a horizontal line.

b. Try resorting: using this "vertical action list", drag the rectangle cut line to the bottom of the stack.

9. **Adjusting print settings**. In a personal project, you can adjust settings for each element as desired, but for this text square, follow directions below.

a. Select the top element of the design in the vertical action list: Single click on the top item labeled "ETCH". Along the top of the menu that appears, you can select the associated action. In this case, select engrave. Then select "manual" at the bottom. This opens settings for that action. Notice you can adjust speed, power, lines per inch, and number of passes.

b. Leave speed at 1000. Set "Precision Power" to 60 (this represents 60% power) and Lines per inch at 225.

c. For each element in the action list, select the following settings. In this test, for each element that you adjust you must first choose the type of laser action (engrave, cut, score, ignore) and then choose "manual" to reach the settings page.

i. If an element has a % in it, change the laser action to engrave with power set to match the % listed on that element and speed set to 1000. This will show how power settings can affect a change in the output sample.

ii. Change the 40% engrave element to a Lines Per Inch setting of 125.

iii. Change remaining % elements (20%, 100%, 80%) to associated precision power and to a Lines Per Inch setting of 195.



iv. If an element has a name ("Score" and "Cut") rather than a percent, change it to that matching function. Change the manual settings to match the "Glowforge Material Common Settings" (usually sitting nearby the computer) for the Baltic Birch settings for all functions. *Note: you can reference many common material types you are using with this reference guide.*

v. Change the rest of the elements (those without names) to **Cut** functions and set the speed and power appropriately using common settings sheet.

d. How to know design is ready to print. Once you have chosen settings for each



element, it changes from red to a solid and brighter color (pink, orange, purple) You know your design is in the active printing area when it changes colors. See below it goes from red only to red, yellow, and purple. If you haven't edited a setting, that action in the list will not happen. For example, see image below where the 80% action is a lighter red color and the corresponding action in the list shows yellow "enter settings".

10. Print!

- a. Press the print button in the upper right corner. If you cannot click the print button, your design may not be in the printable area. The program will show you the number of minutes and seconds needed to make your print. Write this entry onto your Glowforge log with "Proficiency Test" as your name.
 - i. For a personal project, you will need to keep a record of the time on your glowforge log. The charge on top of your hourly shop rate is per minute of glowforge print time.



b. Press blinking button on glowforge to start printing process. **Remember: you need to** stay with the glowforge until your print is completed.

11. Get certified.

- a. Show the completed sample chip to the steward.
- b. If needed, begin again.; When you pass, congratulations! The steward on duty will change your certification status so you can come use the machine whenever you like.
- c. When finished, click "home" on the Glowforge app and find your test project. Use the drop down arrow on image of your project and choose "delete" so that the next student can begin from scratch.
- 12. Be sure to close browser window and turn off glowforge and fan when finished.