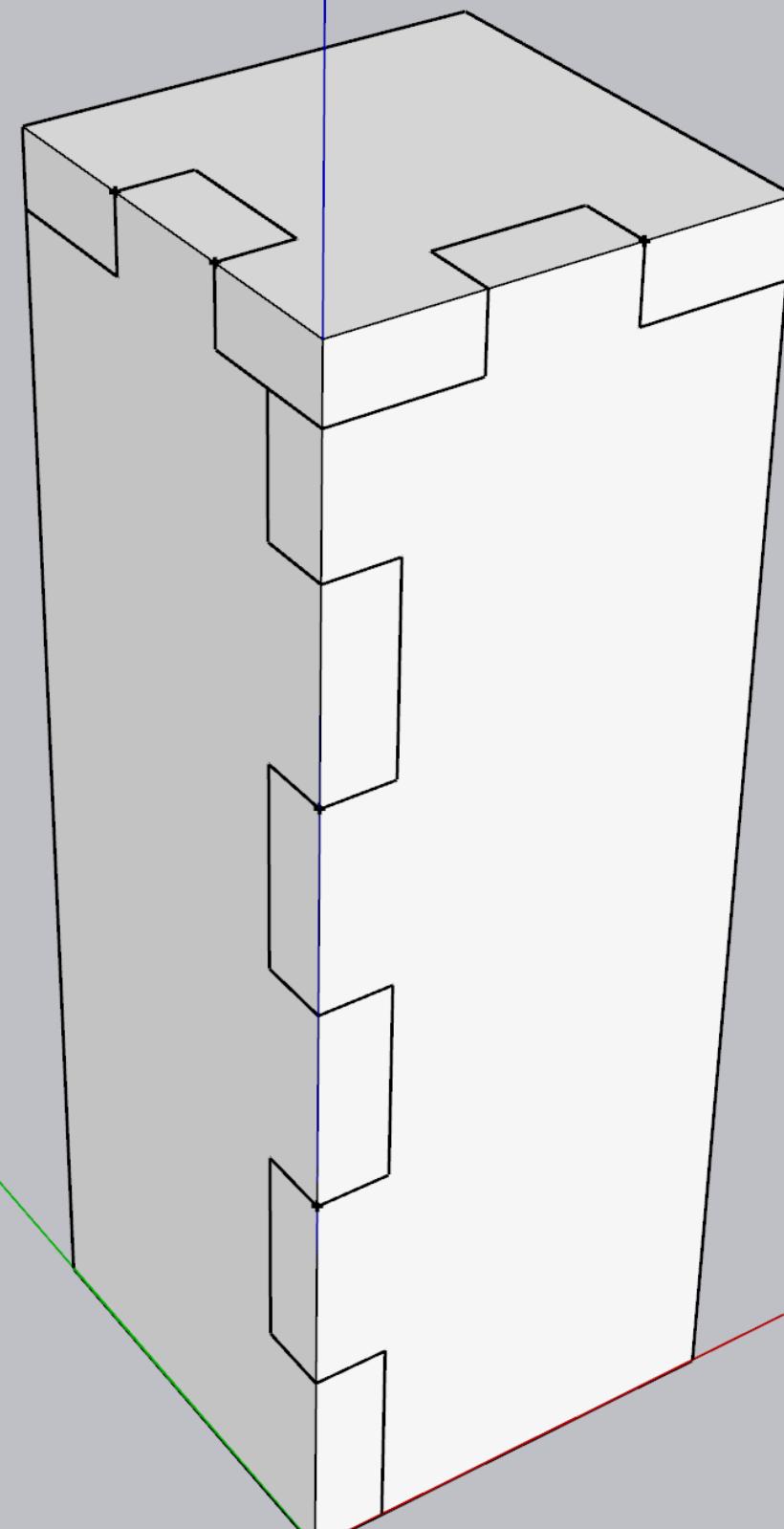


HOW TO LASER CUT FROM SKETCHUP

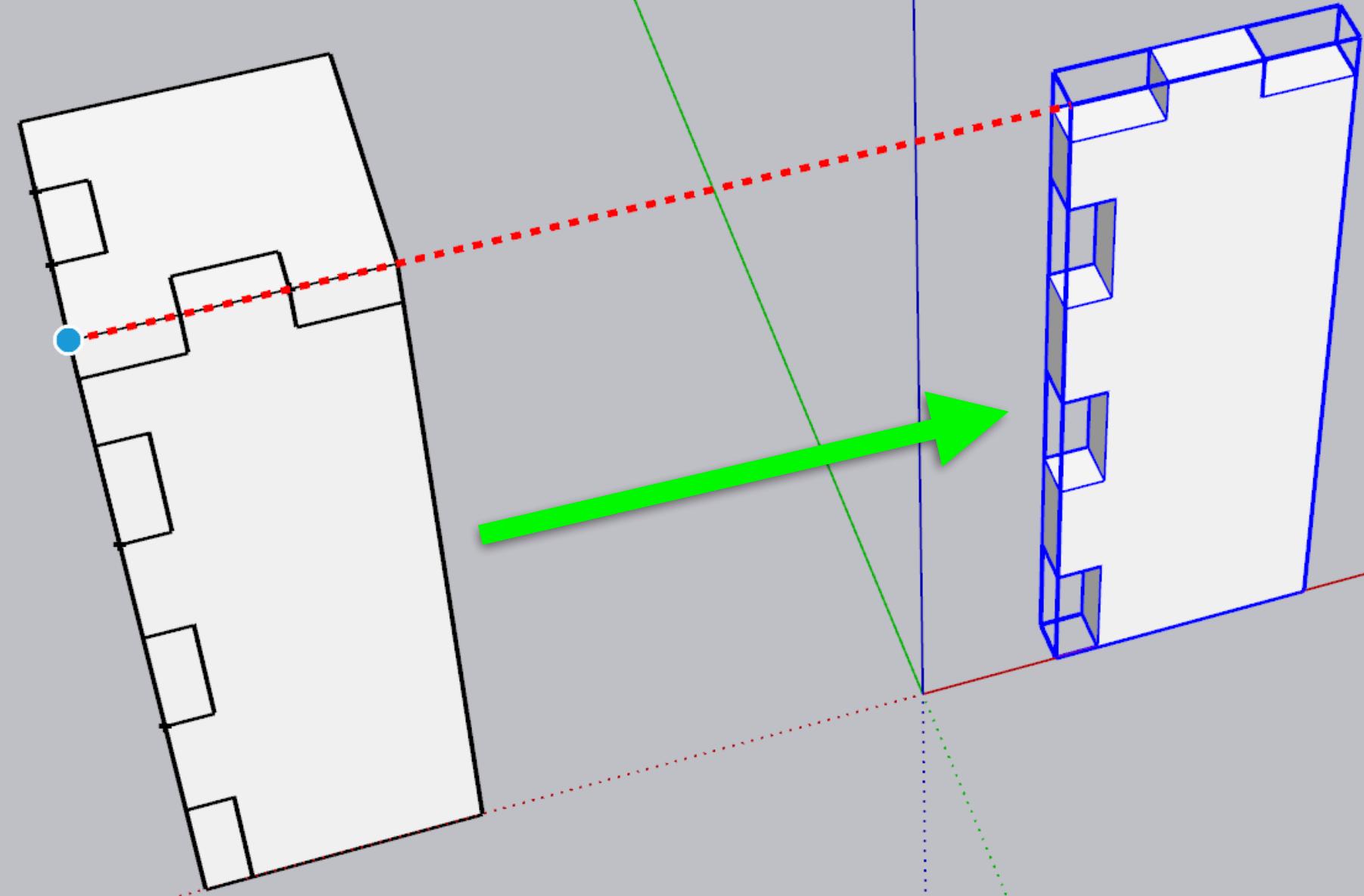
PREPARED BY ANDREW KASTNER!
WITH A BIT FROM JAMES H.
FRESH 15 OCTOBER 2020

*NOTE

This demo assumes you have some basic familiarity with both SketchUp and the lasers in the Corcoran Maker Space. Need to learn SketchUp? Find tutorials on LinkedIn Learning. Need to learn about what the lasers are capable of? Ask corcorantechs@gwu.edu

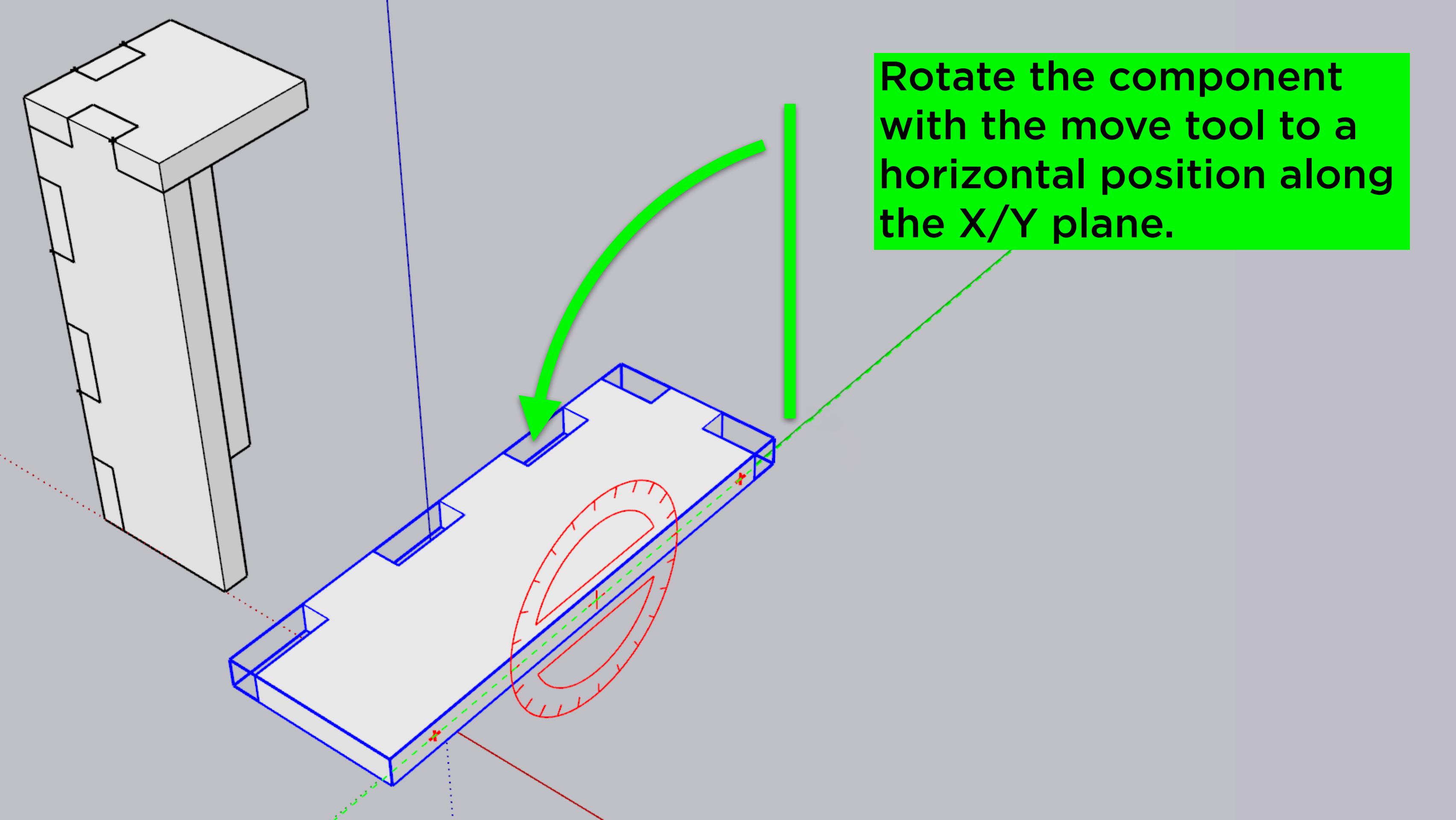


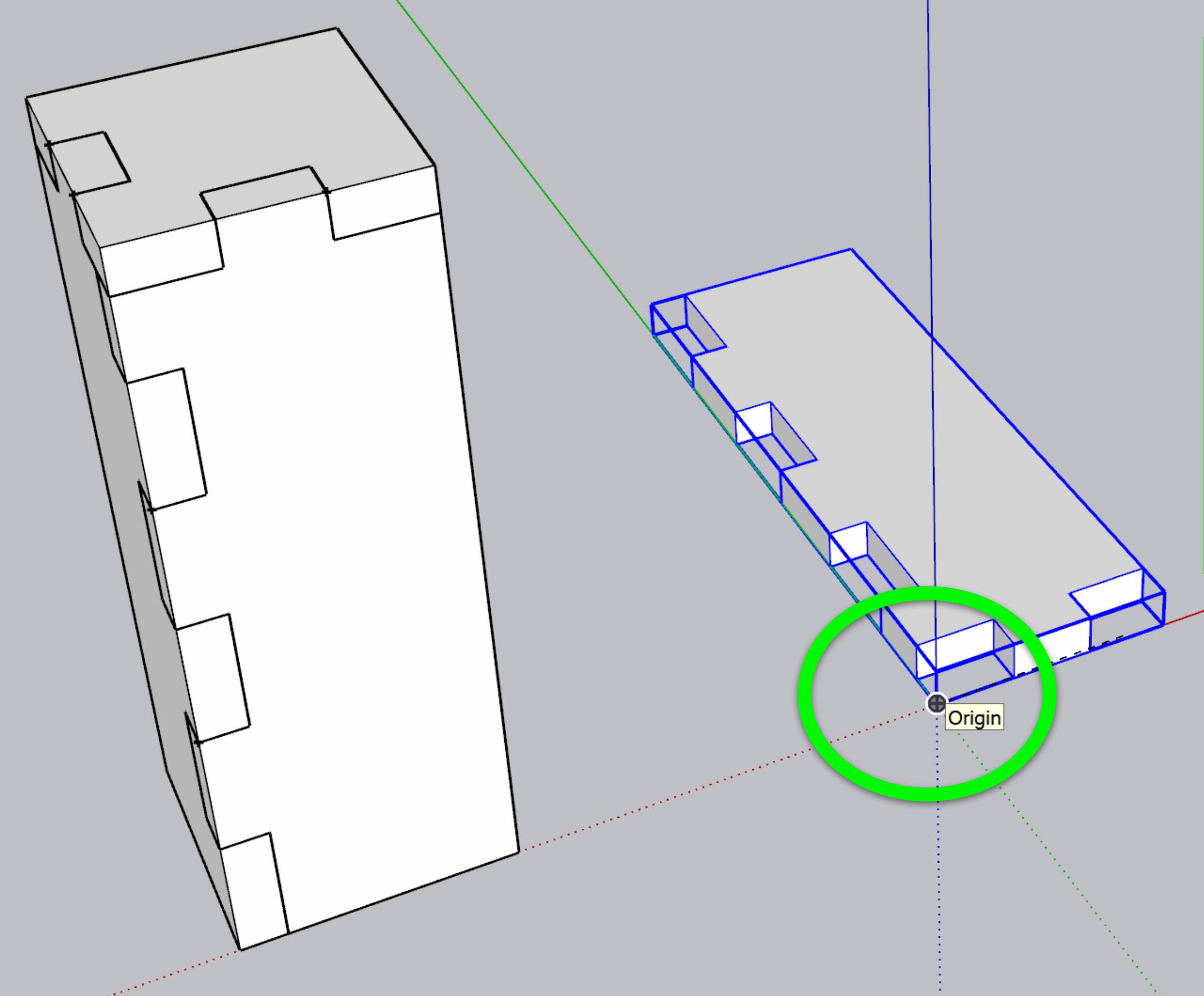
Let's say you've designed something awesome in SketchUp. How would you set that up to cut on the laser like flat-pack Ikea merch? Here's a simple example using a 3D corner section at full scale.



MOVE all of the components of the model away from the origin; then COPY a single component back over towards the origin.

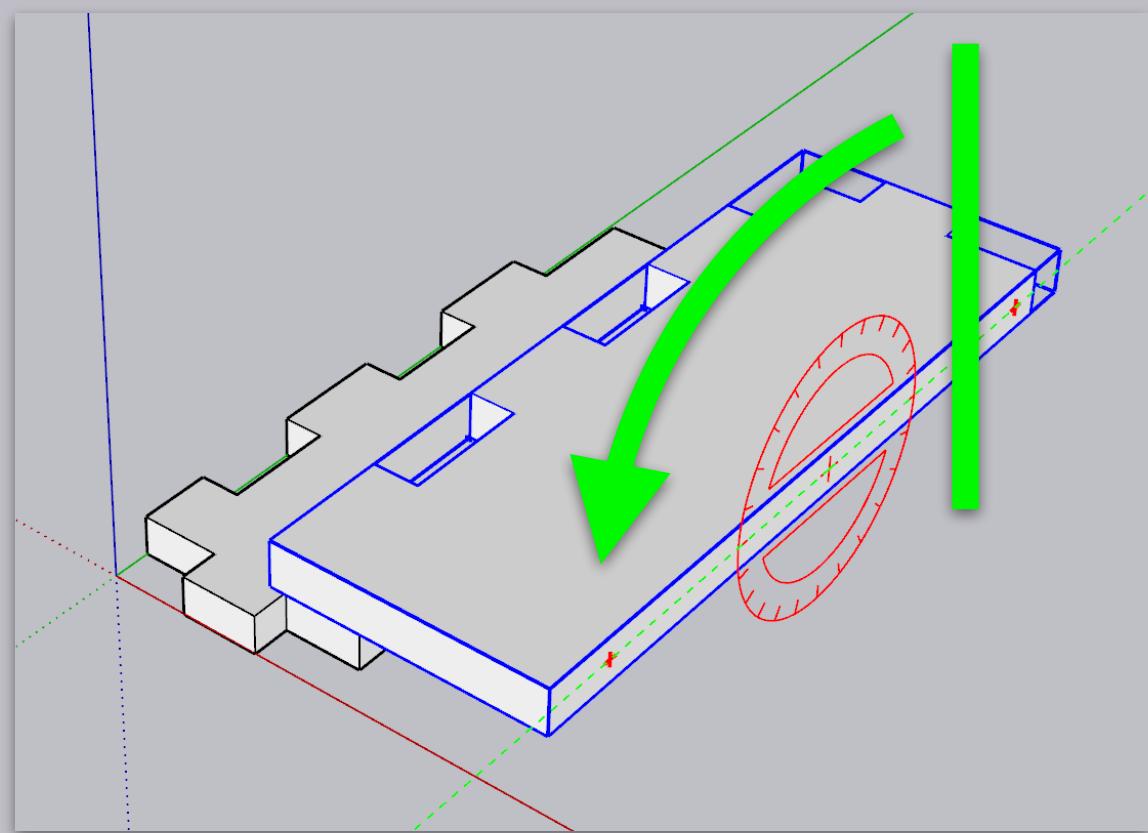
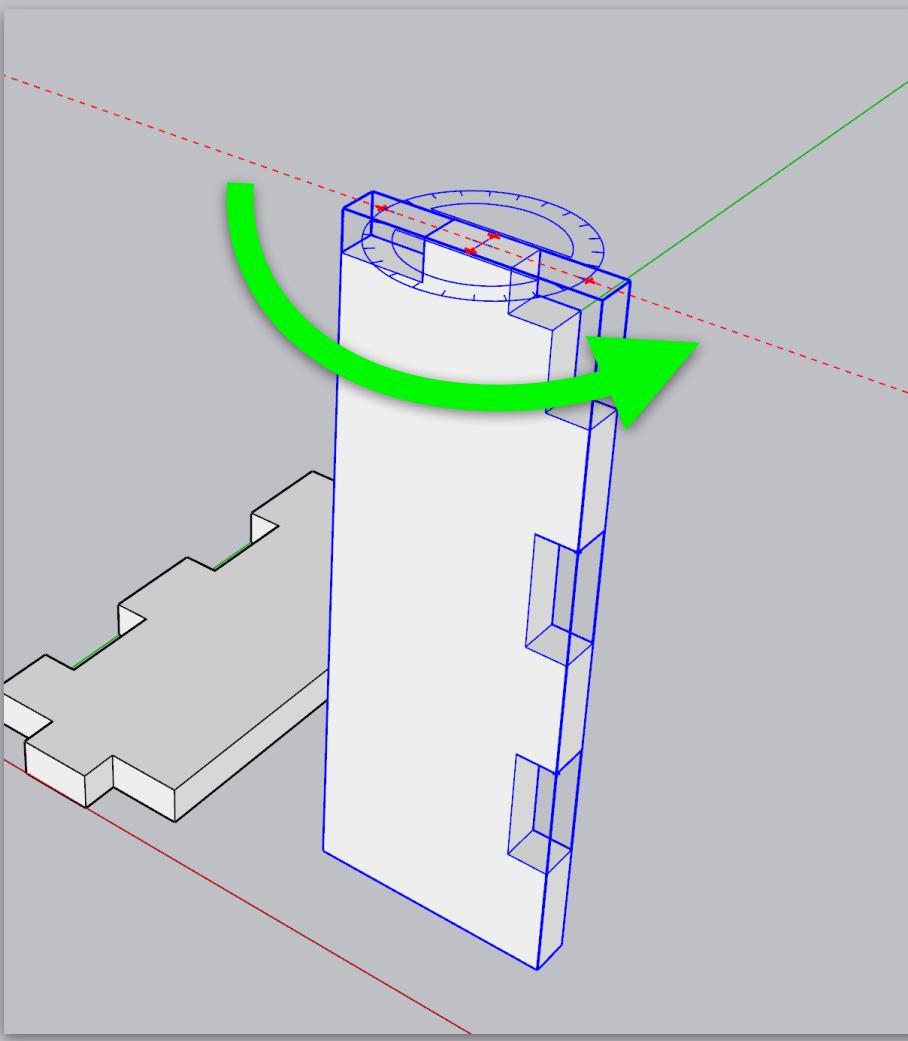
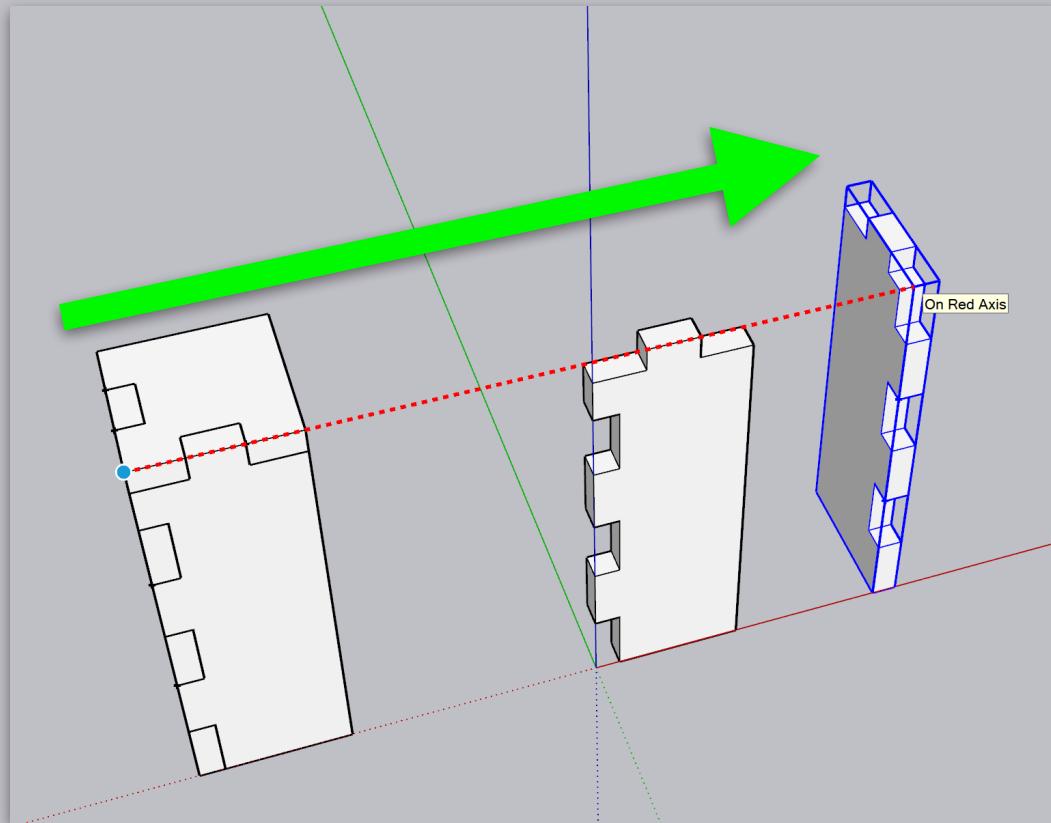
Rotate the component with the move tool to a horizontal position along the X/Y plane.



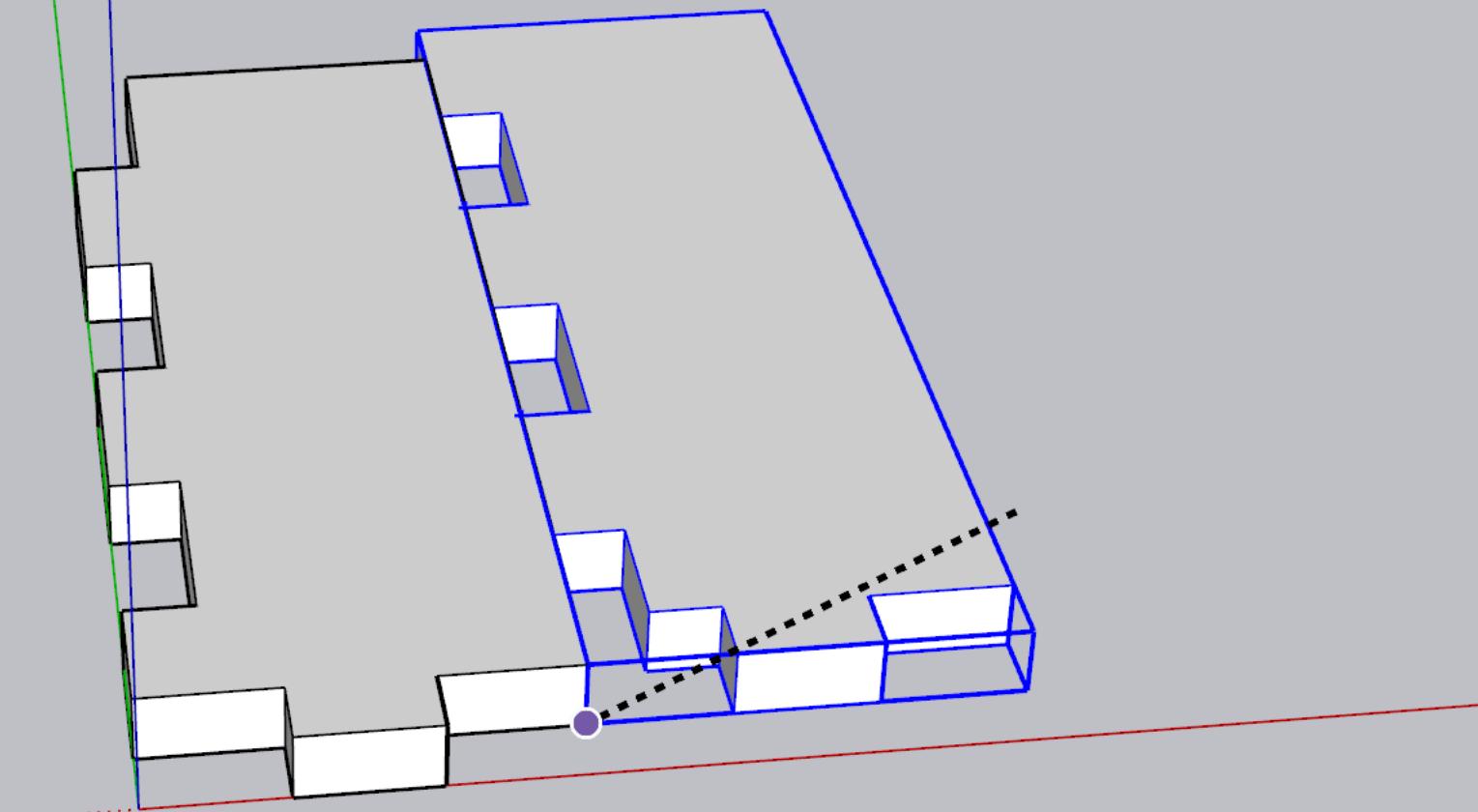


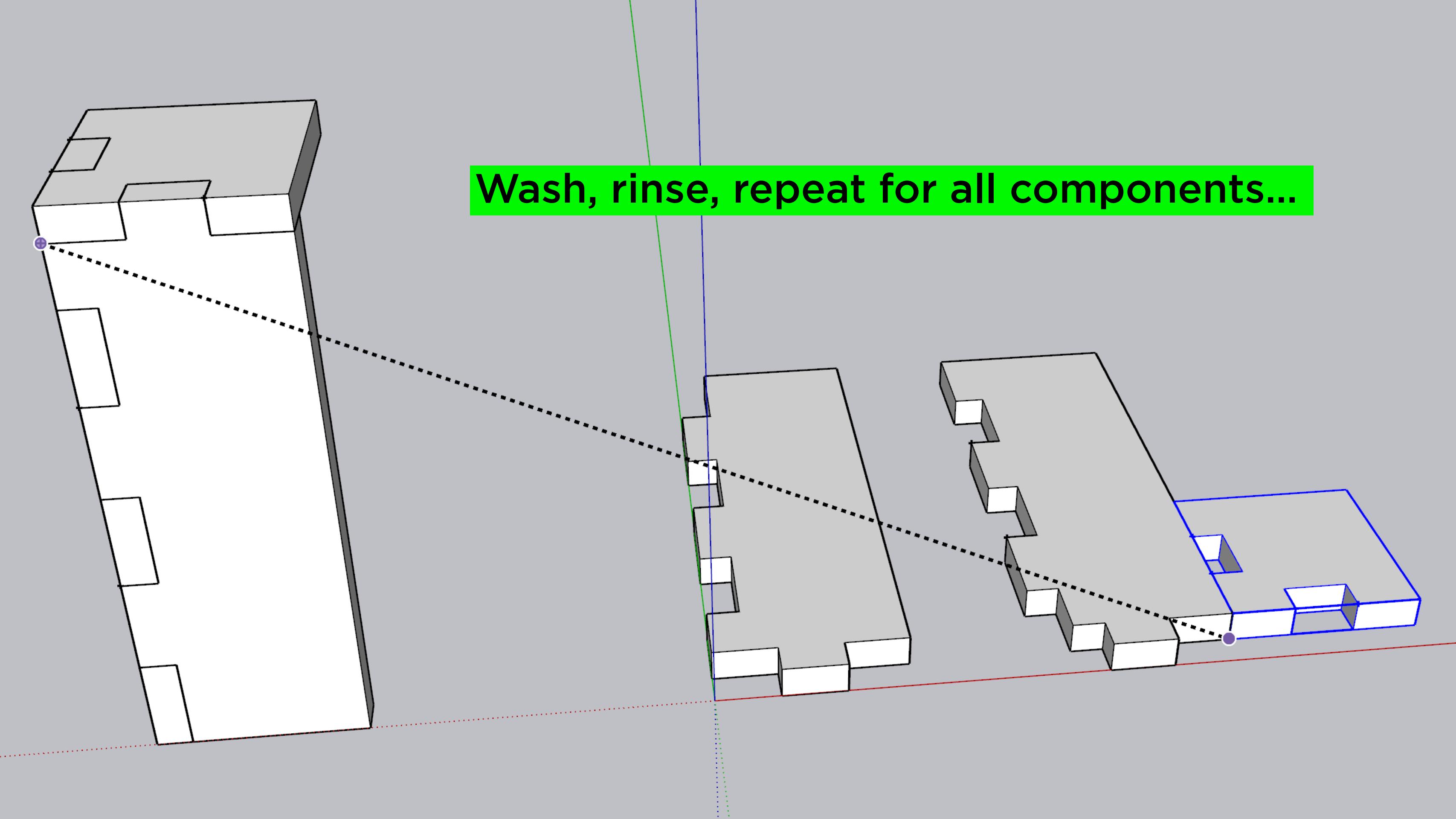
Select the corner of the component with the move tool and snap it with the origin. This will ensure all of the copied components are resting on the same plane.

Continue to move and rotate the other components to a horizontal position.

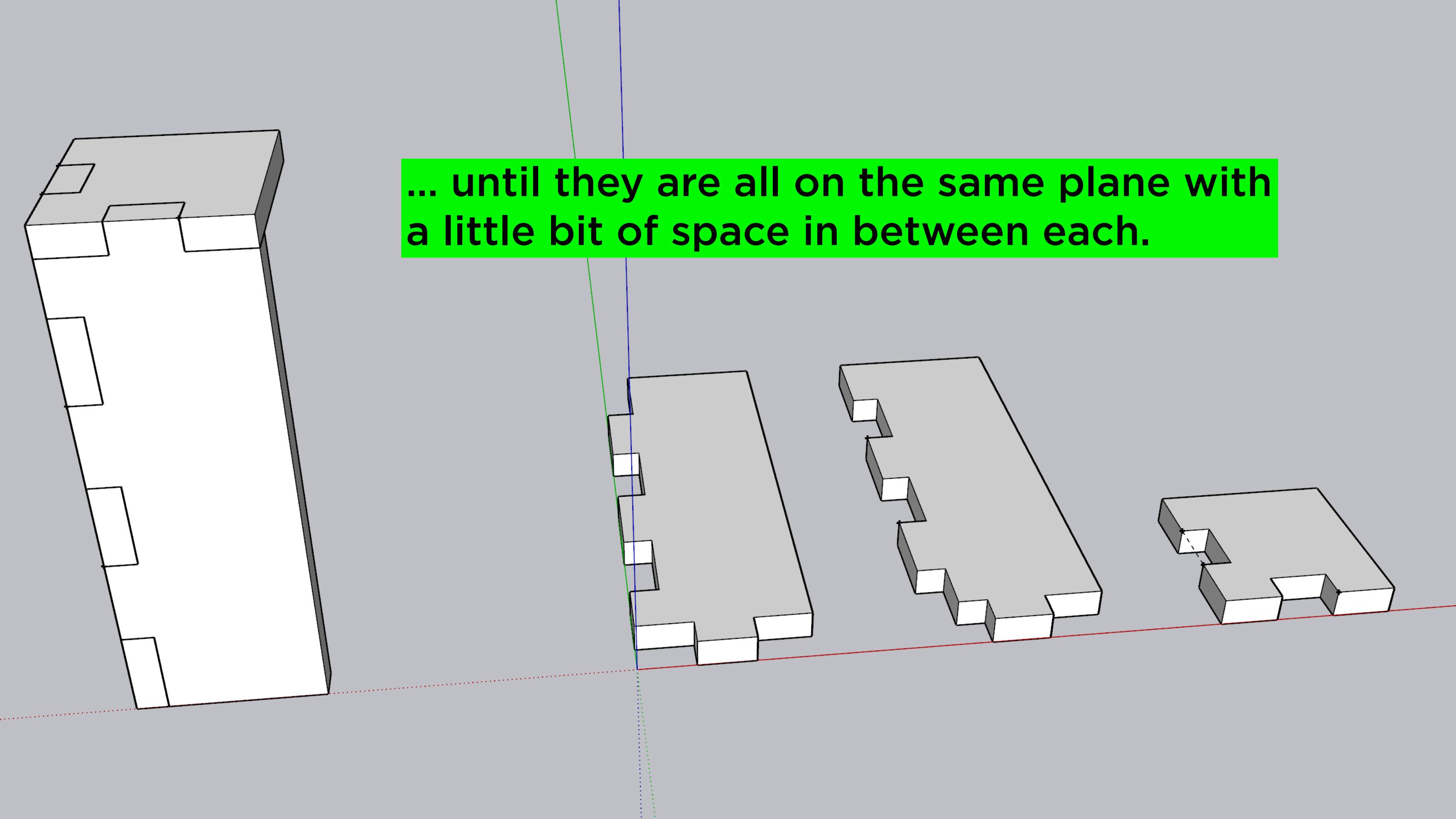


You can reference the other components and snap to them in order to make sure your objects are all on the same plane.

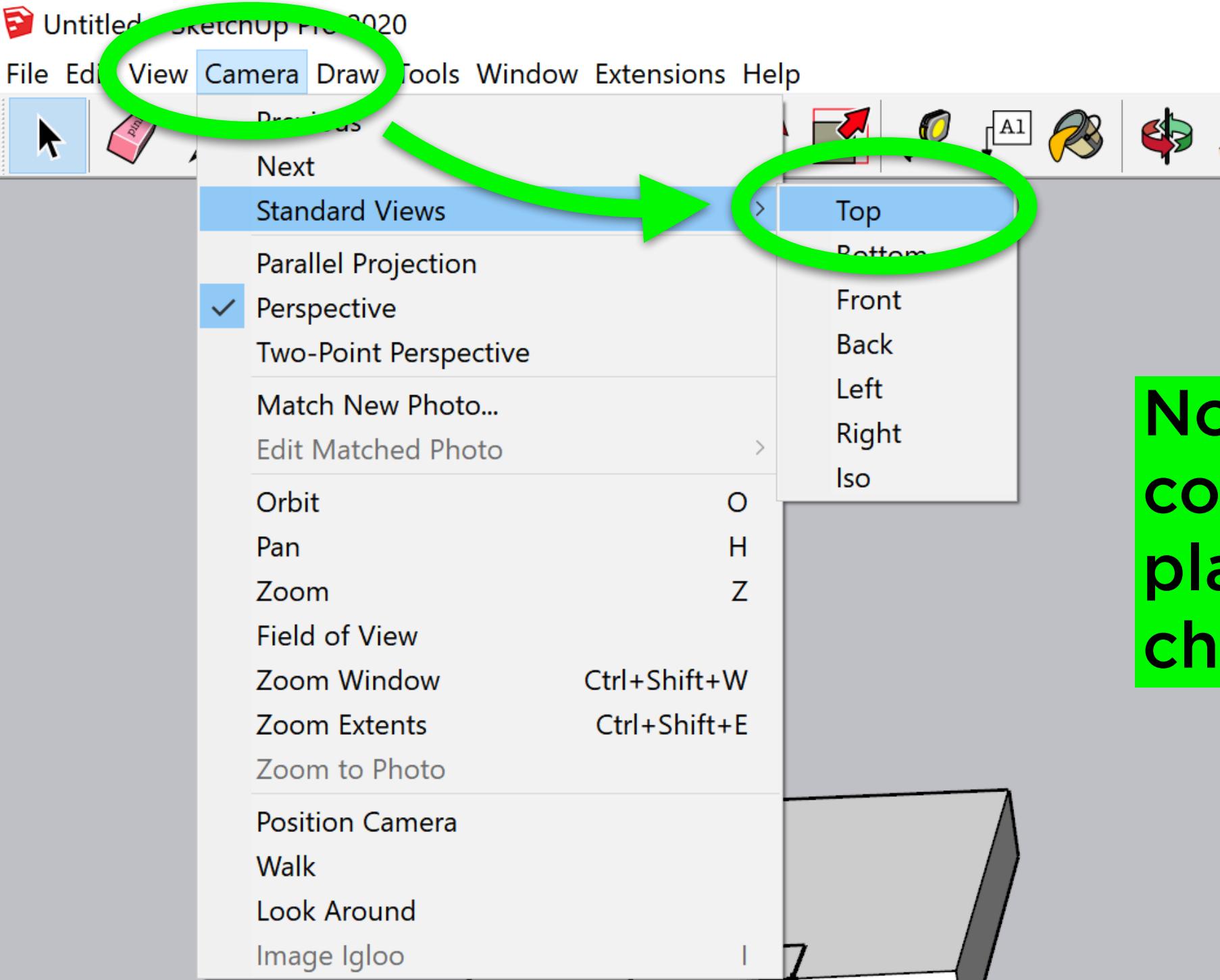




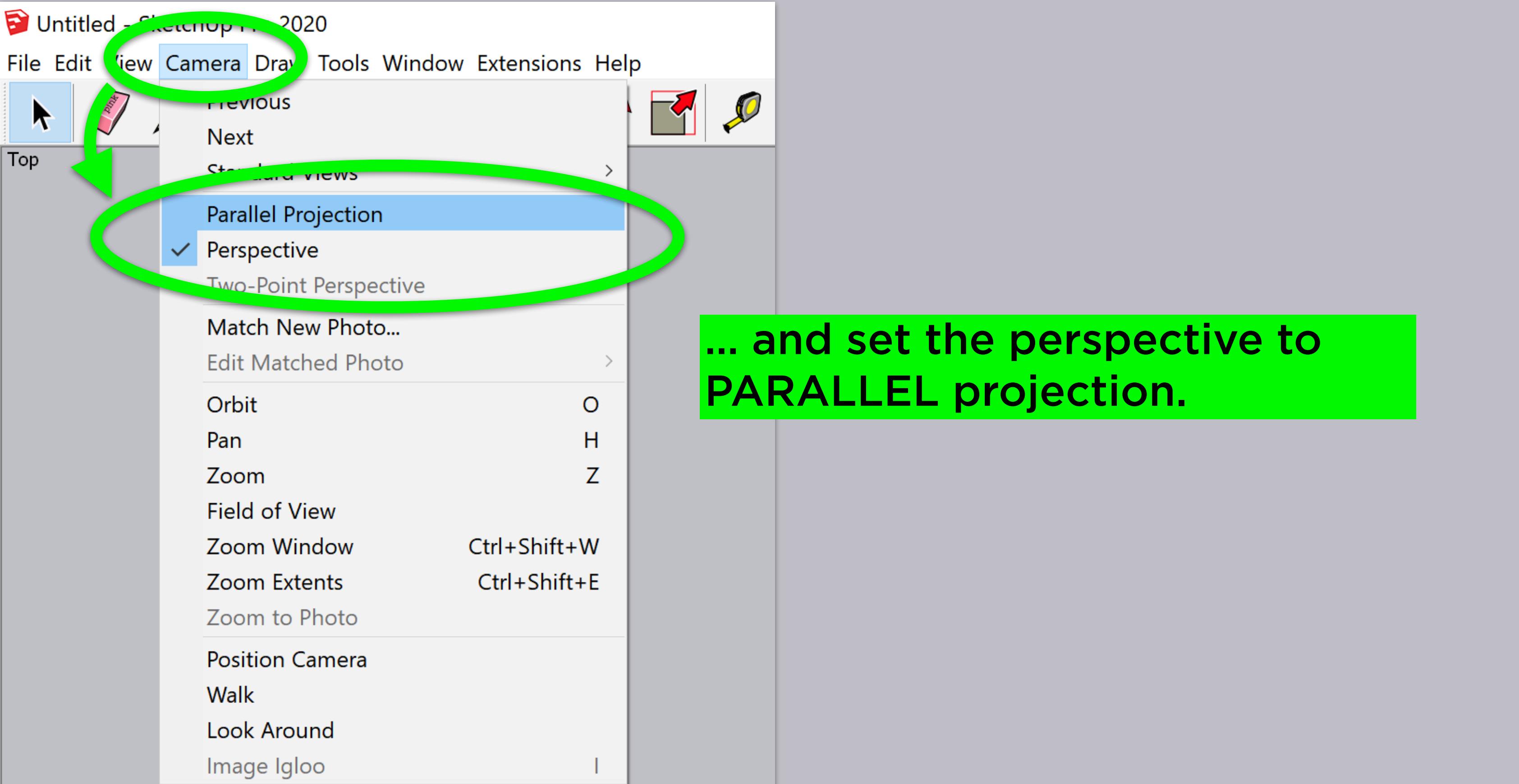
Wash, rinse, repeat for all components...



**... until they are all on the same plane with
a little bit of space in between each.**

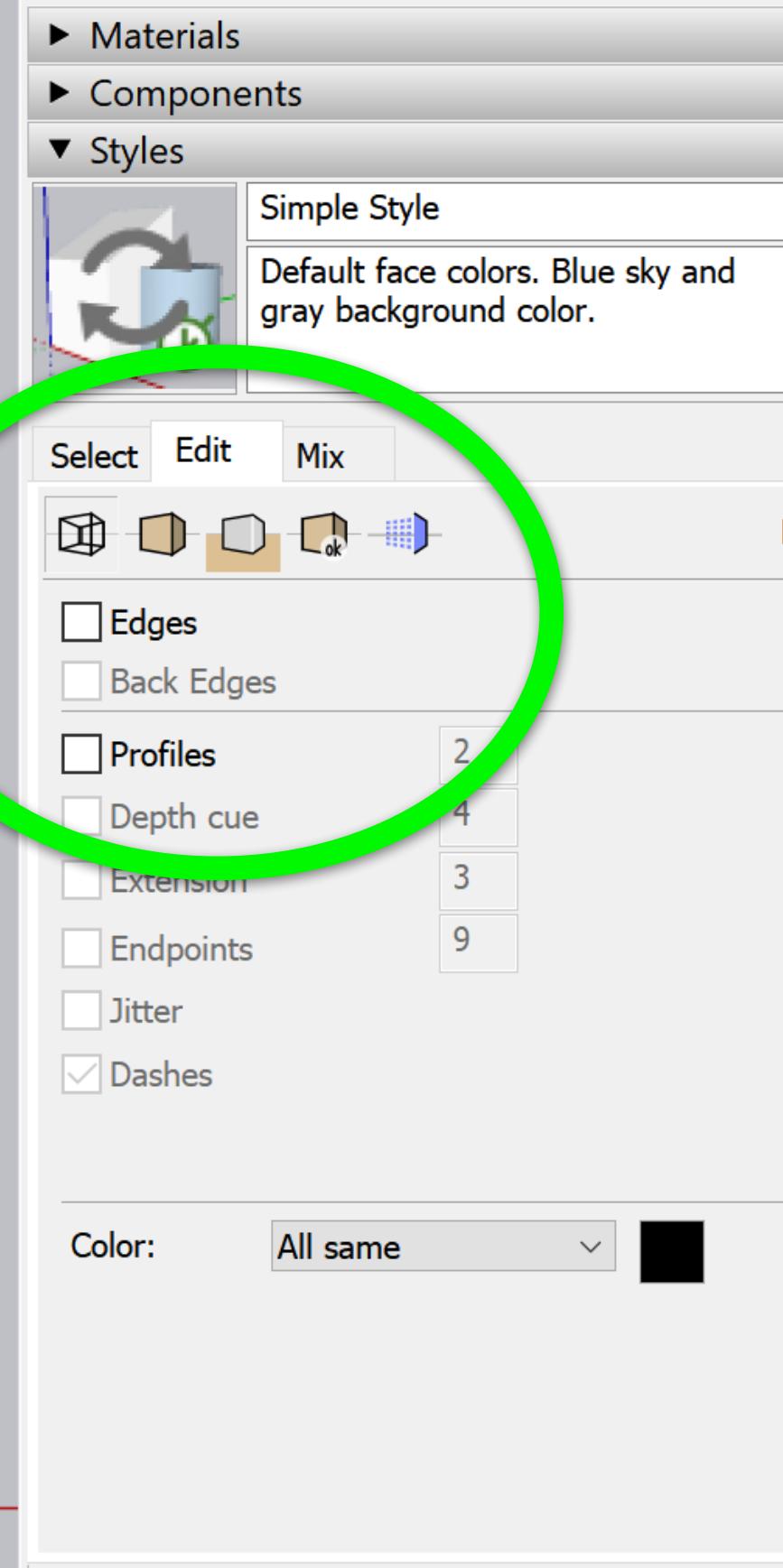


Now that all of your components are on the same plane and set apart slightly, change to camera view to TOP...

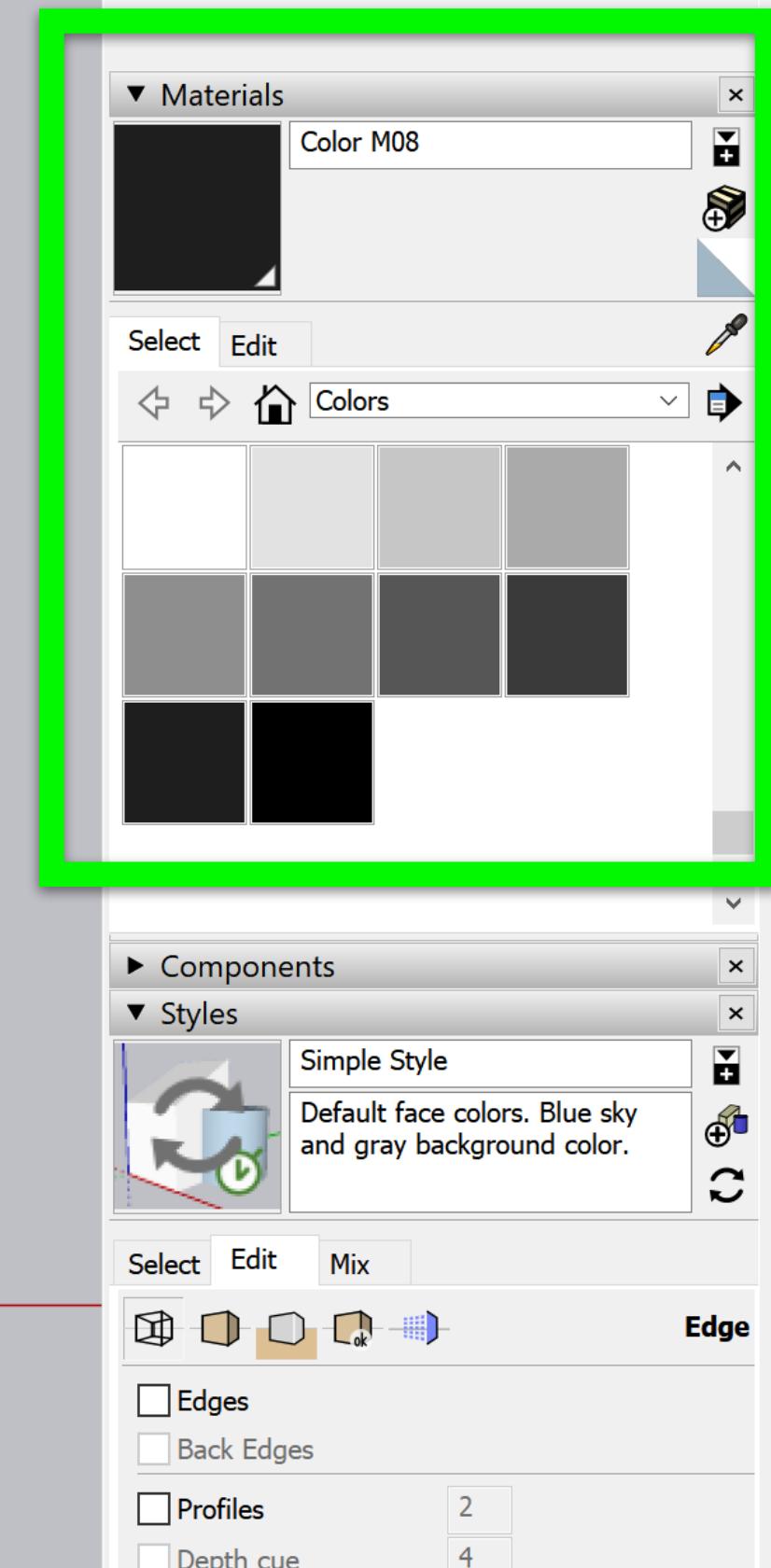


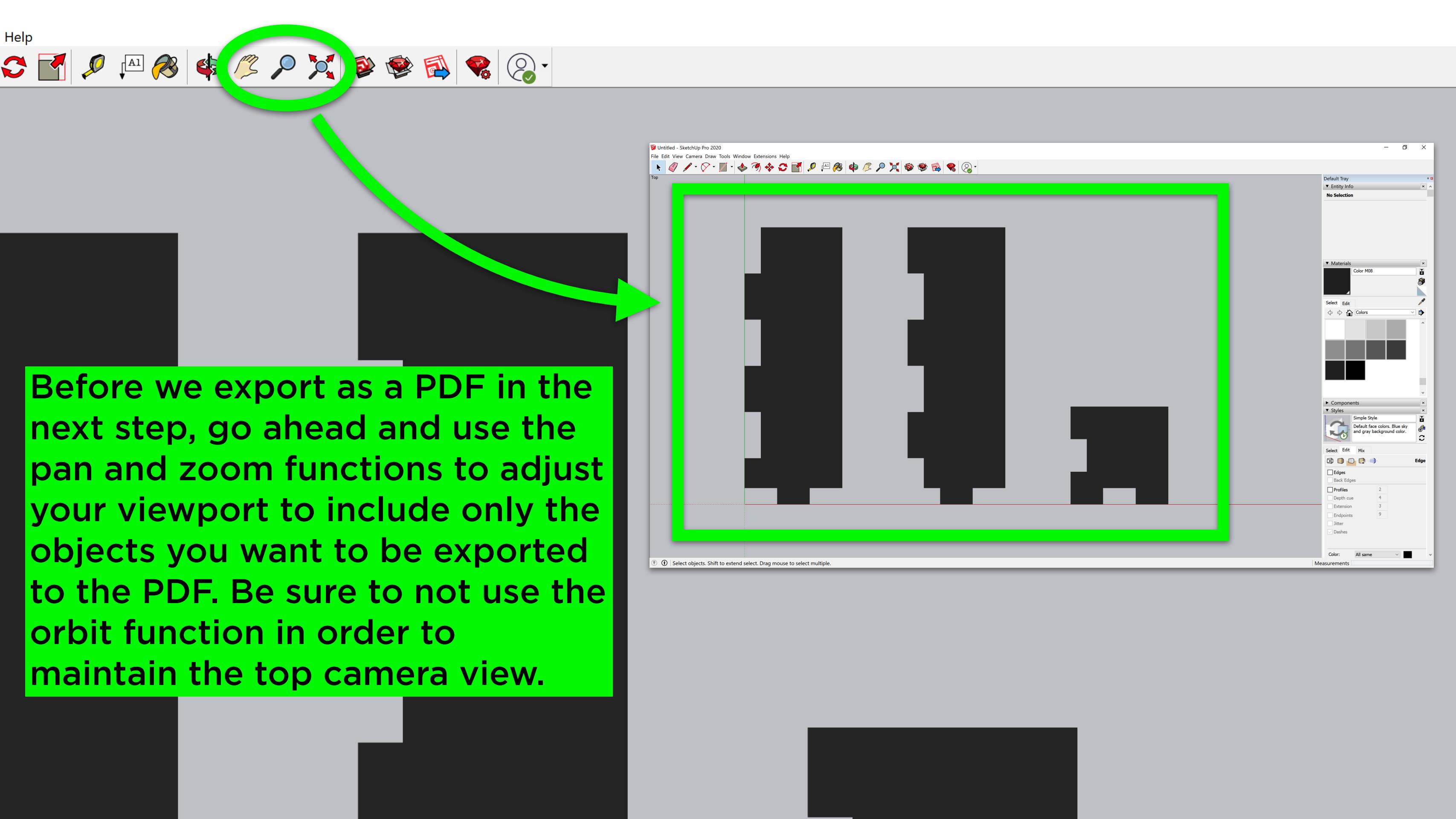
... and set the perspective to
PARALLEL projection.

Now remove the edges and profiles in the STYLES menu under the EDIT tab. This ensures that your vectors will be clean once we export to a PDF.



For increased clarity once you're in illustrator, use the materials menu to color the objects to a color other than white. Select a color from the swatch menu, which will enable the paint bucket tool. Select your components with the paint bucket tool to change their color.





File Edit View Camera Draw Tools Window Extensions Help

New...
New From Template...

Open... Ctrl+O

Save Ctrl+S

Save As...

Save A Copy As...

Save As Template...

Revert

Send to LayOut...

Geo-location >

3D Warehouse >

Table Connect >

Import...

Export >

Print Setup... Ctrl+P

Print Preview...

Print...>

Generate Report...

1 C:\Users\...\Three Rooms Cuts

2 C:\Users\...\Three Rooms Parts

Exit

Ctrl+N



Ctrl+O

Ctrl+S

Ctrl+A

Ctrl+C

Ctrl+V

Ctrl+X

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 This PC SDHC (D:) Network

In the EXPORT dialog, set the file type to PDF and open the OPTIONS...

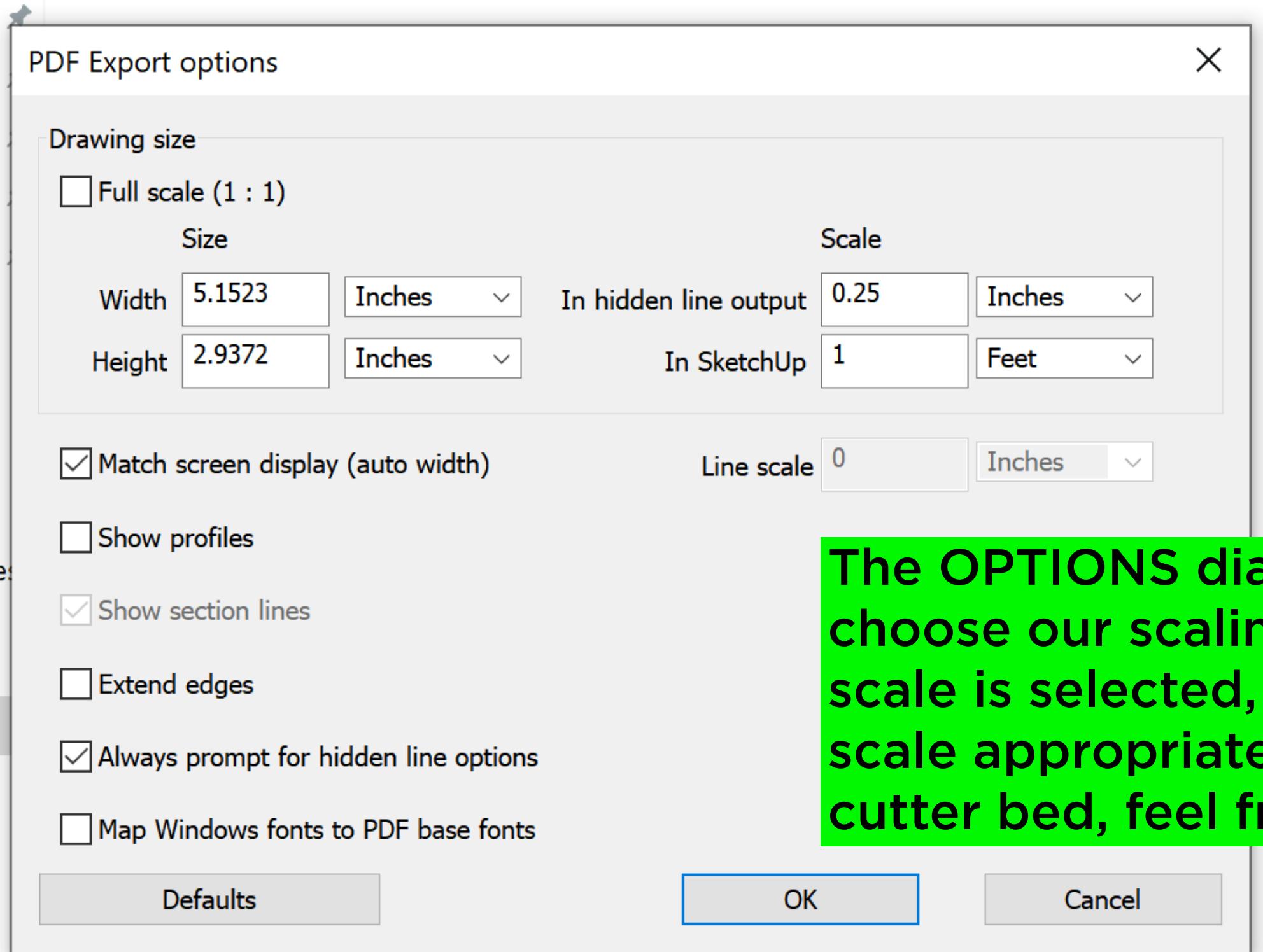
File name:

Save as type: PDF File (*.pdf)

▲ Hide Folders

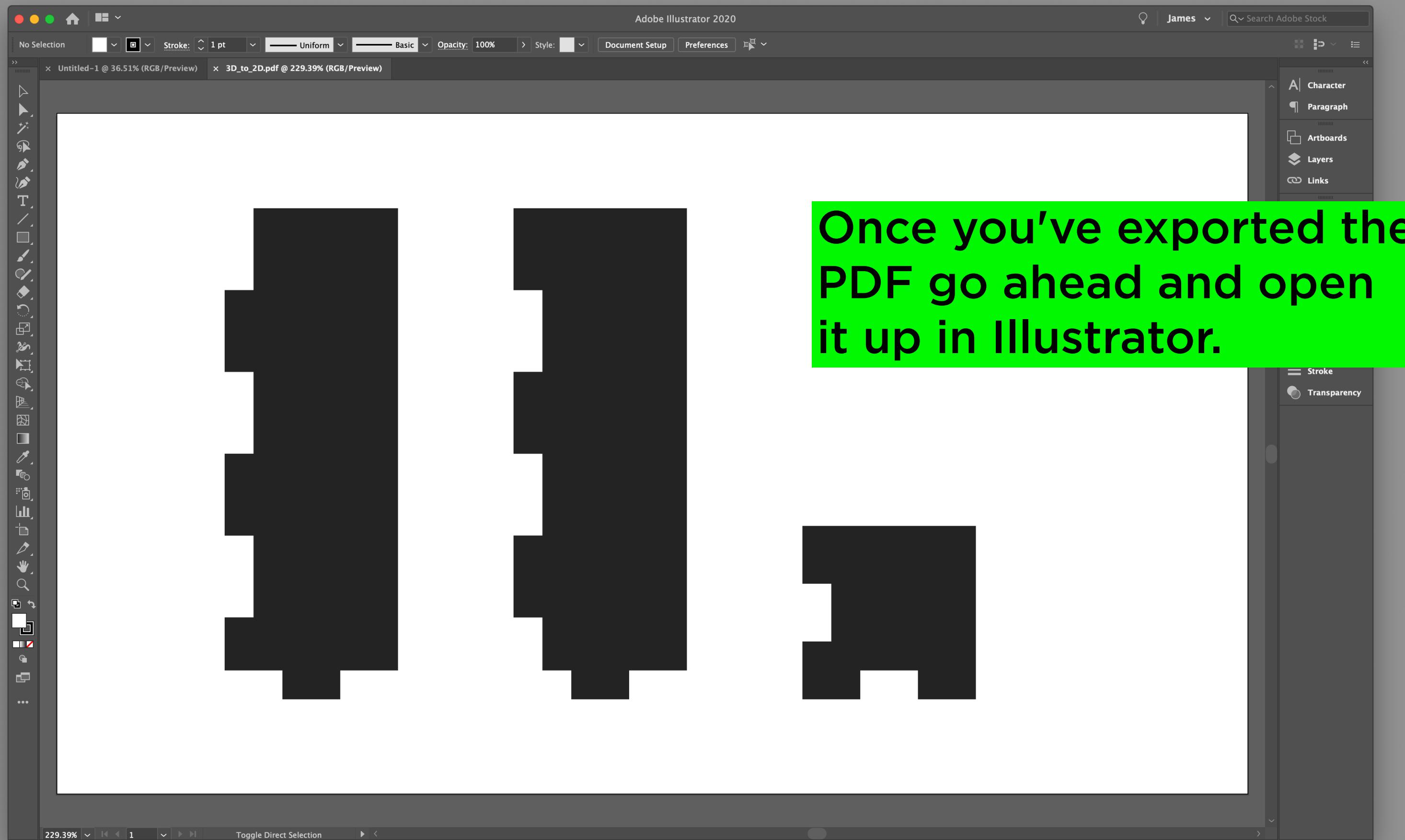
 Options...

No items match your search.



The OPTIONS dialog is where we can choose our scaling options. Here a 1/4" scale is selected, but if you modeled in scale appropriate for the 18" x 24" laser cutter bed, feel free to select full scale.

access
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downloads
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ive
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rk
e name: 3D_to_2D



Once you've exported the
PDF go ahead and open
it up in Illustrator.

**Select all your vectors
(command-A on MAC, ctrl-A on
PC) and copy.**

Adobe Illustrator 2020

James

Search Adobe Stock

Path Stroke Style Transform

Untitled-1* @ 39.78% (RGB/Preview) 3D_to_2D.pdf @ 229.39% (RGB/Preview)

Character Paragraph Artboards

5 10 15 20 25 30 35 40 45 50 55 60 65

1 15 20 25 30 35 40 45 50 55 60 65

2 25 30 35 40 45 50 55 60 65

3 30 35 40 45 50 55 60 65

4 40 45 50 55 60 65

5 50 55 60 65

20 30 40 50 60 70

Stroke Transparency

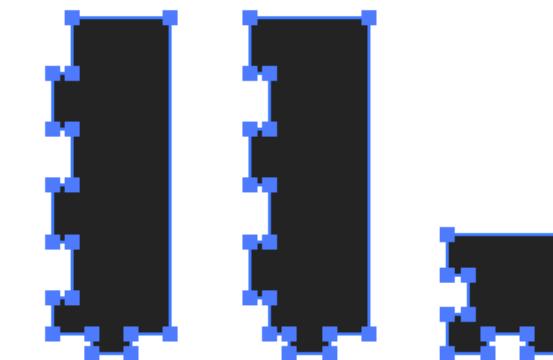
39.78% Selection

Open up the Laser Cutter template and copy and paste your vectors from your exported PDF over to the Illustrator template.



- Use RGB red swatch for vector cutting
Set STROKE to 0.01pt
Set FILL to NONE
- Use RGB blue swatch for vector engraving
Set STROKE to 0.01pt
Set FILL to NONE
- Use BLACK swatch for raster engraving
Set FILL to BLACK

In the background are non-printing instructions for setting the attributes of your paths for vector cutting, vector engraving, or raster engraving.



- Use RGB red swatch for vector cutting
Set STROKE to 0.01pt
Set FILL to NONE
- Use RGB blue swatch for vector engraving
Set STROKE to 0.01pt
Set FILL to NONE
- Use BLACK swatch for raster engraving
Set FILL to BLACK





Illustrator

File

Edit

Object

Type

Select

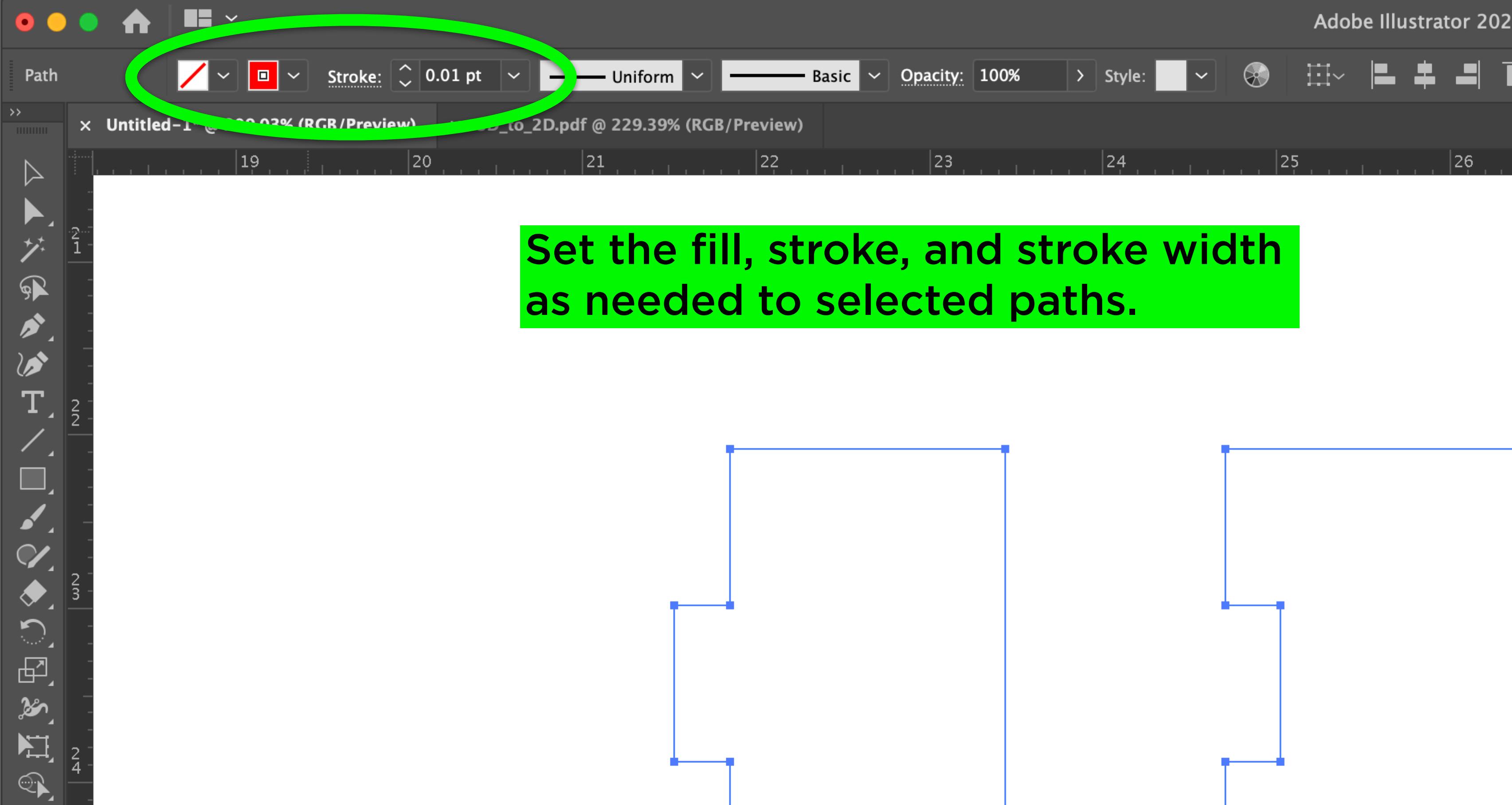
Effect

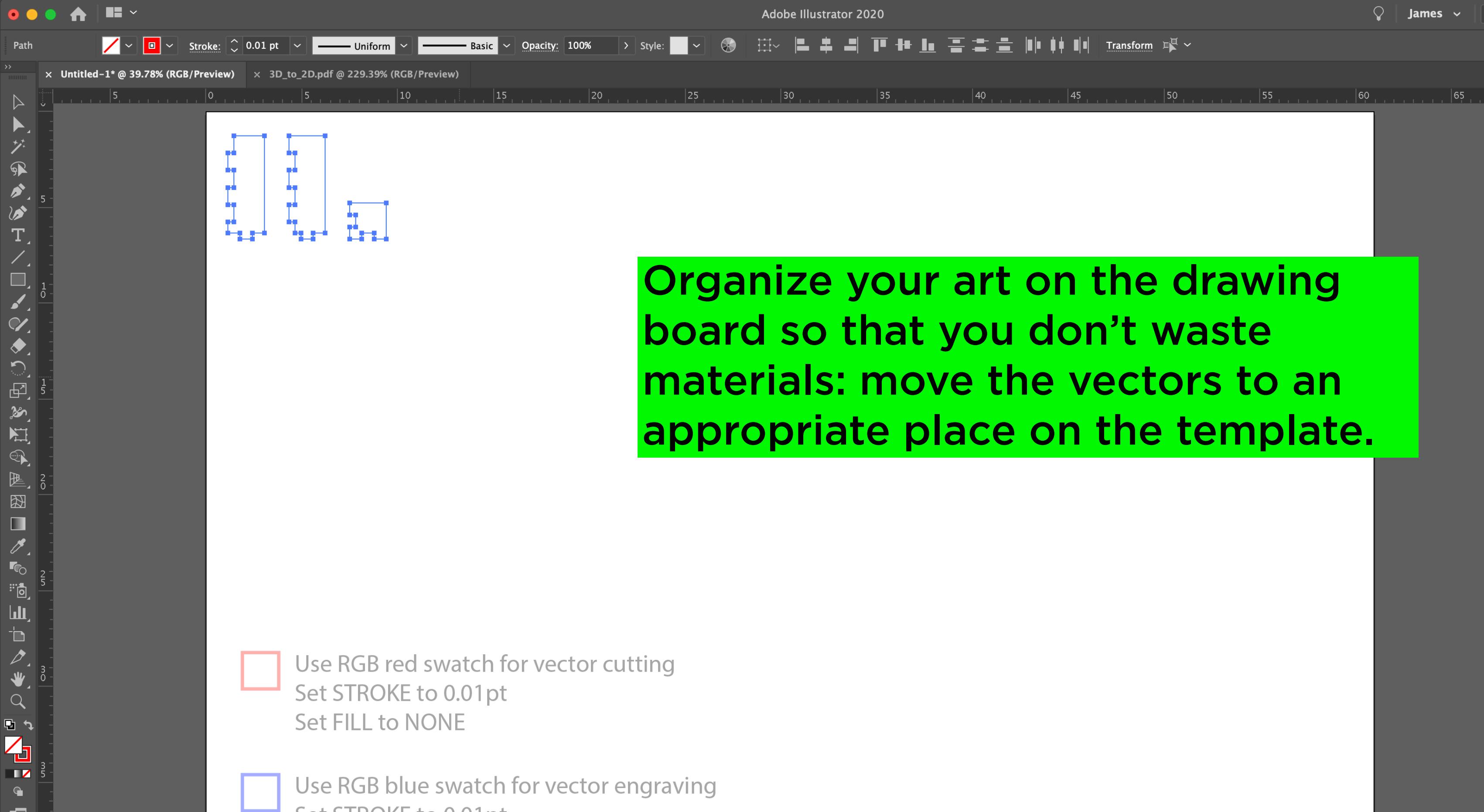
View

Window

Help

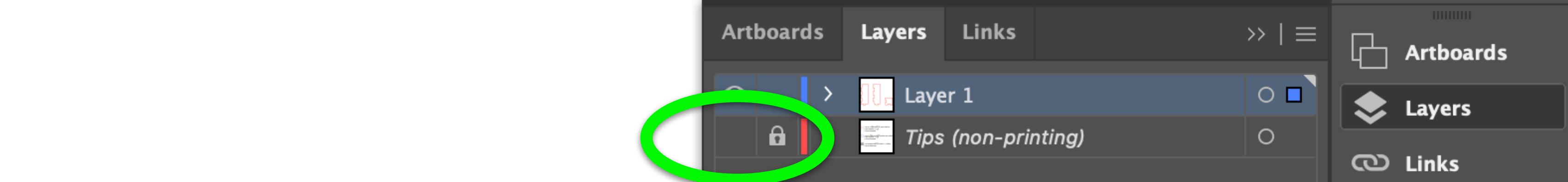
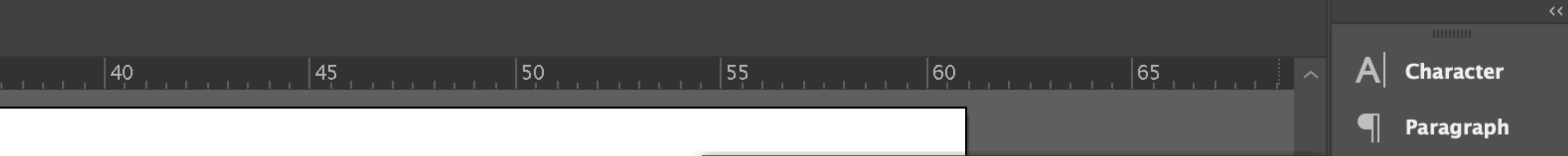
Adobe Illustrator 202





- Use RGB red swatch for vector cutting
Set STROKE to 0.01pt
Set FILL to NONE

- Use RGB blue swatch for vector engraving
Set STROKE to 0.01pt



You can toggle off the non-printing tips layer in the LAYERS palette.

A | Character

P | Paragraph

Artboards

Layers

Links

Transform

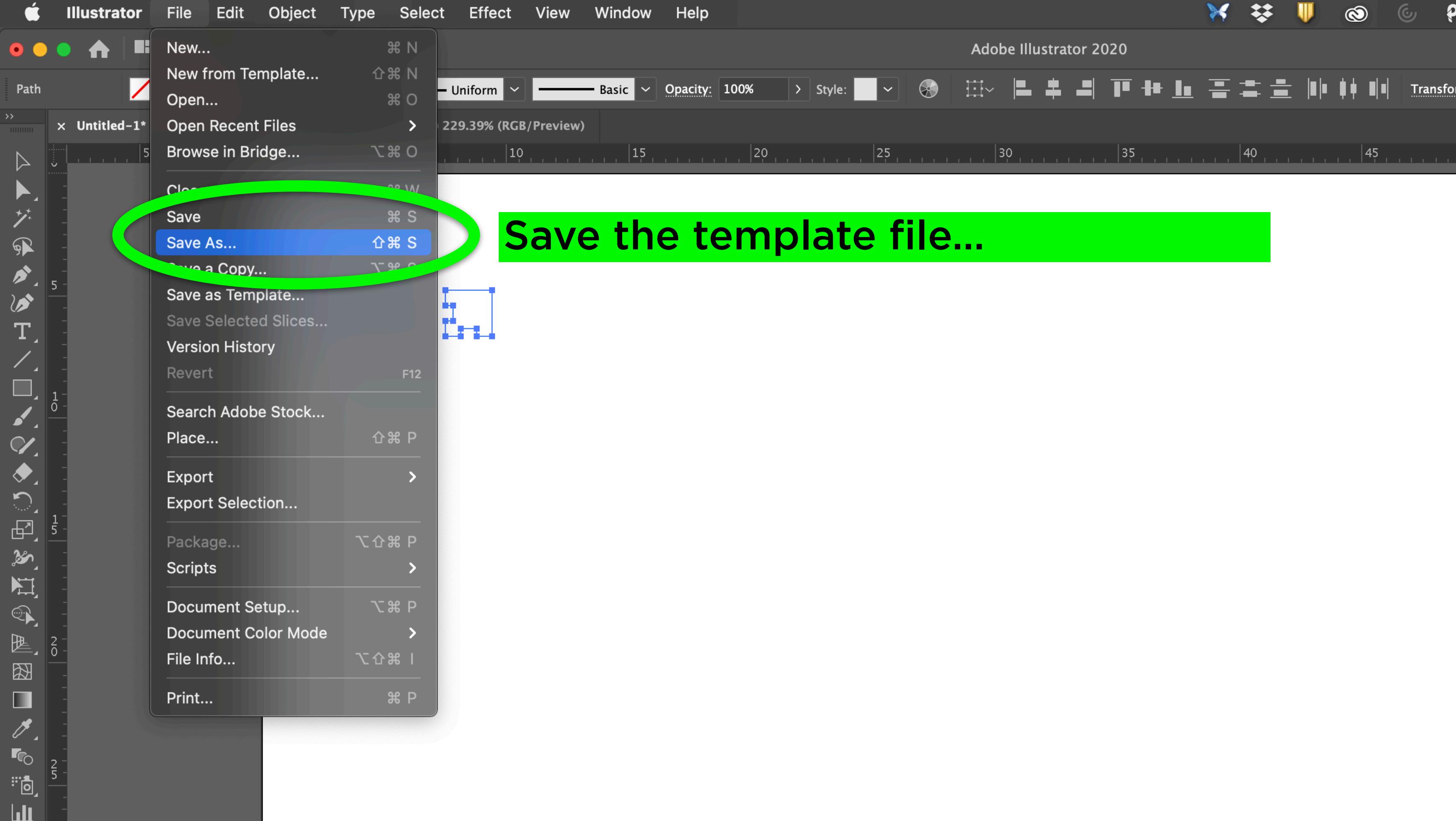
Align

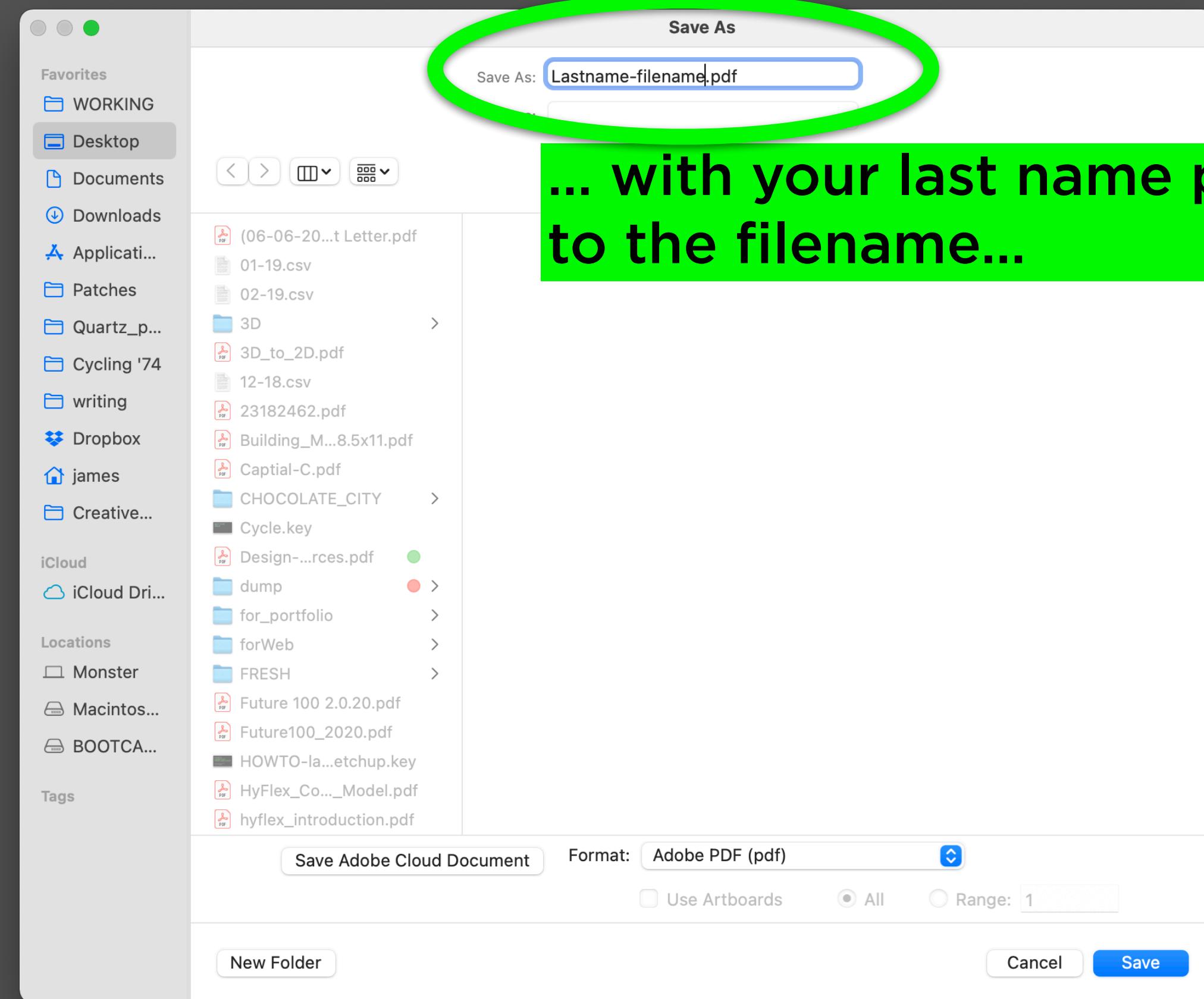
Pathfinder

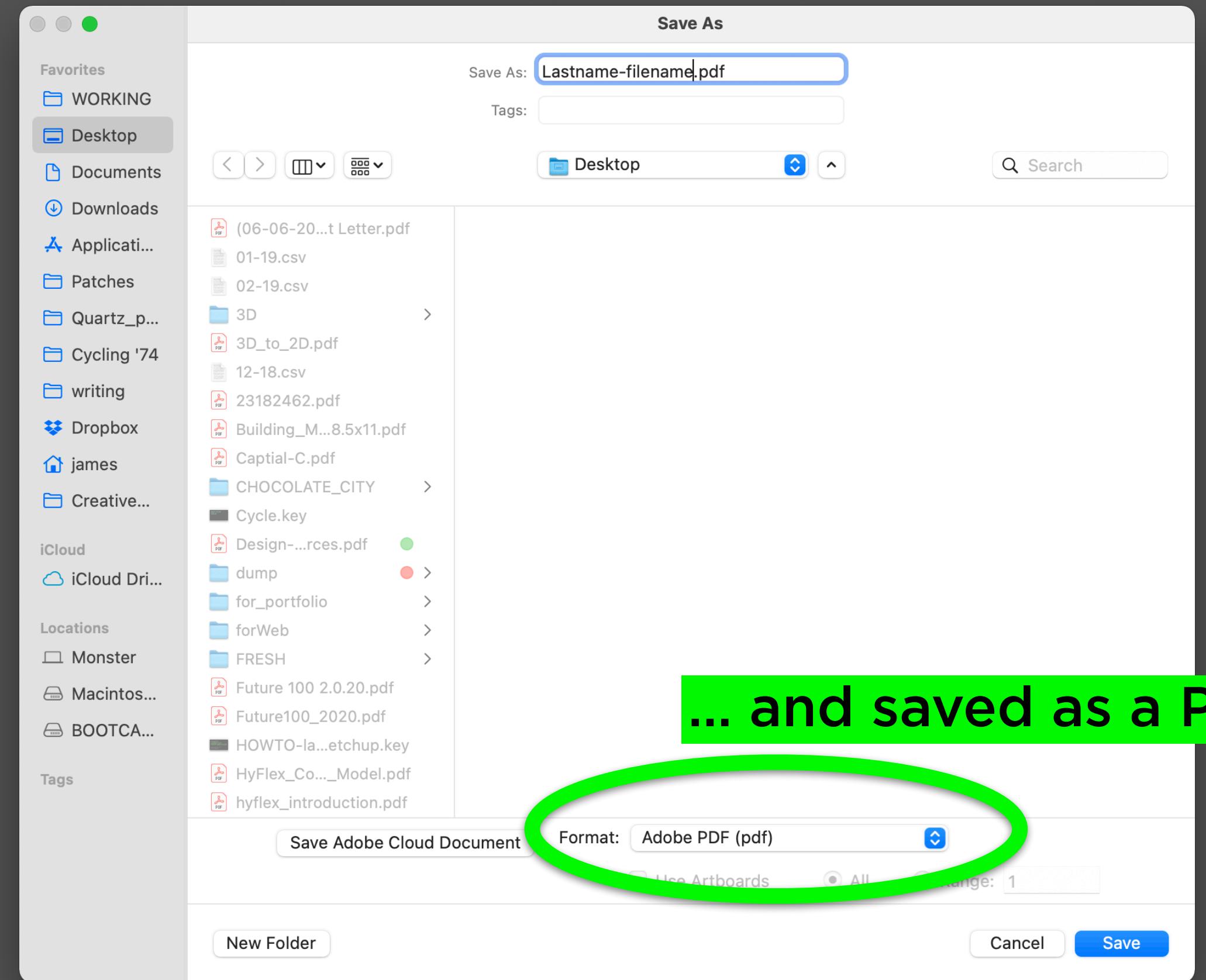
Attributes

Color

Scrubber







Sig | Digi | Ske | Dis | 15 The | Che | Soc | Sof | Cor | CO | PPE | Arti | An | The | ISF | Bric | Win | TCF | Sig | H Ma | CS | 1.6 | PoF | Inst | ske | Dig | GW

[corcoran.gwu.edu/open-studios](#)

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Basic rules and expectations:

- Requires training by studio staff, sign up [here](#)
- Signed studio policy agreement
- Previous experience is a requirement
- Studios are to be used for arts practice only, not for personal posters, t-shirts, etc.
- Reservation must be made at least 24 hours in advance
- Indicate which studio you are interested in using in your reservation - etching, litho, screenprinting, letterpress
- Sign up here:

[PRINTMAKING APPOINTMENT PAGE](#)

Print Service Bureau

Basic rules and expectations:

- Pick up in approximately four business days
- Up to 44" wide prints
- Not fine art photography printing
- Upload your files here:

[FAB LAB & PRINT SERVICE BUREAU SUBMISSION FORM](#)

Woodshop

Basic rules and expectations:

- Requires training by studio staff, sign up [here](#)
- Signed studio policy agreement
- Reservation must be made at least 24 hours in advance
- Not for personal projects, for sculpture / arts practice use only
- If you need minimal cuts made studio staff will do this for you and you will not be required to go through training.
email joebradley@gwu.edu to make arrangements.
- Sign up here:

Send your PDF to the print service bureau! There's a [link](#) to the submission form here!