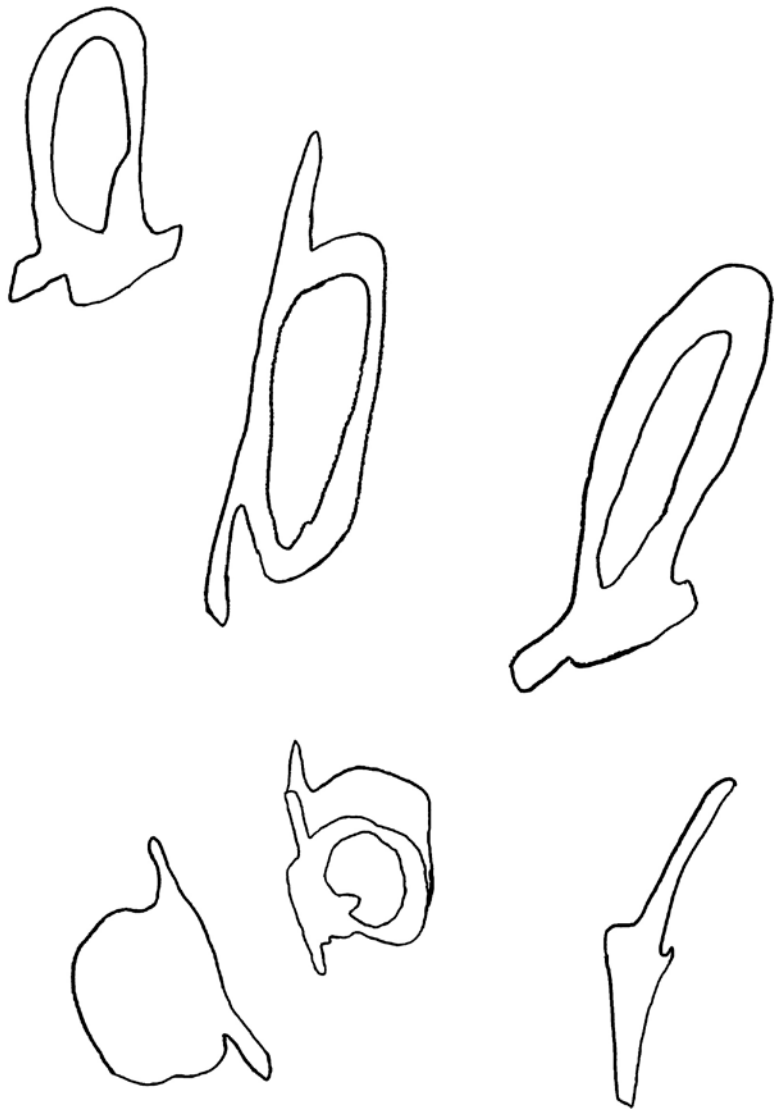
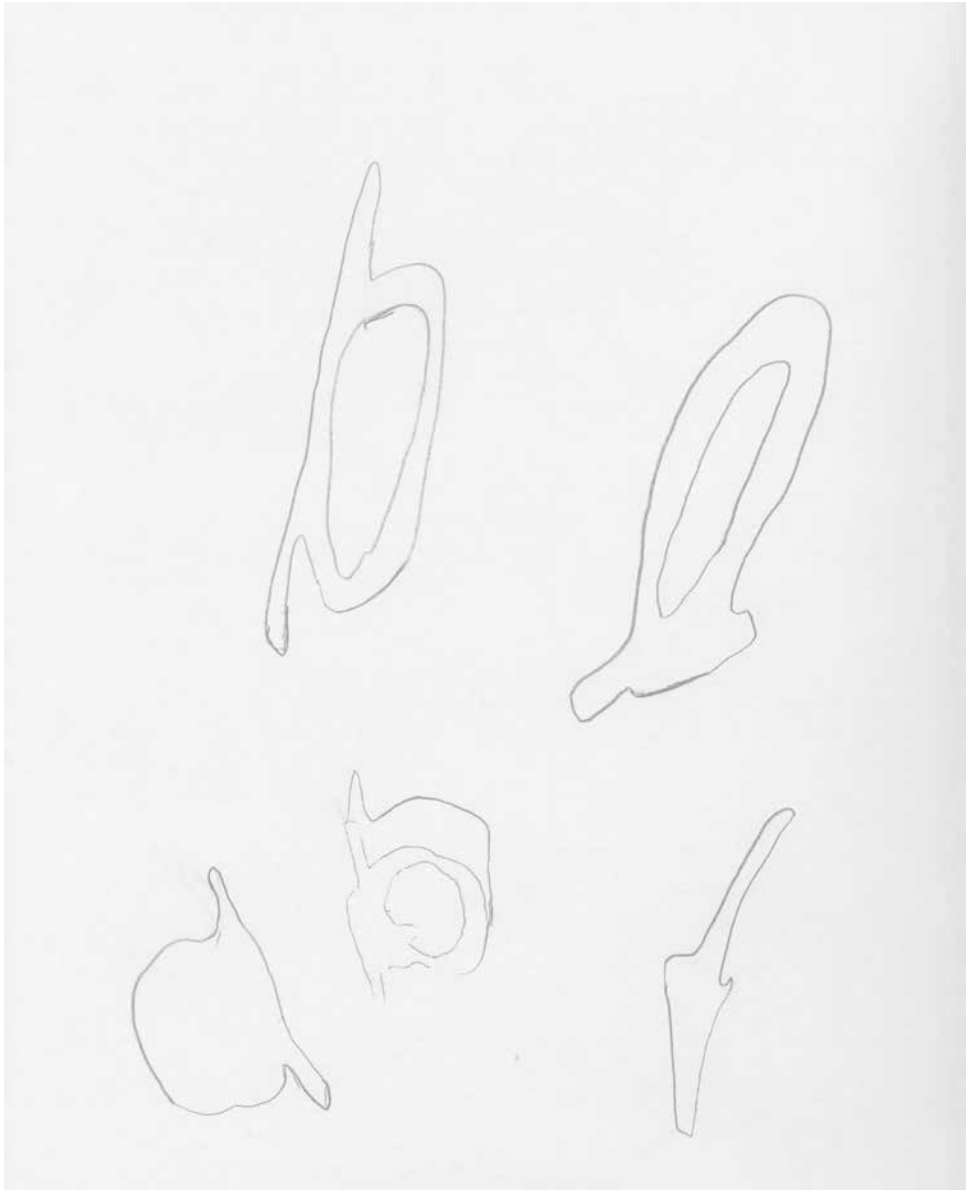
Textures, Tools, and Time

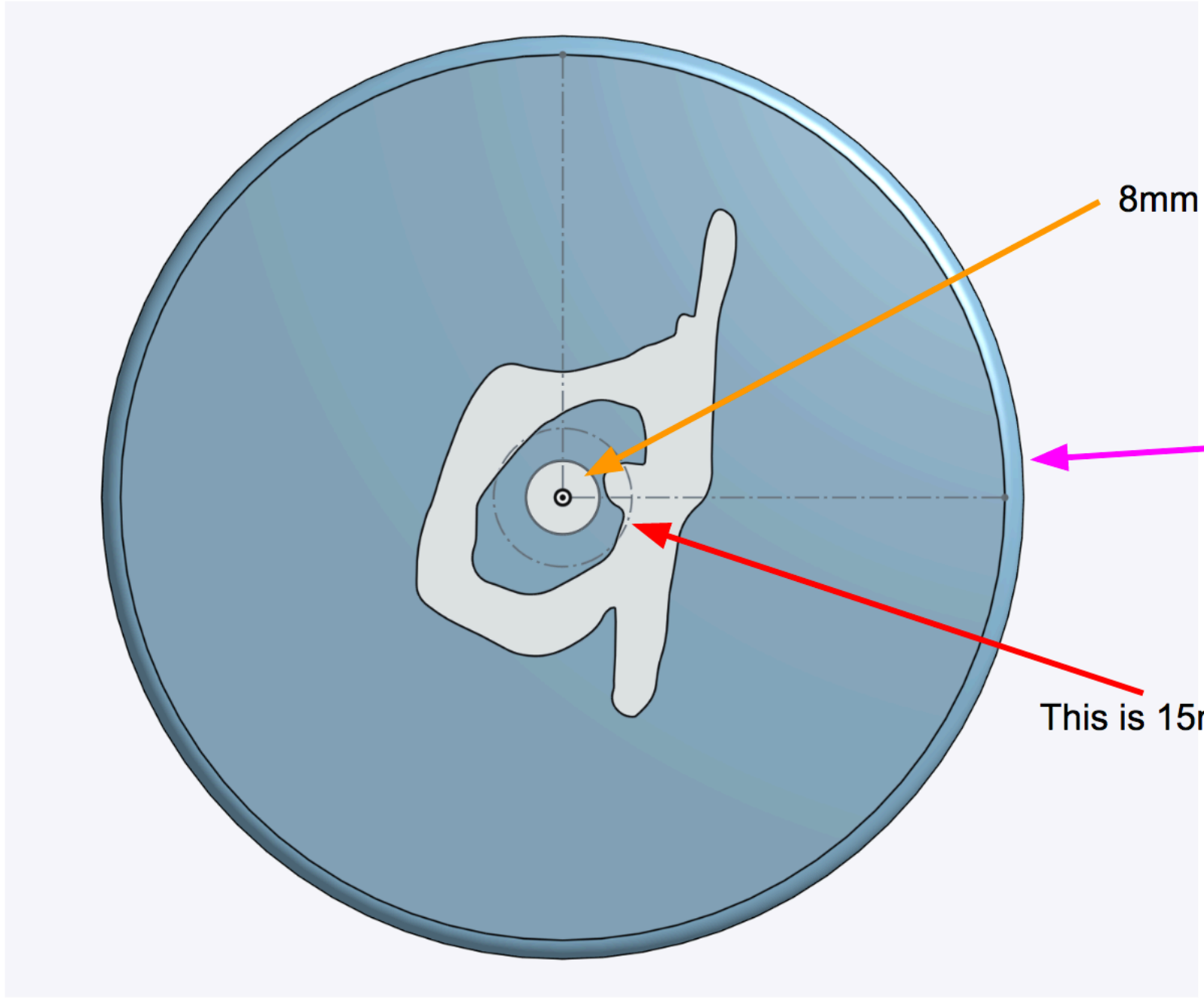
Part 1a: Collaboration

Presented by Elizabeth New & Shalya Marsh

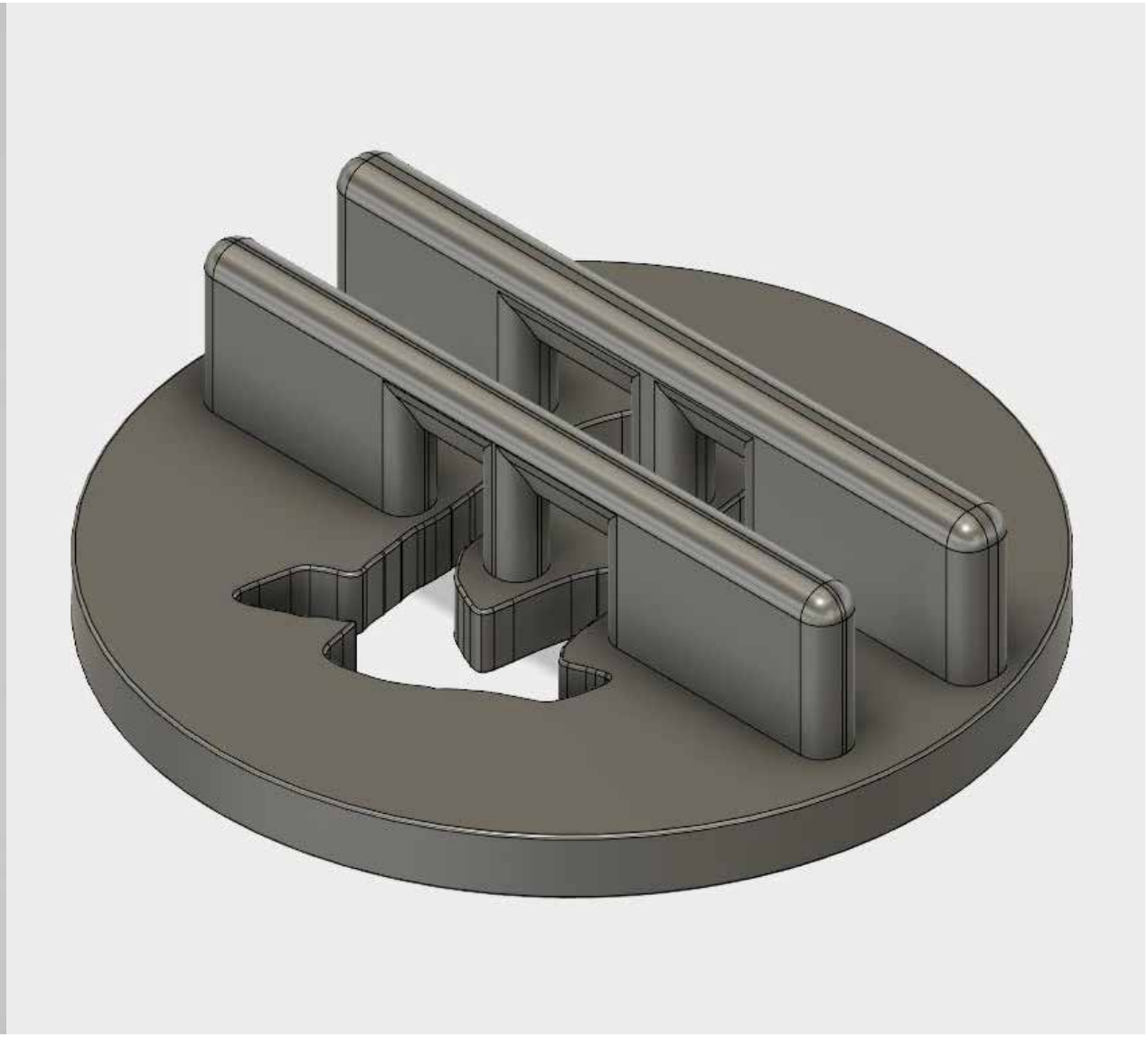
To start our collaboration drawings of shadows were converted to vectors in Adobe Illustrator



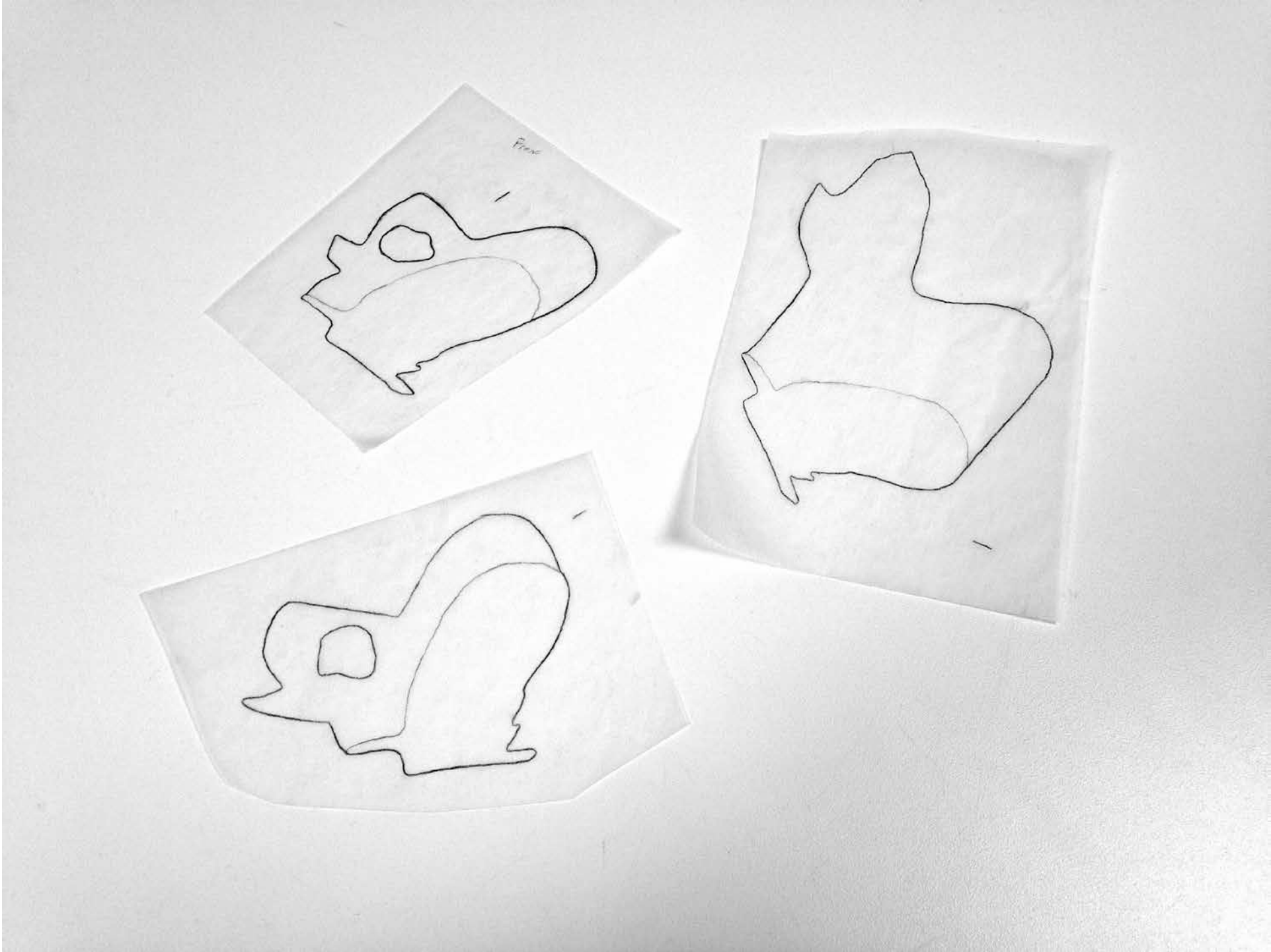



8mm hole
100mm
diameter
disc. 6mm
thick.
This is 15mm. Bolt will cover center part

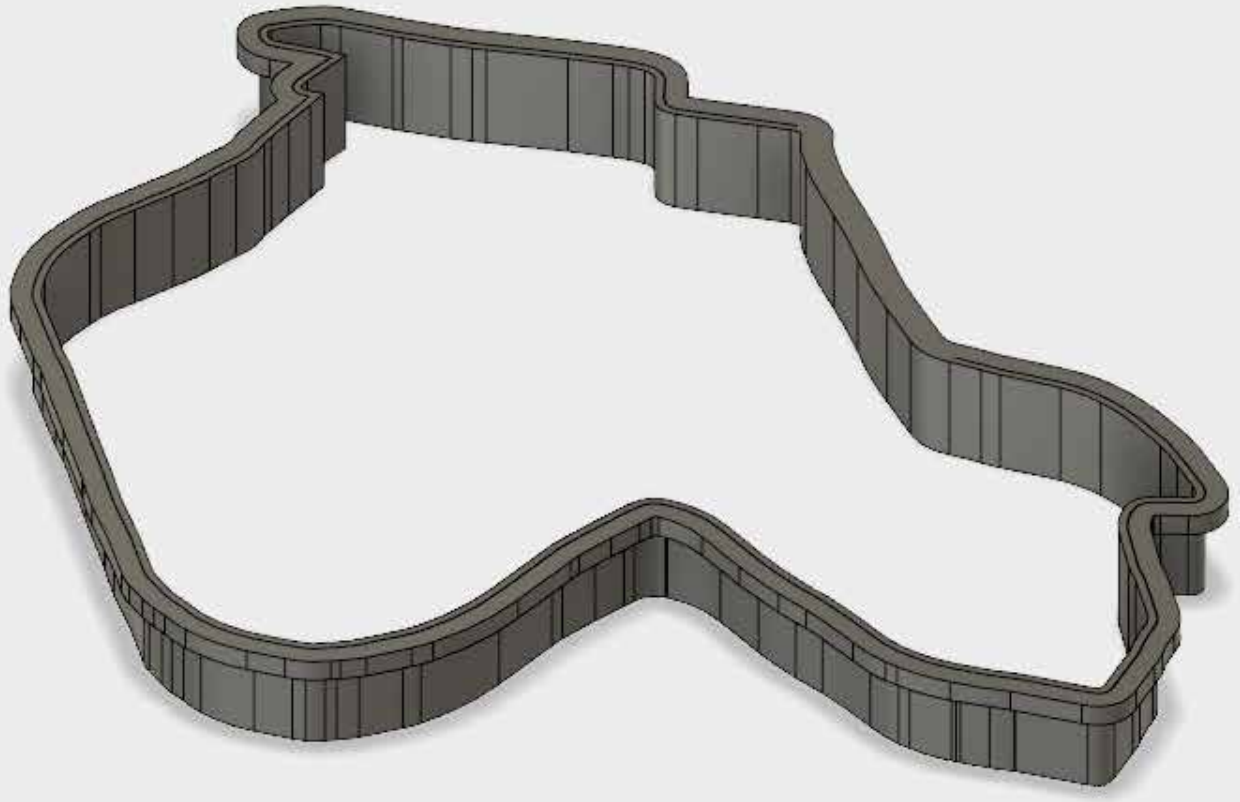
The Illustrator Files were then used to model the extruder dies.



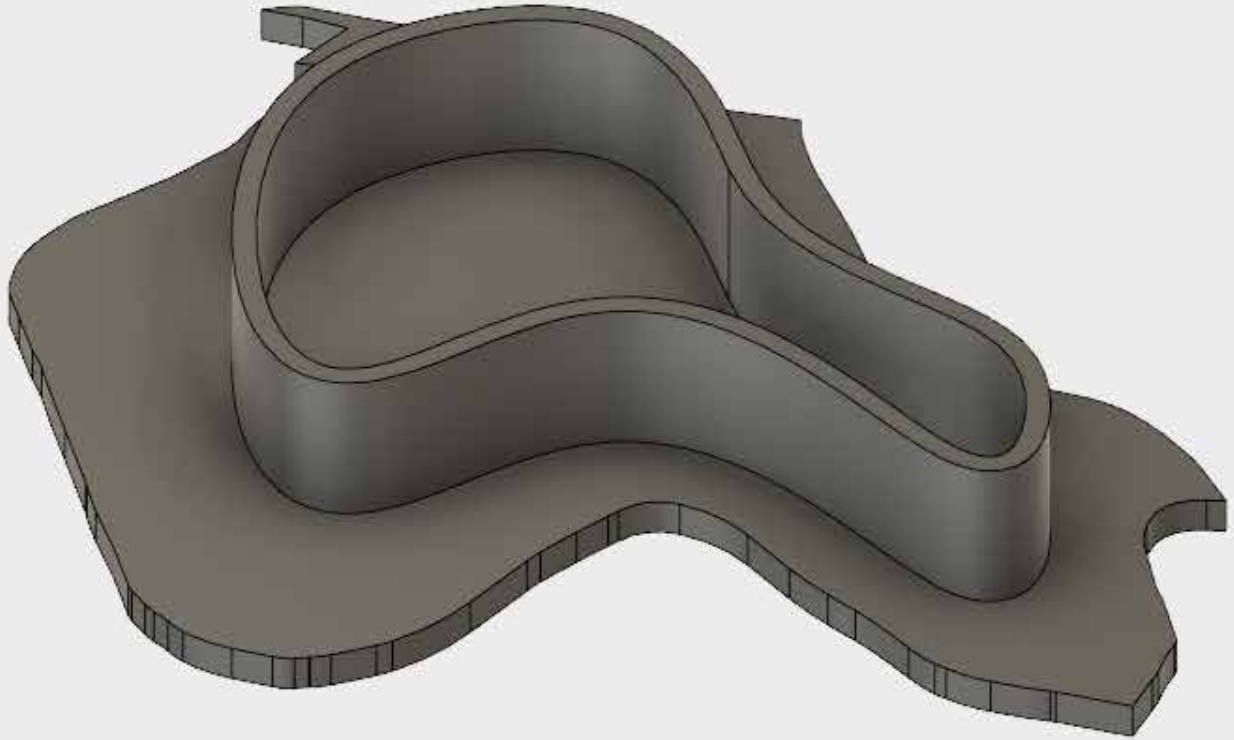
Sketchbook drawings are used as source material for extruder dies and clay cutters.



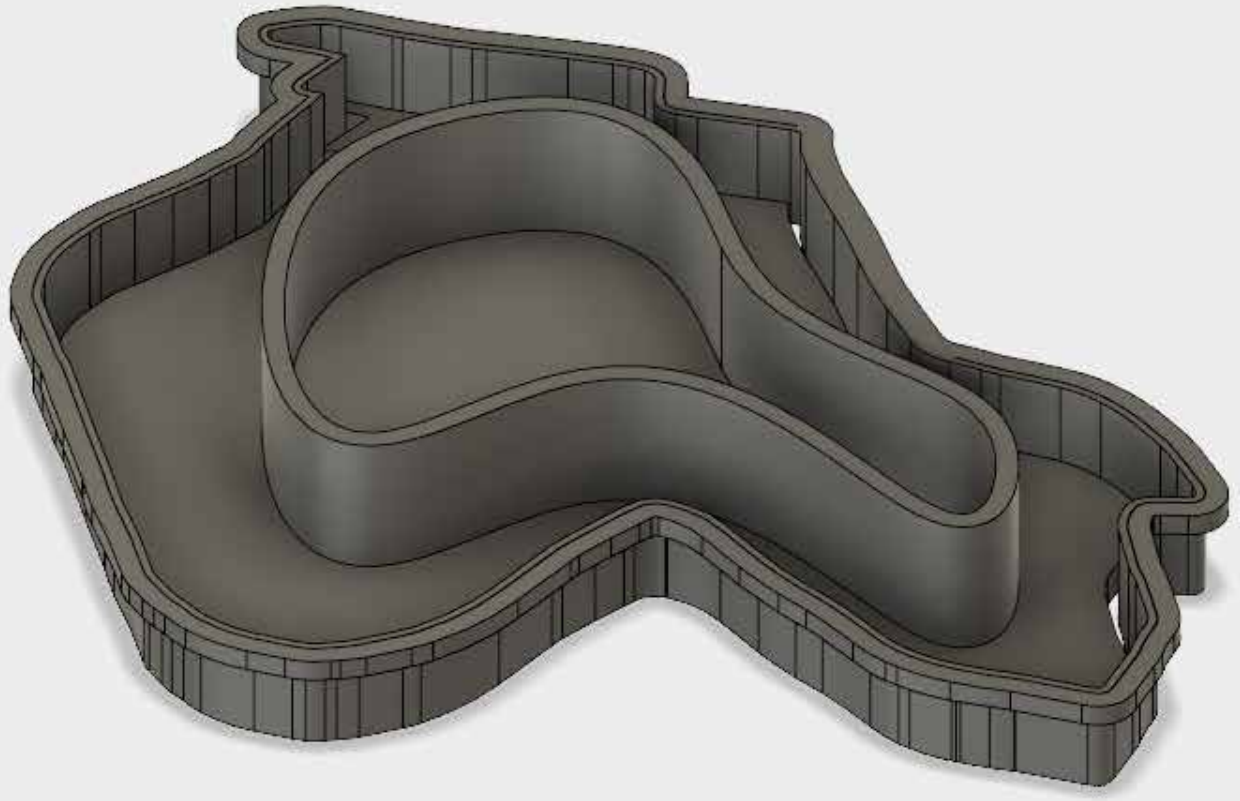
The exterior of the tile cutter model

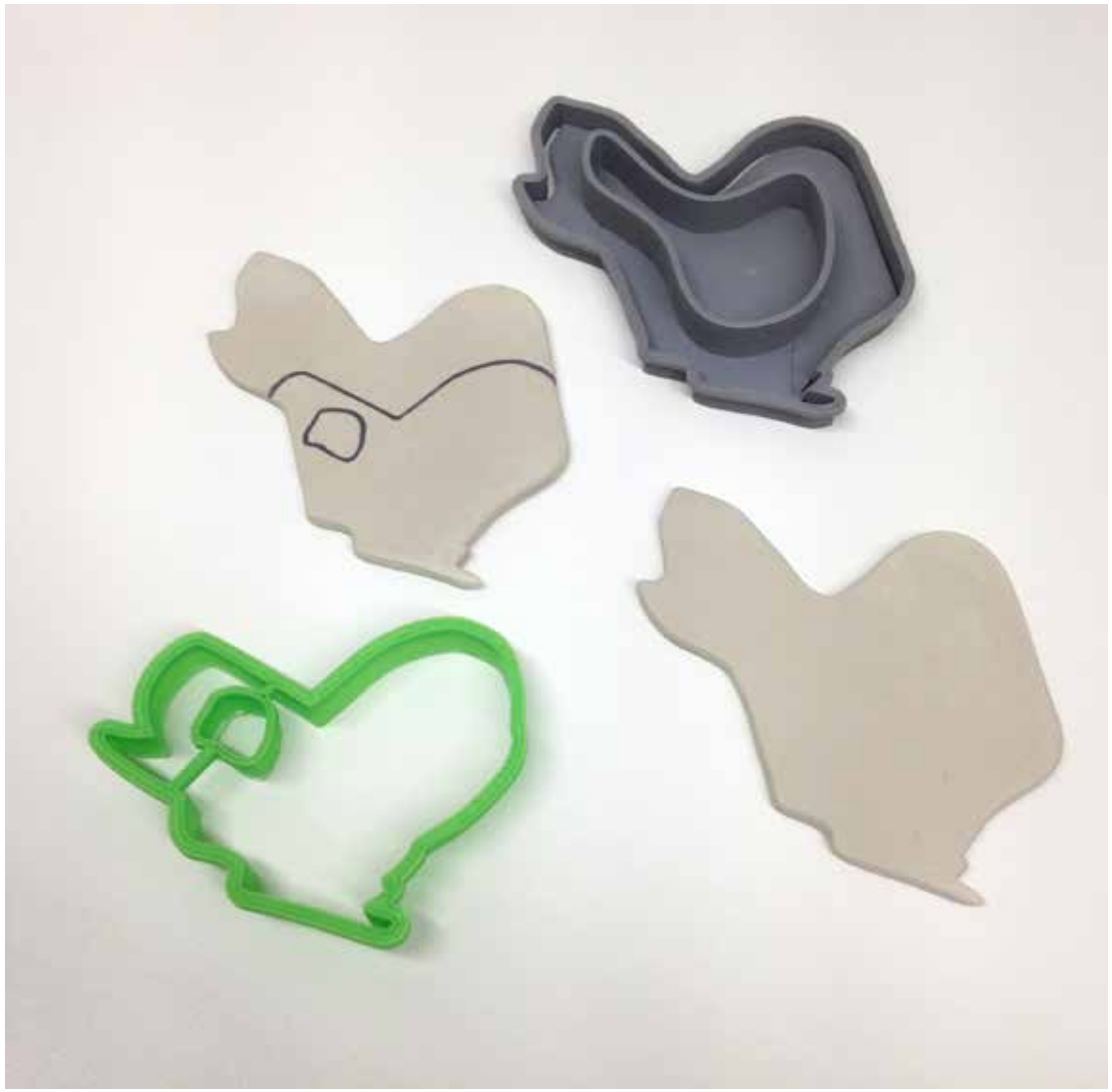


The interior part of the model is used to push the clay from the stamp.



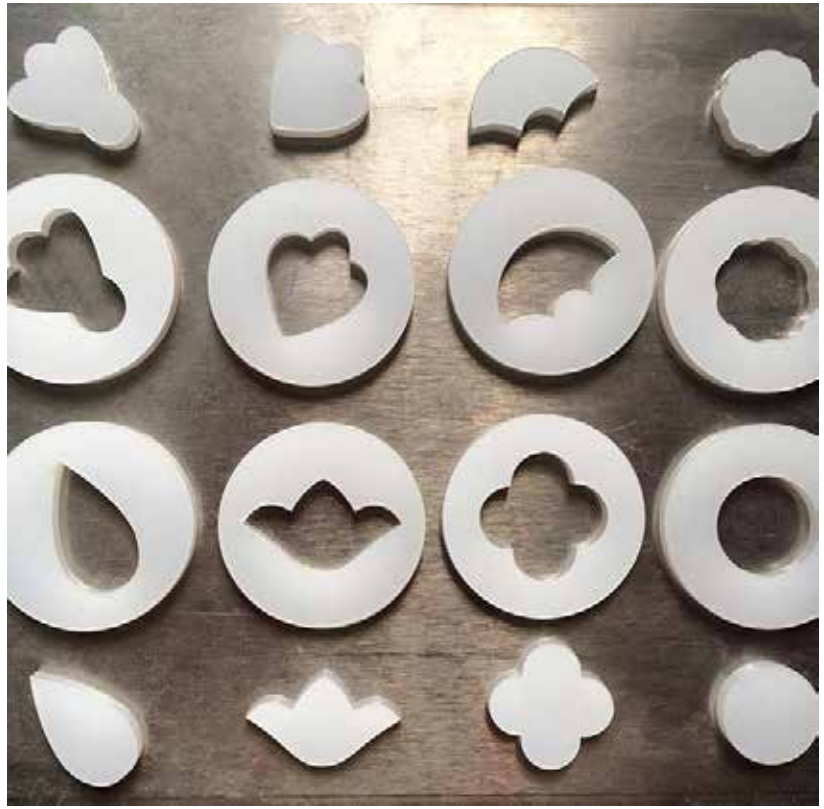
Here you can see
both parts together





Textures, Tools and Time

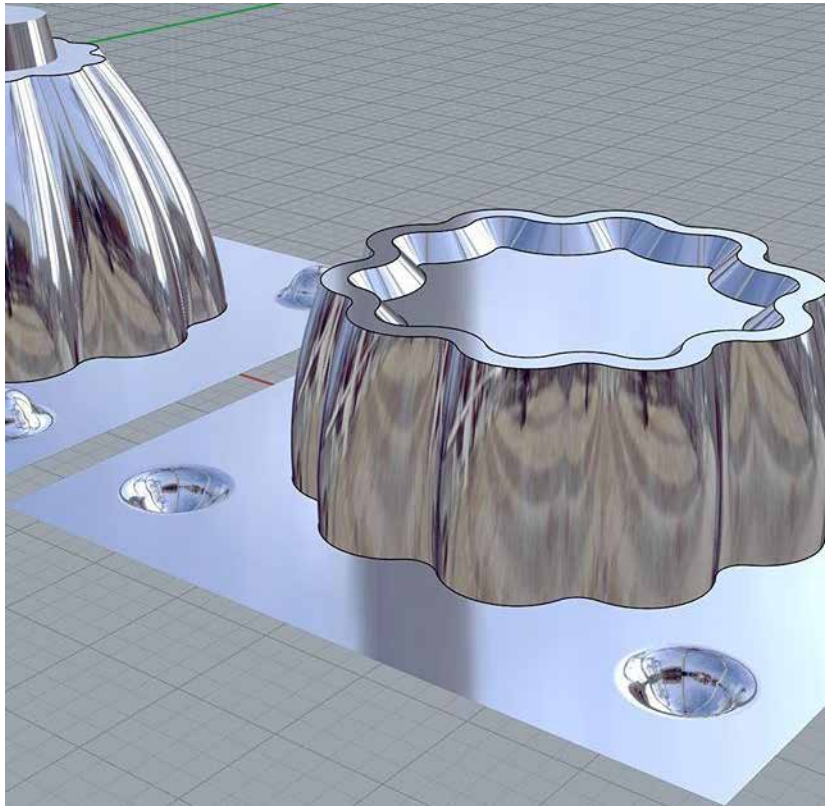
Part 1b: Tools In Use



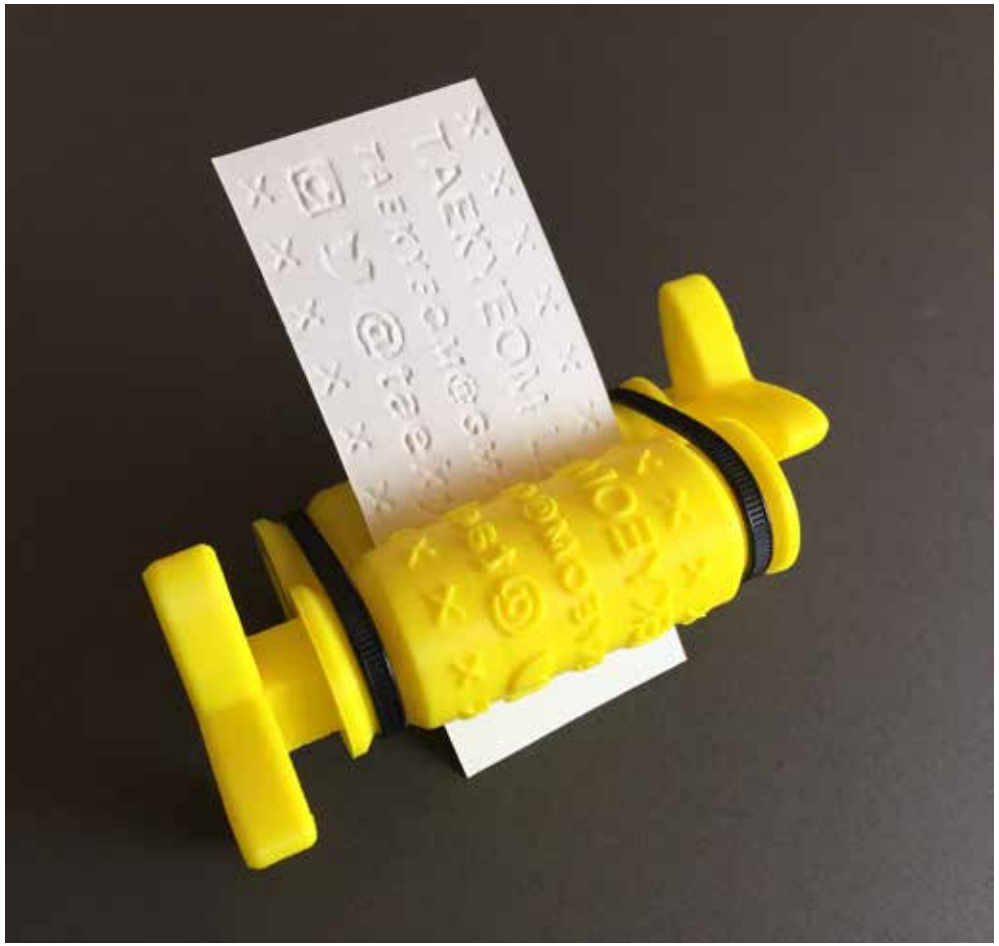
Frances Priest
Laser cut Extruder Dies

Matt Kelleher
Alfred Ceramics

This image shows a 3D printed PLA cottle system for making a plaster mold. The Cottle is filed three times with plaster to create mold parts. The yellow tumbler seen in the foreground was made from the plaster molds seen in the back.



Tyler Lotz
CNC milled blue foam
insulation for making
plaster molds



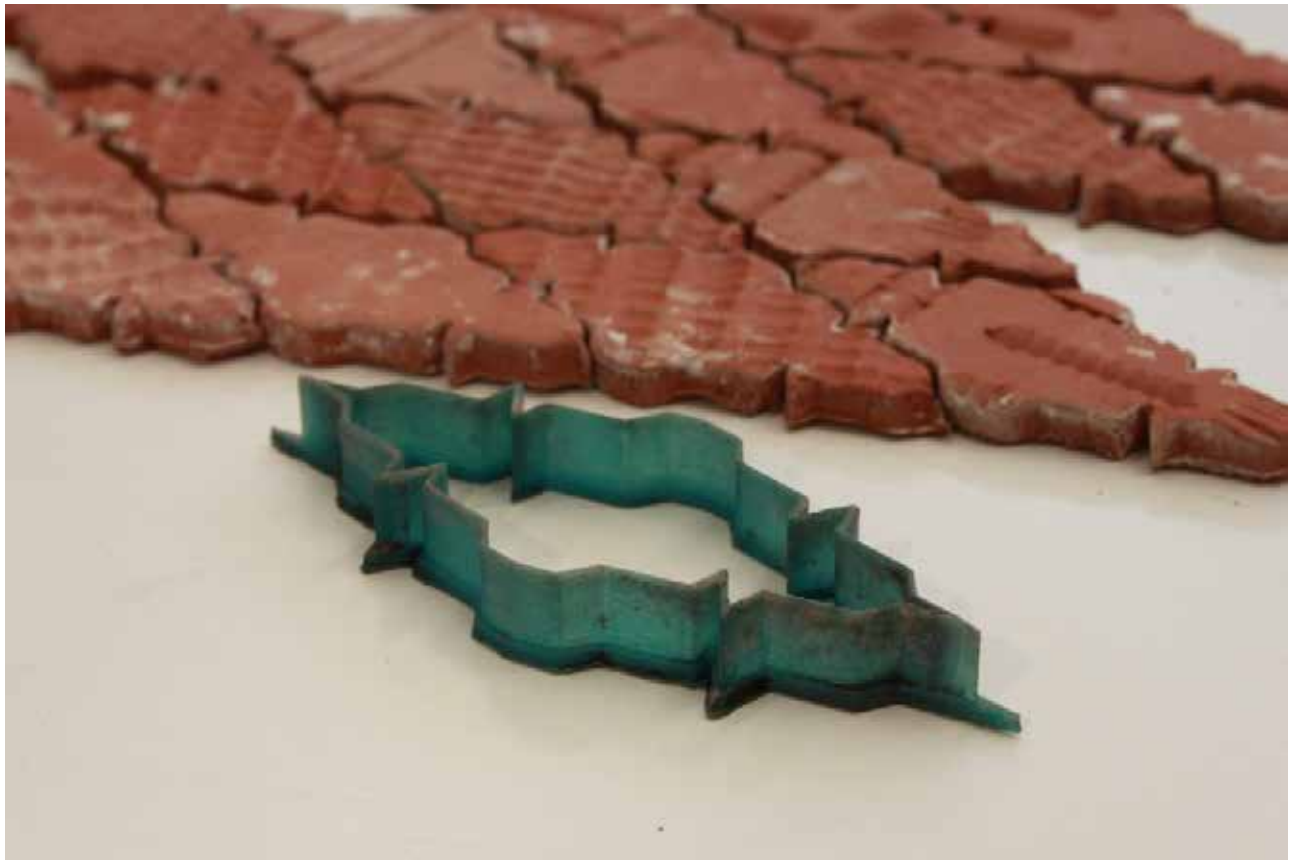
Taekyeom Lee
Stamps and Business Card Printer

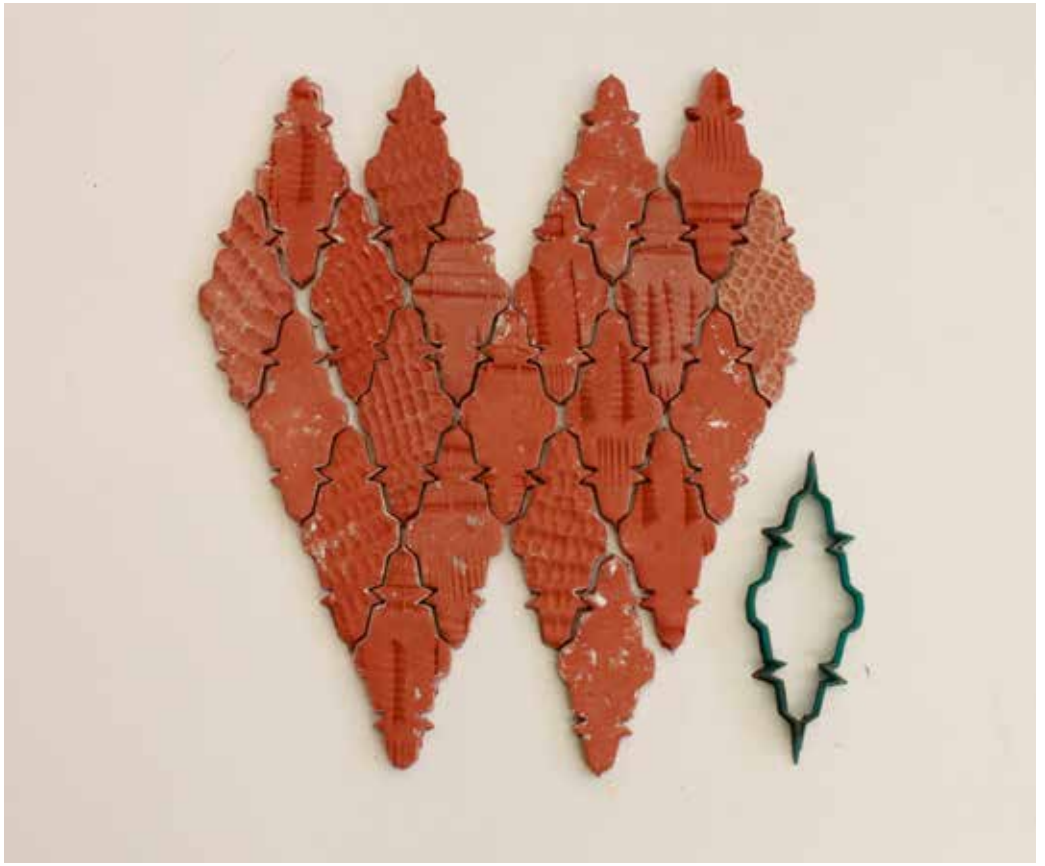
Brooks Oliver
3D Printed Drying Jig

Oregon College of Art and Craft
Fab Lab

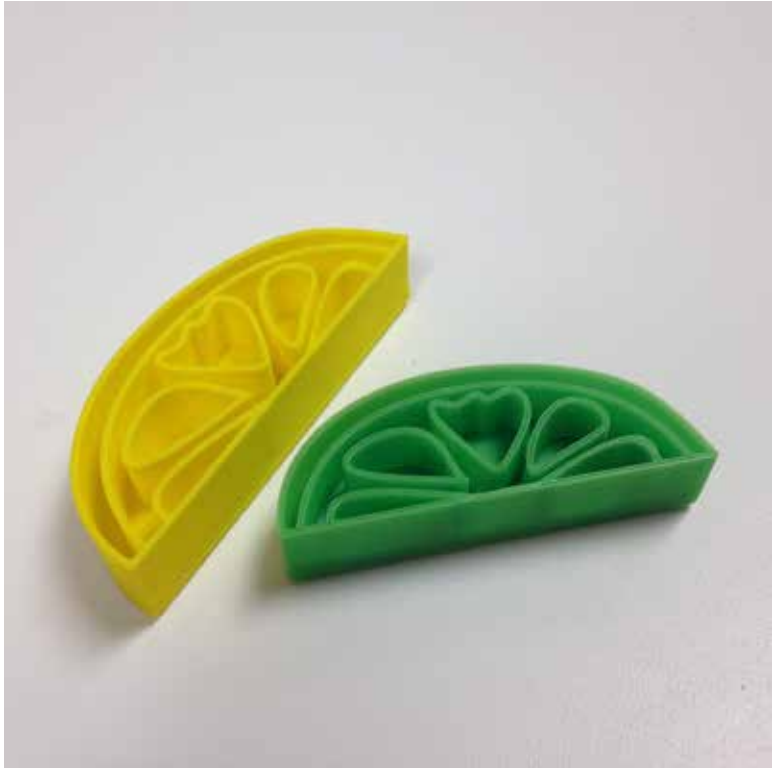
3D printed wood burning tool
printed in Steel at shapeways.com

Jo Kamm’s digital fabrications class at KCAI
Bisqued terra cotta tiles
Detail of the 3D printed tool used to make tiles





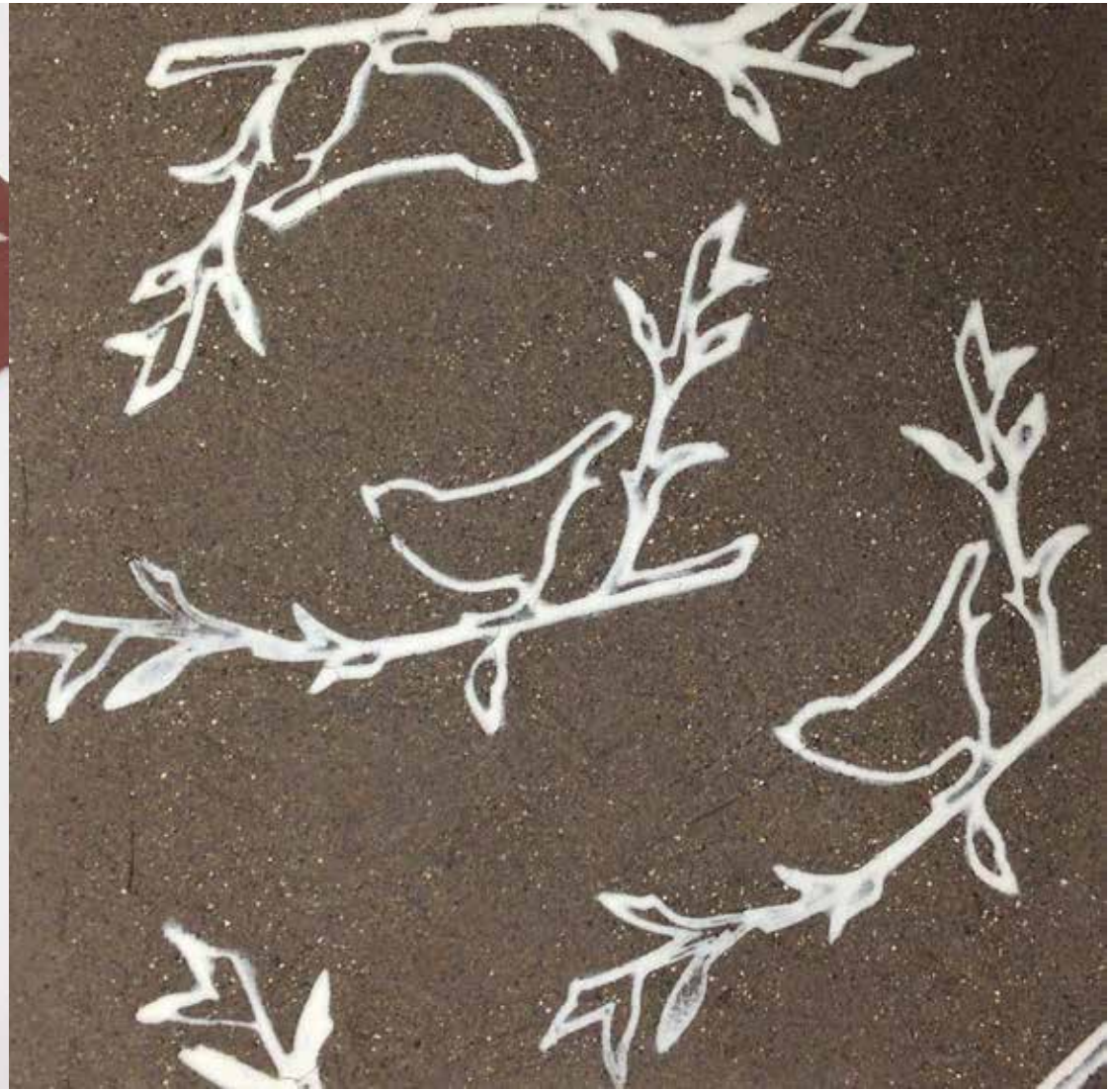
Jo Kamm’s digital fabrications class at KCAI
Bisqued tiles created by Kendall Hammond
Detail of the 3D printed tool used to make tiles



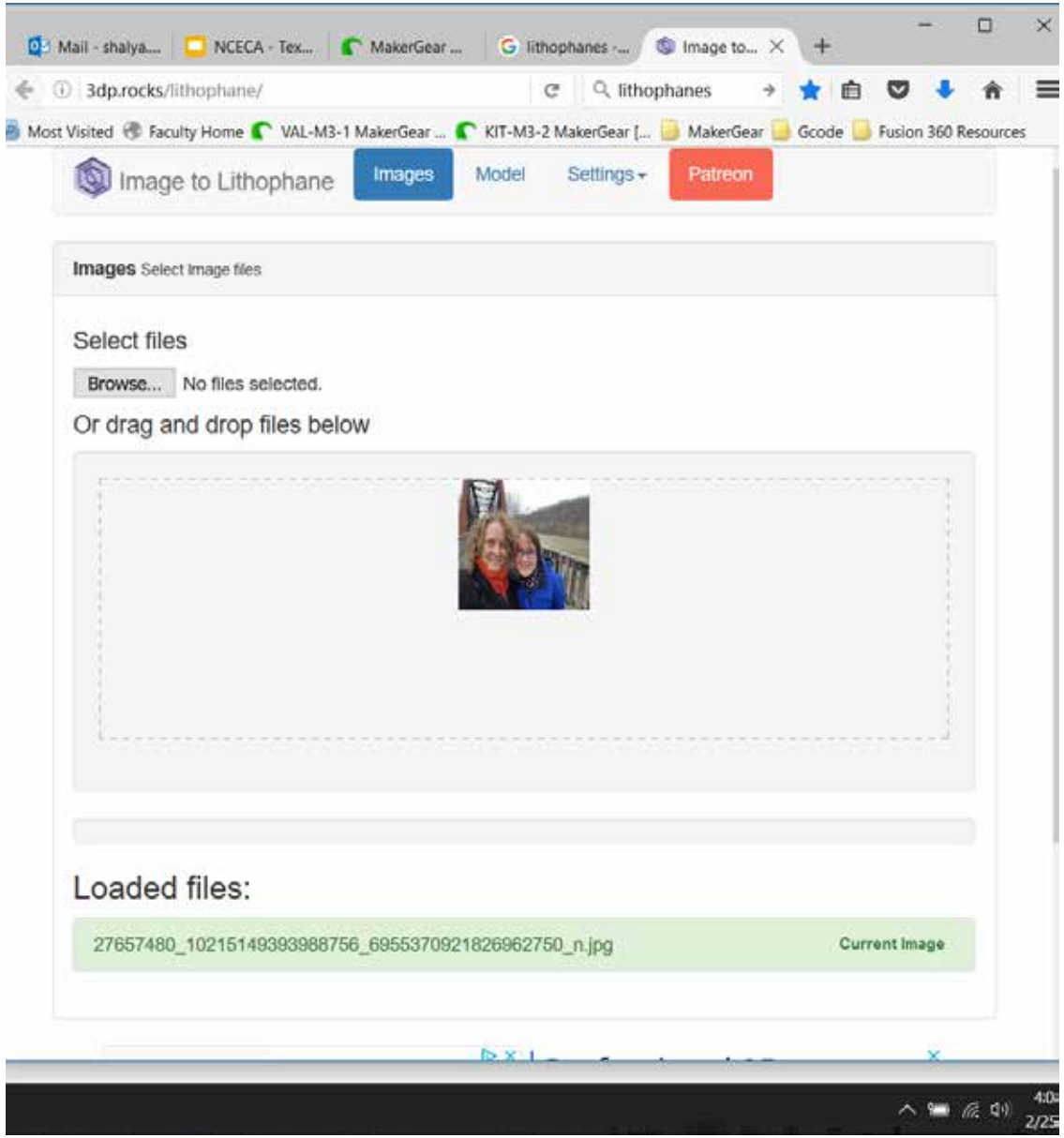
Stamps modeled in Fusion 360 and printed on a Makergear M3
The stamps were then used to make ceramic tile.
The clay is dusted with a thin layer of corn starch to prevent the stamp from sticking.
West Virginia Universities – Art 593 3D Printing

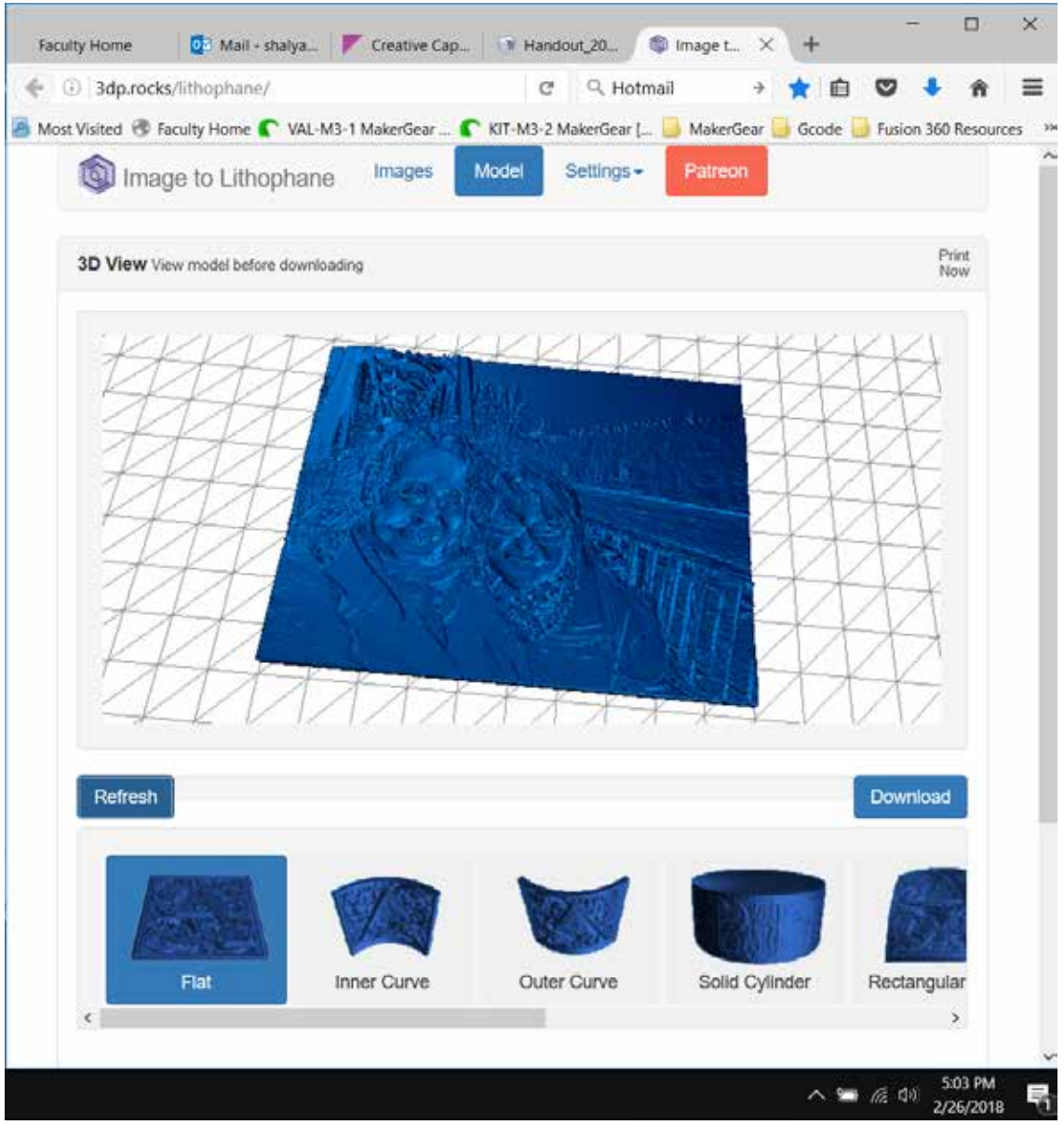
Once modeled the stamp can be scaled to provide variation.
West Virginia Universities – Art 593 3D Printing

Finished Tiles
West Virginia Universities – Art 593 3D Printing

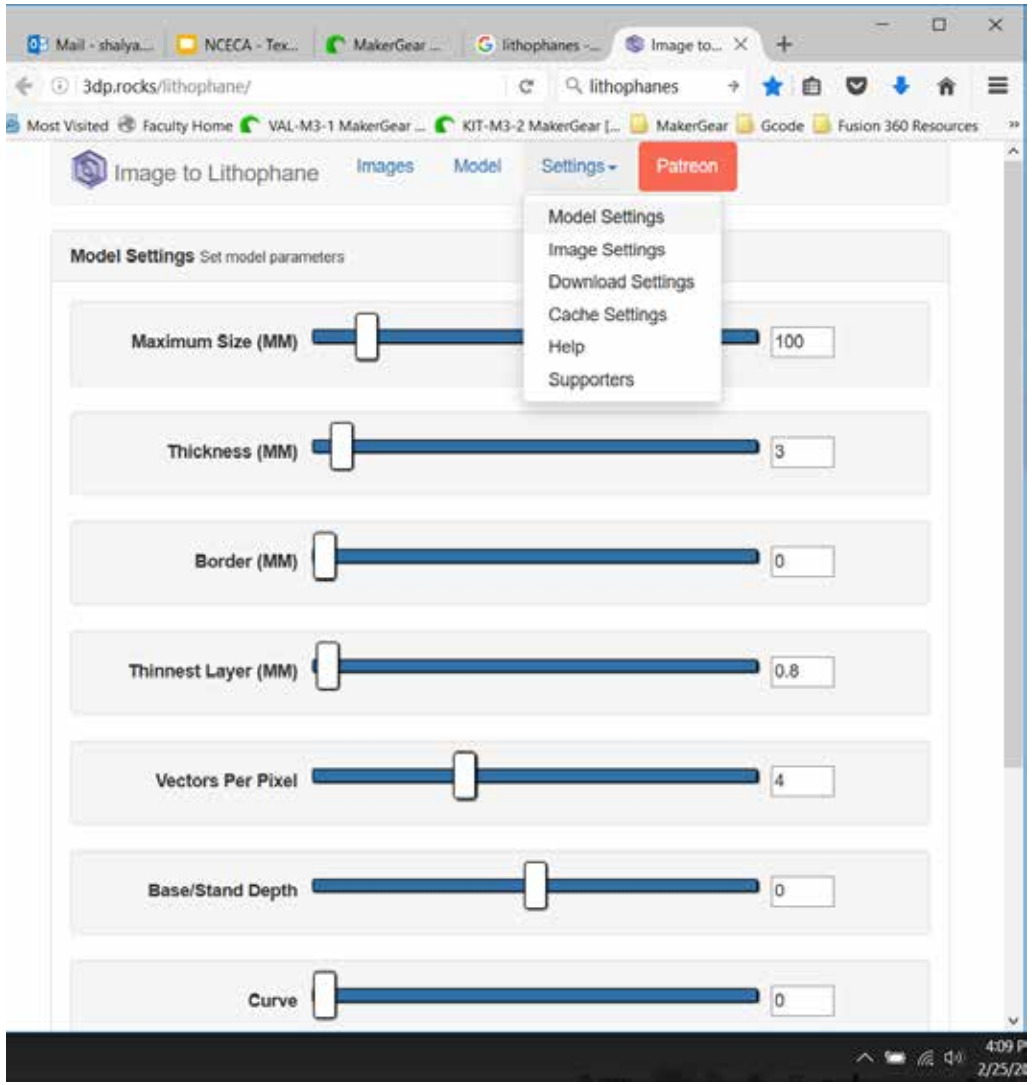


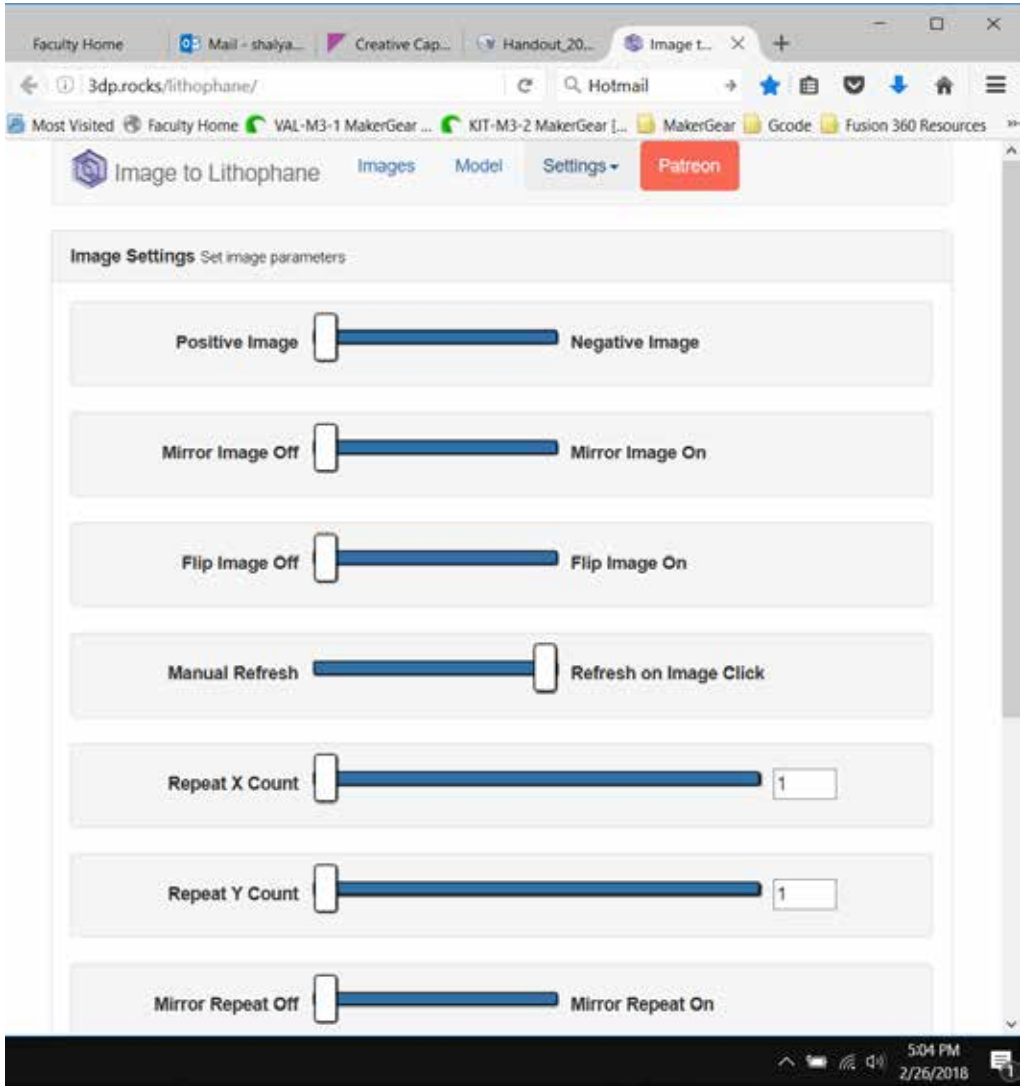
The 3D printed stamps were also used to inlay slip for mishima
West Virginia Universities – Art 593 3D Printing



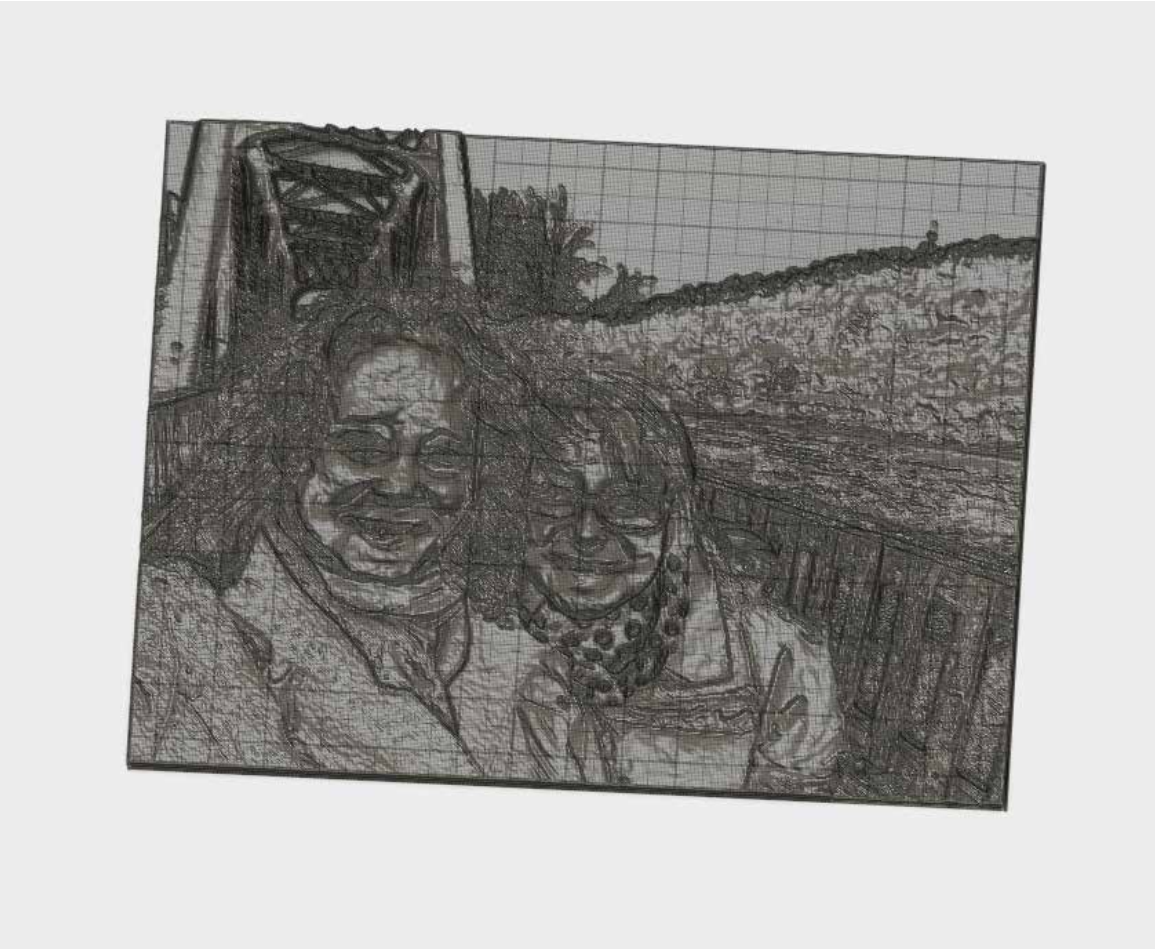


Lithophane Generator: http://3dp.rocks/lithophane/





In the Settings Menu set the image to Positive Image so that the clay you press will be a negative
Set Thickness to determine how deep the relief is
Set the Vectors Per Pixle to determine the amount of detail in the lithophane



You can easily export an STL file for 3D printing

Textures, Tools and Time

Part 2

Presented by Elizabeth New & Shalya Marsh

Free Programs we will be talking about today

1. Tileshop- http://asciiascetic.github.io/projects/ashlar/# this software was developed by Colin O-Keefe for Jo Kamm at KCAI to help people create tessellated files

1. Cookie Caster - http://www.cookiecaster.com/ app for making 3D printed cookie cutters that is PERFECT for making simple tiles

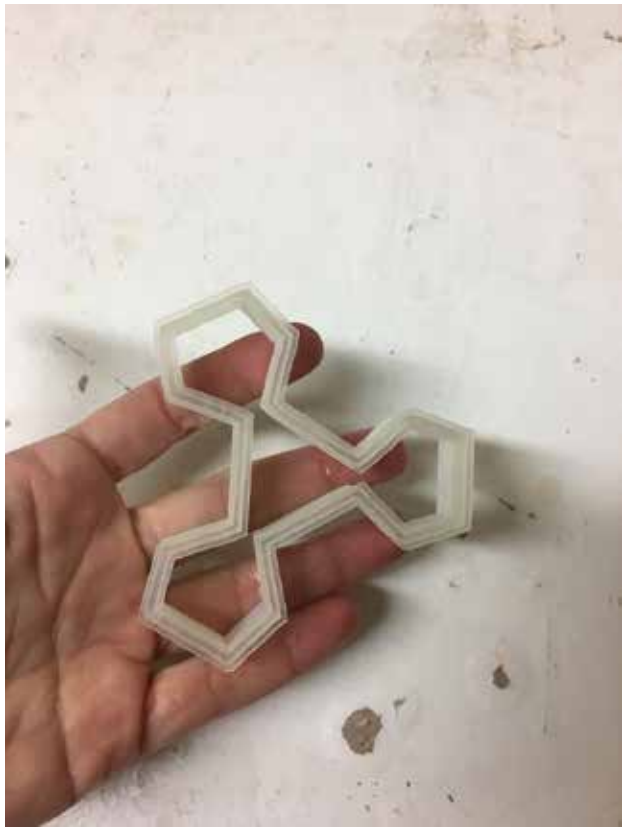
1. Tinkercad - https://www.tinkercad.com/ - simple drag and drop shapes and great introductory tutorials for people who are just getting started.

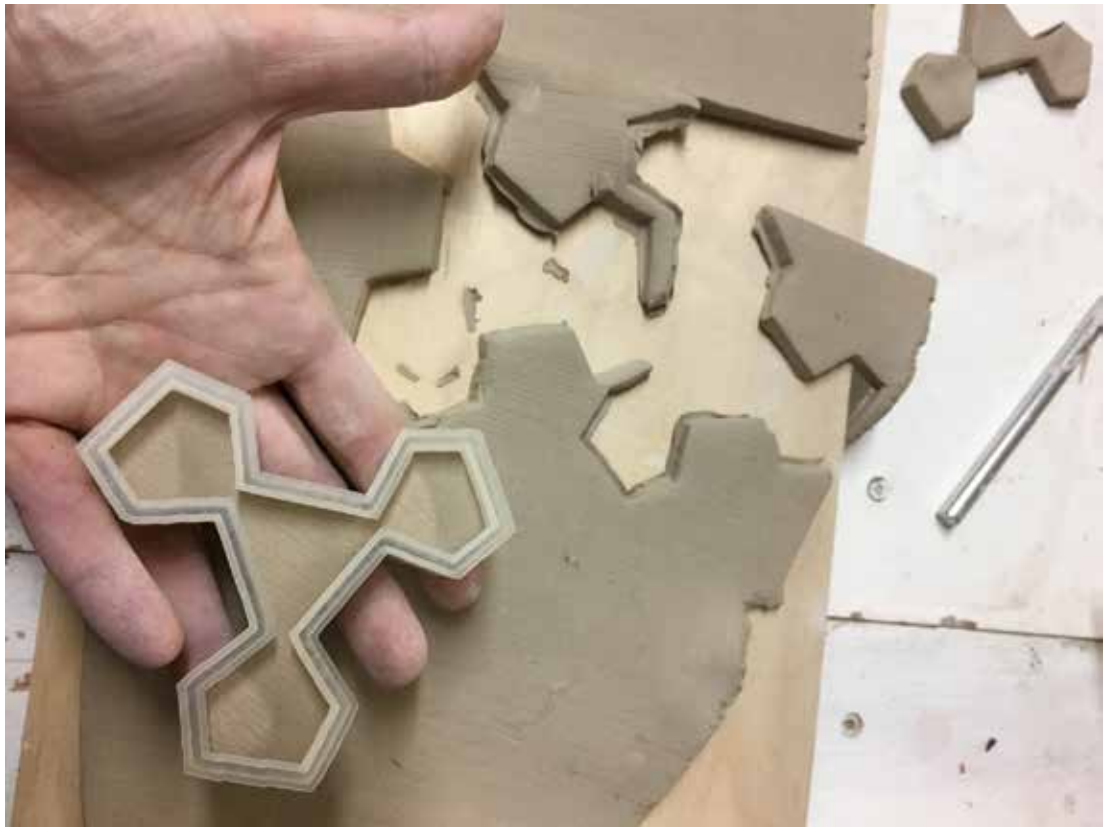
1. Onshape - https://www.onshape.com/ - more complex, but more options. Allows you to create shapes on multiple axis using drawings to create your shapes. Free when your files are publicly available, or if you are a student/educator otherwise there is a yearly fee.

Not everyone uses a computer in the studio

How do I make this stuff?

Making custom tessellated tiles...





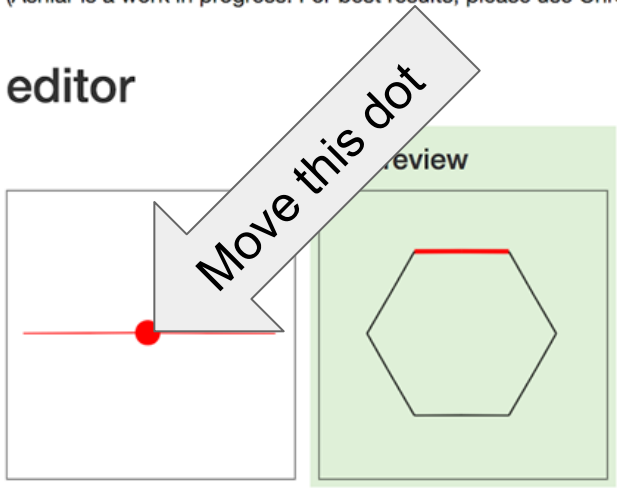
Can you use an app?
Then you can make tile cutters!

Ashlar - Tileshop

Ashlar (alpha)

(Ashlar is a work in progress. For best results, please use Chrome)

editor



Active Edge

a

Line Width

Scale

Rotation

Tiling Type

IH10

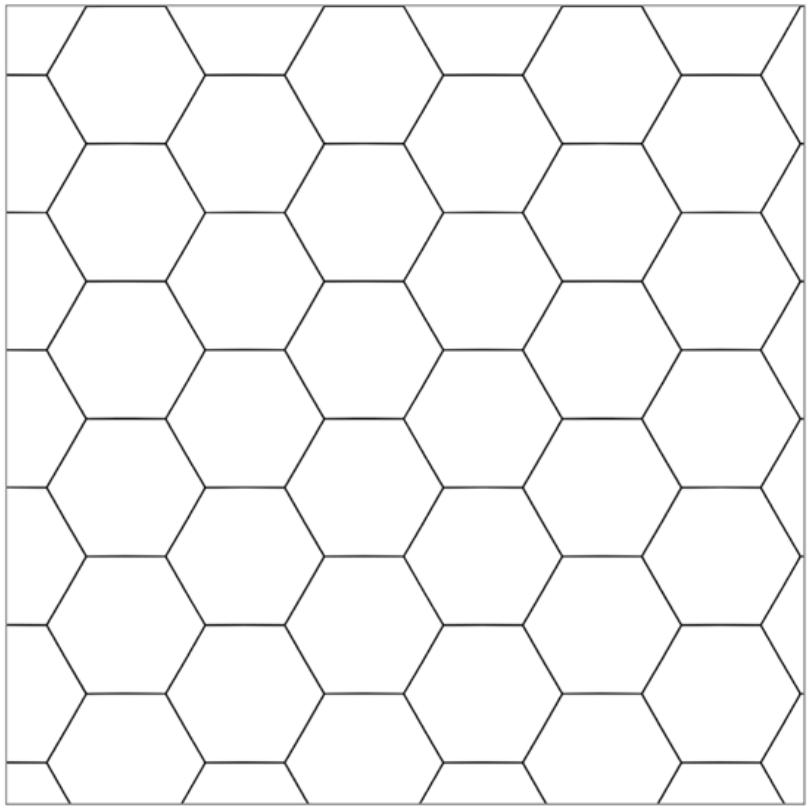
Freehand:

Name This Tile tile

Export Tile as SVG

Refresh

here is a link to your tiling -- SHARE IT!



Name tiling

Export As SVG

Enjoying the application? Do you have a particular use case in mind? I'd be happy to hear about it . Please do check out the Source on Github

Last Updated Sun Jul 24 09:58:44 CDT 2016

Developed by Colin O-Keefe with Jo Kamm at KCAI

asciiascetic.github.io/projects/ashlar/

Search

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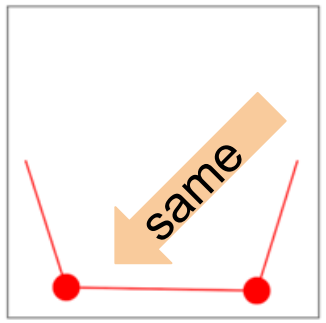
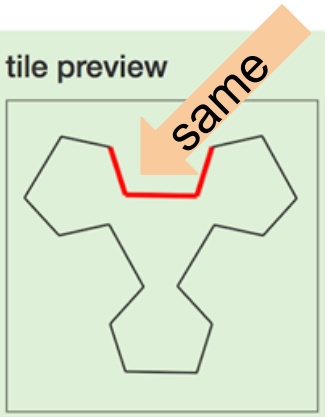
Ashlar (alpha)

(Ashlar is a work in progress. For best results, please use Chrome)

editor



tile preview



Active Edge a

Line Width

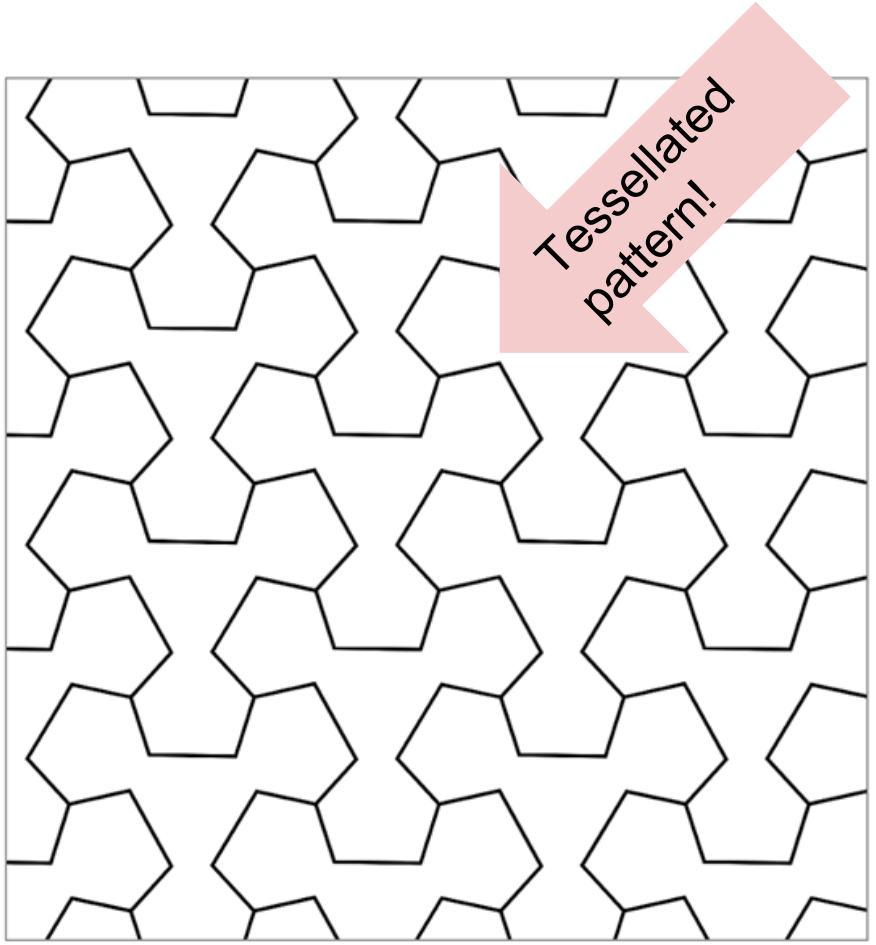
Scale

Rotation

Tiling Type IH10

Freehand: ☐ **Name This Tile** NCECA demo tile | Export Tile as SVG

Refresh | ↔ | ↔ | here is a link to your tiling -- SHARE IT!



Name tiling | Export As SVG

Enjoying the application? Do you have a particular use case in mind? I'd be happy to hear about it . Please do check out the Source on Github

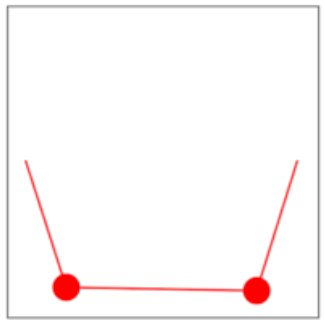
Last Updated Sun Jul 24 09:58:44 CDT 2016

asciiascetic.github.io/projects/ashlar/
Search
Industrial Design | supplies | Money | Blogs | Travel | Share on Tumblr | Pin It | Netflix: | hotmail | stuff | Jobs | Interesting Editions

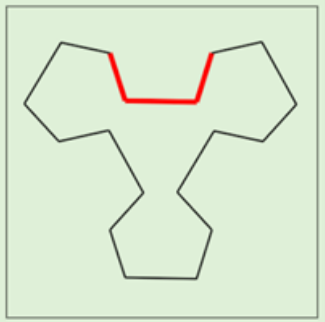
Ashlar (alpha)

(Ashlar is a work in progress. For best results, please use Chrome)

editor



tile preview



Active Edge

a

Line Width

Scale

Rotation

Tiling Type

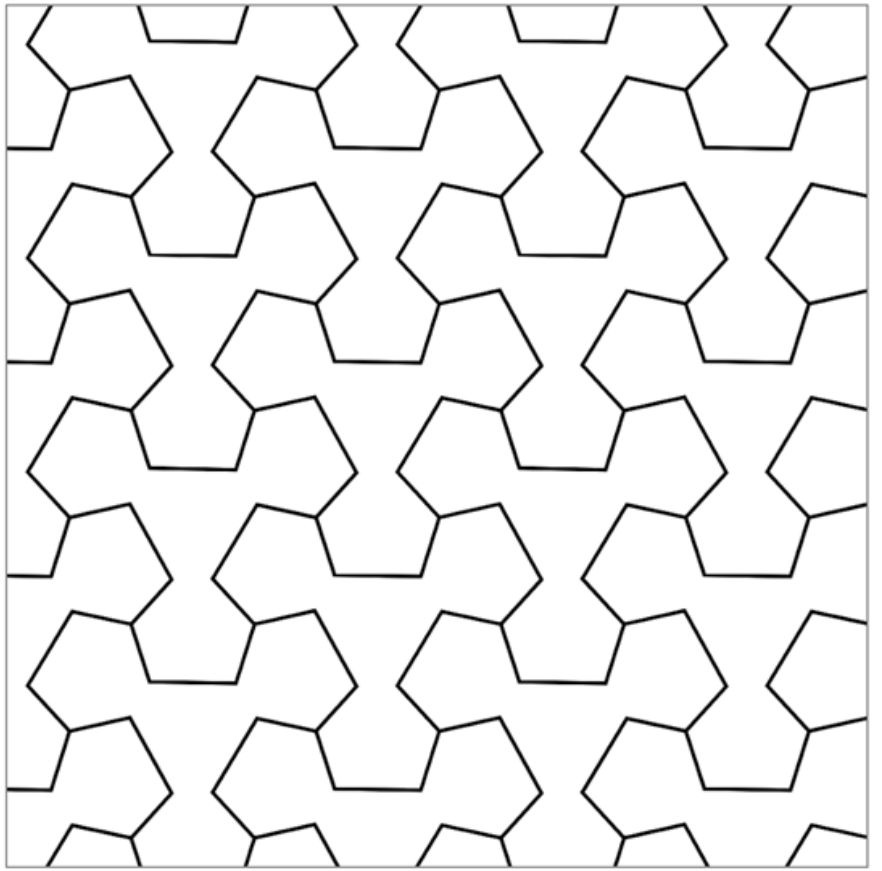
IH1

Freehand: Name This Tile NCECA demo tile Export Tile as SVG

Refresh

here is a link to your tiling -- SHARE IT!

Name and export your file, or take a screen shot

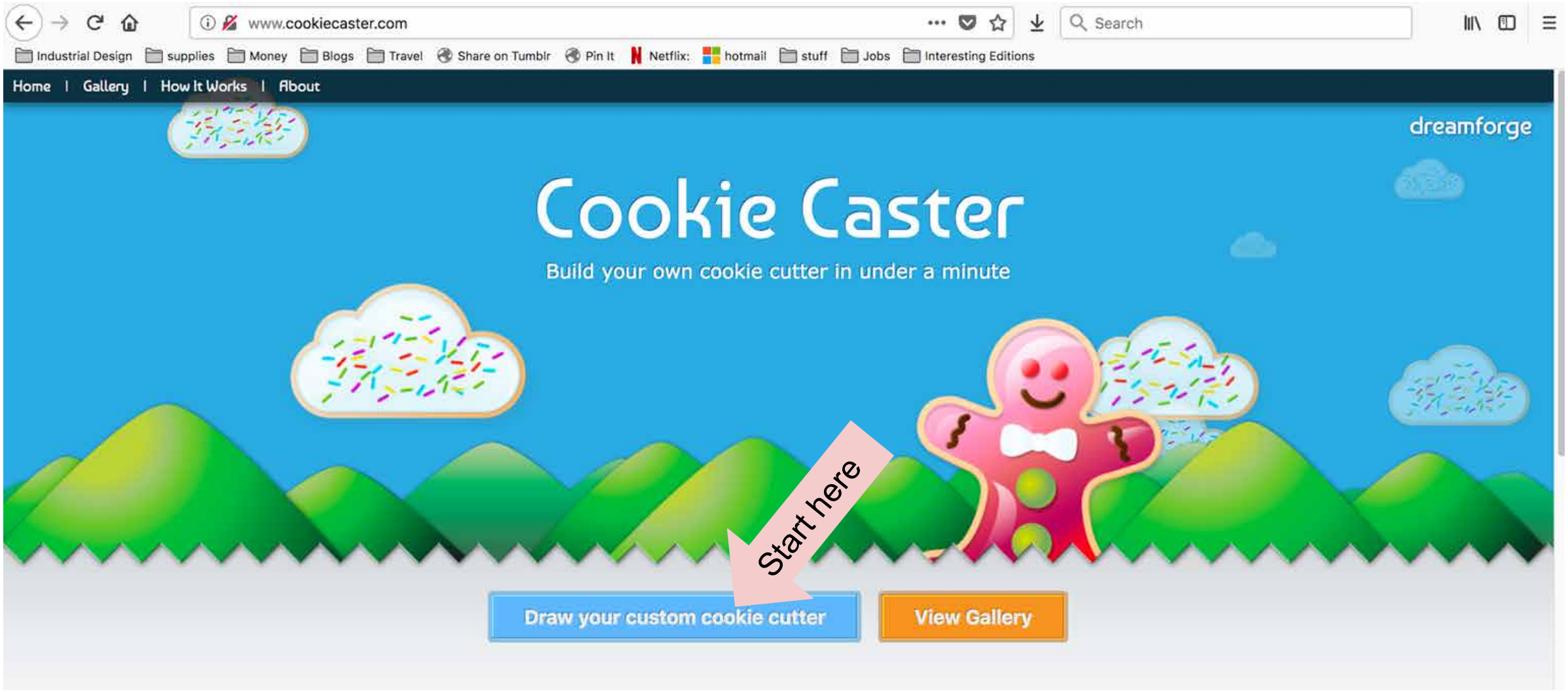


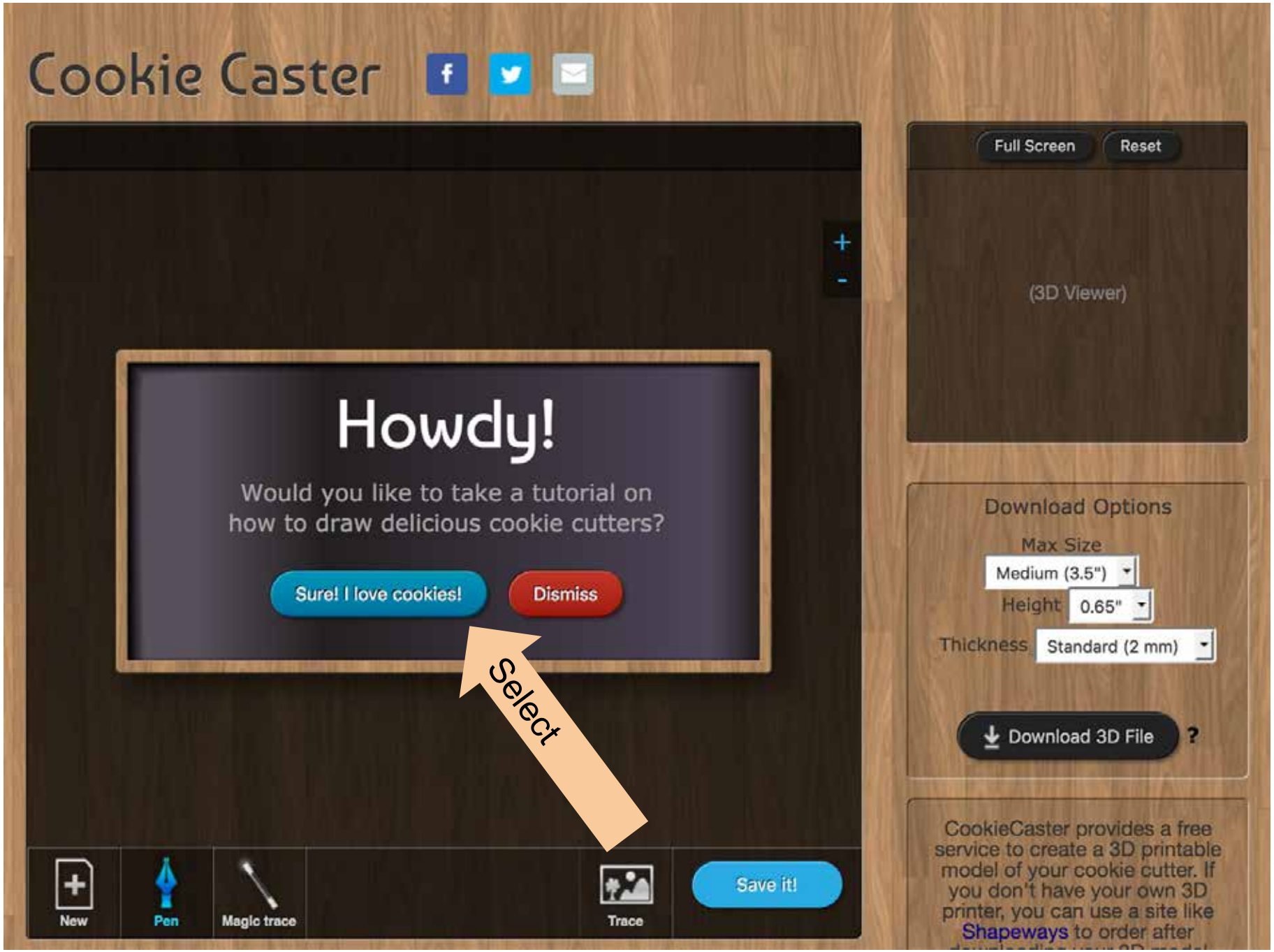
Name tiling Export As SVG

Enjoying the application? Do you have a particular use case in mind? I'd be happy to hear about it . Please do check out the Source on Github

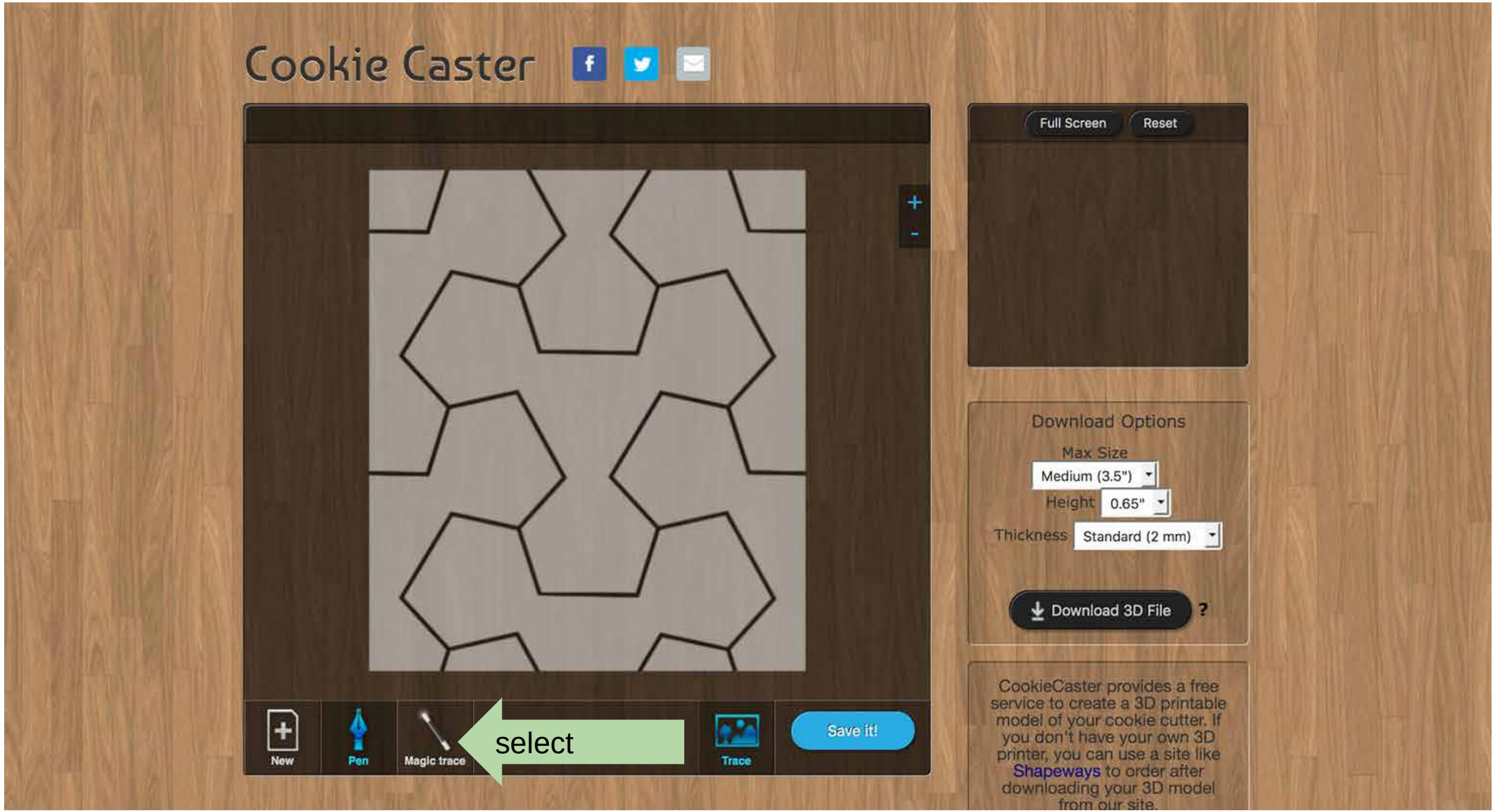
Last Updated Sun Jul 24 09:58:44 CDT 2016

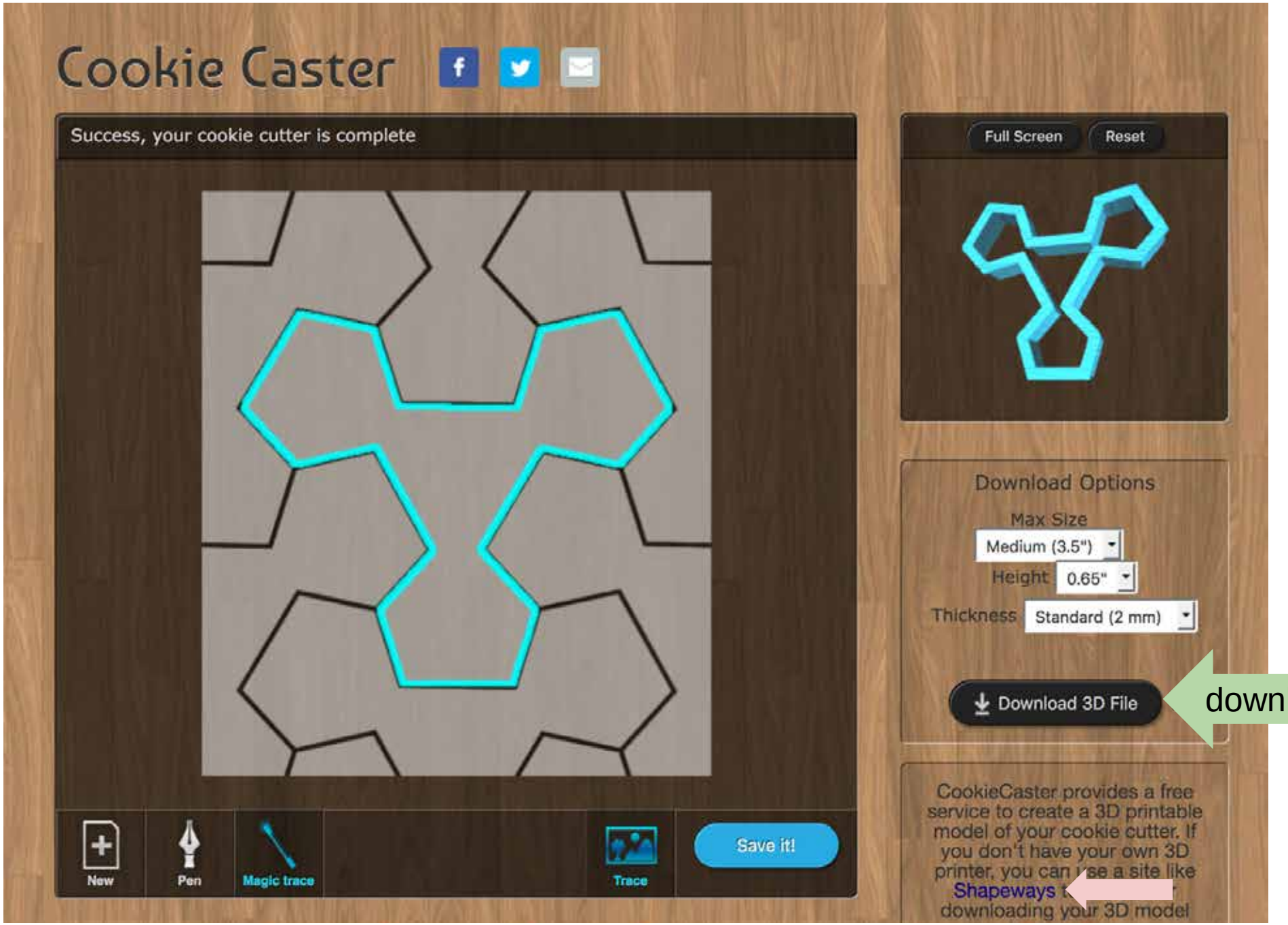
Cookie Caster - AKA making tile cutters




Cookie Caster
Full Screen
Reset
(3D Viewer)
Howdy!
Would you like to take a tutorial on how to draw delicious cookie cutters?
Sure! I love cookies!
Dismiss
Select
Download Options
Max Size
Medium (3.5")
Height
0.65"
Thickness
Standard (2 mm)
Download 3D File
?
New
Pen
Magic trace
Trace
Save it!
CookieCaster provides a free service to create a 3D printable model of your cookie cutter. If you don't have your own 3D printer, you can use a site like Shapeways to order after

Cookie Caster
Full Screen
Reset
Click on the canvas to get started
Upload screen shot
Download Options
Max Size
Medium (3.5")
Height
0.65"
Thickness
Standard (2 mm)
Download 3D File
?
New
Pen
Magic trace
Trace
Save it!
CookieCaster provides a free service to create a 3D printable model of your cookie cutter. If you don't have your own 3D printer, you can use a site like Shapeways to order after downloading your 3D model


Cookie Caster
Full Screen
Reset
Download Options
Max Size
Medium (3.5")
Height
0.65"
Thickness
Standard (2 mm)
Download 3D File
?
CookieCaster provides a free service to create a 3D printable model of your cookie cutter. If you don't have your own 3D printer, you can use a site like Shapeways to order after downloading your 3D model from our site.
New
Pen
Magic trace
select
Trace
Save it!


Cookie Caster
Success, your cookie cutter is complete
Full Screen
Reset
Download Options
Max Size
Medium (3.5")
Height
0.65"
Thickness
Standard (2 mm)
Download 3D File
download
CookieCaster provides a free service to create a 3D printable model of your cookie cutter. If you don't have your own 3D printer, you can use a site like Shapeways
downloading your 3D model
New
Pen
Magic trace
Trace
Save it!

More cool samples from Jo Kamm's workshop…

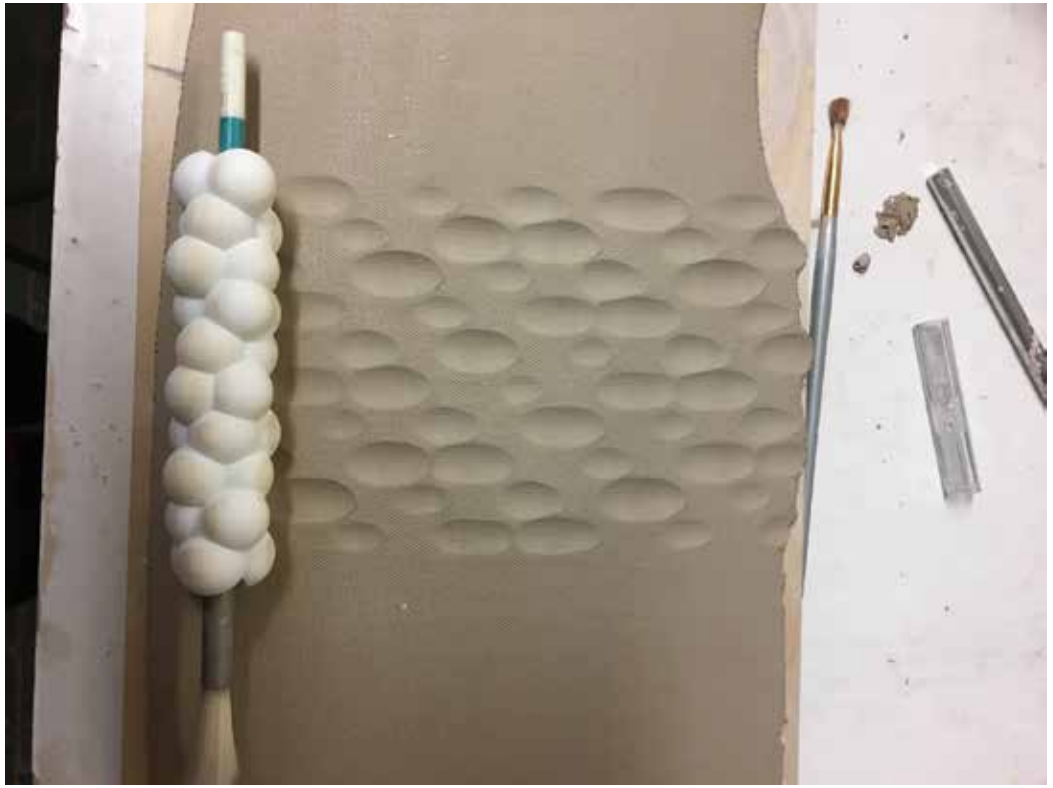
Valentina Trinidade-Soria

Caroline

Shontaja Brown

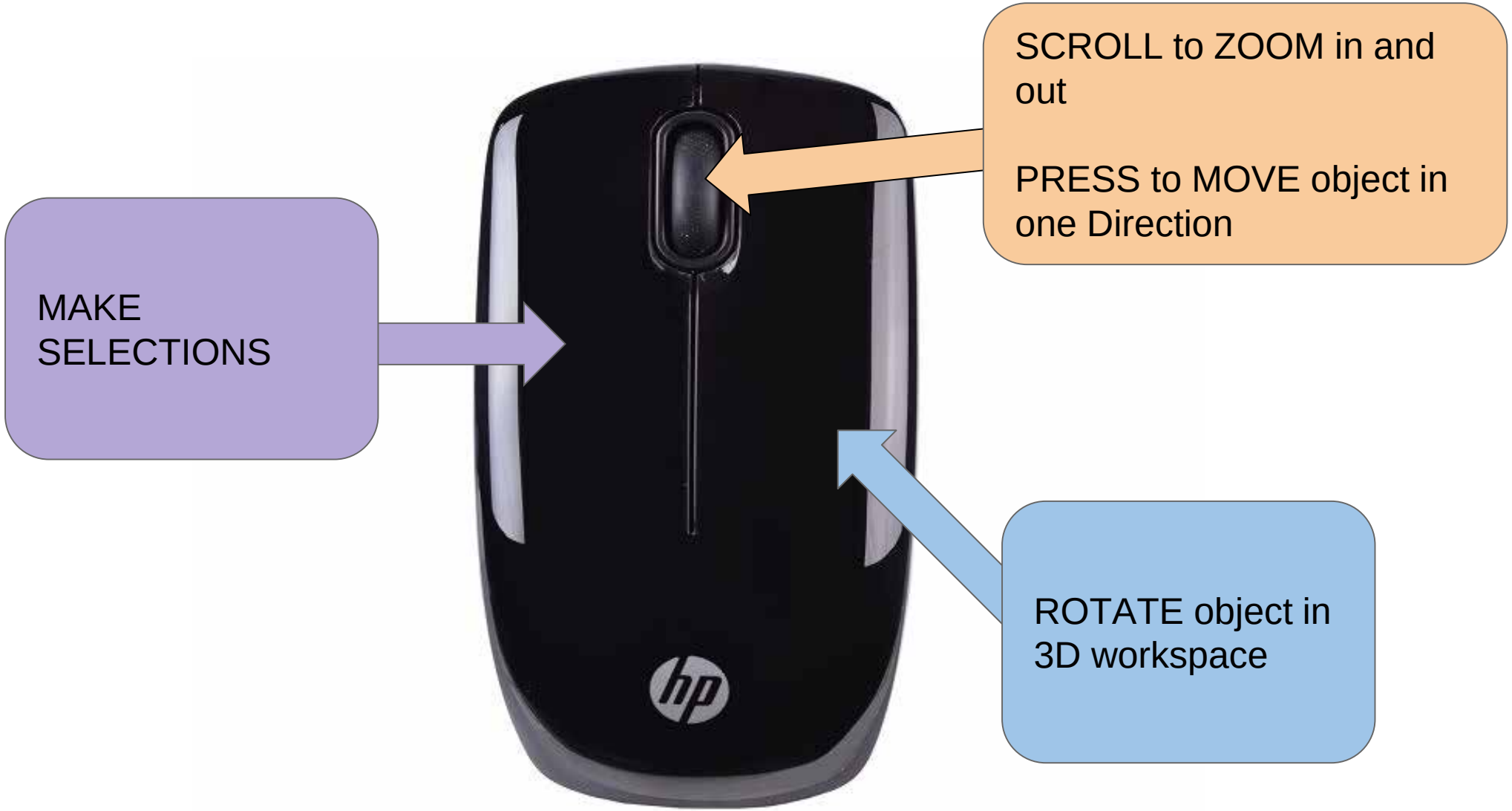
Muriel Hansen

Making a texture roller



Only slightly more complicated than the cutter

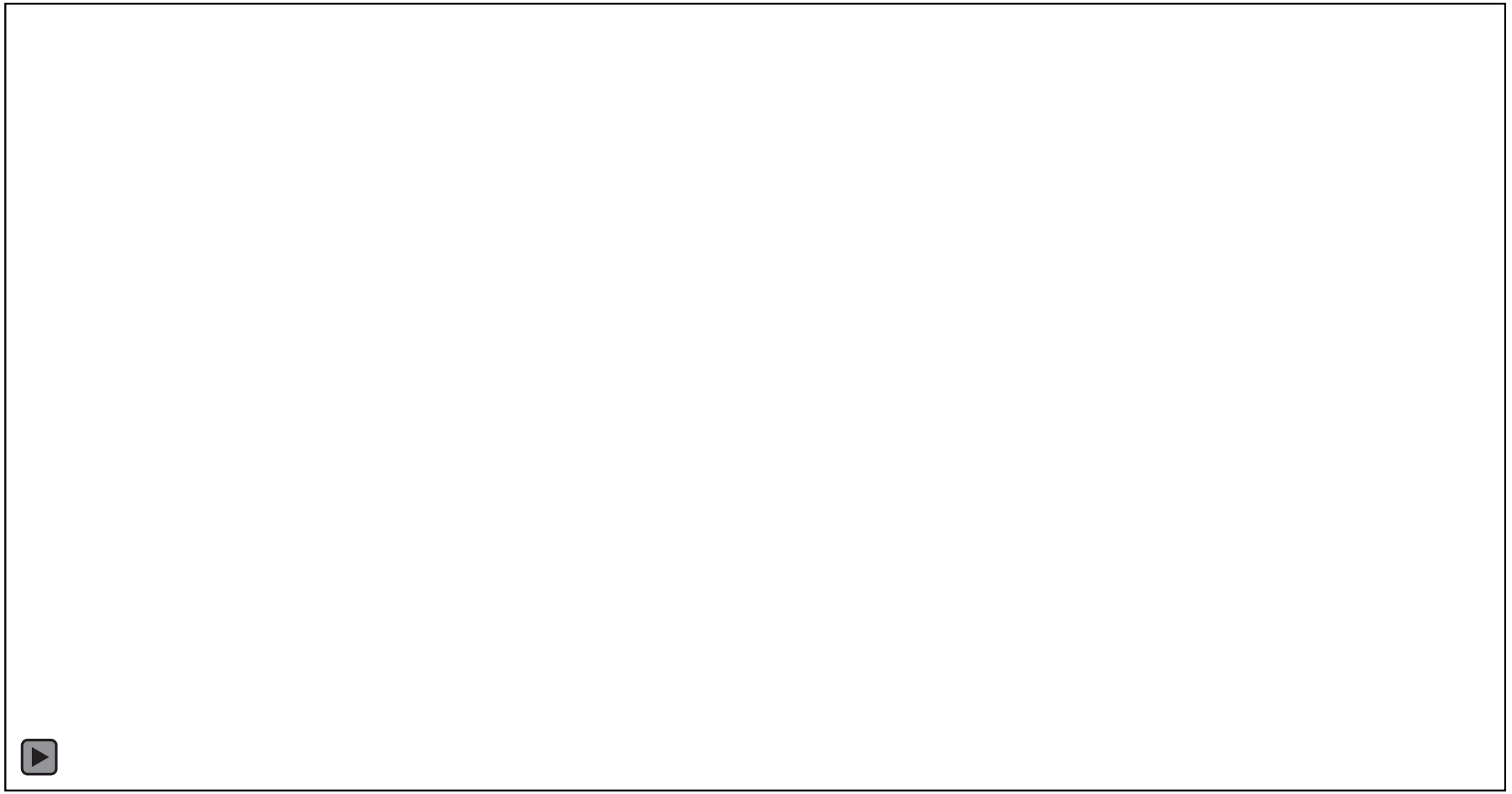
Your mouse is really important.



Left Mouse Button - make selections

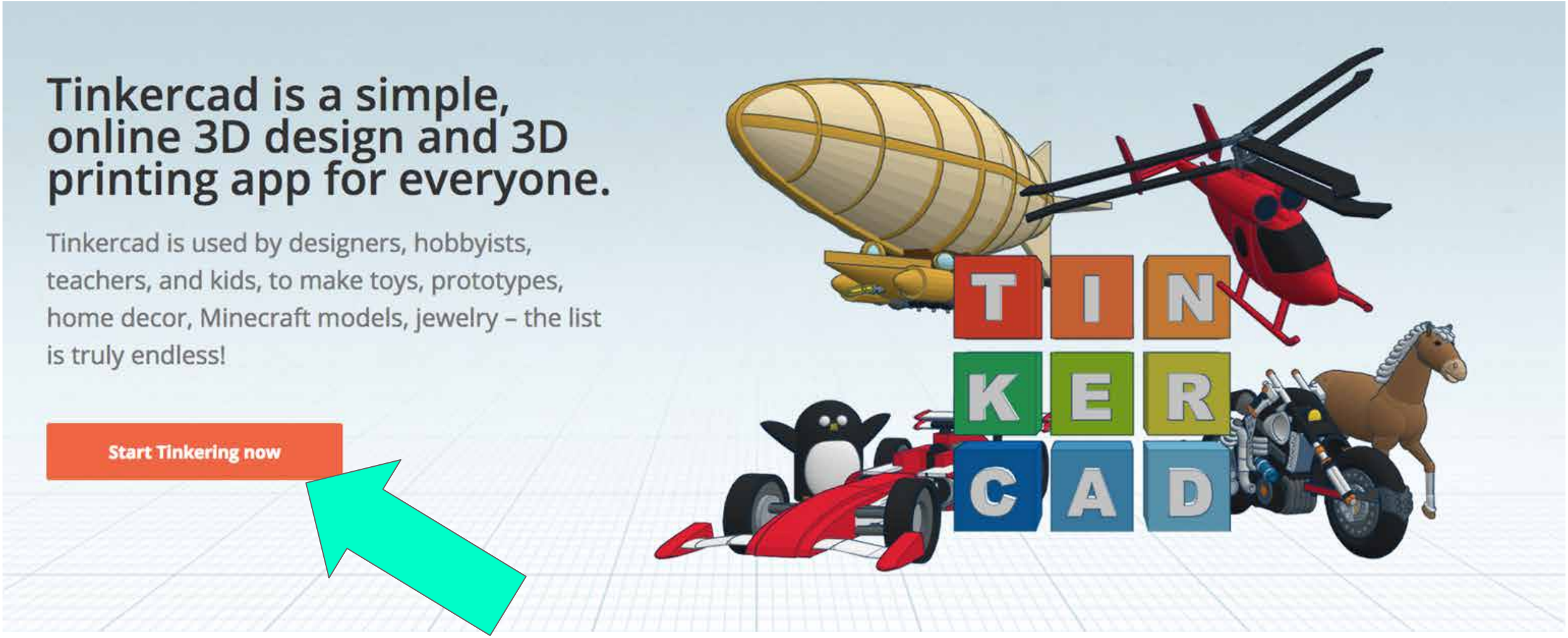
Center Button - Move and Zoom

Right Button -rotate in 3D workspace

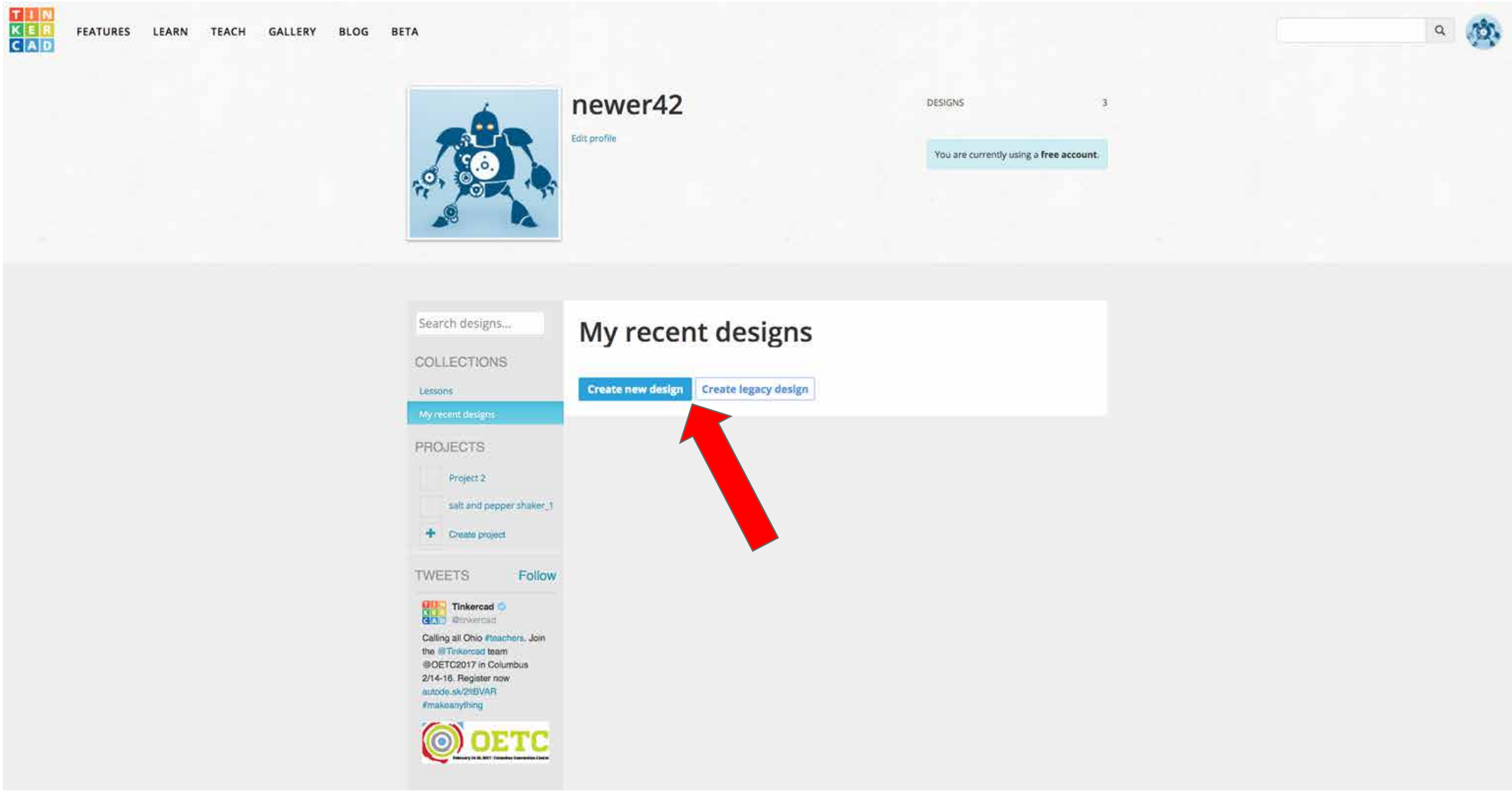


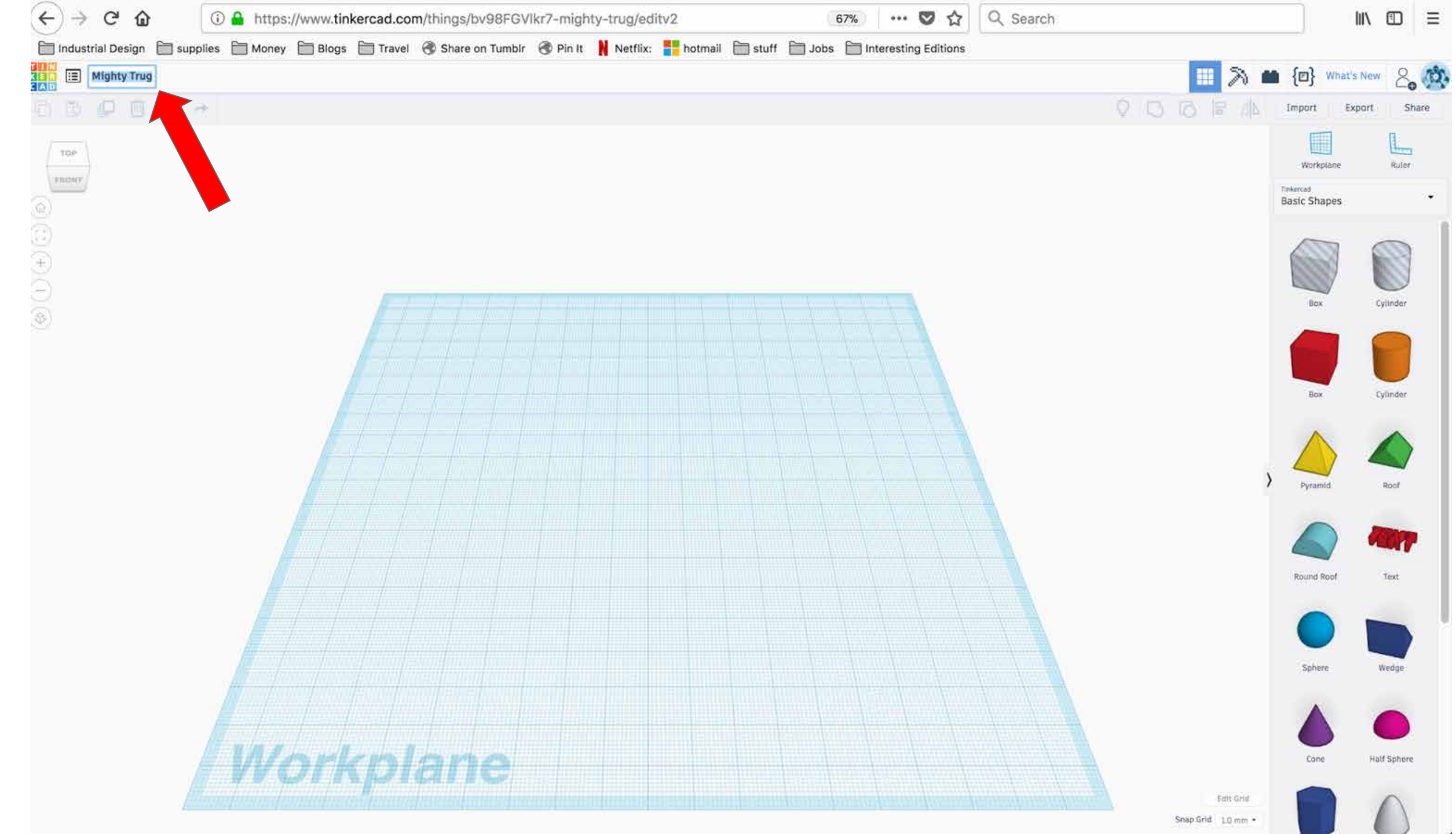
TinkerCad

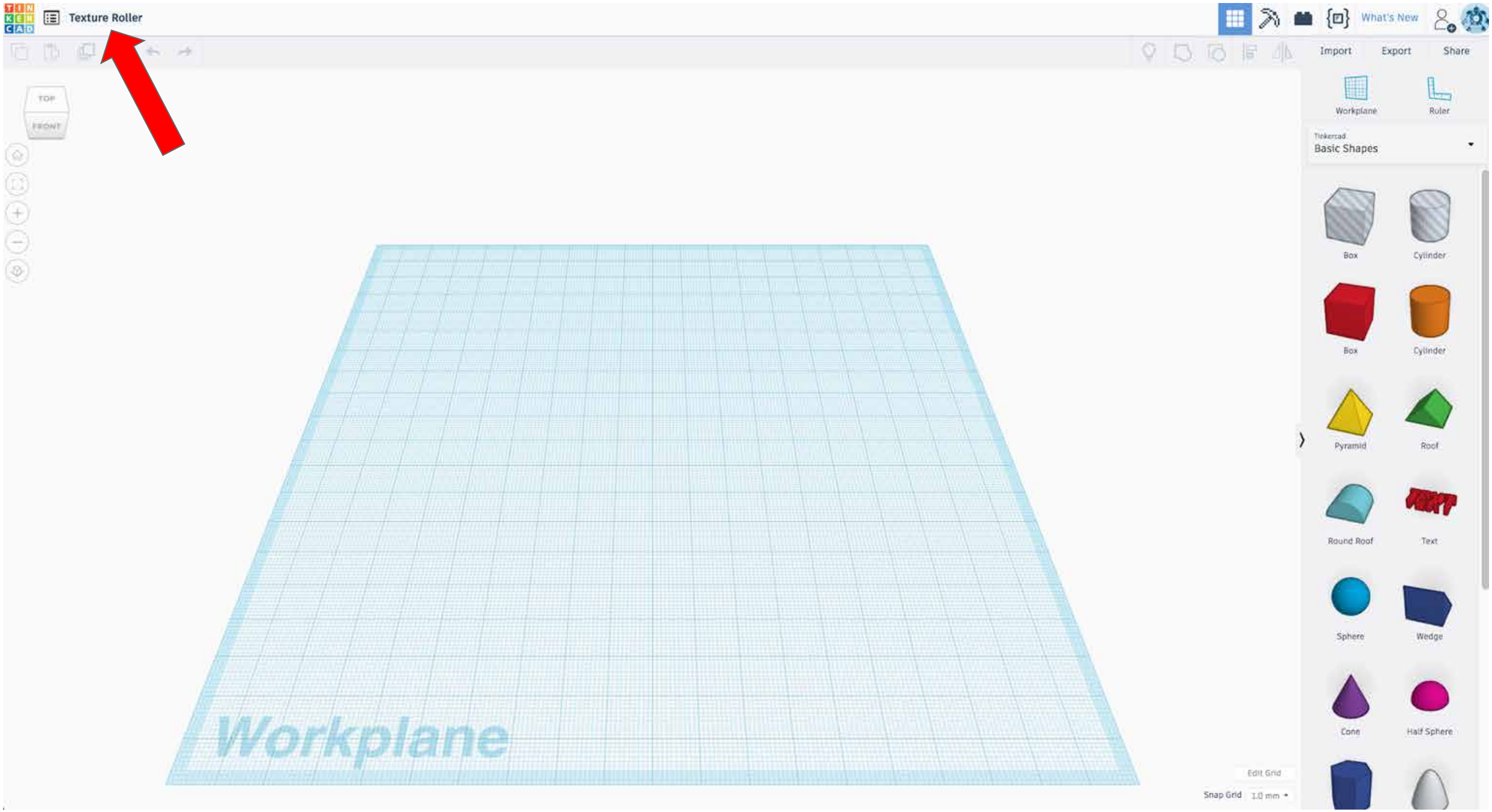
Great free software for your very first 3D models

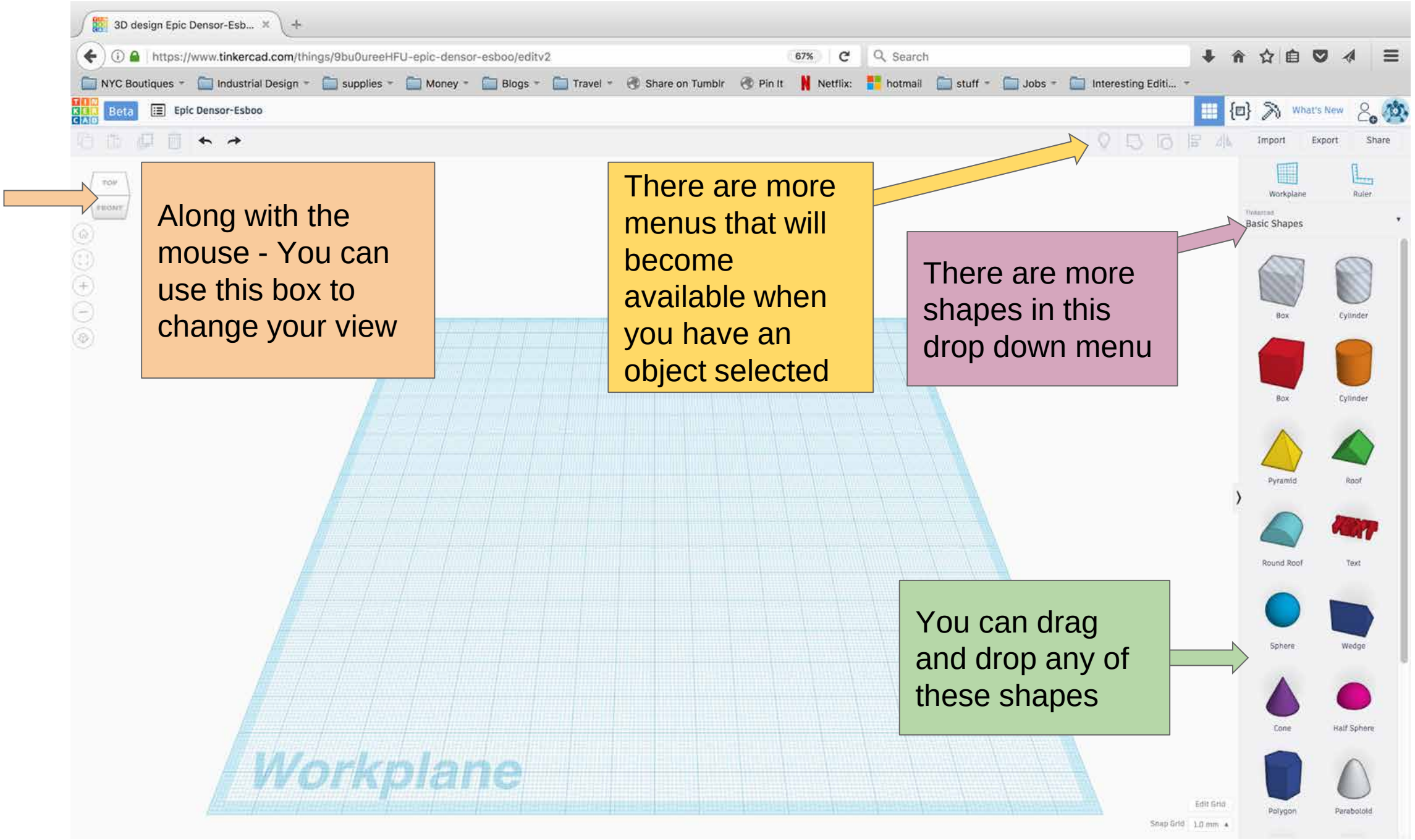


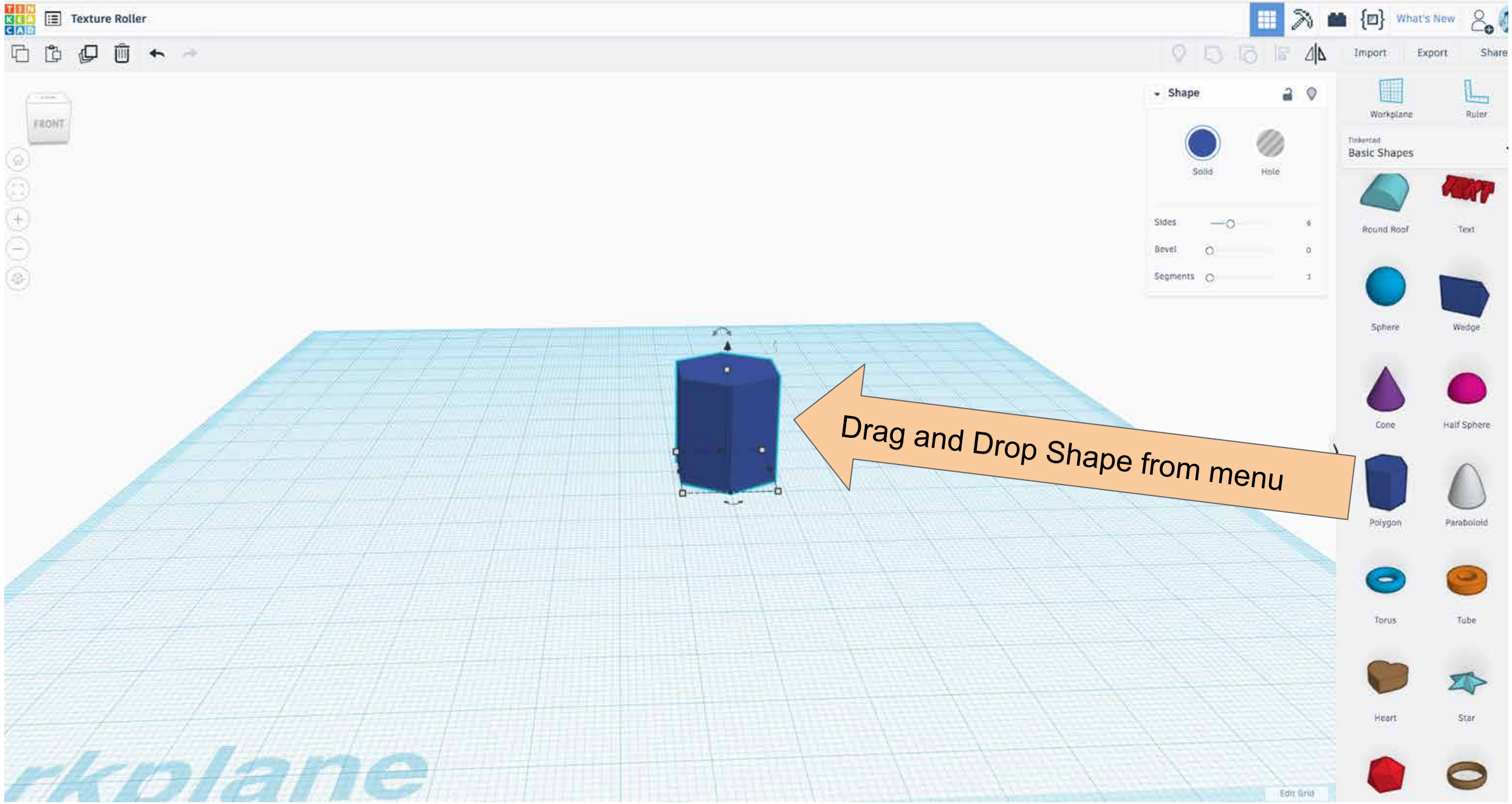
Lets get started



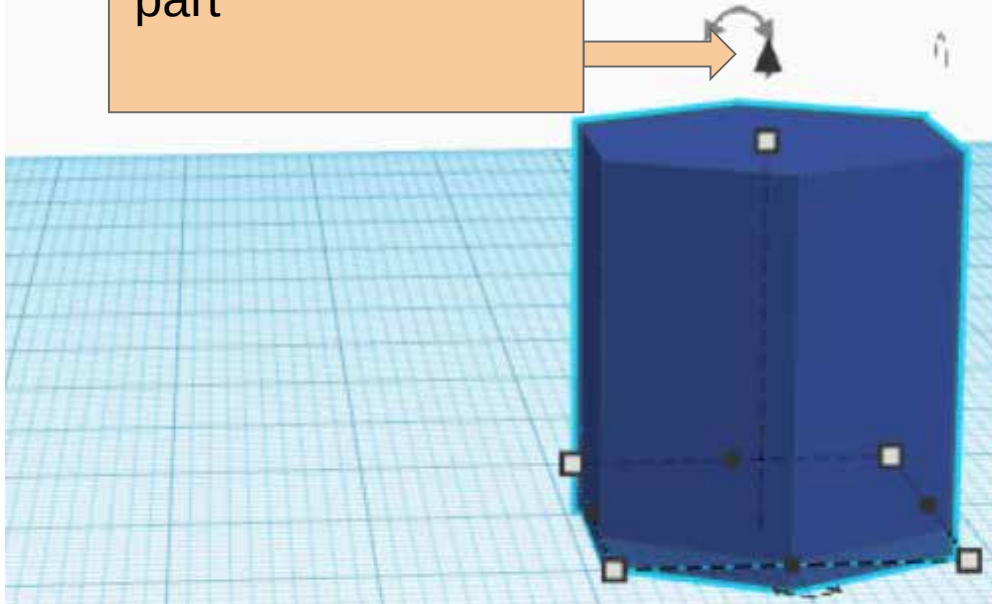

https://www.tinkercad.com/things/bv98FGVlkr7-mighty-trug/editv2
67%
Search
Industrial Design
supplies
Money
Blogs
Travel
Share on Tumblr
Pin It
Netflix:
hotmail
stuff
Jobs
Interesting Editions
Mighty Trug
What's New
Import
Export
Share
TOP
FRONT
Workplane
Ruler
Tinkercad
Basic Shapes
Box
Cylinder
Box
Cylinder
Pyramid
Roof
Round Roof
Text
Sphere
Wedge
Cone
Half Sphere
Workplane
Edit Grid
Snap Grid
1.0 mm


Texture Roller
What's New
Import
Export
Share
TOP
FRONT
Workplane
Ruler
Tinkercad
Basic Shapes
Box
Cylinder
Box
Cylinder
Pyramid
Roof
Round Roof
Text
Sphere
Wedge
Cone
Half Sphere
Edit Grid
Snap Grid
1.0 mm
Workplane

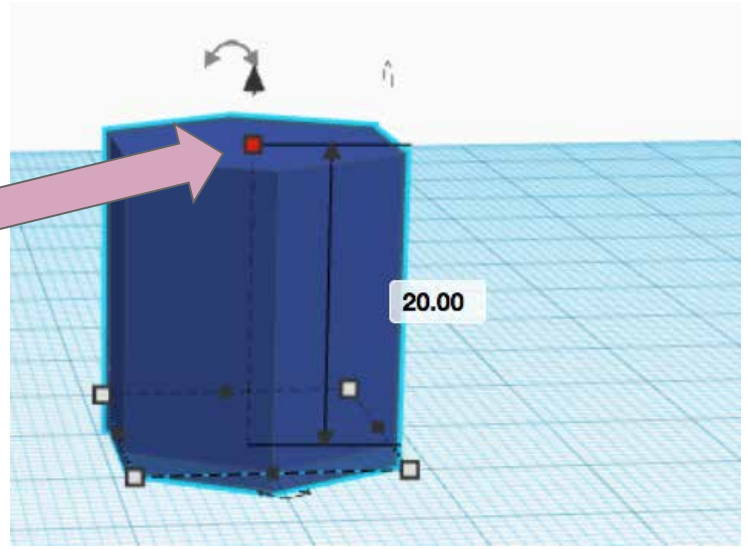

3D design Epic Densor-Esb...
https://www.tinkercad.com/things/9bu0ureeHFU-epic-densor-esboo/editv2
67%
Search
NYC Boutiques
Industrial Design
supplies
Money
Blogs
Travel
Share on Tumblr
Pin It
Netflix:
hotmail
stuff
Jobs
Interesting Editi...
Beta
Epic Densor-Esboo
What's New
Import
Export
Share
Workplane
Ruler
Basic Shapes
Box
Cylinder
Box
Cylinder
Pyramid
Roof
Round Roof
Text
Sphere
Wedge
Cone
Half Sphere
Polygon
Paraboloid
Edit Grid
Snap Grid
1.0 mm
Workplane
Along with the mouse - You can use this box to change your view
There are more menus that will become available when you have an object selected
There are more shapes in this drop down menu
You can drag and drop any of these shapes


Texture Roller
What's New
Import
Export
Share
FRONT
Shape
Solid
Hole
Sides
Bevel
Segments
Workplane
Ruler
Basic Shapes
Round Roof
Text
Sphere
Wedge
Cone
Half Sphere
Polygon
Paraboloid
Torus
Tube
Heart
Star
Drag and Drop Shape from menu
Edit Grid

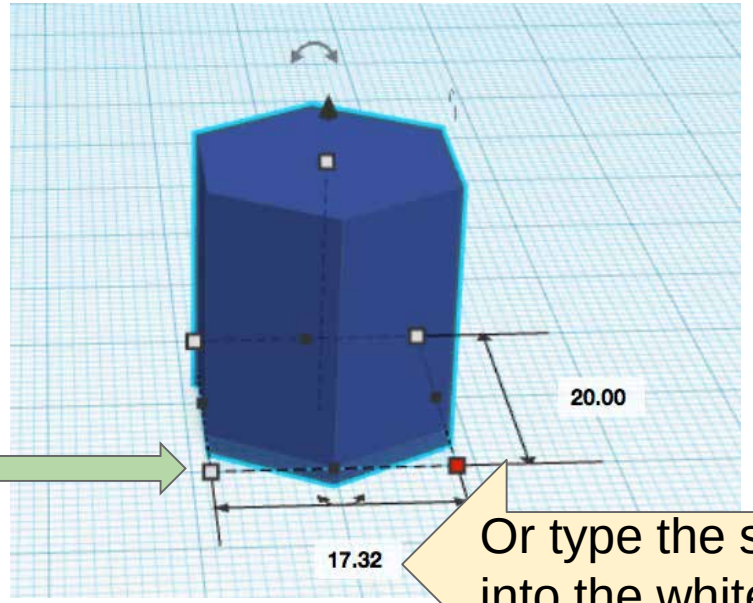
Use this arrow to raise and lower the part



Top Dot will show the height of the object, and allow you to change it by dragging the dot.

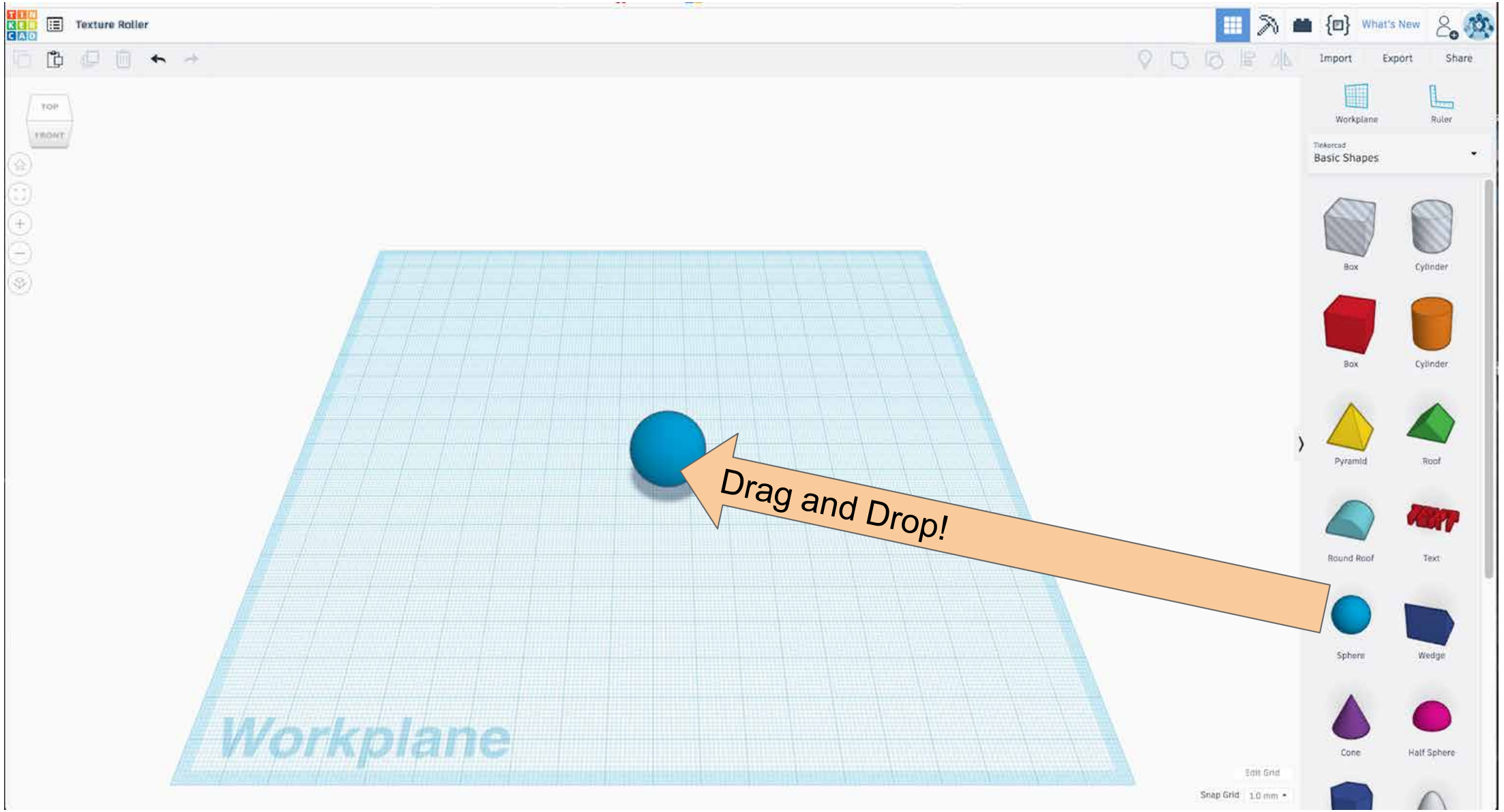


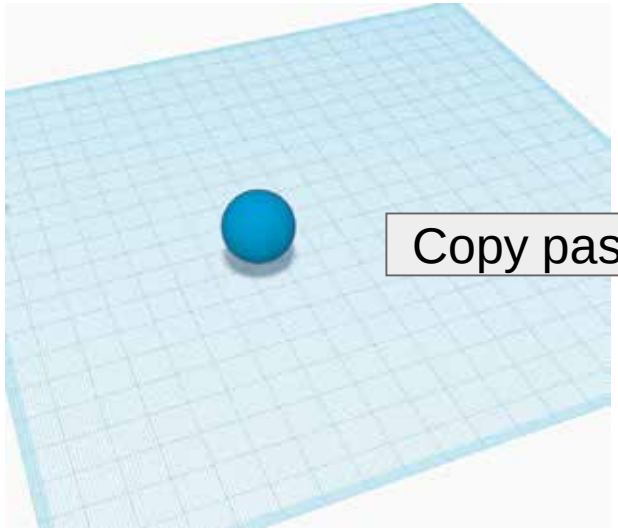
When you hover on these white dots it will give you the length and width of the part. Drag with these dots to change the length and width



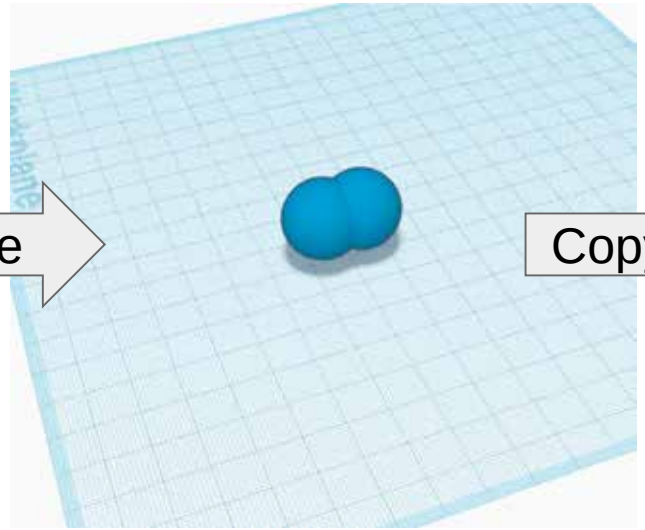
Or type the size into the white box

Now the texture roller!

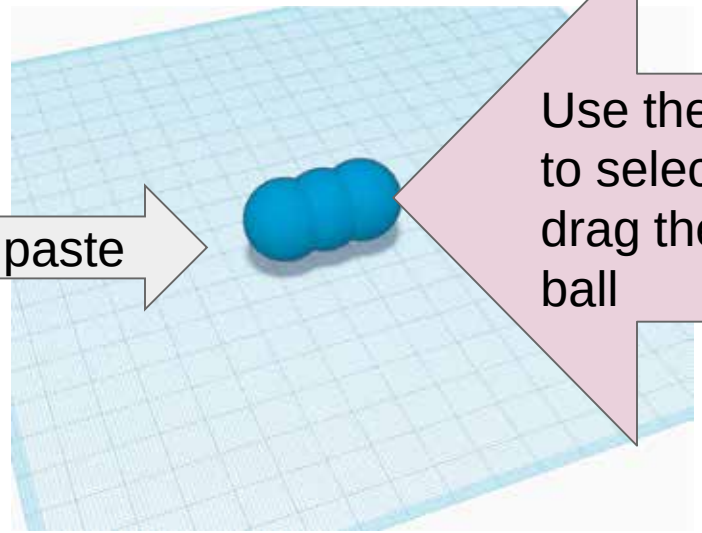




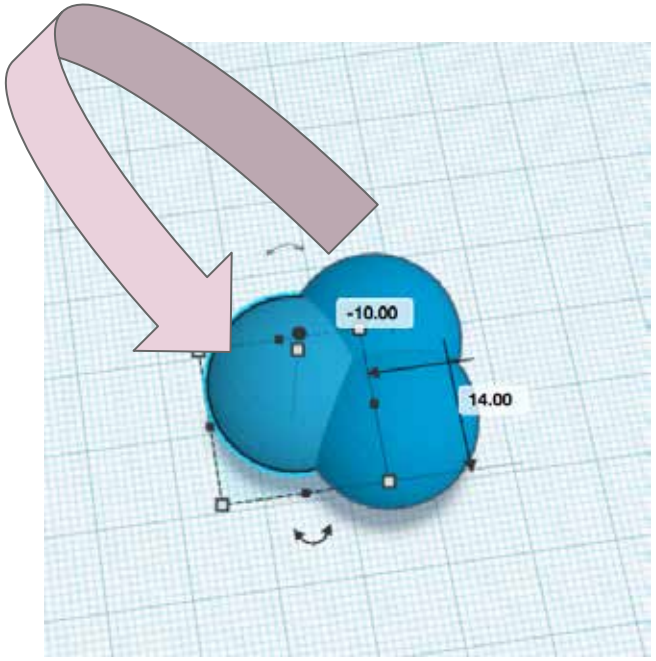
Copy paste

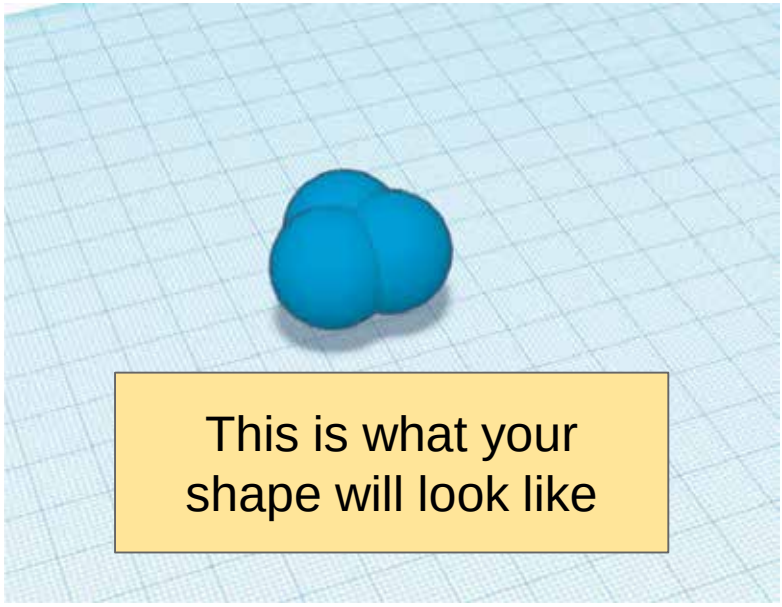


Copy paste

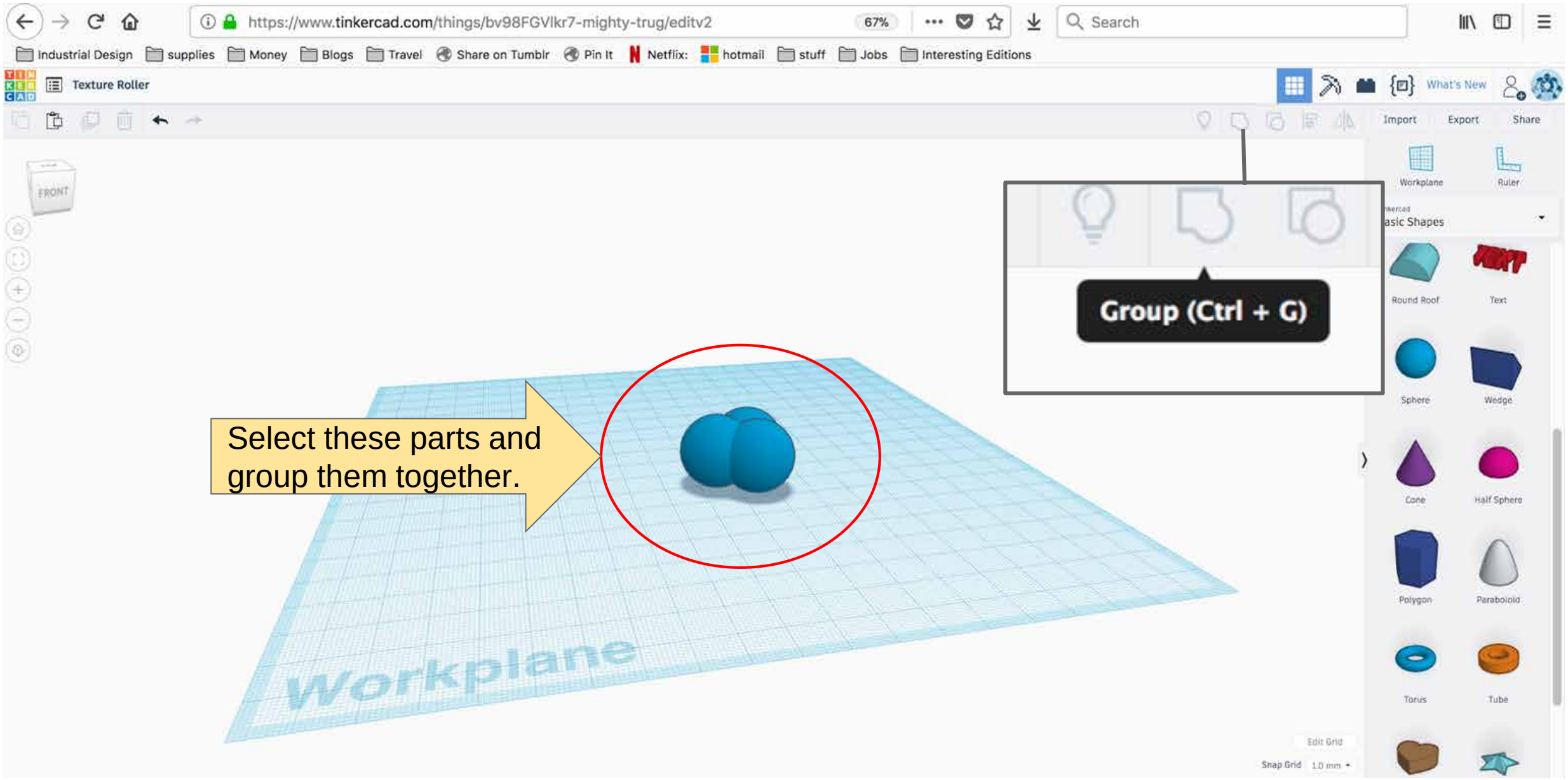


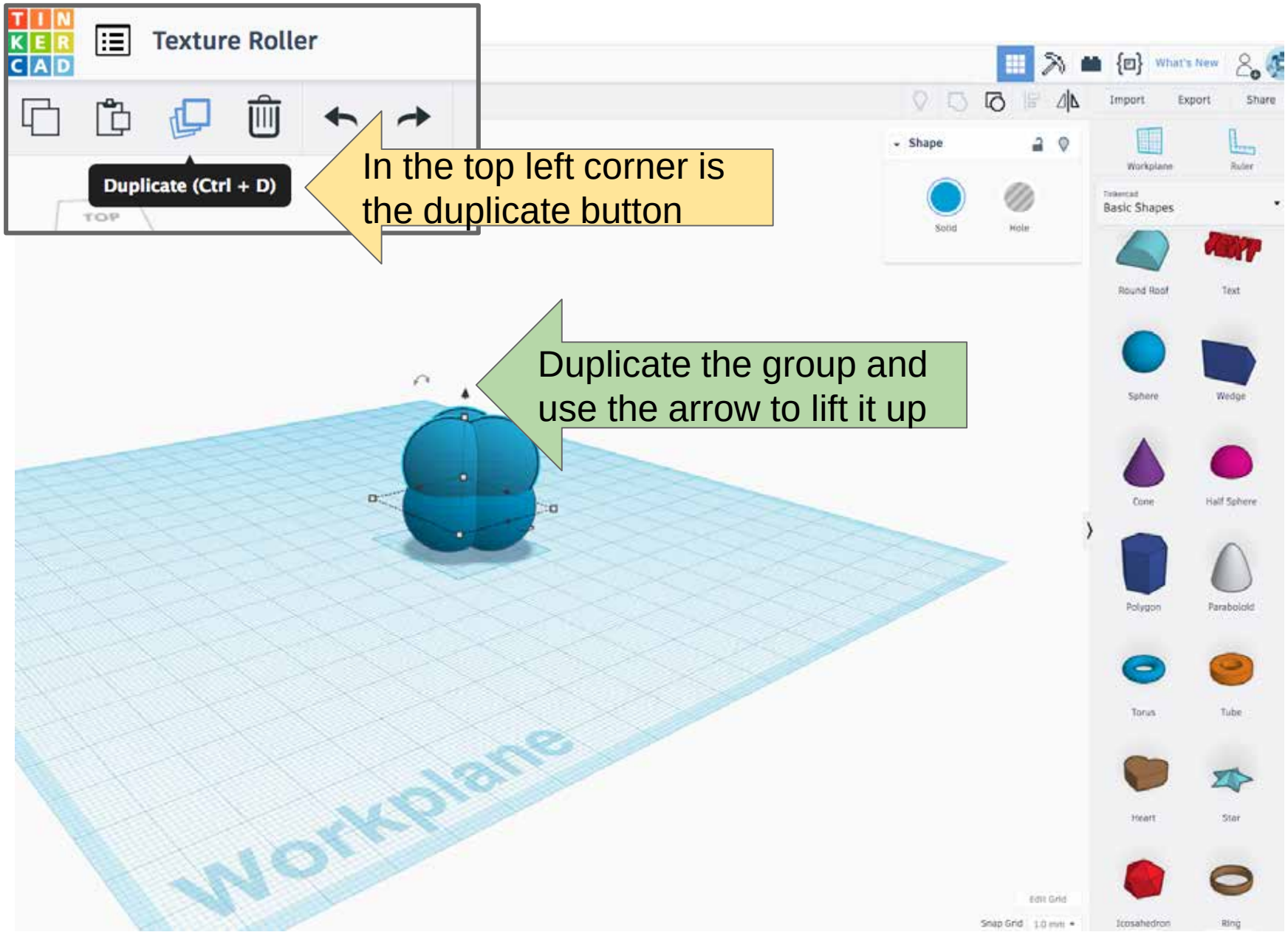
Use the arrow to select and drag the last ball

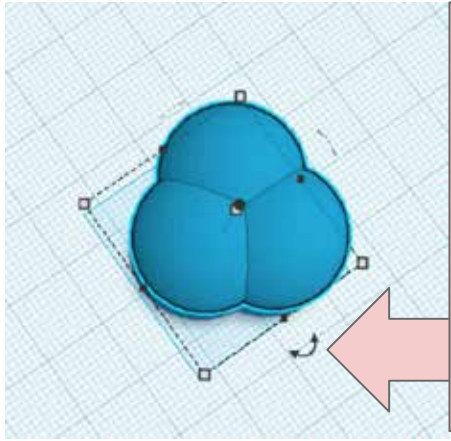




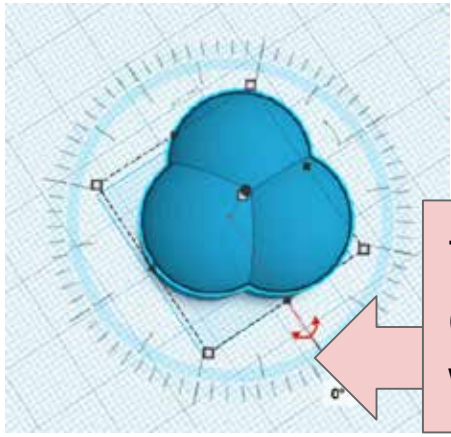
This is what your shape will look like


https://www.tinkercad.com/things/bv98FGVlkr7-mighty-trug/editv2
Search
Texture Roller
What's New
Import
Export
Share
Workplane
Ruler
Round Roof
Text
Sphere
Wedge
Cone
Half Sphere
Polygon
Paraboloid
Torus
Tube
Group (Ctrl + G)
Select these parts and group them together.
Workplane
Edit Grid
Snap Grid

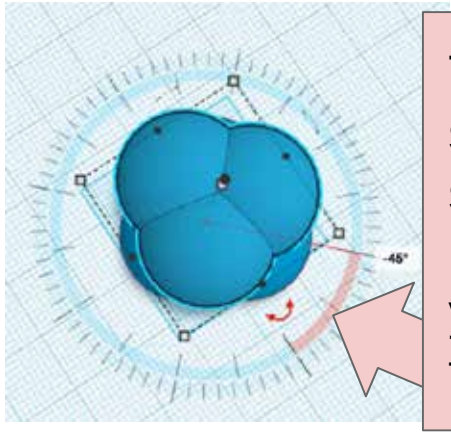




Select arrows to turn the part

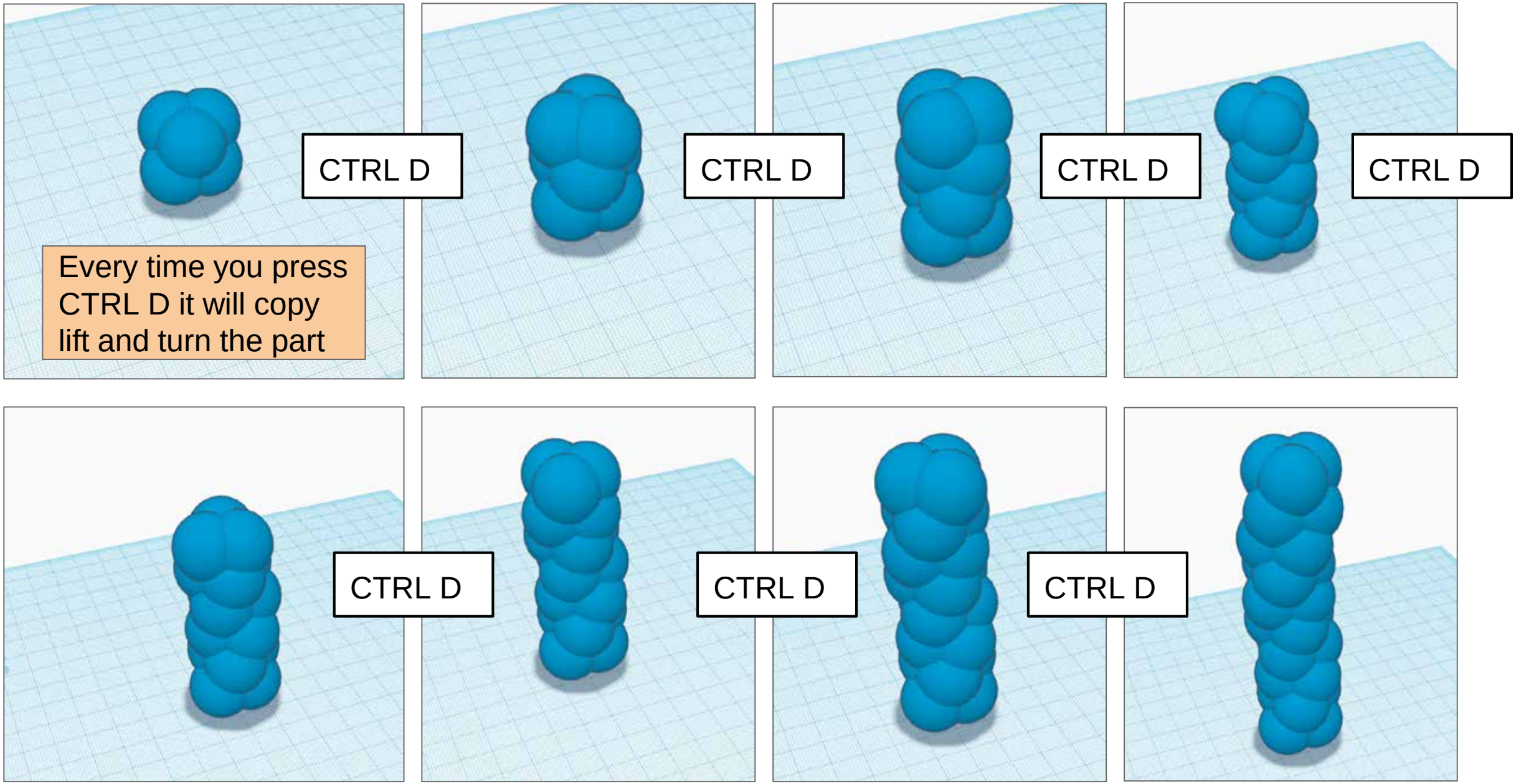


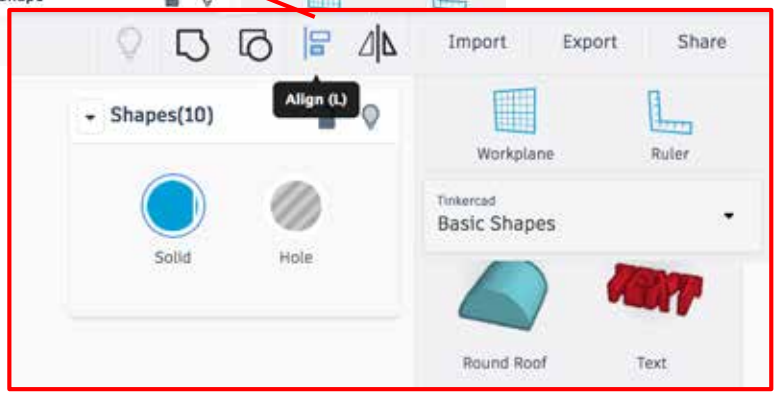
The compass will appear



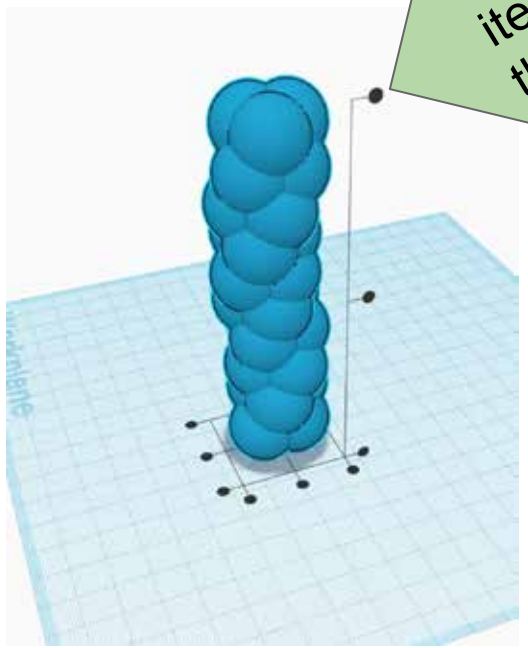
The red section shows you how far you have turned.

Control D is duplicate, it will copy an entire action if all the parts are selected!

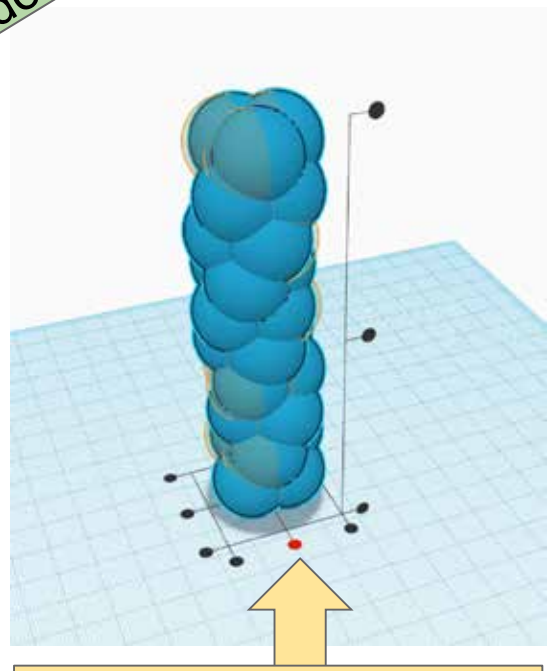




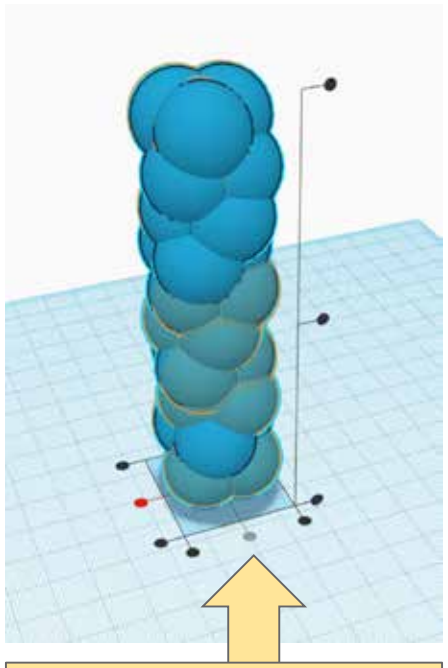
When you select your items and choose align these dots show up



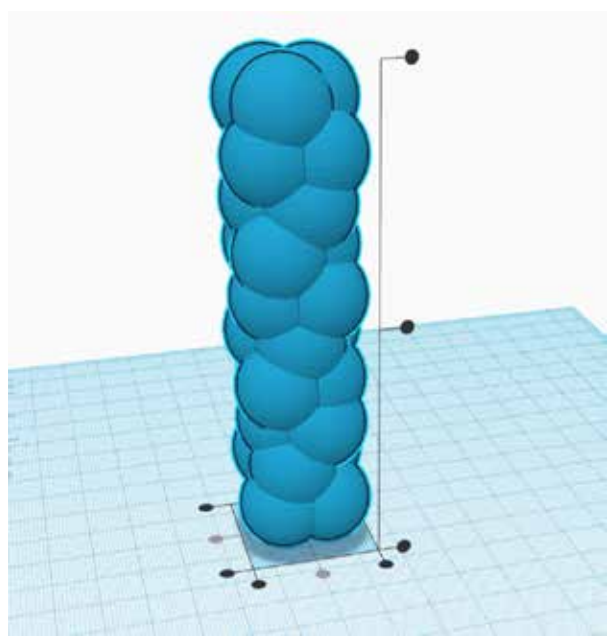
Wobbly part



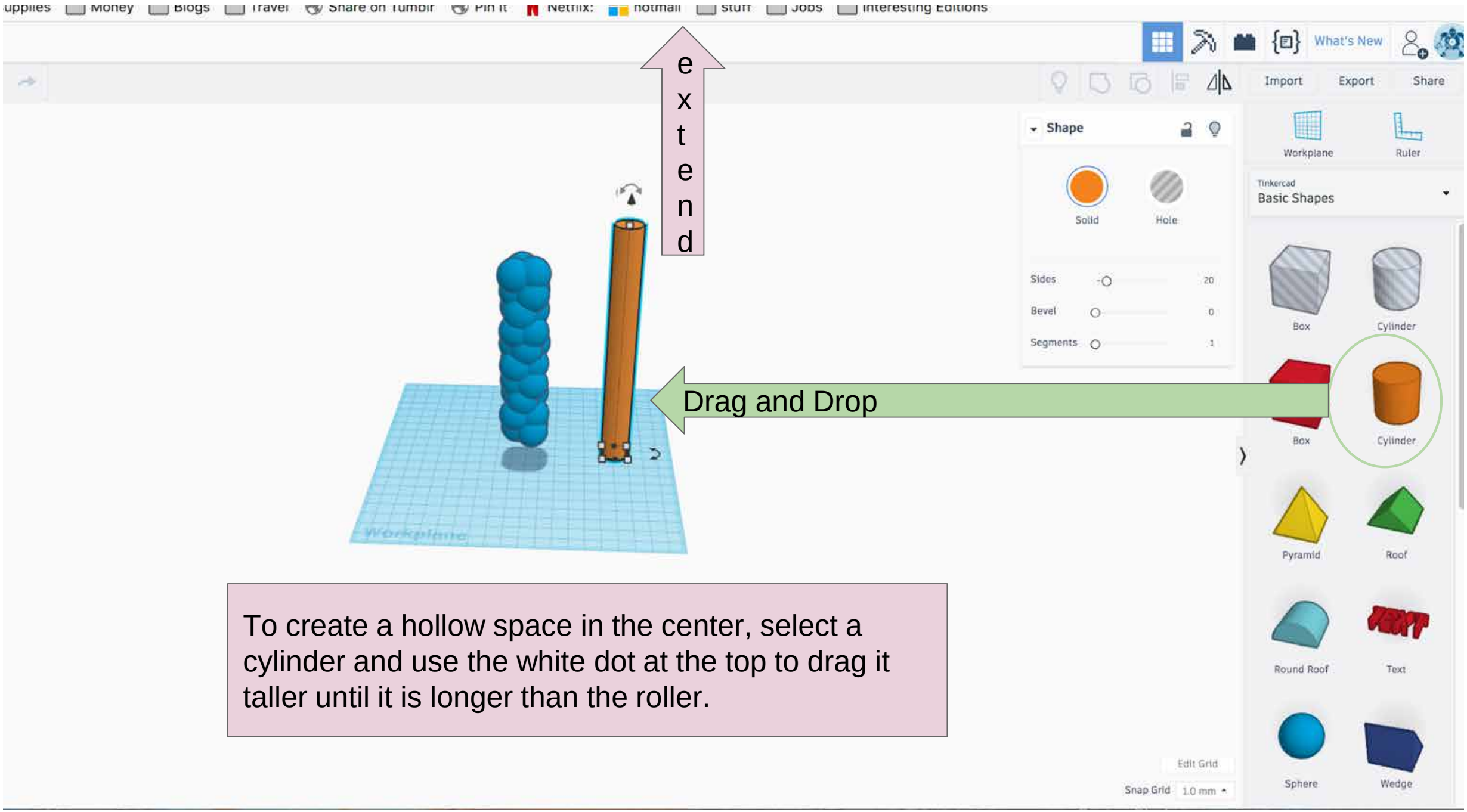
When you select the red dot it will align in that direction



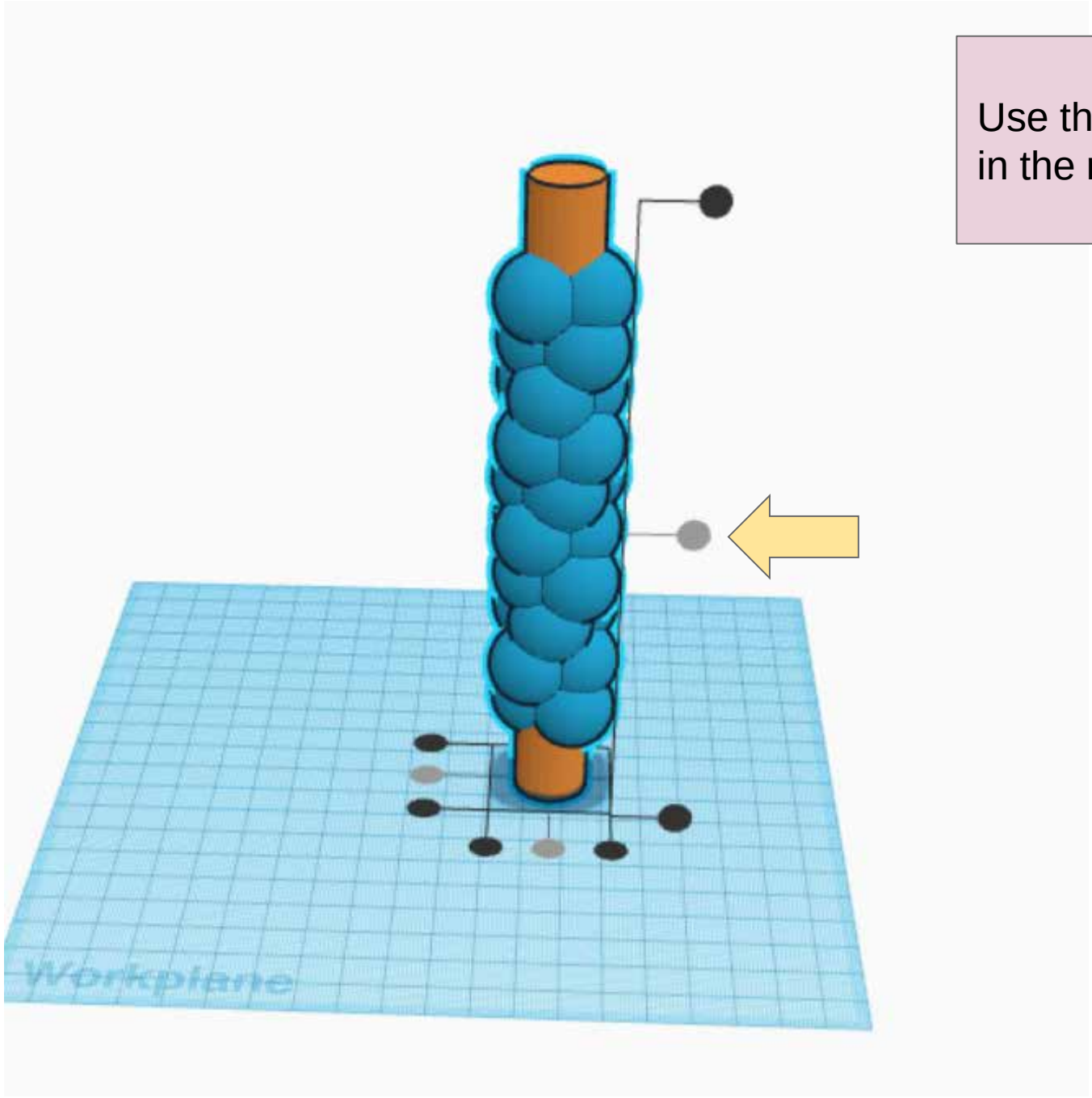
When the parts are aligned the dot turns grey



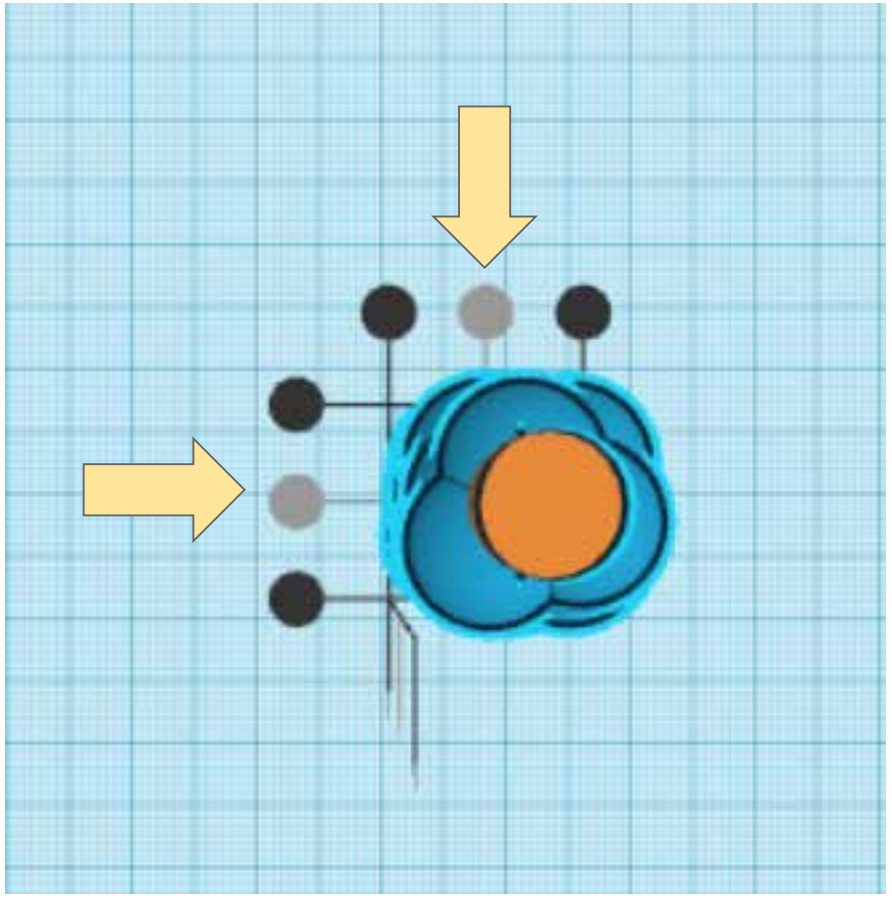
Aligned part

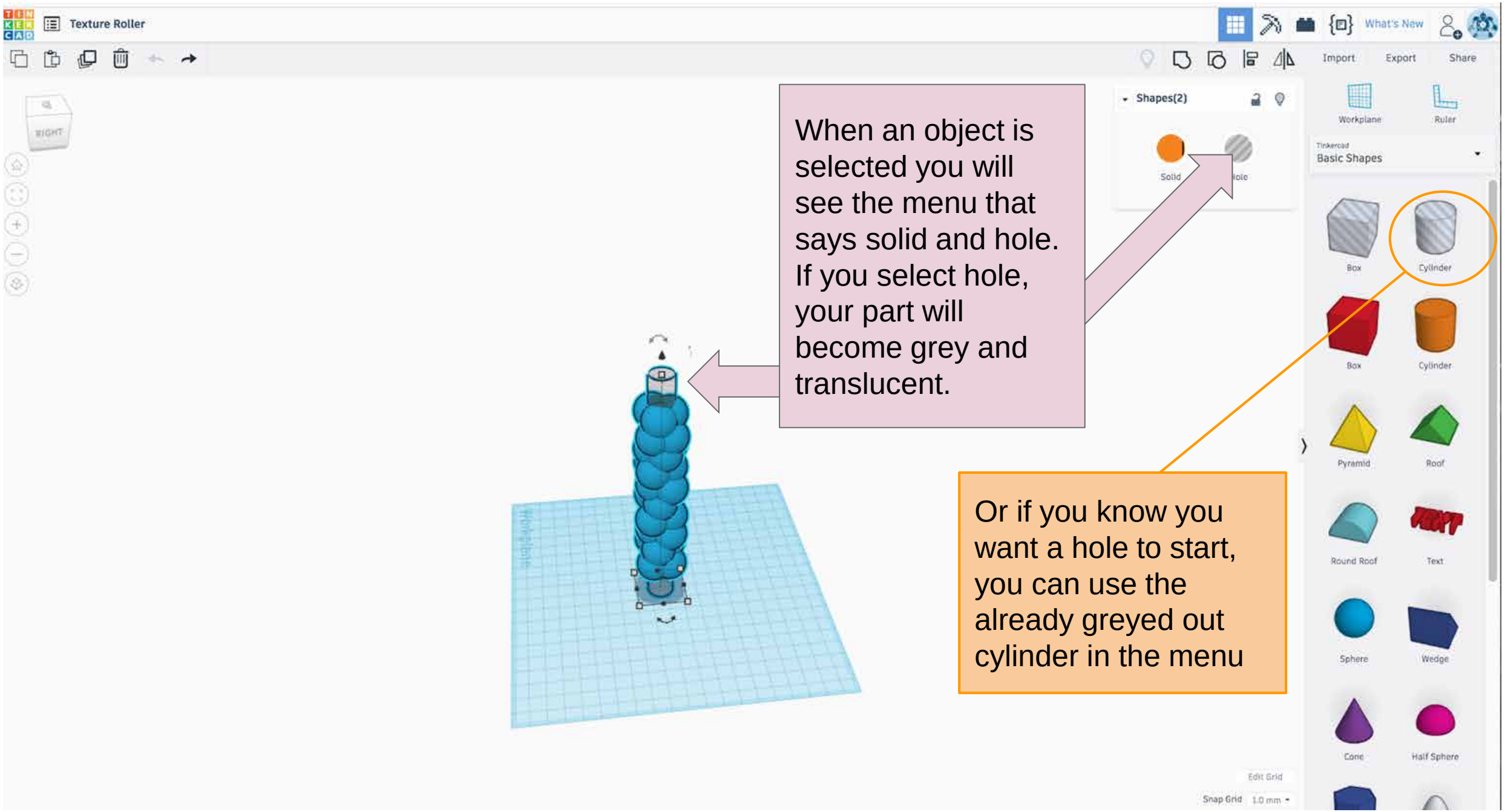


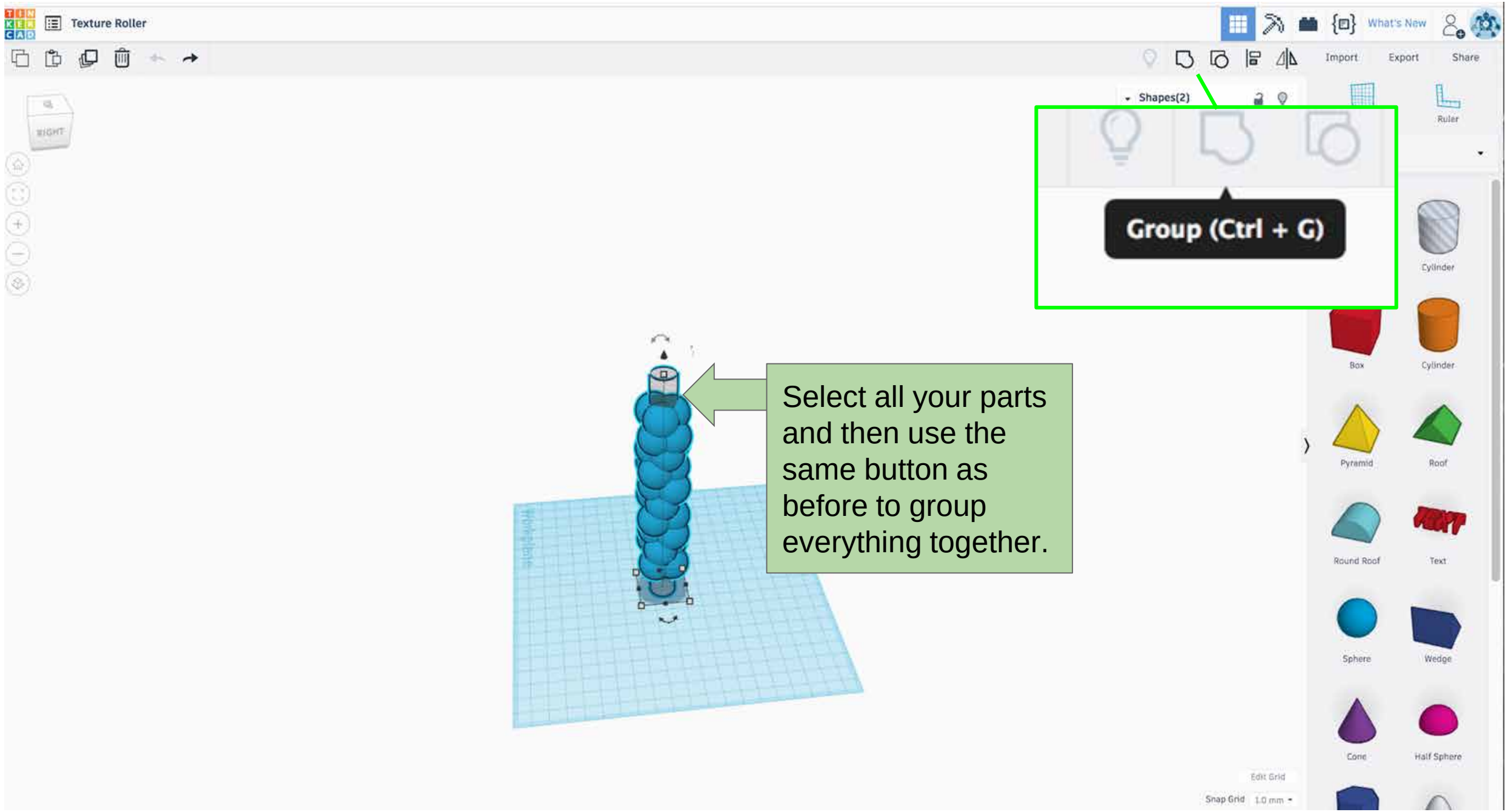
To create a hollow space in the center, select a cylinder and use the white dot at the top to drag it taller until it is longer than the roller.

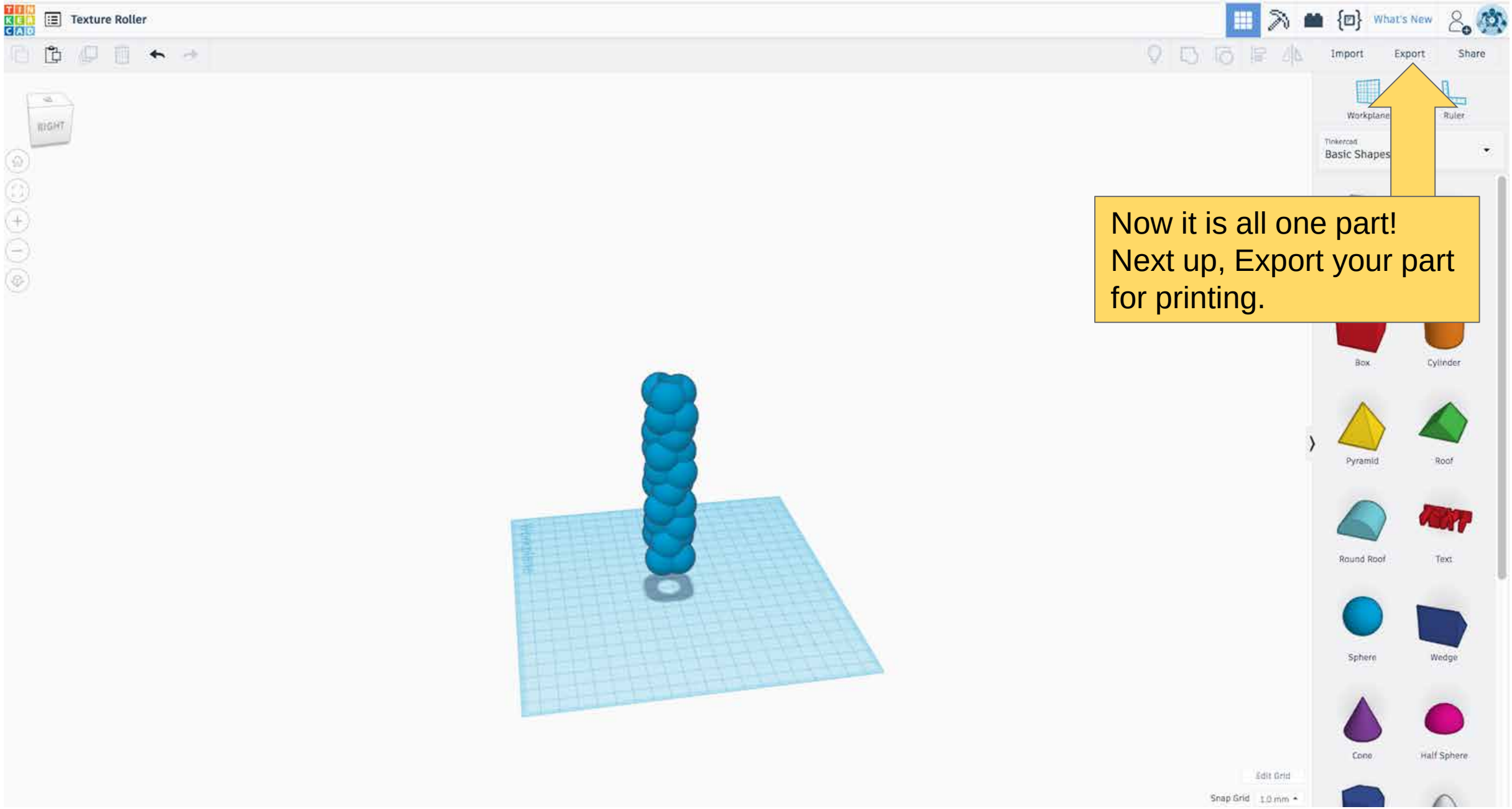


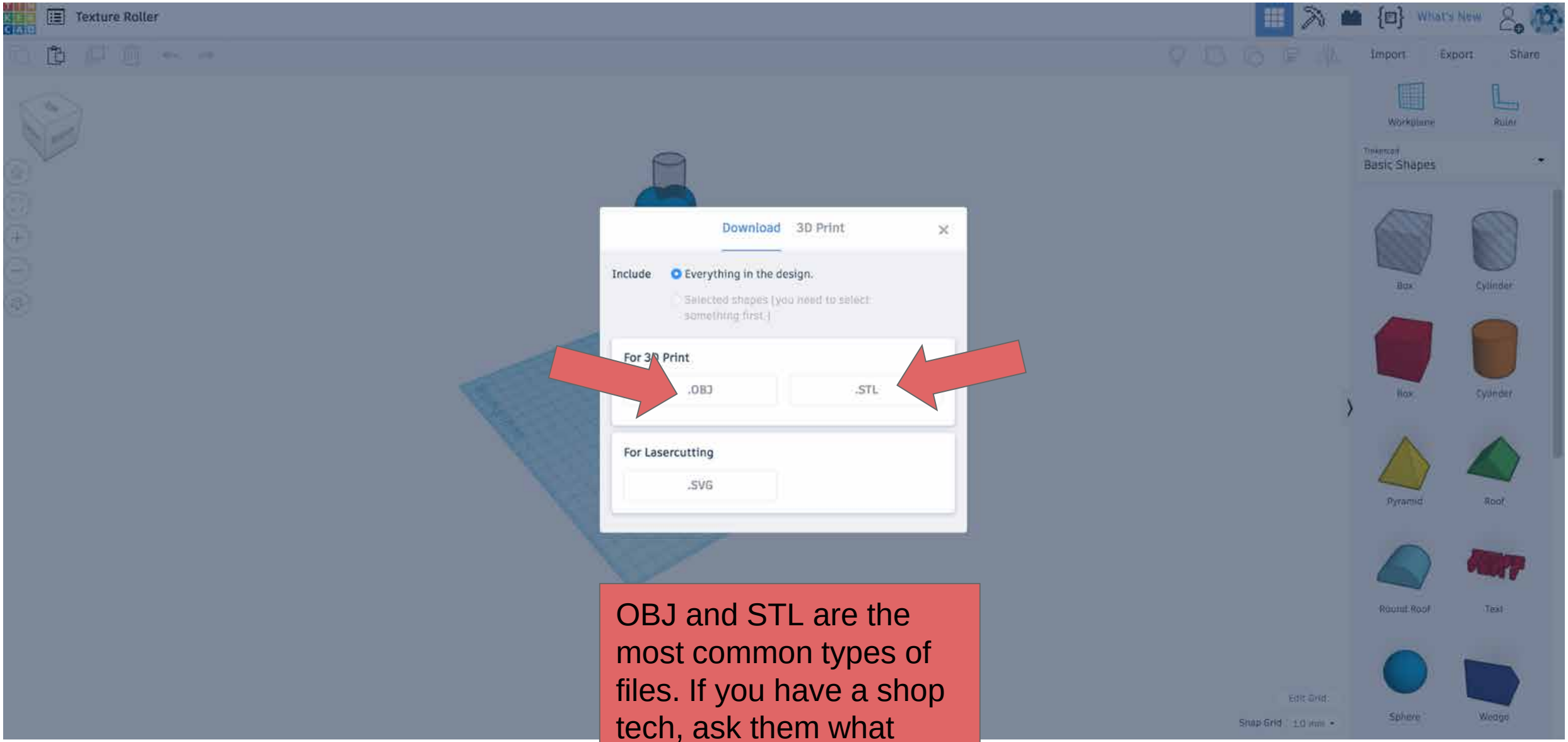
Use the same alignment tools to center the cylinder in the roller.




Texture Roller
What's New
Import
Export
Share
Shapes(2)
Solid
Workplane
Ruler
Tinkercad
Basic Shapes
Box
Cylinder
Box
Cylinder
Pyramid
Roof
Round Roof
Text
Sphere
Wedge
Cone
Half Sphere
Edit Grid
Snap Grid
1.0 mm
When an object is selected you will see the menu that says solid and hole. If you select hole, your part will become grey and translucent.
Or if you know you want a hole to start, you can use the already greyed out cylinder in the menu


Texture Roller
What's New
Import
Export
Share
Shapes(2)
Ruler
Group (Ctrl + G)
Cylinder
Box
Cylinder
Pyramid
Roof
Round Roof
Text
Sphere
Wedge
Cone
Half Sphere
Edit Grid
Snap Grid
1.0 mm
Select all your parts and then use the same button as before to group everything together.


Texture Roller
What's New
Import
Export
Share
Workplane
Ruler
Tinkercad
Basic Shapes
Box
Cylinder
Pyramid
Roof
Round Roof
Text
Sphere
Wedge
Cone
Half Sphere
Edit Grid
Snap Grid
1.0 mm
Now it is all one part!
Next up, Export your part for printing.



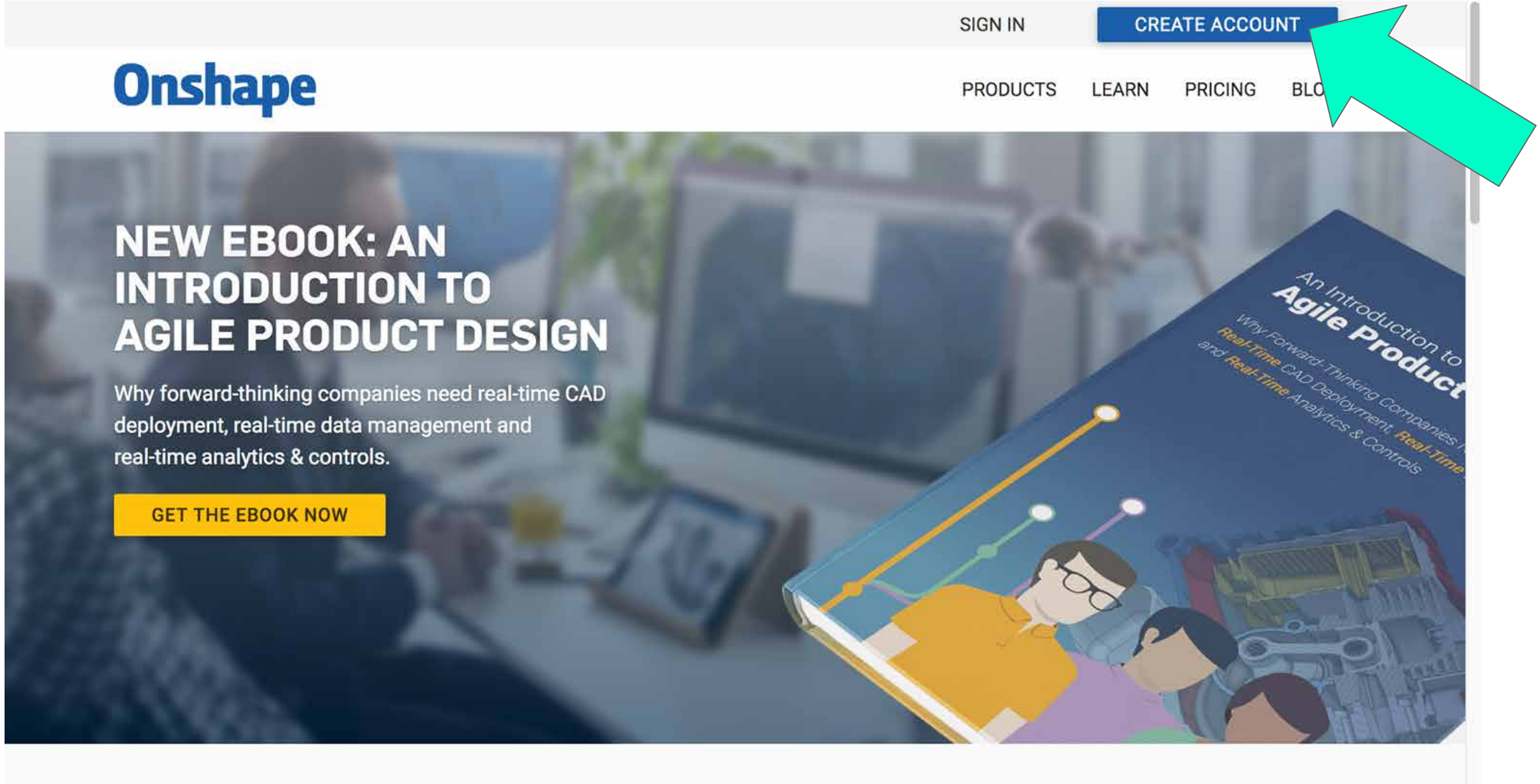
OBJ and STL are the most common types of files. If you have a shop tech, ask them what types of files your machines can understand.

Making a custom glaze stencil:

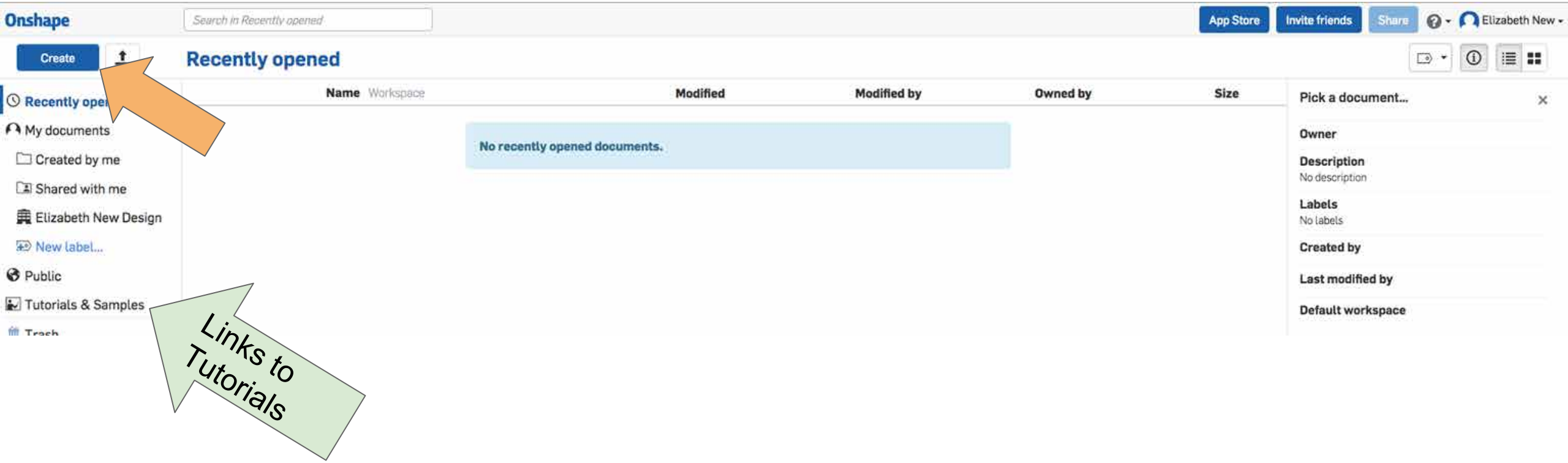
Kinda tricky, but well worth the effort.

Onshape.

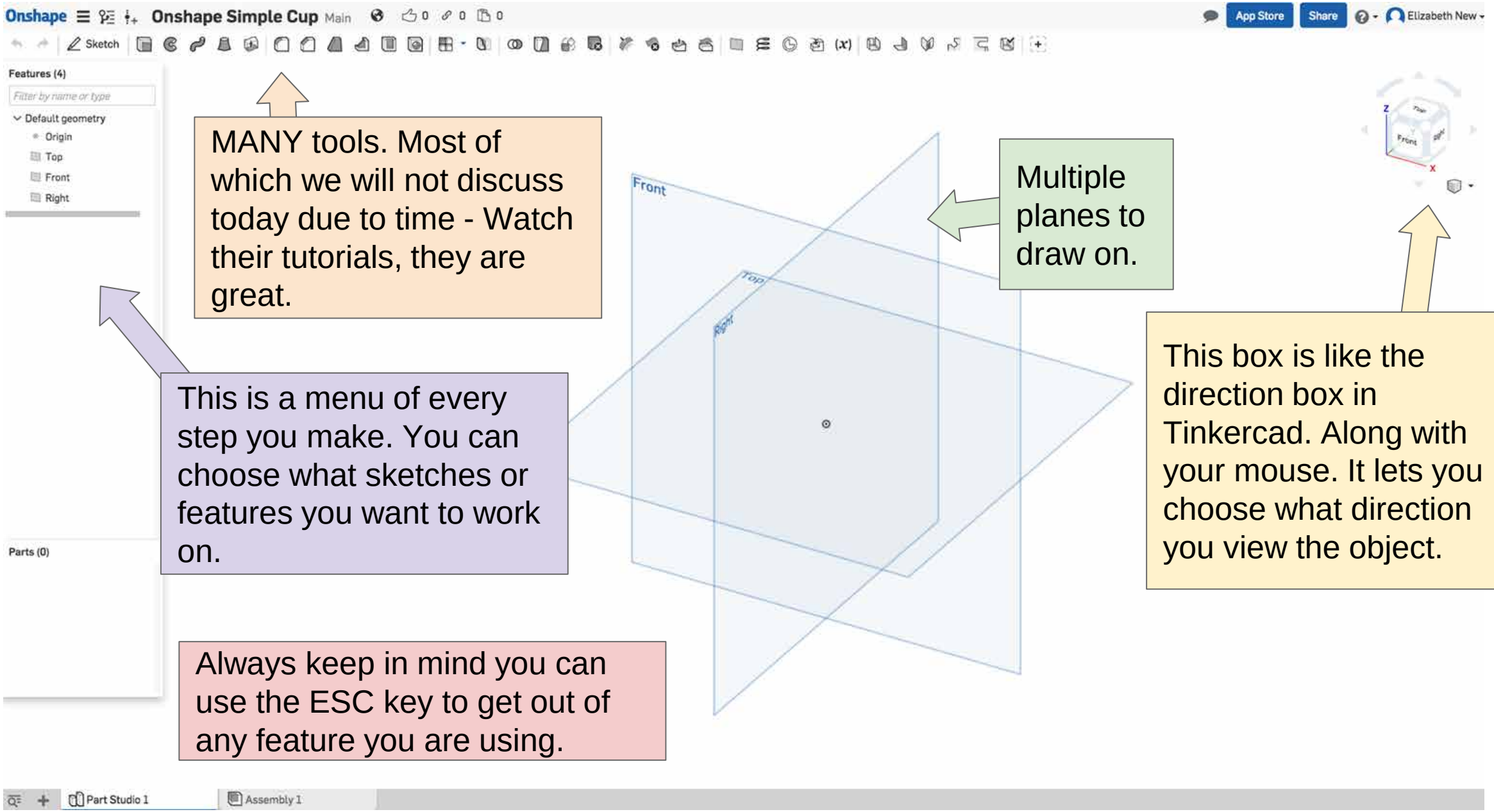
Try this after TinkerCad gets boring.



Opening page - Create a new file



The onshape workspace



MANY tools. Most of which we will not discuss today due to time - Watch their tutorials, they are great.

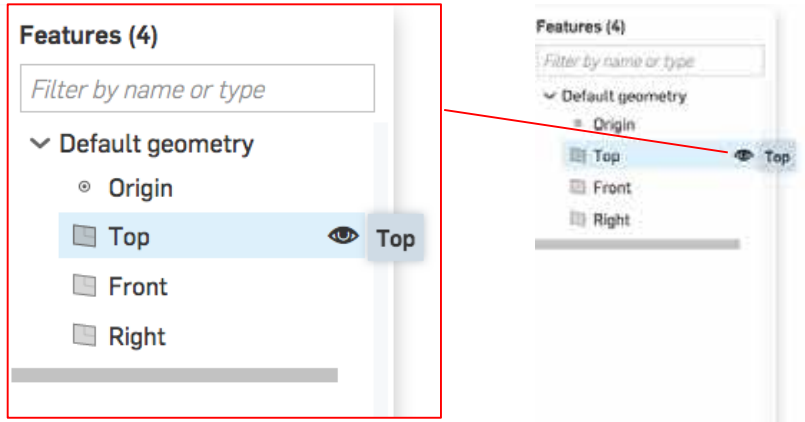
This is a menu of every step you make. You can choose what sketches or features you want to work on.

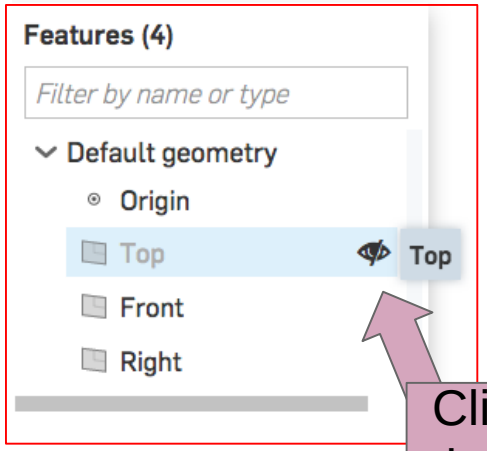
Multiple planes to draw on.

This box is like the direction box in Tinkercad. Along with your mouse. It lets you choose what direction you view the object.

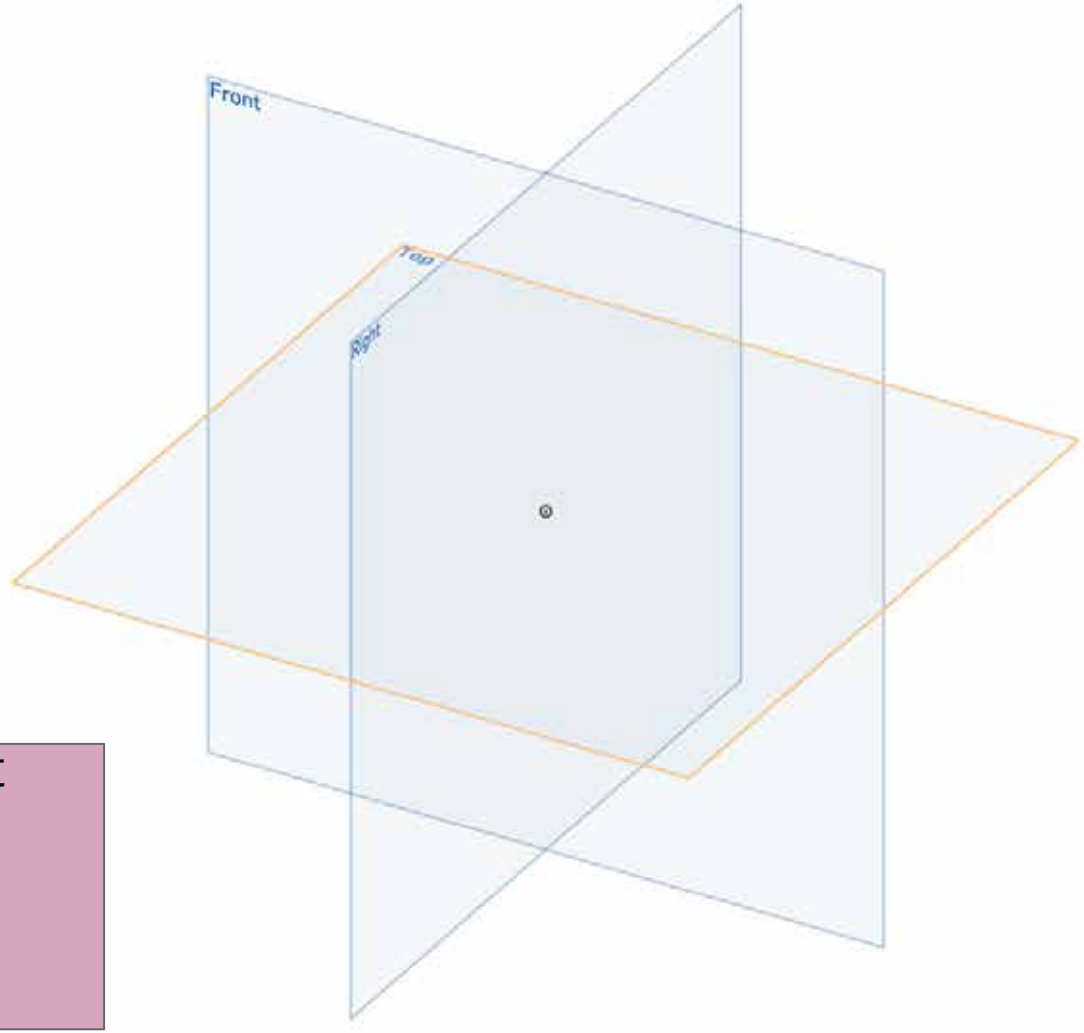
Always keep in mind you can use the ESC key to get out of any feature you are using.

Decide what plane to draw on - hide the other ones

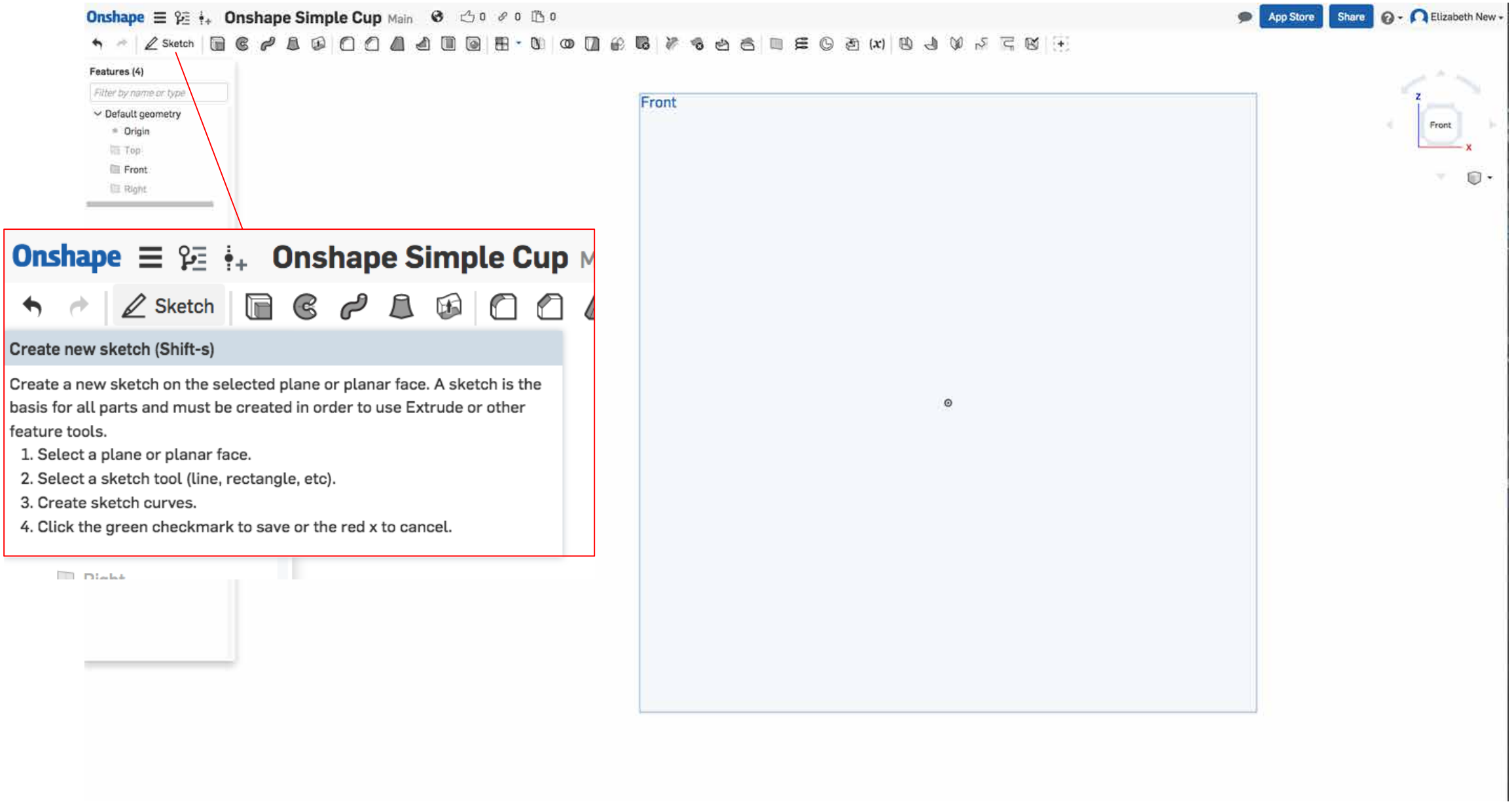




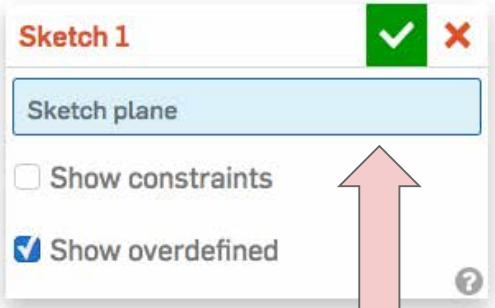
Click on the eye. When it is crossed out then the top plane is no longer visible. Follow the same process for the right plane. We will be working on the Front Plane only.



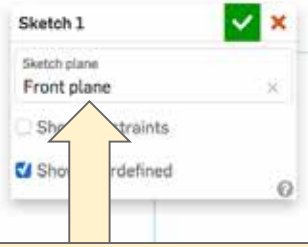
Start your sketch by clicking the sketch button



Choose a plane to draw on.



This box will show up first (make sure it is highlighted blue)



When you click on the Front Plane the box will auto fill, and it will allow you to start sketching.

Sketch 1 - Practice - make a center line

This is part of the menu at the top left of the screen. We will be using the LINE button and the CONSTRUCTION button

Line (l)

Create a line between two points or a chain of lines.

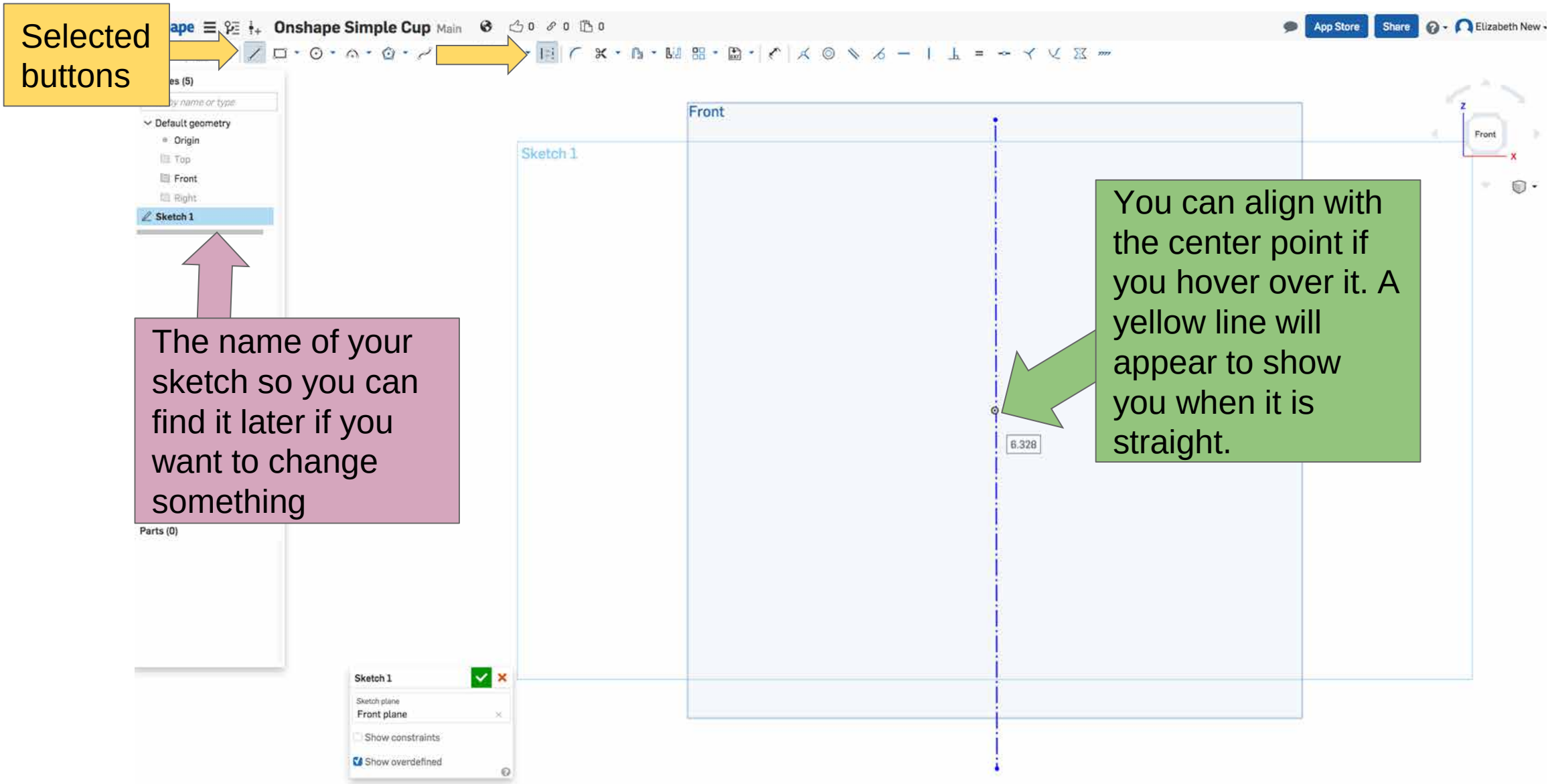
1. Click the start point.
2. Click the end point.
3. Repeat to create a chain of lines or double-click to end.

Construction (q)

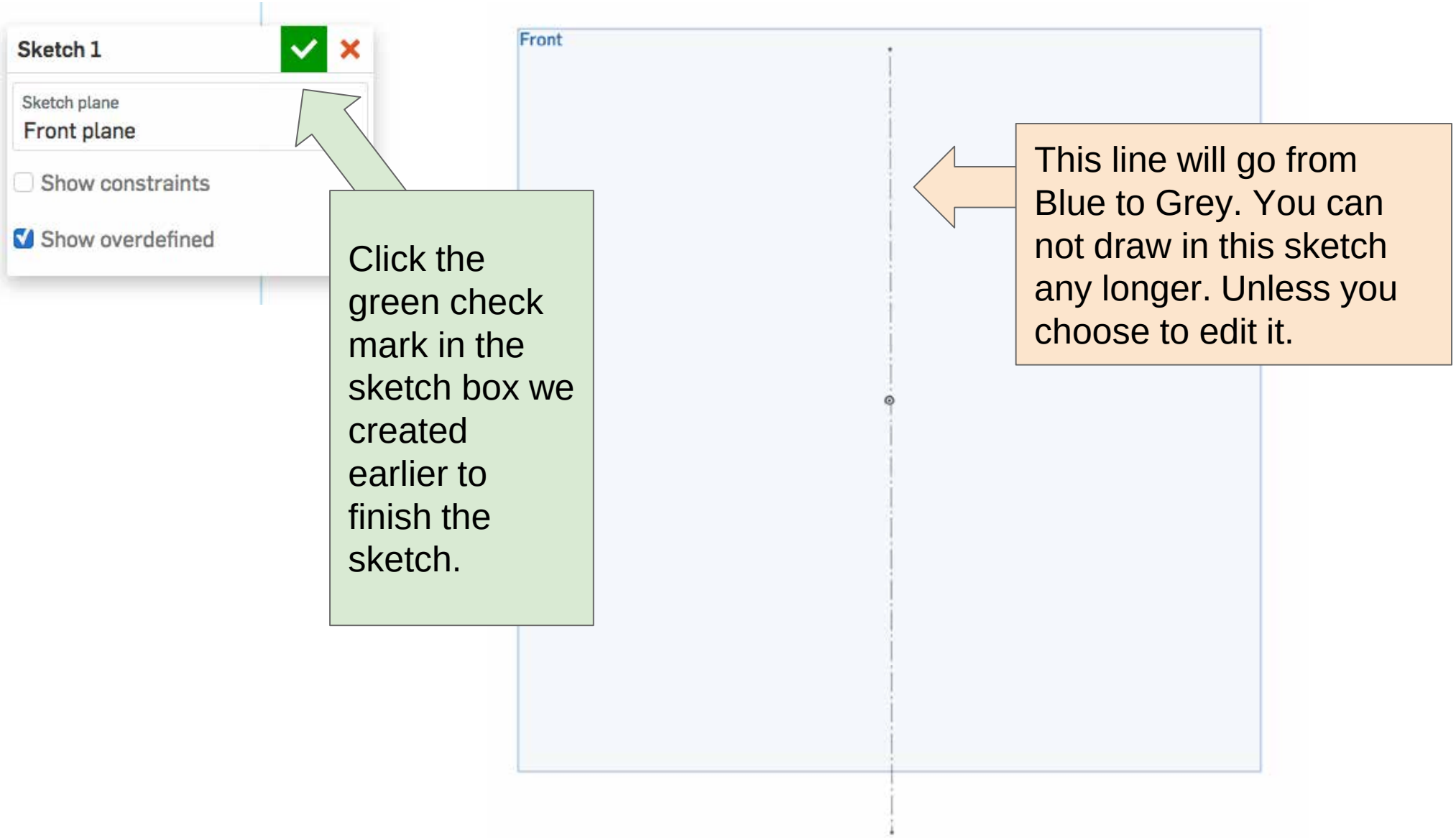
Create new construction geometry or convert existing entities to construction.
Construction geometry is ignored when the sketch region is used for features.

1. Select Construction icon.
2. Select a sketch tool to create construction geometry.

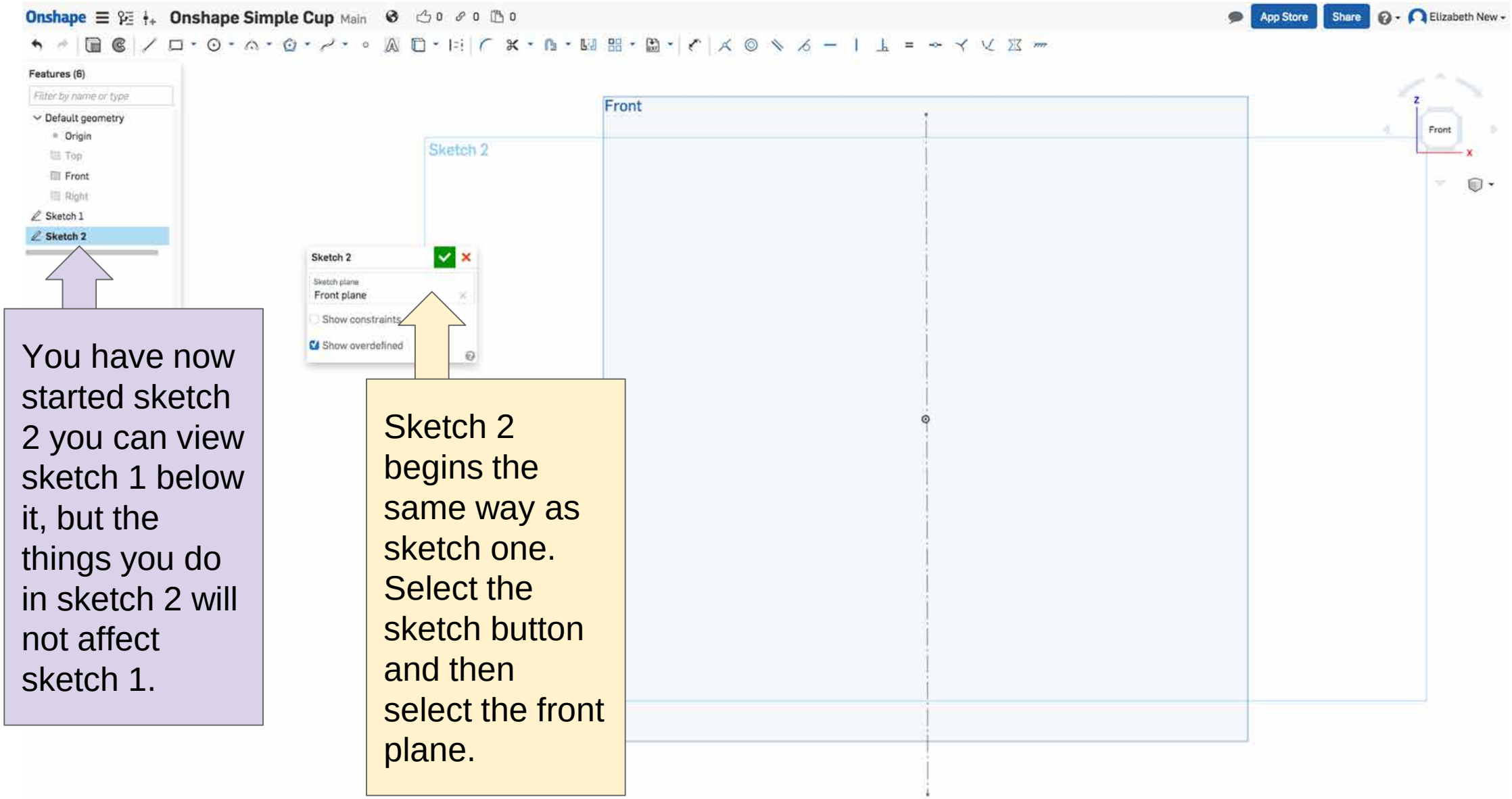
Or, select a sketch entity, then toggle its state by selecting the Construction tool.


Selected buttons
Onshape Simple Cup Main
App Store
Share
Elizabeth New
Default geometry
Origin
Top
Front
Right
Sketch 1
Parts (0)
The name of your sketch so you can find it later if you want to change something
Front
Sketch 1
6.328
You can align with the center point if you hover over it. A yellow line will appear to show you when it is straight.
Sketch 1
Sketch plane
Front plane
Show constraints
Show overdefined

Finish your first sketch



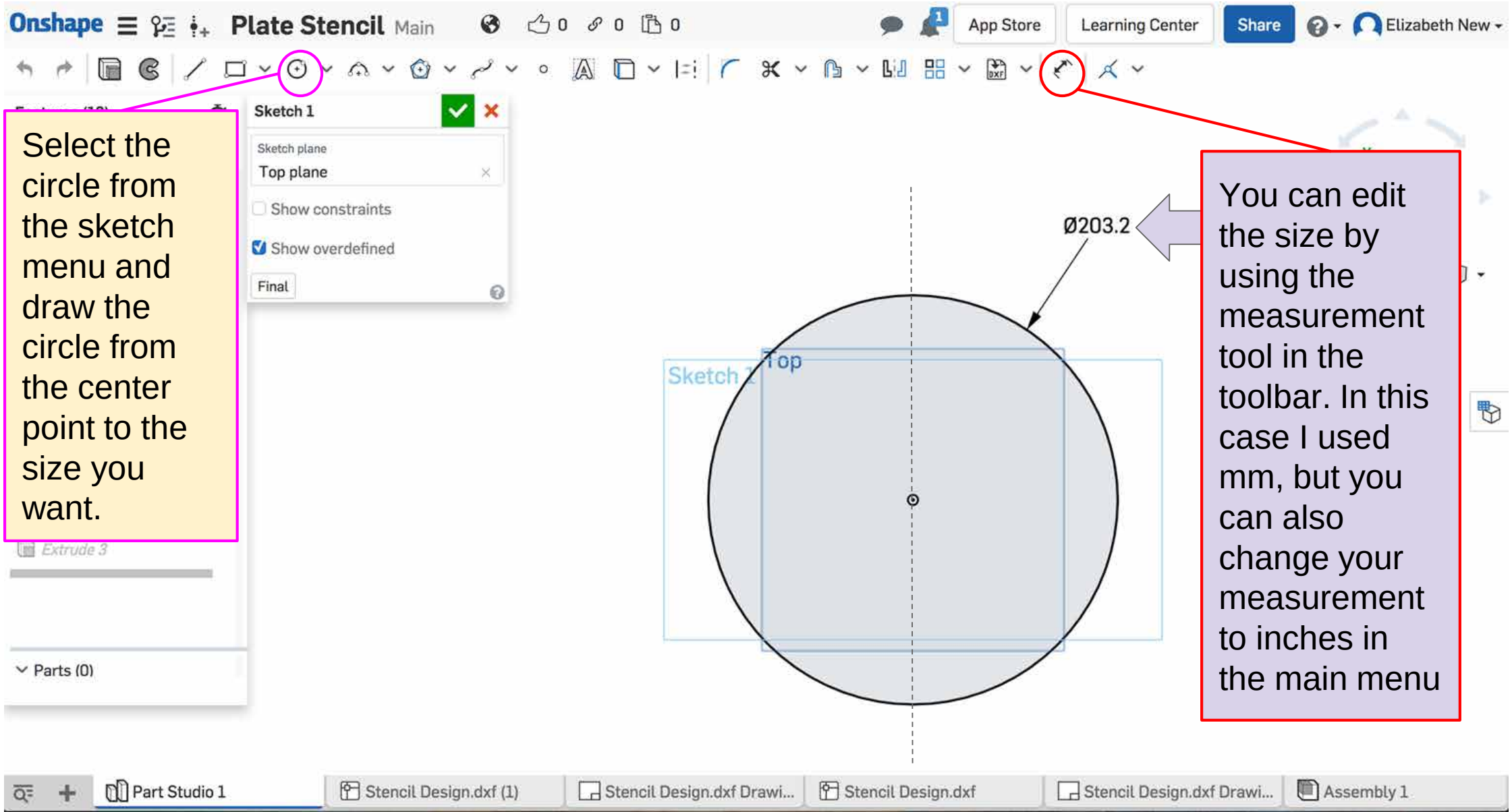
2nd sketch



You have now started sketch 2 you can view sketch 1 below it, but the things you do in sketch 2 will not affect sketch 1.

Sketch 2 begins the same way as sketch one. Select the sketch button and then select the front plane.

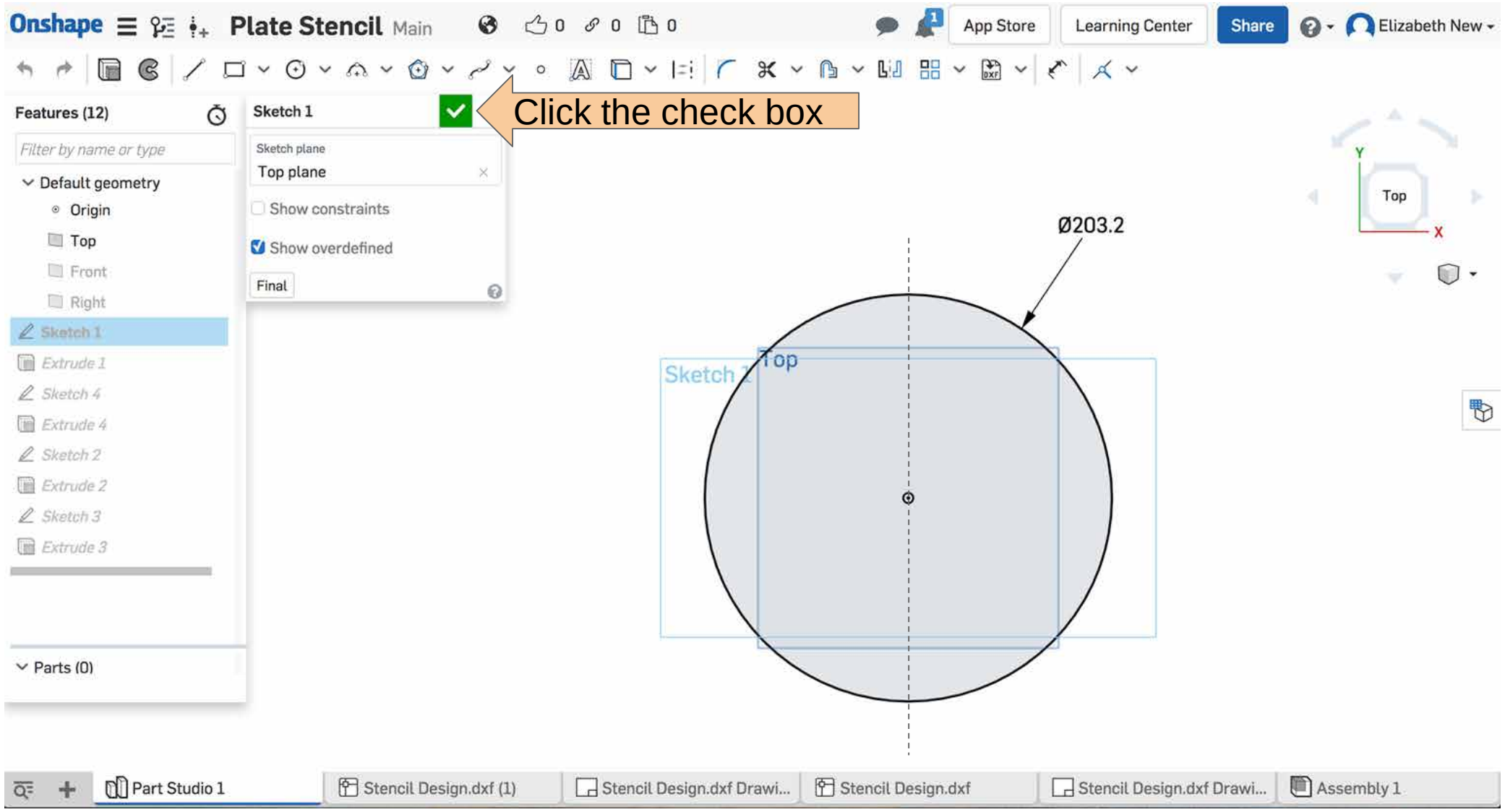
To get started on the stencil...

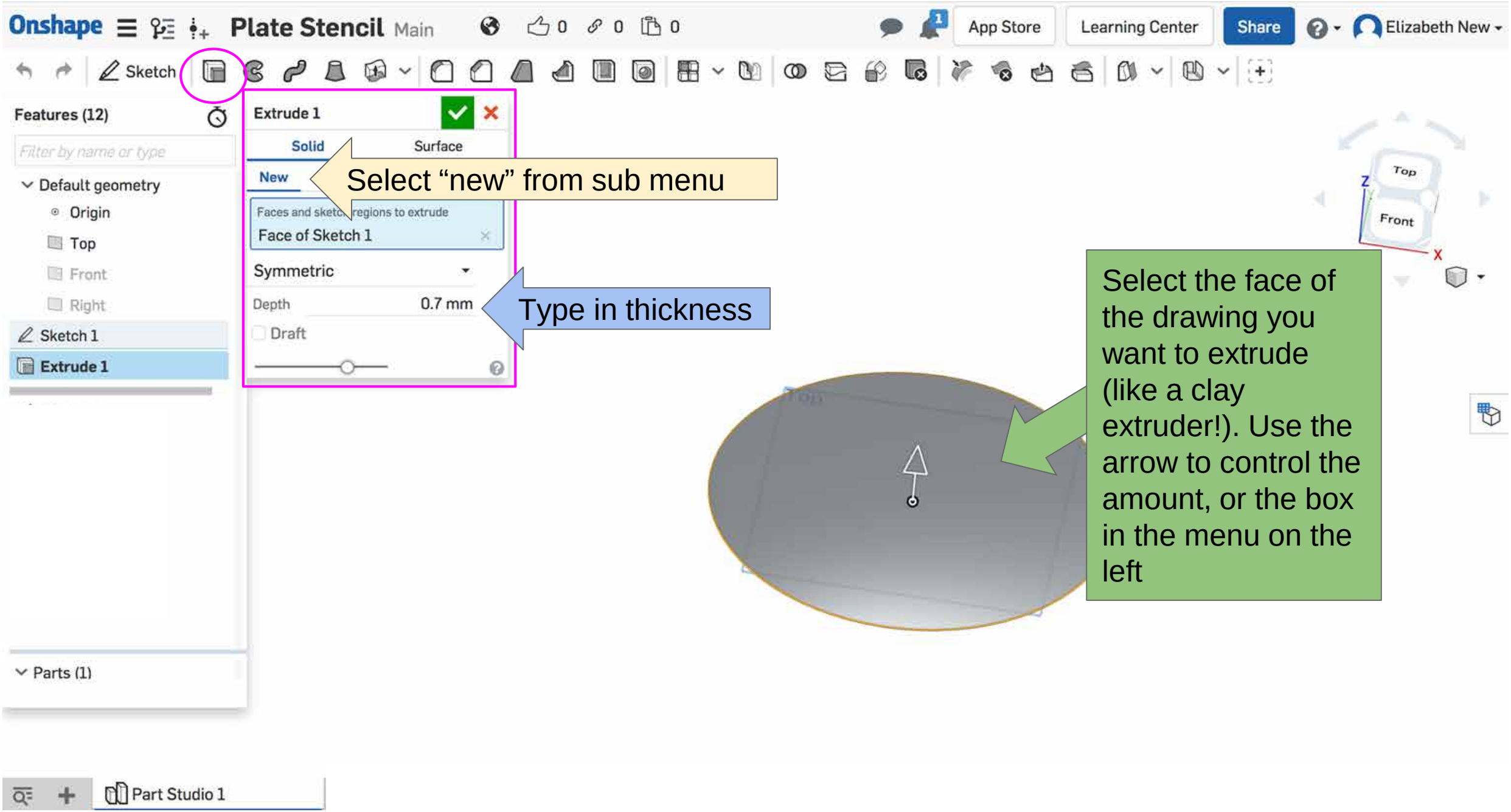


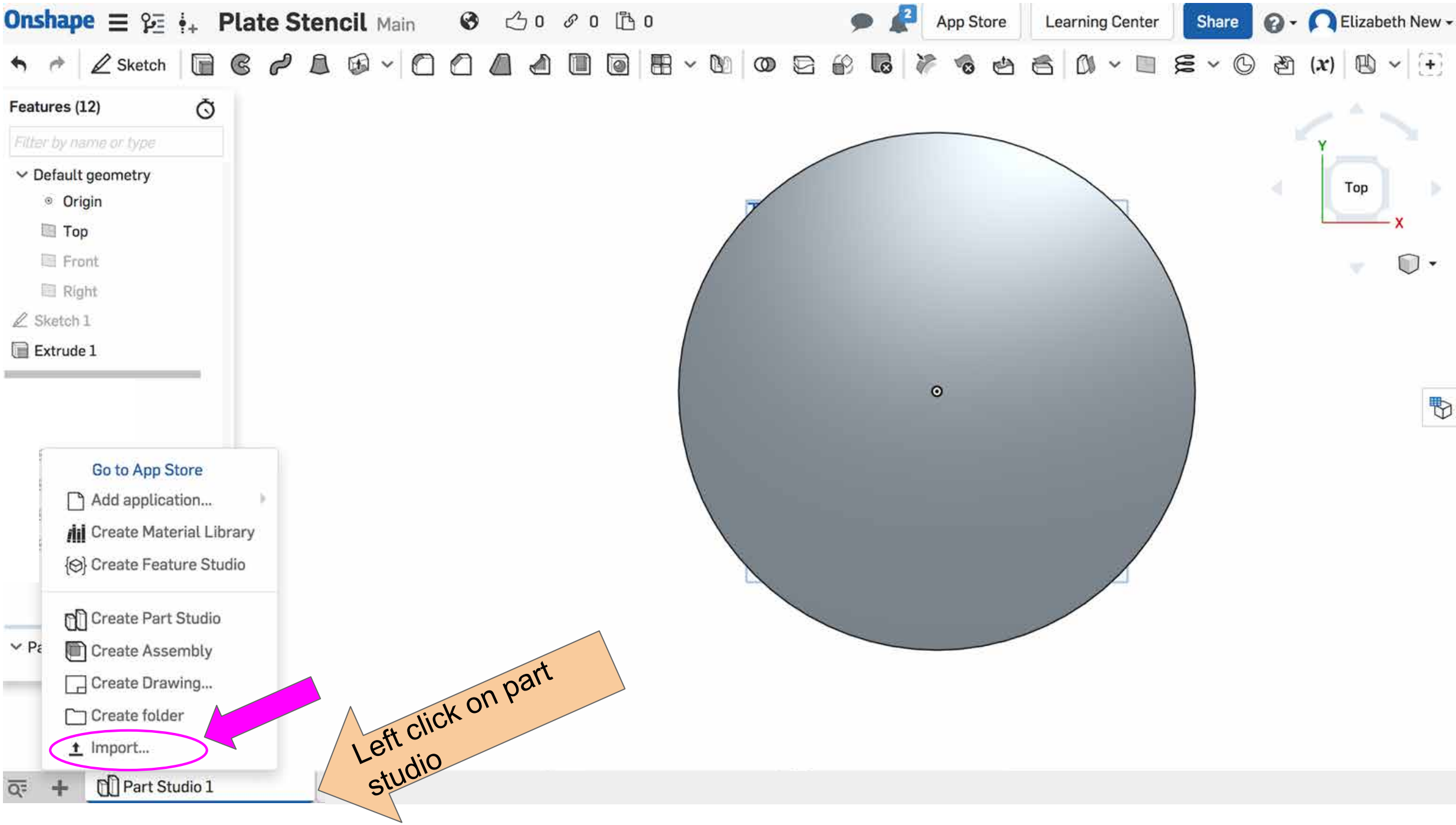
Select the circle from the sketch menu and draw the circle from the center point to the size you want.

You can edit the size by using the measurement tool in the toolbar. In this case I used mm, but you can also change your measurement to inches in the main menu

Approve circle drawing

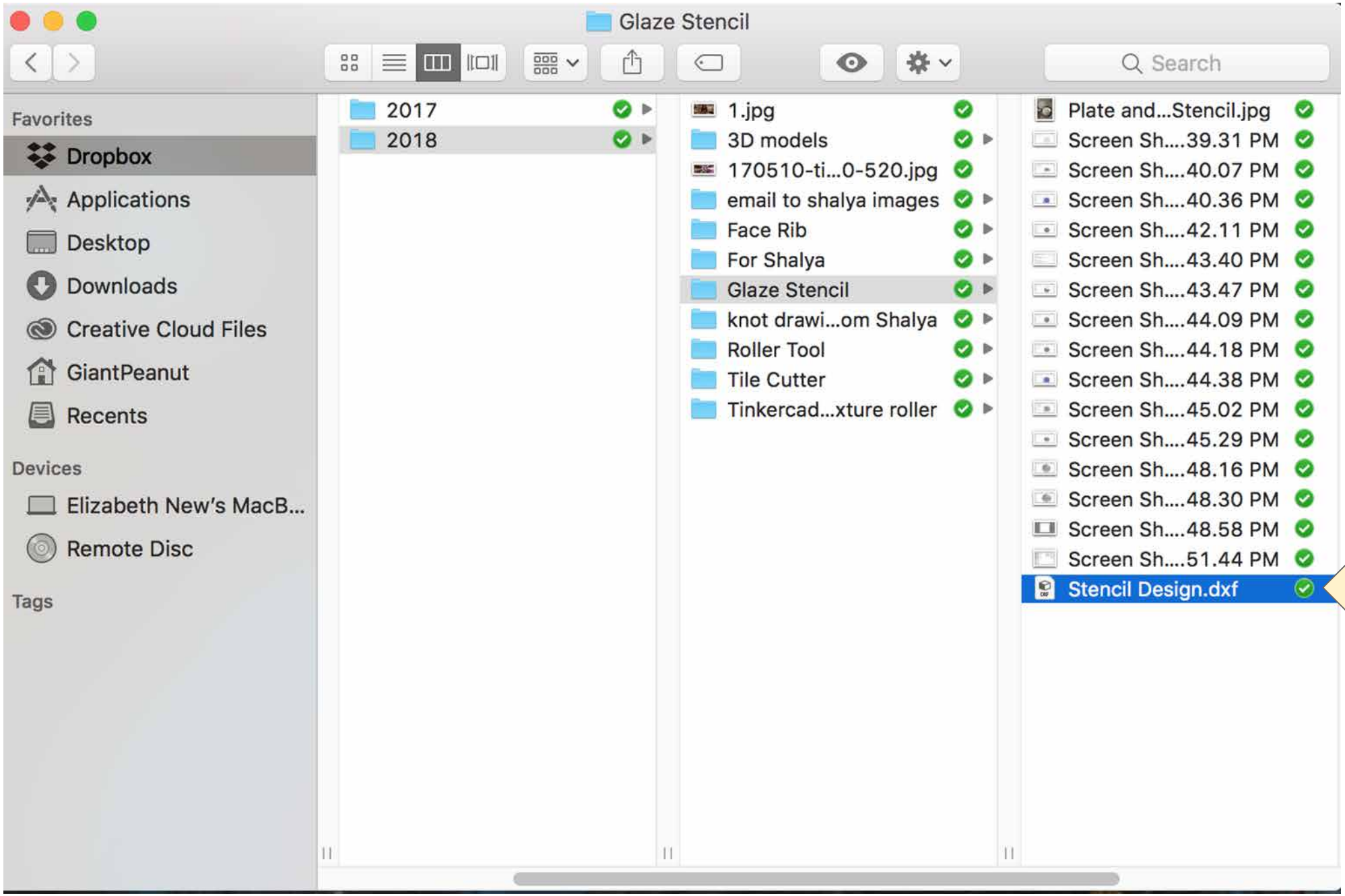


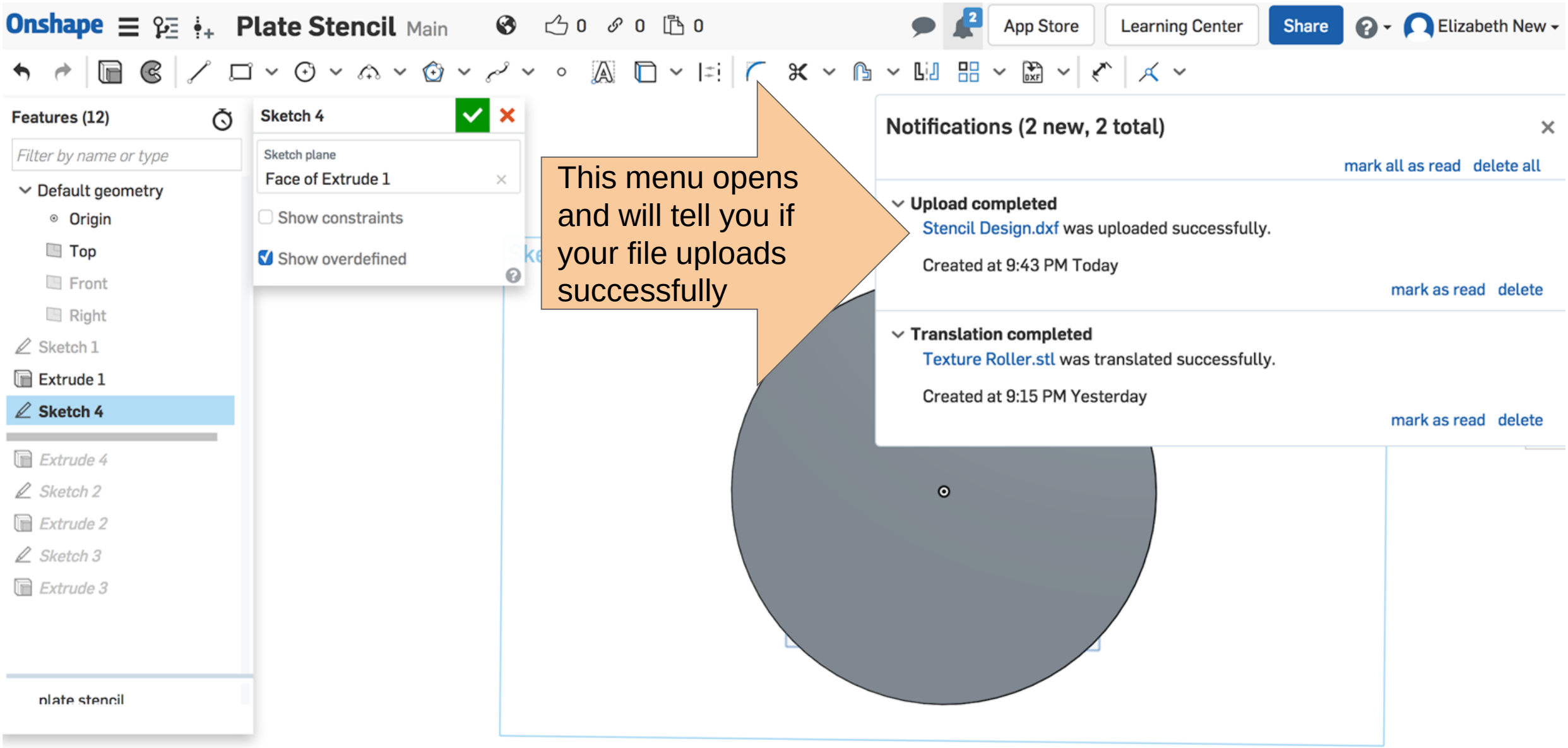

Onshape
Plate Stencil
Main
App Store
Learning Center
Share
Elizabeth New
Sketch
Features (12)
Filter by name or type
Default geometry
Origin
Top
Front
Right
Sketch 1
Extrude 1
Parts (1)
Part Studio 1
Extrude 1
Solid
Surface
New
Faces and sketch regions to extrude
Face of Sketch 1
Symmetric
Depth
0.7 mm
Draft
Select “new” from sub menu
Type in thickness
Select the face of the drawing you want to extrude (like a clay extruder!). Use the arrow to control the amount, or the box in the menu on the left
Top
Front
Z
X

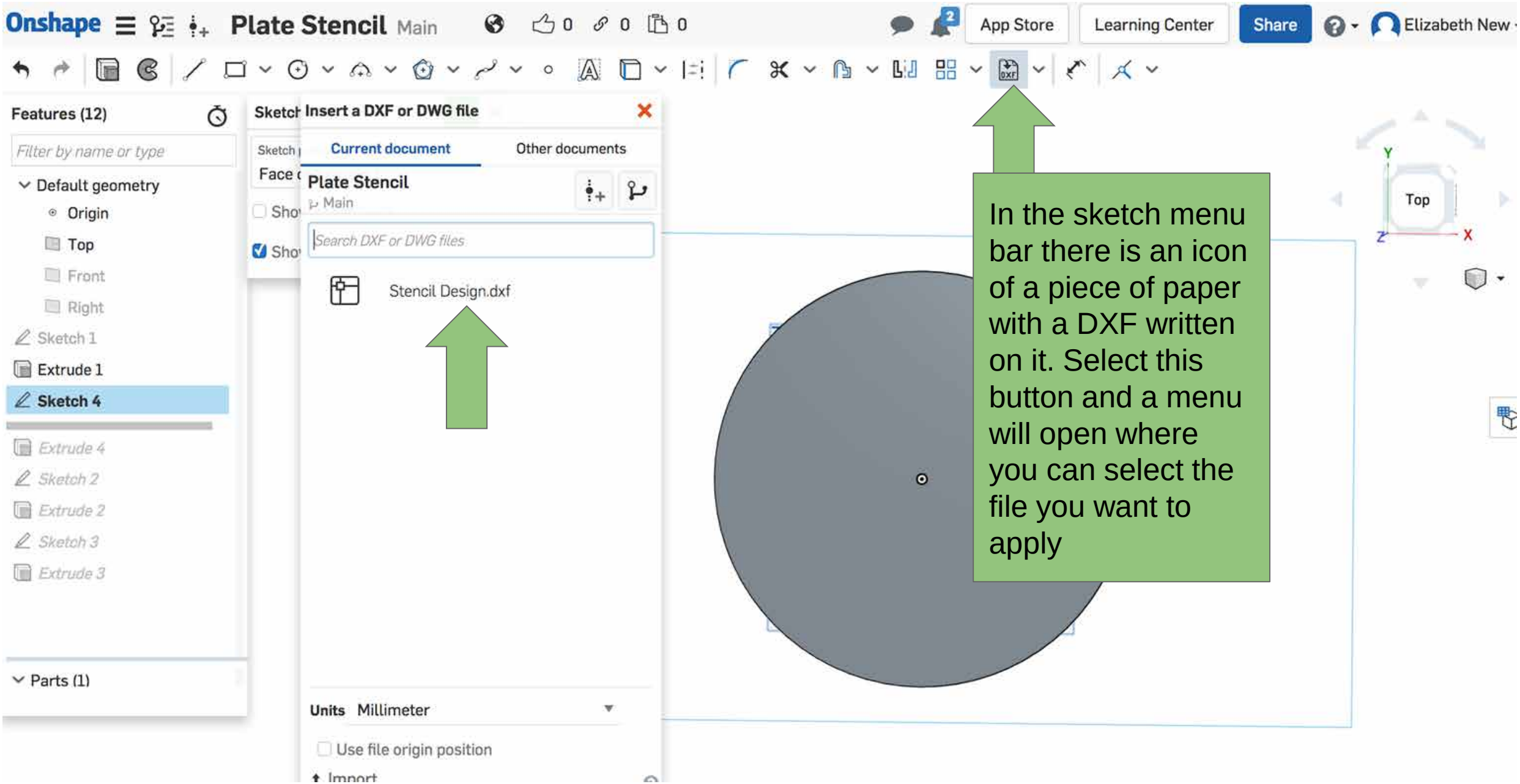

Onshape
Plate Stencil
Main
App Store
Learning Center
Share
Elizabeth New
Sketch
Features (12)
Filter by name or type
Default geometry
Origin
Top
Front
Right
Sketch 1
Extrude 1
Top
Y
X
Go to App Store
Add application...
Create Material Library
Create Feature Studio
Create Part Studio
Create Assembly
Create Drawing...
Create folder
Import...
Part Studio 1
Left click on part studio

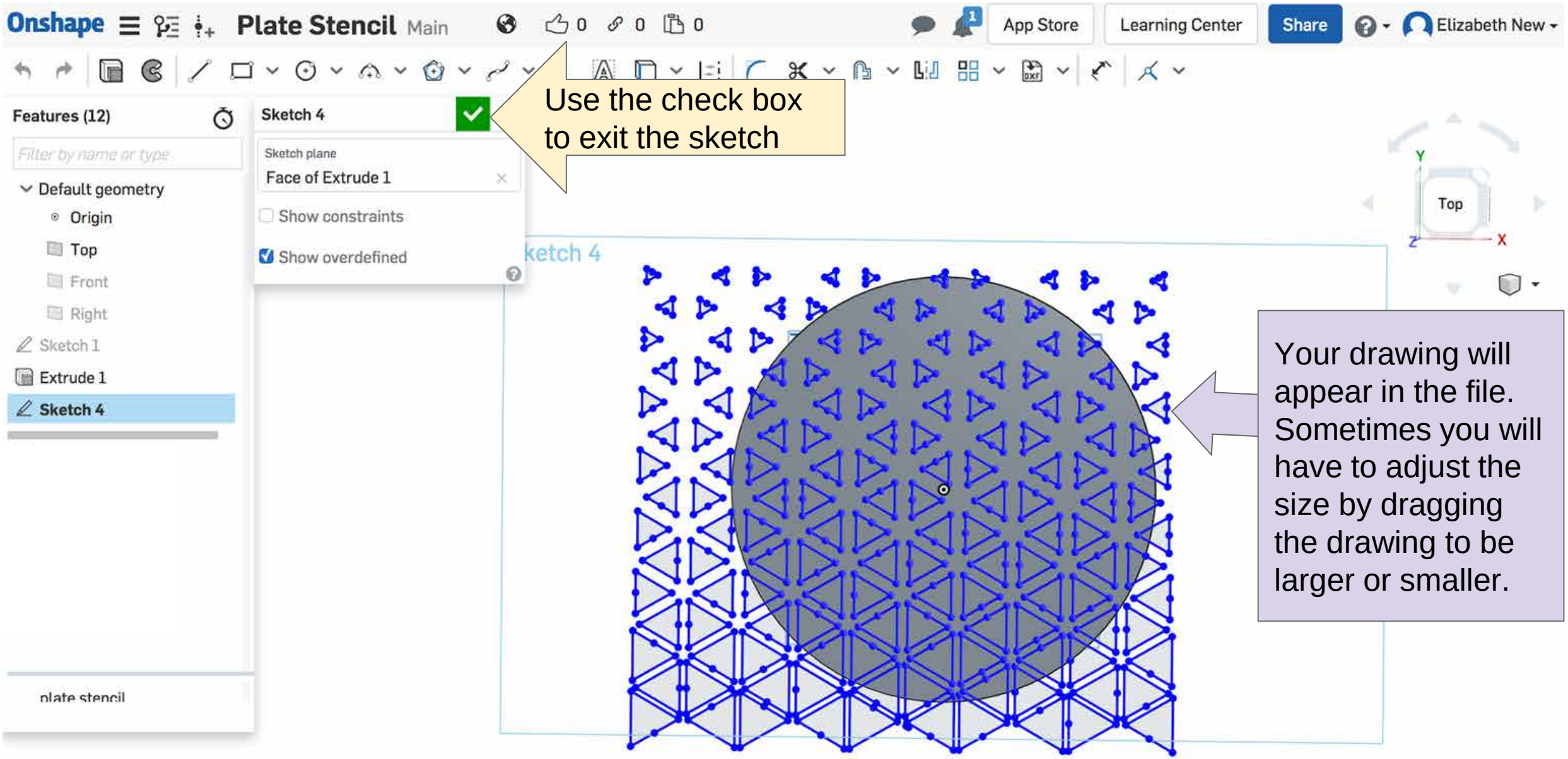
You will need a DXF or DWG file

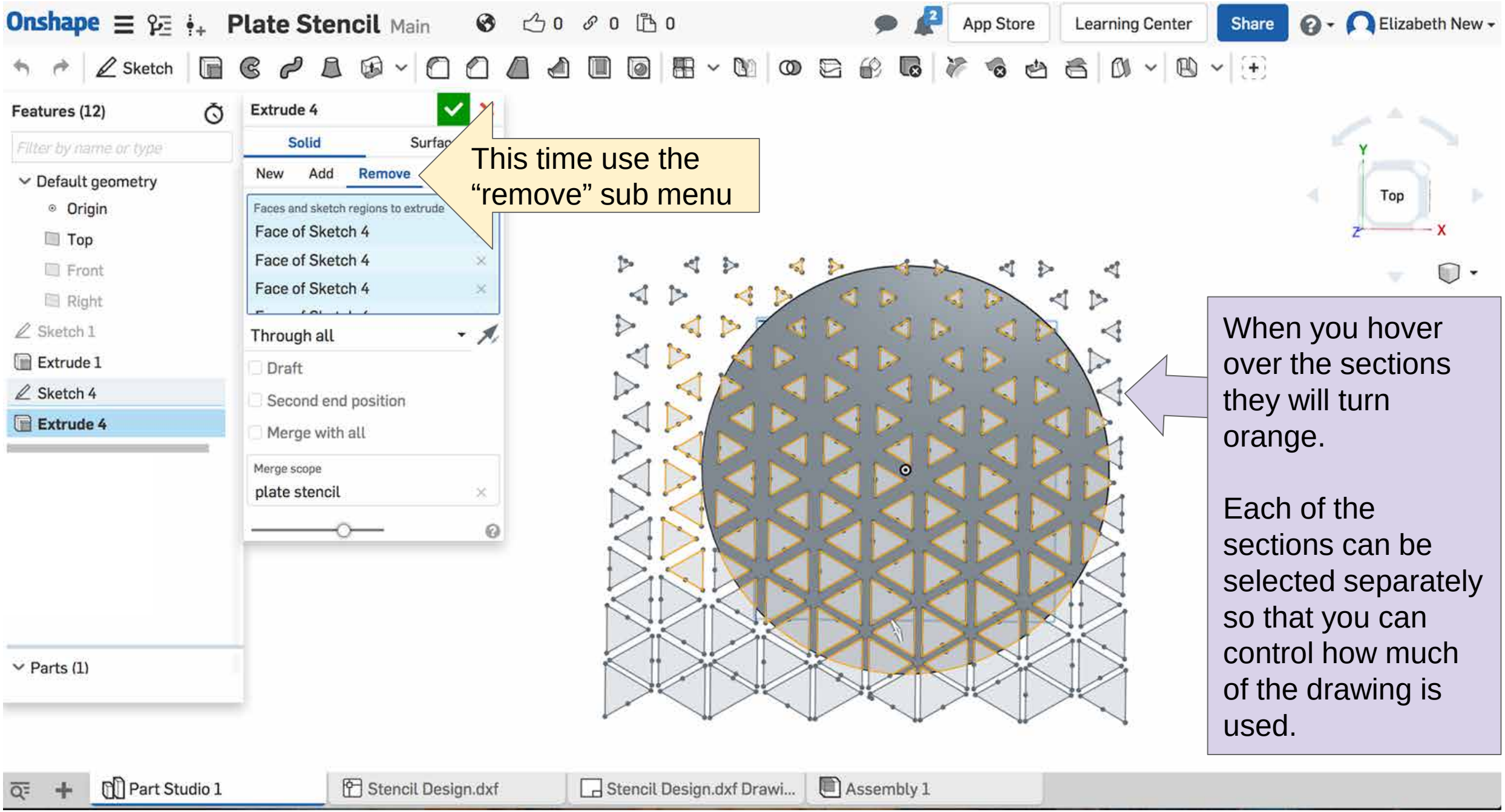
There are free options online but they need some work

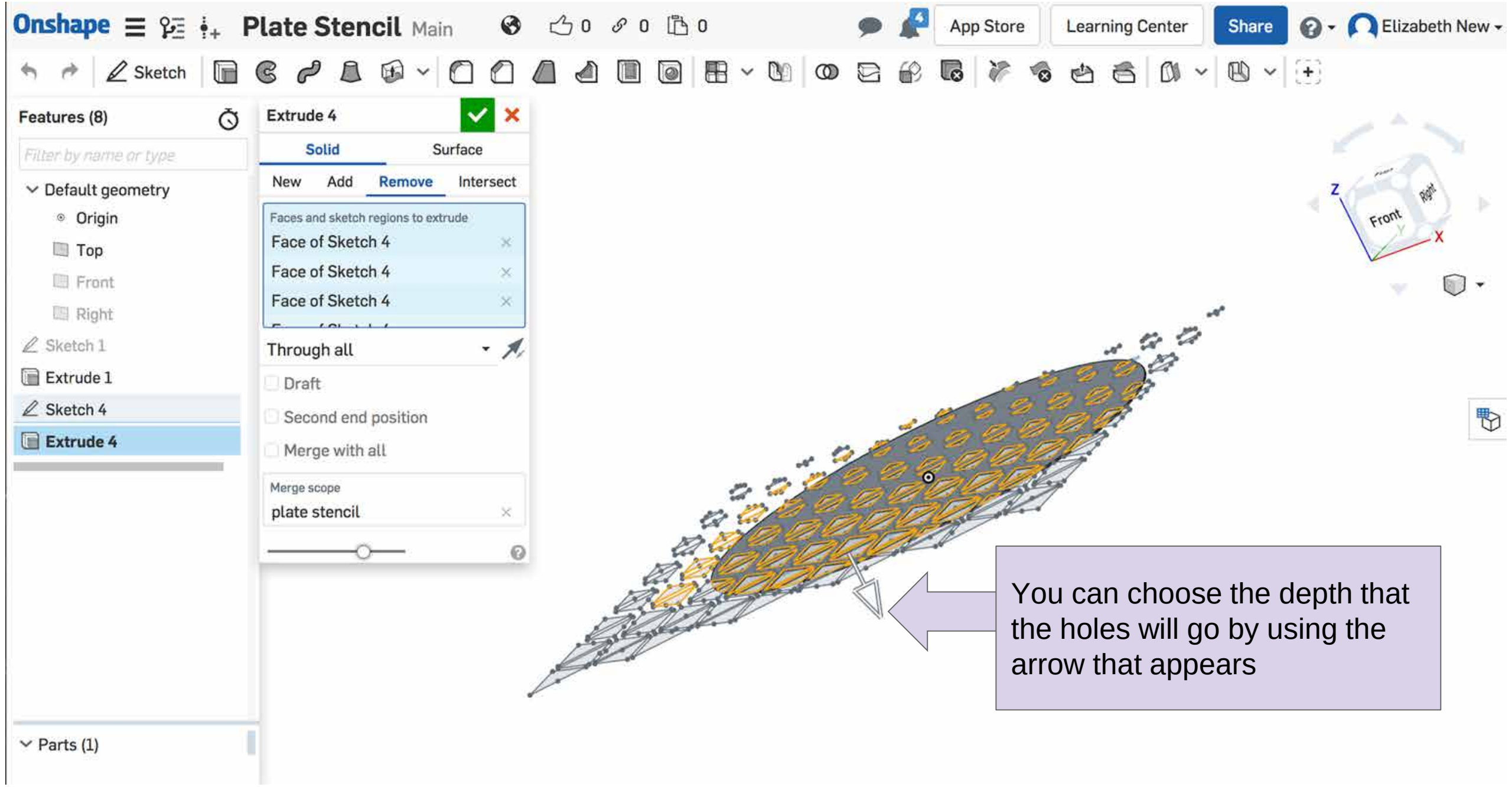

Glaze Stencil
Search
Favorites
Dropbox
Applications
Desktop
Downloads
Creative Cloud Files
GiantPeanut
Recents
Devices
Elizabeth New's MacB...
Remote Disc
Tags
2017
2018
1.jpg
3D models
170510-ti...0-520.jpg
email to shalya images
Face Rib
For Shalya
Glaze Stencil
knot drawi...om Shalya
Roller Tool
Tile Cutter
Tinkercad...xture roller
Plate and...Stencil.jpg
Screen Sh....39.31 PM
Screen Sh....40.07 PM
Screen Sh....40.36 PM
Screen Sh....42.11 PM
Screen Sh....43.40 PM
Screen Sh....43.47 PM
Screen Sh....44.09 PM
Screen Sh....44.18 PM
Screen Sh....44.38 PM
Screen Sh....45.02 PM
Screen Sh....45.29 PM
Screen Sh....48.16 PM
Screen Sh....48.30 PM
Screen Sh....48.58 PM
Screen Sh....51.44 PM
Stencil Design.dxf
Select your file

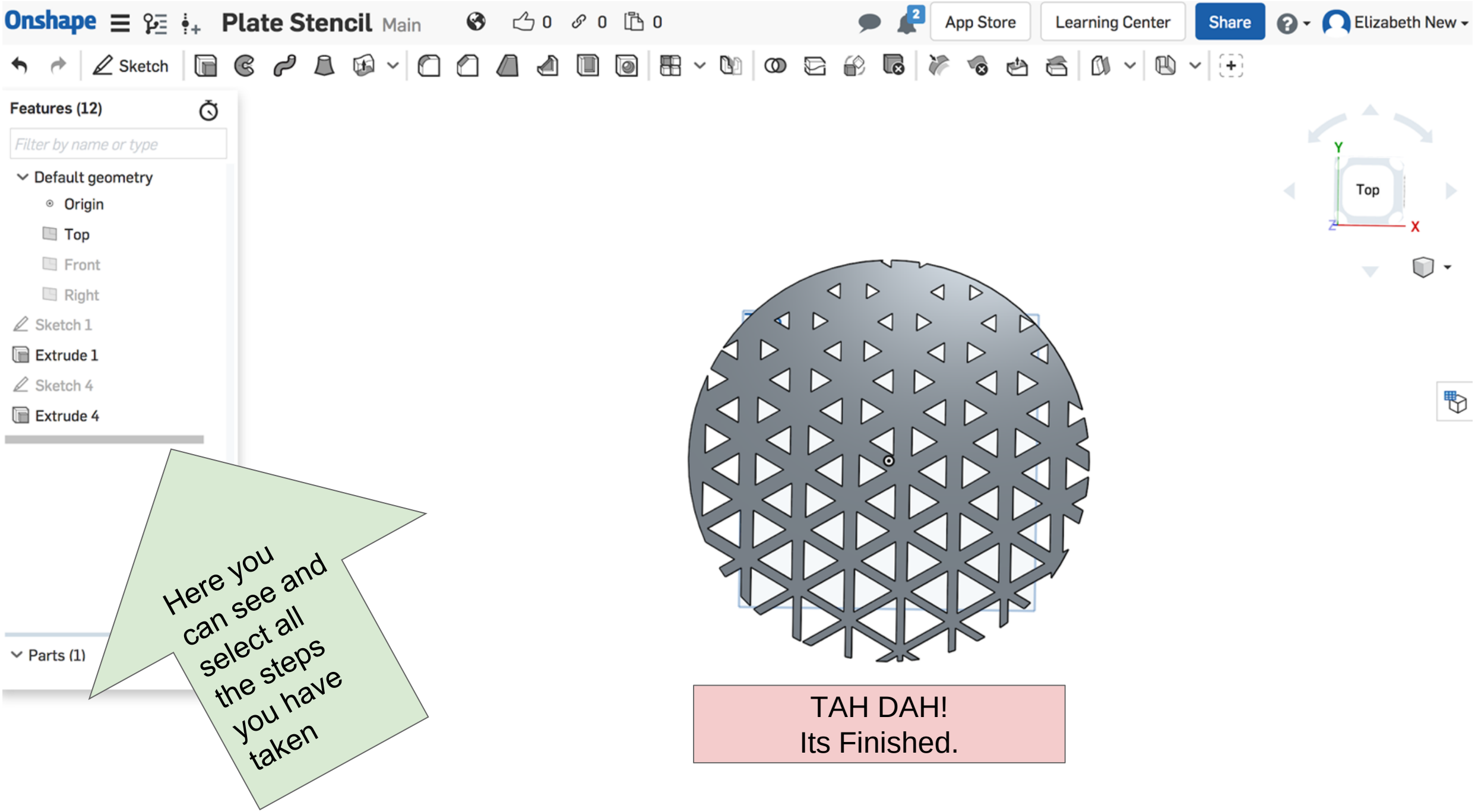

Onshape
Plate Stencil
Main
App Store
Learning Center
Share
Elizabeth New
Features (12)
Filter by name or type
Default geometry
Origin
Top
Front
Right
Sketch 1
Extrude 1
Sketch 4
Extrude 4
Sketch 2
Extrude 2
Sketch 3
Extrude 3
plate stencil
Sketch 4
Sketch plane
Face of Extrude 1
Show constraints
Show overdefined
This menu opens and will tell you if your file uploads successfully
Notifications (2 new, 2 total)
mark all as read
delete all
Upload completed
Stencil Design.dxf was uploaded successfully.
Created at 9:43 PM Today
mark as read
delete
Translation completed
Texture Roller.stl was translated successfully.
Created at 9:15 PM Yesterday
mark as read
delete

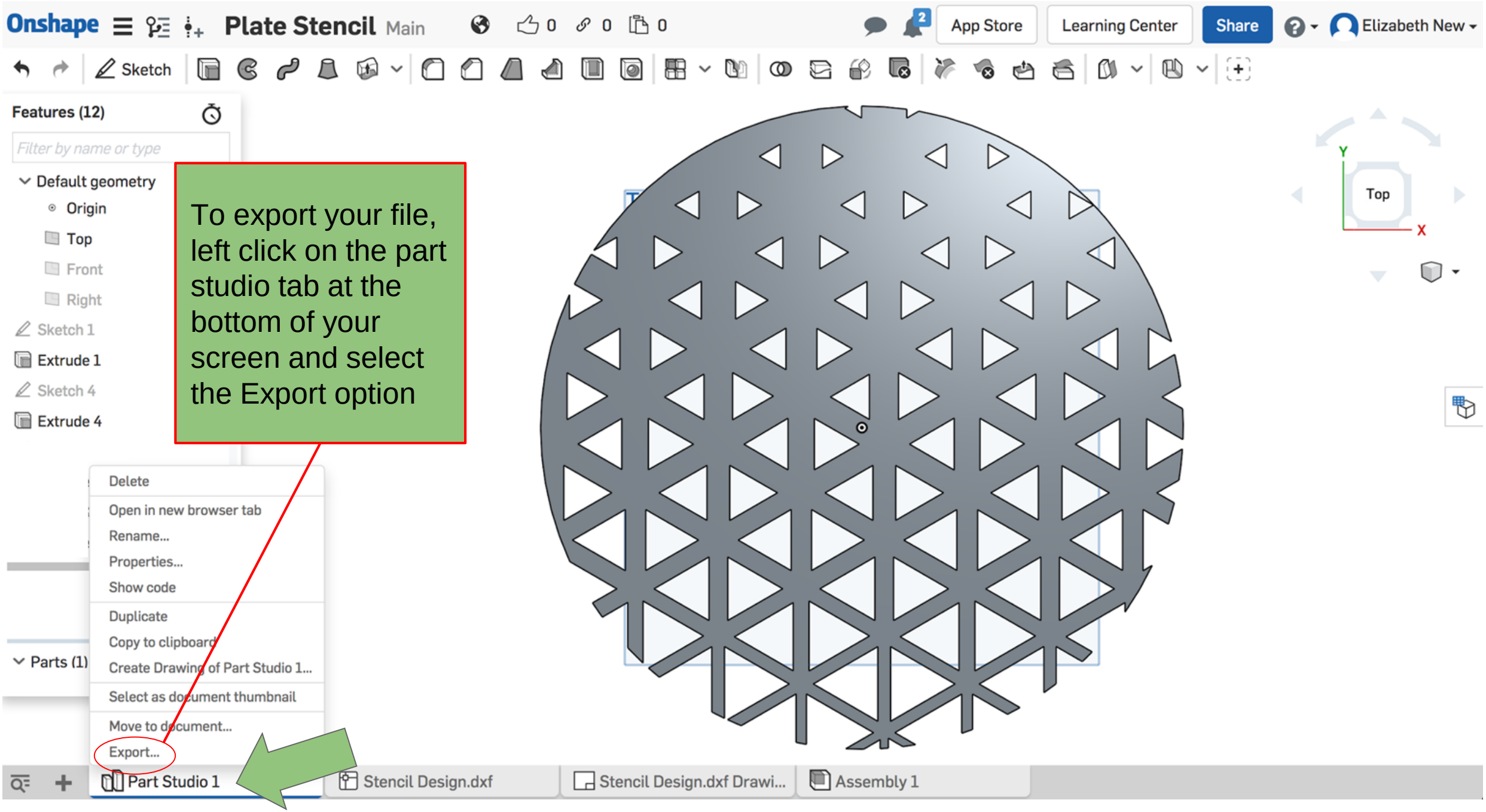

Onshape
Plate Stencil Main
App Store
Learning Center
Share
Elizabeth New
Features (12)
Filter by name or type
Default geometry
Origin
Top
Front
Right
Sketch 1
Extrude 1
Sketch 4
Extrude 4
Sketch 2
Extrude 2
Sketch 3
Extrude 3
Parts (1)
Insert a DXF or DWG file
Current document
Other documents
Plate Stencil
Main
Search DXF or DWG files
Stencil Design.dxf
Units Millimeter
Use file origin position
Import
Top
In the sketch menu bar there is an icon of a piece of paper with a DXF written on it. Select this button and a menu will open where you can select the file you want to apply

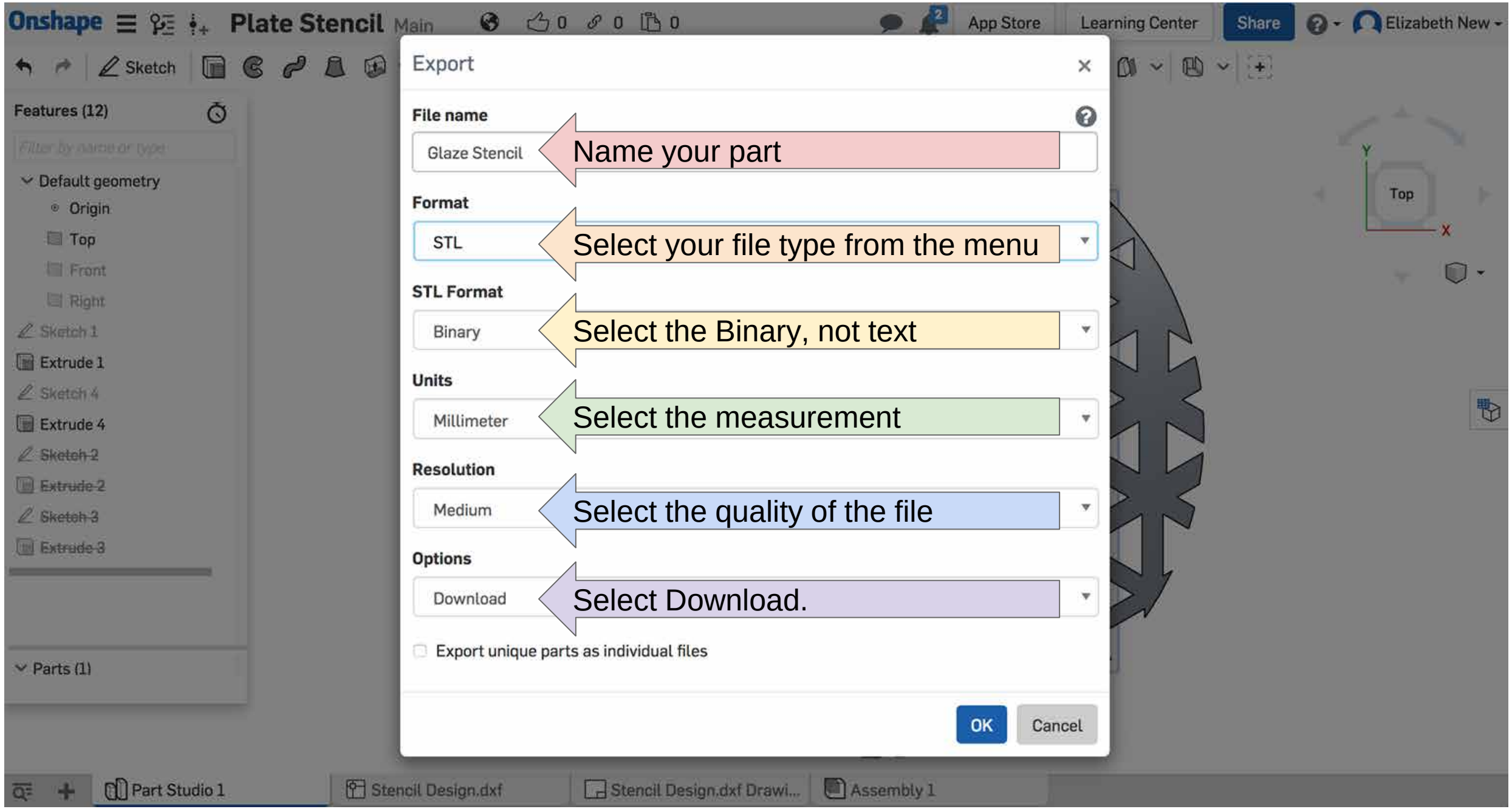

Onshape
Plate Stencil
Main
App Store
Learning Center
Share
Elizabeth New
Features (12)
Filter by name or type
Default geometry
Origin
Top
Front
Right
Sketch 1
Extrude 1
Sketch 4
plate stencil
Sketch 4
Sketch plane
Face of Extrude 1
Show constraints
Show overdefined
Use the check box to exit the sketch
Top
Your drawing will appear in the file. Sometimes you will have to adjust the size by dragging the drawing to be larger or smaller.


Onshape
Plate Stencil Main
App Store
Learning Center
Share
Elizabeth New
Sketch
Features (12)
Filter by name or type
Default geometry
Origin
Top
Front
Right
Sketch 1
Extrude 1
Sketch 4
Extrude 4
Parts (1)
Extrude 4
Solid
Surfac
New
Add
Remove
Faces and sketch regions to extrude
Face of Sketch 4
Face of Sketch 4
Face of Sketch 4
Through all
Draft
Second end position
Merge with all
Merge scope
plate stencil
This time use the "remove" sub menu
Top
When you hover over the sections they will turn orange.
Each of the sections can be selected separately so that you can control how much of the drawing is used.
Part Studio 1
Stencil Design.dxf
Stencil Design.dxf Drawi...
Assembly 1


Onshape
Plate Stencil Main
App Store
Learning Center
Share
Elizabeth New
Sketch
Features (8)
Filter by name or type
Default geometry
Origin
Top
Front
Right
Sketch 1
Extrude 1
Sketch 4
Extrude 4
Parts (1)
Extrude 4
Solid
Surface
New
Add
Remove
Intersect
Faces and sketch regions to extrude
Face of Sketch 4
Face of Sketch 4
Face of Sketch 4
Through all
Draft
Second end position
Merge with all
Merge scope
plate stencil
Z
Front
Right
X
Y
You can choose the depth that the holes will go by using the arrow that appears


Onshape
Plate Stencil
Main
App Store
Learning Center
Share
Elizabeth New
Sketch
Features (12)
Filter by name or type
Default geometry
Origin
Top
Front
Right
Sketch 1
Extrude 1
Sketch 4
Extrude 4
Parts (1)
Top
Here you can see and select all the steps you have taken
TAH DAH!
Its Finished.

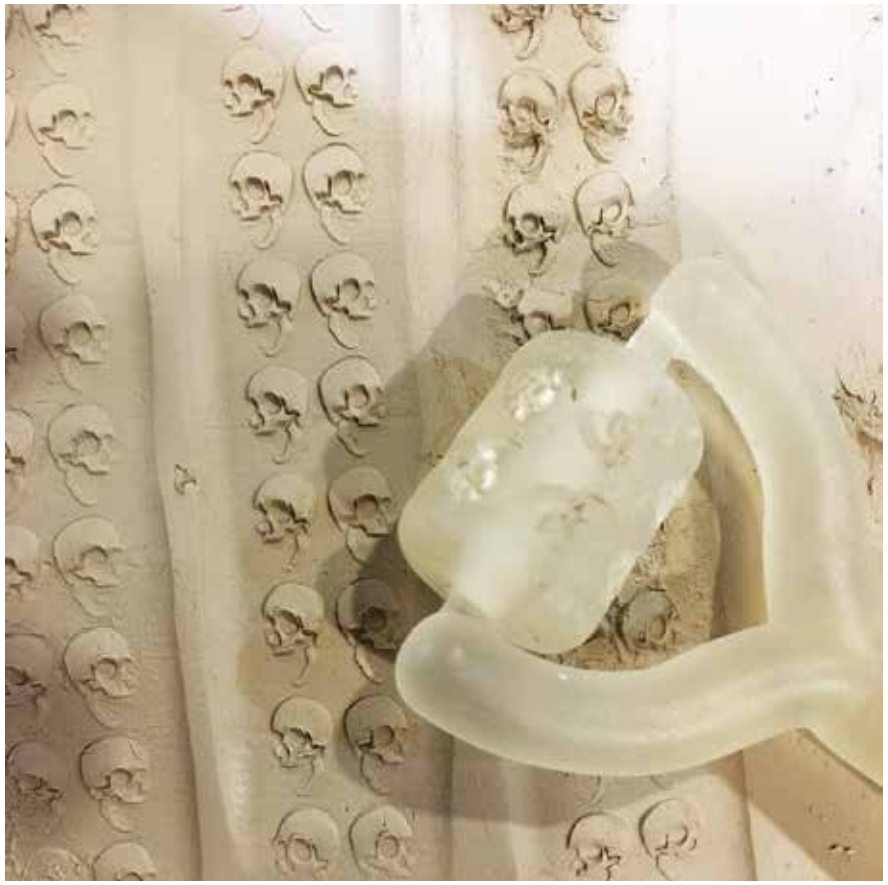

Onshape
Plate Stencil
Main
App Store
Learning Center
Share
Elizabeth New
Sketch
Features (12)
Filter by name or type
Default geometry
Origin
Top
Front
Right
Sketch 1
Extrude 1
Sketch 4
Extrude 4
Parts (1)
To export your file, left click on the part studio tab at the bottom of your screen and select the Export option
Delete
Open in new browser tab
Rename...
Properties...
Show code
Duplicate
Copy to clipboard
Create Drawing of Part Studio 1...
Select as document thumbnail
Move to document...
Export...
Part Studio 1
Stencil Design.dxf
Stencil Design.dxf Drawi...
Assembly 1
Top
Y
X


Onshape
Plate Stencil
Main
App Store
Learning Center
Share
Elizabeth New
Sketch
Features (12)
Default geometry
Origin
Top
Front
Right
Sketch 1
Extrude 1
Sketch 4
Extrude 4
Sketch 2
Extrude 2
Sketch 3
Extrude 3
Parts (1)
Export
File name
Glaze Stencil
Name your part
Format
STL
Select your file type from the menu
STL Format
Binary
Select the Binary, not text
Units
Millimeter
Select the measurement
Resolution
Medium
Select the quality of the file
Options
Download
Select Download.
Export unique parts as individual files
OK
Cancel
Top
Part Studio 1
Stencil Design.dxf
Stencil Design.dxf Drawi...
Assembly 1

additional uses...

Custom face rib

Skull pattern roller



Different materials = different textures

Make these tools - files online

TinkerCAD Roller:
https://www.tinkercad.com/things/bv98FGVlkr7

OnShape Glaze Stencil:
https://cad.onshape.com/documents/0908c4d75915e5d3ea932a5b/w/b9af6cb192f2f2ce782b47aa/e/c12b1055f9364ec4fdf26380

OnShape Face Rib:
https://cad.onshape.com/documents/ca02b8ce3ab7f0f66d4ed38e/w/d7634d6fe46fca737b9e3121/e/0d53b131c8420ab30e83cda0

OnShape Skull Roller:
https://cad.onshape.com/documents/c024a854842259f6dcafbbf6/w/34d545cdfb76251443751db7/e/b772574a756569f905859506

Many thanks!
questions?

Email: ElizabethNewDesign@gmail.com
Shalya@shalyamarsh.com