

# The Party That Shall Not Be Named: Designing a 3-D Snitch

How do people create 3-D model files? Generally, 3-D model files are created with 3-D model software. There are a lot of software options to choose from; some are web-based and some desktop based. Tinkercad is a web-based software used to create and share 3-D model files. What makes Tinkercad so great is how easy it is to use. If you can click and drag, then you can use Tinkercad.

## Exercise

### Login

Open up a web browser and navigate to [www.tinkercad.com](http://www.tinkercad.com)

Click Sign In in the upper right corner.

A blue rectangular button with the text "Sign in" in white.

Choose the blue email login option.

A blue rectangular input field with a white triangle icon on the left and the text "Email or Username" in white.

Enter the following credentials

Account: [NLPotterreads@gmail.com](mailto:NLPotterreads@gmail.com)

Password: Alohomora123

### Creating a New File

Click on Create New Design.

A light blue rectangular button with the text "Create new design" in white.

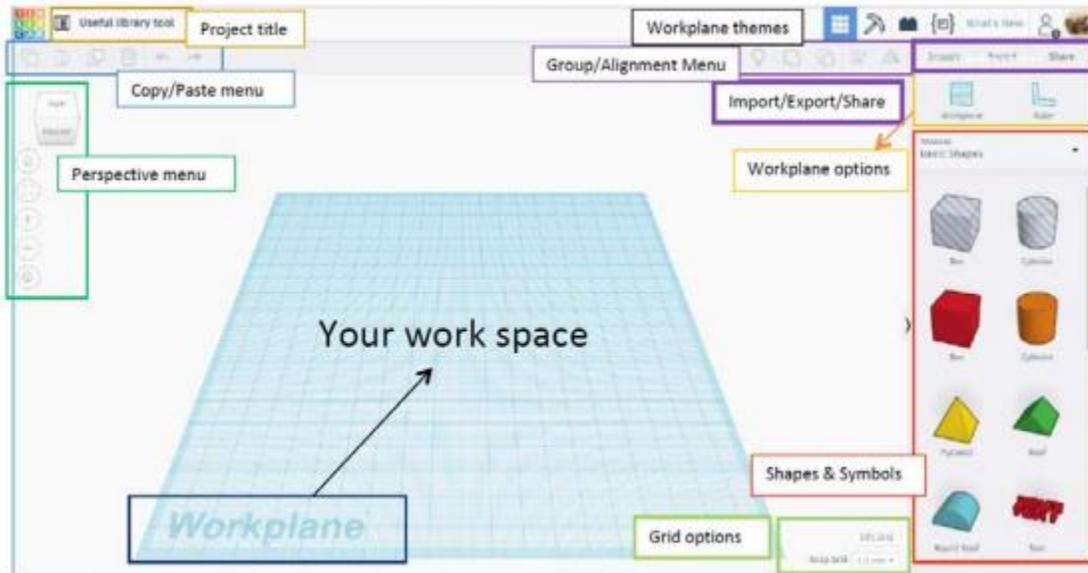
In the upper left corner, your file will have a strange name.

A light blue rectangular box containing a small icon of a document with a list and the text "Smooth Duup-Kasi".

Click on the name and rename the file with your first initial and last name.

A light blue rectangular box containing a small icon of a document with a list and the text "JSmith".

Press Enter on the keyboard to finalize renaming of the file.



## Basic Instructions

*Mouse buttons commands*

Left click- Selects objects and anchor points

Mouse wheel click and hold- move the workplane left, right, up and down. \*Alternatively, you can left

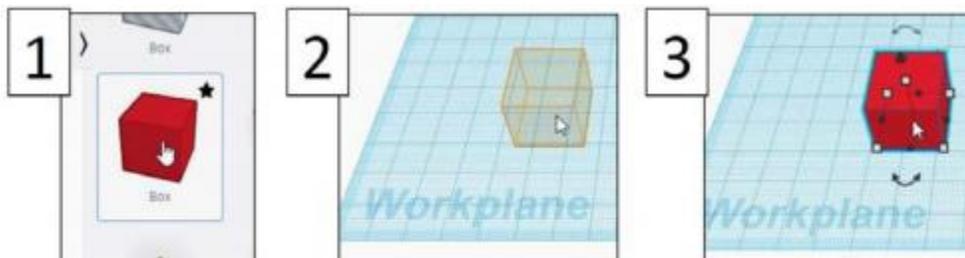
click on the directional box in the upper left to change directions.  To reset the direction, click on

the home button below the square. 

Mouse wheel roll forward and back- Zooms in and out

Right click and hold- Rotates the workplane

*Moving a shape or symbol from the basic shapes menu to your workplane*



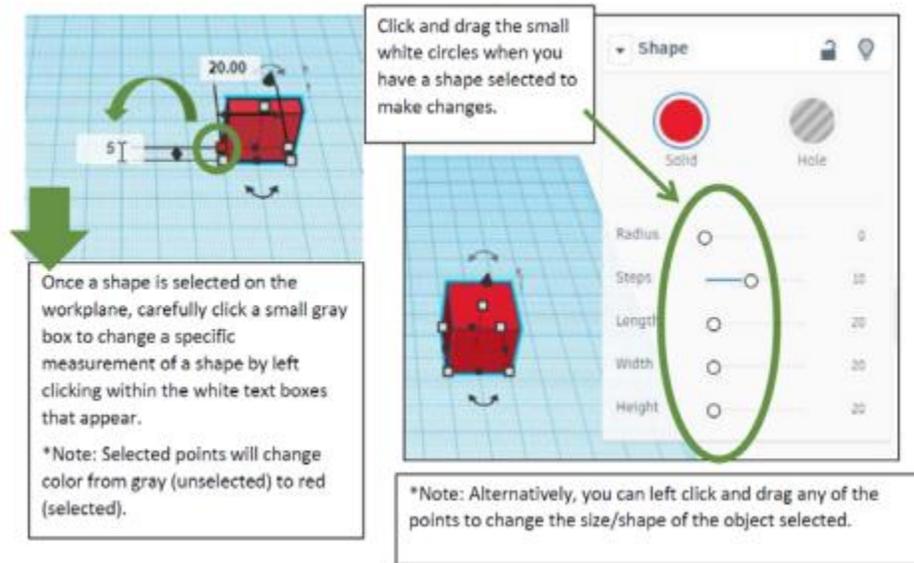
a. Select which shape you would like to add to your Workplane by left clicking and holding the button in.

b. Drag your mouse over the Workplane where you would like to “drop” your shape.

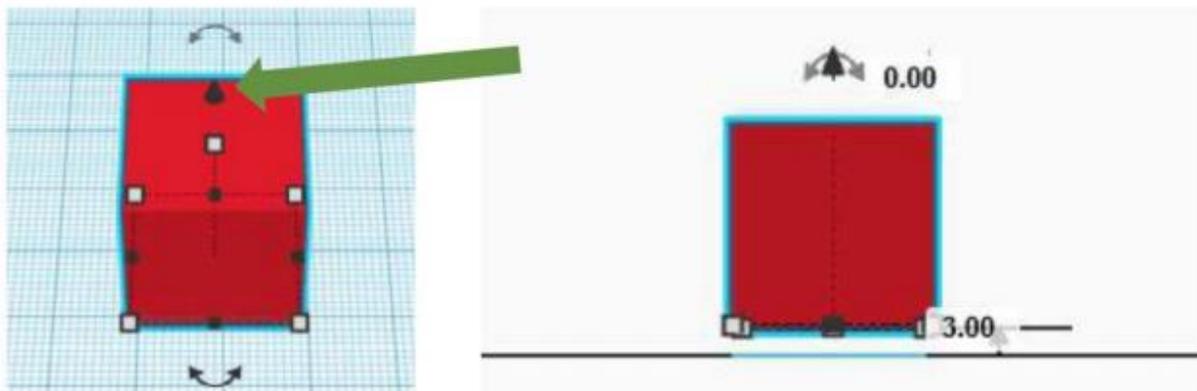
c. Let go of the left click to “drop” shape and add it to the Workplane.

*Resizing your shape*

There are many different ways to edit your shape once it's on the Workplane.



### *Moving a shape above or below the Workplane*



a. You can move a shape above the Workplane by clicking and dragging the black cone shaped handle above your shape. This function allows you to stack shapes on top of each other.

b. Remember to view your shape from the front to make sure it's not floating above the Workplane. This could mess up your 3D print if the base of your project isn't touching the Workplane.

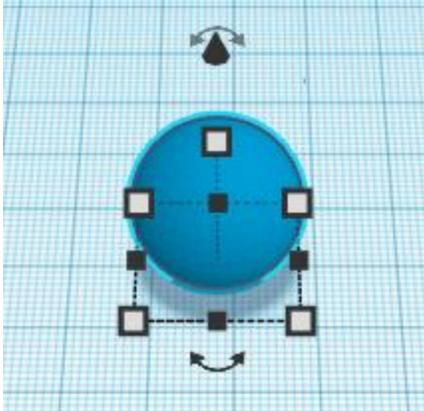
### **Create a hanging snitch**

#### **Step 1**

If you practiced any of the above steps, delete any objects brought onto the Workplane. Click on the object/shape and press delete.

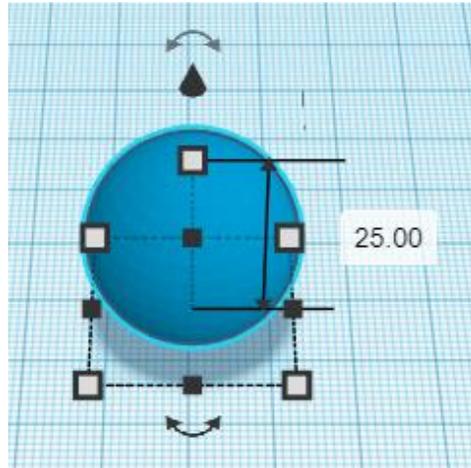
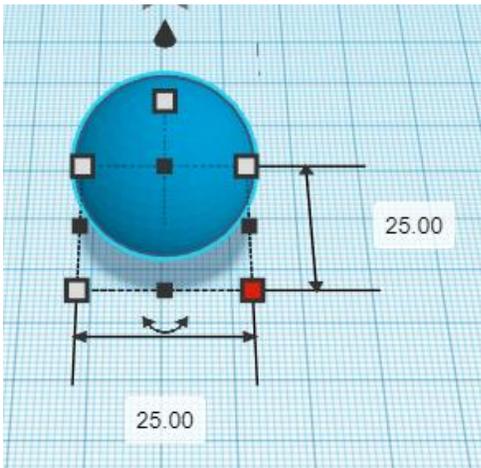
#### **Step 2**

Click and drag a blue sphere onto the Workplane.



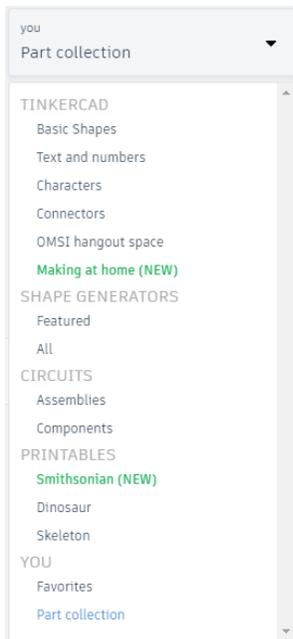
### Step 3

Change the dimensions to 25 x 25 x 25. You can click on the white box on the bottom left and type in the numbers for length and width or drag the box until the numbers each read 25. To adjust the height, click on the center white box and drag the height to 25.



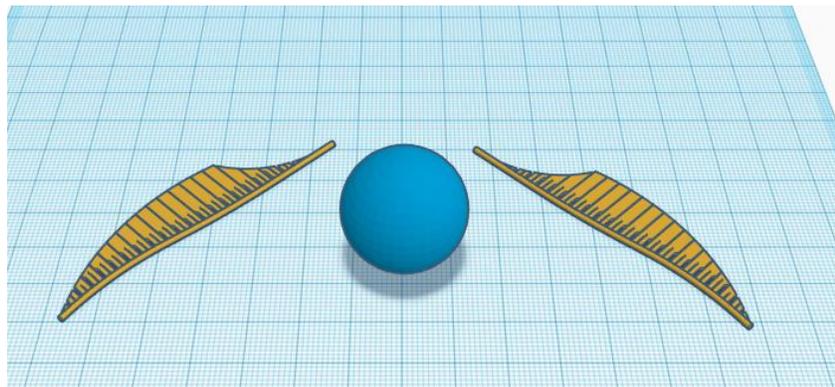
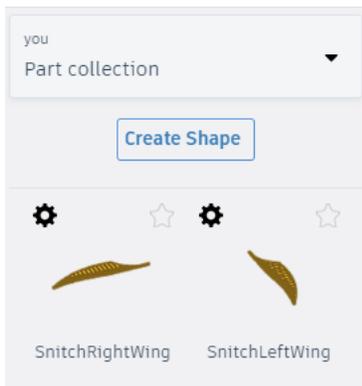
### Step 4

Right now, Basic Shapes are displayed on the right. Click on the menu to select Part Collection.



### Step 5

Click and drag the left and the right wing to the Workplane.



### Step 6

Return to Basic Shapes by choosing it from the menu.

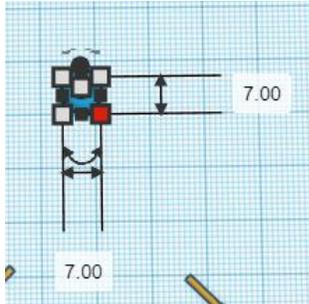
### Step 7

Click and drag a blue Torus shape to the Workplane.



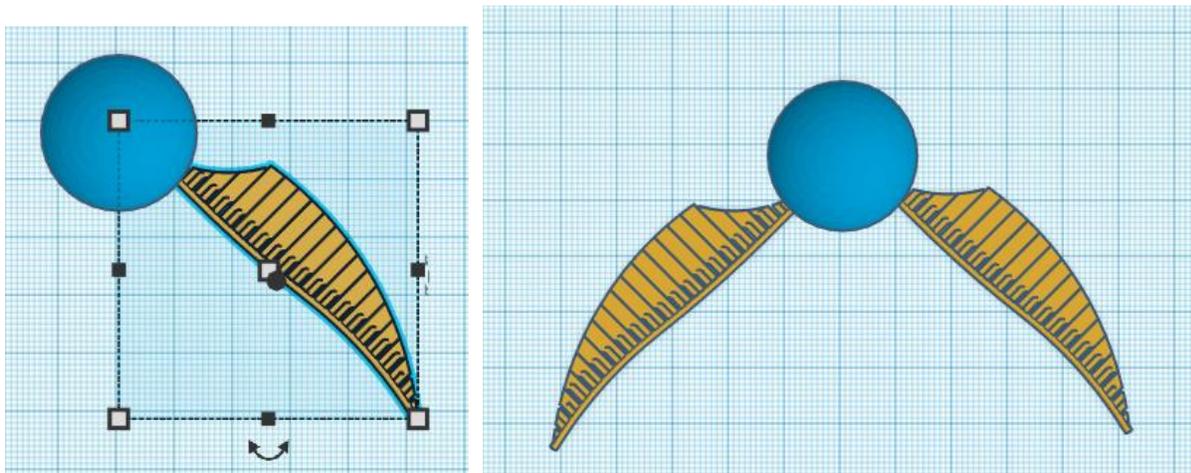
### Step 8

Resize the Torus to 7 x 7.



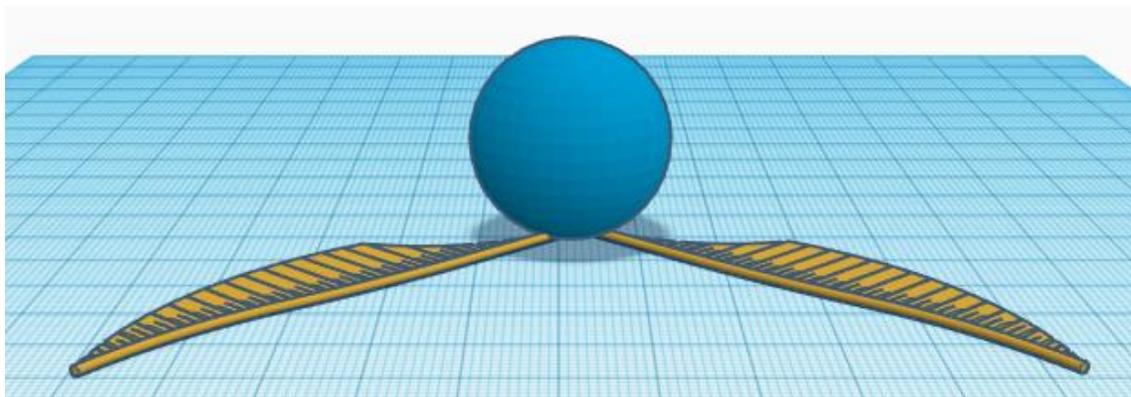
**Step 9**

Move each wing so the thin end reaches the middle of the sphere.



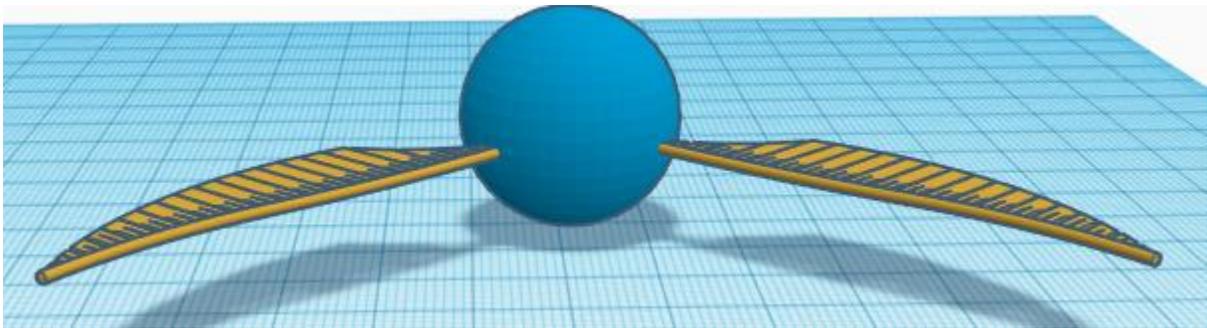
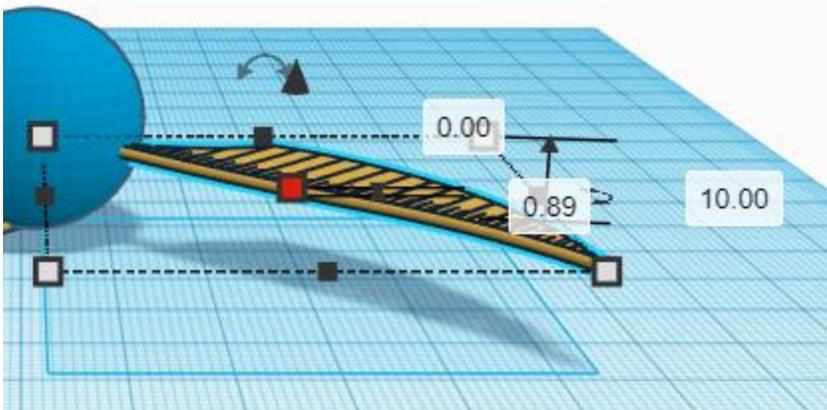
**Step 10**

Change your view to be able to see the front. Notice that the wings are not connecting to the sphere yet.



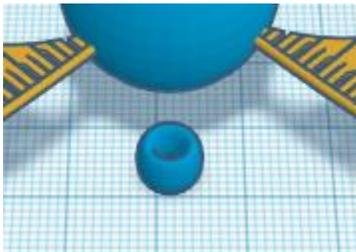
**Step 11**

We want the wings to be in the middle of the sphere. Click on each wing and use the black cone to raise them up 10mm.



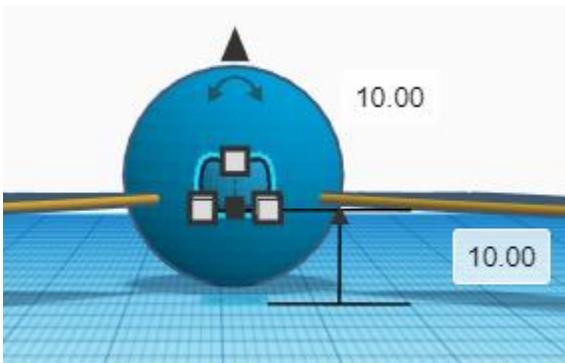
**Step 12**

Click and drag the Torus shape on the Workplane to the front of the snitch.



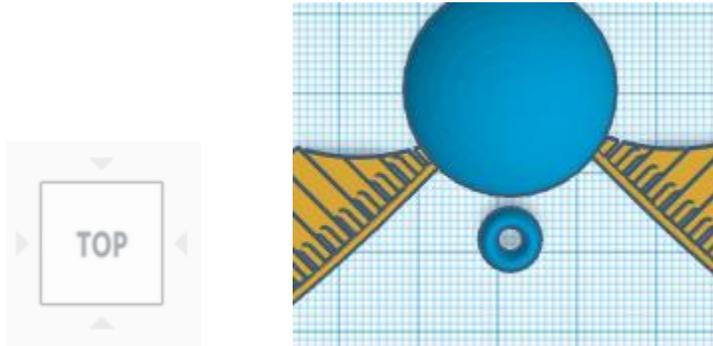
**Step 13**

Raise the Torus object using the black cone up 10mm.



#### Step 14

Change your view to top. The Torus may not be connected to the sphere.



#### Step 15

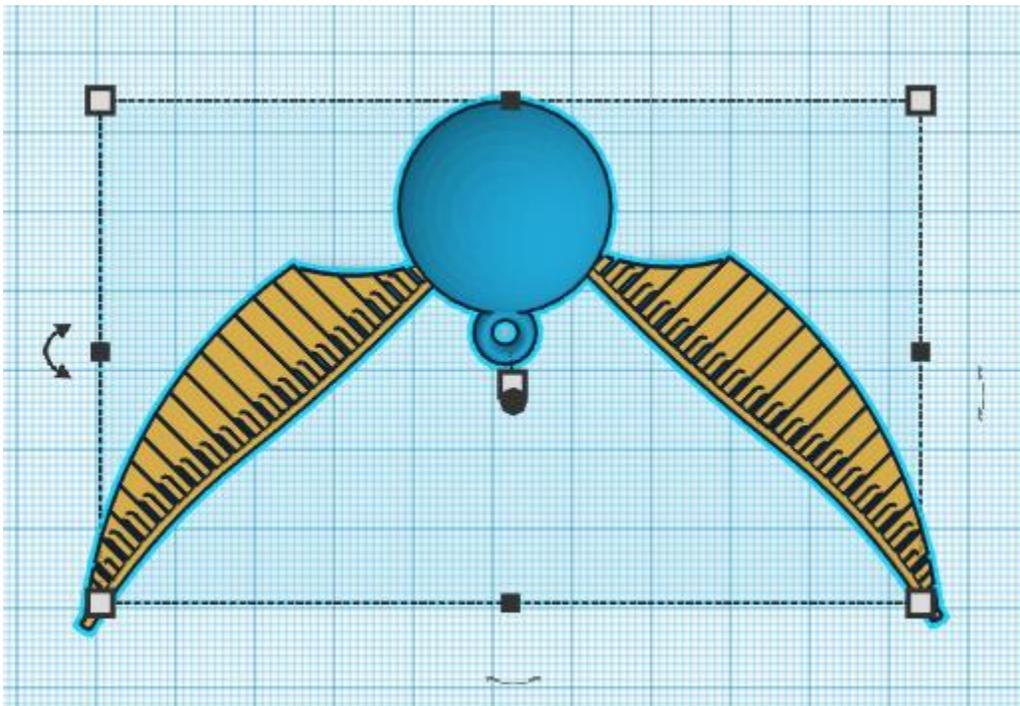
Click and drag the Torus until it is connected with the sphere.



#### Step 16

Next, we will group all the pieces as one object. Click and hold on the Workplane above and to the left of the object. Without letting go, drag the mouse over the whole object down and to the right. If the whole object is in the box, let the left click go and the objects will all be selected.

\*Alternatively, you can use the keyboard shortcut Ctrl+A to select all items on the Workplane.



### Step 17



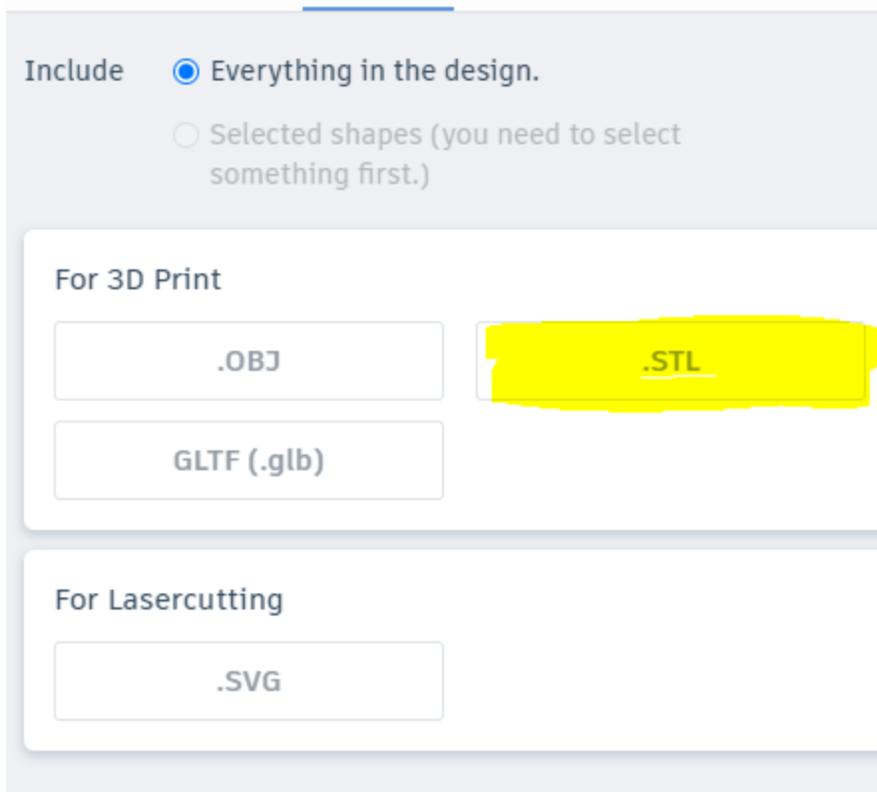
In the upper right, there are Group and Ungroup options.

Click on the Group icon, which is the one on the left with the dark outline.

This will lock all the pieces together.

### Step 18

In the upper right, you can Export your file to be able to send it to print. Click on Export  to open a pop up. In the pop up window, select .stl for the file type.



This will save the file to the computer. You have now designed a 3-D object.

*If you wanted to add any additional details, you can go back to Tinkercad and continue to edit or tinker the object. Then, save and export the design again.*

### Step 19 (optional)

If you want to print your item, you can send it to the library to print by using the 3-D Print Queue. The library charges by weight in grams for printed objects. As designed, this object comes to around 8g. At \$.20/gram, the total cost would be \$1.60 to have the object printed.

Visit the library website at: <https://www.naperville-lib.org/> Choose resources, then computers and technology.



Scroll down the page and on the left side, click on **3-D print order** . \*Alternatively, you can access the form at this link: <https://www.naperville-lib.org/forms/3d-printing-request>.

Fill out your personal information and choose your options for color and pickup location.

Add the STL file that was downloaded in the File Source area.

A screenshot of a web form section titled "File Source". It features a file upload interface with a "Choose File" button, a text box containing "No file chosen", and an "Upload File \*" button.

Solve the math problem at the bottom and click Submit.

The library average print time is between 7-10 business days. Depending on the number of jobs in the print queue, it may be done earlier. You will be emailed when your print is completed and ready to be picked up.

Thank you for participating in this self-guided activity. If you have any questions about 3-D design or printing, feel free to contact us at [digitalservices@naperville-lib.org](mailto:digitalservices@naperville-lib.org).