



Using Meshmixer to Make Tinkercad Models Look More Organic



by TheFoundryMarcel

[Tinkercad](#) is an amazing (and free!) online 3D modelling tool for all ages. By using simple geometric shapes you can create everything for cars to cats. However as my students pointed out, the end result never looks that natural...

So we experimented with [Sculptris](#), a fantastic free 'digital clay' sculpting program. [Sculptris](#) is a great program for creating more organic models however creating the overall shape of your creature can be a challenge. Many students' accidentally created comically misshapen creatures or odd protruding vertices. We tried importing our [Tinkercad](#) creations into [Sculptris](#) but the program couldn't handle the files.

We wanted the solid base of [Tinkercad](#) with the organic finishing of [Sculptris](#). Then we found [Meshmixer](#)!

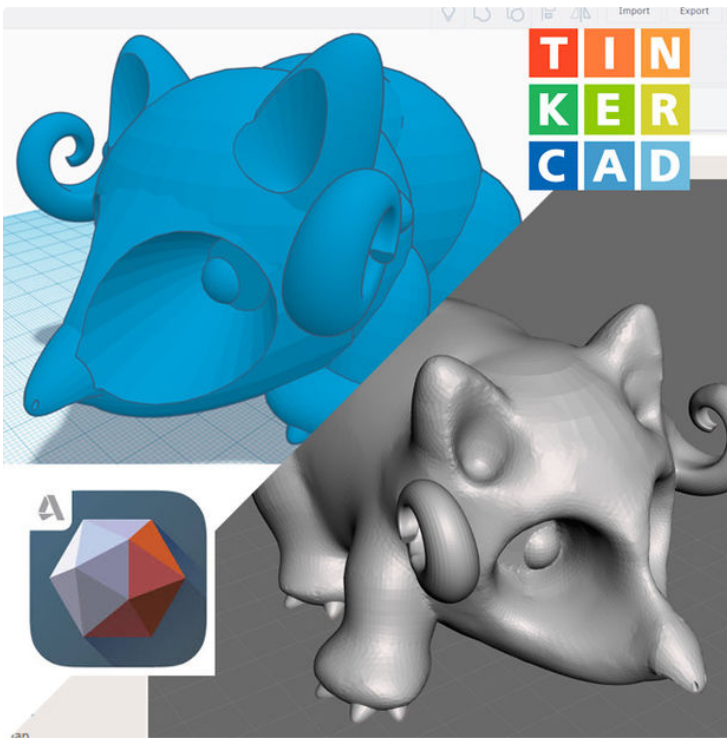
[Meshmixer](#) is a free program for preparing 3D models

for printing and has a wide range of editing tools including a sculpting section.

The aim of this instructable is to show you how you can take a [Tinkercad](#) model and edit it in [Meshmixer](#) to get a more organic finish. If you want to learn more about using [Meshmixer](#) for further editing can I recommend trying the [HoneyPoint3D Meshmixer course](#). I found it well laid out and it delves into some of [Meshmixer](#)'s more powerful functionality.

A quick side note on computer ergonomics

3D modelling and sculpting tends to take a lot of time and involve a lot of fiddling. Please make sure that you start in a comfortable position where your arms are at pleasant angle (ideally 90 degrees). Also take regular breaks. You'll be thankful for this once you have a 3D printed your creature and aren't complaining of back pain!



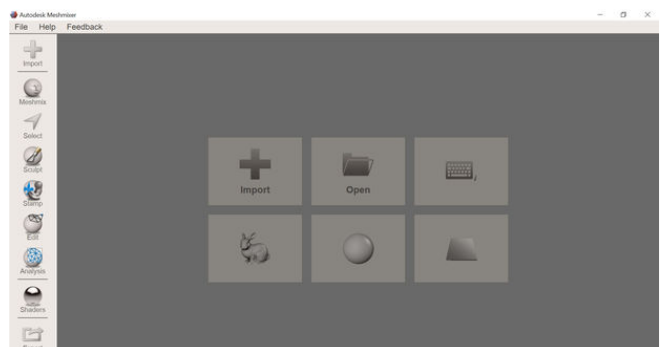
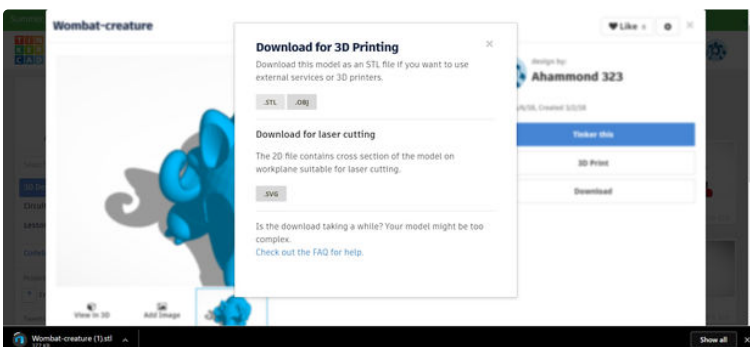
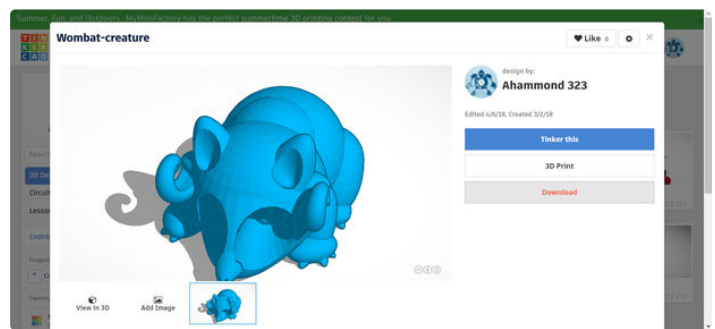
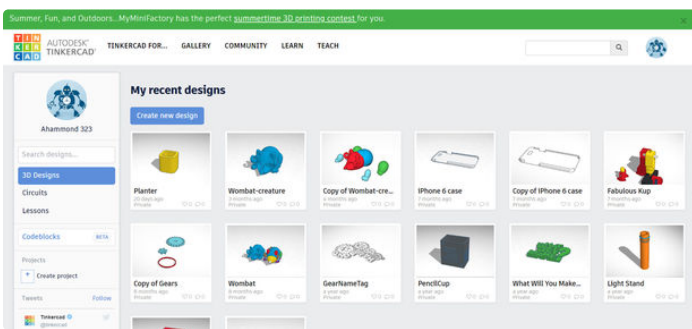
Step 1: Exporting From Tinkercad and Importing Files Into Meshmixer

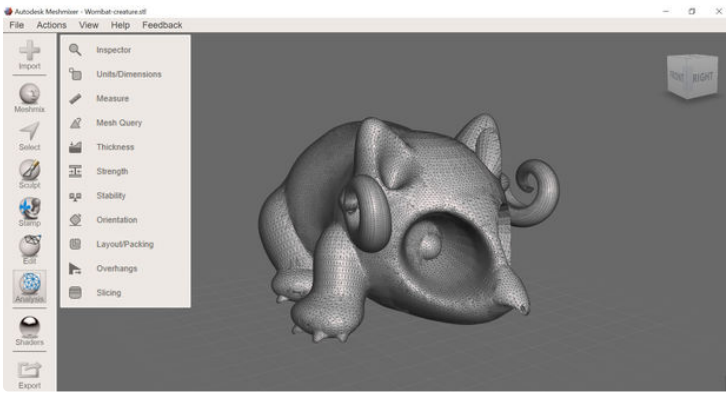
To start sign in to your [Tinkercad](#) account and find the model you want to sculpt.

Next click **.stl** and it will start downloading automatically.

Click on the model and press the download button on the right.

Now open up [Meshmixer](#) and click the **Import** button in the centre (the one with the plus icon).



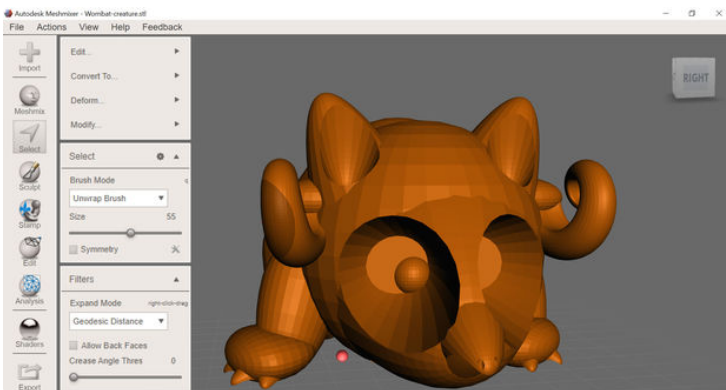
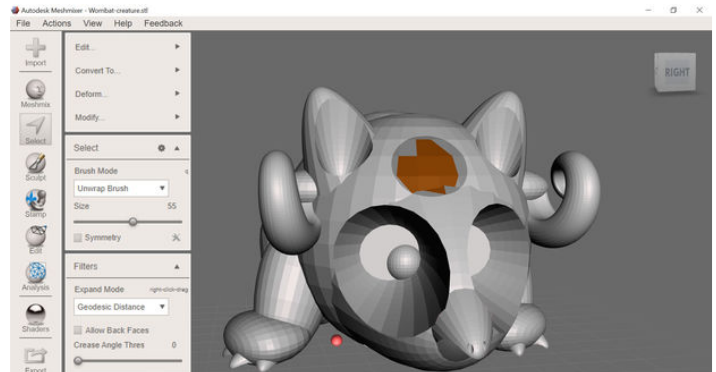
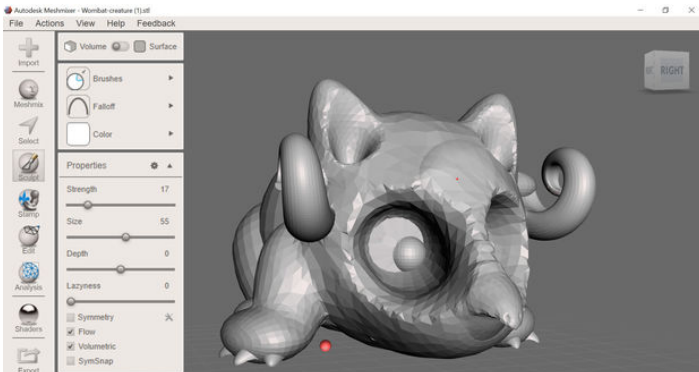


Step 2: Prepare Your Model for Sculpting

But wait, before you can sculpt your model you'll need to remesh it. Why, you ask? Check out these ugly shapes I get from the smooth tool (*the first picture*)! Yuck! That's triangular abomination instead of a beautiful soft fantasy creature. Let's remesh it fast!

First head to the **Select** section by clicking **Select** on the left side menu. Then click one part of your model.

To select your entire model press **ctl + a** on your keyboard. Then navigate to **Edit...** on the top of the menu and press **remesh**.

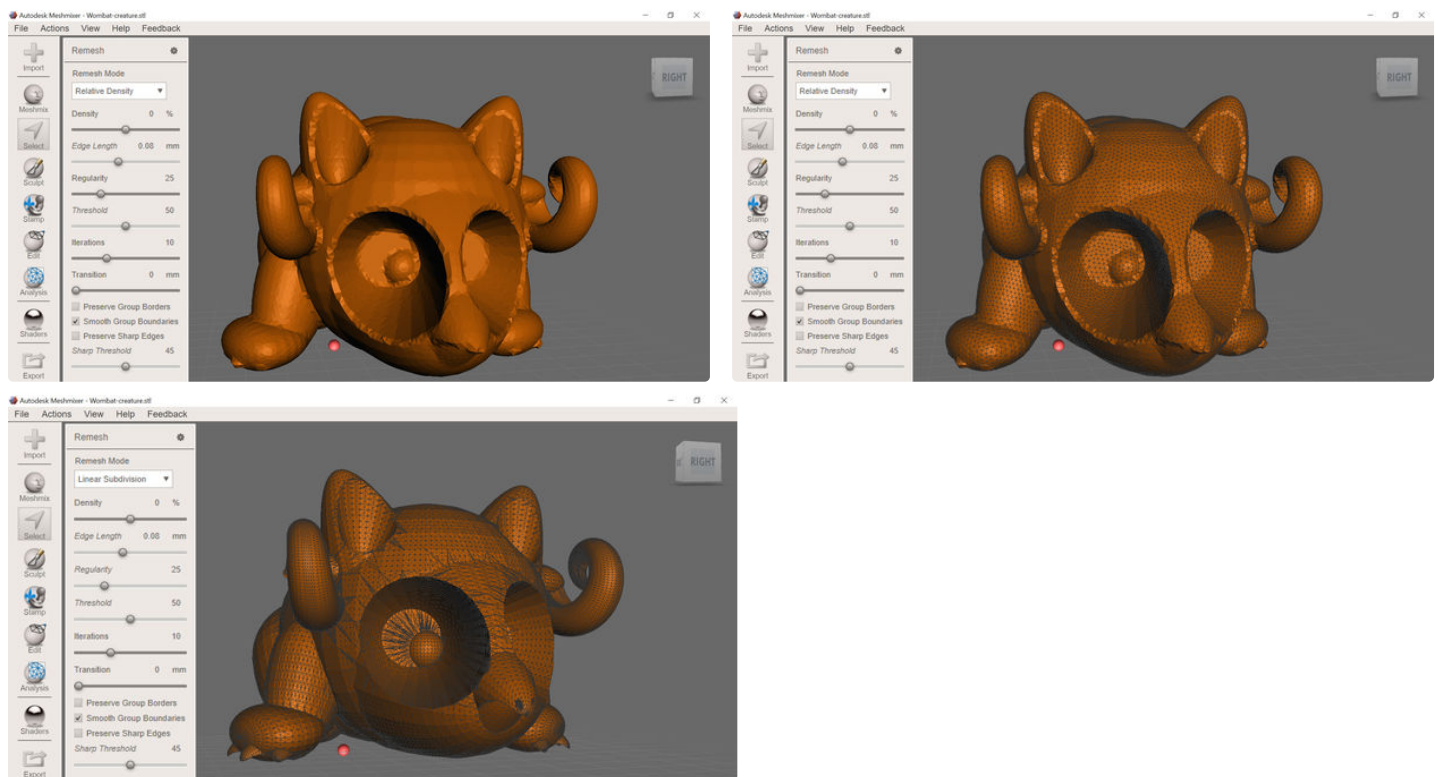


Step 3: Remeshing Options

So as you can see in the first image, Meshmixer has remeshed the creature and it looks...jagged.. Not only that but it's claws are all but gone!

So to check what's going on press **W** to see the wireframe. Here we see that Meshmixer has created hundreds of tiny triangles to cover the creature. This would probably smooth well but you may want to try another re-mesh mode to get a more accurate model.

So let's use the '**Linear Subdivision**' mode (**Remesh Mode** can be found at the top of the **Remesh** menu). Here we can see a much more accurate remesh where Meshmixer has simply sub-divided all the original faces. Notice how the creatures claws, horns and beak are sharp and crisp. This mode should be useful for models that have crisp edges.

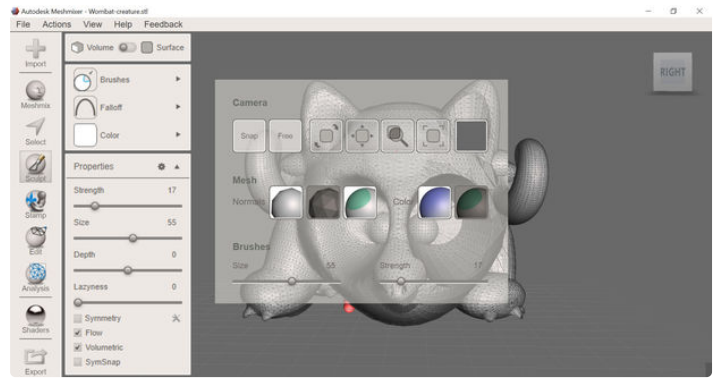
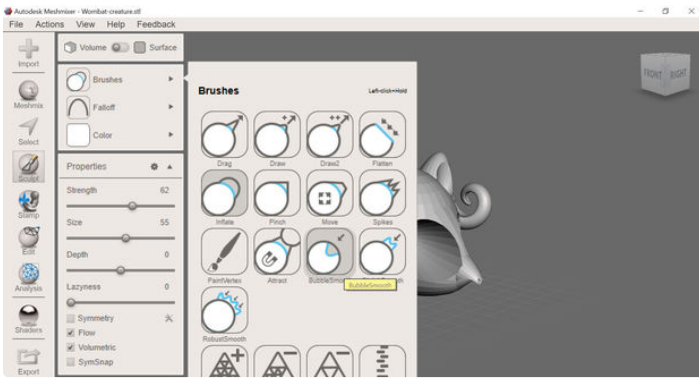


Step 4: Controlling the Size and Strength of Your Brush

Time to navigate to the **Sculpt** menu (which can be found just under the **Select** menu button). Press the **Brushes** button on the side to get a look at all the brushes available to you.

But first let's have a quick look at your brush options. Press **space bar** to get a 'quick menu' for brushes. Here you can control the size and strength of your

brush (as well as a few other colour and mesh options). This is very useful for when your sculpting because you can see the size of your brush change while you're adjusting it unlike if you change your brush size from the left menu were you'll need to keep moving your cursor off to see the actual brush size.

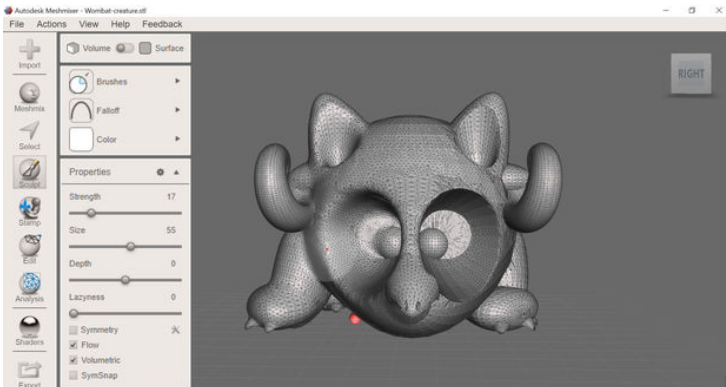


Step 5: Start With the Smooth Brush

The best way to learn how to use all the brushes in [Meshmixer](#) is to experiment with them. A great place to start is with a smooth brush.

In this picture I've smoothed the left-hand side of the creature. As you can see, the wombat creature now looks a lot less like Lego construction and more like a fantasy pet...mostly!

To use simply press the **BubbleSmooth** brush and move your cursor over the parts of your model you want to smooth.



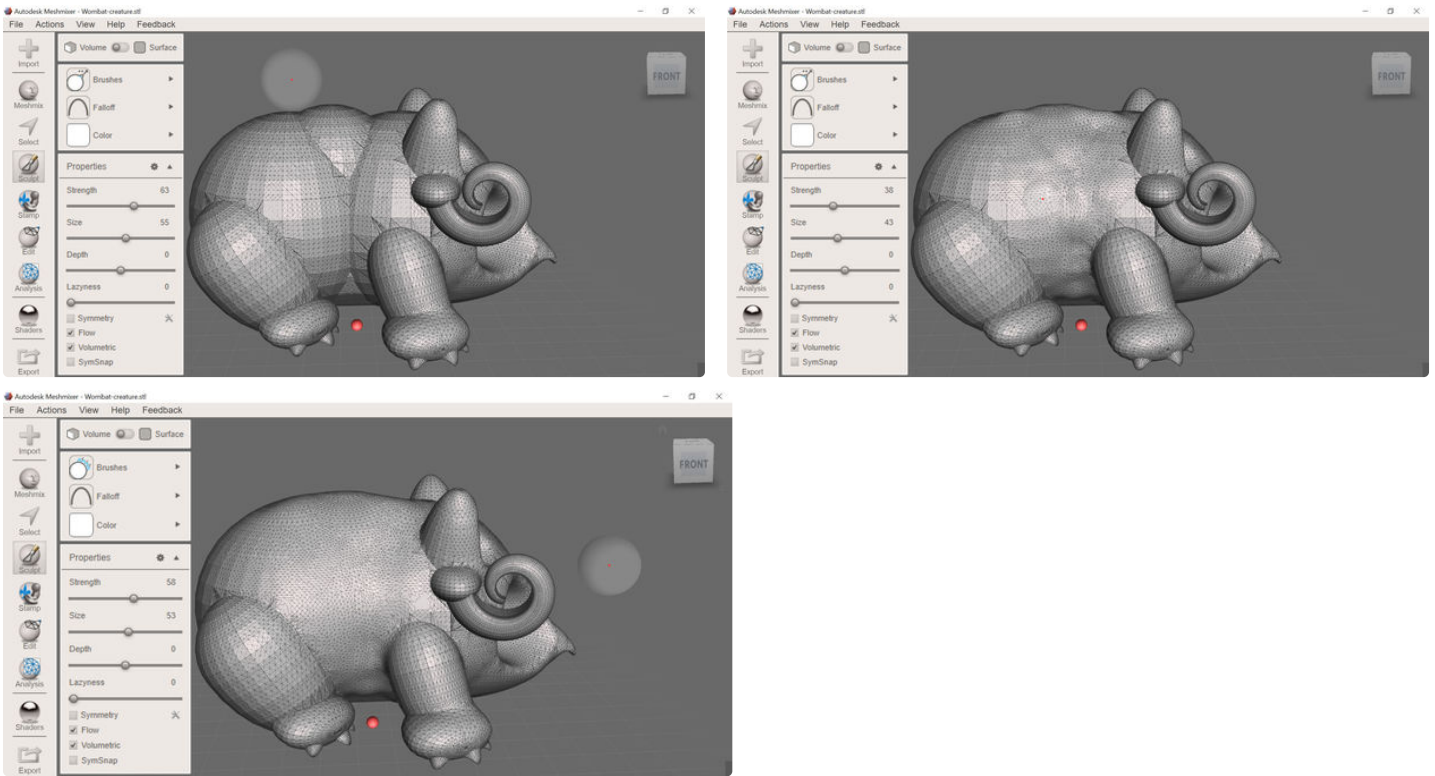
Step 6: Try the Draw Brush for Filling in Gaps

To create the creatures body I used three spheres in [Tinkercad](#). Although they gave a good approximation of a wombat's back it'd be nice if it looked a lot smoother so I'm going to fill in the gaps using a draw brush.

you see fit. Don't worry about the model look messy at this stage, just fill in the gaps and give yourself enough material to work with.

To begin with, grab a draw brush from the menu. I used the **Draw2** brush. Then just fill in the gaps as

Now use a smooth brush to smooth it all down. I used the **RobustSmooth** brush.

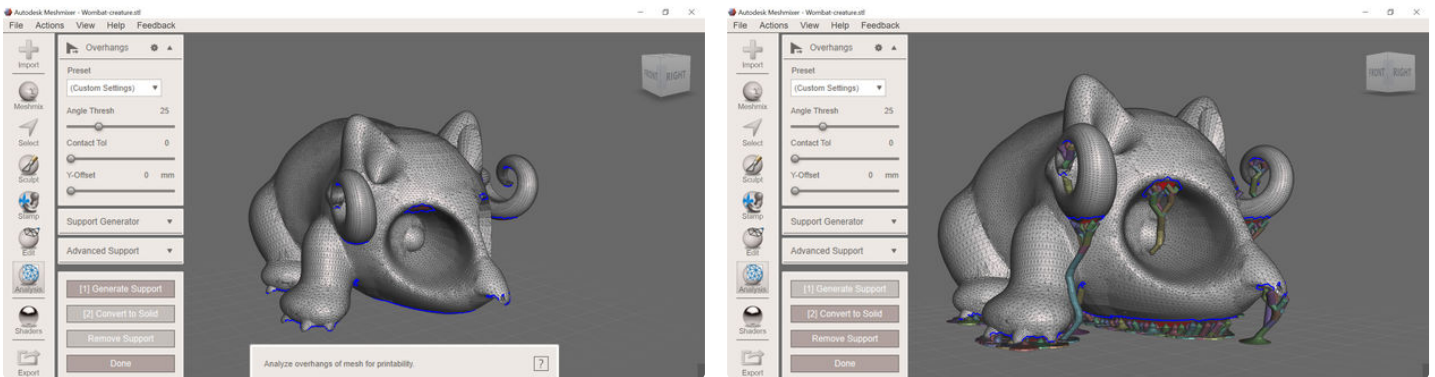


Step 7: Finishing Up and Preparing Your Model for Print: Overhangs and Generating Support

Now it's time to prepare your model for printing! Head to the **Analysis** section which can be found in the left-hand menu under **Edit**. Here you will see a range of tools to help you analyse your print. For now click on the **Overhangs** button.

When you open the **Overhangs** section Meshmixer will highlight the parts of your model that will need support in blue.

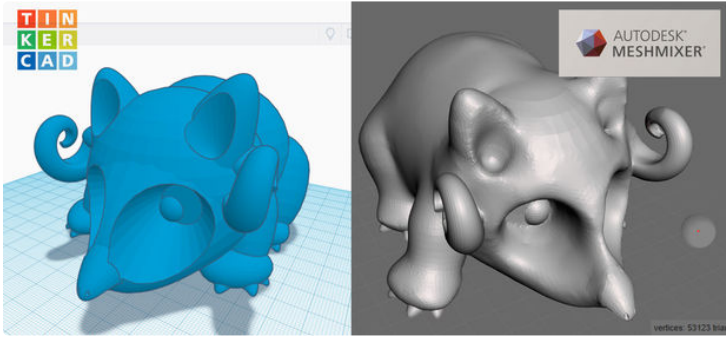
Click the **[1] Generate Support** button near the bottom of the section. You can choose to use Meshmixer's supports over those generated by your regular printer software if you wish however I usually use this as a way of seeing what parts of my model need supports. I may then choose to edit parts of your model to make it more 'printer friendly'.



Step 8: Conclusion

Tinkercad is a brilliant program for getting a solid 3D model 'base'. Combined with Meshmixer your ability to make organic looking creatures is endless! Both are powerful programs and I'd highly recommend just playing around with both to see what results you can get.

To my students, now with a little bit of work that cat you made in Tinkercad will look like a cat, so keep practicing your sculpting!



That model looks fantastic! Wonderful tutorial :)