

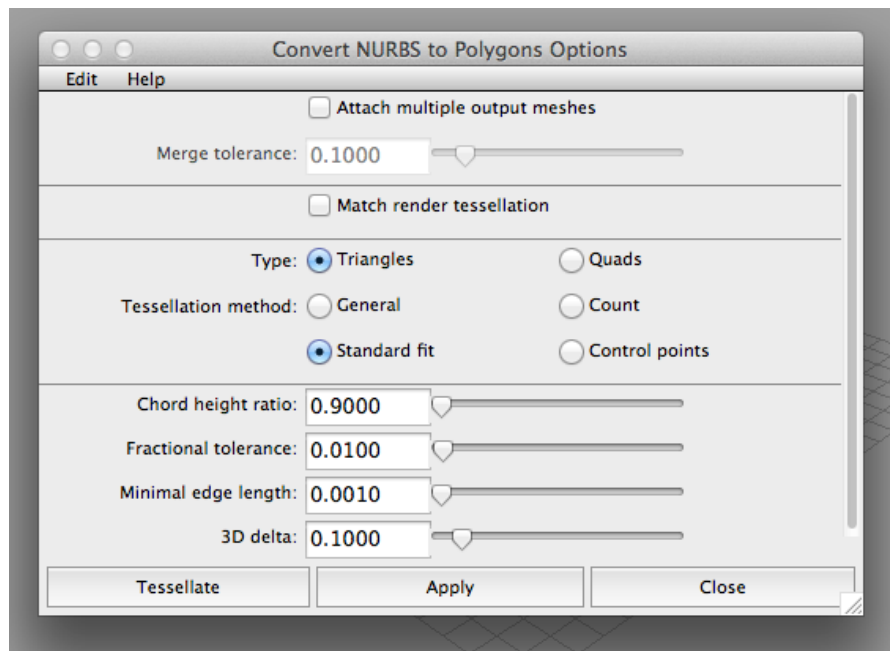
Preparing Your Models for 3D Printing

Talk to Dave Olson, Thomas Willis or Jack Wolfe when your model is ready to print.

To export your models to .STL, a format compatible with the 3D printer:

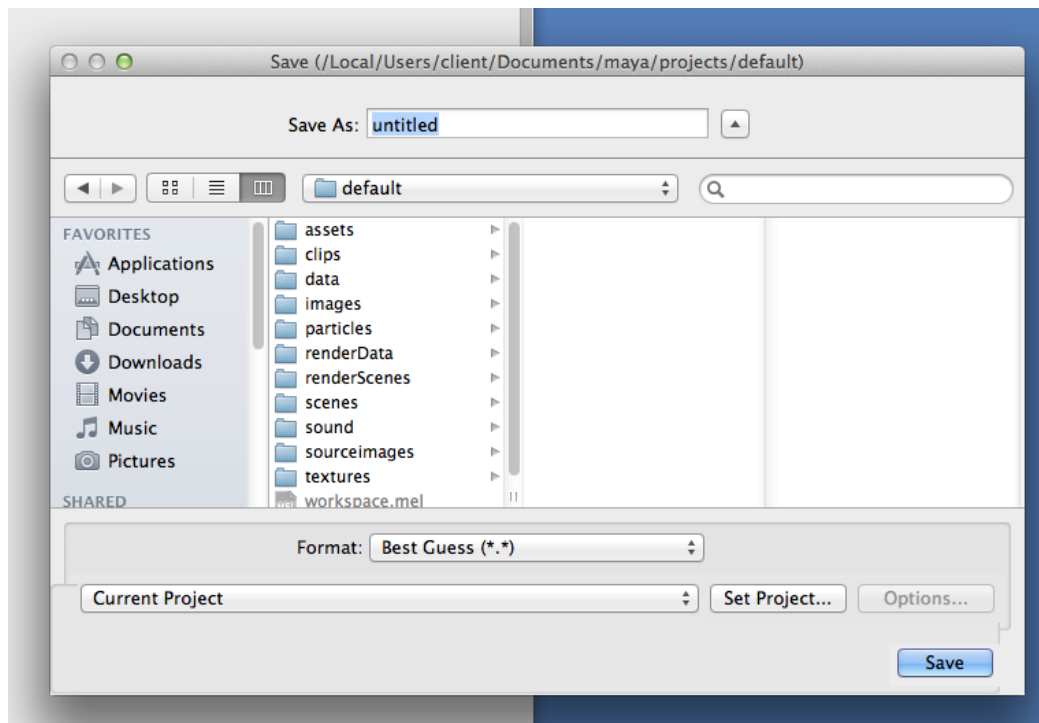
- Select the geometry in **Maya** you wish to export
 - Your model must be constructed out of **Polygons** to export properly. If your model is made out of **NURBS**:

- Select it and go to **Modify > Convert > NURBS To Polygons Options Box**



Depending on what **Tessellation Method** you select, your model will look different when converted to polygons. Try a different method and adjust the conversion settings if you are dissatisfied with the result.

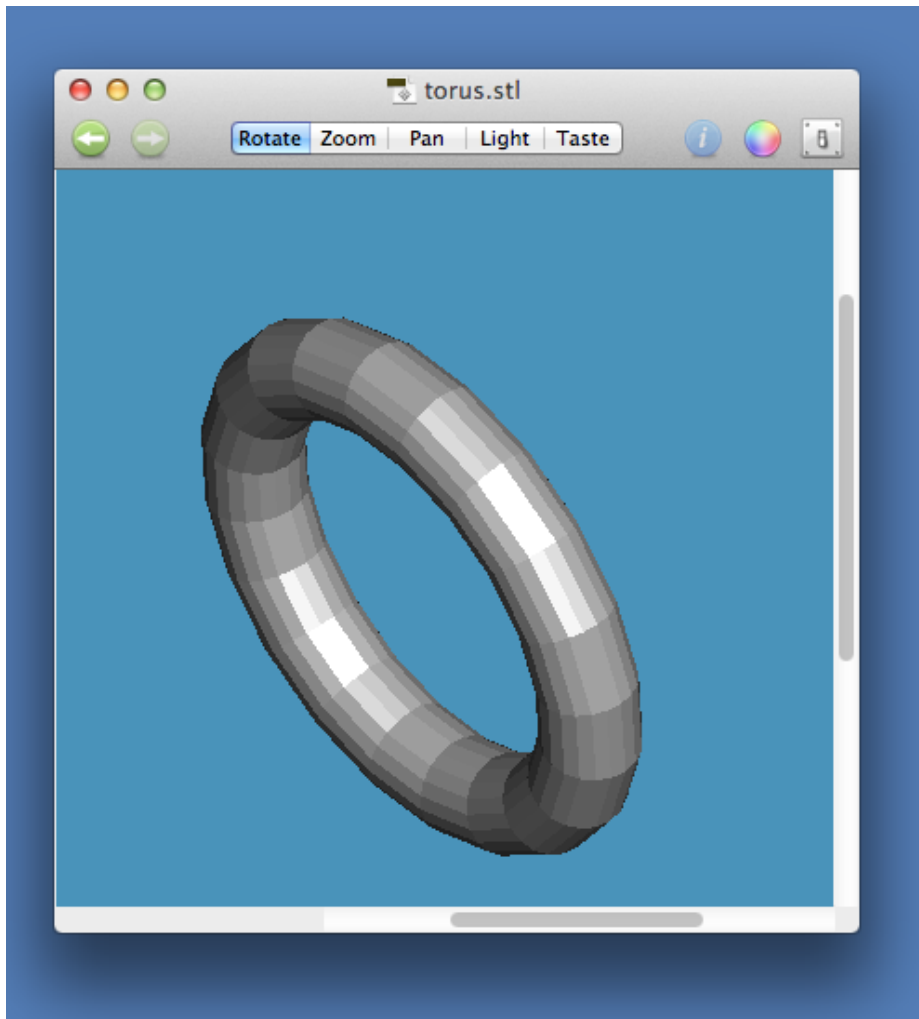
- Select the model you wish to print and go to **File > Export Selection**. Choose **STL_DCE** as the option for **Files of type** to save a copy as an STL file.
- Choose where to save your file. Ideally, you should save your file within one of your project sub-folders located in **maya/projects/(project name)**, such as the **/data**, **/assets** or **/images** folder.



- After saving your exported model, all polygonal faces will be converted to **Triangles** in a process known as **Triangulation**. Try to make sure that your model contains only three and four sided faces for the best results when exporting your model.

To view your exported .STL files outside of Maya:

- Right click on the .STL file and select **Open With > 'topeScope**



- Inside **'topeScope**, Click on the top menu buttons to:
 - **Rotate**: Click and drag to orbit around your model
 - **Zoom**: Click and drag a rectangle to zoom to a specific area
 - You can also use the mouse scroll wheel to zoom in and out
 - **Pan**: Click and drag to pan around your model
 - **Light**: Click and drag to change the light source direction
 - **Taste**: Click to display 3D coordinate values on your model (useless)
 - **Left & Right Arrows**: Undo & Redo
- Click on the **Light Switch Icon** to adjust the display settings, such as:
 - **Polygon Front & Back Rendering Mode**:
 - Display object as Polygons, Wireframe or Points
 - Enable **Bounding Box**, **Axes** or **Two-sided Illumination**
 - **Object Color & Background Color**

Tips for optimizing your models to print correctly:

- Make sure your models are “airtight”, meaning that there are no holes in your geometry. The printer will automatically add a support lattice to the interior of models ONLY when they have no holes; otherwise, the prints will not have rigidity and may collapse or break.
- Very small details on your model (for example, quills on the back of a porcupine) may be too brittle and break off when you try to print your model or remove it from the build platform. Try to use thicker walls when designing your object to avoid this from happening.
- Top heavy models (like a hot air balloon) may collapse under their own weight while printing. When possible, rotate your models so that the thickest parts are closest to the build platform and the thinnest walls are pointing upwards.
- Models with large overhanging structures (like an arch or an upside-down letter L) need thicker walls to prevent collapse while printing.
- If your model includes type, use larger and bolder fonts to maximize readability.