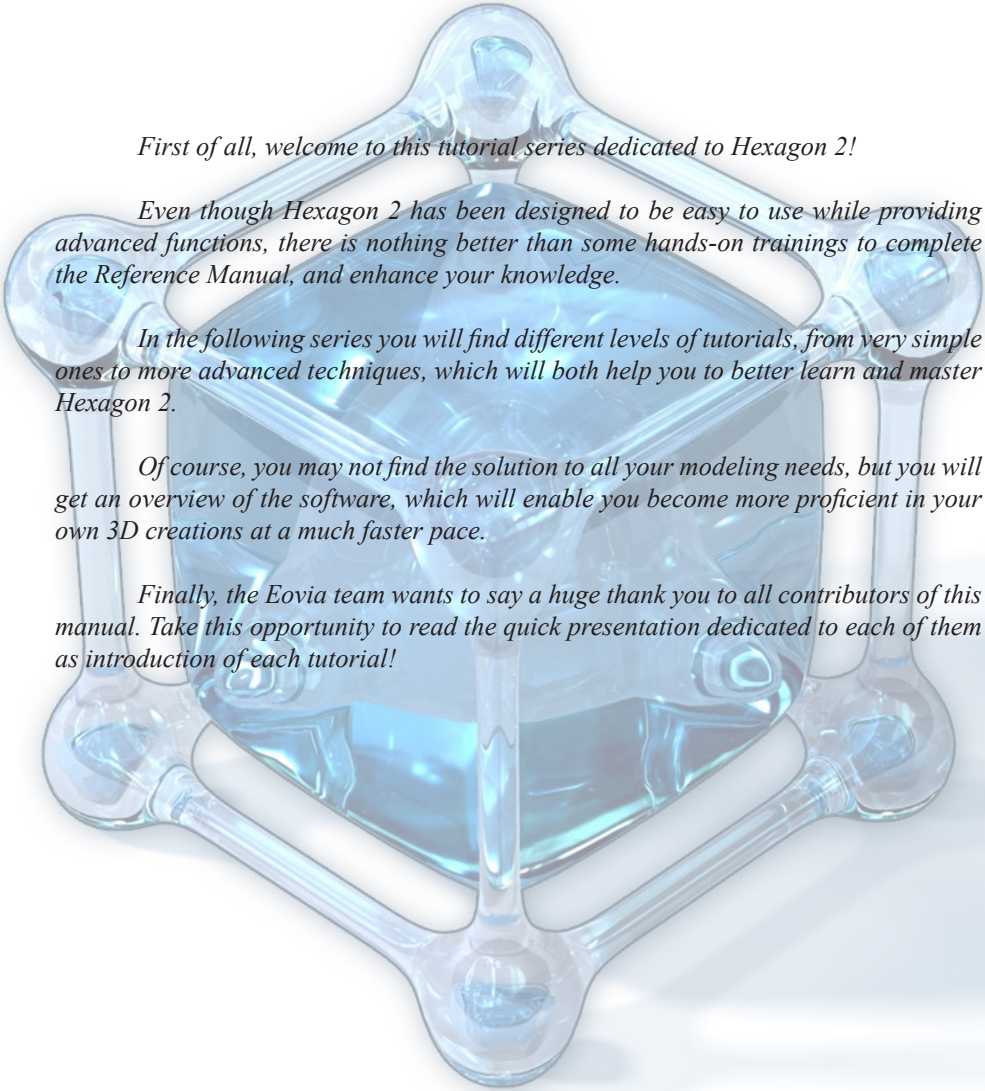
ABOUT



First of all, welcome to this tutorial series dedicated to Hexagon 2!

Even though Hexagon 2 has been designed to be easy to use while providing advanced functions, there is nothing better than some hands-on trainings to complete the Reference Manual, and enhance your knowledge.

In the following series you will find different levels of tutorials, from very simple ones to more advanced techniques, which will both help you to better learn and master Hexagon 2.

Of course, you may not find the solution to all your modeling needs, but you will get an overview of the software, which will enable you become more proficient in your own 3D creations at a much faster pace.

Finally, the Eovia team wants to say a huge thank you to all contributors of this manual. Take this opportunity to read the quick presentation dedicated to each of them as introduction of each tutorial!

A WILD SPACE CREATURE

This tutorial, called « A wild space creature » will show you a basic technique called « Box Modeling ».

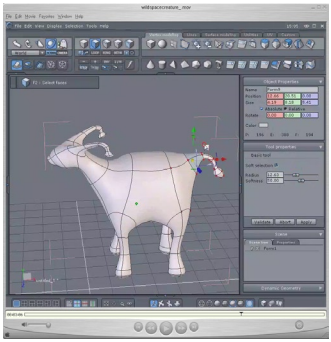
Note: This tutorial has been made in Hexagon 1.2, but works the same in Hexagon 2

About the Autor:

Thomas Roussel is behind most of the Hexagon workflow and ergonomy. He is also the owner of Eovia3D.net, a dedicated website and forum about Hexagon, Carrara & Amapi and also the owner of Polyloop, a company dedicated to 3D video training and various contents.

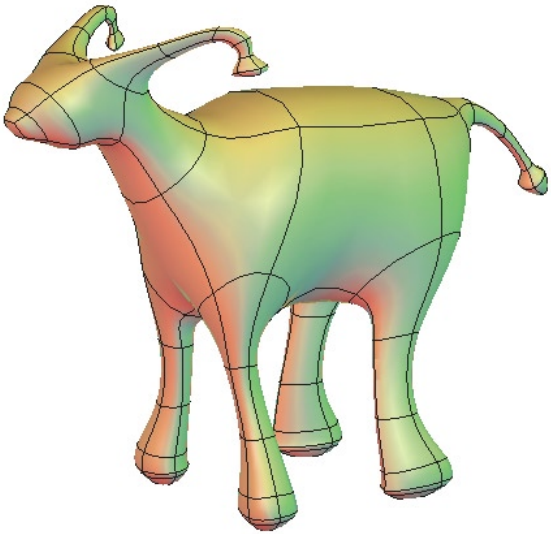
You can visite both website and talk with Thomas on the Eovia3D.net forums.
http://www.Eovia3D.net
http://www.Polyloop.com

1. The video



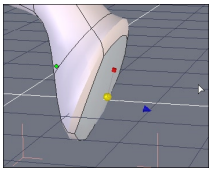
Watch the video!

2. The finished model



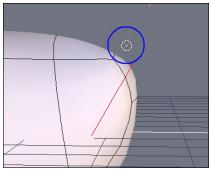
The result of the video.

1.3. Explanation of the important steps



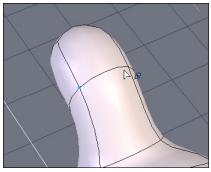
- The start is simple: create a cube and apply two levels of smoothing to it.

- Next select a face from the back, then extrude it with Fast Extrude. The tool is first selected by its icon in the Vertex modeling tab, then from there on by its keyboard shortcut, (Ctrl while face is selected).



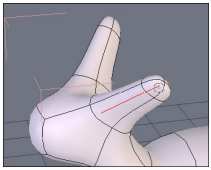
- Once the body is done, it is time to put a tail on our creature. For this, the simplest is to use the Sweep tool. Select the back polygon, then the Sweep tool. An extraction of the polygon appears, following your mouse moves. With the right click (Ctrl+click on the Mac), you can modify the size of the new section.

- Create as many sections as you want, and validate with the Enter key.

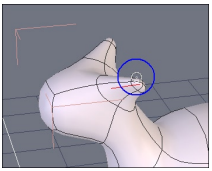


- For creating the corns on the head, the Sweep tool is used again, but this time with a selection of points.

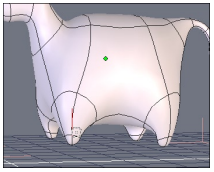
- In Select points mode, select the first point, and then with Shift, select the second.



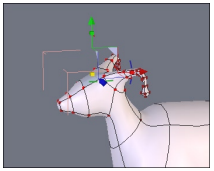
- Now take the Sweep tool. Unlike the tail, which had only one polygons, the corns are made from just two points, and Hexagon extrudes in a mirrored fashion.



- If necessary, again use the click+right during the Sweep to modify the radius of the extrusion.
- Validate the tool at the end of the last section.



- For the feet, use the same technique as the horns: multi selection of points, then take the Sweep tool, and modify the size with a click+right.
- During the operation, press the Space bar repeatedly, to cycle through the options of extrusion and see the results.



- Now that the body is done, it is time to polish the form a bit.
- In the Tool options palette of the 3D manipulator, (Universal manipulator in the video) activate the Soft Selection option: it lets you modify the form with more delicacy.
- Modify the radius of influence of the soft selection, and make as many modifications as you want, until you are happy with your creature!

A CARAFE

This tutorial, called "Carafe" will show you the basics of surface modeling, as well as some utilities.

Note: This tutorial has been made in Hexagon 1.2, but works the same in Hexagon 2

About the Autor:

Thomas Roussel is behind most of the Hexagon workflow and ergonomy. He is also the owner of Eovia3D.net, a dedicated website and forum about Hexagon, Carrara & Amapi and also the owner of Polyloop, a company dedicated to 3D video training and various contents.

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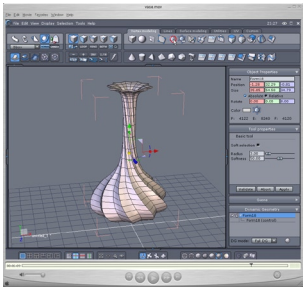
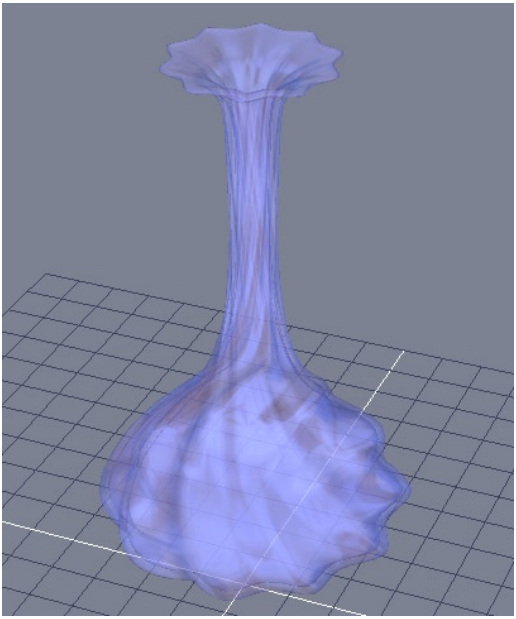
1. The video



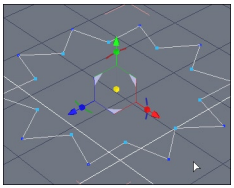
Watch the video!

2. The finished product



The result of the video.

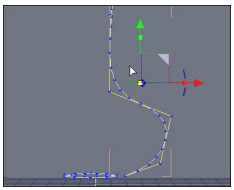
3. Explanation of the important steps



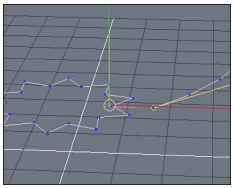
- Before you start, choose Full DG in the Dynamic Geometry palette.

- To start off the carafe, you will first make the curves that will construct it. A section (the base) and a profile will be needed. For the section, start off with a circle, and select one point out of two using the 1/n tool, in Select point mode.

- With the scale manipulator, change the scale to make a star shape.

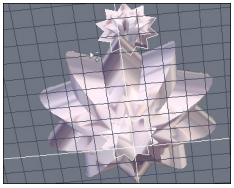


- Draw a profile with the curve tool: you will be able to come back and edit the curve after, thanks to the Dynamic Geometry.

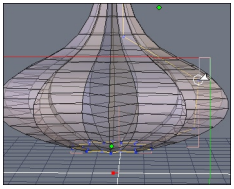


- Once these two curves are finished, you will connect them for a better extrusion.

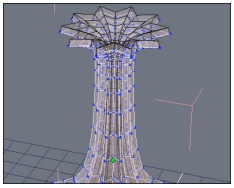
- Select the profile, then the Snap/align tool. Click on the point at the base of the profile, then on one of the quarter points of the base circle. The profile snaps to it!



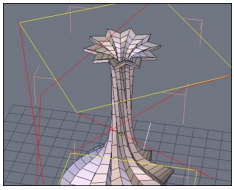
- Select the base section, then select the Extrude tool, then click on the profile. The form appears. Before validating the tool, click under the carafe on the white outline that indicates an opening, to close the bottom. Validate the tool



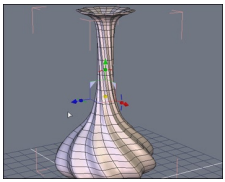
- To further modify the control curves of your carafe, use the Stretch tool, in the Utilities tab.



- To make the carafe more realistic, you can give it a constant thickness by selecting the Thickness tool.
- Validate the tool after you choose your thickness with the +/- keys.



- Now, apply a deformation to your carafe. Select the Twister tool, and move the yellow rectangle on the top of the bounding box to twist it a bit.
- If you want, use the other deformation tools: Taper and Bender.



- A final touch is to add some smoothing to give your carafe a softer look, with less polygons visible.
- If necessary, add a material to your object.

SHORT TUTORIALS

This is a set of short tutorials, made by Grendel, using various modeling tricks in Hexagon.

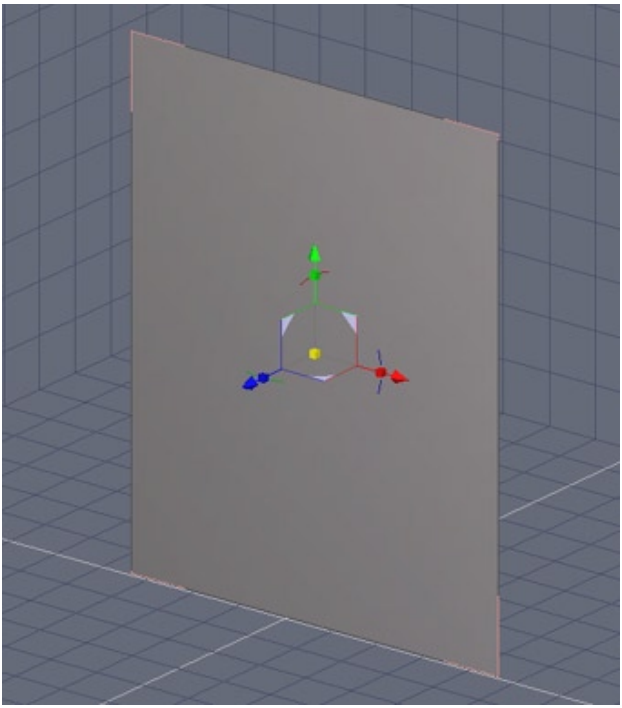
About Grendel, in his own words:

My name is Orlan Lyle but most of may know me as Grendel from Eovia3d.net. I now work for an offshore drilling contractor as a subsea engineer after a nine year career in the US Navy.

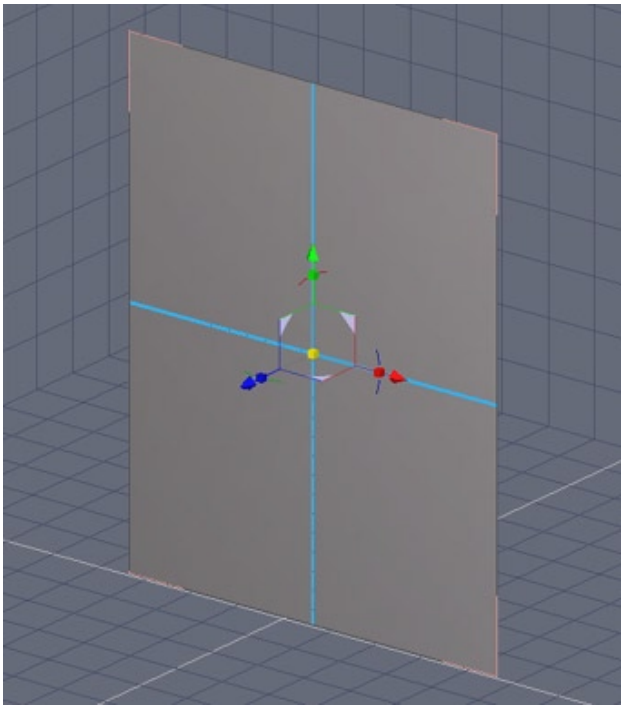
I started in 3d about 3 years ago with a free version of Realsoft 3d from a magazine. Since then I have moved from several different packages trying to find a good fit for me and now use Eovia products for most of my work.

Starting with Carrara and then Hexagon and I enjoy their ease of use power versus their cost. I started with mostly mechanical modeling from my CAD background but have started doing more organic work after using Hexagon.

1. A Window

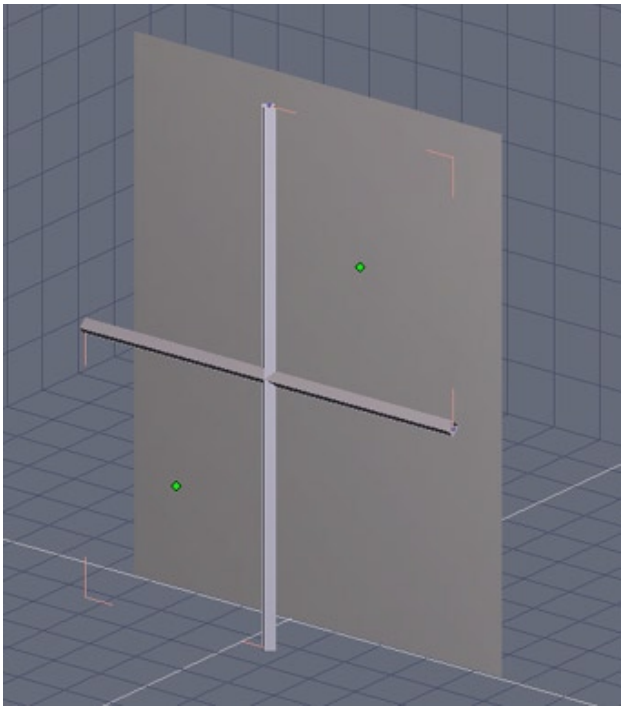


Open the 3d Primitives tab and create a grid with a single polygon.



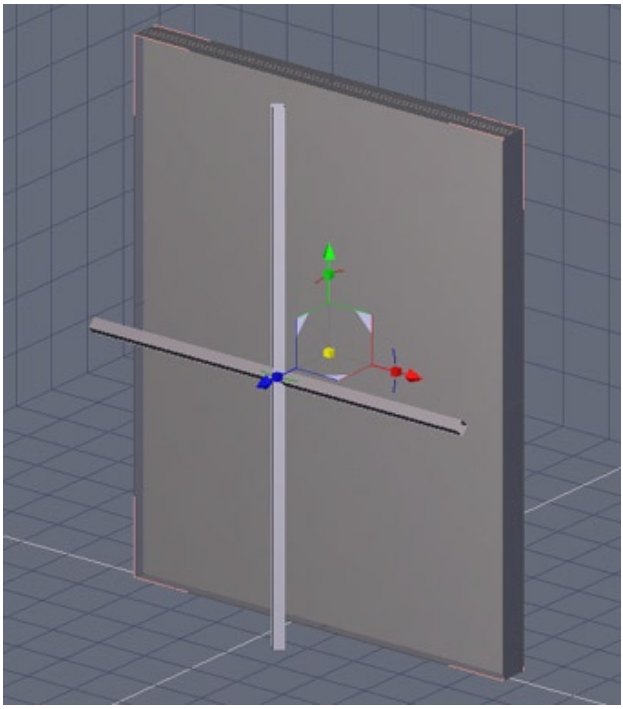
Select the single polygon and open the Vertex modeling tab.

Select the Quad Tesselation tool from the Tesselate dropdown menu: This will automatically divide your poly into fourths.



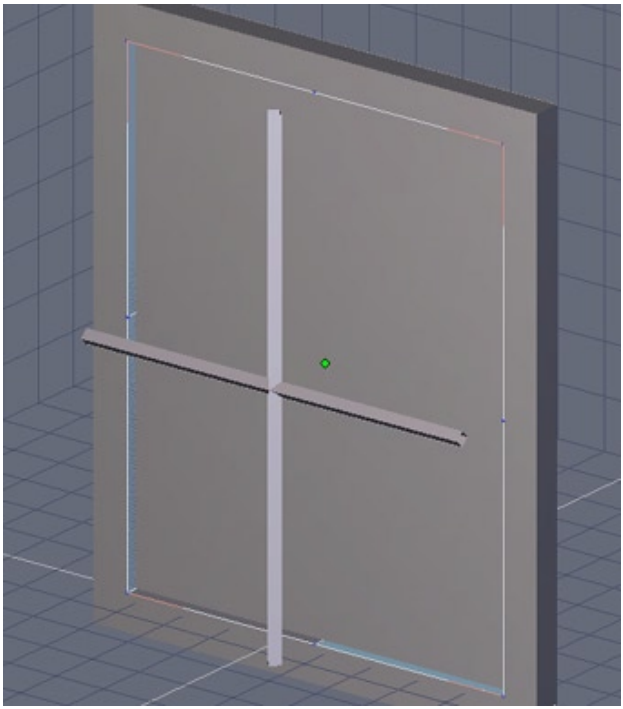
Select the vertices we have just created with the Quad tesselate tool and copy/paste them.

Then open the surface modeling tab and select the Thickness tool. Change the number of points to four.

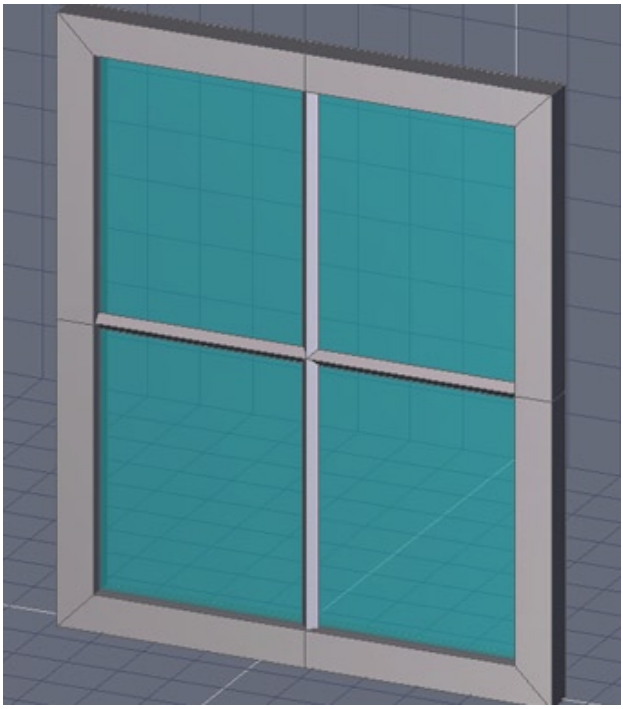


Select your four polygon grid and use the Thickness tool again to create the glass for your window pane.

Then select outer diameter polygons and copy/paste them as well and scale slightly so they are deeper to form the window frame.

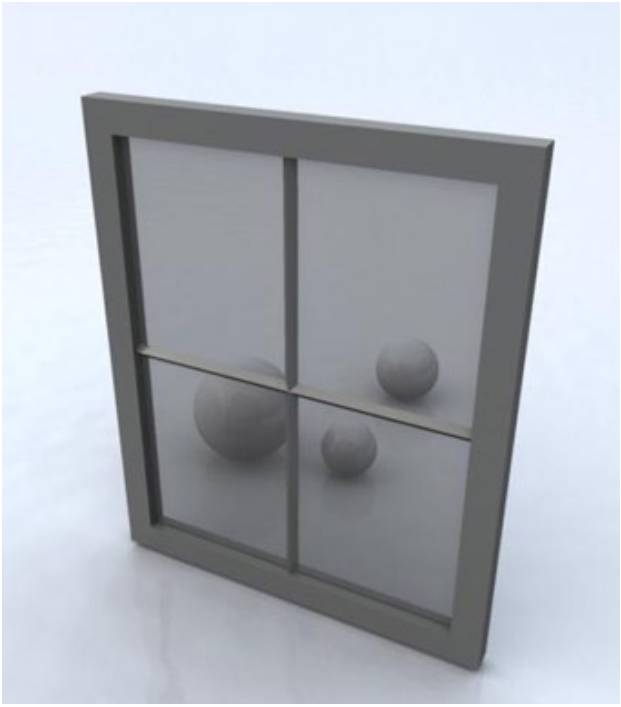


With the frame polygons selected use the Thickness tool again to grow the frame outward.



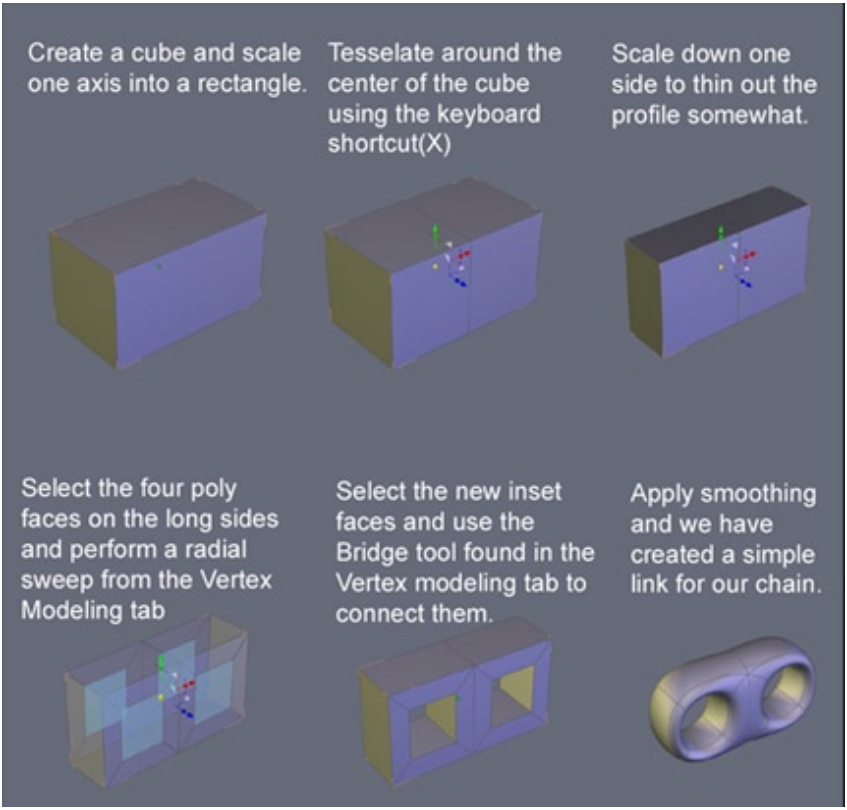
Position the cross piece back to the center of the window pane and we are finished.

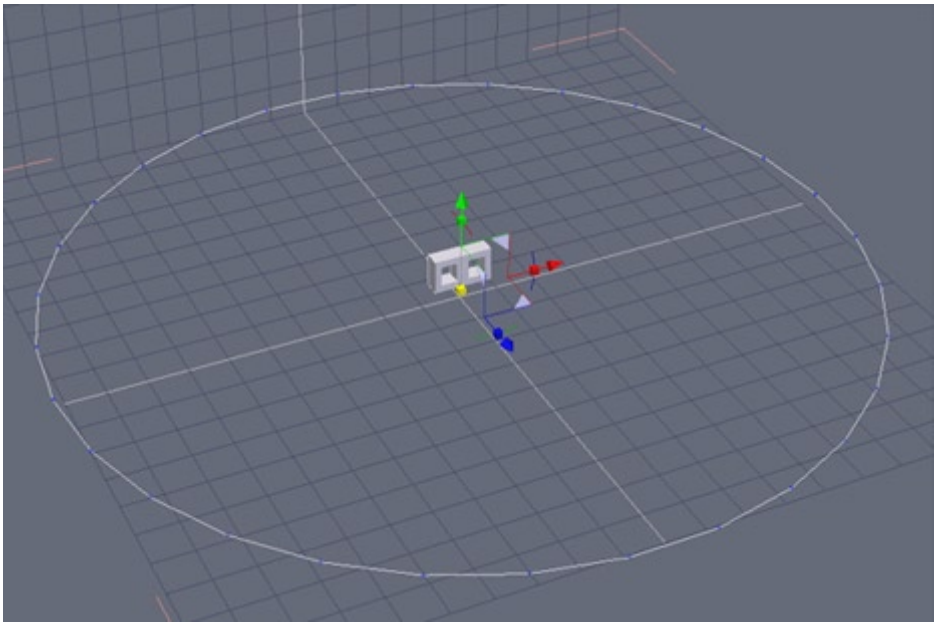
Materials that are transparent can be added for the window glass.



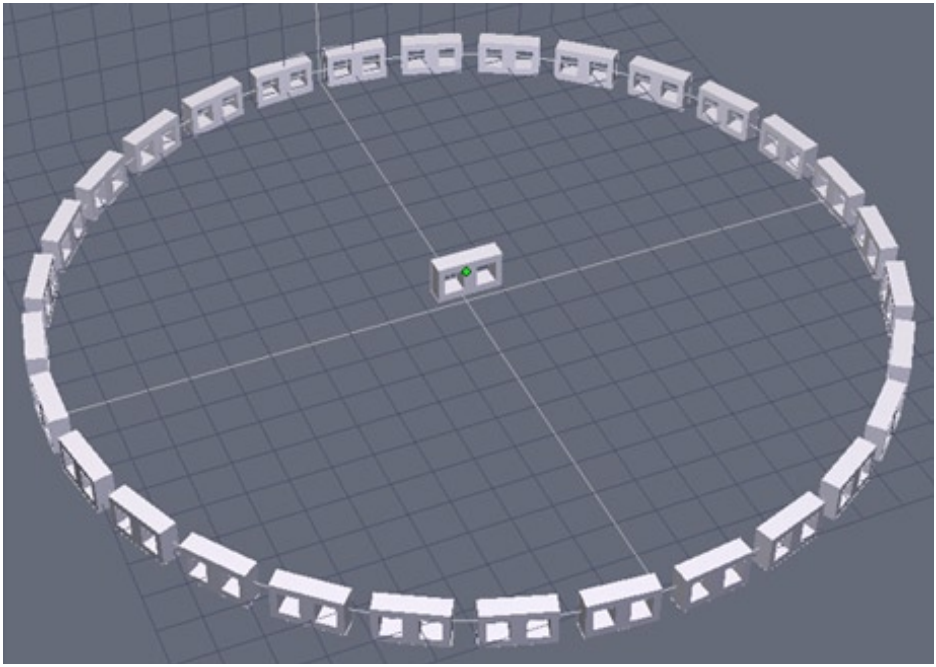
A simple render with our four pane window we just created.

2. A Necklace


Create a cube and scale one axis into a rectangle.
Tesselate around the center of the cube using the keyboard shortcut(X)
Scale down one side to thin out the profile somewhat.
Select the four poly faces on the long sides and perform a radial sweep from the Vertex Modeling tab
Select the new inset faces and use the Bridge tool found in the Vertex modeling tab to connect them.
Apply smoothing and we have created a simple link for our chain.

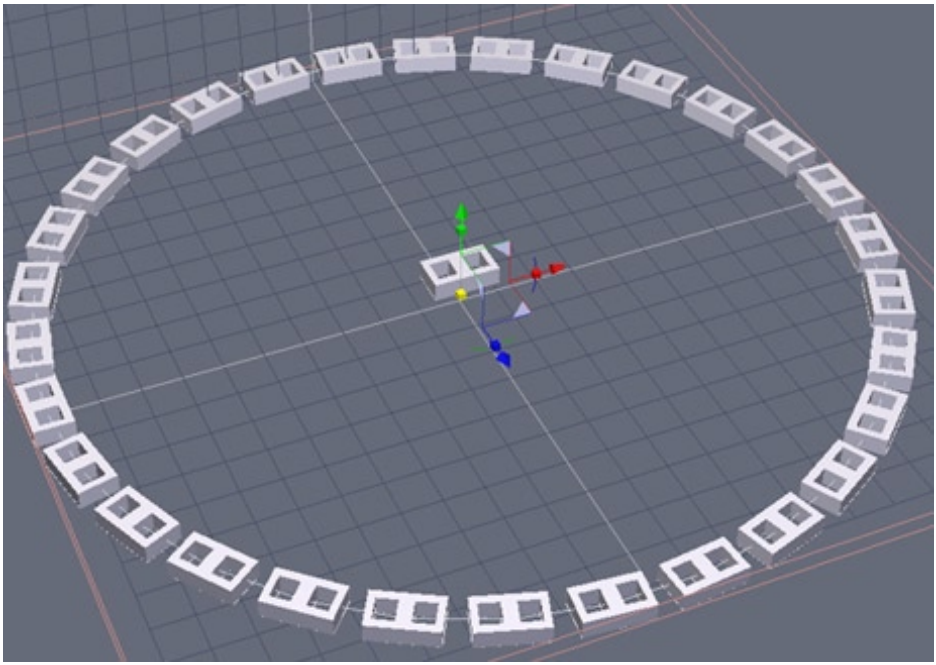


Create a circle with half the number of points equal to the number of links you want in your chain from the Lines tab.

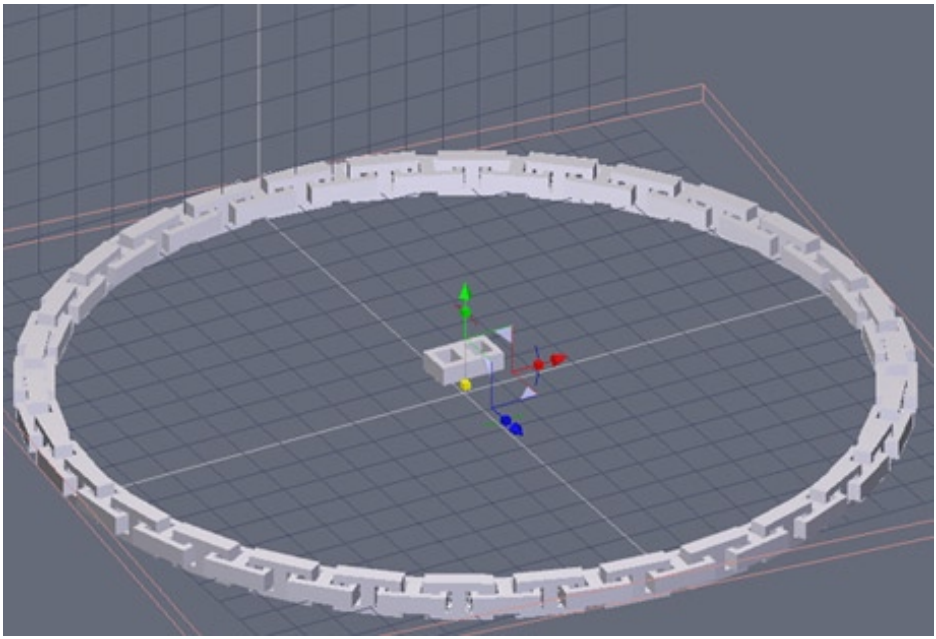


Select the link and in the Utilities tab choose the Copy on Support tool then select the circle line.

You may have to adjust the scale of the link in the properties palette so when we create the alternate links they appear linked together.

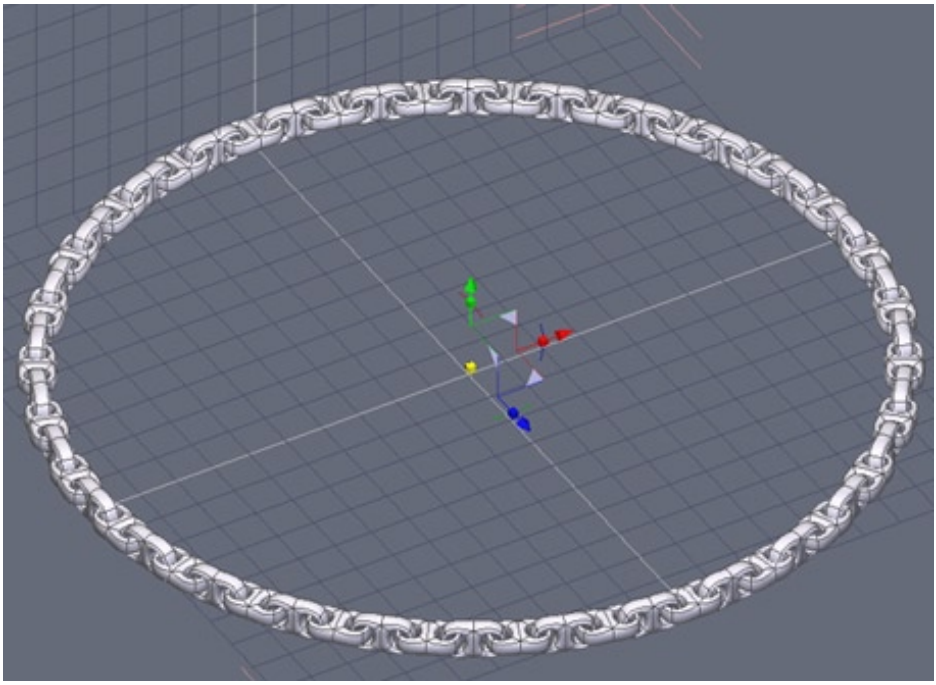


Rotate the link 90 degrees and then use the Copy on Support function again. We have now made the alternate links for our chain.

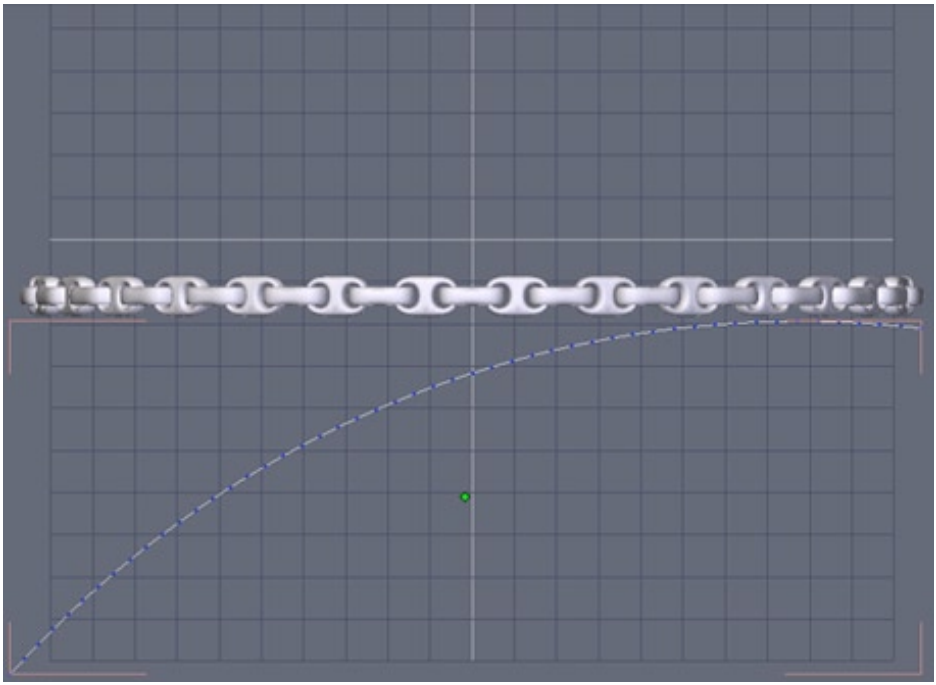


Select one of the groups and rotate until the individual links appear to alternate and are linked together.

The select both groups and weld them together using the Weld tool in the Surface modeling tab.

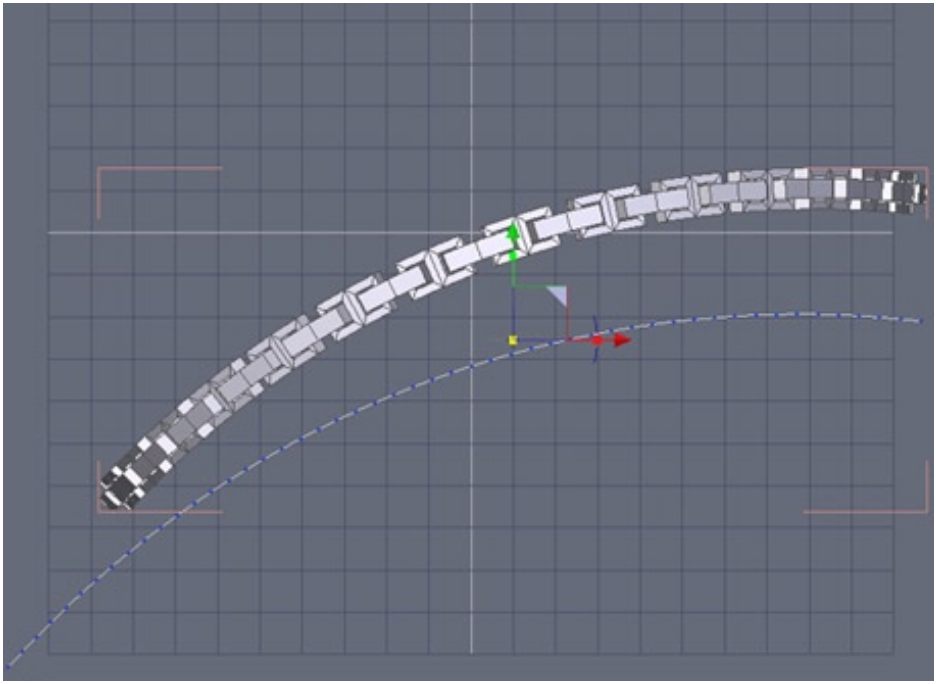


With smoothing applied we can see now that we have what appears to be a continuous chain of alternating links.



Create an arc similar to the one shown above using the Arc tool in the Lines tab similar to the one shown below. We are going to deform the necklace using the arc as a path.

Ensure there are sufficient points in the arc to give a gradual deformation to the chain (40+), insufficient points will give an undesirable jagged look to the chain mesh.

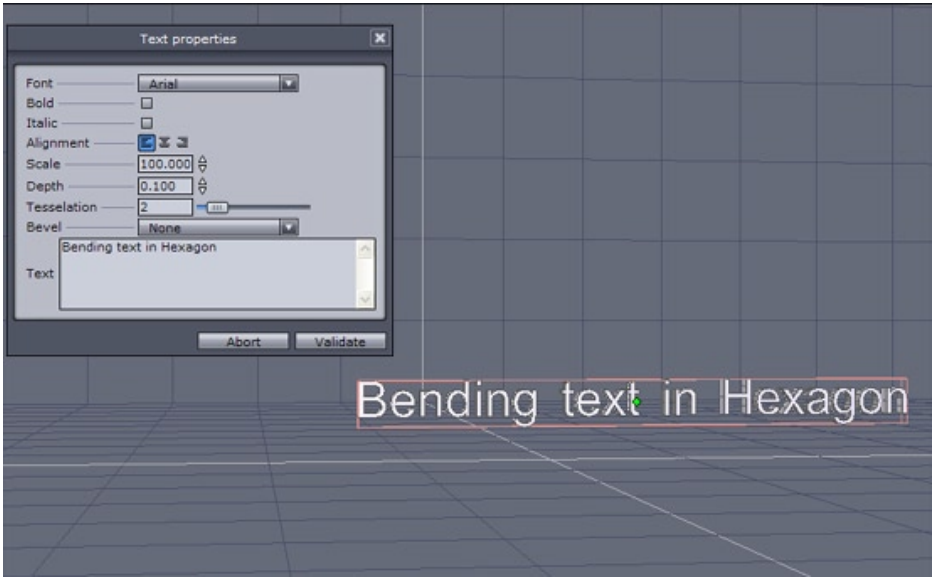


Select the chain and then open the Utilities tab, select the Bend tool and then select the arc.

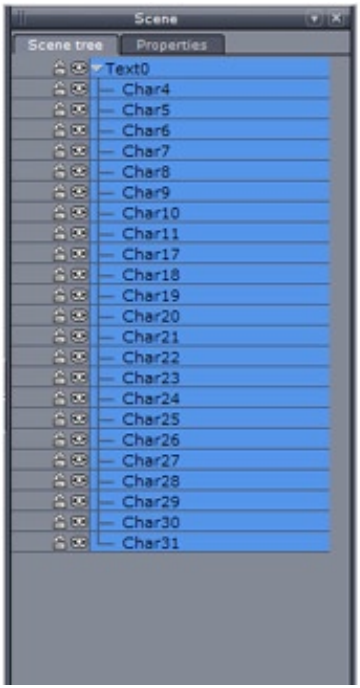
We have now bent the chain along the profile of the arc giving a pleasing arc to the chain.

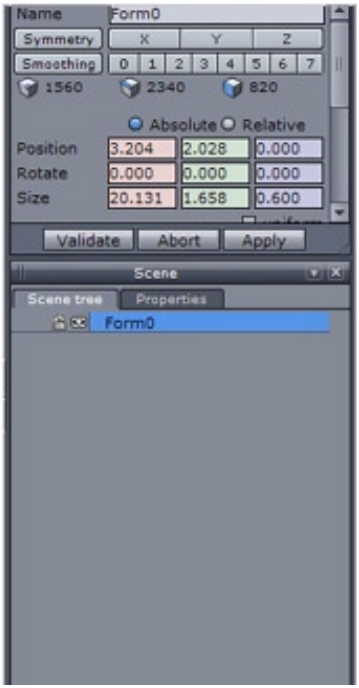
A rendered version of the chain we have just created with a simple pendant attached for decoration.

3. Bending a text



To create curved 3d text in hexagon let's start by inserting a Text 3d object found in the 3d Primitives tab



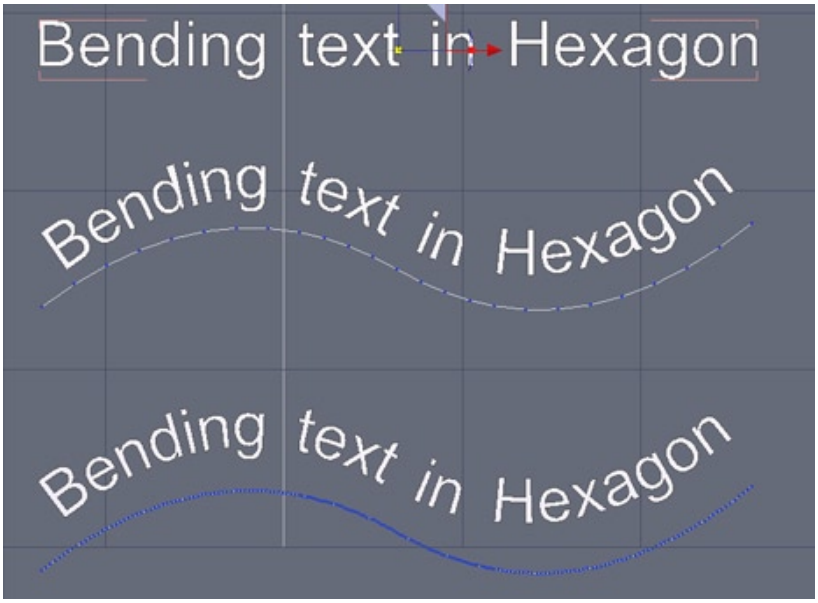


When text is created in Hexagon each character becomes an individual object in a single group as shown below on the left.

For the bend tool to affect the entire string we need a single object. To make the characters into a single object expand the group in the scene palette ensuring all the characters are highlighted and then select the Weld tool from Surface modeling tab.

You should now have a single form as shown on the right.

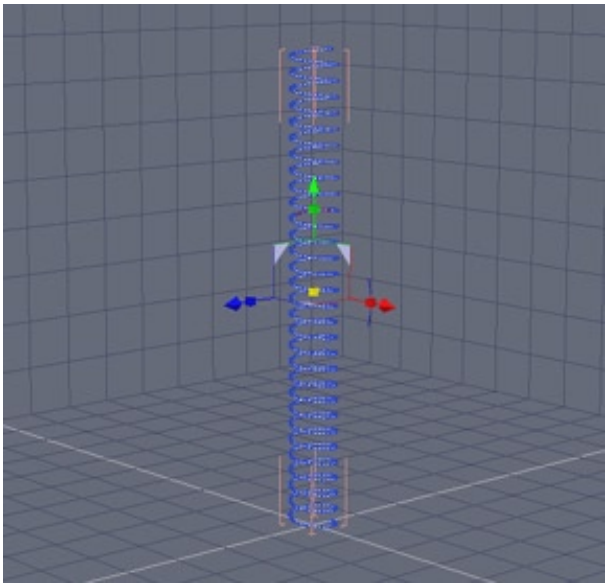
Create a curve for the letters to be bent along from the Lines tab.



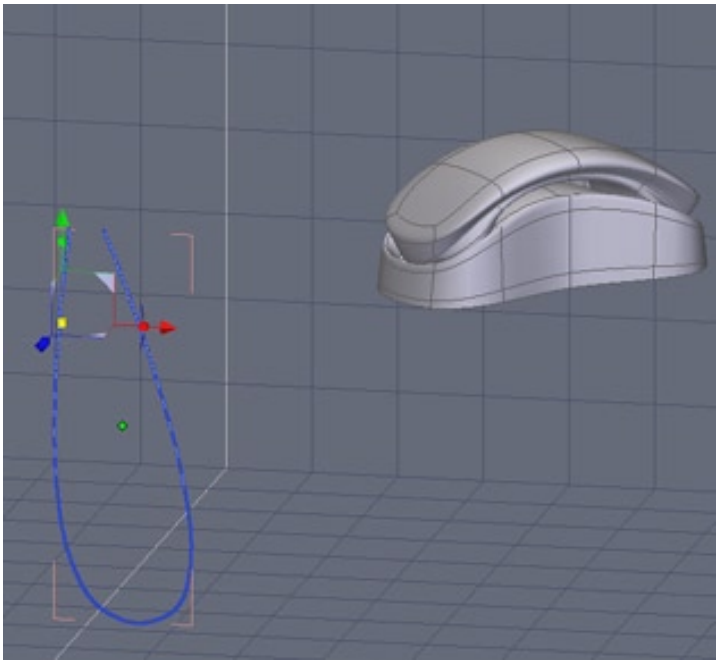
Select the text object and then use the Bend tool in the Utilities tab and select the curve. The middle example shows some distortion of the characters caused by an insufficient number of points in the curve.

Increase the smoothing in the Vertex modeling tab for a smoother and distortion free bend deformation as shown in the bottom example.

4. A PHONE COIL CORD



Create the basis for our coil cord using the helix tool found in the Lines tab. Ensure the radius at the beginning and end are the same and enter a value of twenty for the number of slices.

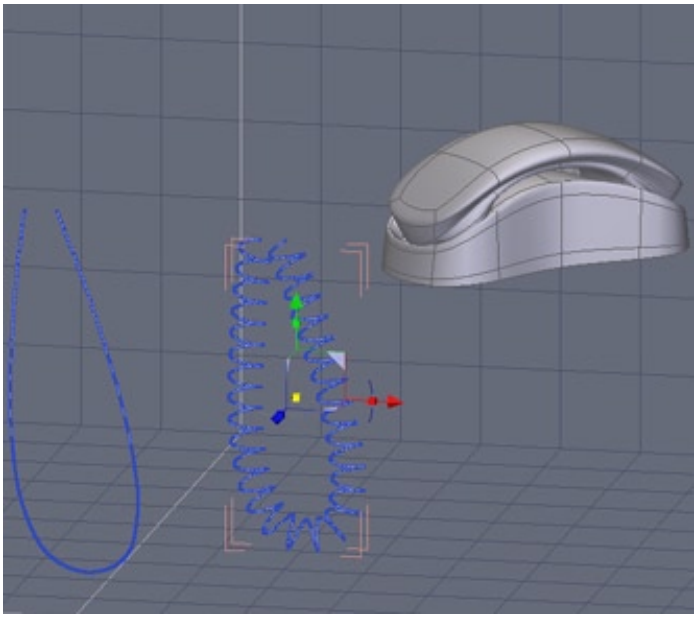


To bend the helix into the U-shape we require we will create a u-shape line with either the interpolated curve, spline curve or bezier curve all found in the Lines tab.

The most important thing is to have a large quantity of points on our guide curve for the bend to look its best.

You can add points to a line by increasing the smoothing in the Vertex modeling tab.

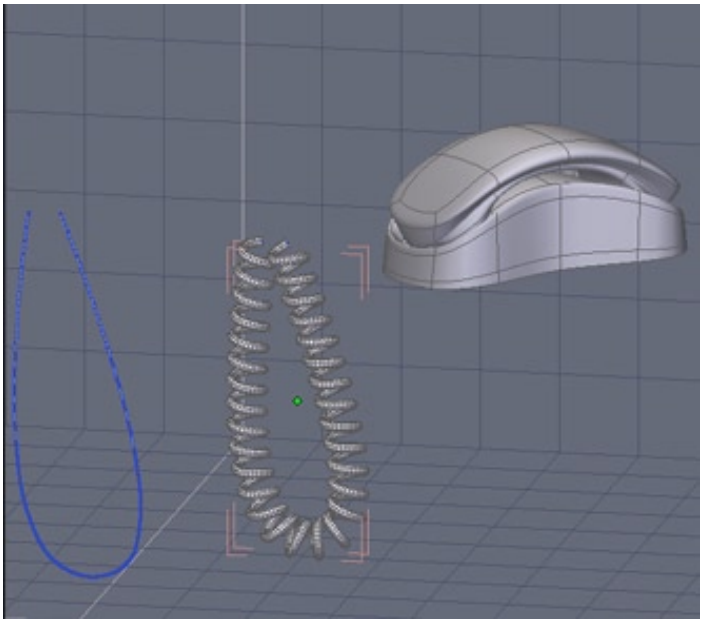
A helpful tip is to think of each point providing influence to the object being bent so the more the better



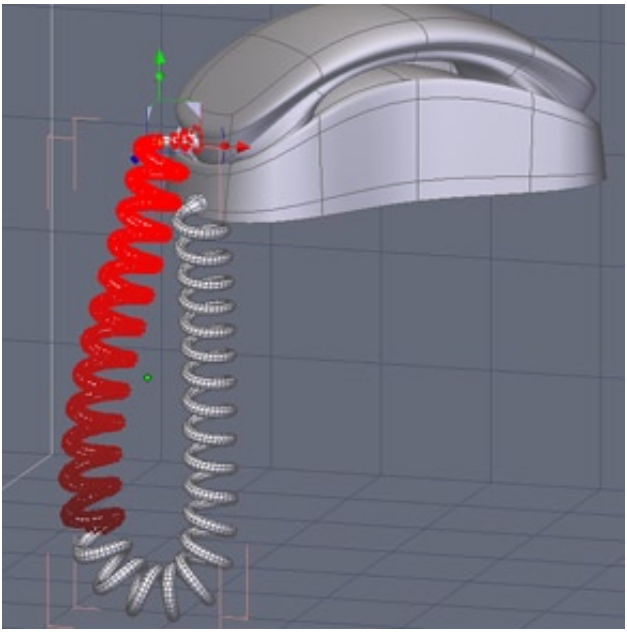
Select the helix we made in step one, then select the Bend tool found in the Utilities tab and select the u-shaped line we created to be the guide.

You should now have bent the helix into the shape of the guide we created.

If the geometry of the helix looks jagged or skewed then increase the number of points in the guide curve we created by increasing the smoothing further until a smooth bend over the entire length is achieved.



With the helix selected add Thickness to it by using the Thickness tool in the Surface tab until satisfied with the result.

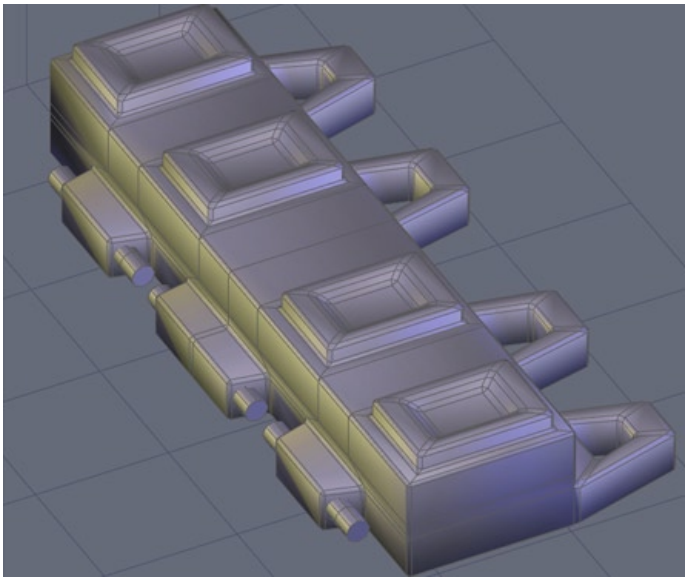


To position the cord ends to the phone select the vertices on one end and use Soft Selection with a large radius(keyboard shortcut F) to move the end position.

Repeat for the opposite end.

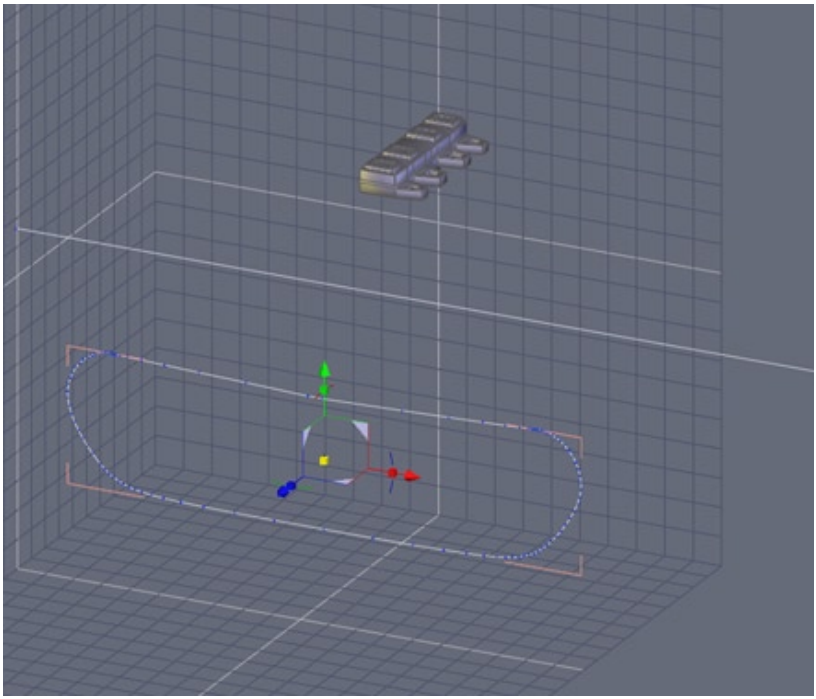
Congratulations you now have a simple coil cord for attaching a handset to a receiver.

5. A Tank track



We will be using the Copy on Support tool to copy a single tread into a full set of tracks for a tank or heavy equipment vehicle.

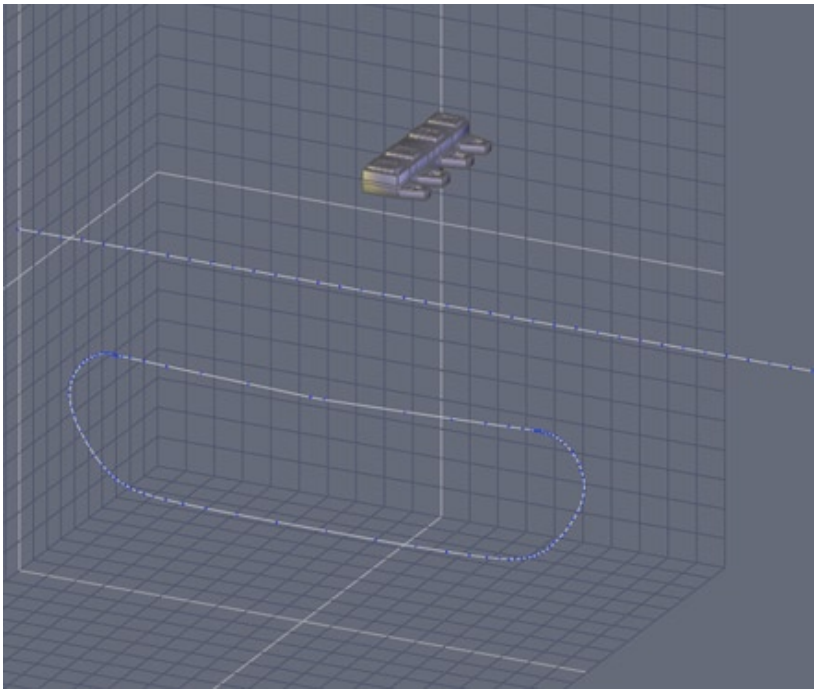
Above is a simple version of a tread that I will use for the example.



Create a curved line using the interpolated, spline, or Bezier tools found in the Line tab.

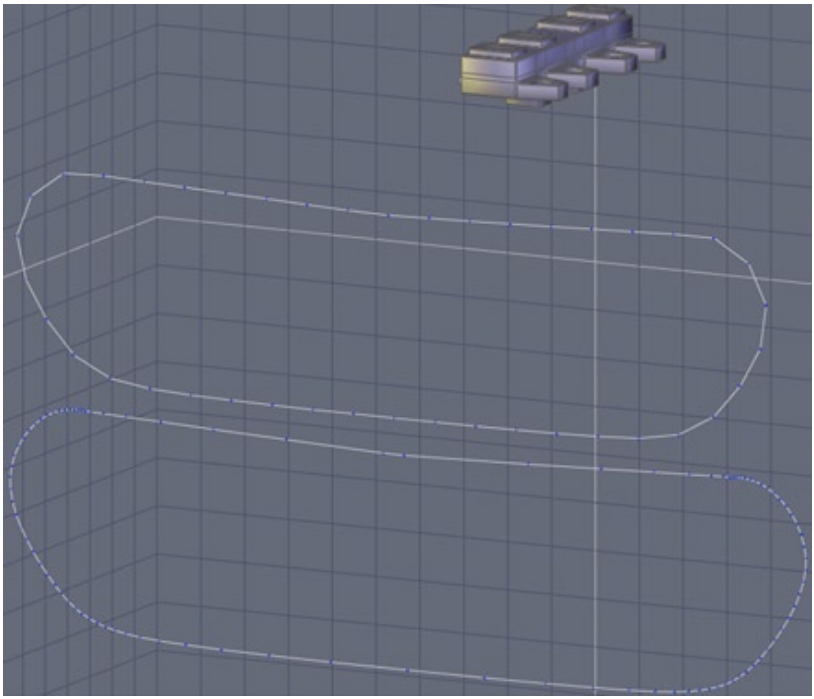
One thing to keep in mind is to create a little deflection in the top line to simulate the weight of the treads.

We will be using this curve just for shape so point placement is unimportant.



Now create a straight Polyline found in the Lines tab roughly twice as long as the closed loop we just made.

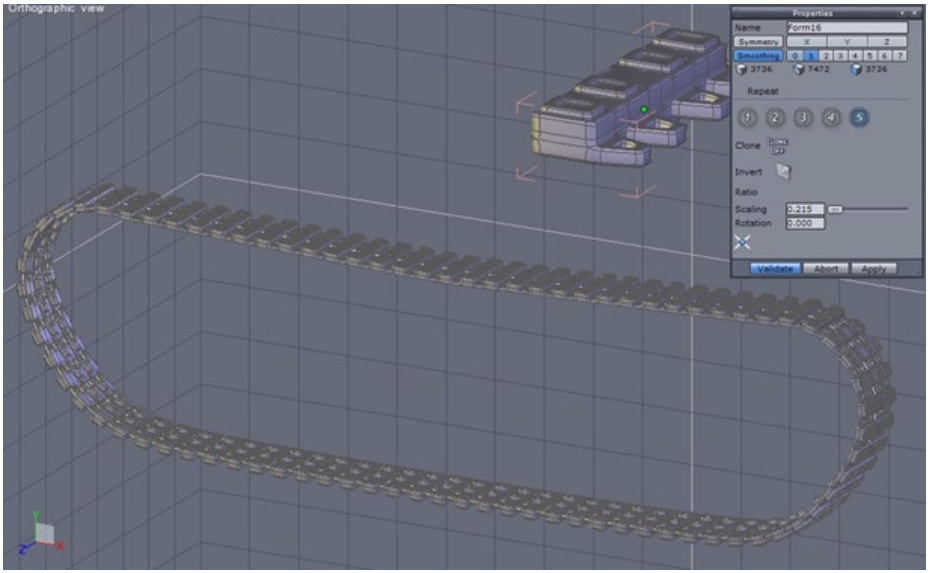
After it is made go to the vertex modeling tab and increase the smoothing on the polyline until the number of points equal how many treads you desire.



With the polyline selected open the Utilities tab, select the Bend tool and then select the closed curve we made for our outline.

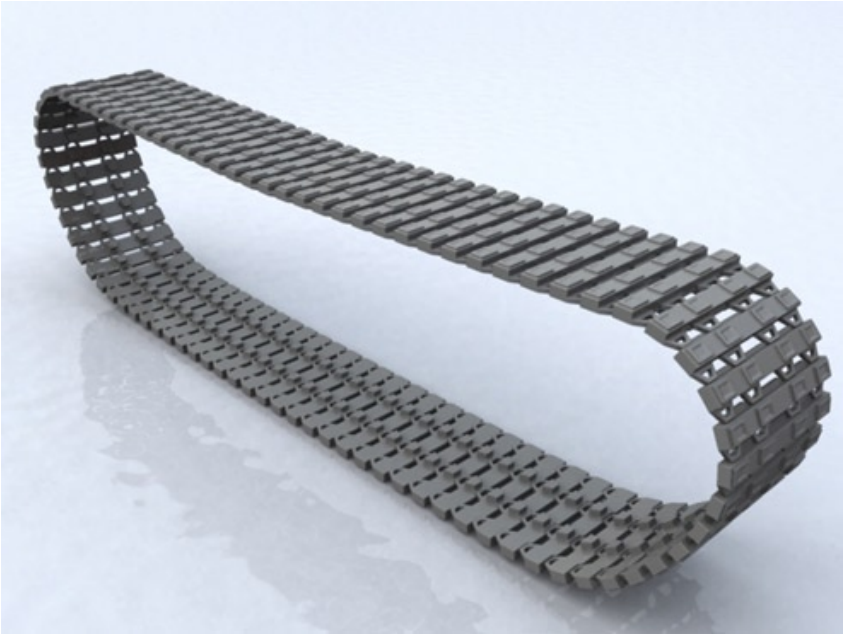
This will bend the polyline into its shape but will retain the polylines evenly spaced points.

This is important since it is a mechanical item repeated continuously.



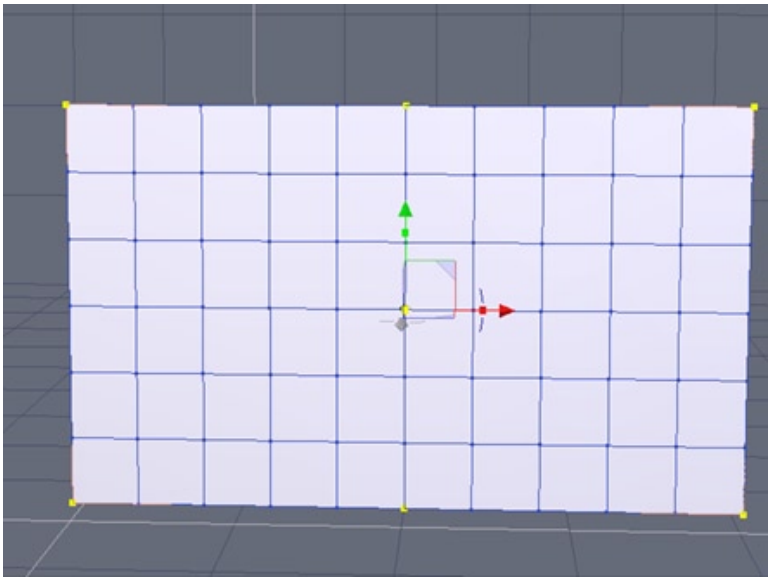
Select the single track link we started with and then open the Utilities tab, select the Copy on Support tool and then select our curved polyline.

The Properties panel will allow you to change the axis, scaling and rotation to fit the replicated track together.

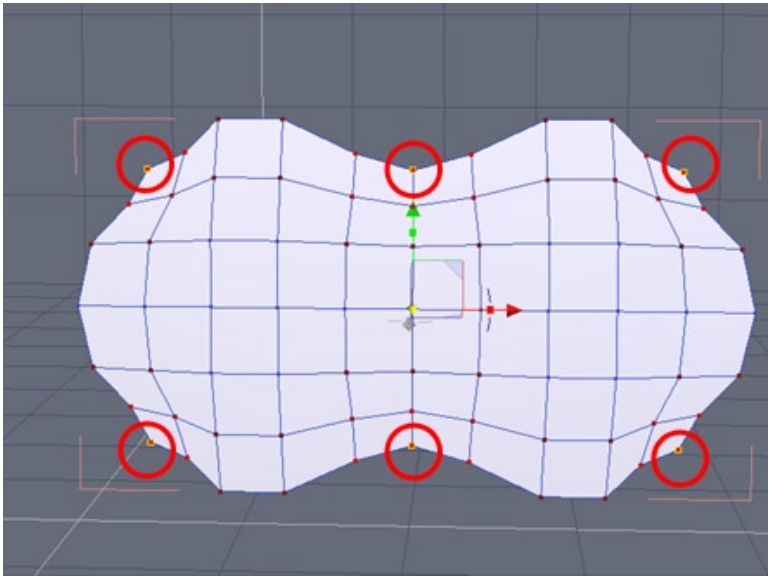


Above is a render of the tracks we have just made, I scaled the width to make them slightly wider.

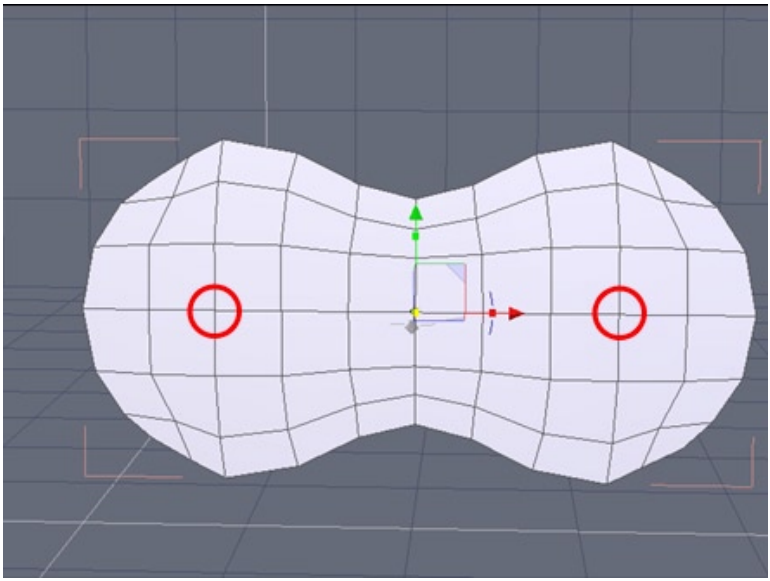
6. A CHAIN



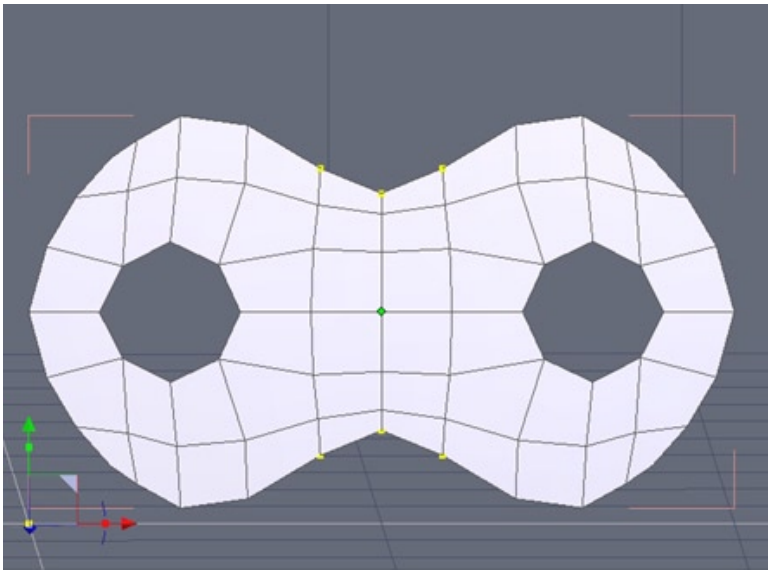
From the 3d Primitive tab create a grid with six vertical polygons and 10 horizontal polygons.



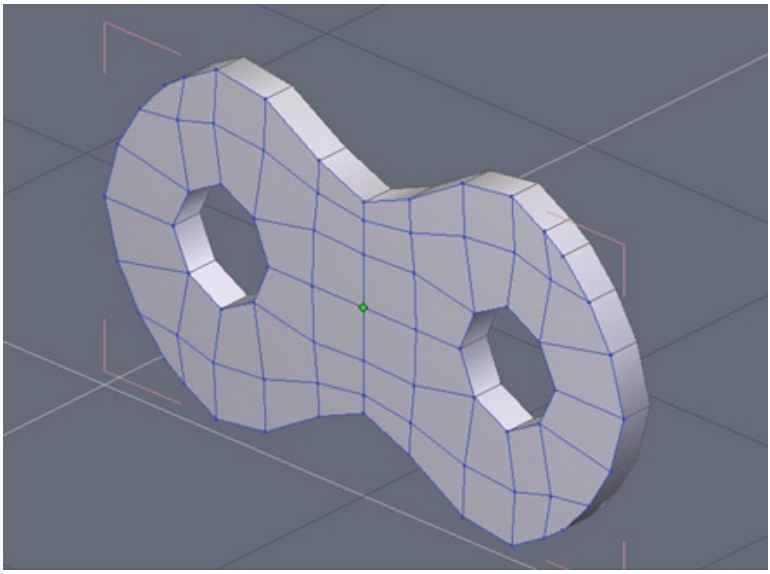
Select the corner and center points shown using soft selection (keyboard short-cut F) and scale them in to form the rough shape of the link.



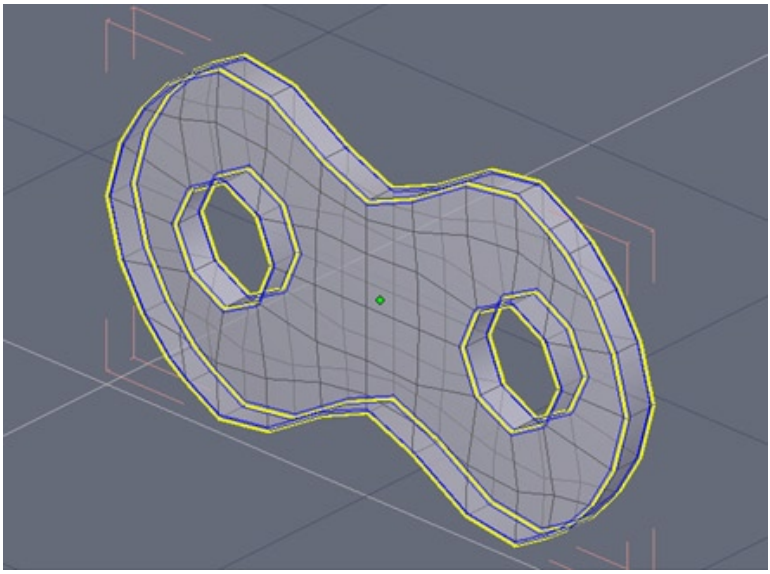
Continue adjusting points until the outline is in shape then select the center points shown.



Delete the points to form the holes for the pins.
Adjust the points around the new holes into a circular shape.

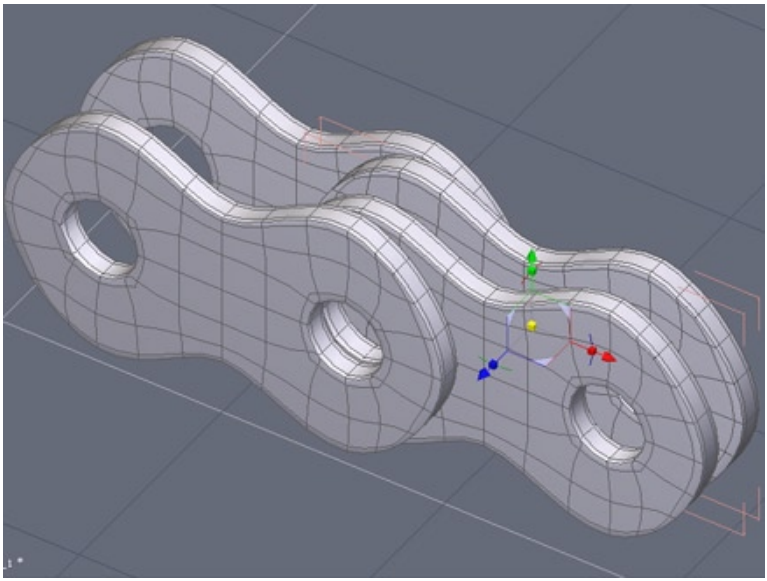


We will now give thickness to our grid by opening the Surface modeling tab and selecting the Thickness tool.

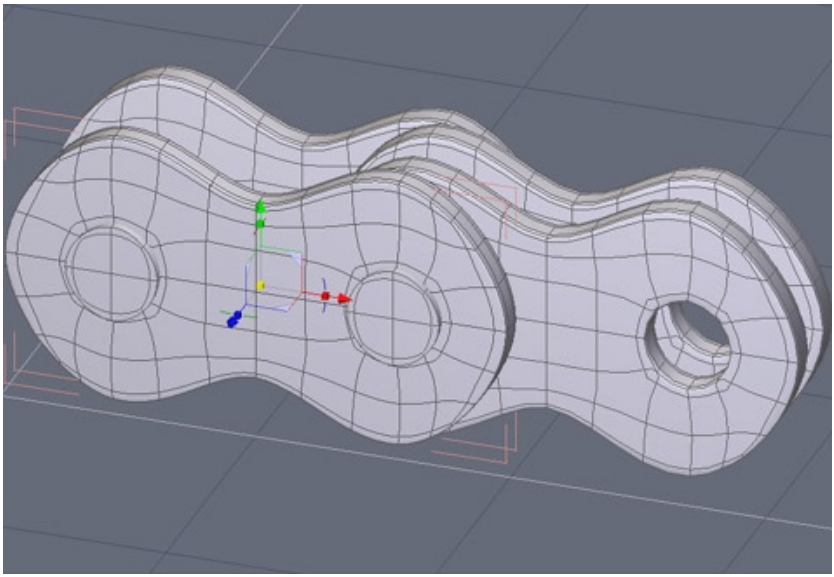


Select the edge loops shown and use Extract Around Edge tool found in the Vertex modeling tab to form a tight crease when smoothing is applied.

New in Hexagon 2 is the ability to create breaks (creases) in smoothing.



Copy and paste the link three times and position them as shown below. Two will be inset of the others.



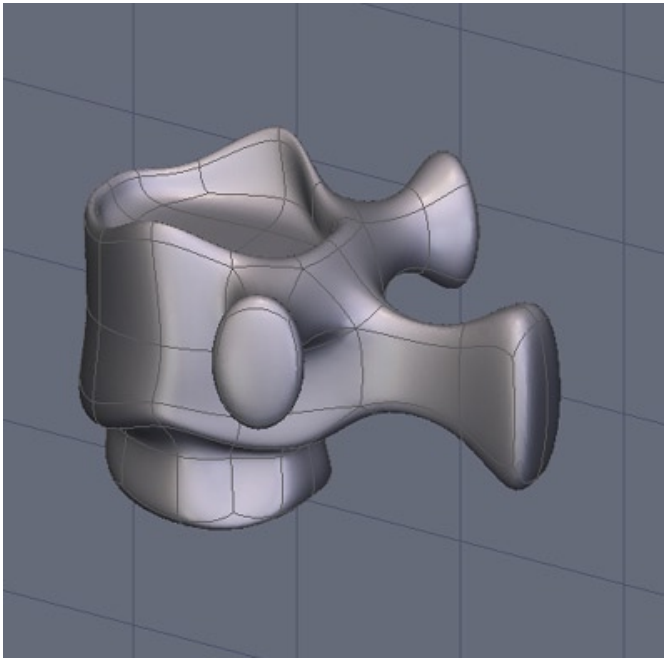
Create two cylinders from the 3d Primitives tab and position them in the holes ensuring they are long enough to pass through each side.

Group together all the pieces we have made and weld them together using the Weld too found in the Surface modeling tab.

From this one unified piece you can now create a chain in any shape you require using the same technique illustrated in the Tank Track tutorial.

Shown below is a render of a length of chain created by replicating our single piece along a helix.

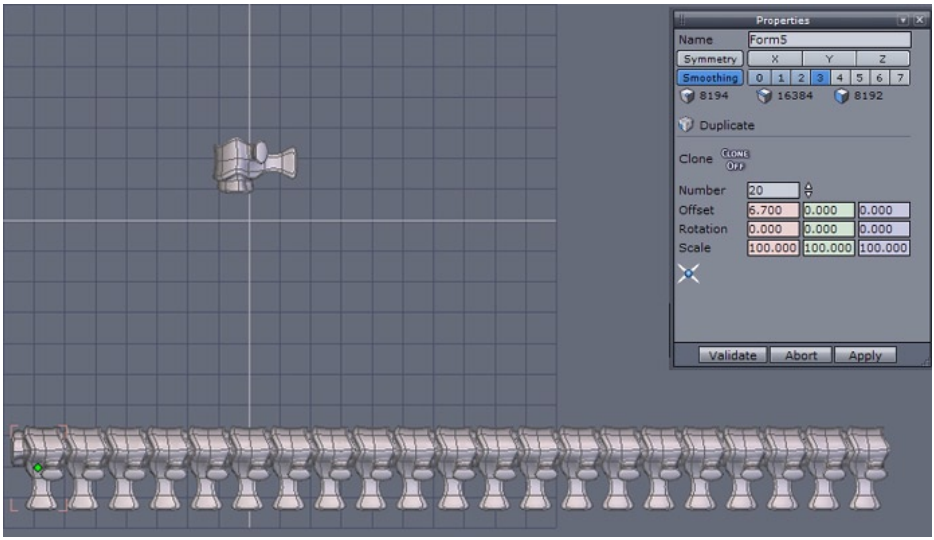
7. A SPINE



We will be creating a spinal tail similar to the Alien movies and numerous other science fiction settings.

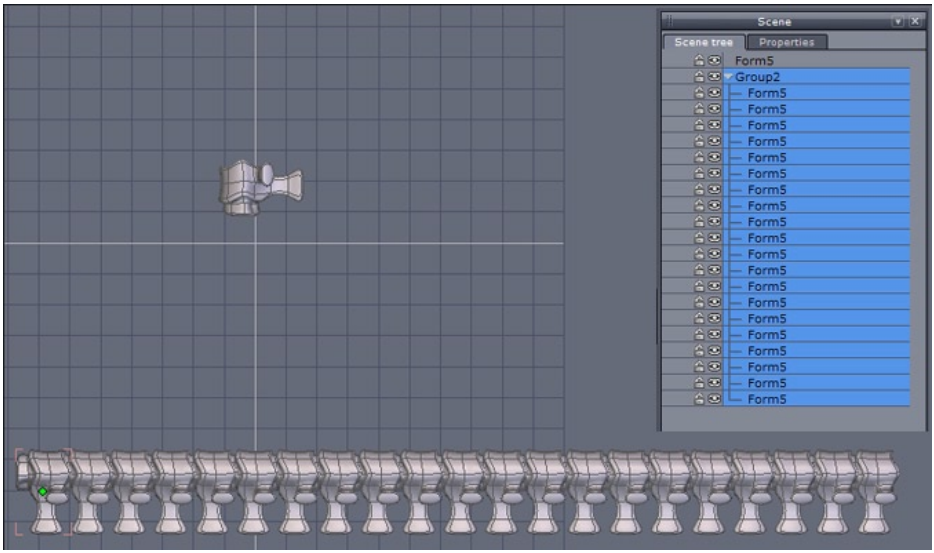
Start with simple vertebrae object.

It doesn't have to be medically accurate just similar.

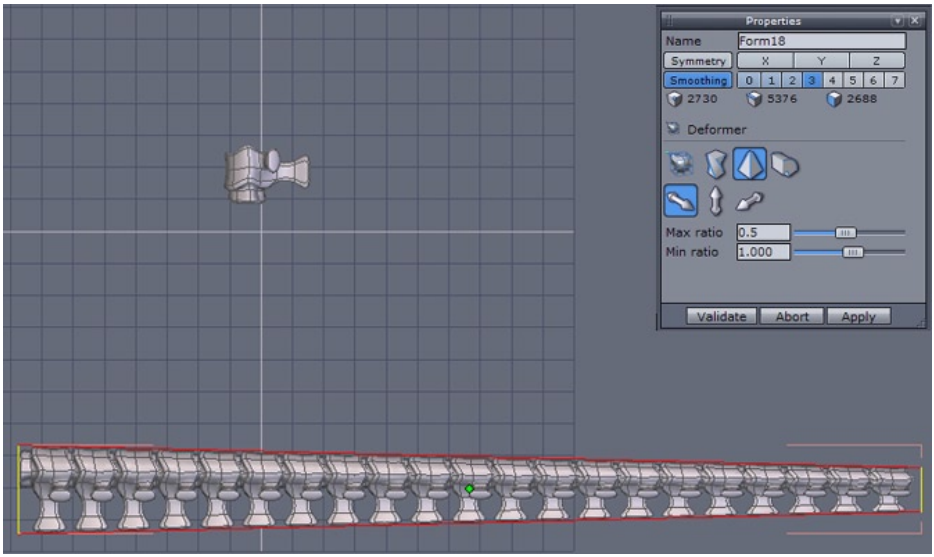


We will use the Multiple Copy tool found in the Utilities tab.

Depending on the length of your tail enter the number of copies you require and the amount each copy will be offset from the last I used twenty copies and enough offset to give the appearance of connective tissue between the segments.

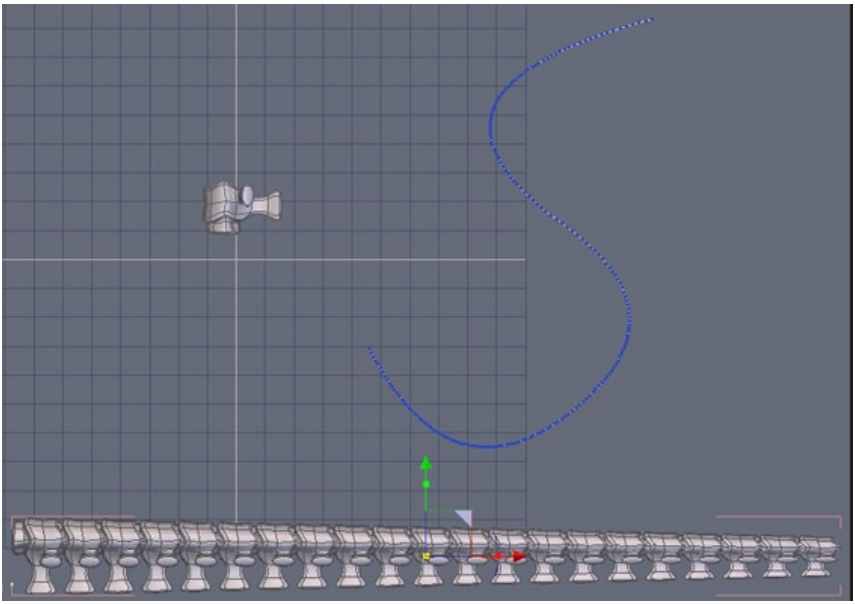


In the Scene palette open the new group, ensure all the segments are highlighted and then use the Weld tool in the Surface modeling tab to create a single object.



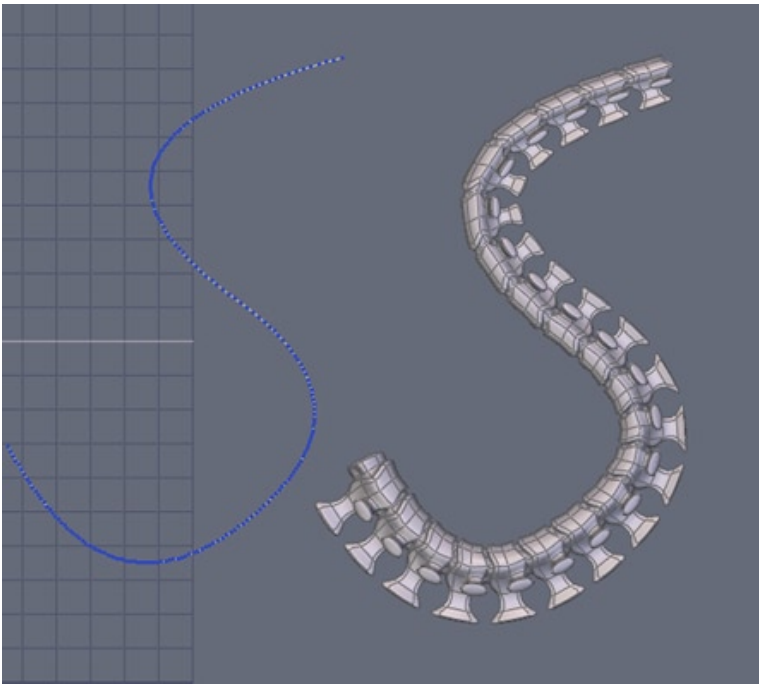
With the single form still selected we will use the Taper tool found in the Utilities tab in the deformer dropdown menu.

Select the axis required and scale down one end of the group to form a tapered end and validate.



Create a s-curve with one of either the interpolated, spline, or Bezier curve tools found in the Lines tab.

Increase the smoothing of the line in the Vertex modeling tab to increase the number of points over the line.



With the tapered vertebrae group selected use the Bend tool found in the Utilities tab and then select your curve.

You should now have the bent the vertebrae into the s-shape you created.

Just add a barb or another tip for your tail and your ready to attach it to another model for a gruesome addition.

A DINOSAUR

This tutorial shows an advanced Box Modeling creation. This technique has the advantage of quickly creating volumes and thus allows you to quickly visualize your work as it is modeled. This technique is especially well suited for beginners.

We chose a dinosaur model because this kind of model is a bit complex while also being simple to create!

Furthermore, this model could be useful as a base for future displacement and painting sessions, and will be a perfect training model for learning these new features of Hexagon 2.

You may find it helpful before starting your creation to do some research to find photographs or drawings of dinosaurs to help you to better build your model!

About the Autor:

Thomas Roussel is behind most of the Hexagon workflow and ergonomy. He is also the owner of Eovia3D.net, a dedicated website and forum about Hexagon, Carrara & Amapi and also the owner of Polyloop, a company dedicated to 3D video training and various contents.

You can visite both website and talk with Thomas on the Eovia3D.net forums.

http://www.Eovia3D.net

http://www.Polyloop.com

Notes:
Shortcuts are mentioned between brackets, such as "Use Edge-tools (E) then…".
"E" being of course the shortcut for the "Edge-Tools".

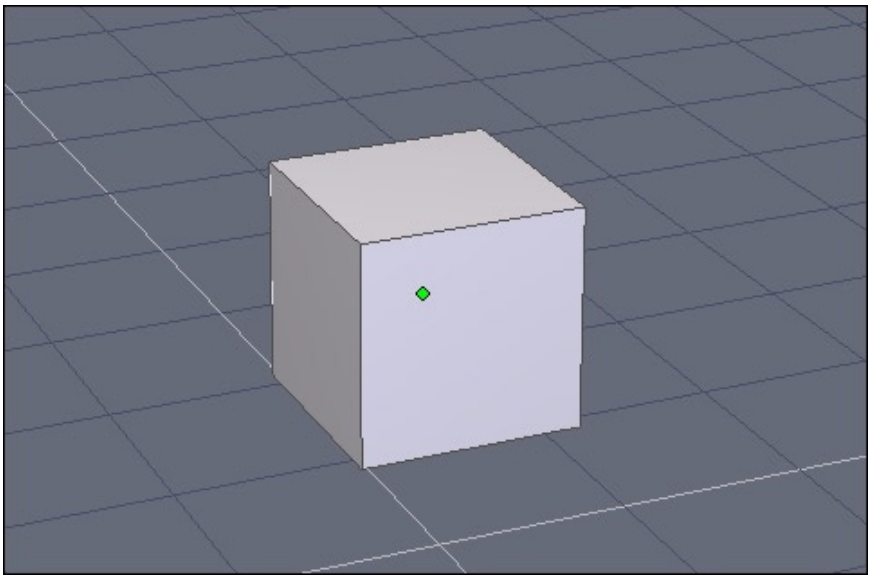
All manipulations are based on the Universal Manipulator.

1. Tool Used

- Cube: The base primitive. This tool will be used only once.
- Fast Extrusion: A widely used tool. One of its advantages is to have a direct shortcut: the CTRL key (or Command on Macintosh).
- Extrusion and Sweeping: These two tools let you extract polygons in more complex and advanced ways than the Fast Extrusion. For your information, these two tools are basically identical, except that the default tool option is not the same one.
- Tweak (Q): The ultimate model refinement tool. Do not forget to Validate the tool once your modifications are performed.
- Edge tools (E): This tool is in fact a set of three tools, providing you with a single access to perform several useful modifications on the models.
- Connect (X): This tool, associated with the Ring tool, lets you quickly perform various topology cuts.
- Tesselation (X): This tool lets you perform a continuous topology cut, or lets you cut polygons by slice. Note that its shortcut is the same as for the Connect tool. These two tools are in fact the same, but behave differently according to the active selection.
- Smoothing (Page-up / Page-down): This tool lets you smooth the object, by subdividing them.
- Symmetry Tool, with Clone option: This tool generates a mirror copy of the original model, according to a specified plane. The Clone option replicates all modifications on the second half of the model.
- Symmetry Mode: This is not a tool, but an object property. This property replicates all manipulations performed on one half of a symmetric model, to the mirror part.
- Loop (L), Ring (K) and Select Between (J): This tools work on selections. Keep in mind the shortcuts, because this set of features will be widely used in all modeling sessions.

2. Modeling Steps

2.1. The Pelvis Base, the Neck and the Head

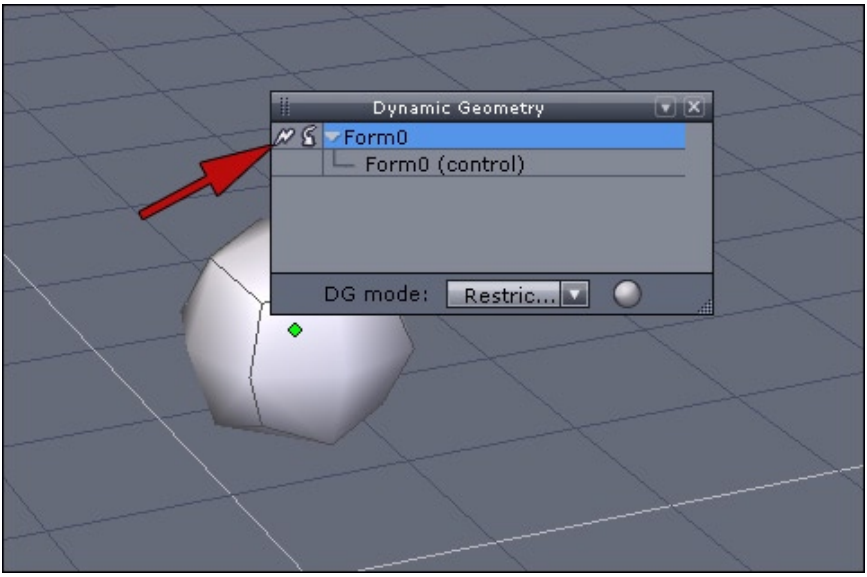


This first step may seem to be the easiest one, but many things will be defined here. To start modeling your Dinosaur, you need a base. Start from a cube, which you will afterwards extrude and modify.

What you will wonder here is: will this cube be the head, a leg, or the end of the tail?

For this modeling tutorial, you will start from the pelvis, because this part is going to be the center of the model: the tail and the spine will be drawn from this center piece. Then the head, front legs and finally the back legs will be created.

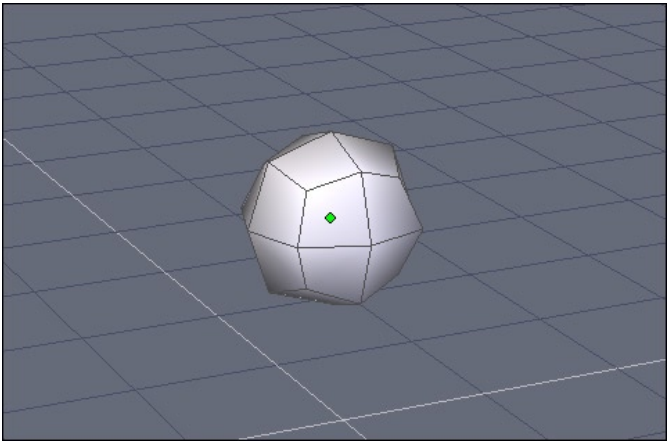
This is not the only method that could be used, and it will be up to you to find the method you feel is best as you create more models and try new creations.

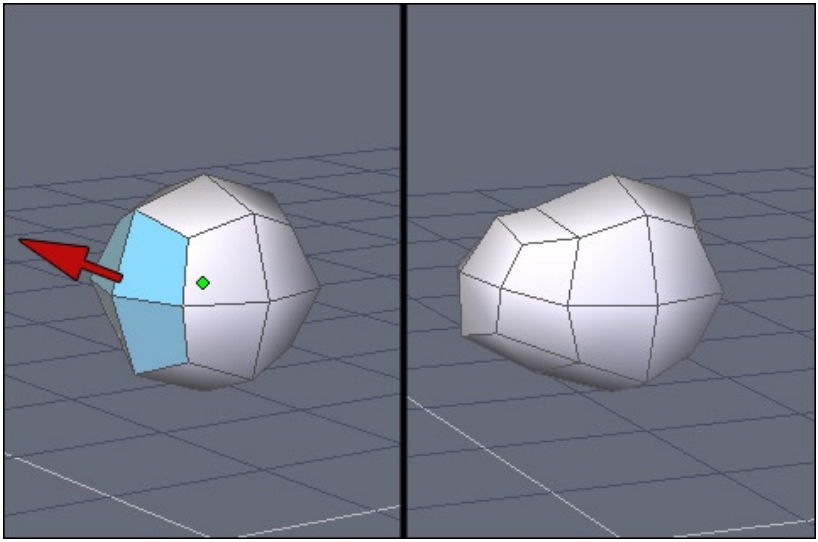


The starting cube lacks “resolution”, or polygons. Apply a first smoothing (Page-Up).

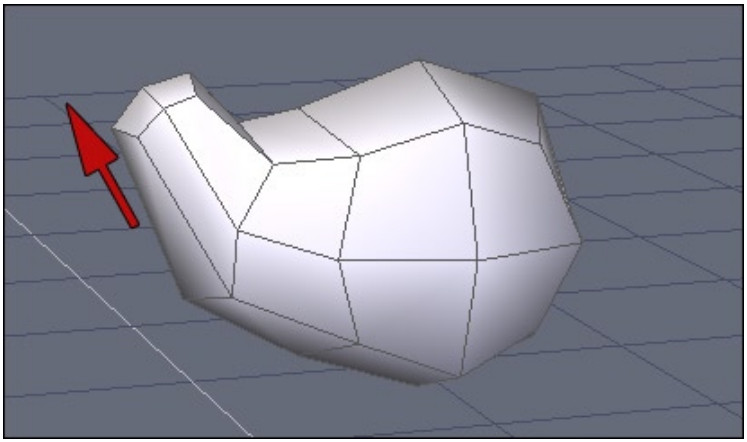
The smoothing is a dynamic operation, but we want to “generate” this smoothed geometry and want to get the subdivided model as the basic one.

To convert this smoothing operation into static geometry, we have to “collapse” the Dynamic Geometry by clicking the small icon which looks like a lightning bolt, located in the top left corner of the Dynamic Geometry Panel. You should then see your smoothed cube being displayed as shown below:

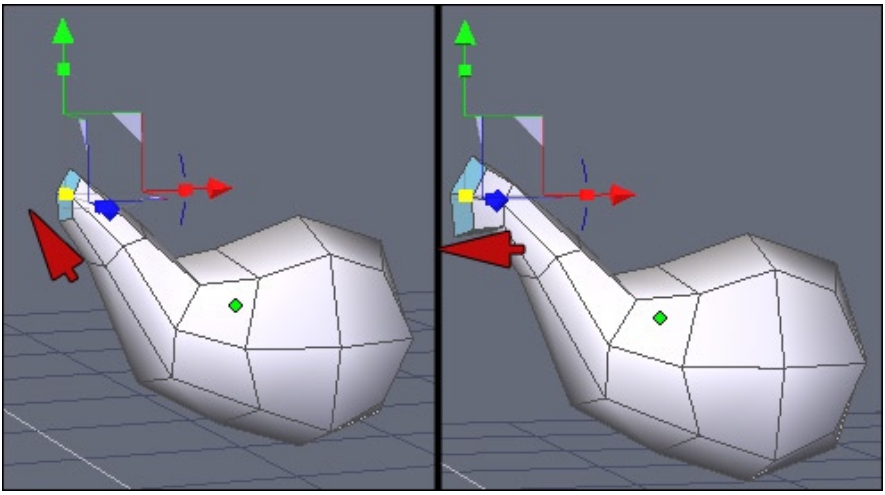




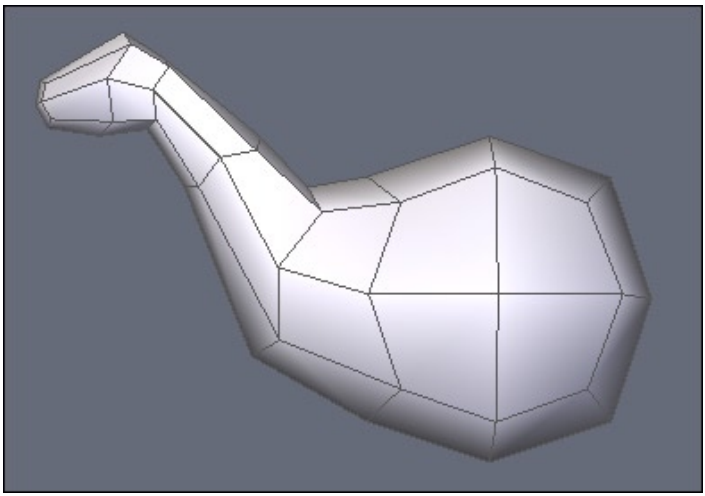
Select the four polygons as shown, which will let you extract geometry to start the spine. For this operation, the easiest way is to use the Fast Extrusion Tool (CTRL) while clicking on the small yellow sphere. Once the extrusion is done, pull the extracted polygons upward.



Do the same operation again to extract the base of the neck (Select polygons, Fast Extrusion (CTRL) and pull the selection upward with the Manipulator.

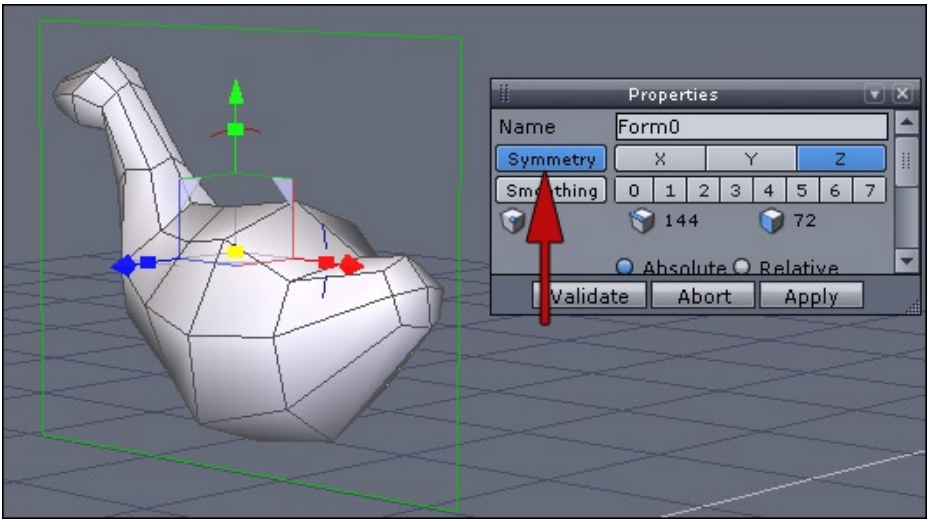


Do this operation sequence two more times to continue modeling the neck and to create the base of the head.



After a last extrusion, you will have the neck and the base which will be used for the head a bit later.

2.2. Symmetry, Tweaking and Tail Creation

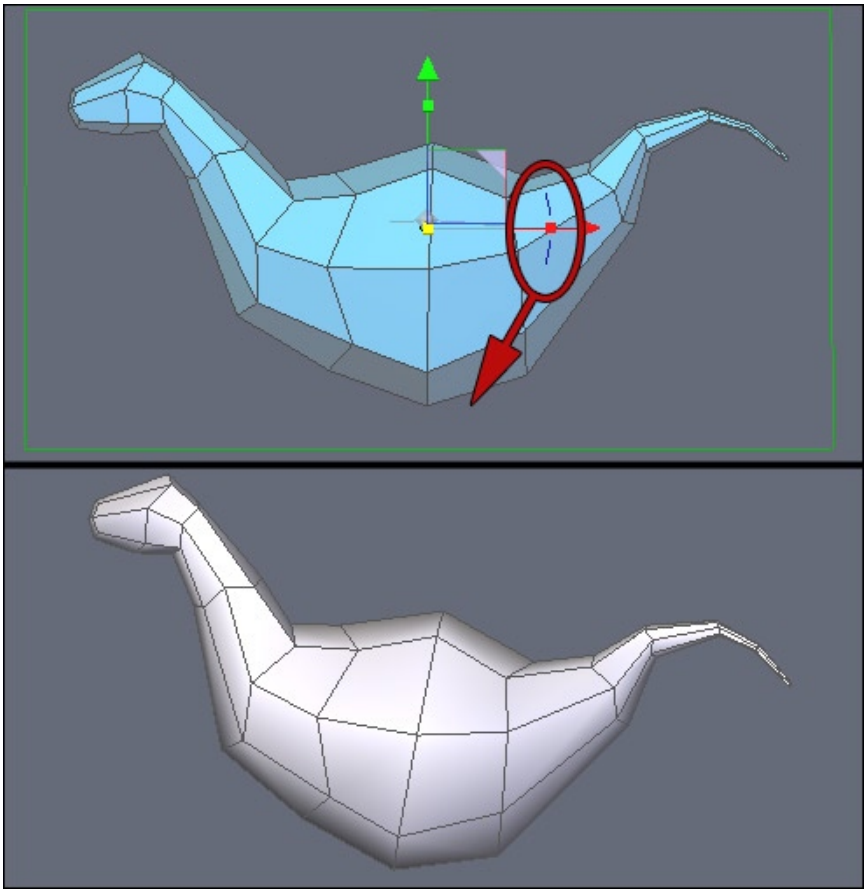


For the following operations, it will be more convenient to activate the Symmetry Mode, located in the Property Panel, or in the Contextual Menu. Click on the "Symmetry" button. The right symmetry plane will be automatically detected.

The advantage of turning this mode on right now is simple: if you wish to tune the global aspect of your shape using the Tweak tool, the vertex or polygon displacements you will perform will be replicated on the other side and your model will stay symmetrical.

This mode will also replicate extrusion operations on the mirror half, such as for the extrusions we will perform to model the legs.

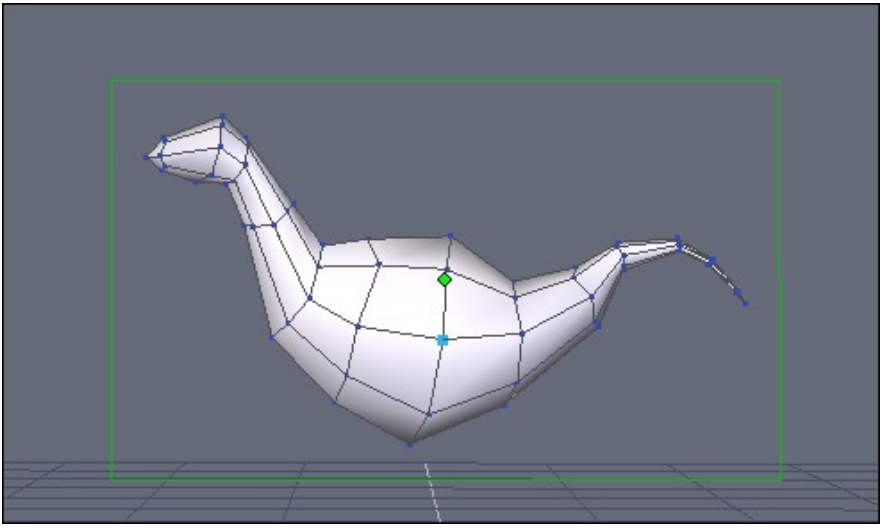
Take the opportunity now to extract the start of the Dinosaur's tail, using the same method as used for the neck and the head modeling steps.



As shown on the shot above, do additional extrusions for the tail. To speed up the creation process, you can use the Sweeping tool to perform a sequence of Extrusions while staying in the same tool. Do not forget that the right click allows you to change the sweeping radius on the fly.

For the next steps of the modeling, it could be necessary to slightly modify the global orientation of the model. This is a small “trick”:

Instead of making a rotation in object mode, which will affect the bounding box of the object (and thus which could generate unwanted results afterwards), it is better to rotate the geometry itself: switch to Face Selection Mode, select all polygons, and perform a rotation as shown on the snapshot above. You can also try to do the rotation in Object Mode and in Face Mode to compare!

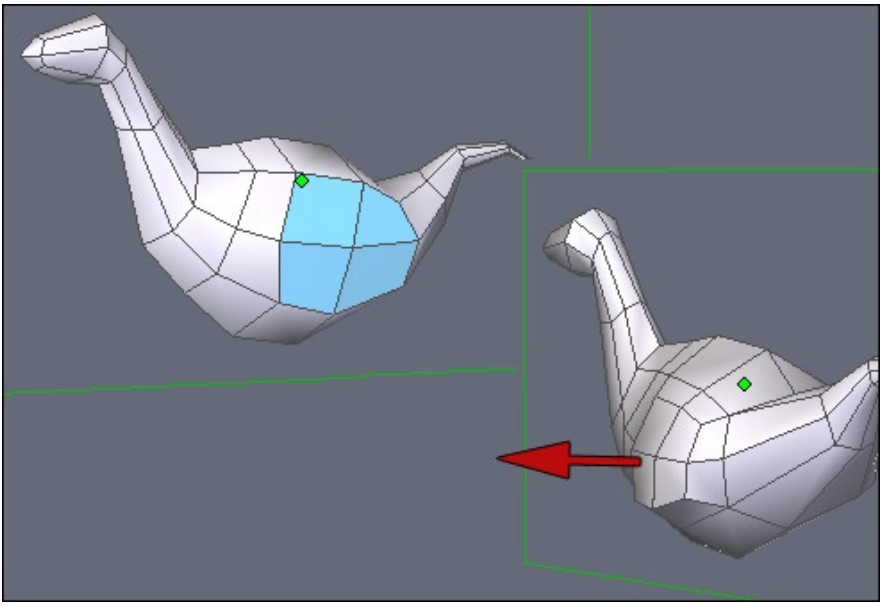


Before extracting polygons further, take the Tweak Tool, to refine a bit the shape of the model, and make the geometry a bit more “harmonious”.

Do not hesitate to compare with the previous snapshots. This step is more important than it seems, because if you do not make sure your proportions look nice on the basic model, further extracted parts will inherit the possible proportion problems.

Keep in mind that your model must be as accurate as possible at all steps of its construction.

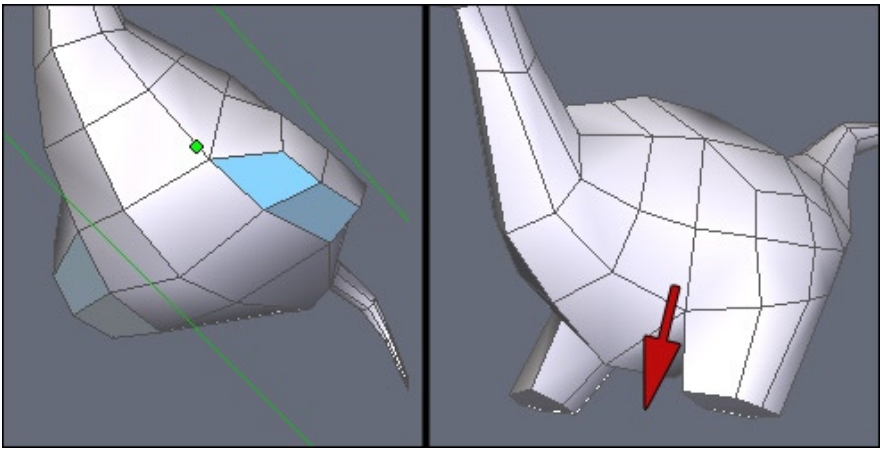
2.3. Building the Rear Legs



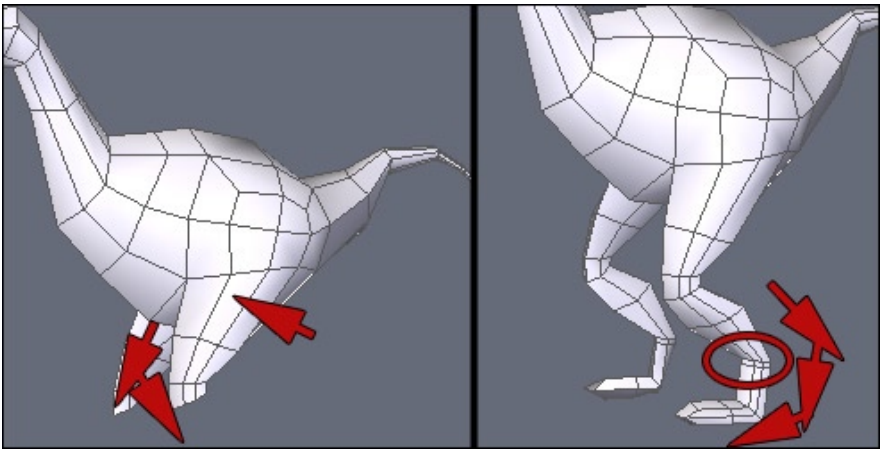
To extrude the legs, you must first prepare the part from where there are going to be extruded. Tweak if needed the polygons corresponding to the haunches (a bit to the rear, rounding them a bit).

From the selection, using the Fast Extrusion tool, extract a row of polygons. Modify them if necessary.

The legs will start from the bottom of this extrusion. Now will be the time to modify the polygons that will be the base of the extrusion.

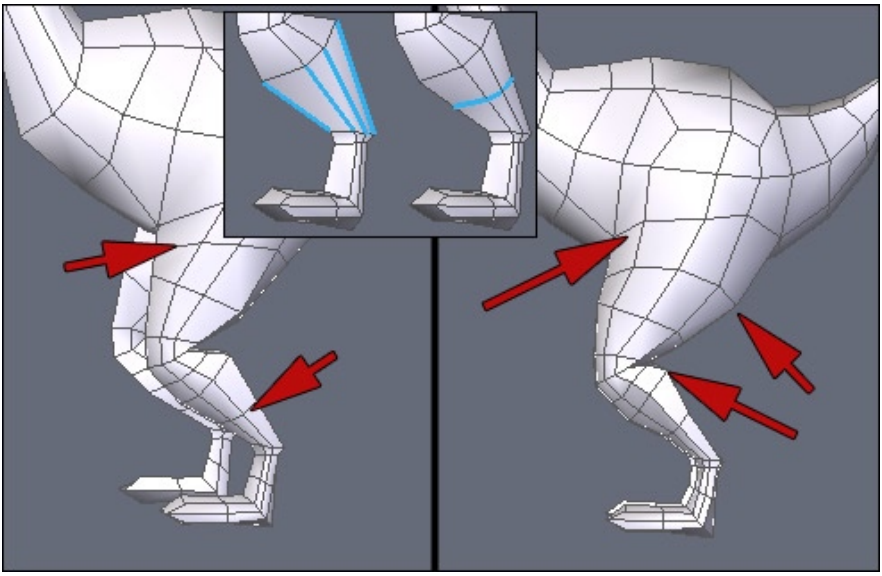


At left, polygons which are going to be extracted and to the right, the result of the extrusion, using the Fast Extrusion (CTRL).



Continue to extract legs. After each extrusion, do not hesitate to modify the extracted polygons. As you can see on the left snapshot, the thigh is oriented toward the front, and a rotation at the knee level has been done.

At right, the end of the leg and the foot. Indicated by the red circle, a small extrusion is created. Consider doing the same with you work, as it will be important when we will smooth our model.



To finish the base of the legs, we have to modify a bit this base and start to add some cuts in order to get a model with a finer resolution.

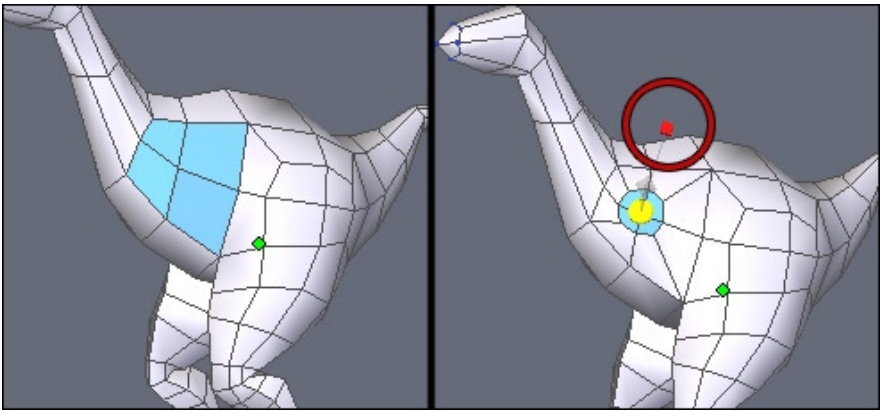
If you look closer at the snapshots of the previous step, the legs are rather straight. You have to add slices.

The fastest method is to do what we call a “Cut from Ring”. Do not look for this tool in Hexagon. It’s in fact a combination of the Ring Selection Tool (K), with the Connect Tool (X). Select an edge of the tibia, then do a Ring (K), then a Connect (X): a “slice” cut, or a cross-section, has been added, as shown in the small inset of the above picture.

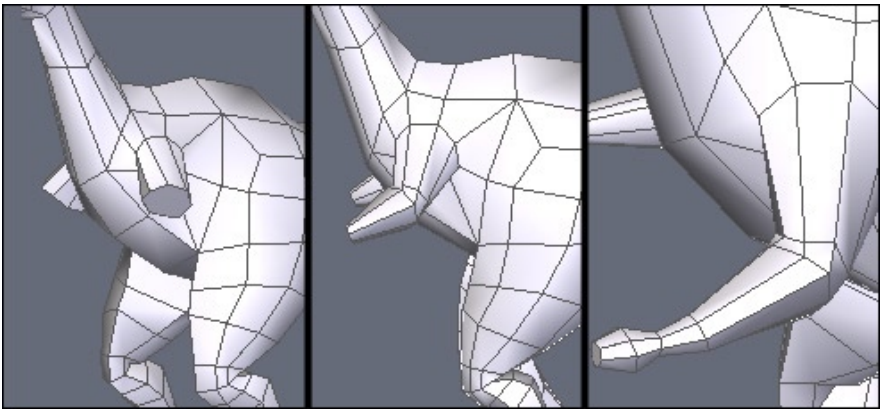
Keep this combination in mind. It will be widely used again. A small tip: select an edge, then hit “K” and “X” to perform a “Cut from Ring”.

Do several cuts on the legs as shown on the left shot and then tweak this additional geometry, as shown on the right.

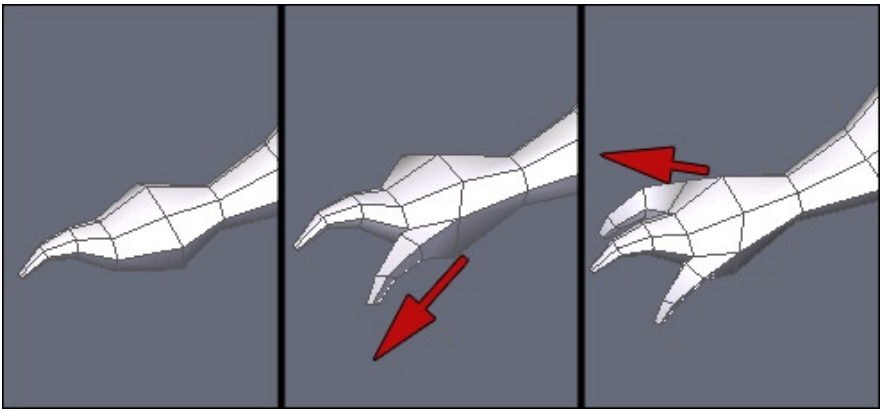
2.4. Building the Front Legs



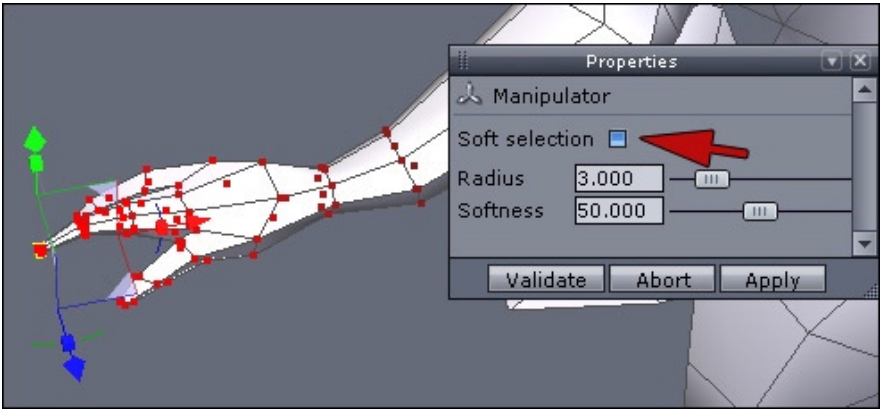
For the front legs, repeat more or less the same process as used for the rear legs. Start with an Inset using the Fast Extrusion (CTRL), as shown on the surrounded part of the shot above.



Continue to do the extrusion sequence in order to model the arms. Do not hesitate to re-orient polygons before performing the next extrusion, since it is always performed perpendicularly to the selection.



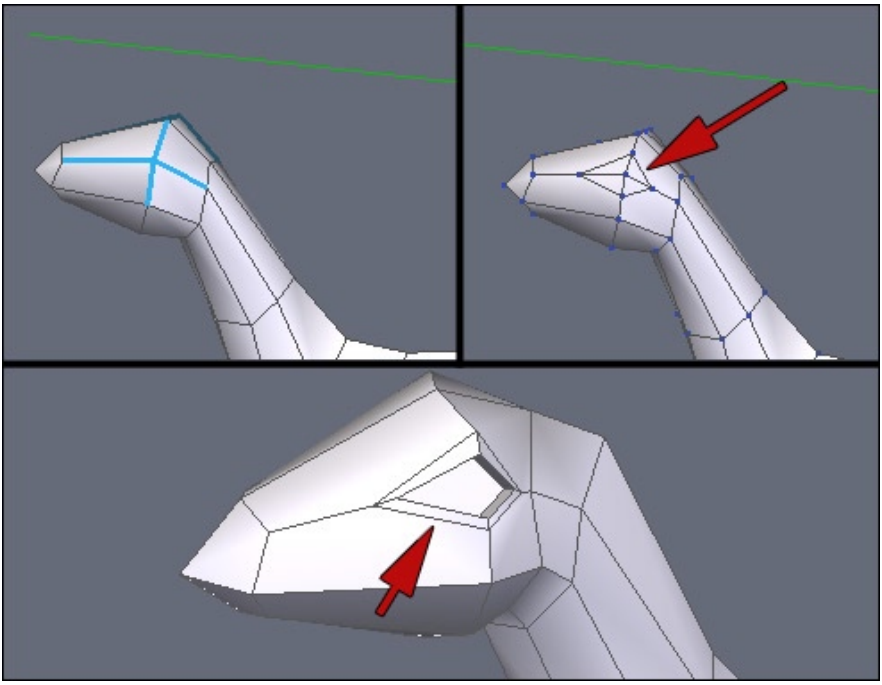
At the end, to model the wrist, do three extrusions corresponding to the claws. Nothing difficult here – the Fast Extrusion tool will do the job in few clicks!



The claws will be likely not sharp enough and not stretched enough.

The easiest solution to fix this small problem is to use the Soft Selection: Select a polygon (or a peak) at the end of the claws, then turn the Soft Selection on (F) in the Property Panel, and move the Manipulator. Keep in mind that you can use the Soft Selection option with the Tweak tool (Q).

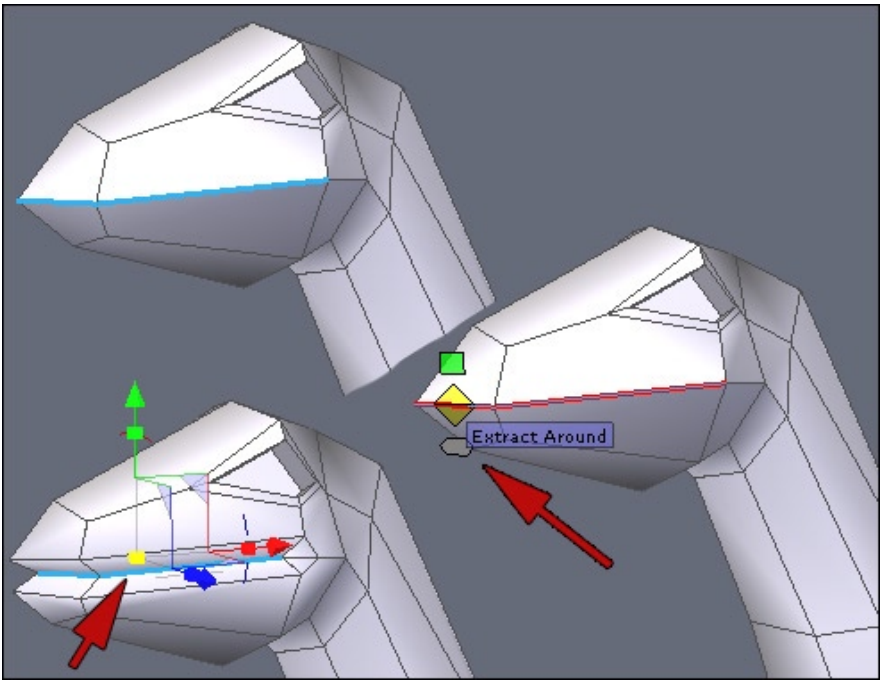
2.5. Creating the Head's Details



First step: the creation of the eye. A quick solution is to select the edges around a vertex, as shown in the top left shot, and to perform “Cut from Ring” operation (see above), which means to perform a Ring Selection, combined with a Connect (K then X).

Then, suppress the edges located inside the eye contour, as indicated by the red arrow above. Just select the edges, then use the Dissolve Tool (Backspace). Pay careful attention, in some cases, it may happen that a vertex still stays on your polygon. Do not forget to Dissolve it, as well.

It is now time to shape the eye. Use Fast Extrusion again (CTRL), with an Inset first (small red cube) and internal extrusion. You should get something similar to what shown in the bottom snapshot.

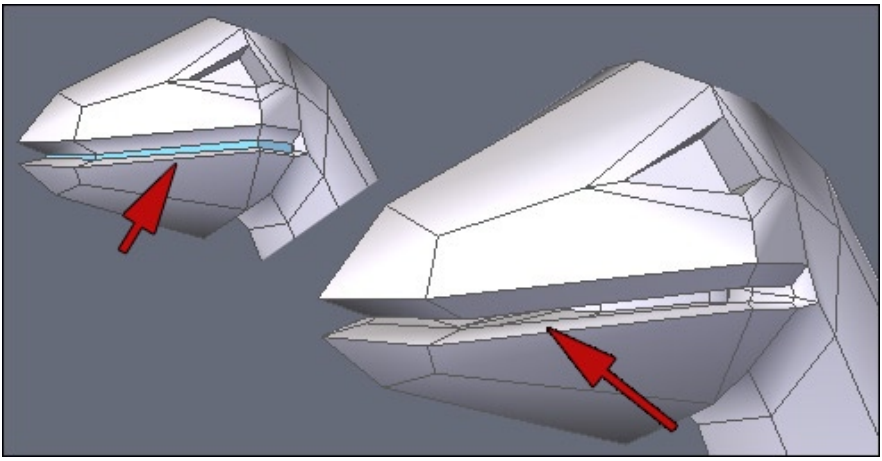


Let's now start the Dinosaur's maw. To do this, we are going to use "Edges Tools".

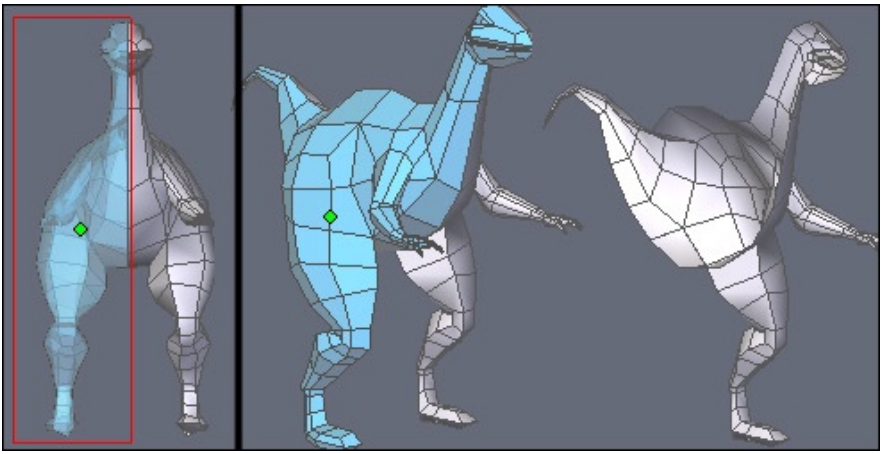
Select the edges that define the boundary of the maw, as shown on the snapshot below. You can select an edge further to the rear, as it will be shown in the following snapshots.

Now, call the "Edge tools" (E): a small manipulator appears on the edges. Do a drag-and-drop on the blue manipulator (pointed by the red arrow on the snapshot), corresponding to the Extract Around operation, in order to specify the radius.

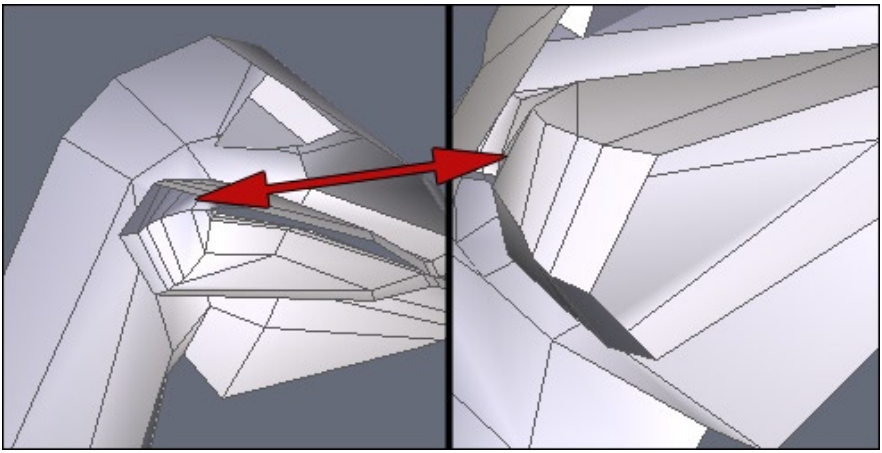
The selection must remain active. Now you just have to adjust the internal scale, by clicking on the small yellow cube of the Universal Manipulator. If needed, pull the selection a bit toward the inside.



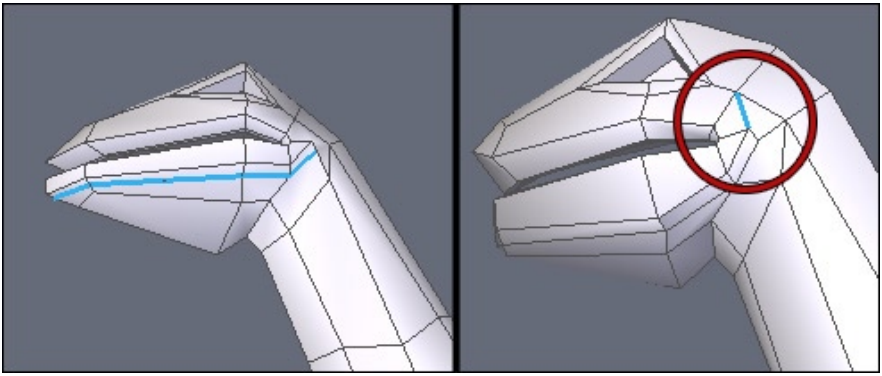
Perform a small chamfer operation (CTRL+F) or use the small green manipulator of the Edge Tool (E). Then, on the selection of the created polygons, do an Inset using the Fast Extrusion (CTRL key on the red cube).



For practical issues, select the half of the model in Face Selection Mode (with display transparency turned on and in orthogonal view to make the selection easier). Then suppress – or mask – half of the polygons. This step will allow you to work in a more comfortable way inside the maw.

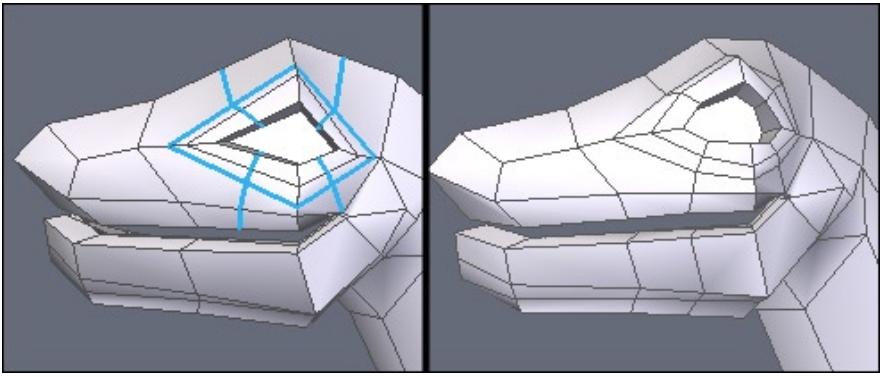


With the Tesselation Tool (X) and/or using the Edges Tools (E), tweak the shape of the mouth a bit. Be careful not to move the vertices located in the middle of the model, or only onto the vertical plane.



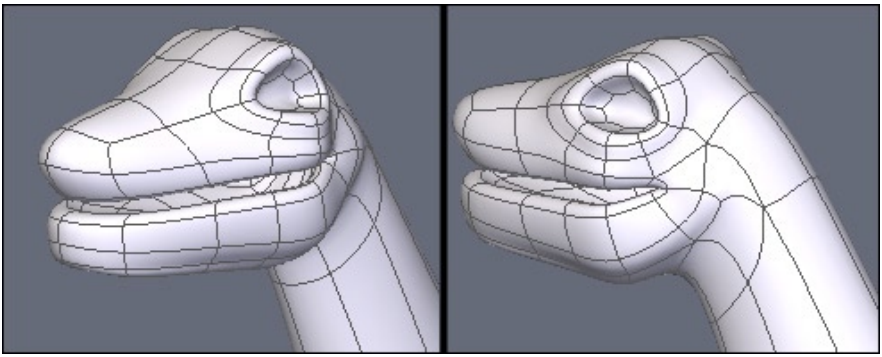
Repeat the above steps with the outside of the maw, to refine the jawbone shape. Edges Tools (E), combined with the Tesselation Tool (X), will once again facilitate this part of the work.

Be careful with your cuts. In some cases, you can create polygons with more than 4 sides ("n-gons"). Do not hesitate to work on them to get only quadrangles. Surrounded below, an edge has been added to divide the 6-edges polygon into two quadrangles. The operation was simple: the two opposite vertices were selected, then the Connect Tool (X) was been used to connect them.



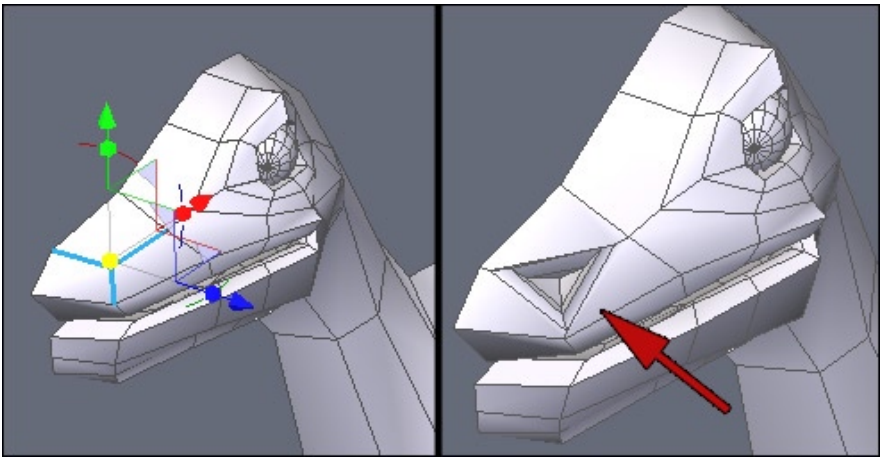
Once the jawbone done, let's work on the eye. The left shot shows edges which have been added, thanks to the Tesselation (X) and Edges Tools (E).

Take some time to Tweak (Q) the shape a bit more, in order to give a more natural aspect to it.



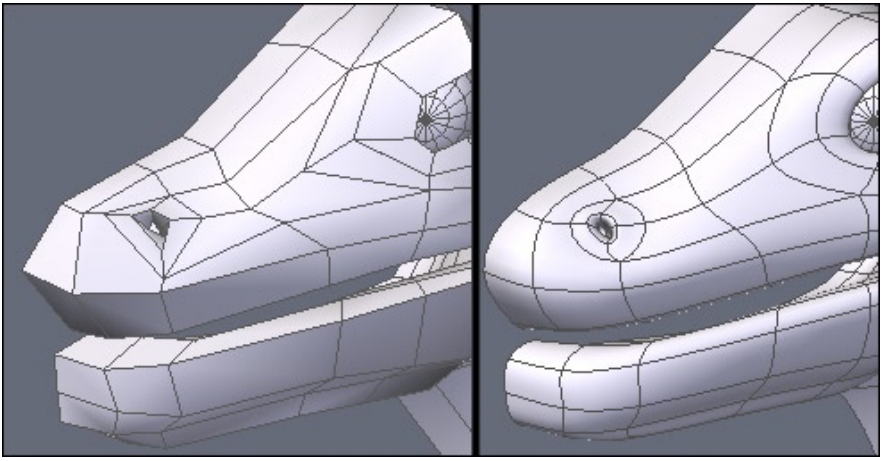
If you suppressed, as suggested before, the half of the model, take the Symmetry Tool, activate the Clone option, and create the mirror copy.

Finally, apply a smoothing (Page-up) to preview the result. If needed, use again the Tweak Tool (Q) to refine the shape of your model.



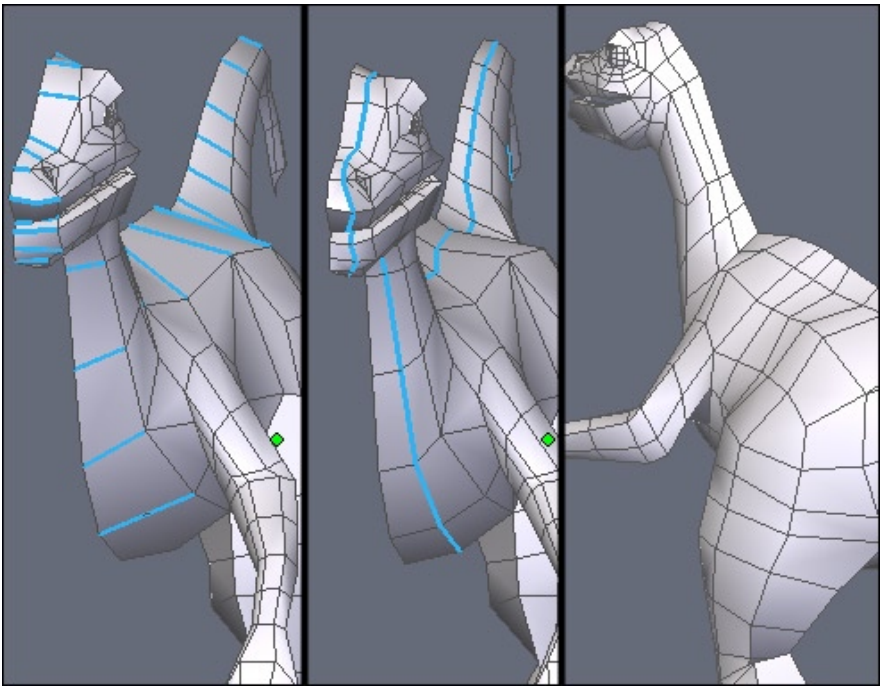
Once the contour of the eye is done, add a sphere in order to model the eye-ball.

To model the nostril, use the same method as for the eye contour: a “Cut From Ring” (K then X) and several inset extrusions with the Fast Extrusion Tool (CTRL).



Now use the Tweak Tool (Q) to refine the shape, and preview your final model by increasing the smoothing range (Page-Up).

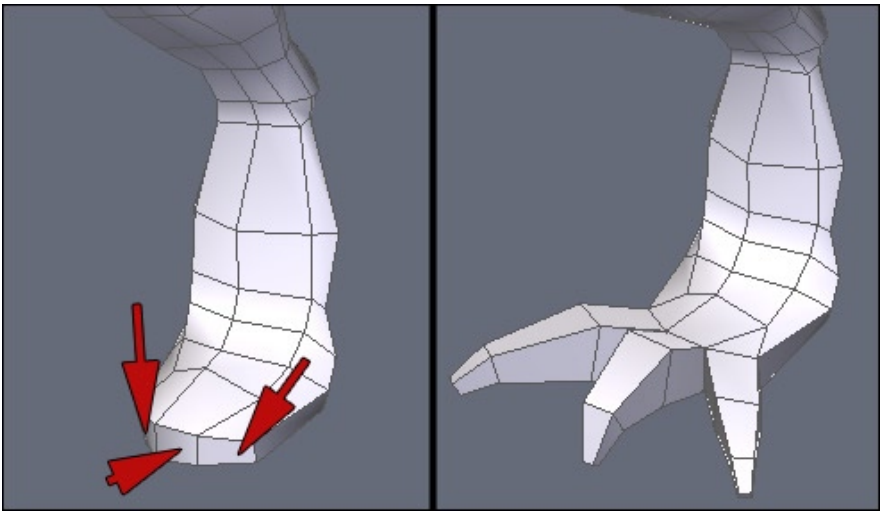
2.6. Details and Finish



The global model has now been created. Now is the time to add small details here and there.

For example, add some slices to your model and use the Tweak Tool (Q) to refine the geometry more locally.

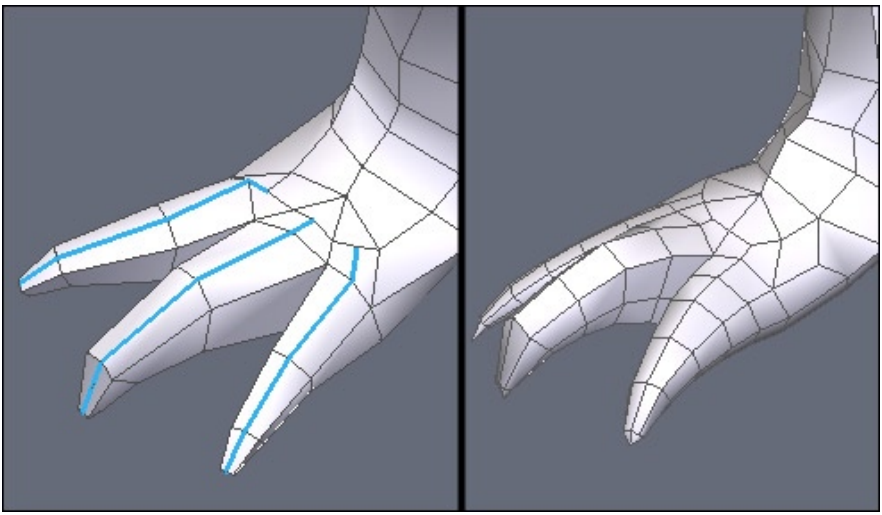
Above, a Ring (K), then Connect (X) have been applied on the whole length of the model. Keep in mind that you can use the second option of the Tesselation tool to achieve the same result. Please note however that the “Cut from Ring” operation is used more often, as it allows you to get a preview of the cut to be created, thanks to the prior Ring selection.



Work again then on the rear legs. Unlike the front legs, the claws have not been modeled yet. Same method here, e.g. Extrusion and Sweeping, starting from three polygons (indicated by the red arrows above).

If needed, tweak and refine the end of the leg to have the base polygons correctly located, using the Tesselation (X) or Edges Tools (E).

As mentioned previously, the orientation of the base polygons will drive the direction of further extrusions.



Add cuts to change the shape of the claws to your desired shapes.

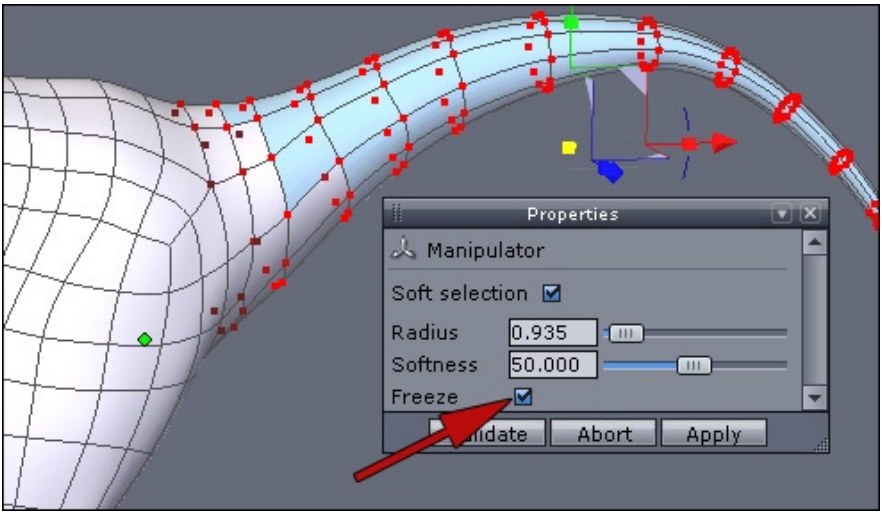
Try as much as possible to keep 4-sided polygons. Also be careful to keep the mesh as uniform as possible, to avoid having dense areas of polygons and others with too low a density. This issue is important if you plan to use displacement brushes to model high-definition details afterwards.

Finally, if you wish to animate your model, do not forget to detail it around deformation areas, to have them performed in a fluid way.

2.7. Global Modifications

Before starting this step, if you previously masked the half of the model, be sure to unmask it. Then, select both parts of the model using the Shift key and use the Weld Tool, located in the Vertex Modeling tab.

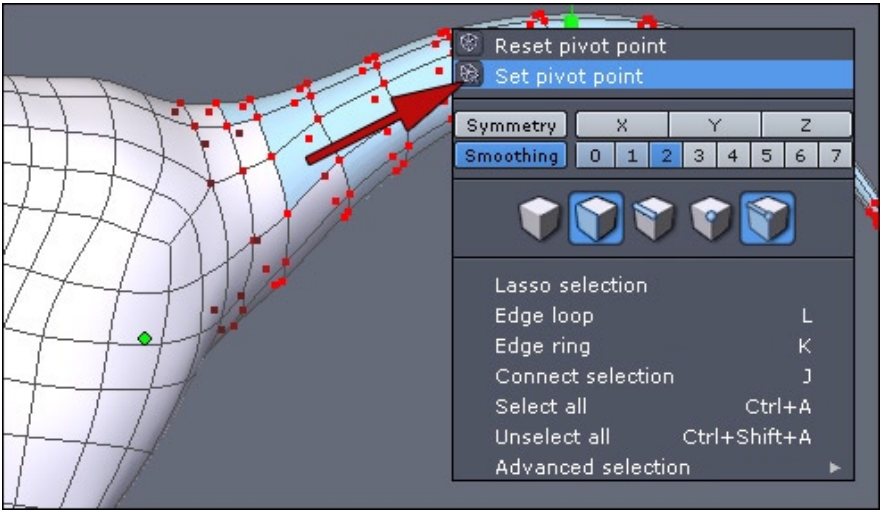
If all boundary edges were strictly located on the symmetry plane, your model will be perfectly welded. If needed, manually weld vertices which have are disjoined.



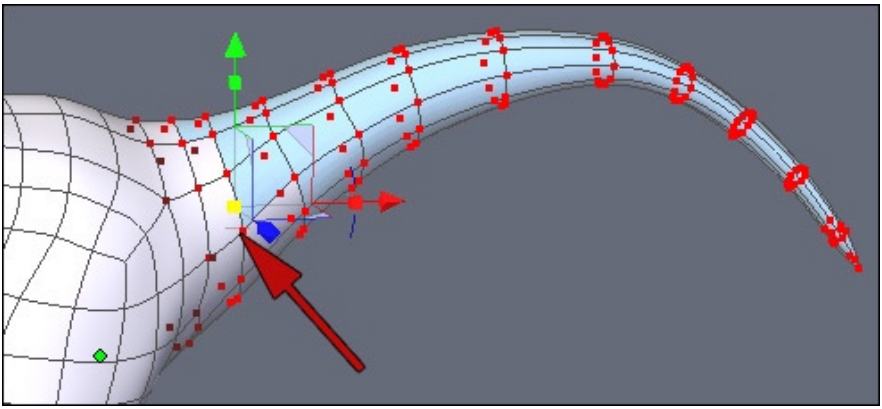
If you wish to modify a part of your model, such as changing the curvature of the tail, the easiest and fastest way is to use the Soft Selection.

A trick for the selection, provided by Emmanuel Rémia, is to select the polygon at the end of the tail and then, using the CTRL/Command and "+" key combination (the "+" key of the numeric keypad) several times will expand the selection along the model topology, to reach the location which best suits your needs.

Then turn the Soft Selection on in the property panel, and check the Freeze option, which allows you to keep the attenuation influence of the selection even after you have moved it.

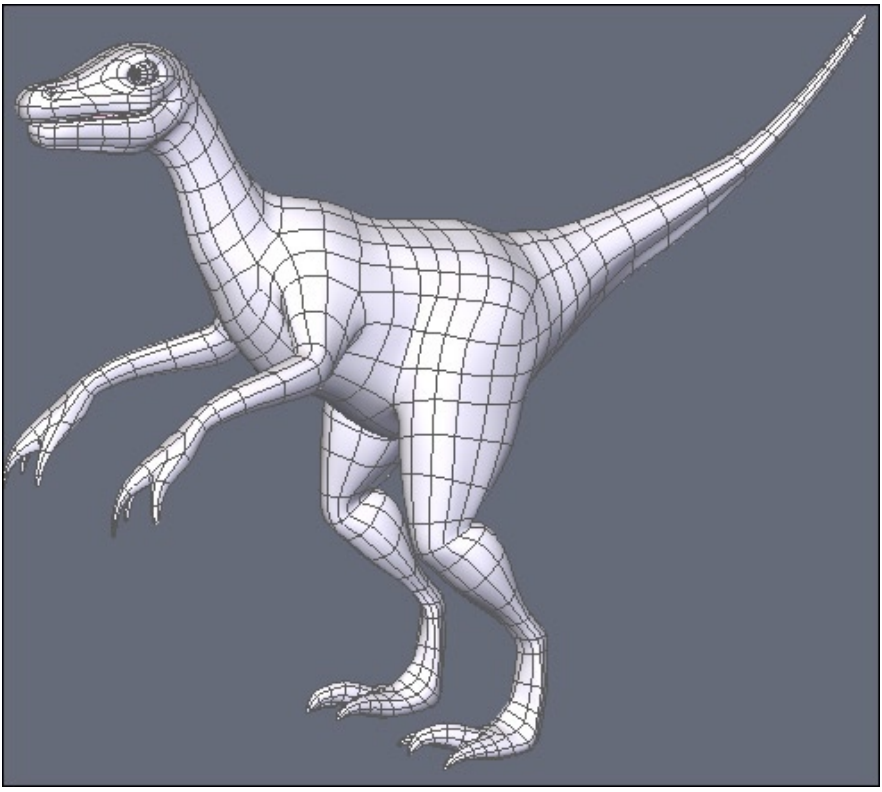


In the contextual menu, choose the “Set pivot point” utility, which will let you to place the Manipulator at a precise point on the model instead of the default location (which is the center of the selection).



Click a vertex and perform rotations to change the aspect of the tail.

As you do these operations with different selections, do some of the operations with the Soft Selection mode activated and some without the mode activated to refine the shape of your model until you are satisfied.



And voilà, the final dinosaur model! Of course, there are still small enhancements to do, additions, cuts, details to tweak, and your own personal touch.

We hope that through this example you have now a good overview of the Box Modeling technique.

It's now up to you to get inspired from this example to realize even more advanced creations!

Note to the Golden Pack owners: this model is available in the pack, as well as all its modeling steps!!

CREATE POSER CLOTHES

This short tutorial made by Kagi, will show you one of the methods available to create clothes with Hexagon 2 for a Poser or DAZ character.

Note: This tutorial has been made in Hexagon 1.2, but works the same in Hexagon 2

About Kagi:

Recently switching to compter (in 2002), Kagi started the 3D « seriously » only in 2005. It is now his main hobby, playing with Hexagon, Poser and Vue d'Esprit. He models all kind of stuff, but like a lot Anime/Manga style and Science fiction.

You can contact Kagi by email or visit his website!

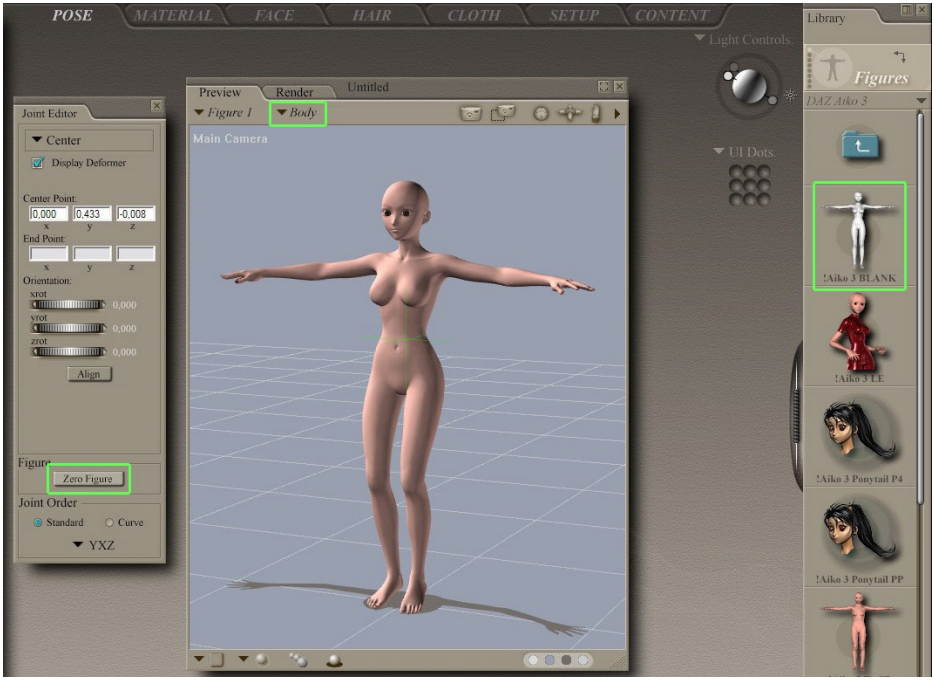
1. Introduction

This tutorial is based on Poser 6 and Aiko 3 from Daz. But it will work with any Poser version and Poser / Daz characters!

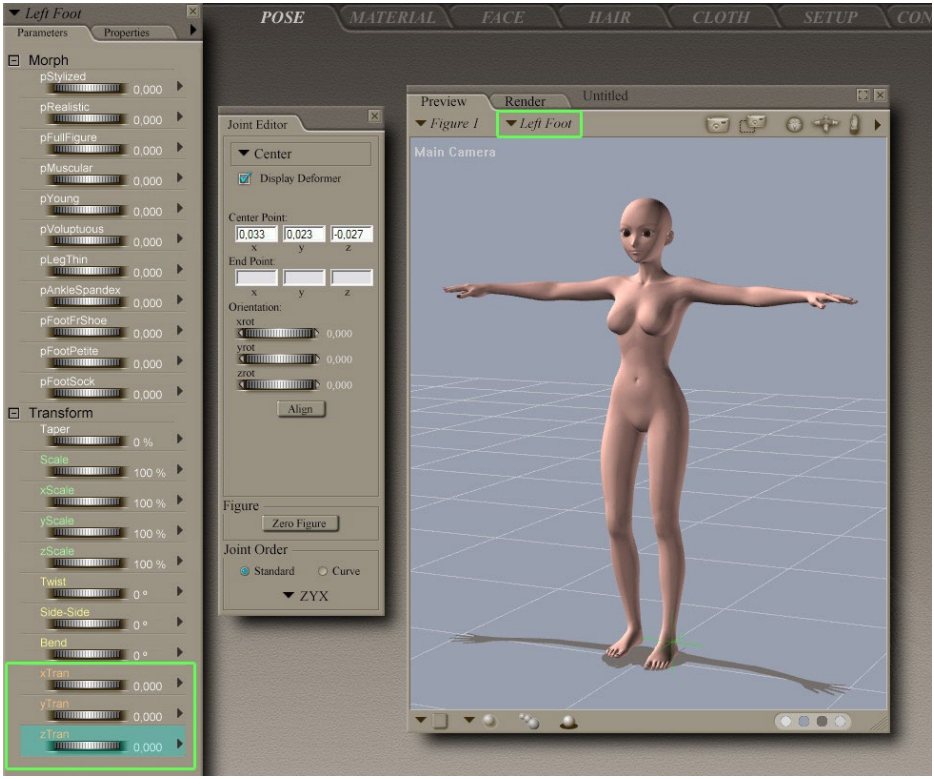
You won't find the steps to create the model itself, but only the way to create yours clothes!

2. The steps

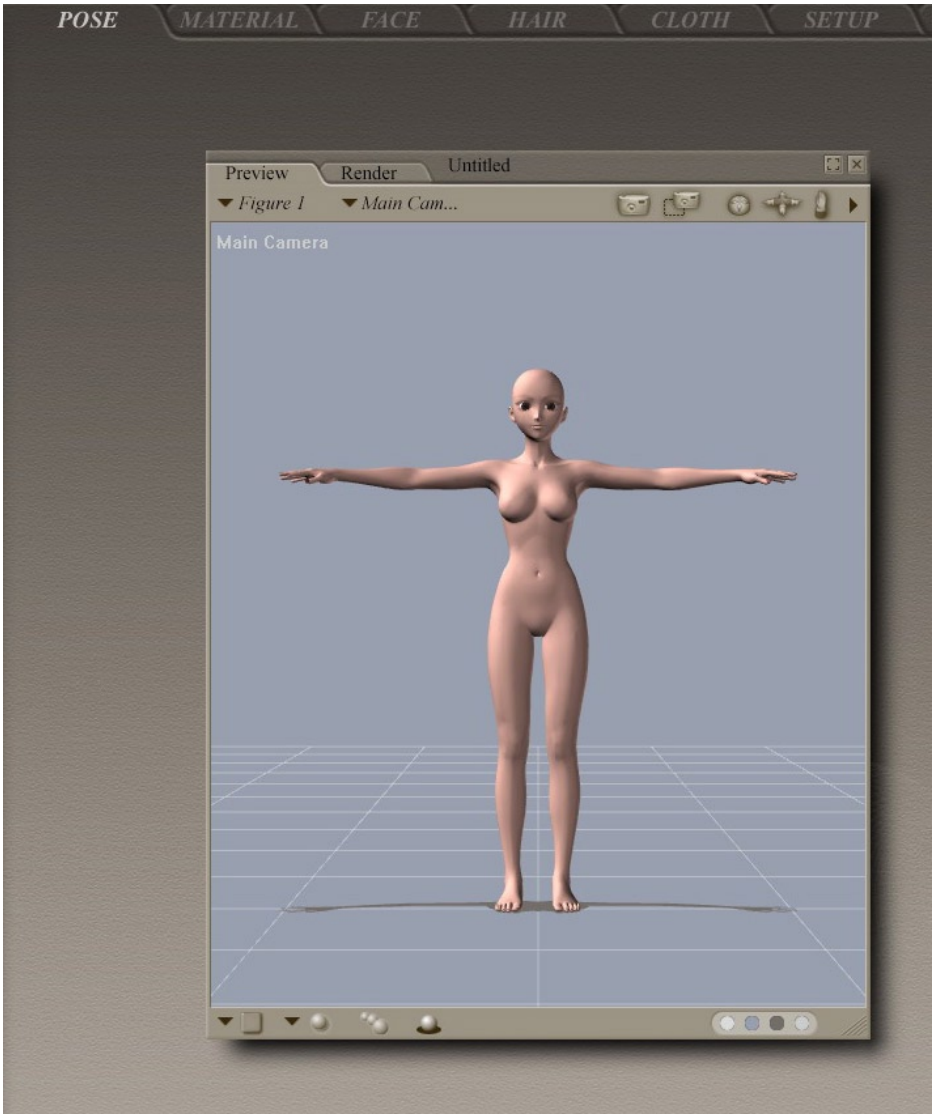
2.1. Preparing the Poser model



We load the character and we apply the "zero position" to it, in other words all the parts of the body must be at a zero position. One easy method is to open the "Joint Editor" (Window>Joint Editor), and to click on "zero figure".

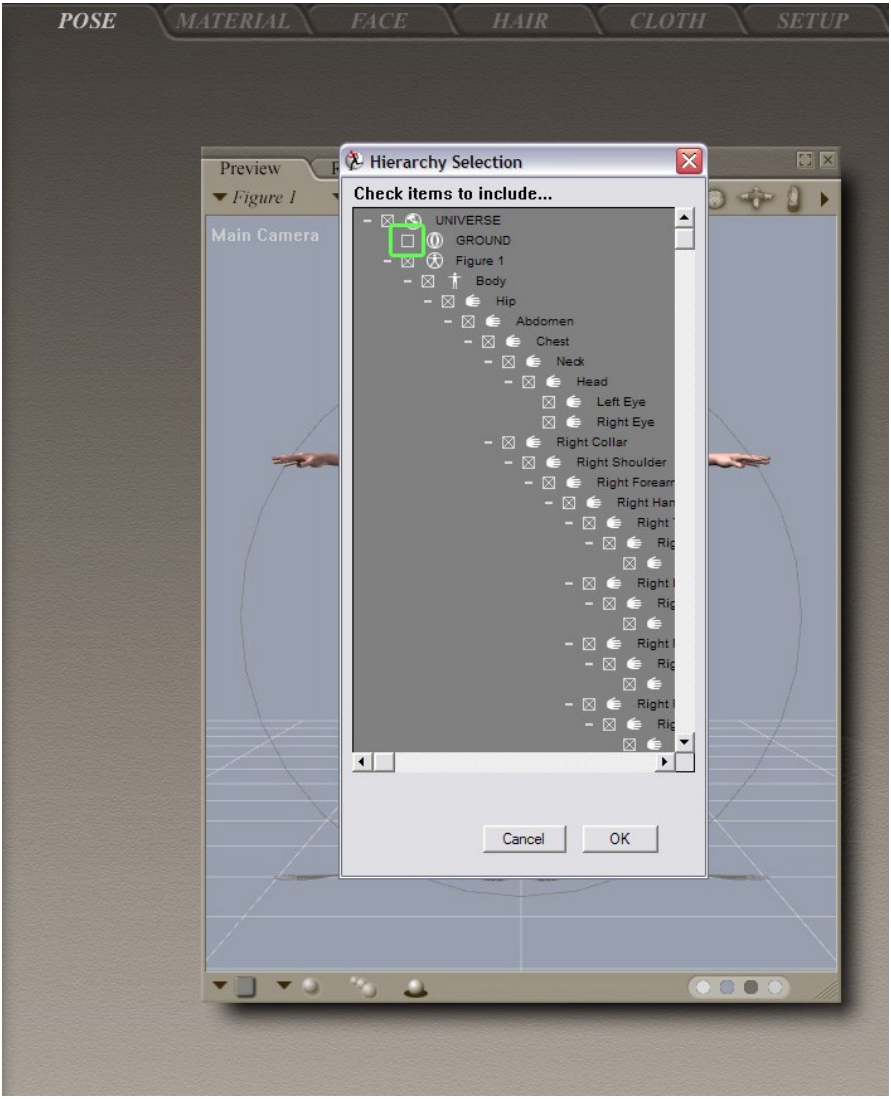


All the body parts are now at zero. We just need to move the feet now.

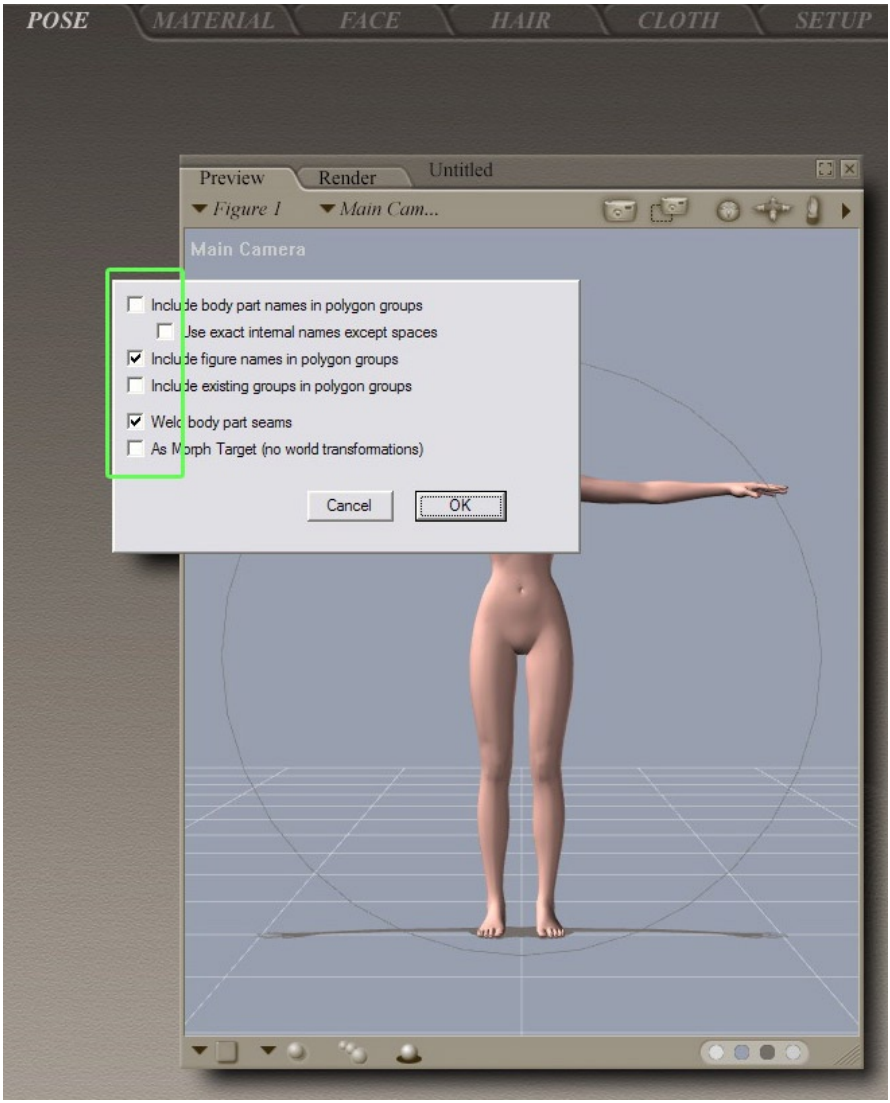


Now, the model is ready to export!

2.2. Export the model from Poser to Hexagon

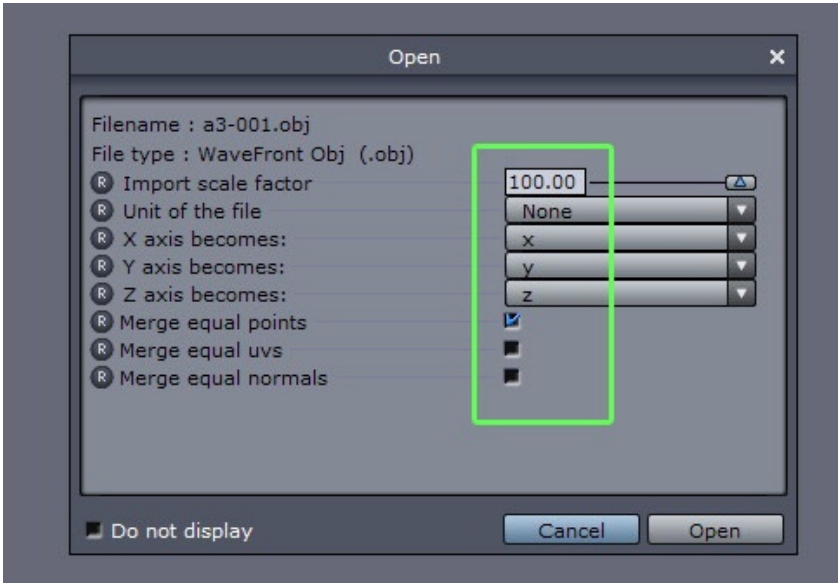


Then we export the character in .obj format (Wavefront). In the “Hierarchy Window” we uncheck “Ground”.

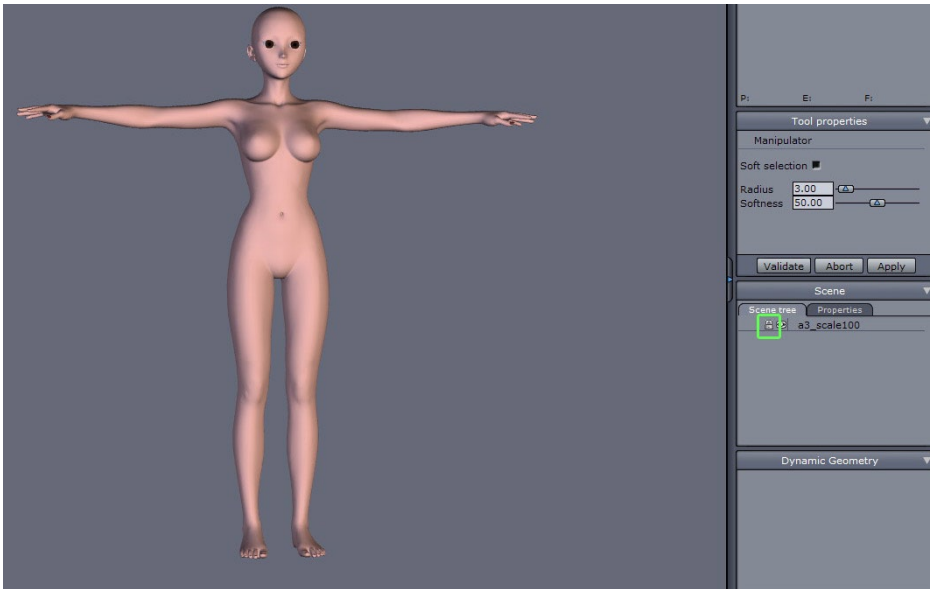


We can export it with default export settings.

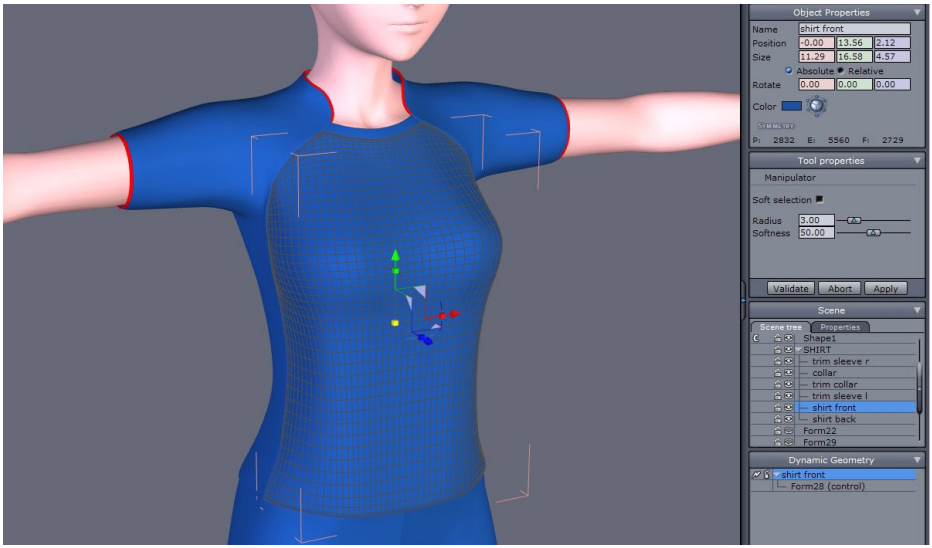
2.3. Import the model in Hexagon



Now we switch to Hexagon 2. We import the character, and we choose a scale of 100.

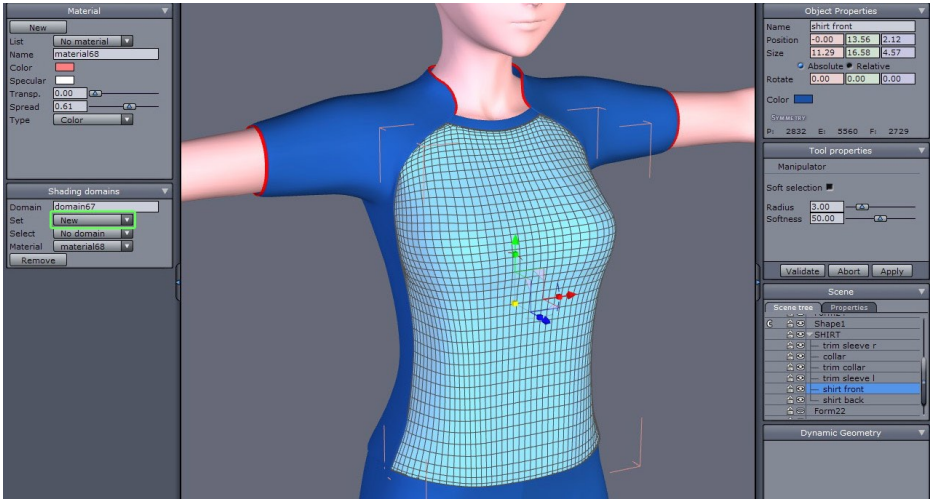


The character loaded, we can rename it, lock it, and save it!



Now create the model following your own method.

2.4. Preparing the model

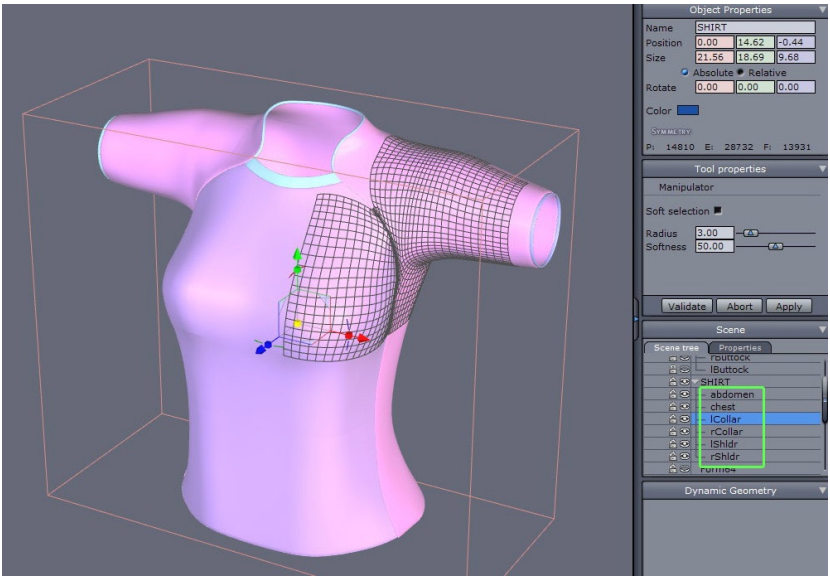


To define the textures, we use the “shading domain”. We select all the faces (or object) to apply a domain to it.

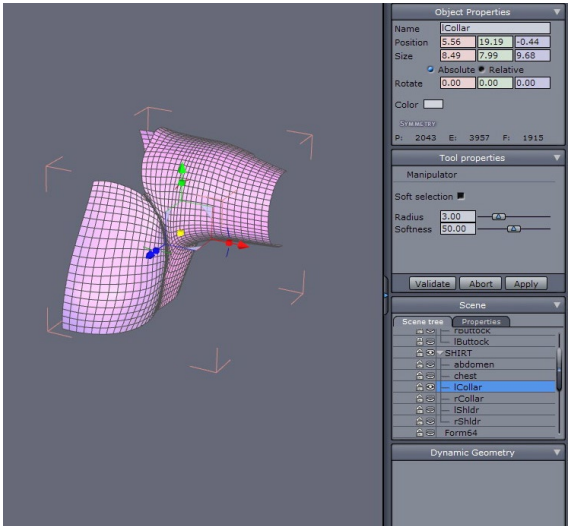
Tip: once the domain is created, we have to change the color, to avoid getting some bugs in Poser later.

We also verify the orientation of the normals of each objects, it can avoid bugs in Poser later too...

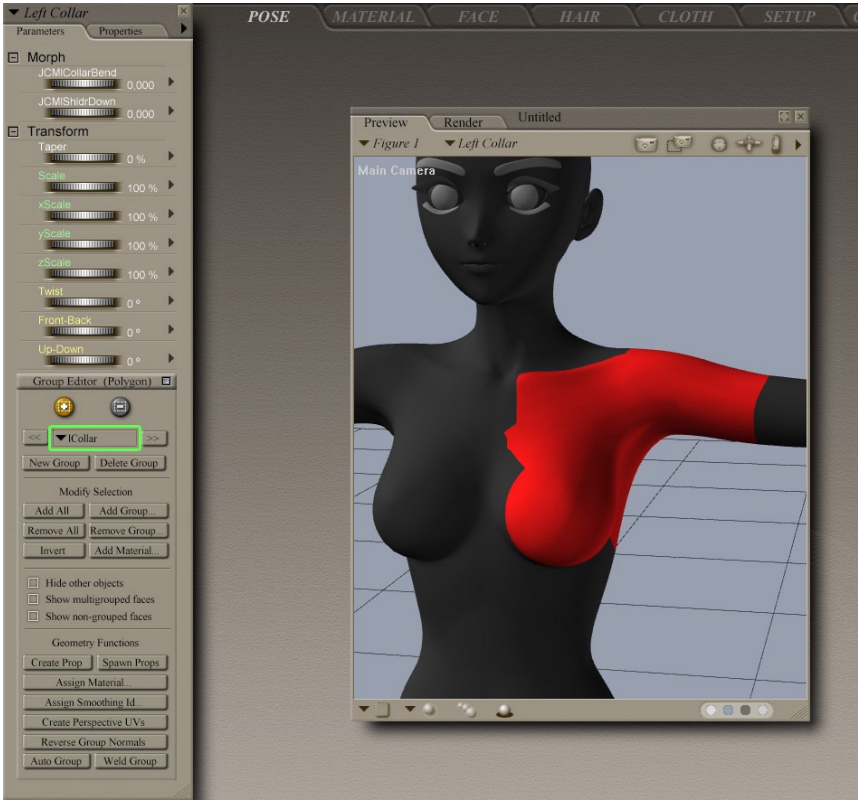
Once the cloth is modeled, the material domains applied, and the normals verified, we weld all the elements composing the cloth.



Now we will do the separation of each part of the cloth which will correspond to the parts of the character's body.

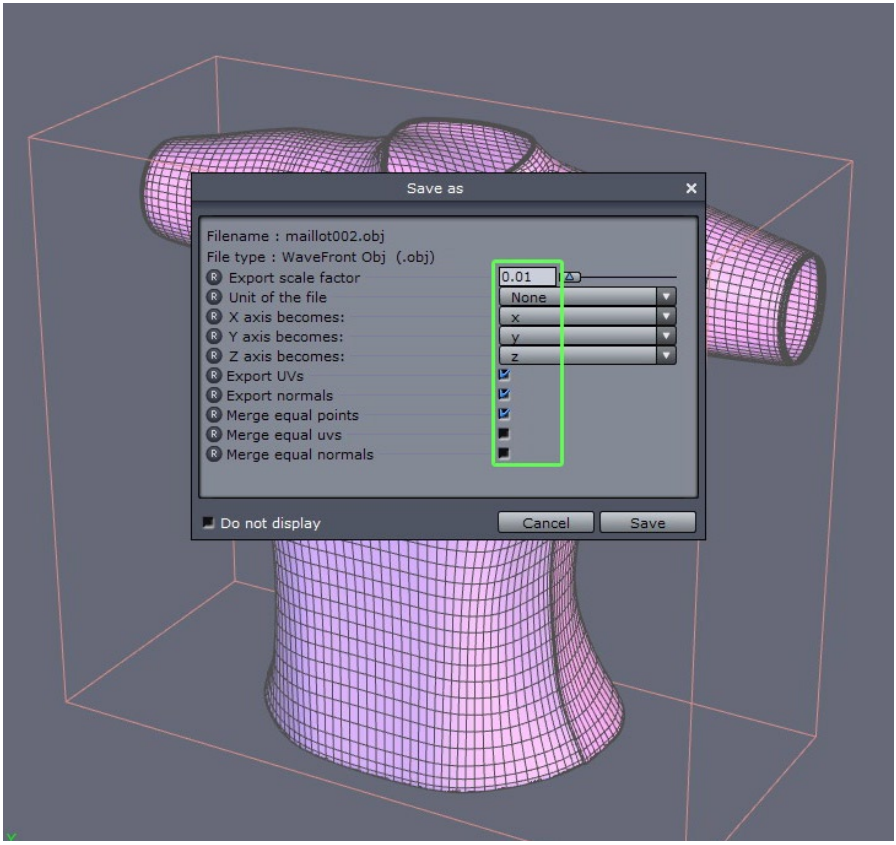


We use the Extract tool to cut the cloth (or do Cut Paste).

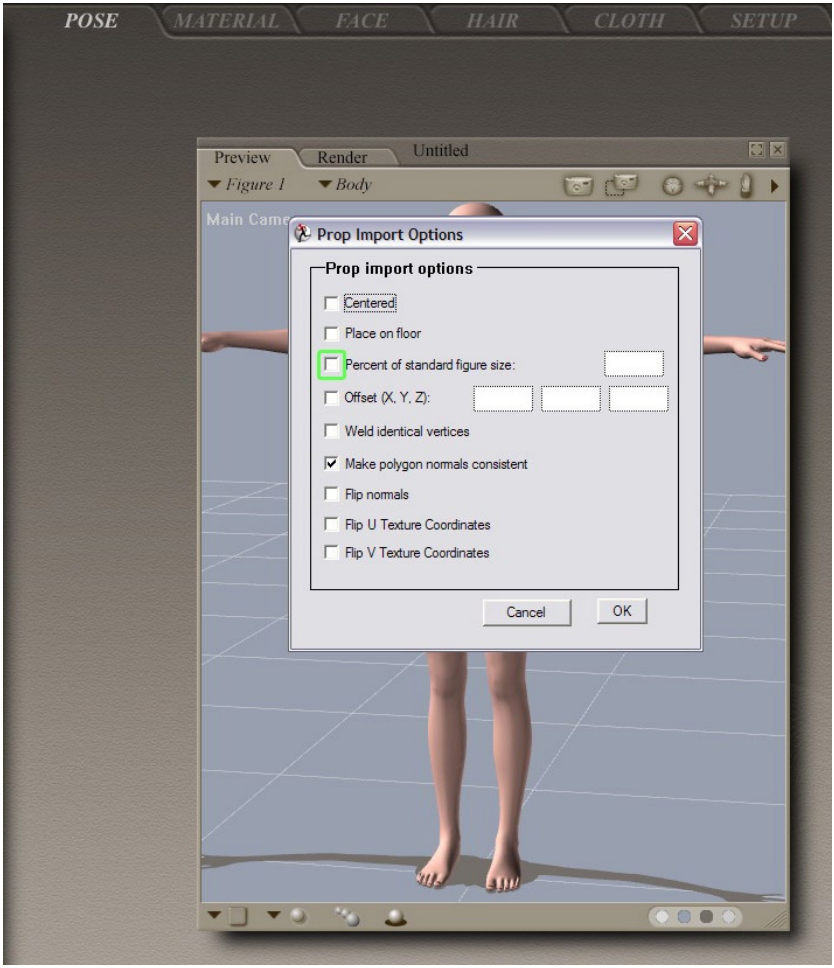


To cut the cloth, we look at the groups of the character in Poser. Once this is done, we rename each part with the name corresponding to the body part of the character (abdomen, chest, etc.). We can use the “Group Editor” in Poser so we know the exact names, as it is important to keep the caps. We verify the normals again, as they may have changed.

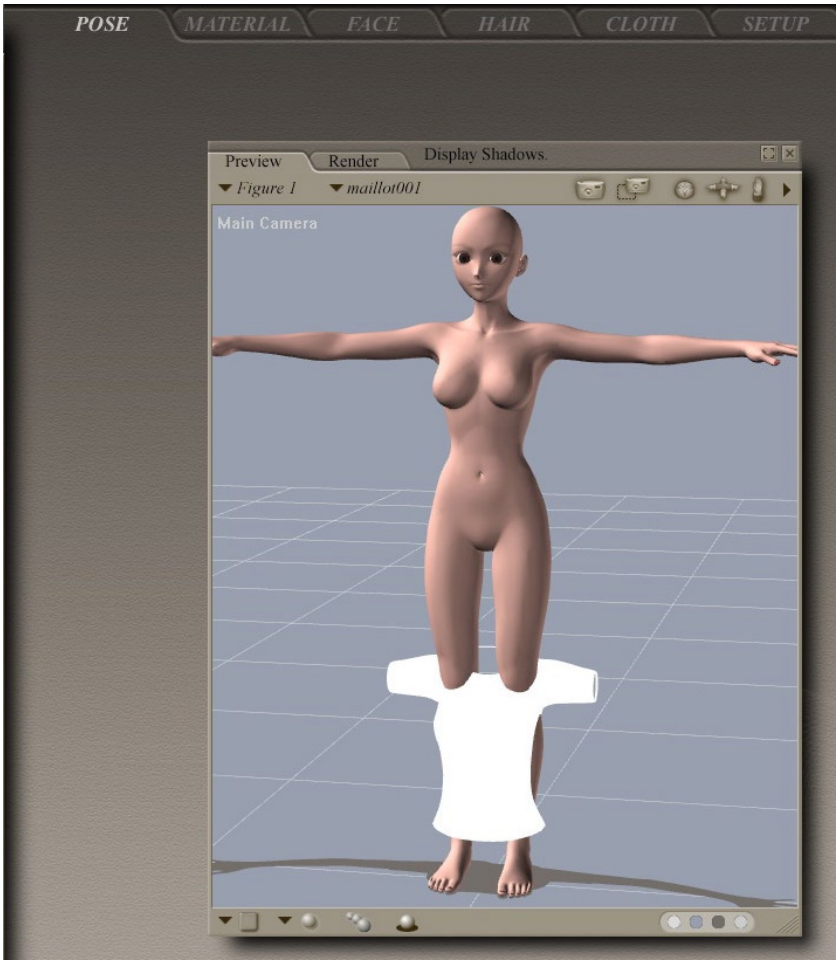
2.5. Export the model from Hexagon to Poser



Once the cloth is correctly split and its part renamed, we can export it. We choose the .obj format and we restore the export scale to 0.01.

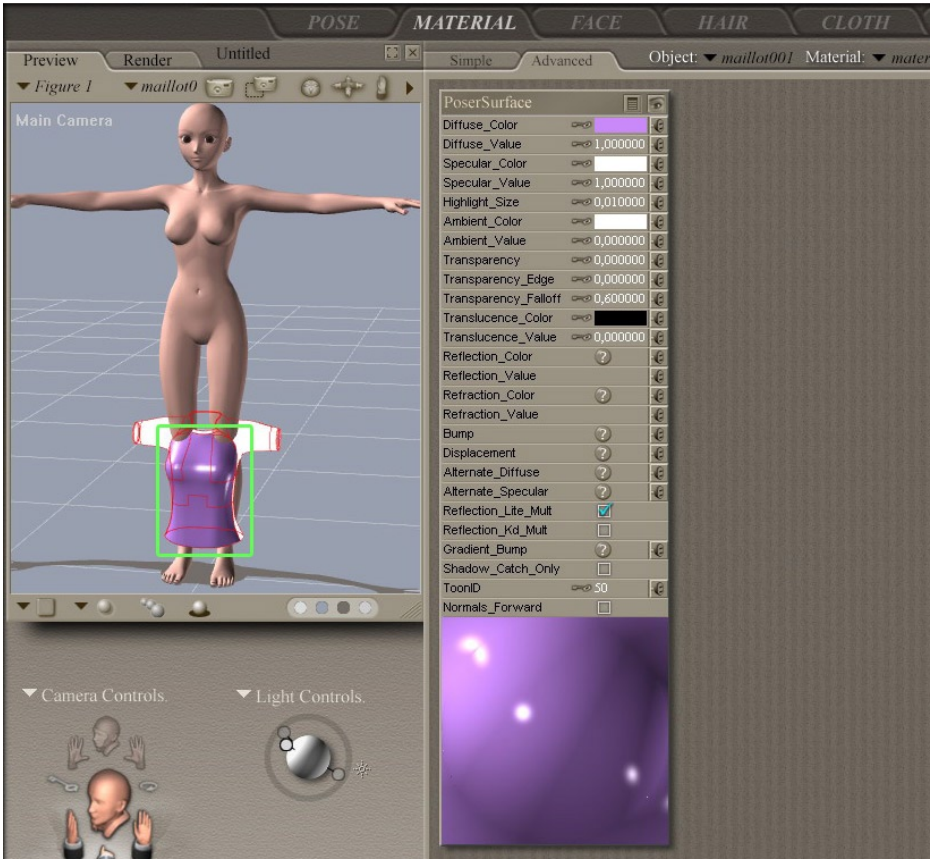


Now, go back to Poser, load the character and import the cloth. Uncheck “Percent of standard figure size”, like this, so the cloth will have the correct scale. You can keep “Centered” checked.

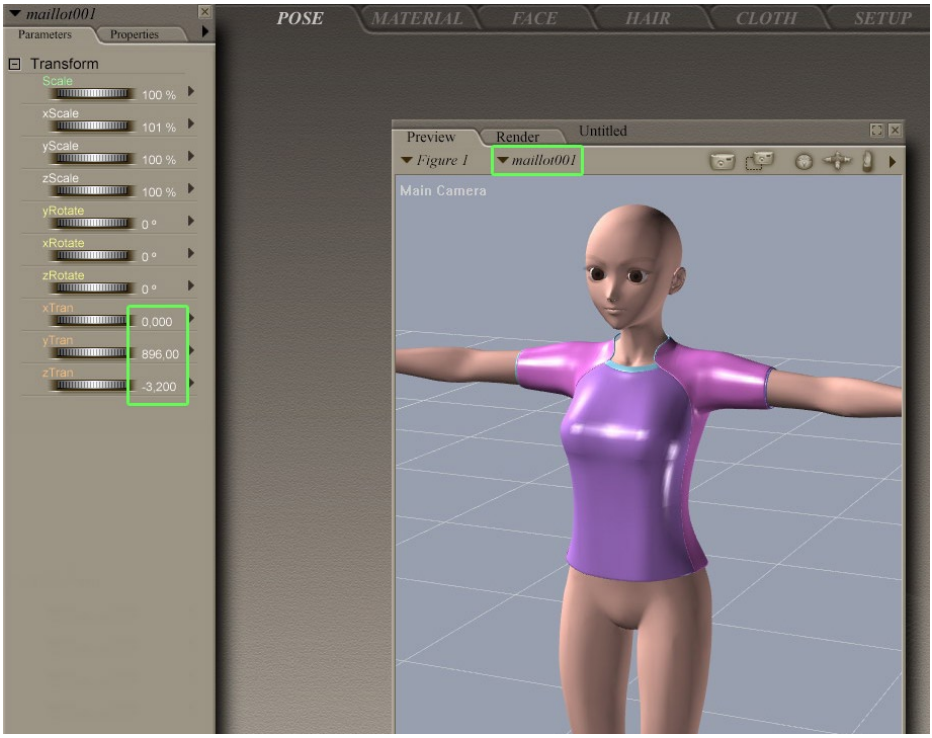


The cloth appears.

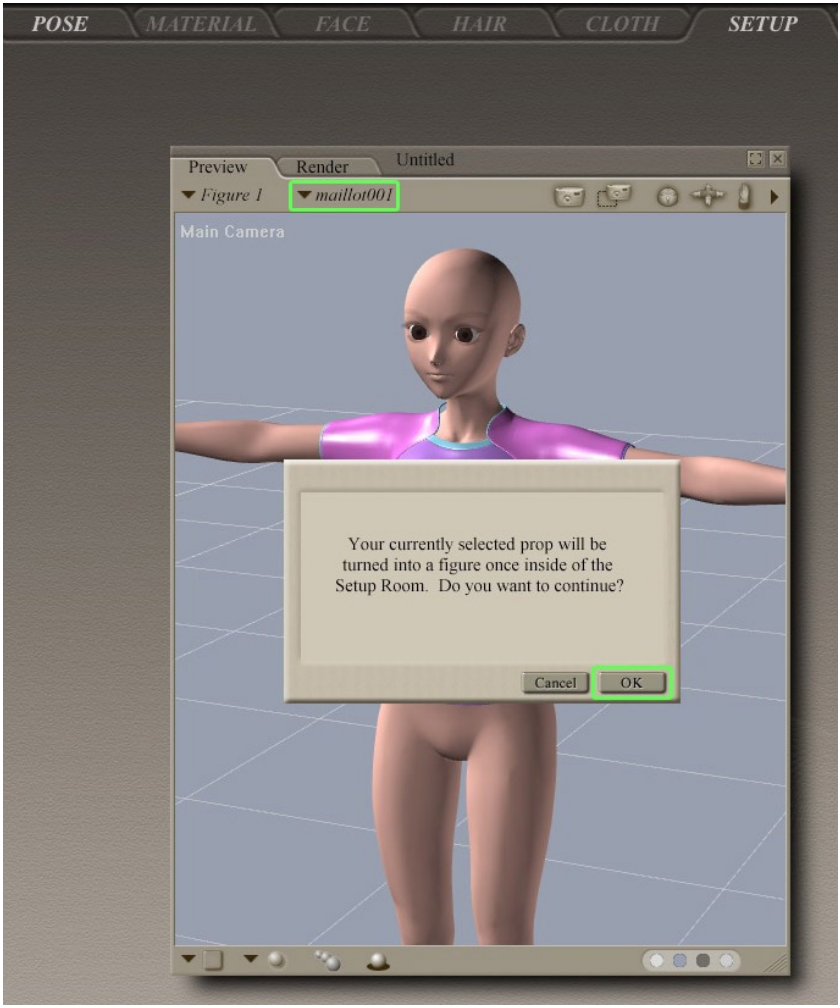
2.6. Create the cloth in Poser



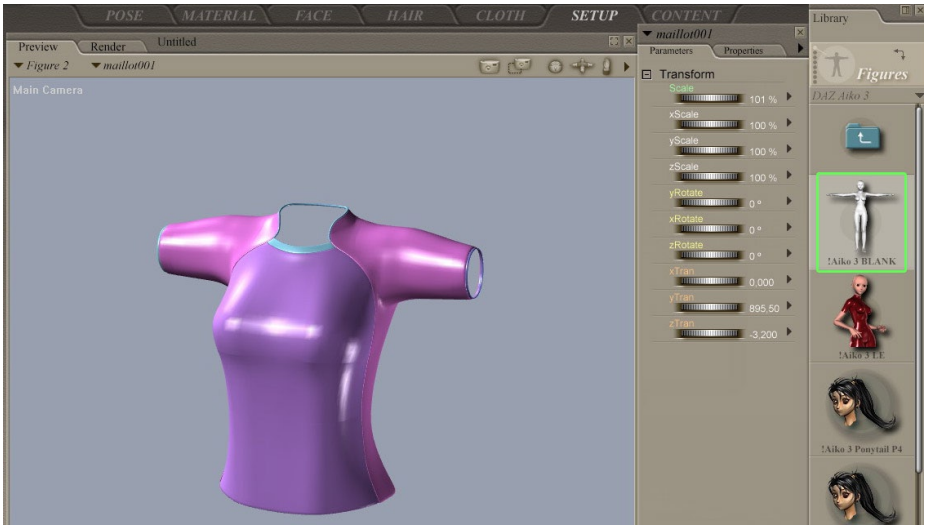
If it is all white, just go to the Material Room and choose each part to restore the color.

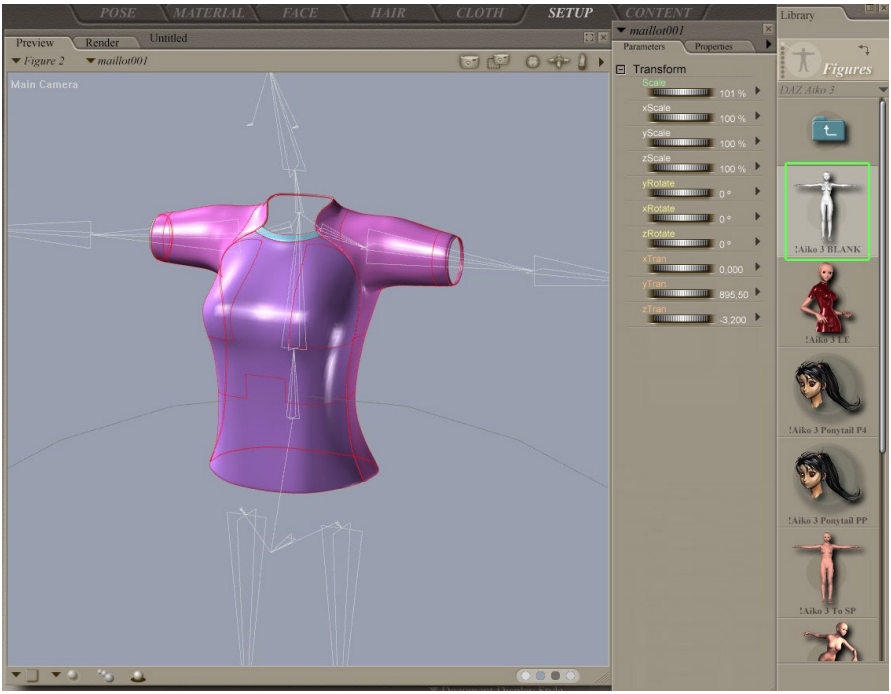


We may need to move the cloth and fix the scale a little, if necessary. Once it's done, you can write the coordinates, as they will be the same for all other clothes, shoes, pants, etc.

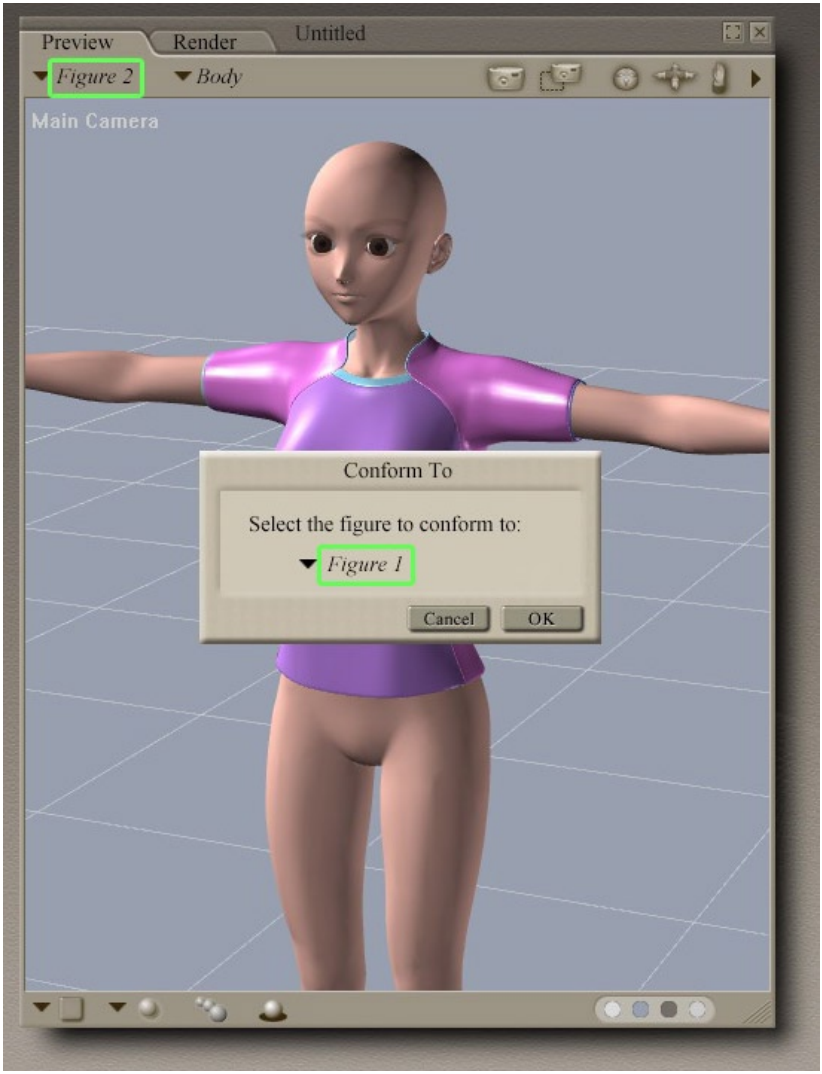


With the cloth selected, we can go to the Setup Room.

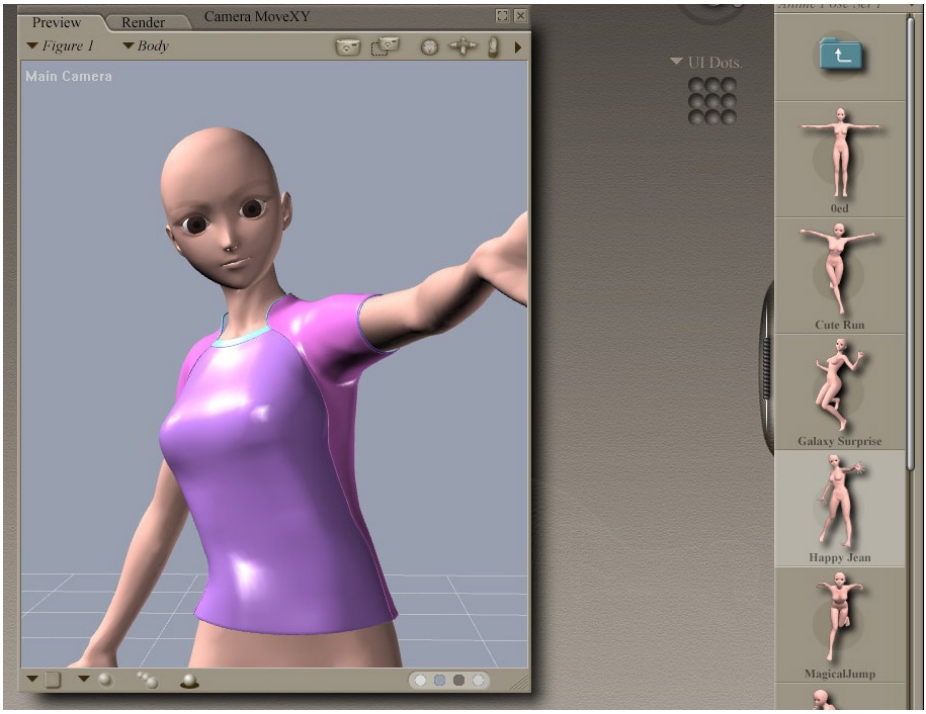




We only need to load the bones of the present character, and the bones appear.



Go back to the Pose Room.
The “prop” became a “figure” that we can now conform (Figure>Conform To).



Of course some adjustments are needed but the main part is done!

And Voila.

CREATE POSER PROPS

This short tutorial made by Kagi, will show you one of the methods available to create Props with Hexagon 2 for a Poser or DAZ character.

Note: This tutorial has been made in Hexagon 1.2, but works the same in Hexagon 2

About Kagi:

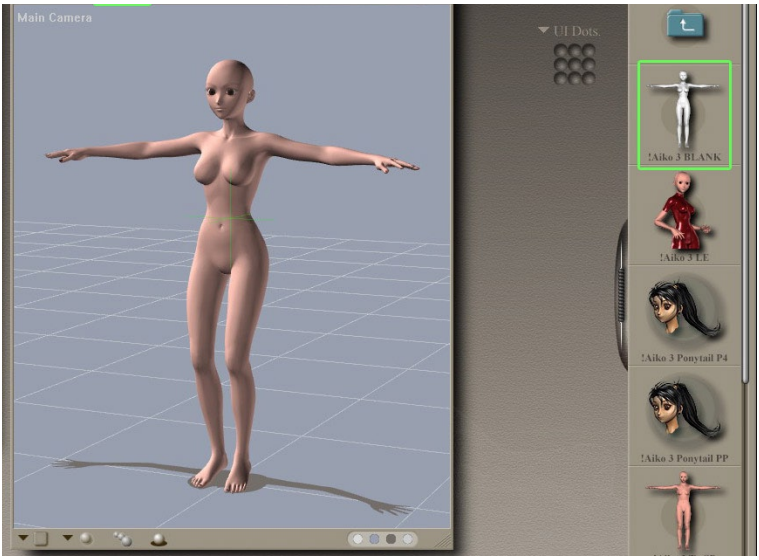
Recently switching to compter (in 2002), Kagi started the 3D « seriously » only in 2005. It is now his main hobby, playing with Hexagon, Poser and Vue d'Esprit. He models all kind of stuff, but like a lot Anime/Manga style and Science fiction.

You can contact Kagi by email or visit his website!

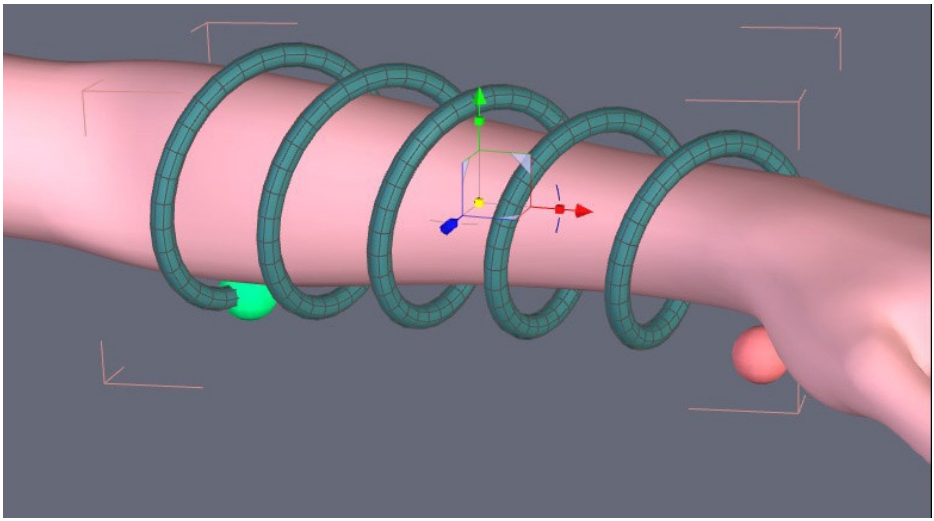
1. Introduction

This tutorial is based on Poser 6 and Aiko 3 from DAZ. You won't find the steps to create the model itself, but you will know how it works to create your own Props!

2. The steps

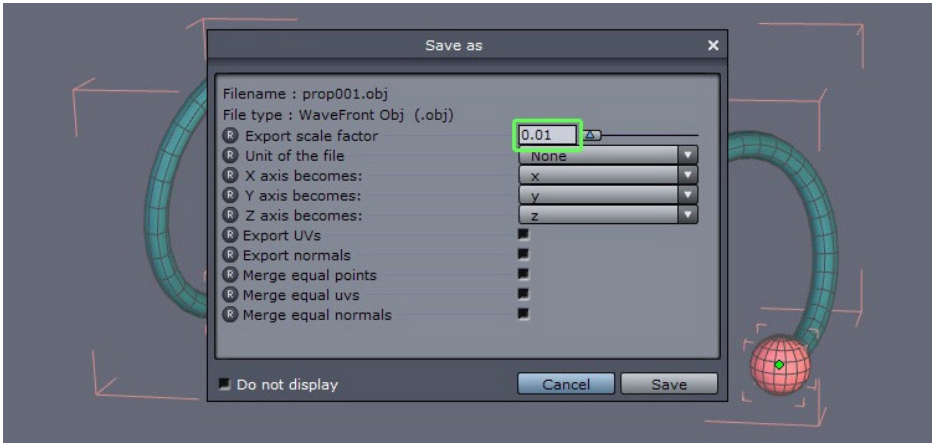


To create a Prop, it's not necessary to import any character, but in some case, it's better. (ie: jewelry, glasses, etc.). To import the character, we follow the same method as for the clothes creation tutorial.

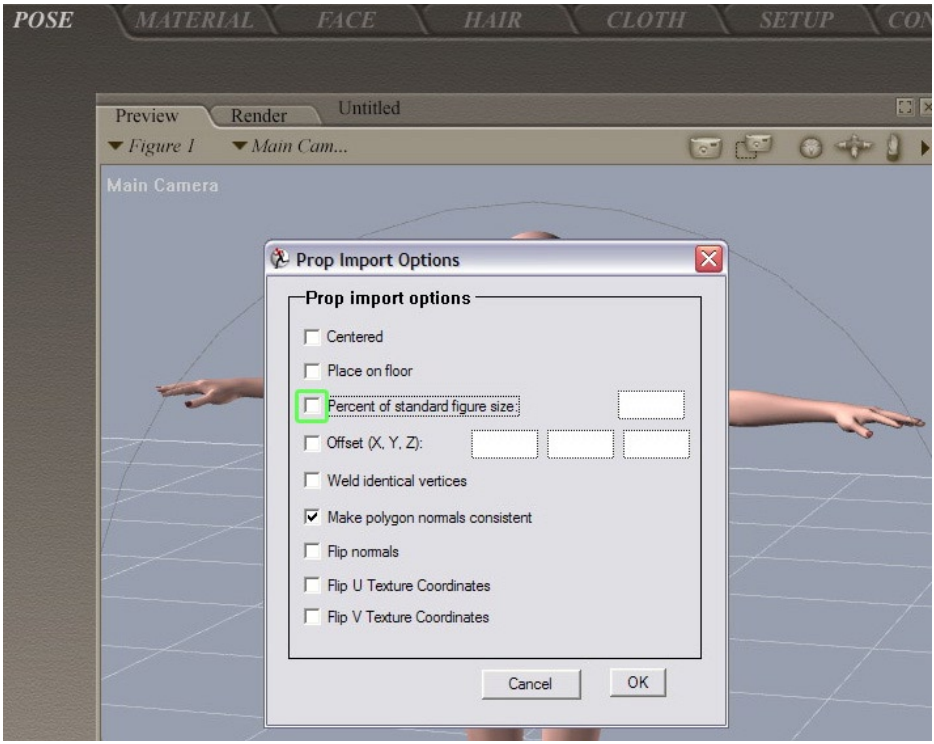


Then we create the prop. For the textures, we use the same method as for the clothes creation tutorial, using the shading domains. But it's not necessary to cut the object because it will not be articulated.

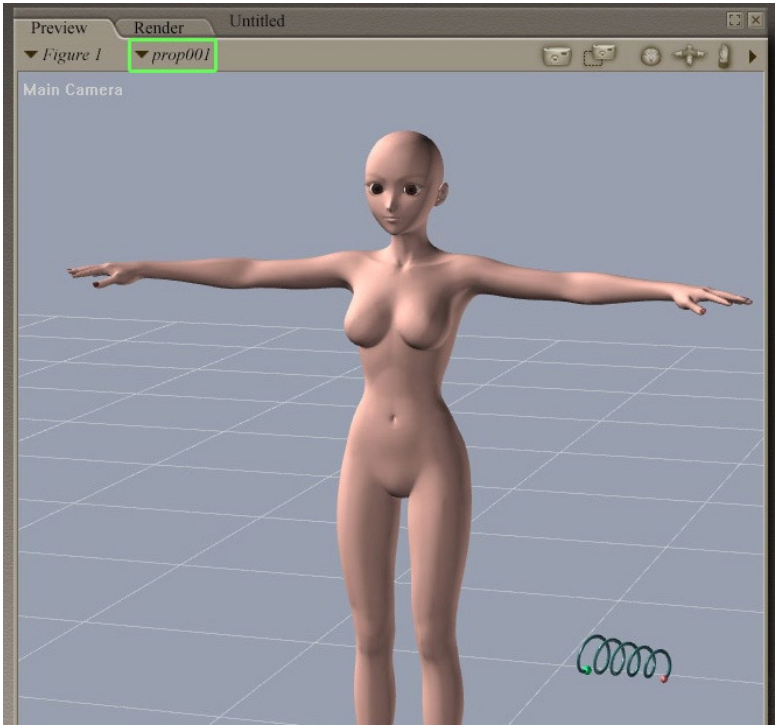
Tip: using the morph target we can easily create some variants.



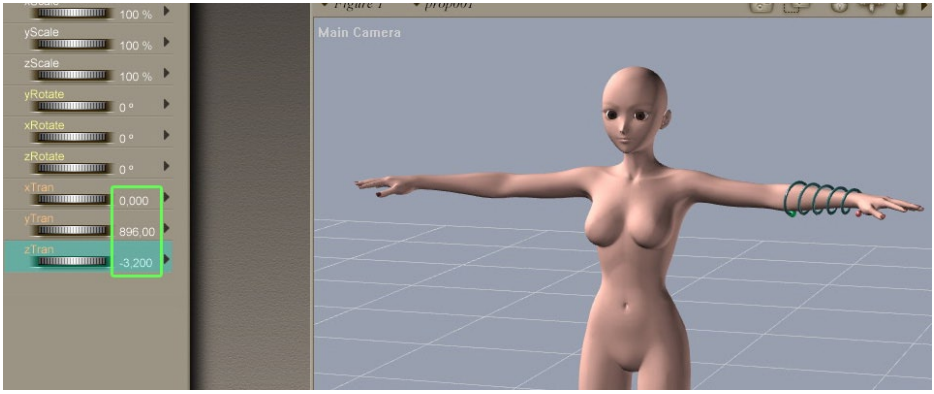
Export the model, and don't forget to change the scale if you did it when you imported the model.



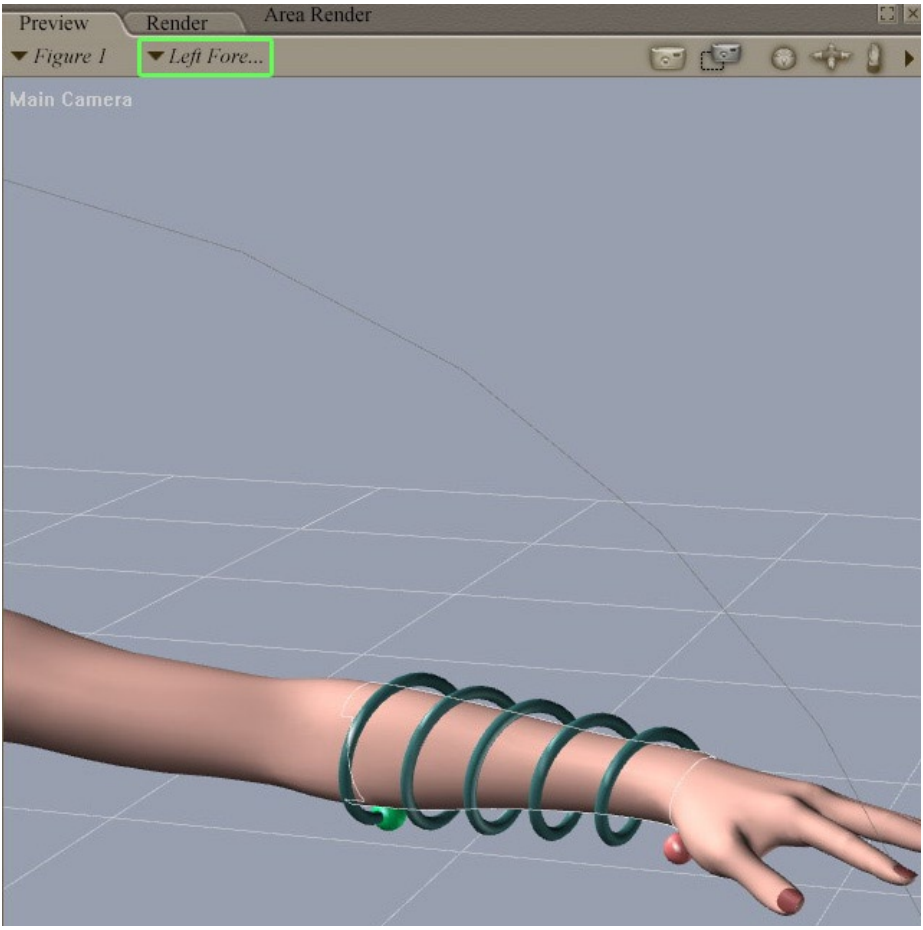
In Poser, we load the desired character and then we import the prop.



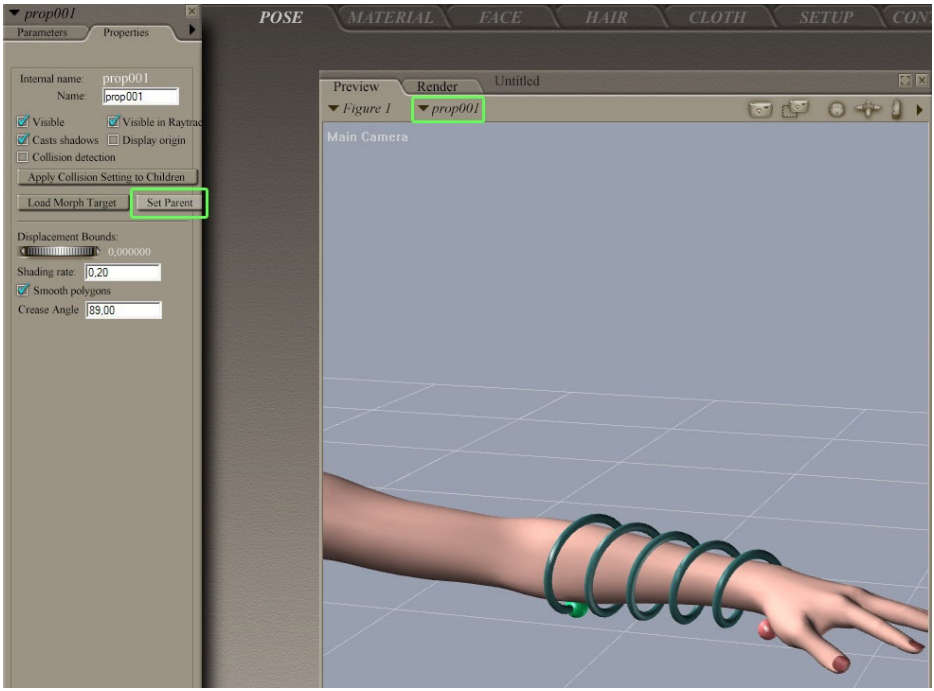
Then we need only to move it.



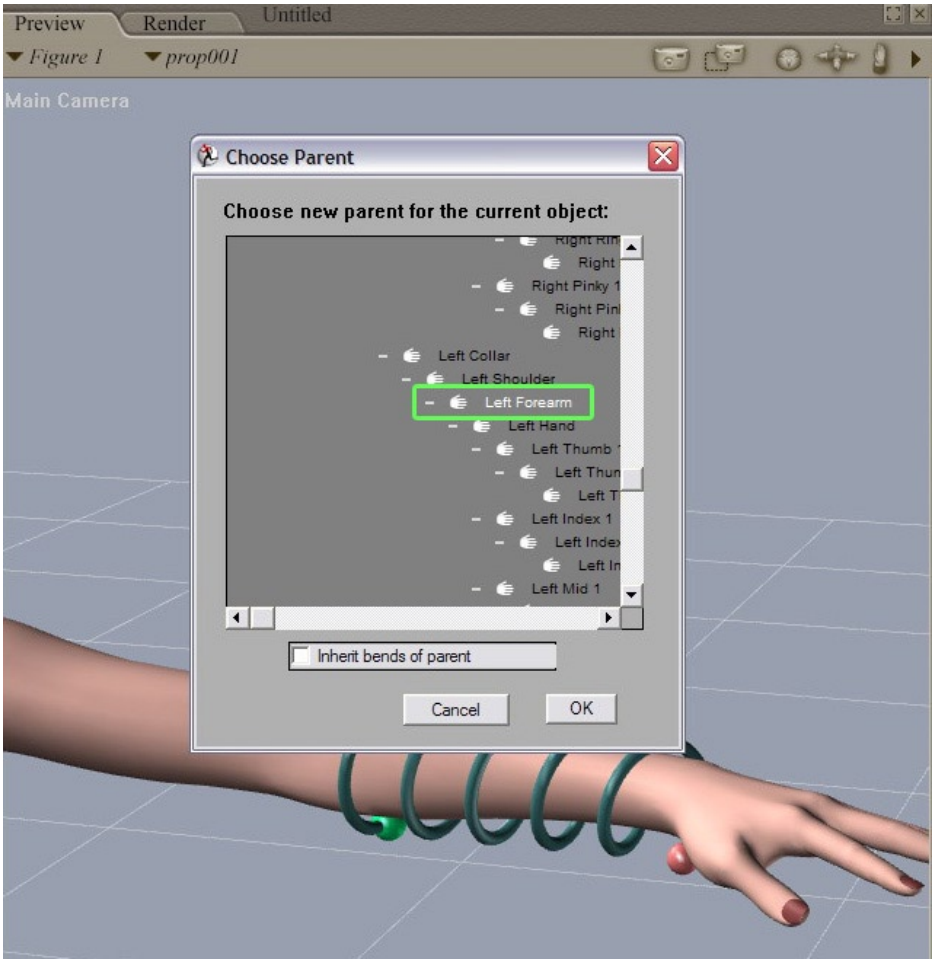
The coordinates are the same than we used for the clothes.



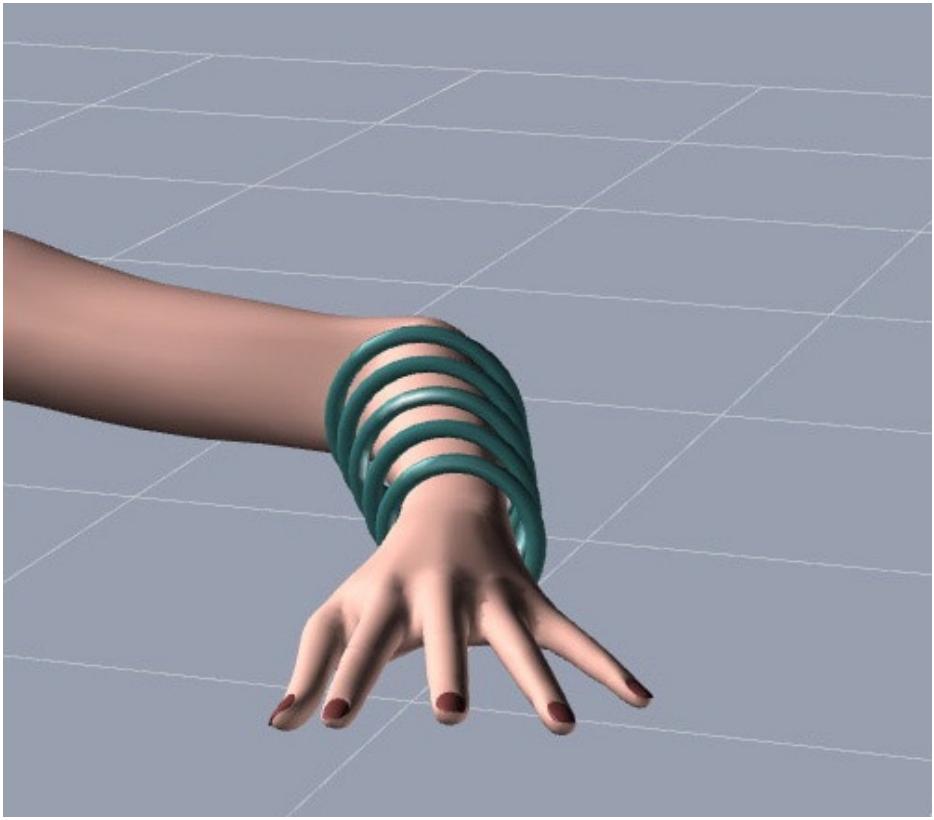
The prop only needs to follow the movements of the characters. Then depending on its position, we note the corresponding body part



In the properties we will choose it as “parent”.



And choose the body part as the parent.



Now, your Prop is connected to your character, ready to be Pose or animate!

CREATE POSER MORPH TARGETS

This short tutorial made by Kagi, will show you one of the methods available to create Morph Targets with Hexagon for a Poser or DAZ character.

Note: This tutorial has been made in Hexagon 1.2, but works the same in Hexagon 2

About Kagi:

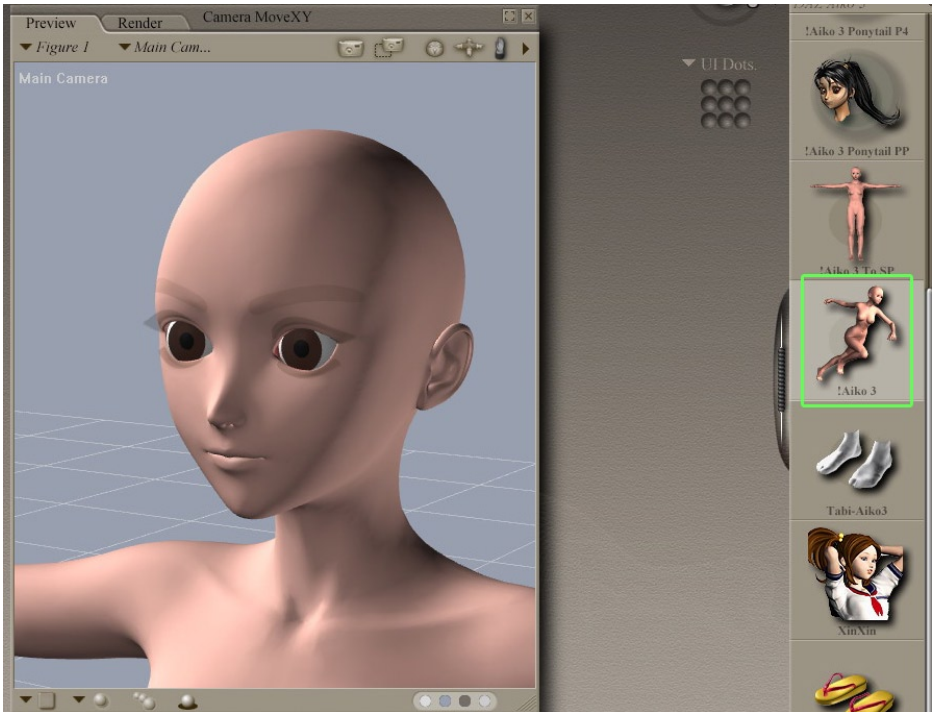
Recently switching to compter (in 2002), Kagi started the 3D « seriously » only in 2005. It is now his main hobby, playing with Hexagon, Poser and Vue d'Esprit. He models all kind of stuff, but like a lot Anime/Manga style and Science fiction.

You can contact Kagi by email or visit his website!

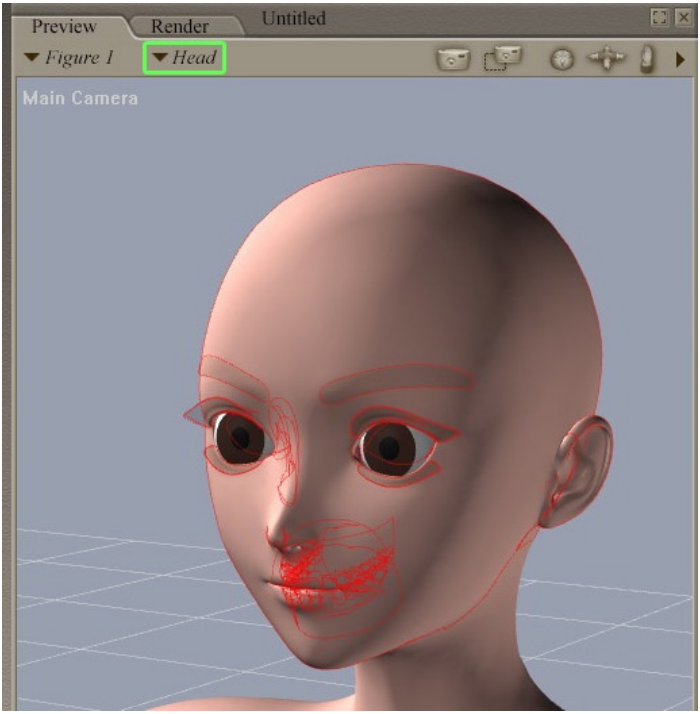
1. Introduction

This tutorial is based on Poser 6 and Aiko 3 from DAZ. You won't find the steps to create the model itself, but you will know how it works to create your own Props!

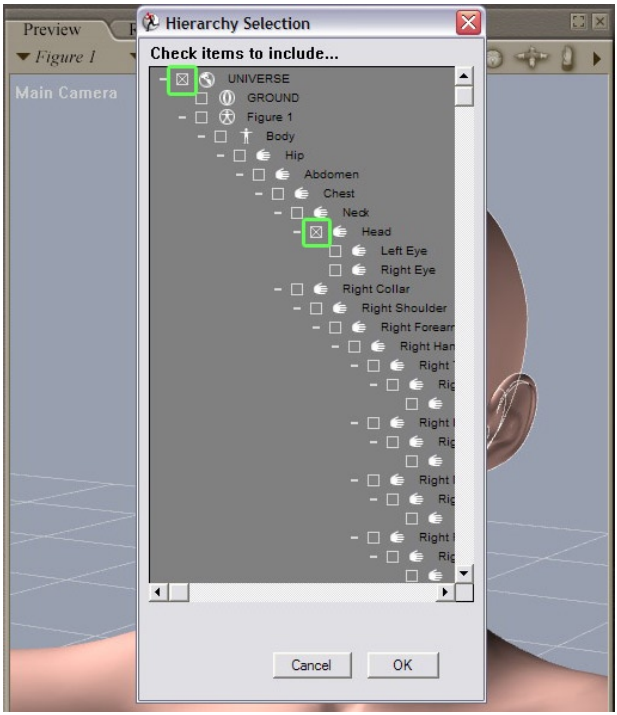
2. The steps



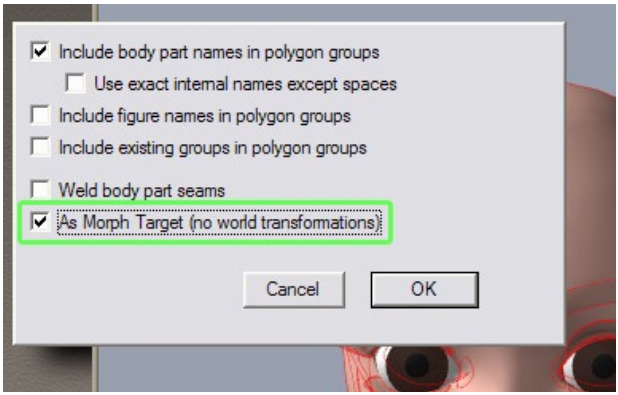
In Poser, load the desired character.



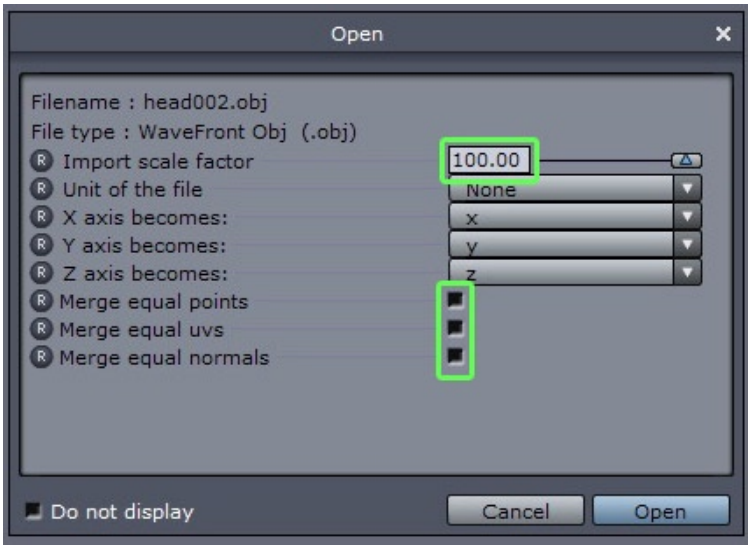
Export only the part you want to modify.



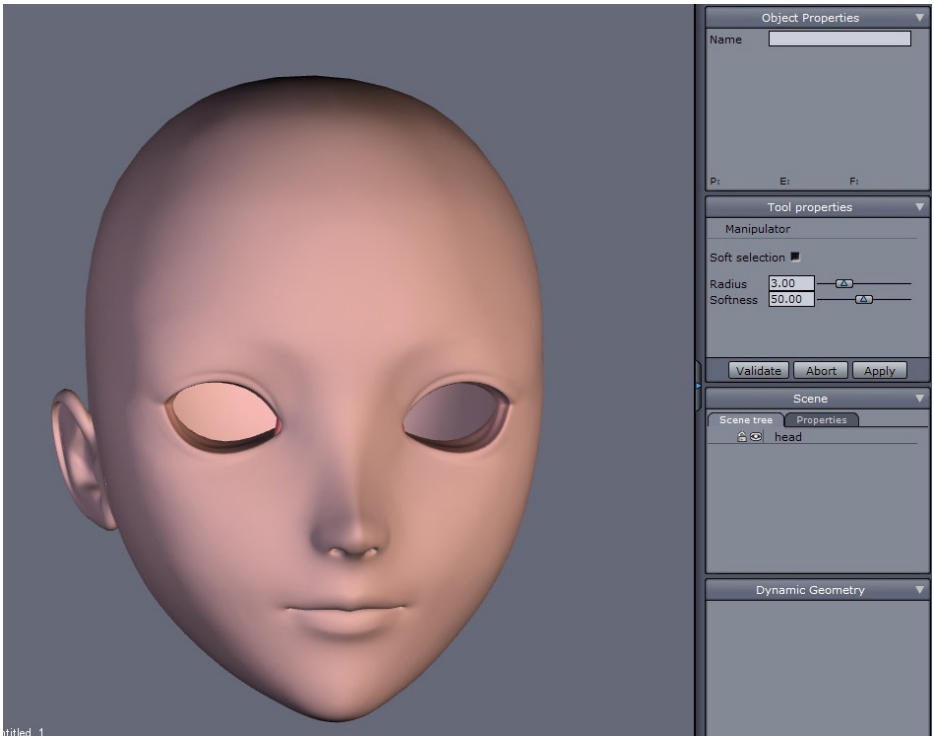
Export>Wavefront .obj and in the “Hierarchy Selection” uncheck all except “Universe” and then only add the body part we want to modify.



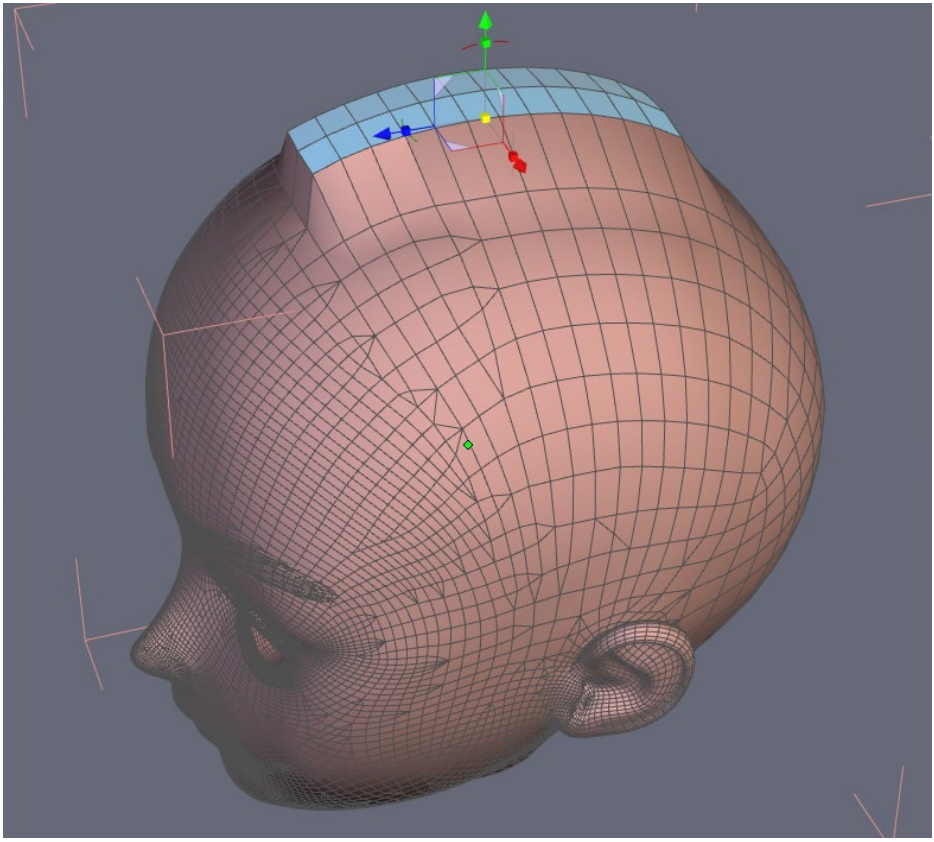
In the export settings, check “As Morph Target”.



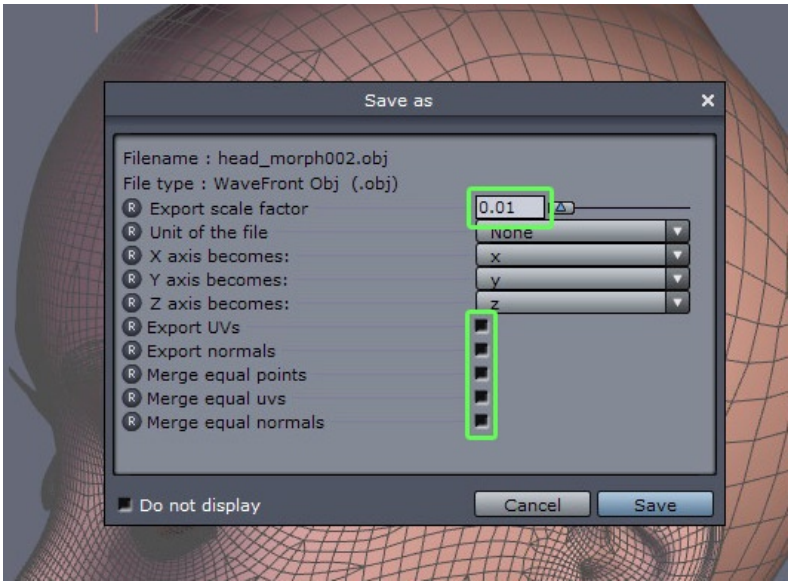
In Hexagon 2, import the object. Uncheck the merge options and don't forget to change the scale for a better visualization of your mesh (100 scale value).



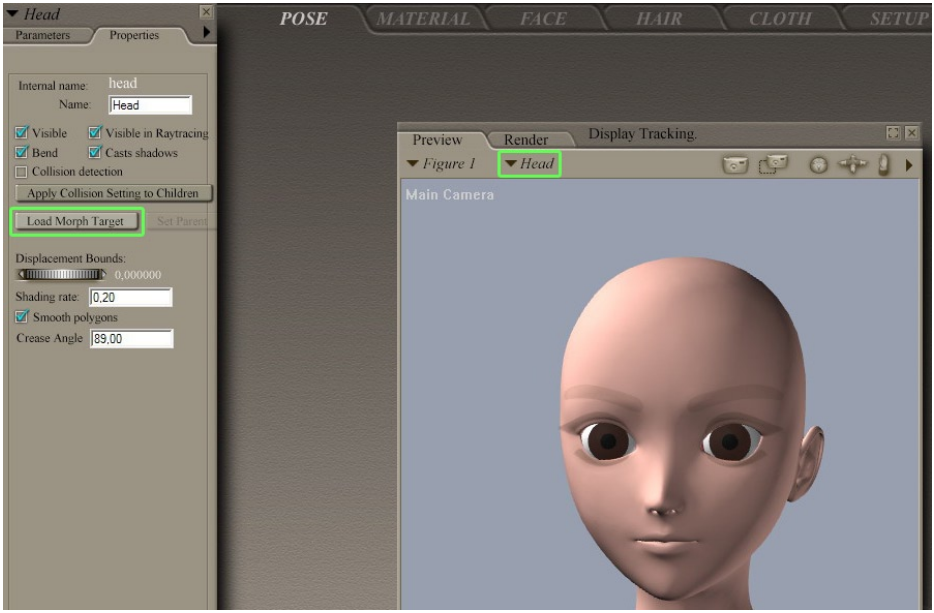
The object you will morph appears.



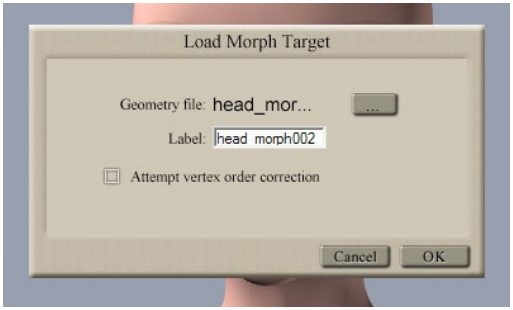
To make the morph target active, it's important to keep the mesh geometry intact, which means that we can only move the faces and can't create new ones. So we can only move, rotate and scale them.



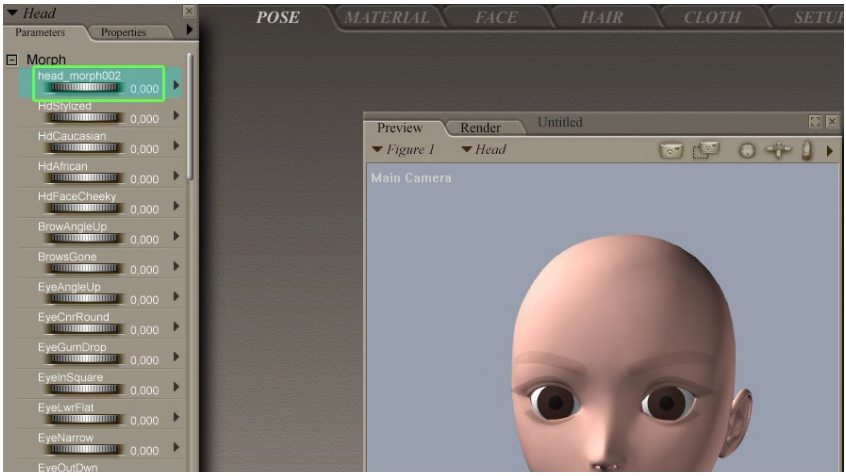
Once the modifications are done, you can export it. Choose the .obj format and restore the scale (0.01). All the boxes are unchecked.



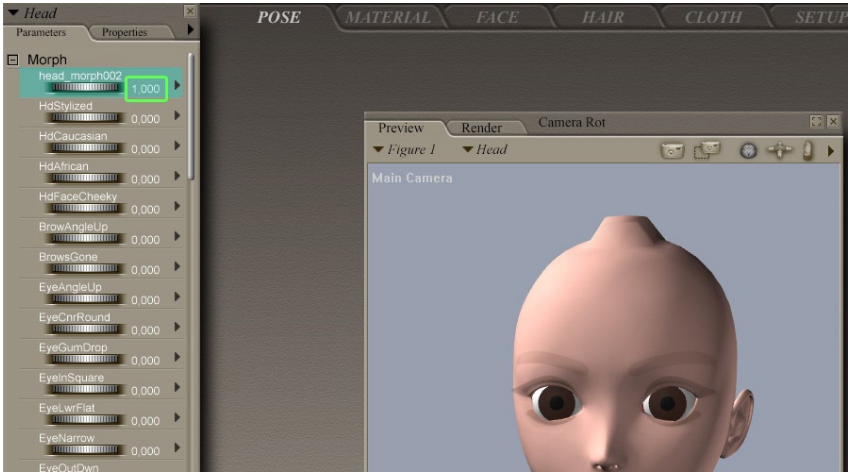
Go back Poser, and load the character again. Select the body part you are about to modify.



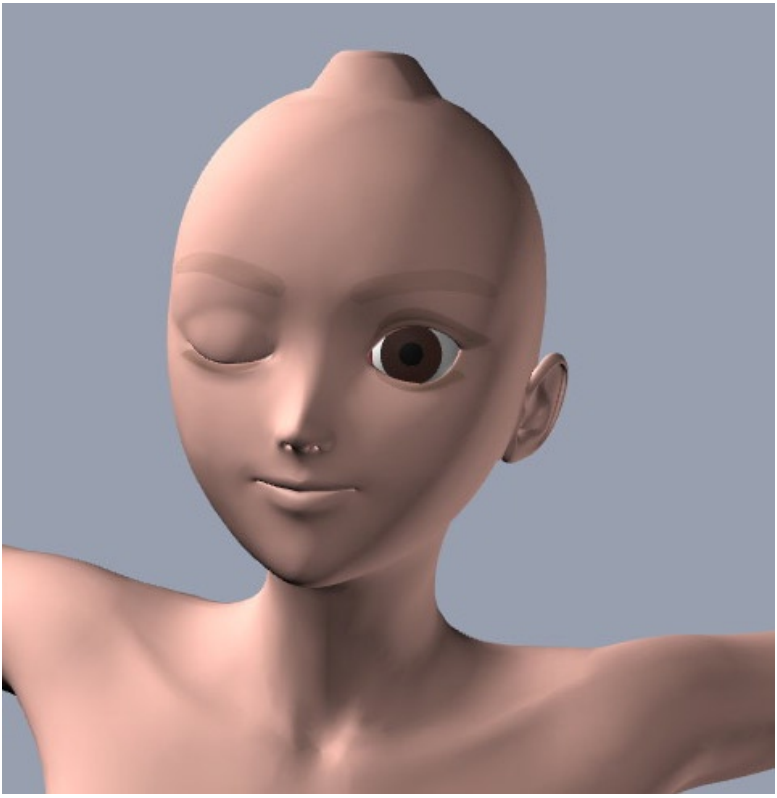
In the properties, load the morph target.



The new morph appears.



You just need to modify its scale from 0 to 1 to see the changes.



It's time to play with your morph targets, and create new ones as much as you need with the help of Hexagon!

EXPORTING FROM HEXAGON TO LIGHTWAVE

This short tutorial, created by Yann Vaugne, shows in few steps how to use a displacement map generated by Hexagon 2 to render your model in Lightwave 8.5.

The modeling steps in Hexagon, as well as the final operations to perform in Lightwave to get the final render, will not be described.

About the author, Yann Vaugne:

A 3D graphic artist and Lightwave expert, Yann became a Hexagon user very recently, during the Hexagon 2 Beta-test program. Yann was able to adjust to and master Hexagon remarkably fast, as proven by the numerous images he has created and which are used to illustrate some Hexagon 2 features.

Feel free to contact Yann by e-mail directly for more information or comments, or should you have questions about the following tutorial or his modeling techniques!

The model in Hexagon 2 with, to the right, an Ambient Occlusion preview.

1. Requirements

In order to be able to handle displacement maps created with Hexagon 2 in Lightwave, you will need to get two free Lightwave plug-ins from Mathias Wein:

- Normal displacement
- 16 bit grayscale Tiff loader

You can download them from the following URL: http://lynx.aspect-design.de/plugins.htm

2. Steps

2.1. Exporting from Hexagon, Importing in Lightwave

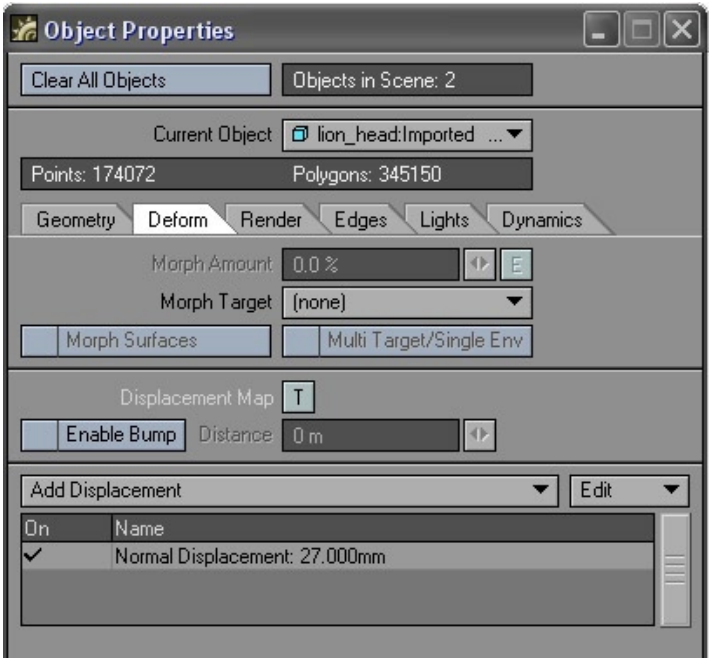


Figure 1

Within Hexagon 2, export your texture through the "Displacement Map" tool then save your model using the .obj file format, with a 0 smoothing range.

You will have to revert the vertical orientation (up side down) of the texture using a 2D editing software (such as Photoshop®).

Load your model into the Lightwave Modeler and switch to Subpatch (Tab key). Save the model, and go to Layout.

Edit the object properties (P key), go to the "Deform" Tab and then, in the "Add displacement" pull-down menu, select "Normal displacement (figure1)".

Edit the options as shown in Figure 2. It is clear that the displacement value is variable and depends entirely on the size of your object. It is generally recommended to work in real size.

2.2. Displacement Parameters in Lightwave

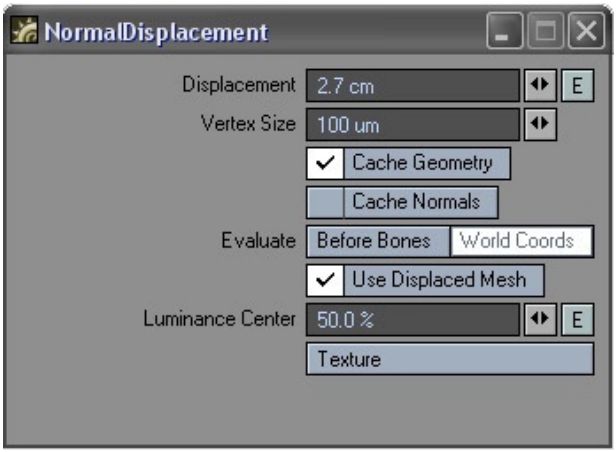


Figure 2

To assign your displacement texture, click on the “Texture” button, located at the bottom of the dialog box (Figure 2) and choose the UV-Projection mode.

Assign your UV map which was imported with your object and, in the Image field, load the displacement texture generated by Hexagon (Figure 3).

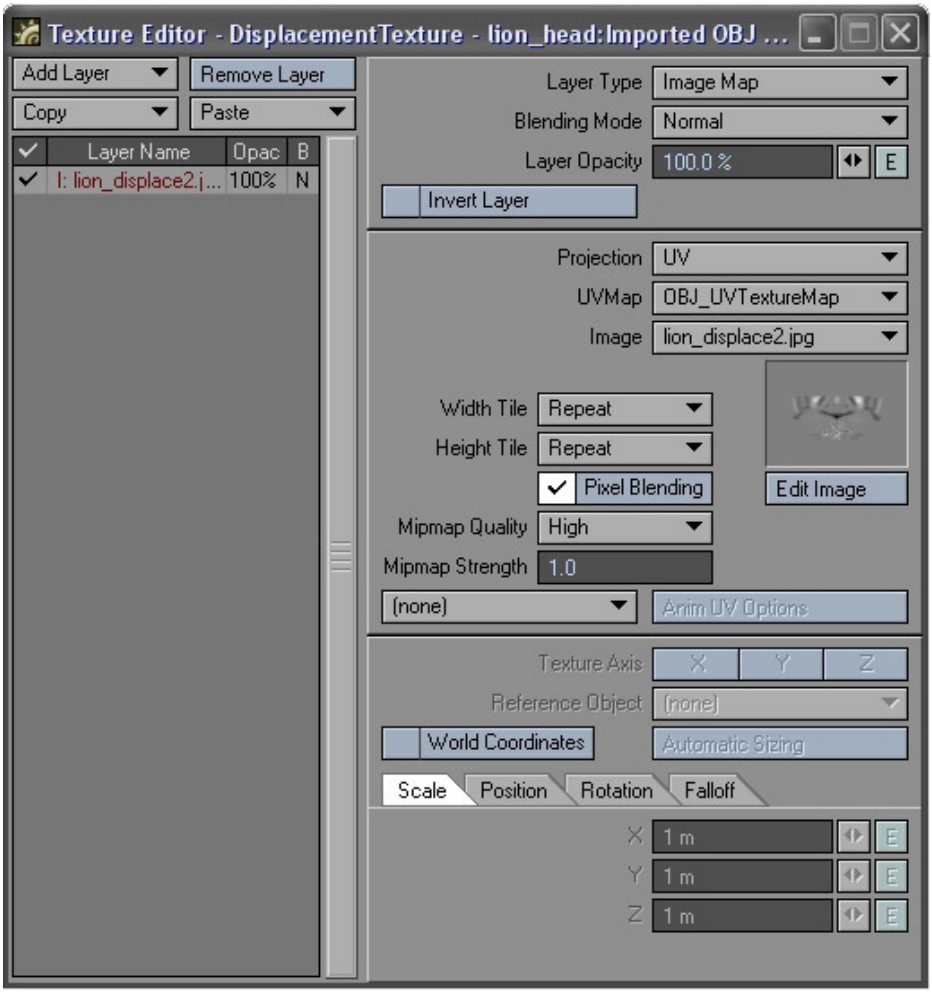


Figure 3

Now, go back into the Object Properties, open the Geometry Tab and in the "Render Subpatch Level" field, enter a value between 10 and 30, according to the complexity of your object and the details of your texture.

Do a test render (F9 or F11 to render only your object), then adjust the "Render Subpatch Level" value.

To get a more precise idea of the geometry created by your displacement texture without having to calculate a render, you can increase the “Display Subpatch Level” value.

Below is a test render. Do not hesitate to compare the Hexagon 2 model with the final model rendered by Lightwave.

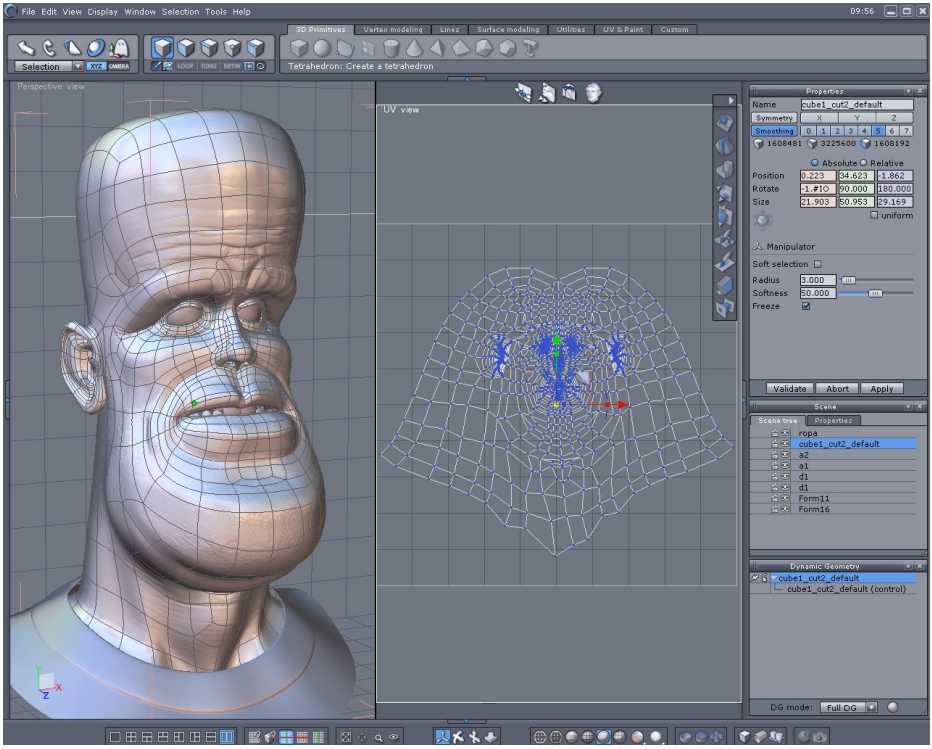
HOW TO EXPORT DISPLACEMENT MAPS FROM HEXAGON 2 TO 3DS MAX

This short tutorial created by Juan Carlos and will show you how to export your Hexagon 2 model and displacement map, to render it in 3ds Max.

About Juan:

This 3D designer, well known under the MOXSTudios nickname is an active member on the forums dedicated to Hexagon and Carrara. Feel free to contact him on the Eovia3D.net forums and discuss about 3D!

1. Exporting the model and the Displacement Map

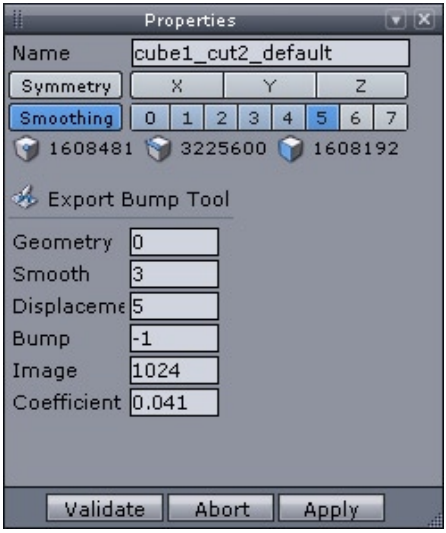


The 3D model and its UVs unfolded.

Before beginning the tutorial, you must be sure to make a UV mapping for the model. You can make this using the Unfold tool, located in the UV & Paint tab.

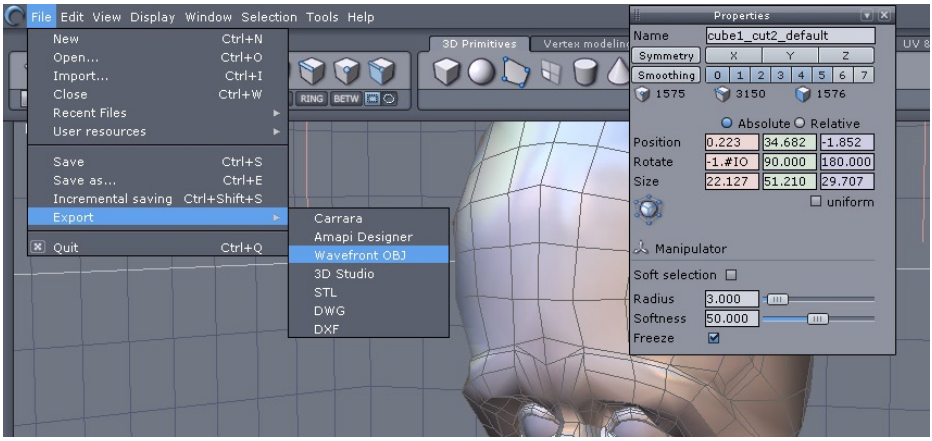
The icon of the Export Bump Tool

In the same tab, hit the “Export bump” tool.



The Export Bump Tool parameters

In “Export smooth” put 3, and 5 in “Export Displacement” depending of your Smoothing of your model and select the image that you like. Make sure you remember the “Disp coef” number to add later in 3ds Max and click validate.



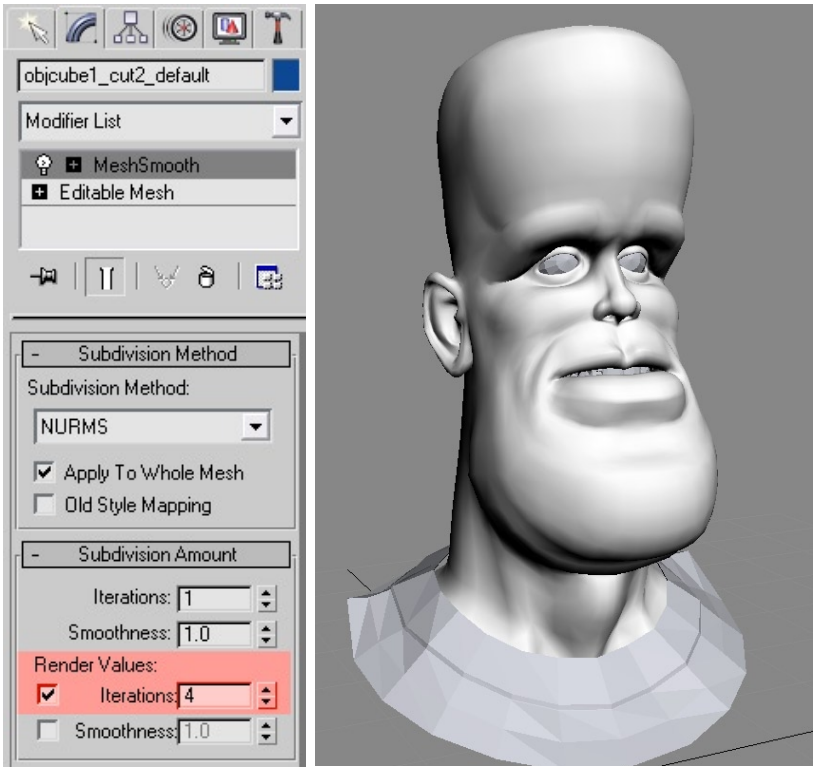
On the left, the export menu. On the right, the Smoothing unchecked.

Uncheck the smoothing and export the model in .obj. Be sure to have the two first options checked in the export dialog box.

2. Import the model in 3ds max and render

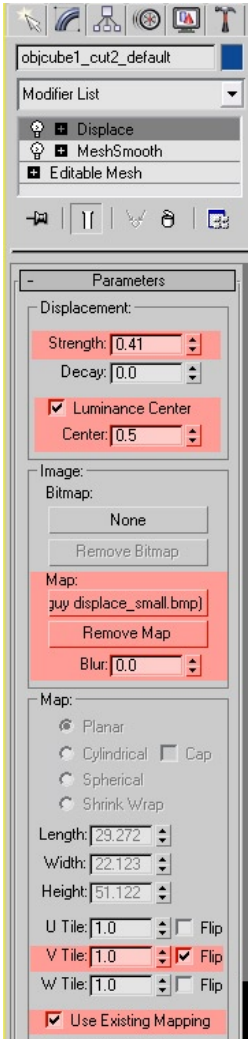
The 3D model in 3ds Max.

Import into 3ds Max the OBJ model. If you own an older version of 3ds Max and don't having the OBJ import, search on the Internet a free plug-in named OBJ2MAX.



The smoothing parameters

Select the model you want to add the displacement map to, then go to Modify tab from the left and select “Mesh Smooth” from the object space modify list. Check render values and add 4 iterations – this is for the final render smoothing.

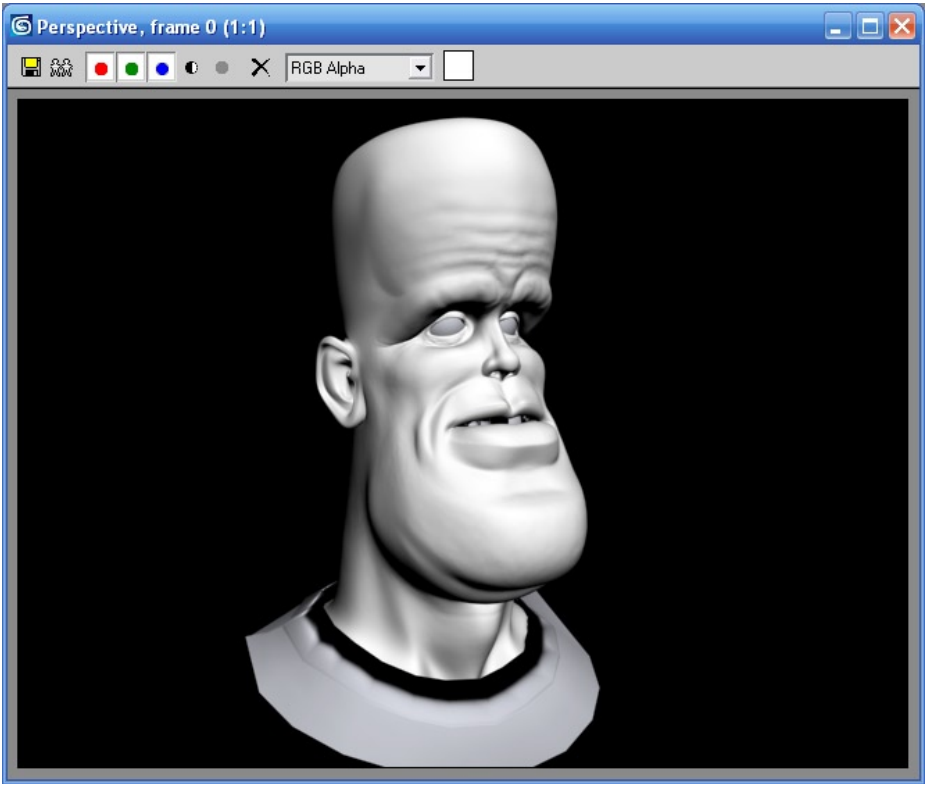


The displacement modifier and its parameters

Be sure you add all these settings:

In strength add the Disp coef number from Hexagon 2 (you can increase the percentage to get more details if you want) and check luminance center.

Add the map, flip the V for the image and check the use existing mapping to use the UV map you made in Hexagon 2.



The final render

Then hit F9 to see your render!

Note: It is also possible to add the displacement map in the Displacement channel of the material, and use Mental Ray to render your model.