

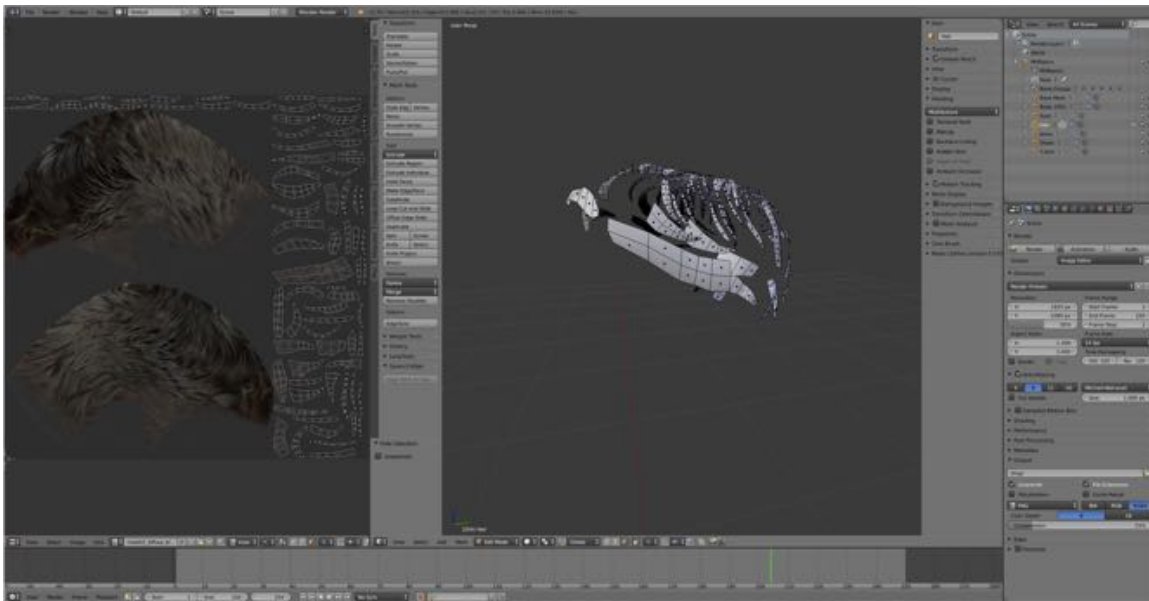
MakeHuman - Basic Steps

Step 05:

Reducing Poly Count - Human

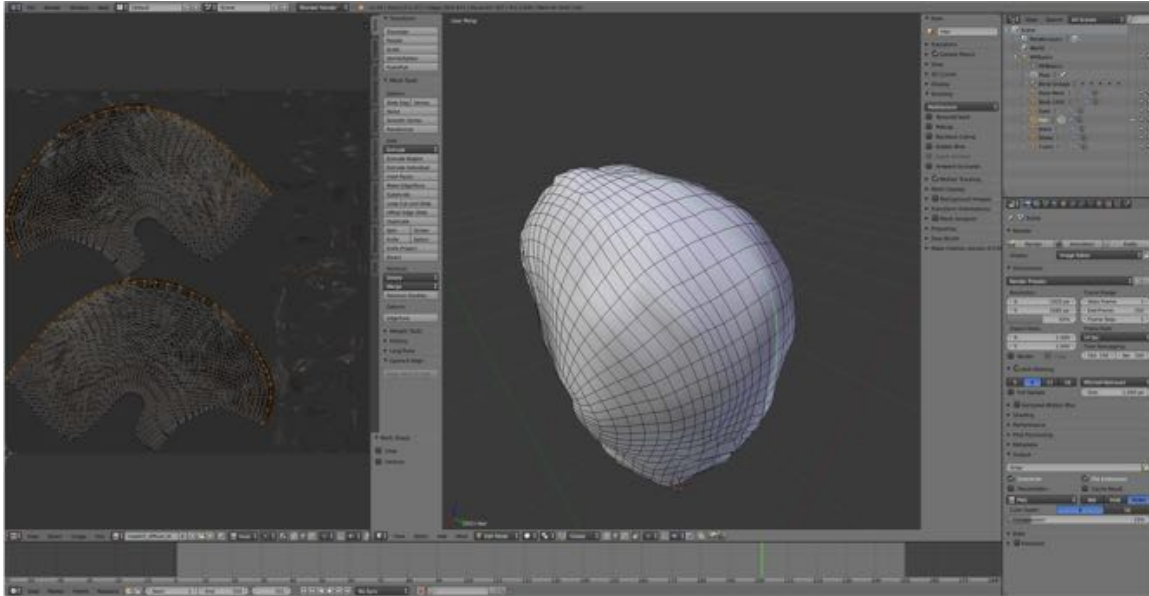
Hair

- Select the hair and in the Outline Editor, deselect the shoes.
- In the 3D Editor, select and hide (H-KEY) the large bottom piece of the model.



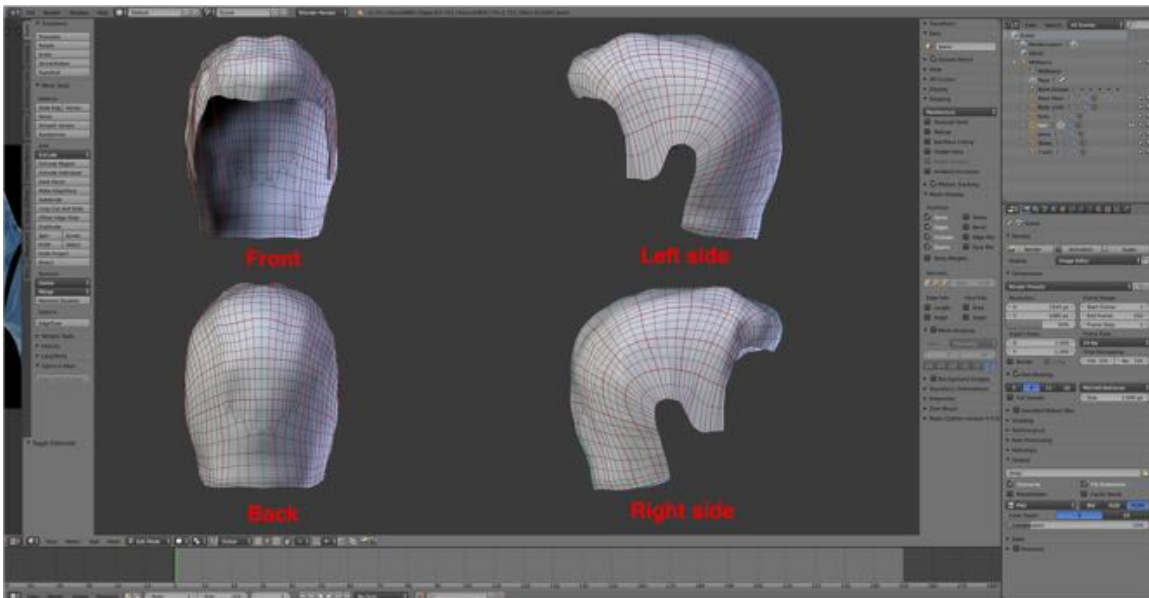
1011

- Select the smaller pieces of the mesh and delete.
- In the UV/Image Editor, select (ALT/OPT + RMB) the **center edge** across the scalp that **MakeHuman** used to **UV unwrap**.
- In the 3D Editor, **Mark Sharp** (CTRL + E-KEY > Mark Sharp).



1012

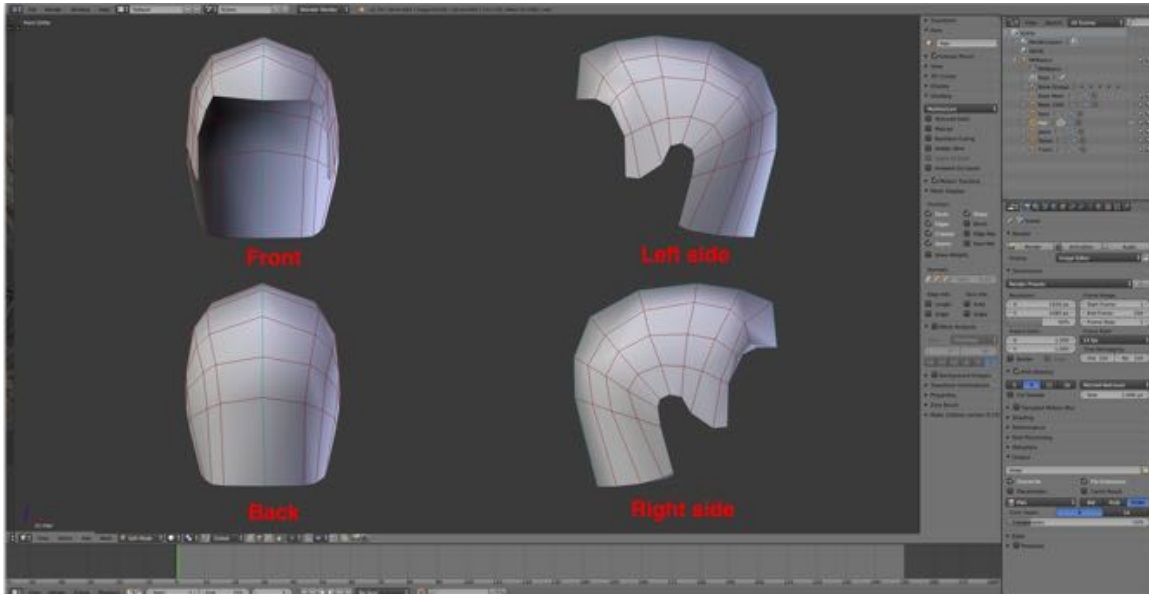
- For the hair, **keep** the edges marked in red.



Original hair mesh = 2,604 triangles.

1013

Save your work after marking out the hair as “**MHBasics09.blend**”



Hair mesh reduced = 128 triangles.

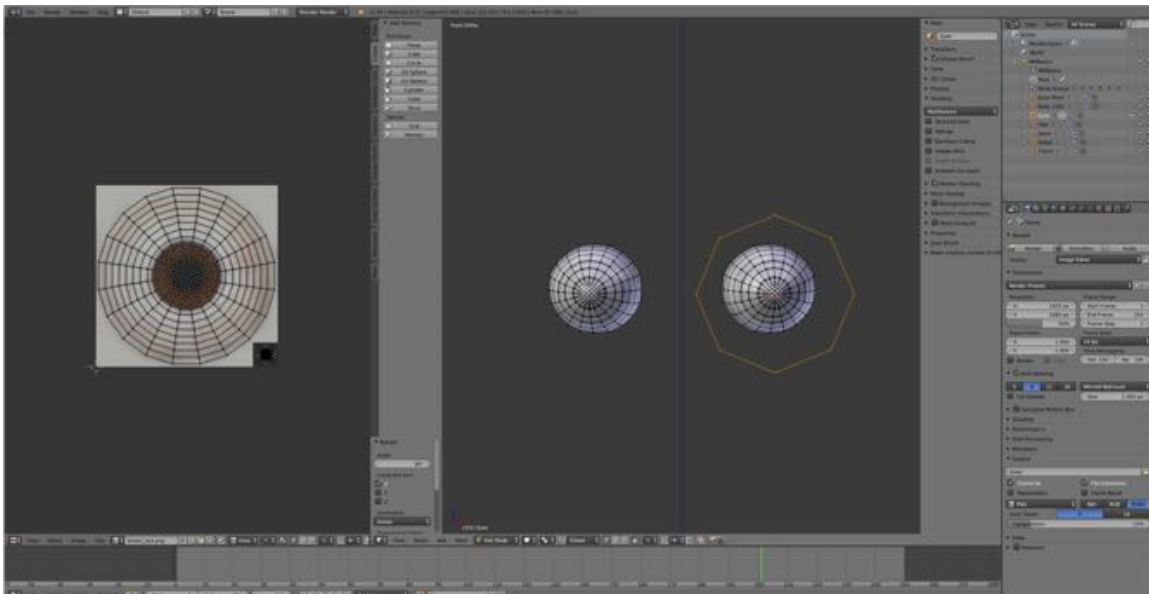
1014

Save your work after reducing the poly count as “**MHBasics10.blend**”

Eyes

The eyes are far too detailed (knowing I was going to remove them, I selected the high poly eyes). I am going to replace them with 8-sided polygons.

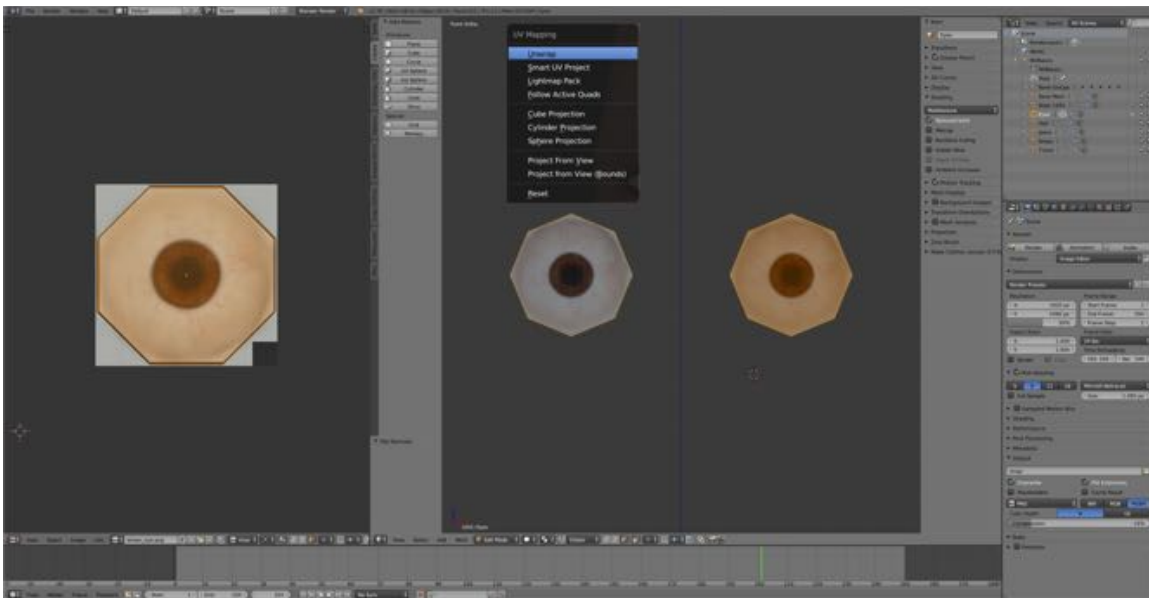
- Select the eyes and in the Outline Editor, deselect the hair.
- in Front View, place the cursor in the center of one of the eyeballs and add a circle.
- Reduce the vertices to 8, rotate around the X-axis 90° and scale in.



Eyes = 2,040 triangle (they are actually double layered).

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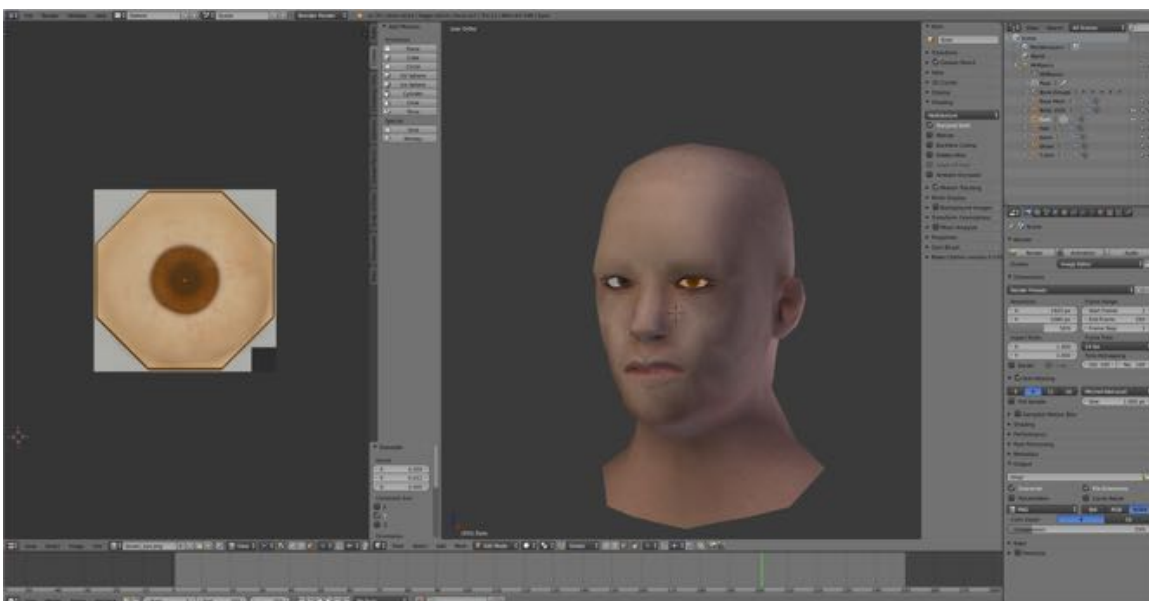
- Scale to the diameter of the eyeball and fill in the face.
 - Duplicate and position the second polygon over the other eye.
 - Delete the eyeballs.
-
- Select each eye and UV unwrap using “Unwrap” (top choice in the UV mapping menu).



Eyes mesh reduced = 12 triangles.

1016

- In the Properties Editor make the Body 1591 object. visible
- Move the eyes back on the y-axis until they are inside the head.



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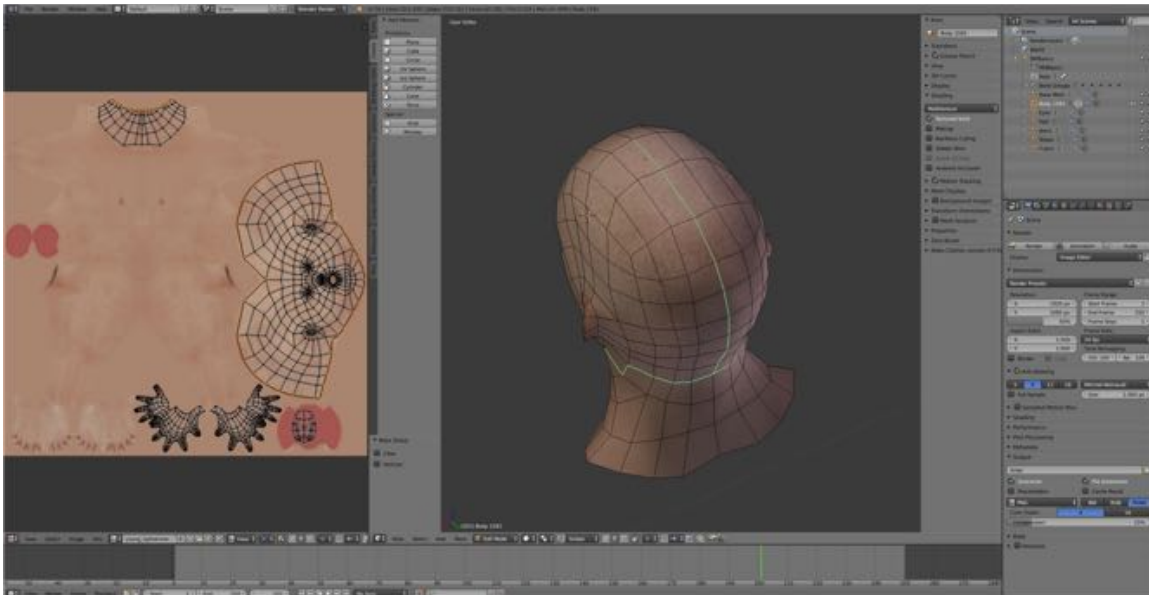
Note: Try moving the head around, you get an interesting “Mona Lisa” look. Maybe that’s how Leonardo da Vinci achieved the look. He painted the eyes as if they were flat.

Save your work after reducing the poly count as “**MHBasics11.blend**”

Head

MakeHuman has divided the neck from the head and split the head down the centerline from the top of the head to the neck.

- Select the Body 1591 and in the Outline Editor, deselect the hair.
- In the UV/Image Editor, **select the edges** (ALT/OPT + RMB) that **MakeHuman used to UV unwrap**.
- In the 3D Editor, **Mark Sharp** (CTRL + E-KEY > Mark Sharp).



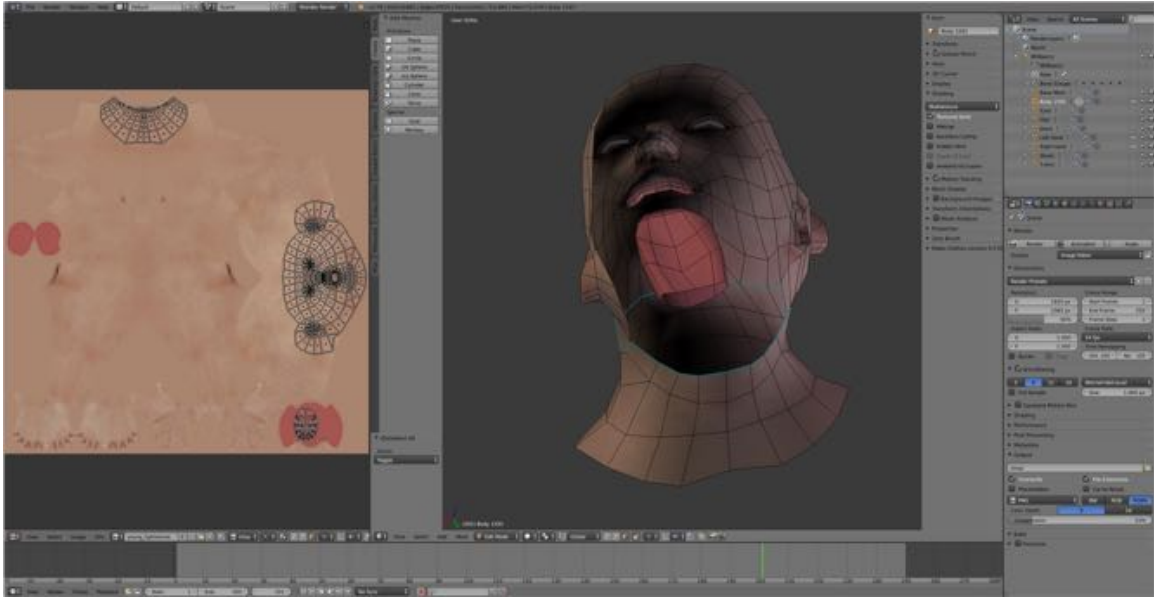
1018

To facilitate working on the head, I am also going to suggest we separate the head and hands.

- Switch to Wireframe Mode, **separate** (P-KEY) each **hand** and name the new objects (i.e., Right Hand and Hand).
- Hide the hands.

The hair covers a good portion of the head, so we can remove the part that is covered.

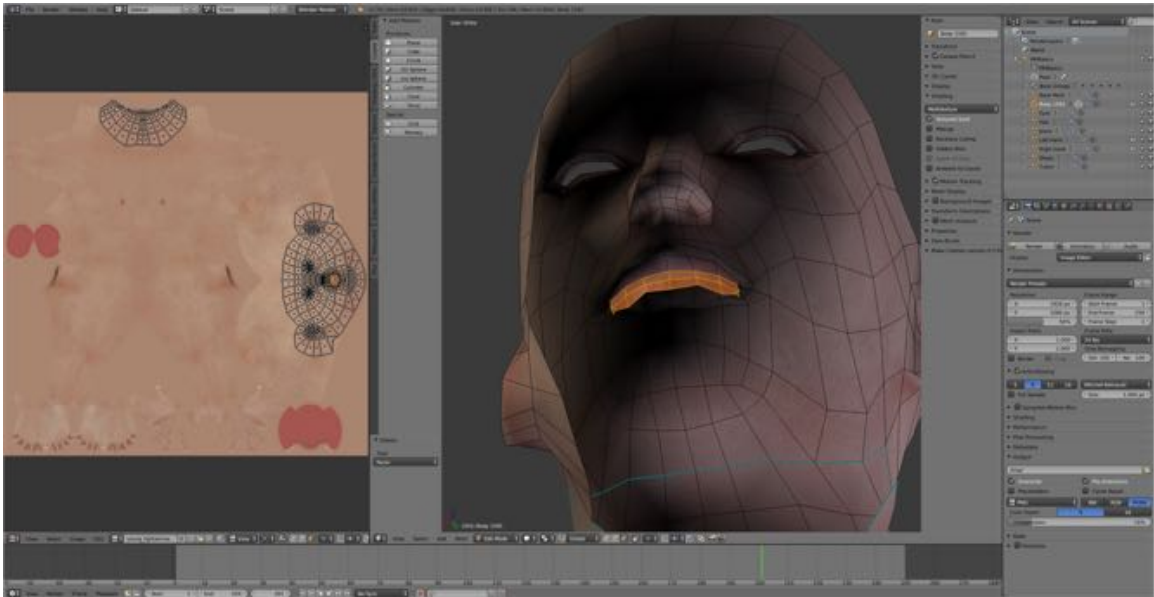
- In the Outline Editor **turn the Hair object on and off** and use this **as a guide to remove the underlying faces**.



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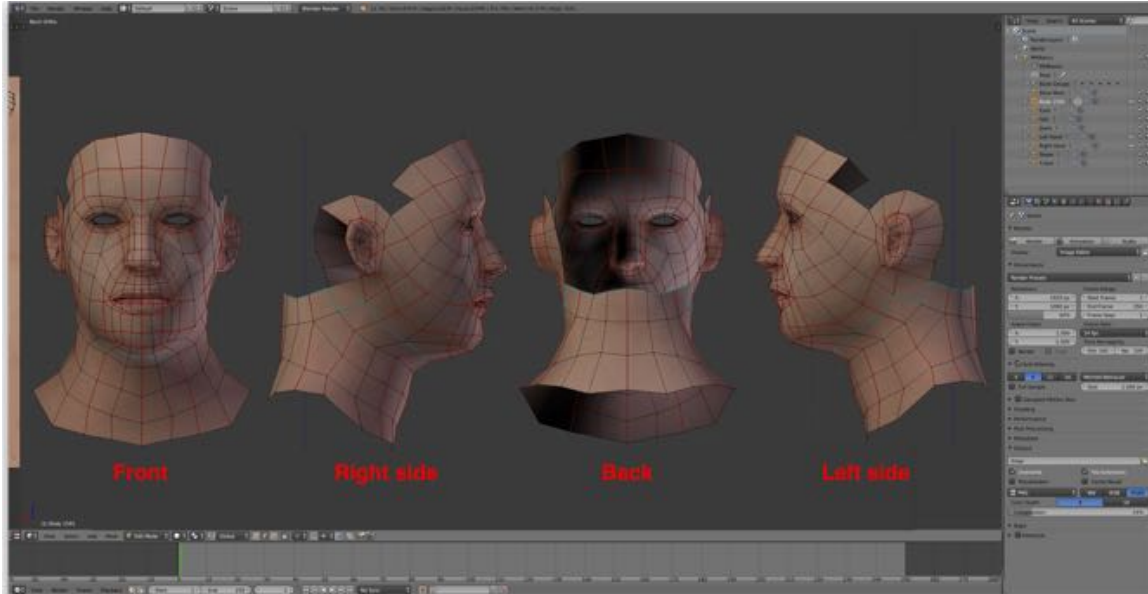
Removing the back of the head reveals that there is a tongue that we can get rid of.

- Remove the tongue and also one row of faces around the inside of the mouth.



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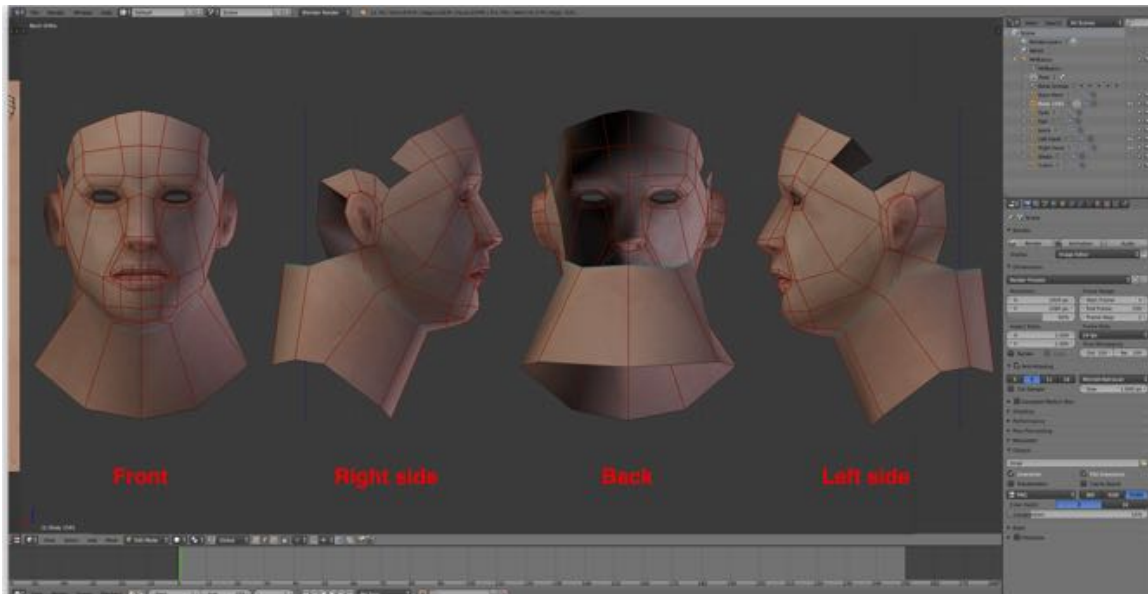
- For the head and neck, **keep the edges marked in red.**



Original hair mesh = 1,056 triangles.

1021

Save your work after marking out the head as **“MHBasics12.blend”**



Head mesh reduced = 350 triangles.

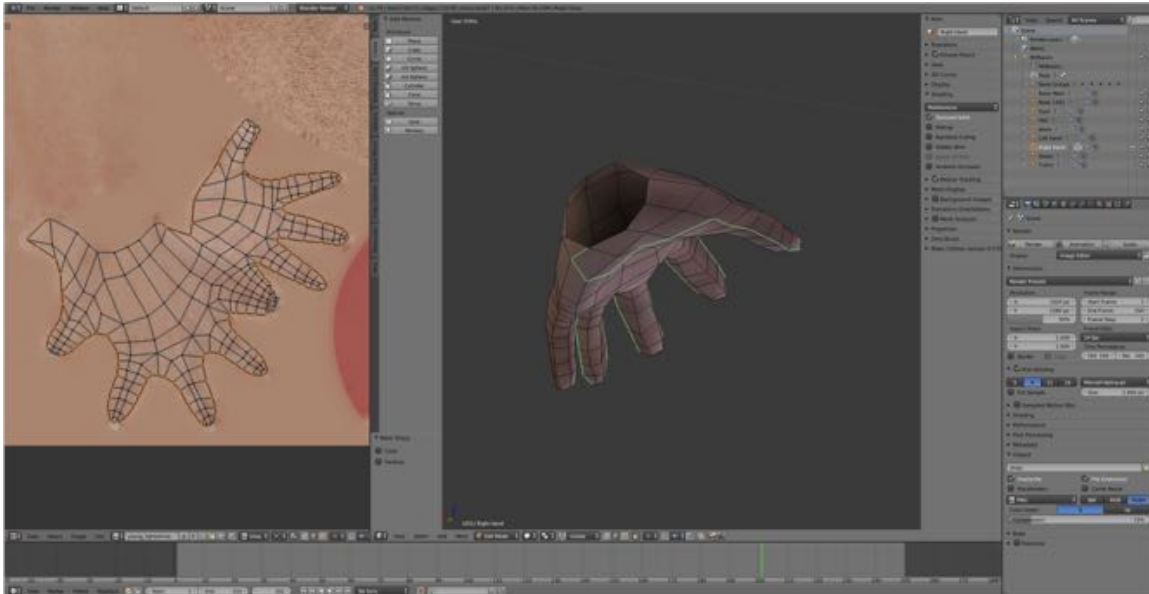
1022

Save your work after reducing the poly count as **“MHBasics13.blend”**

Hands

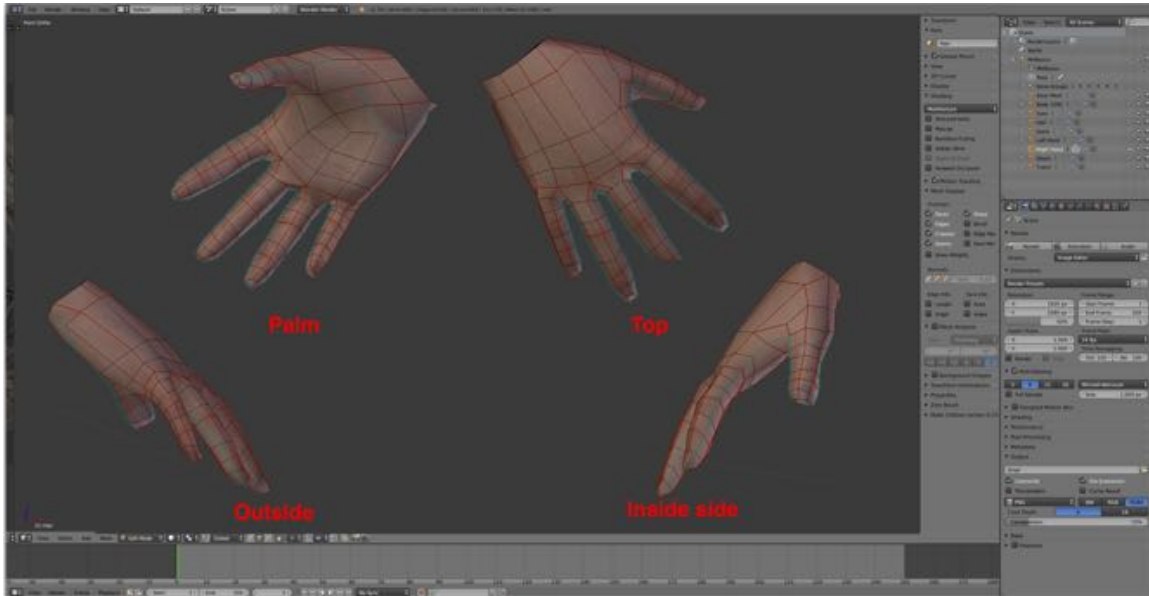
We'll begin with the right hand and find the seams used by MakeHuman to UV unwrap.

- Select the Right Hand and in the Outline Editor, deselect the Body 1591 object.
- In the UV/Image Editor, **select the edges** (ALT/OPT + RMB) that **MakeHuman used to UV unwrap**.
- In the 3D Editor, **Mark Sharp** (CTRL + E-KEY > Mark Sharp).



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To maintain thickness to the hand we are going to need to retain a ridge of edges next to the seam. I have chosen to retain the one on the top of the hand. We also want to retain an edge loop at the wrist and at each of the finger joints so we can close the hand in a grasping pose.

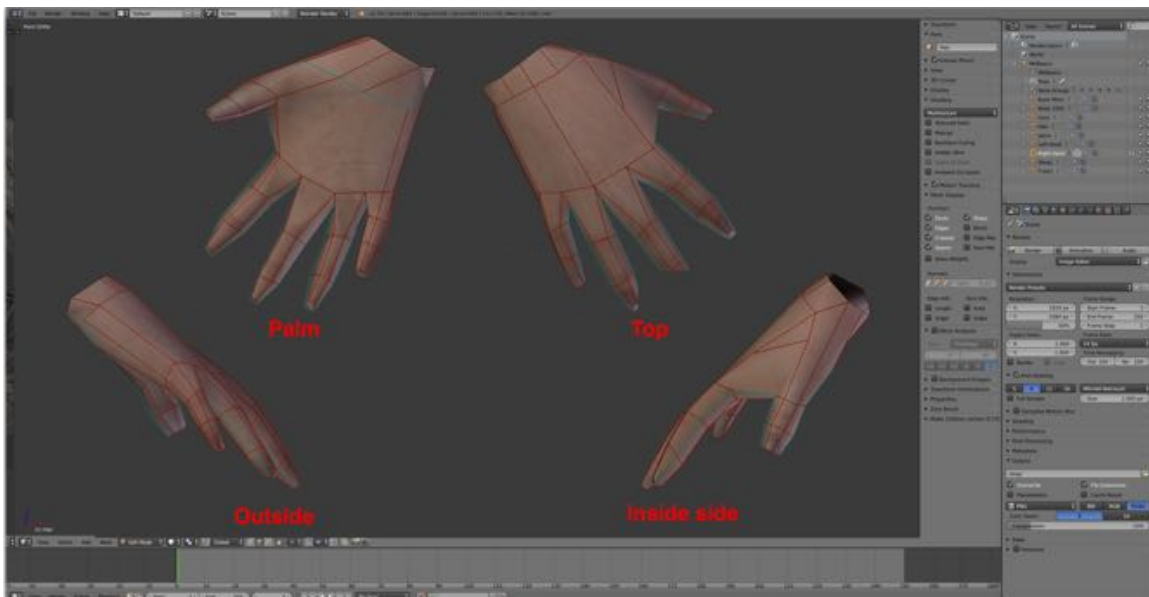


Original right hand mesh = 534 triangles.

1024

Save your work after marking out the hand as “MHBasics14.blend”

- For the right hand, **keep** the **edges** marked in red.



Right hand mesh reduced = 168 triangles.

1025

Save your work after reducing the poly count as “MHBasics15.blend”

Repeat for the right hand.

Save your work after marking out the hand as “MHBasics16.blend” and after reducing the poly count of the right hand as “MHBasics17.blend”.

We started with a figure with 13,248 triangles. Our image now contains 1,500 triangles a little less than the 2,000 I was aiming for but more than the 500 for which we would not have to apply multiple levels of detail (LOD). But a model with less than 500 triangles would be difficult to pose. With our current model we can set different poses then reduce the poly count further to achieve <500.

Selecting each object in turn and switching to Edit Mode can be used to determine poly count. The Tris value in the Information Editor gives the number of triangles for that object. Summing the values for all objects gives the total, which I have found differs from the value shown in the Information Editor but agrees with PEV's Mesh Viewer 2.

<http://trainz.shaneturner.co.uk/tutorials/index.php/home/utilities/pevsoft-trainz-tools>