

Abnormal Eye Shape (not a perfect sphere) Eye Control

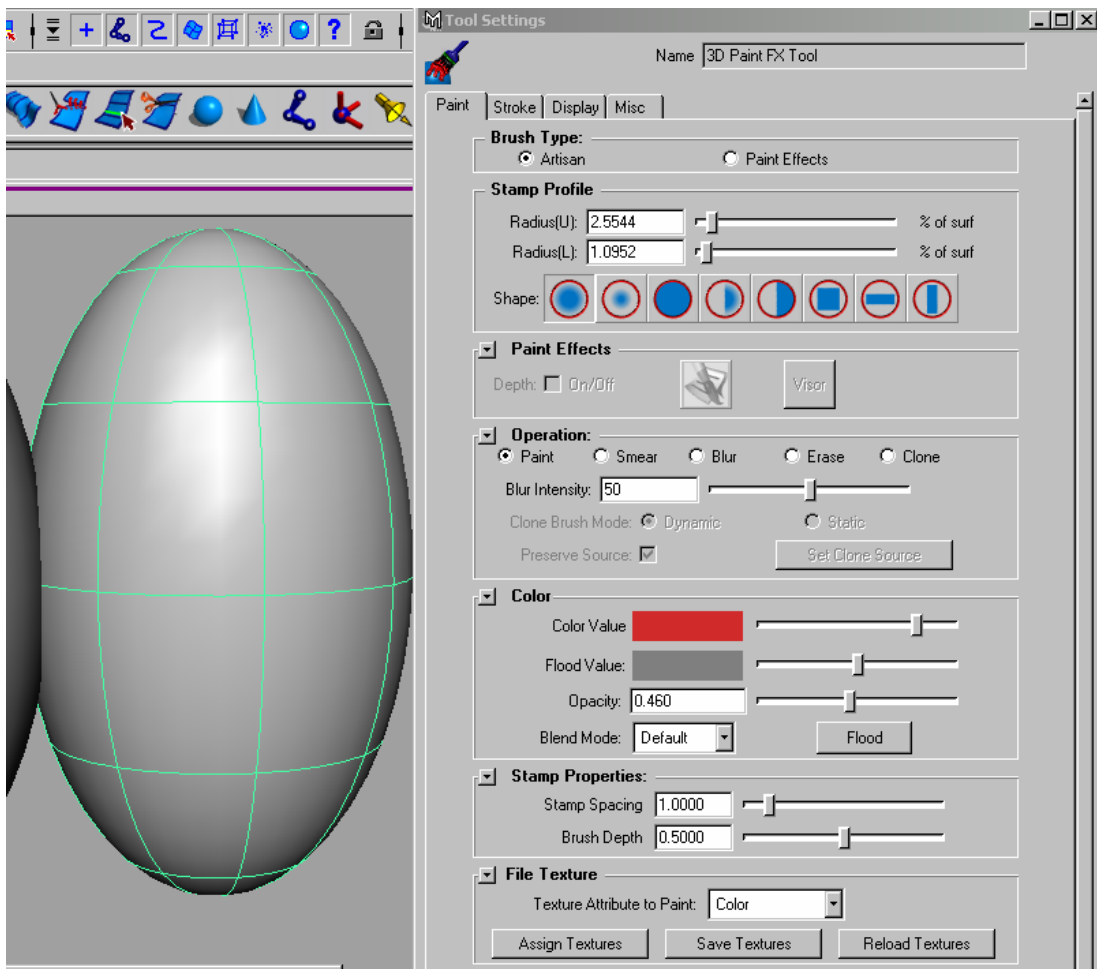
Advanced Character Animation

Week 1, Day 2

Step 1

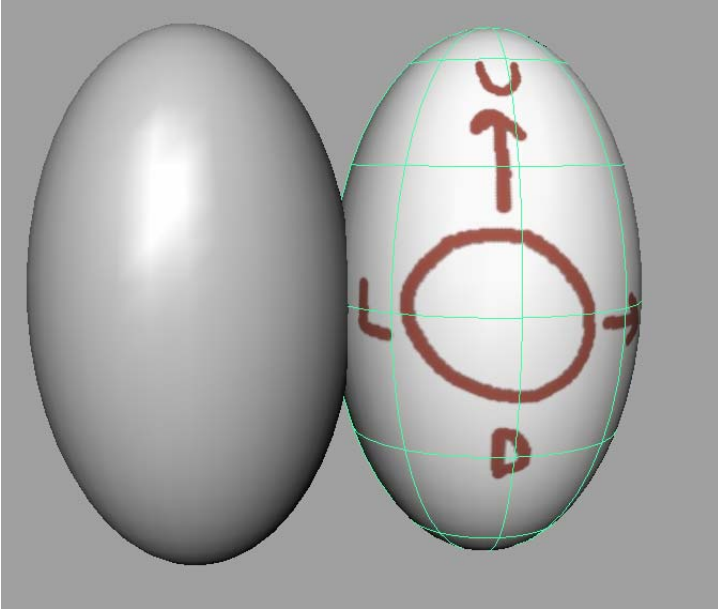
Assign a new Phong or Blinn shader to the eyes and give them the base color you want to end up with (white, slightly off-white etc). Next, select one of the eyes and open **Rendering>Texturing>3D Paint Tool... Option Box**.

The tool settings will open up with the default set to Artisan (if you are using the 3D Paint FX Tool). Scroll to the bottom of the window and under the **File Texture** section, **Texture Attribute to Paint** should be on **color**, click on **Assign Textures**.

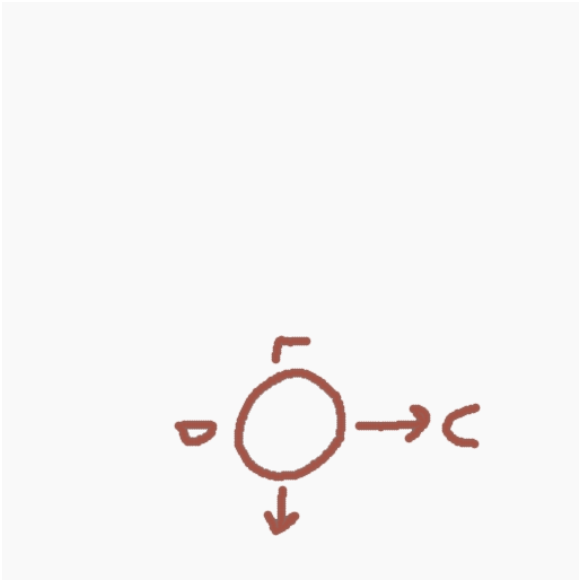


The Assign File Textures window opens up where you can choose the pixel resolution and file format of the bitmap it will assign. When you click **Assign Textures**, a texture map was just assigned to the shader and saved in the Textures Folder of the project you are working out of. The name of the file is determined first by the name of the scene, and second by the name of the object you are working on.

At this point, just choose a color under Color Value and paint a place holder for the iris. You may also want to orient yourself with up, down and side to side arrows as well.



Even if both eyes have the same shader assigned to them, the map only shows up on the eye you painted. Maya adds a triple shader node that allows this to happen.



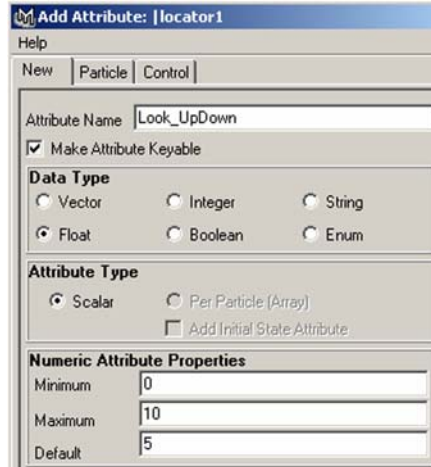
You are now ready to go into Photoshop, load the placement texture you just painted and repaint the texture the way you want it to appear. The benefit of doing the map in Maya to begin with is to figure out the inherent UV coordinates of the NURBS model.

When you are finished with the final texture, simply replace the texture in Maya. You can also, if you so desire, use a gradient map on the eye to create the texture; however, the end result does not look nearly as finished or polished.

Step 2

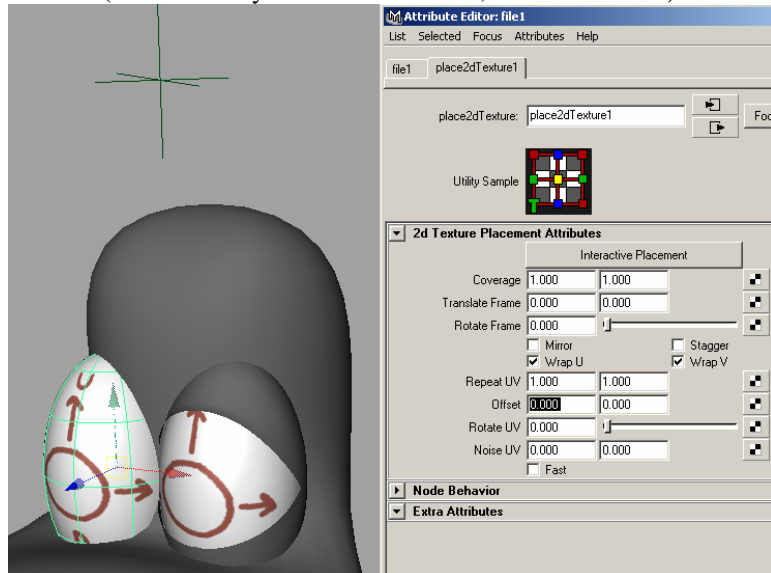
With the new textures re-assigned, you are now ready to set up the eye controls. Aim constraints on locators are all fine and dandy on a spherical eyeball, but not if they are oblong.

Create a locator and place it above the head; name it 'eye_control' or something of the like. Goto **Modify>Add Attribute...** add two new attributes, one labeled 'Look_UpDown' and one labeled 'Look_Side' (or something like that).



Set the **Minimum** to 0, **Maximum** to 10 and the **Default** to 5 on both Attributes.

Goto the **place2dTexture** node on the eye's shader. You are going to do link, through Set Driven Key, your new 'Look' attributes to the **Offset U** and **V** attributes of the texture. Now, what you need to do, is test the offset values and find your extremes (start with very small values at first, like 0.2 and -0.2).

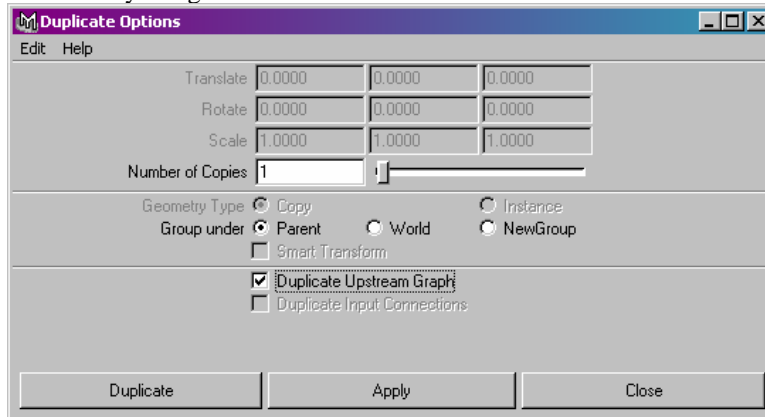


Once you've found your magic values, use the Set Driven Key to make the 'eye_control' attributes drive the Offsets. There you have it!

Step 3 (optional)

To create the eyelid, begin with a new sphere and put it in place around one of the eyes. Rotate the sphere 90 degrees in the Z (so the poles are at the sides of the eye). Now, rotate the eye in Y until you can see the border isoparm... rotate the sphere so that the border isoparm is in place where the lower lid meets the upper lid (lids closed position). Freeze transformations but don't delete history. Now, scale the lid to the proper shape and size around the oblong eye (slightly larger than the eye itself). If you select the lid, then click on the makeNurbSphere(#), you can animate the Start and End Sweep(s) to open and close the eye.

The second eyelid will have to be duplicated with **Duplicate Upstream Graph** on, otherwise the Start and End Sweep will effect both eyes together.



If you want to consolidate controls, you can use this to help create your Blend Shapes, or use Set Driven Key with another added attribute on the 'eye_control' locator you created earlier. To make things more versatile, you should make sure to have separate controls for each eyelid.

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