CSCI 181 : 10 : Computer Animation Design I : Fall 2006

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Workflow for Texturing

1. Open Perspective/Hypershade view

2. The top of Hypershade contains the Materials in your scene, make sure that tab is frontmost. The bottom half is your Work Area, you will build shaders, connections in the Work Area. Occasionally, you will want to RMB >Graph>Clear Graph to clear out the work area. MMB on a shader above to add it to the Work Area, you can also click on various nodes like File, Ramp, etc. in the left column to get them into the Work Area in order to build your shader.

3. Create a new Phong Shader by clicking on the left, or MMB dragging it into the Work Area.

4. Scroll down on the left to 2D textures, you can add your own image by MMB dragging a File node into the work area, for this example you will select a Ramp. (Note, a 2D texture Ramp is different from the Ramp Shader located near the Phong shader, we want the 2D texture Ramp)

5. MMB the ramp1 texture onto the new Phong texture, the pop up box will ask where you want the ramp shader out node to be connected, choose "color".

    Congratulations! You've made your first Node connection using Hypershade. Nodes are a very powerful way of working in Maya, it's good to know how it works. Hover your mouse over the resulting green line that connects the ramp to the Phong shader. You will see that your ramp's "outColor" is connected to the Phong's "phong.color" node. You can double-click on the line to bring up an intimidating connection editor, but don't do that! We'll get into that later.

6. Select the ramp, hit Ctrl-a to bring up the Attribute Editor. Click on the green box with the X in it to delete the green color. Slide the red circle almost to the top to create a very thin gradation.

7. Change the Ramp type from V Ramp to Box Ramp. You can play with other ramps, but this is going to make us a brick pattern.

8. Click on the place2dTexture tab, and change the Repeat UV values to 5 and 10. Many textures need different nodes to function properly, the ramp is simply a color fade, the object you are applying it to needs to know how to place it on the surface. That's what the place2dTexture node does, it tells it by default to wrap it once around the objects polygons. We're now telling to wrap it 5 times in the U direction and 10 in the V directions. These are known as the UV coordinates and is what textures and lights need to know about a polygon object in order to display the texture on it.

9. Now, we don't have to repeat it in a perfect grid, check the Stagger box and you should see a nice brick pattern. This technique can also be used to hide the seams that repeating textures tend to have. Play around with other options and see how it effects the texture.

10. Scroll down to General Utilities and click Bump 2D, this adds it to the Work Area.

11. MMB drag the Ramp onto the Bump 2D and choose Default as the option.

12. MMB drag the Bump 2D node to the Phong Brick shader and select "bump value". You should now see the bricks look dimensional in a test render.

Notes

- Texturing in Maya is not the most user friendly of the various 3D programs out there, but it's node structure is extremely powerful once you get the hang of it. It's results can be far better and more sophisticated than anything else available. Connecting things using nodes is a concept used everywhere in Maya, especially getting into advance animation and special effects.
- Look at things and notice where you see colors, bumps, variations in shininess and imagine how to texture that specific channel of a shader to reproduce the effect. Using Noise, and various procedural shaders you can create sophisticated shaders for virtually anything