UV Mapping in Hexagon ~ A lesson in Cubic Projection

Author: Gary_P

Tools Needed

* Hexagon
* Painting Tool like Photoshop

Introduction

So why am I showing you how to texture when you may not already know how to model? Ask yourself this question: Why do I want to model? Because you want to make something really cool and show it off in your favorite rendering program, which could be Carrara, DAZ Studio, or Poser. What good is a model without a texture? This is why I am starting at the back of the book, so to speak. First some background: Old grief. When I first opened Hexagon 2, I was in a hurry to make my first great model. I had been modeling for years in other packages, so this should be a snap, right? I clicked on the 3D primitives, and created a cube. Hah, my first model! It could be a crate, a table, or a box ~ anything I want, all it needs is a texture. In this case, it was going to be a crate. I sized it 6 wide by 10 high by 2 deep. Now to unfold the faces and export it into Photoshop, for some quick wood texturing, and a few labels. I'll spare you the details, but what I found was that Hexagon likes to unwrap a cube in a strange way. Even though my cube was long and thin, the UV Map came out all square. Why was this? Something I did? After looking in the manual and several posts on various forums, I discovered the projection tools, in particular, Cubic Projection, would solve my problem. Cubic Projection sounds like something you would see in a movie but it is really easy to do. And it is so fast. In the steps that follow, I am going to show you how to texture a cube using Cubic Projection. Now begins the tutorial.

Step 1: The Universal Manipulator

Open Hexagon and click on the Universal Manipulator to turn it on.

The Universal Manipulator is a wonderful tool. It functions as Move, Rotate, and Scale by dragging on the handles or arrows.
**Step 2: Creating a cube**

Click on the 3D Primitives tab, which is located in the top right-hand side of the screen.

Click on the first icon that looks like a cube.

Click on the middle of your screen and drag to create a cube. Validate when finished.

Note: I have turned off the back and left grids.

Set the size of the cube to 6, 10, 2 as shown. This is important to show the resizing.

And center it.

Your cube should look like the one below.

**Step 3: Cubic Projection**

Make sure your cube is selected by clicking on it.

Click on the UV and Paint tab and click on the Cubic Projection button.

Your cube should look like the one shown. See the checker pattern?

This takes the place of your texture for now, so you can size it correctly.

Click on the button in the Properties panel that looks like 6 little buttons.

This tells Hexagon that each cube face has its own UV space, or to say it a better way, it lays out each face on a virtual paper 'page'.

If you had used the left large button, then Hexagon would have laid out all of the faces one on top of the other. We don't want this.
If you had used the middle 3 buttons, it would have told Hexagon that the two opposite faces would have been laid on top of each other. We don't want this either.

We want the third button, so we can texture map all of the faces differently.

Some things to notice is that the texture, or checker pattern, looks stretched a bit vertically on the front and back, and tiny and squashed on the top and sides. We're going to fix that.

**Step 4: Resizing the Texture**

If you drag the small blue cube on the universal manipulator, it resizes the checkerboard on the top and sides. This is called the Z direction.

Try it. If the checkerboard just moves back and forth, then you grabbed the arrowhead handle and not the scaling or resizing handle.

Now DRAG RIGHT on the blue cube on the universal manipulator, in the direction of the blue arrow to stretch the checker pattern until it's square, and the same size as the front as shown here.

Now that we have the sides looking like the front and back, it's a bit stretched in the vertical, or in the Y direction.

We are going to DRAG DOWN on the small green cube, as we did with the blue, to make this work. This called the Y direction.

Now it looks much better!

Be sure to look at it on all sides to make sure all of the checkers are square.

You may have to adjust the other directions to get it to look right.

**Step 5: Laying out the pieces**

We will now split the screen and show the UVW View.

Click on the 'Two Vertical Views' button on the bottom toolbar, to show the UVW View.

You can now see the effects of the resizing of the checker pattern on the virtual 'page'.

If it is helpful to you, you may do this step earlier in the process if you like.
The view you just opened is called the UV View. This will show you the virtual 'page' I was telling you about earlier.

On the right side in the UV View, you can see all of the faces of the cube laid out on top of a grid. This grid is our paper, or 'page'. This is what we will be exporting to our paint program for coloring.

Resize the textures on your cube so they look as close to mine as you can.

Make sure all of the pieces will fit on the 'page' by resizing the checkered texture, using the small cubes, or resizing handles as they are called, the same way you did earlier.

It does not matter what size the pieces are, just that they will fit the page when moved into place.

Currently all of our sides are not arranged properly to fit the paper, so we will have to move them.

Click on Validate to end the Cubic Projection.

Click on the Select Faces button on the main toolbar to select the individual faces to move them.

Your cube should look like this.

Select the left face in the UV View by clicking on it. Then click and drag on the red arrow to move it over so we have room for the rest of the pieces.

You can move more than one face at a time by Shift-Selecting them.

You can also Right-Click to draw a selection window around them to move them. Pretty much everything you can do in a 3D window, you may do here, including zooming in and out.

When it looks like fits on the 'page' it is done. Give yourself plenty of room around the 'page' by making the checker pattern as big as you need to, as shown in the picture here.

You have completed the UV Mapping part of the tutorial.

Next, I would like to show you how to texture it.

**Step 6: Exporting the Template**

We are now going to export a picture of the virtual 'page', but first we need to make the UV View the main window.

Click somewhere in the UV View window and then click on the Single View button in on the bottom toolbar.
This will un-split the window and make the 'page' in the UV View window cover the whole screen.

Zoom in the view as big as you can.

Click on the small camera icon in the bottom right corner of the UV View window's toolbar. This tells Hexagon that we want to take a snapshot of the UV View's window.

Note: Use the camera icon in the UV View, not the main one.

When the save as screen comes up, name the file something you will remember like cubetextureJPG and save it where you can find it later.

This will be your template to color or texture.

If you open the cubetextureJPG in a paint program, you have a picture similar to the one shown here.

As a side note, if you want to see black lines on a white background, Hexagon is totally customizable.

It is beyond the scope of this tutorial to teach you how to create a texture, so I colored each side of the cubetextureJPG, flipped it and saved it.

It is important to remember after you create your texture in your paint program, to flip the texture vertically, before saving it. This ensures the texture will be right side up after importing.

It will avoid pictures like this.

Step 7: Applying the texture to your model and finishing up

After you have colored and saved your texture, this is how you apply it to your model.

If you still have the UV View on your screen then change to the Perspective View by left clicking on the words 'UV View' on the left top of your window. This will open a dropdown list. Pick 'Perspective View', from this list.

Open the Materials rollout from the left side of the screen.

Since we are not using multi-materials on the same cube, we do not need to set up more than one Shading Domain. The default one will do.

Your screen should look like this one.
In the Materials panel, click on the dropdown box and choose Texture from this list.

This will open a window where you can choose the cubetextureJPG that you colored.

If it does not open a window, or you would like to reload the texture, then click on the button with the 3 dots on it. This will open a window where you can choose the cubetextureJPG that you colored.

Your screen should look like this one.

That's it. All done!

You have:

Created a cube.

UV Mapped it

Exported the texture template and colored it.

Imported the texture and applied it to your model.

Until next time.

Happy modeling.