UDK Basics – Textures and Material Setup

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In UDK materials are comprised of nodes, some of which you may be familiar with, such as Diffuse, normal, specular and emissive (glow). There are many other nodes however that give a variety of different effectives, including animation, reflection etc that can be found in the material editor. In this tutorial I will be going over basic material setups and a few simple custom nodes that will allow you to begin editing the look and feel of your materials.

Creating Materials

To create a new material, select the package you would like it to be placed in and right click in the main content window (where the assets are located) and select 'New Material'. A window will appear confirming the package, group and name of the material. Hit ok and you will see a new blank material in the window and the material editor will open. We will be mainly working with the diffuse, normal and specular channels.
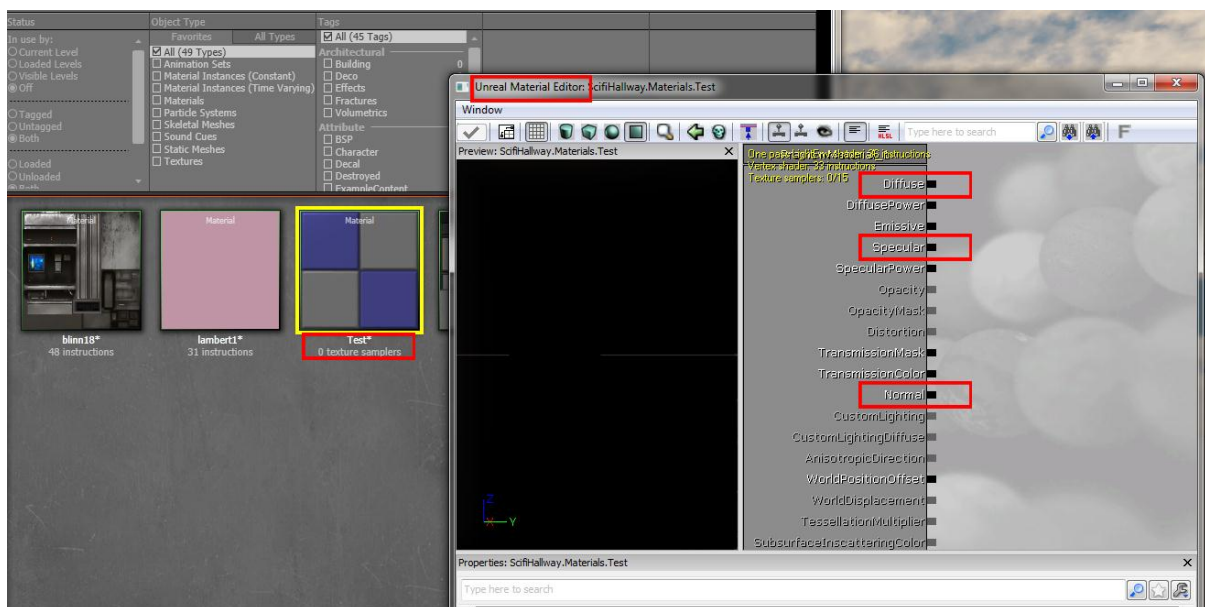
The first thing we have to do is get our textures into the editor. To do this, select your diffuse in the content browser, a yellow box will appear around it. Go back to the material editor and hold T and click in the open space to the right of the grey box. This will create a texture sample of your diffuse material. Do the same to your specular and normal maps.

You can select the texture sample nodes in the material editor and hold down ctrl button as you drag the node to move it around. You can also right click on the node and select duplicate to make a copy.
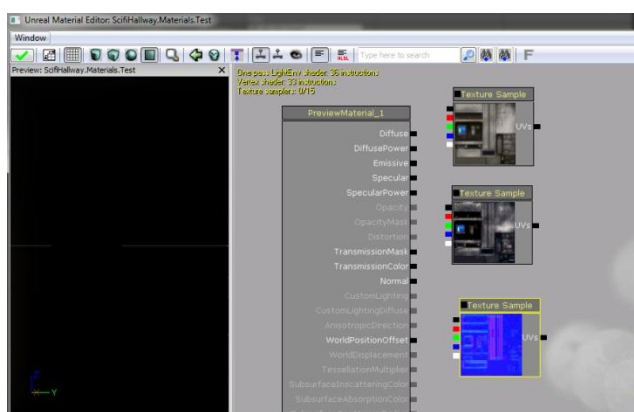
Now that you have your Diffuse, normal and specular maps in we need to connect them to the material. To do this click and drag the black box on your diffuse into the diffuse material node.

You will notice that each texture sample node has 5 outputs and one input. The outputs stand for the different channels in the texture. Black is the entire texture, Red, green and blue are the RGB channels (corresponds to Photoshop files) and white is the alpha channel.

The UV input is generally for texture coordinate nodes. There will appear when you import a model already with textures. UDK will create a material with the textures automatically linked in and there will be texture coordinate nodes on the ends. I will go more into what those do in my advanced material tutorial, but you don't need them for now.
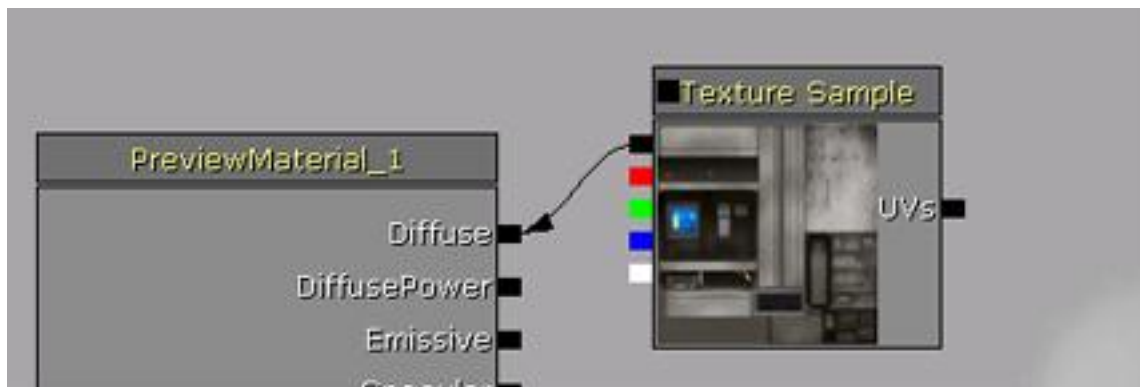
After plugging in all your nodes, you will notice the preview section now shows a preview of your material. You can change the view type by choosing a different primitive shape (in green above the preview window)

Once everything is plugged in, go ahead and hit the green tick to save your material.

Now that we have the base done I will show you how to use some other simple nodes to give you more control over the look and feel of your material. I have noticed that with the base 3 textures in place, materials with higher amounts of specular (eg: metal) does not often appear to look the same as it does in maya or marmoset. The specular often seems more dim and less shiny.

To fix this we can use the multiply and constant nodes to control how much specular is showing on our texture. Here is how my wall texture looks right now.

Now I am going to add a 'multiply' node by holding 'M' and clicking next to my specular texture. I will also add a 'constant' node by holding '1' and clicking. You will see that the multiply node has 2 inputs and 1 output. Plug your specular map into the A input of the multiply node by clicking and dragging the black box just as we did before. Add the constant node into the B input of the multiply node. Now plug your multiply output into the material specular node. You will notice that once you do that the link from the specular texture will disappear.

Now click back onto the constant node and in the options below change the R value to 10. Now we have this result


What you have done is tell UDK to multiply your specular texture by a factor of 10. You can change this value anytime and save out the changes.

The last thing we are going to do is change the 'Specular power'. This will dictate how big your specular reflection is. Create another constant node by holding '1'and clicking and plug this into the specular power node. You should notice a big difference with the default setting of '0' on the constant value.
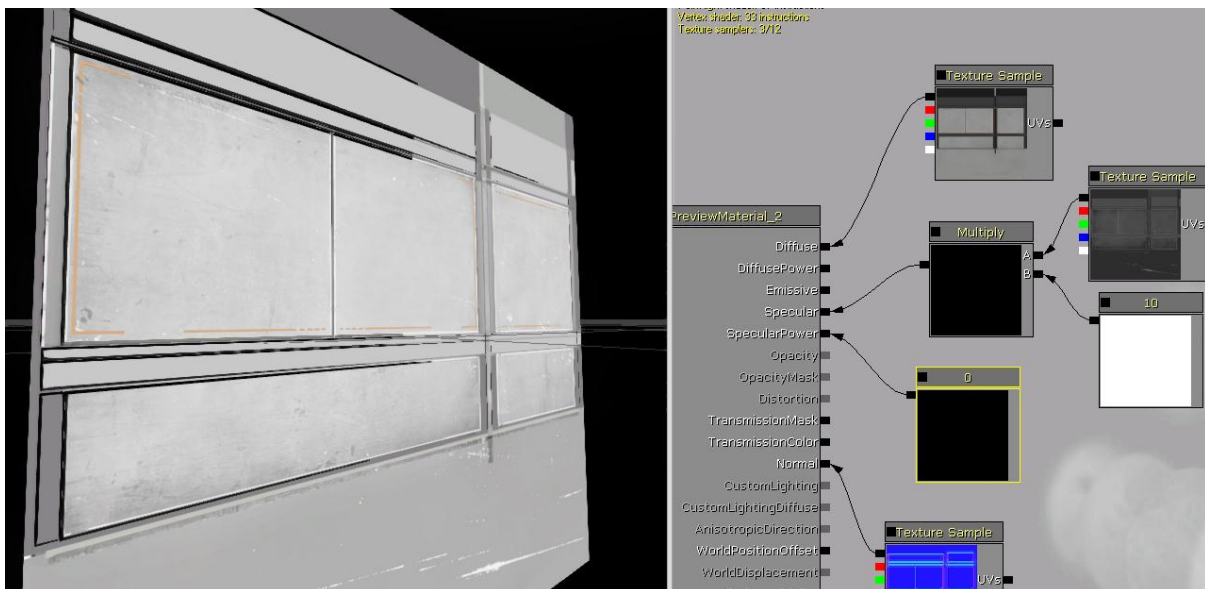

To tone this down just increase the value. I've now set it to '40' Play with these settings until your happy with your texture and make sure you save your changes!
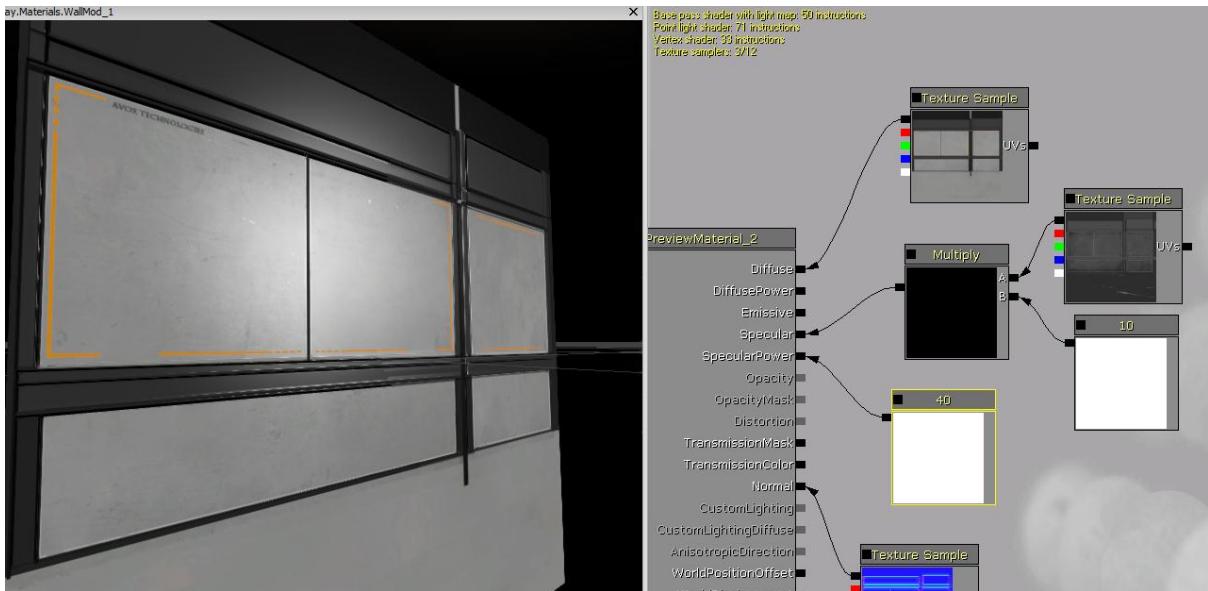
Another handy setting to turn on is 'Toggle Expression real time preview'. It is a little eye symbol on the top bar. This will show you the effects your connections are having in your nodes as well as your preview window.
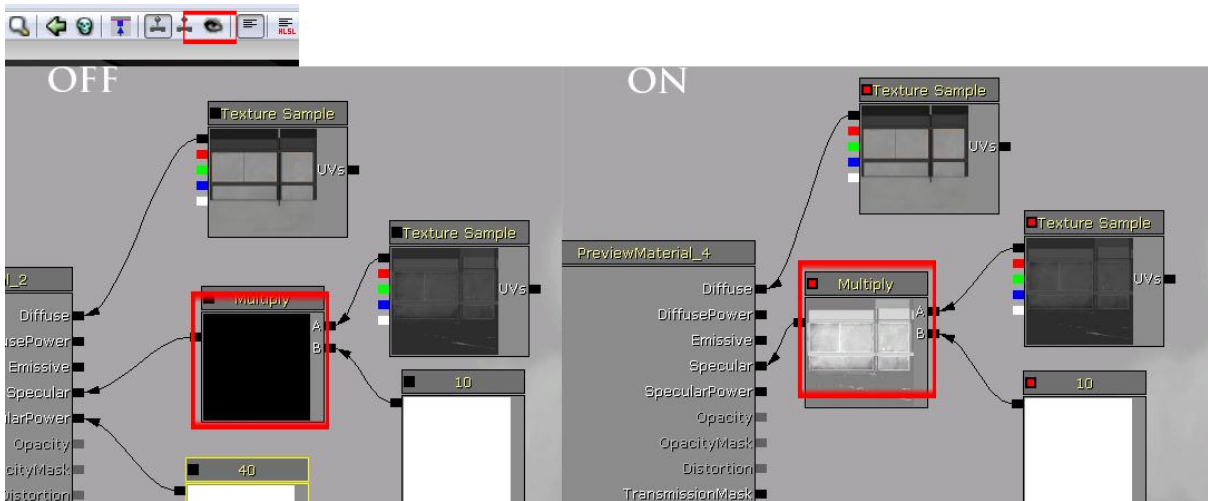
Finally when searching for node expressions later on, you may find it easier to use the search window instead of right clicking and looking through the different menus. To turn the search menu on, go to the top left corner and click on window. Turn on 'Material expressions'
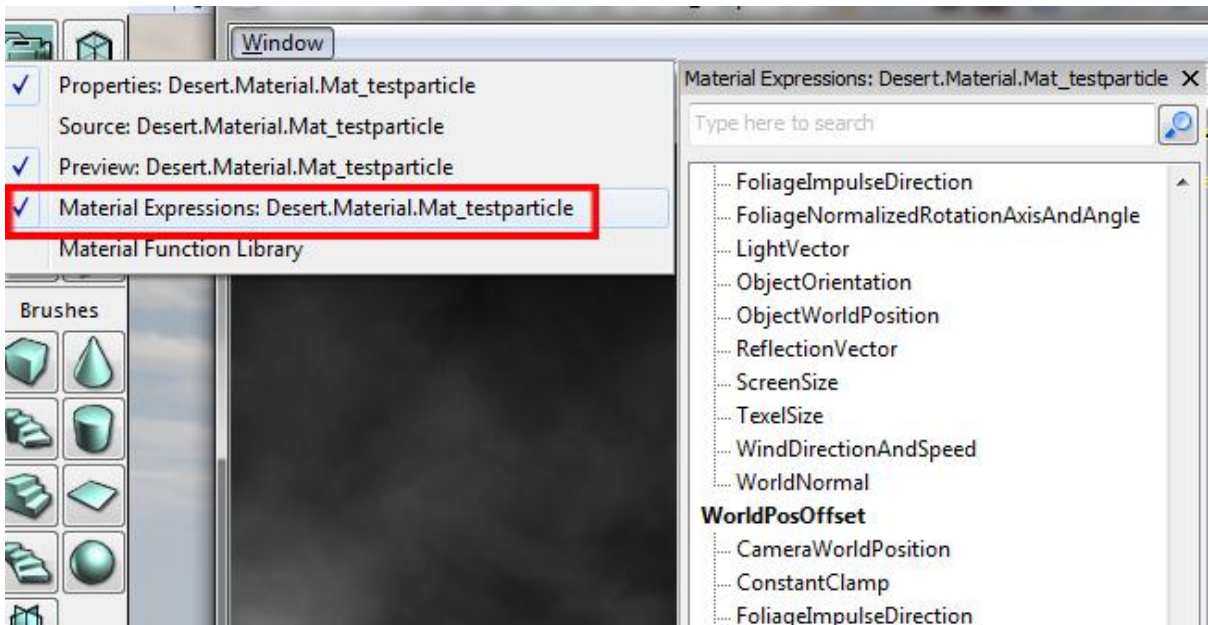
I hope this has been helpful! If you have any questions regarding my tutorial, or something has not been clearly explained, please don't hesitate to contact me.