Tiling Objects – Approximate Transcript

There are some objects that can be tiled, 2D-faces and cubes for example, also terrains; there are others that are hard to image to be tiled, spheres or tori come to mind.

Terrains are a special case. Terrains can be created in the terrain editor in such a way that they can be tiled to make the resulting terrain larger and richer in details. A two part video exists on the Bryce Mentoring DVD 1 which covers that aspect.

A terrain can also be used a bit like a 2D face. There is only one unique terrain with many copies that can be tiled. A terrain is generated by a height map and it makes very nice 3D tiles. A 2D-face on the other hand has to rely on bump to make it appear of having an uneven surface. 2D-faces are great to make polished tiles. For tiles on a wall, cubes are the best choice because a ceramic tile is thicker than a piece of paper and there is the mortise.

Tiling Terrain Tiles

Terrain tiles are equal terrains that are copied and then tiled together. Also this topic was already covered in a video for the *Ground Texture Tiles* product.

Four different methods are showed there; here we will show the easiest and most straightforward method of them all. Why bother with tedious methods if there is an easy one?

When you create a terrain, always leave it at the default size as it comes into Bryce. Scale it after tiling. If you scale it before tiling, you make yourself life very hard and this video will not be of great help. The default size of a terrain is X and Z 81.92 Bryce Units and Y 20.48 Bryce Units.

Go into the Terrain Editor and load the picture height map you want and in the Materials Lab, apply the picture material. This has already been done here. Now scale Y, the height of the terrain to make it fit the width and depth of the terrain. Just do not alter the X and Z value. Now you are ready to tile.

We assume that the single terrain prepared will be the near left corner of the tiled terrains and we will make the whole thing four terrains wide and four terrains into the distance, giving us 16 terrain tiles in all.

There is one important detail to know. Even though the default terrain is 81.92 Bryce Units wide (X) and 81.92 Bryce Units deep (Z), the terrain itself is 0.16 Bryce Units short to the right and at the far end. If terrains are tiled with the size of 81.92 Bryce Units in mind, there will be gaps between the terrains that are 0.16 Bryce Units wide. In order to tile without visible seems, we have to consider X and Z to be 81.92 minus 0.16 equal 81.76 Bryce Units only.

Now to business. There is only one terrain in the scene. Select it if it is not yet selected. Go to Edit and click on Multi Replicate. You can also use the keyboard shortcut Alt+Shift+D (Windows) or Option+Shift+D (Mac). This brings up the Multi Replicate dialog.

For Quantity, enter one less than the number of tiles. We want four, therefore we enter 3. We do the row first, so we add for the X Offset 81.76 and click on the check mark. Now, we have a row of 4 terrains that are seamlessly tiled.

Select all terrains, Alt/Option+Shift+D to bring up the Multi Replicate dialog. Quantity is already at 3 but X Offset must be reset to 0. Since we are going to tile the row, we have to enter the offset for Z, which is also 81.76. Click the checkmark and another 12 terrains appear. There are now 4 x 4 = 16 terrains properly tiled.

Select all terrains and group them. Now you can resize and rotate the group as you like. The tiled terrains stay together.

Tiling 2D faces

2D faces come vertically oriented with X horizontal 20.48 Bryce Units and Y high also 20.48 Bryce Units. Apply the material on the 2D face. Make sure the 2D face is selected.

Alt/Option+Shift+D brings up the Multi Replicate dialog. Set Quantity to 3 and Offset X to 20.48 and click on the checkmark. The 3 new 2D faces are selected; select the first as well one by holding down the Shift key and click on it. Open the Multi Replicate dialog, set X Offset to 0 and enter 20.48 for the Y offset (not Z as for the terrains). Now select all 2D faces and group them.

There is something you have to be careful when using 2D faces. Work on them as they come in Bryce as we did. Do not turn the 2D face flat. If you must, set the rotation in the Attributes for X = minus 90. If X is set to plus 90, the material on the surface will be mirrored and it will be also upside down.

Tiling Pyramids

Well, you won't do this on a daily basis, I reckon. Nevertheless, we will cover it briefly. Create a pyramid. The default size is X = Y = Z = 20.48. Turn it over so that the ground square can be seen, that would be in the Attributes dialog X rotation 90. Creating the row with Multi Replication is the same as for the 2D face: X Offset 20.48. When all 4 pyramids in the row are selected, open the Multi Replicate dialog and enter Z Offset minus 20.48. If positive is used, the rows are added downwards instead of upwards. When all pyramid tiles are created, select them all and group.

Note that the image texture is scaled to fit the surface on which it is applied. Only the ground is square, the sides are triangles and the picture is adjusted accordingly.

Tiling Cubes

A cube comes into the Bryce world with 20.48 Bryce Units in all three directions. To tile them seamlessly, you can do it the same way as discussed for the 2D faces. However, using a cube this way would be a bit of overkill. Rather, you would keep the X and Y (width and height) sizes but make the Z value much smaller. If we consider 20.48 Bryce units as 20.48 cm or about 4 inches, we would make the tile perhaps 5 mm, half a cm or a fifth of an inch thick. Then tile them with again about 5 mm or 1/5 inch for the mortise. If we think about those lines, we tile with an offset of 21.0 instead of 20.48. For the row, the X offset would be 21.0. With the complete row selected, Y offset would also be 21.0.

Then, we can create a 2D face with 4 x 21 = 84 Bryce Units and align it to the lower edge of the tiles and give it a sand texture and we have nice wall tiles. We can group them now to rescale and for placement.

This example was made just this way. The scene was made four years ago and has potential for improvement. But that's not the issue. It is just here to show how you can tile your bathroom.

Wrapping up

To wrap it up, a few words about rescaling and repositioning in general. Bryce lets you reposition and rescale with the mouse, you can enter absolute values and you can use percentages.

The tile for the terrain was taken from the product Ground Texture Tiles, those for the 2D face and the pyramid where made with StructureSynth and the one for the cubes was an additional leave I found for IvyGenerator, if my memory does not fail me.

There is another means to tile – tiling pictures on a single surface. This will be covered in another video. I hope this tutorial gave you some of ideas what you can do with picture textures.