



Auto Texture Tiling Tool

Version 1.80

Read Me

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1. Basic Functionality

The Auto Texture Tiling Tool can be used for rapid prototyping. It provides a mean to build architecture from primitive blocks with fitting, tiled textures.

1.1 Usage

Attach the *AutoTextureTiling.cs* to any *GameObject* with a mesh. It will automatically adjust the UV coordinates of the mesh to tile the texture over the whole object.

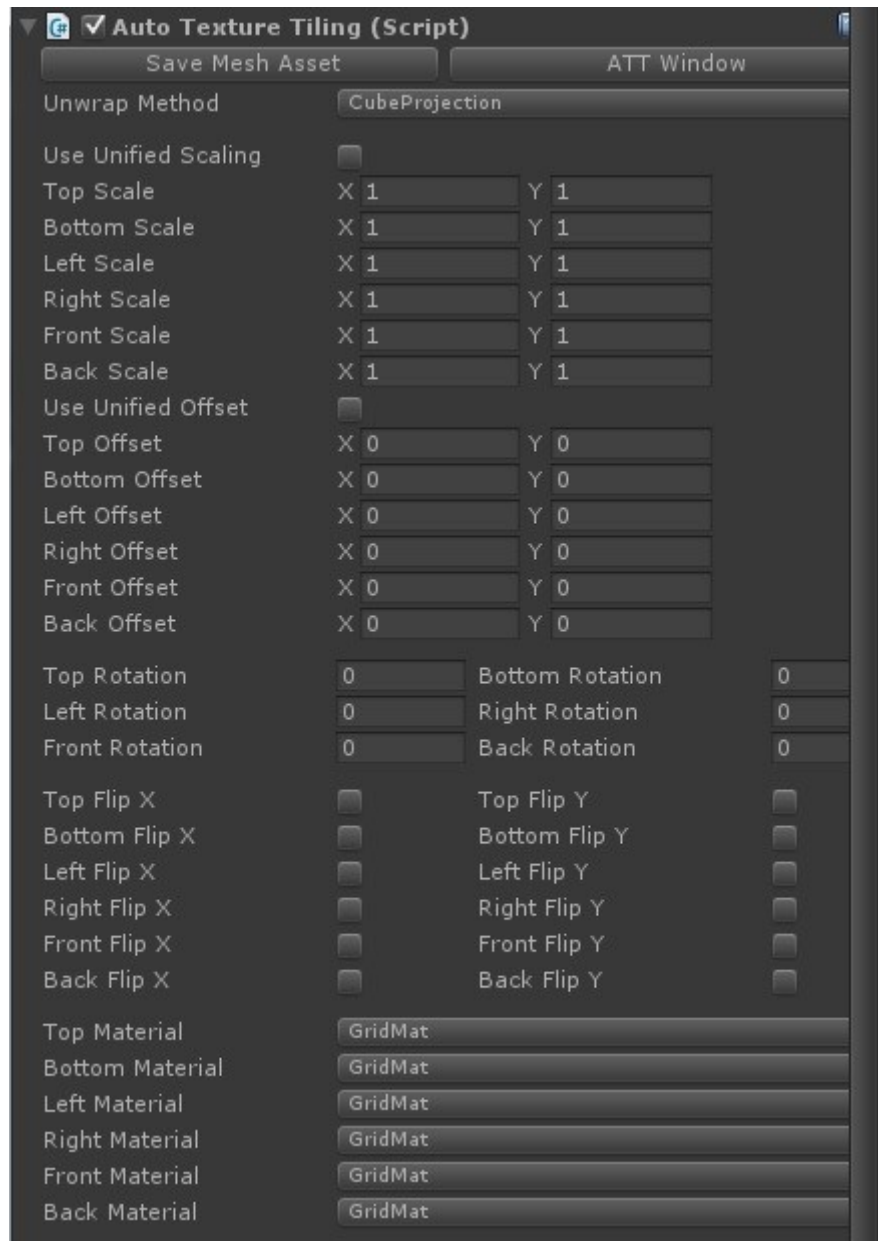
The *AutoTextureTiling* script manipulates the UVs and vertices of the mesh. Make sure that the “Read/Write Enabled” check mark is checked in the import settings of the mesh that you want to attach the script to, if you run into trouble.

You can resize the object freely, which will automatically re-adjust the UV mapping. In the inspector of the *AutoTextureTiling* component, you can adjust the scaling, offset and rotation for each side individually. You can mirror the texture horizontally or vertically by setting the “Flip X” or “Flip Y” checkmarks.

You can also add more than one material to the *MeshRenderer* of the object and then select those materials for each side of the object. Make sure to assign each material to at least one side of the object to avoid rendering errors.

1.1.1 Dynamic Texture Tiling

If you want the Texture to adjust dynamically at runtime, use *DynamicTextureTiling.cs*. This will not work on static objects, and will also give a warning in the console to show that.



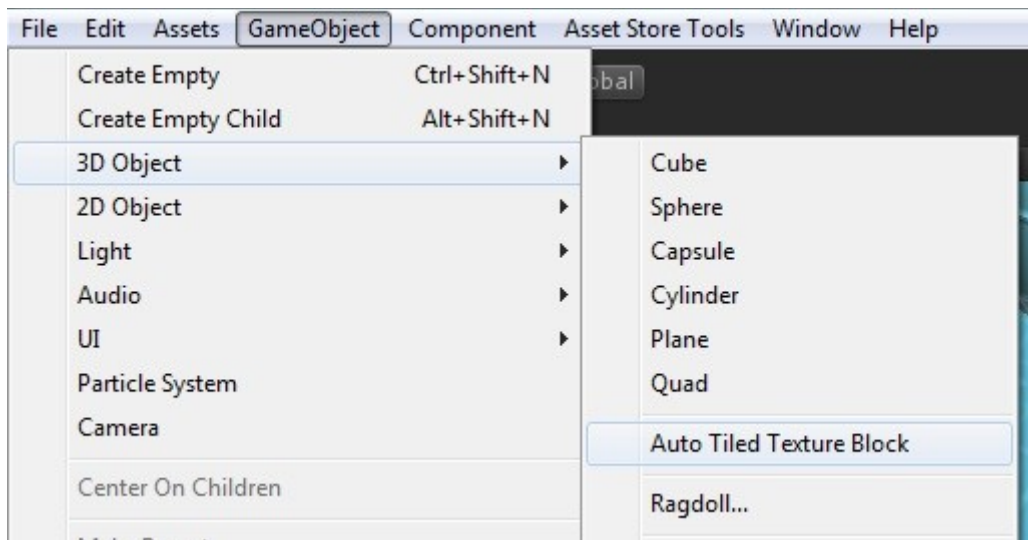
1.1.2 Basic Texture Tiling

There is a new script named *BasicTextureTiling.cs*, which is supposed to work with preset materials. This script is best be used with meshes, where the different materials will have been preset in a 3D Modeling Software. This script will not split the mesh into faces automatically. You will have to define them in the 3D Modeling Software yourself by hand. The script will consider different sub-meshes as individual faces, which means, that you have to split the model into sub-meshes to achieve the intended effect.

The script will then tile the textures as any other Tiling script. Keep in mind that this will not work well with objects, who have only one material (i.e. only one sub-mesh), since it will treat the whole object as a single face. Very peculiar results will occur.

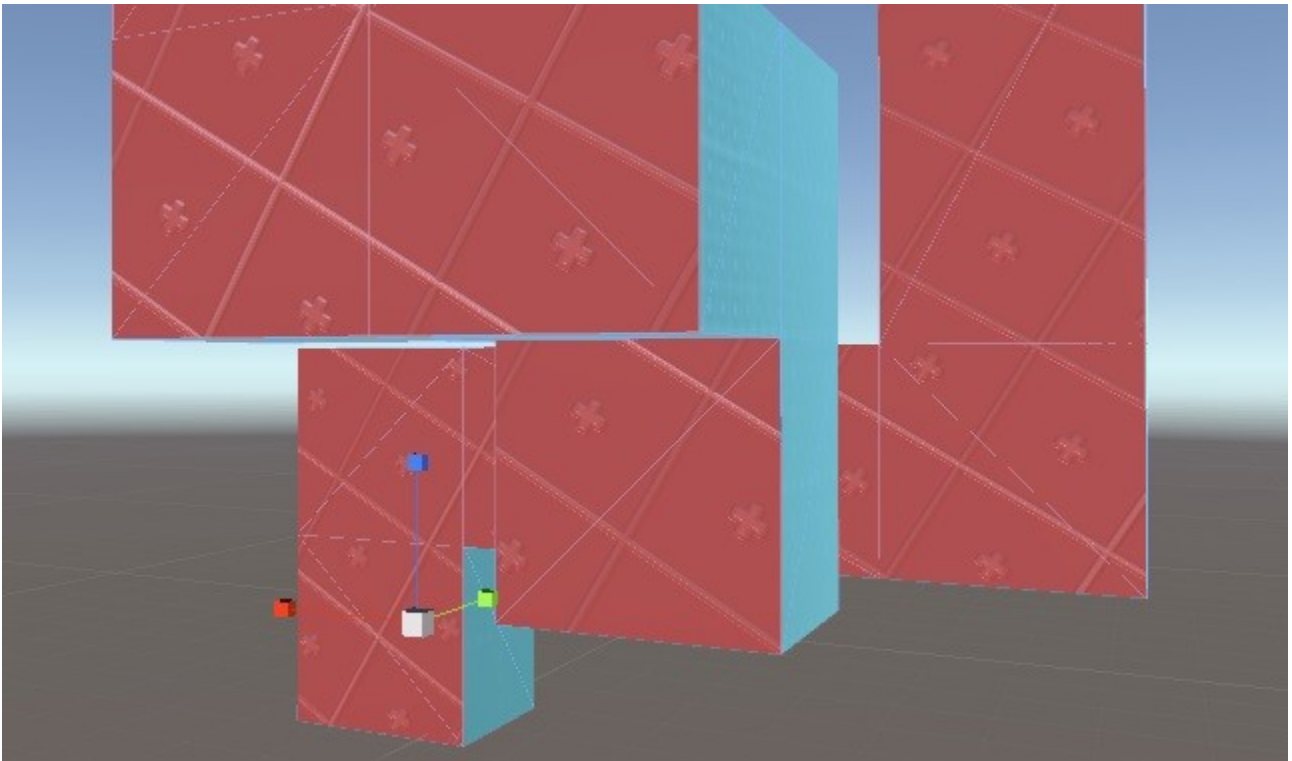
1.1.3 GameObject menu item

The Auto Texture Tiling Tool adds a new menu Item to “GameObject → 3D Object” named “Auto Tiled Texture Block”. Here you can create a Cube with the AutoTextureTiling component already attached.



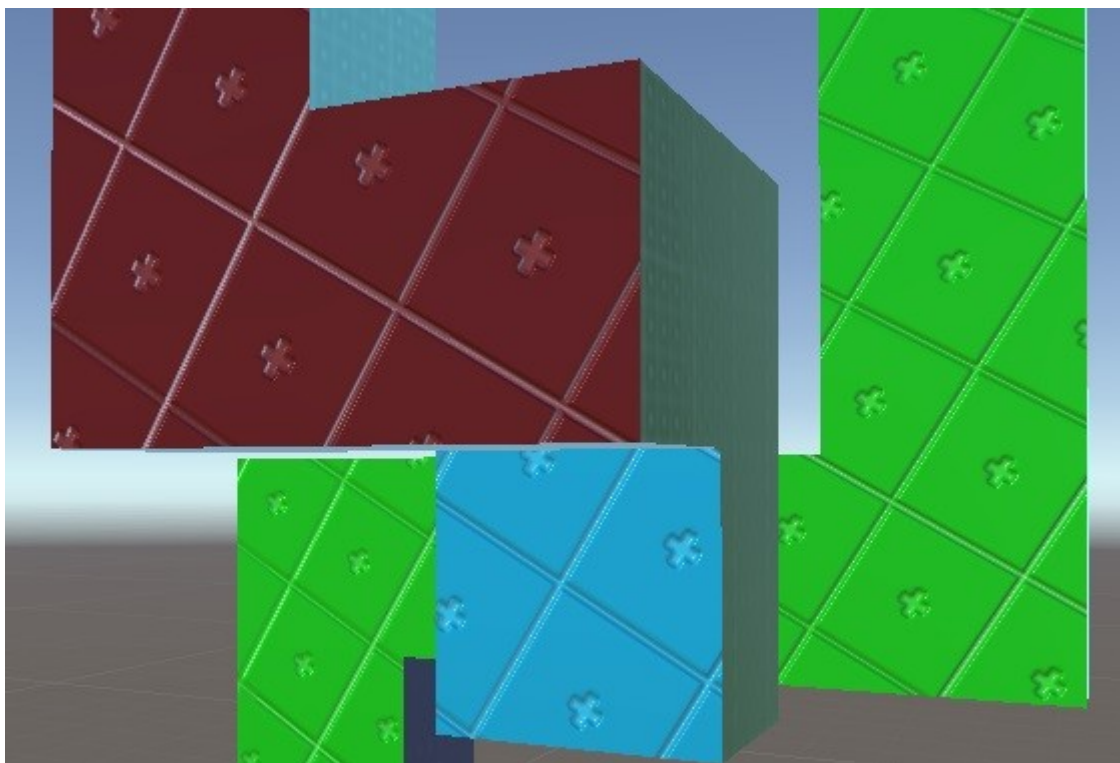
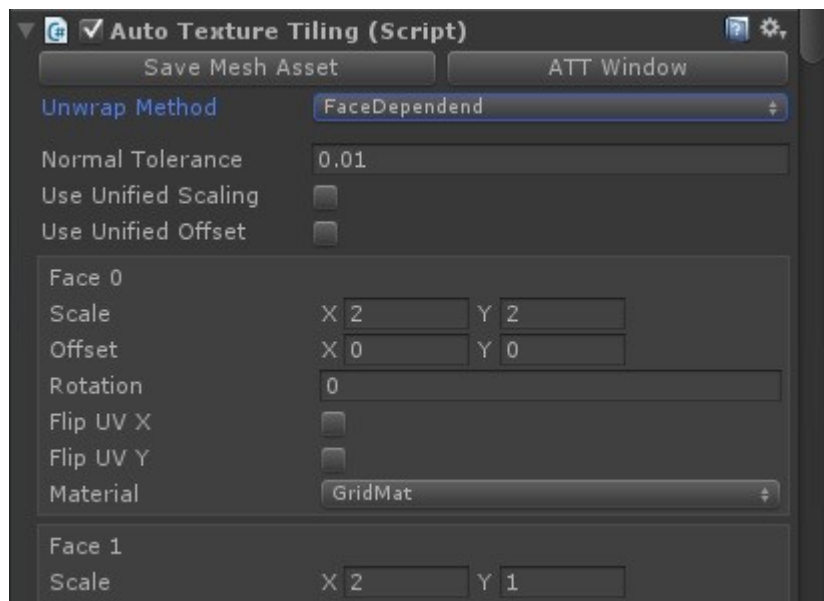
1.2 Unwrap Method

You can choose between two unwrap methods to manipulate the textures on your object. When selecting “Cube Projection”, the mesh will be split in a top, bottom, left, right, front and back part, which can be manipulated individually. This is sufficient for most simple objects, but can lead to unwanted results in more complex shapes. See the screen shot below for the behavior of the “Cube Projection” setting. It treats every triangle facing in the same general direction as the same face and will apply the same materials and settings.



To avoid this, you can select the “Face Dependent” unwrap mode. This will split the mesh into faces by comparing the normals. You can also set a certain threshold, the “Normal Tolerance”, for the difference in the normals for objects with more curved surfaces.

Now each each face can be manipulated individually, setting offset, rotation, scale and material. See the screenshot below with a different material attached to each face.



1.3 Mesh Baking

You can save the created mesh as an asset by clicking on the “Save Mesh Asset” in the inspector. You can delete the mesh again by clicking the “Delete Mesh Asset” button. You should use this to delete the mesh asset before deleting the last object instance that uses this mesh. Otherwise you have to delete the mesh asset by hand. Meshes are stored by default in “Meshes” sub-folder of the “AutoTextureTilingTool” folder, so this folder should not be renamed.

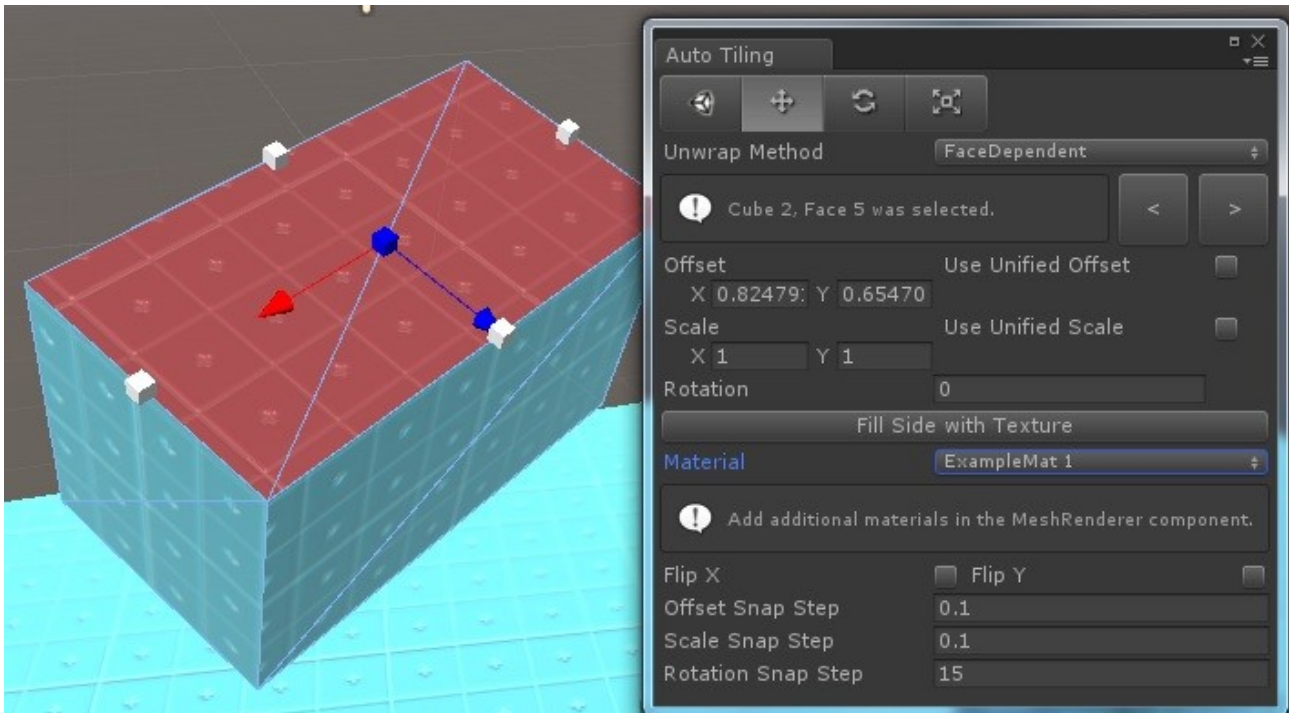
1.4 Prefabs

You normally can't make prefabs from Auto Texture Tiling Tool objects without running into troubles. You can avoid these troubles by saving the mesh first before creating the prefab. (see “Mesh Baking” above)

2. Gizmos and Editor Window

You can click on the “ATT Window”-Button in the inspector of an AutoTextureTiling component to show the “Auto Tiling” editor window. Now you are able to select individual sides, which will be highlighted red. The values of each side can then be controlled by the editor window.

You can also show this window by clicking in the menu on “Window → Auto Texture Window”.

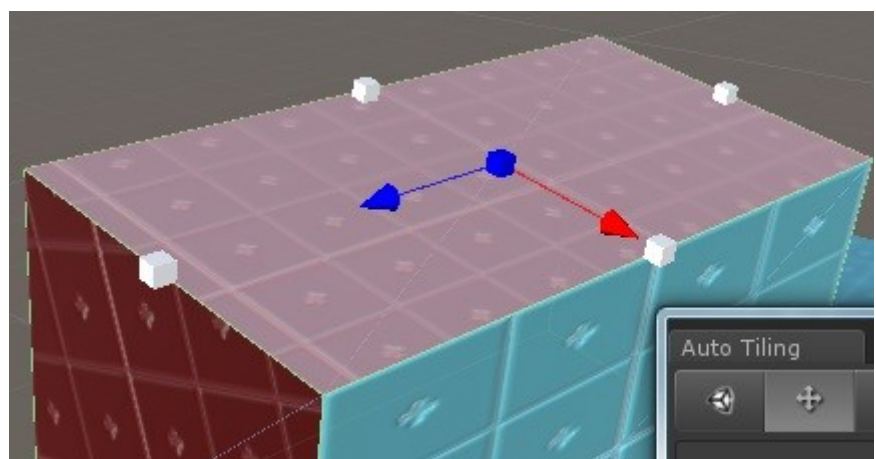


The functionality is basically the same as in the Inspector, but you no longer have to guess, which value belongs to which face. You can also cycle through the faces with the two arrow buttons.

You have a toolbar with four buttons on top of the window. The first button with the Unity symbol lets you use the normal object manipulation tools for moving, scaling and rotating the object. The other three buttons activate gizmos for setting the offset, scaling and rotation of a texture.

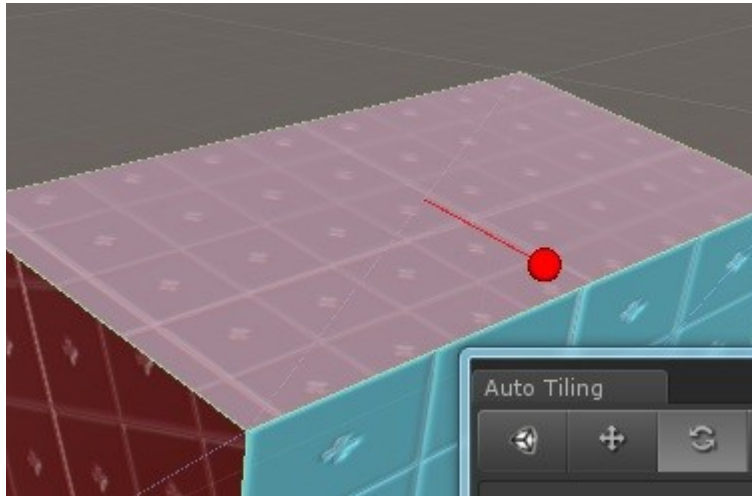
1.1 Offset

You can control the offset by dragging the mouse on the arrow axis. Hold the *Left Control* key to snap the offset to discrete steps. Click on the blue handle to center the texture and click on the white handles to snap the texture to the edges of the face.



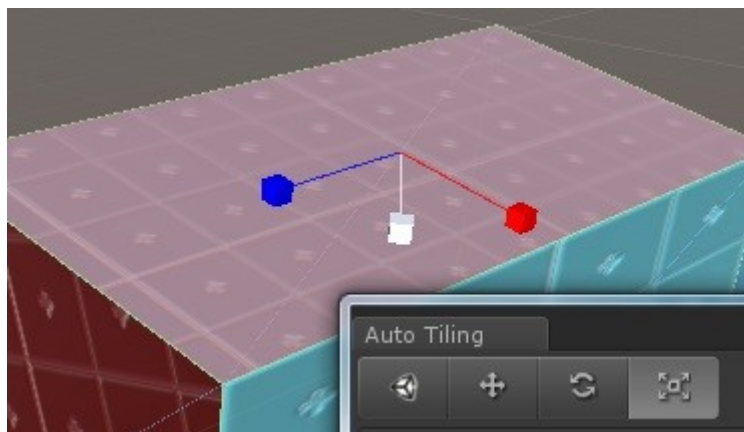
1.2 Rotation

Click and drag the sphere handle to rotate the texture. You can again hold the *Left Control* key to snap the rotation to fixed degrees.



1.3 Scale

Like with the offset, you can control the scale by clicking and dragging along the X or Y axis of the texture. Use the white handle to scale the texture uniformly. Hold the *Left Control* key to snap the scaling to discrete values.



1.4 Fill Side with Texture

The “Fill Side with Texture” button lets you fit a texture on the side of an object. It resets offset and rotation and adjusts the scaling for the texture to fit.

1.5 Snap Settings

Also in the Auto Tiling Editor Window you can set the step size, in which the offset, scaling and rotation will snap while holding down the *Left Control* key. Offset and scaling are clamped between 0 and 1, since they are percentage values. Rotation snapping is in degrees.