

# **Auto Texture Tiling Tool**

Version 1.77

# 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 readjust 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

Save Mesh A	sset	t ATT Window			
Unwrap Method	CubePro	CubeProjection			
Use Unified Scaling					
Top Scale	X 1		Y 1		
Bottom Scale	X 1		Υ 1		
Left Scale	X 1		Y 1		
Right Scale	X 1		Y 1		
Front Scale	X 1		Y 1		
Back Scale	X 1		Y 1		
Use Unified Offset					
Top Offset	X 0		Y 0		
Bottom Offset	X 0		Y 0		
Left Offset	X 0		Y 0		
Right Offset	X 0		Y 0		
Front Offset	X 0		Y 0		
Back Offset	X 0		Υ 0		
Top Rotation	0	Bot	tom Rotation	0	
Left Rotation	0	Rig	ht Rotation	0	
Front Rotation	0	Bac	k Rotation	0	
Top Flip X		Тор	Flip Y		
Bottom Flip X		Bot	tom Flip Y		
Left Flip X		Left	t Flip Y		
Right Flip X		Rig	ht Flip Y		
Front Flip X		Fro	nt Flip Y		
Back Flip X		Bac	k Flip Y		
Top Material	GridMat				
Bottom Material	GridMat				
Left Material	GridMat				
Right Material	GridMat				
Front Material	GridMat				
Back Material	GridMat				

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.

If you want the Texture to adjust dynamically at runtime, use *DynamicTextureTiling.cs*.

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

File	Edit Assets GameObject	Component Asset	Store Tools Window Help
	Create Empty	Ctrl+Shift+N	al
	Create Empty Child	Alt+Shift+N	
	3D Object	•	Cube
	2D Object	•	Sphere
	Light	•	Capsule
	Audio	•	Cylinder
	UI	•	Plane
	Particle System		Quad
	Camera		Auto Tiled Texture Block
	Center On Children		Ragdoll
	Male Devent		

### 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. With the same settings.



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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.

•	🚱 <b>Л Auto Техture Ti</b> Save Mesh Ass	ling (Script) set		ATT	r Windov	N (1)	
	Unwrap Method	FaceDepender					
	Normal Tolerance Use Unified Scaling Use Unified Offset	0.01					
	Face 0 Scale Offset Rotation Flip UV X Flip UV Y Material	X 2 X 0 0 GridMat		2 0			
	Face 1 Scale	X 2	Y	1			



### 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.

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## 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  $\rightarrow$  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.