Terrain Blending Starter Kit Documentation

Foreword:

Hello and thanks for downloading this free donation to the asset store! This package contains a simple scene showing the main purpose of this shader:

Seamlessly blending the terrain with other environmental assets.

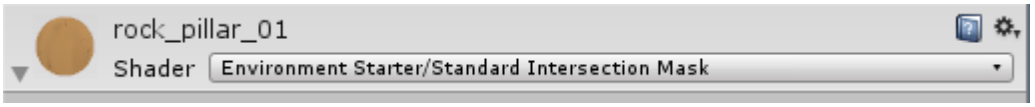
As someone who has been working with game environments for a while I know how annoying it can be to have the surroundings in your game look like patchwork. I hope this asset will be a good starting point for everyone trying to find a solution to this problem. It's built in a way that everyone with basic shader knowledge should be able to make adaptations based on individual needs.

Though it should be powerful out of the box as well. Enjoy! :)

How to Use:

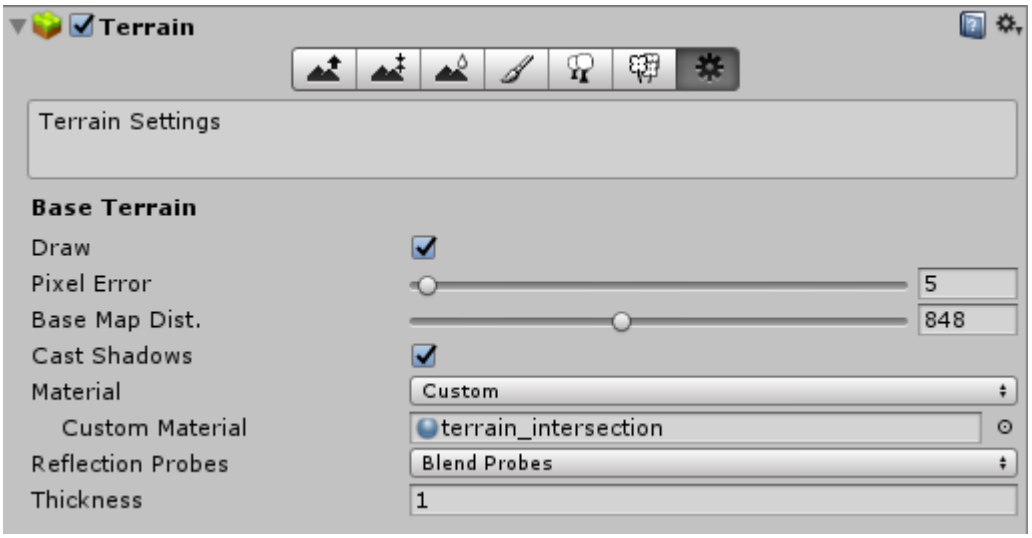
The magic behind this shader is actually pretty simple: Assets are blended into the terrain by setting a Y-axis intersection range. Both the terrain's base texture and the intersection texture of the assets are mapped using world-space coordinates to achieve perfect tiling. As an addition there is simple normal blending to get rid of shading issues in the intersection area.

Setup is pretty straight-forward and simple. You can find both the Terrain Blending Starter Kit Terrain shader as well as the Standard shader under **Environment Starter** in the shader dropdown.



While the "Standard Intersection Mask" shader should be used for the environmental assets on top of the terrain, please use the "Standard Intersection Mask Terrain" for the terrain itself.

You can set a custom Material for the terrain in the right-most tab of the Terrain component.



Settings and Tweaks:

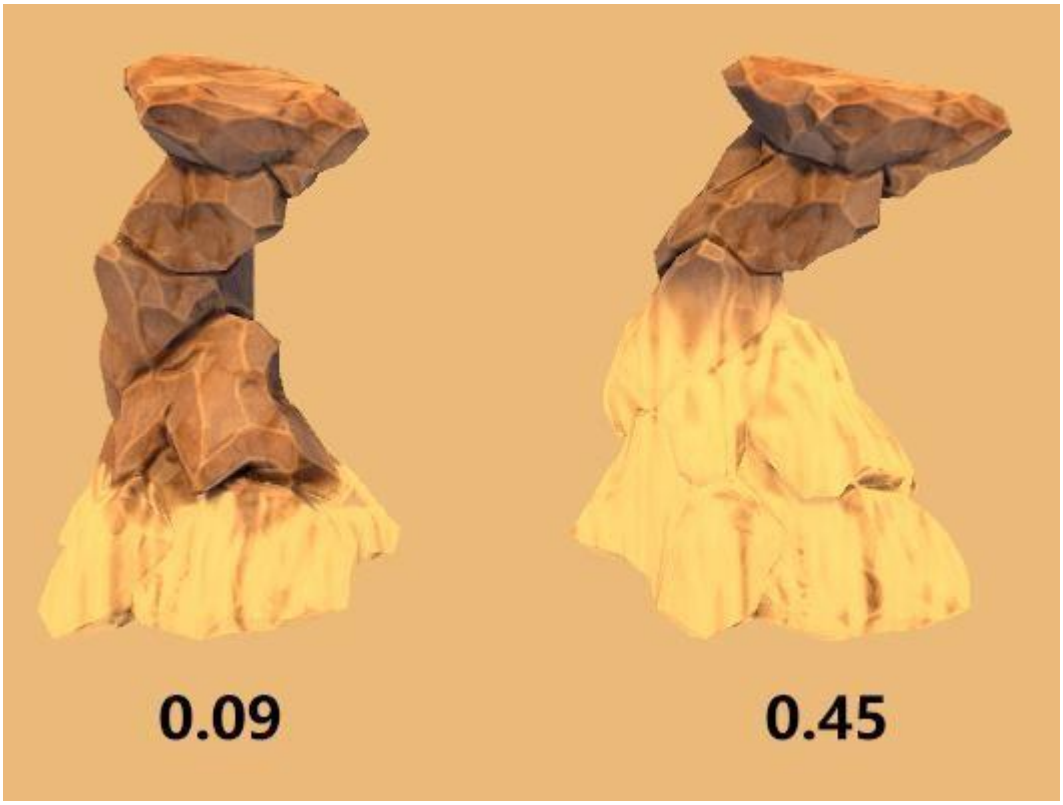
Standard Intersection Mask - Shader

Standard Shader Setup

Everything found under the header "Standard Shader Setup" behaves similarly to the Unity Standard Shader. Please refer to the official documentation if you're wondering about the parameters.

Intersection Settings

Intersection Threshold Max: This is the maximum range for the intersection mask. You can think of it as the value for "how far does this asset stick in the ground".

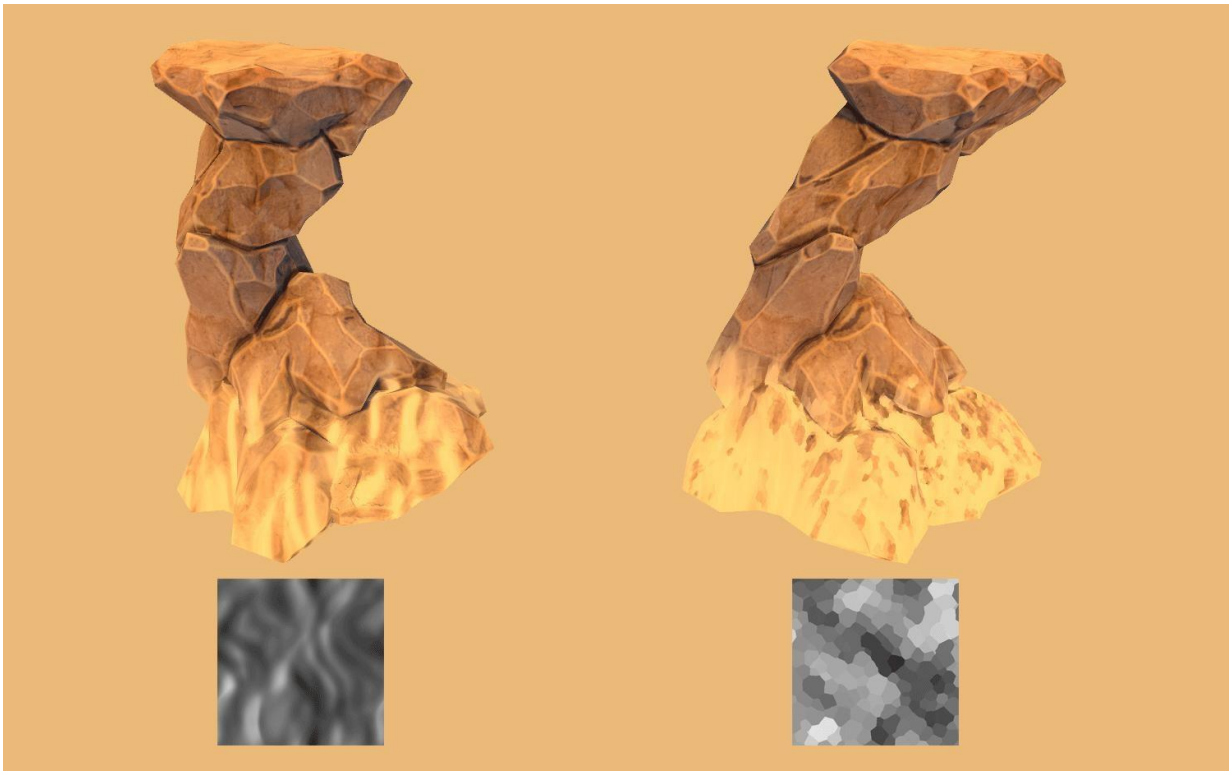


Intersection Power: A higher value creates a harder edge of the mask while a lower value creates a softer transition.

Depth Factor: Based on the Intersection Threshold Max you can increase or decrease the point where intersection masking starts.

Intersection Maps

Here you can plug in your textures for the intersection. Keep in mind the alpha channel of the Intersection Albedo texture is used as an additional mask to make the transition more convincing instead of just a linear blend. In many cases you can probably generate a proper alpha channel mask from your base texture's grayscale. This option can greatly affect the outcome of your final blend.



Mask Tweaks

A couple of parameters for tweaking the intersection blending can be found here.
Intersection Scale is especially important, this one should be synced with the Intersection Scale parameter of the Terrain shader to achieve perfect tiling.

Mask Multiplier can be used to decrease/increase the alpha channel's influence on the mask and Mask Power can soften/harden the edges of the mask.

Vertex Modification

The two settings found here are Target Normal and Inflate Ground. You can use Target Normal's XYZ to bend the Normals in the intersecting area to the set direction. The last component (W) controls the Intensity of the Normal Blending and works in a 0 - 1 range.

Inflate Ground will push the object's vertices along the normal by the set value. You can use this function to make assets appear more sunken into the ground. It will automatically only affect vertices in the intersection area.

Snow Settings

I called this "Snow" since it behaves similar to how snow behaves in real life. It adds on top of your objects. You can check Add Snow to enable/disable it and use Snow Mask Multiplier to decrease/increase the effect, as well as Snow Mask Power to create softer/harder edges.

Vertex Color Settings

Vertex Colors can be used to additionally tweak the blending. This way you can create per-asset variations from a single models and get more control artistic over the blending. You can use any vertex painter of your choice or apply the vertex colors inside your modeling program. Vertex colors channels are used in the following way:

- The red channel adds to the intersection blending mask.
- The green channel subtracts from the intersection blending mask.
- The blue channel adds to the model inflation mask.
- The alpha channel subtracts from the model inflation mask.

Standard Intersection Mask Terrain - Shader

This shader only has the most essential parameters exposed since most of it is managed by the Terrain system itself. The texture that uses the exposed parameters will automatically be the very first texture set in the Terrain component.

Intersection Settings

Here you can set the Intersection Scale for the base terrain texture. Match it with the one set in your asset's shader to get perfect tiling.

Intersection Smoothness works like the PBR smoothness in Unity's Standard Shader.

Final Words:

Thanks again for giving this kit a chance in your projects! I hope you can use it to your advantage and I'll try my best to keep it up to date and modern. I developed and published this kit to get an advantage in fast environmental production and as a challenge after I saw similar projects done in other engines.

Feel free to modify the code to your specific needs an please let me know if you have questions, add feedback and rate this project on the store page if you like to encourage further development. And last but not least: Have fun! :)