Terrains!

Helpful instructions and tips for creating terrains!

- Terrain Tips!

Terrain Tips!

I apologize for the lack of pictures! This was originally written as a video tutorial script, and I haven't gotten around to recording the video for the tutorial yet!

Since these tutorials take so long to make, I don’t want to reinvent the wheel. There is an excellent tutorial by Brackeys that covers the basics of terrains in Unity 2019 and onward. I know from reading my comments that many people who watch my videos don’t watch the prerequisites; but I am so evil that I’m not even going to tell you how to install or set up terrain! Go watch Brackey’s video first!

First up! Something that you should absolutely have turned off! If you use 2D foliage PLEASE do not make them billboards!!! This will make them face the camera at all times which is extremely noticeable and immersion breaking, especially in VR! OK PSA over.

Another quick thing. From my personal experience, there are types of landscapes that are better to try and make as your first terrain, and some that are worse. The first landscape I tried to make was a valley inspired by the Austrian Alps, but I quickly realized that it would take a lot of time and effort to look good, and required me to learn many skills that I didn’t yet have. I then settled on creating a small beach island, which was much easier. Not only was there not a lot of terrain I needed to sculpt, it was far easier to make it look decent than a more detailed landscape. It was also easy to surround with a natural and believable barrier, that being the ocean, which hid where the small terrain ended and functioned as an intuitive way for players not to go beyond the boundary.

I eventually made a valley landscape, which is probably one of the worst looking scenes I’ve created from a technical standpoint, but I still like the aesthetics and vibe of it. I could have certainly made it look better but that would have taken quite a bit of time.

TL;DR: Choose an easier landscape to make for your first terrain! Even after you already have experience making terrains, if you plan on creating new ones, consider how long it might take to make them look good!

Many of the tutorials on terrains explain how to make them but don’t exactly explain what they are or why they are so useful. Unity terrains are optimized for large landscapes. This is because the terrain’s mesh can tessellate.

It’s better you see for yourself first. If you click on the terrain, then go up to gizmos, and tick “mesh wire”, it shows you the polygons of the terrain. As I move closer, you can see that the number of the polygons increases, and as I move further away, it decreases. You can switch to a different scene view rendering mode to make this more visible. This helps with optimization of both the rendering and the collision physics (to my knowledge, anyway).

Terrains have the ability to paint multiple materials on them. This is driven by a splatmap, explained in more detail in this video Unity made themselves. Obviously, if your terrain only has one material on it, it’s probably not going to look super realistic.

The displacement of the terrain is driven by a heightmap. This was discussed in Brackey’s video. The downside of this is that you can’t make overhanging cliffs with terrains, but in that case you would instead want to place static meshes, like rocks or overhanging cliffs with LODs instead.

Speaking of, the problem I see with most terrains made by beginners is that they are boring. Usually the problem isn’t that the landscape the terrain itself is trying to replicate is bad (though it usually is), it’s that there just isn’t enough stuff on the terrain; it should be the foundation upon which the rest of the scene is laid. The terrain itself, the 2-dimensional plane, should not be the star of the show! What matters is the grass, trees, bodies of water, or any human made structures on top of it! That (along with following visual composition rules, which always apply) is what will make your terrains not only visually interesting but also engaging to explore!

For terrains, they often aren’t perfectly smooth. Of course, that all depends on the type of environment you are trying to recreate. If you are making a snowfield, the parts covered in snow are likely to be smoother due to how snow falls and is blown around.
As always, looking at reference is key! Not only that, researching why the terrain looks the way it does will help you in creating it and making it look more realistic! Yes, it may sound boring to some of you, but nearly every professional artist, especially 3D artists, delve deep into not only how things look, but why they look the way they do in order to recreate them in their medium of choice (in this case, 3D software).

If you think that your terrain needs more detail then you can use certain brushes after you have the general shape of your terrain. Obviously you probably want it at a very low intensity. And if that’s too much, then you can always smooth it over again!

Here are some other great free tutorials on Terrains!

https://youtu.be/MWQv2Bagwgk

https://youtu.be/smnLYvF40s4

https://youtu.be/ddy12WHqt-M

https://youtu.be/PDKZXjyhwh0

And take a look at Unity's own documentation on terrain and the Terrain tools too!

https://docs.unity3d.com/Manual/CreatingEnvironments.html

https://docs.unity3d.com/Manual/script-Terrain.html

https://docs.unity3d.com/Manual/TerrainTools.html