

Exploring Level 1 in 3D Mode

Hello everyone!

Welcome back to the game development tutorial using UNITY!

In our last videos, we have tried creating a 2D game. Today we are going to learn about how do you recreate the same scene in 3D using the unity terrain tool! I hope you're excited to see how 3D construction turns out!

So, you know the drill now! We are going to use UNITY hub to open the project that we have created.

As you can see the 2D forest scene that we had created in the last video! So, let's create a new scene. To do that, right click under the assets window in the scene folder, select create and then choose new scene. Name it as "Forest 3D". Double click to open the scene. Now that we will be dealing with 3D, we are going switch to 3D mode. Right now, by default it is set to the 2D mode. Click on 2D button at the top bar to switch it to 3D mode.

Now, click on window in the top bar and select Asset store. An asset store will load just like we have shown in the previous project. Type 'Standard assets' in the search bar and download it as shown on the screen. As I have already downloaded it on my system, you can see the import option only. I am going to go ahead and show you 2 folders in it. One is the sample scene and the other one is the standard assets.

We'll close the asset store tab by clicking on 3 dots and select close tab. Now, I'm going to add the directional light, by clicking on '+' under the hierarchy window and selecting light, then choose directional light from the dropdown menu. Now, I'm going to mark this as a real time lighting because I don't want the light to get all over the place which will ultimately slow down our editing part.

Before proceeding, we will just move the game window and drop it near scene window so that we can get more space on the scene window for editing. Now, select the directional light and change the X, Y & Z position to (0,50,0) so that directional light falls in the right direction.

Since we are creating this in 3D mode, let us first create the terrain. For doing that, you have to click on '+' under the hierarchy window, choose 3D object and then pick terrain from the dropdown menu. Now, the terrain has been created. Let's add a cube to the terrain. Click on '+', select 3D object and click on Cube. Change the position X, Y & Z in the inspector window to (0, 0.5, 0). Slight change in Y will place the cube above the terrain. Drag the cube object above the terrain object to make it look like it is above the terrain. Let's change the view angle of terrain to Y-axis.

If you click on the first option in the terrain component, you can add multiple neighboring terrain just by clicking on the neighboring areas and make it as wider as you can. Let's change the viewing angle to the one as shown on the screen.

So, now it is time to add details to our terrain. So, given that our theme is related to forest, I'd want grass to be covering the whole surface of the terrain. So, I'm going to select Paint terrain option from the inspector window and from the dropdown menu, I'm going to select the paint texture as shown. Next, I'm going to click on 'Edit Terrain Layers' and select 'Create Layer' option. An asset window pops up that lists all the assets present in the standard asset folder. Search for grass in the search bar. As you can see there is a 'Grass hill albedo' texture available. Double click on it to apply that on the terrain. For applying the same grass on the other terrain, select the biggest brush as shown, select the texture and click on the terrain which you want to paint.

We will focus on the center terrain for now. Now, let's create small hills or hollows on the terrain. For that, click on the drop down in the Terrain component and select 'Raise or Lower Terrain' option. Select the brush and change the size to 100. Now, as I paint with the brush, you can see that the hills are getting created. But I feel like it is all a bit circular for me, so I'm going to choose a different brush now in order to create a different shape of the terrain.

Next, I want to smoothen the height of these terrains that I have created. To do that, I'm going to go to the drop down and select 'Smooth Height' option. Select the large brush and keep clicking over the hills to smoothen their height. So, this is how you can create mountains & hill ranges in your scene. We will focus on

the specific area in the center to create our terrain. I'm going to start by creating mountains in the selected area.

As in our game, our focus is not too much on the detailing of terrains and it is on the animals and other things, hence we will not pay much attention to the detailing of them. So now, we have sufficiently created the terrain as per the requirement.

Now, that we are done with the green landscape, let's add small patches of dust too to give a realistic view to the forest scene. To do that, go to terrain component, select the 'Paint Texture' option from the drop down. Click on Edit terrain and select Create layer. Type grass again in the search bar. Select the option 'Grass Rocky Albedo' from the list and double click on it.

Select the texture and decrease the size of brush to 20. Slowly, start moving over the sections where you want to put the land patch by clicking on the area. Change the size of the brush to 50 and paint over mountains to give a rocky feel. Feel free to tweak the terrain according to what you feel looks the best for you!

Now, we are going to add long grass or bushes to the scene. We will do that by going to paint details in the same section. What paint detail does is that it allows to select different objects to be placed over the terrain to give real effect. To do that, click on Edit details from Details section and select 'Add grass texture'. In the Detail Texture section, type grass and select the longer grass for now and click on 'Add' button.

Now, the grass is added. Change the brush size to 20 and paint it over the terrain as shown. To make it more area targeted, reduce the size further to 5 and paint it in patches format. If you want to add another kind of grass, you can do so in the same way as done previously and paint it on the terrain.

Now, let us add trees to the forest. Click on the 'Paint Trees' option. Select 'Edit Tree' option and click on 'Add Trees'. The assets window will pop up. Double click on 'Broadleaf Desktop' tree and click on 'Add'. Decrease the brush size to 10 and tree density to 10. Keep clicking on the terrain to place the trees. Now, by moving around, you can see that the trees have already been place. There are different bushes, mountains, trees and grass so far. So, I can basically create and customize the whole scene accordingly. Basically, there is no limitation to your creativity and imagination!

Now that we have created our forest, it is time for us to add the animals in!

By now you must know the fact that in the 3D world, we require 3D models whether it's a texture, materials or shaders. To make it easier, I have downloaded some 3D modeled animals like Snake and Wolf which I will show to add them into the scene.

To add the animals folder, drag it to the asset folder to import all the files to Unity. Go inside the animals folder and select Wolf. You can see the prefab file of it. But there is also a FBX file too. FBX file is a 3D format file that has been exported from a pre-existing 3D tool like Maya, 3DS Max, Blender etc. In our case, a prefab has already been created and the materials, textures and settings are assigned to it. You can see the detail by just double clicking on it and you will see the information & skeleton of it. We will go out of the folder now and select the wolf fbx file from the project window and then drag and drop it anywhere in the scene.

Now, double click on the object in the Hierarchy window to see the wolf in the scene. To move the wolf scene, select the move tool and drag the direction arrows to move them to a suitable place of your choice or as shown in the scene.

Let's add snake to the scene. Go to the snake folder in the assets section. Drag and drop in the scene. As the size of the snake is huge, we are going to scale it down. To do that, select the scale tool option on the left-hand top corner of the screen. Now click the center yellow dot and pull it to reduce the size of the snake in all direction.

We are unable to scale it properly. So, edit the scale from inspector window. Change the value of X, Y & Z to (0.1, 0.1, 0.1). Place the snake appropriately as per your choice. Position it in such a way so as to make it difficult for the player to find out easily.

So, we have successfully added snake and wolf in the scene. Similarly, you can find different 3D animals and place them into your forest scene that you are creating using the terrain editor.

In this way, we can create a 3D forest instead of 2D forest based on your choice of game creativity. If we write a camera script for moving around in the scene,



we will be able to make it more interesting. It can become a treasure hunt for our Level 1 gameplay.

So, this is how you create a forest by letting your imagination run wild! Decorate it however you want, put more trees, add a lot more grass and mountains, place more animals, the choice is yours!

This was just a very quick introductory video to explain how the same concepts we have constructed in 2D, can also be done in the 3D mode! So, in the next video we will continue creating the Level 2 of our game, wherein we will learn about how to arrange all the animals into a grid, and then create a food web out of it. Until then, have fun exploring all these exciting tools and make many more vibrant scenes come alive!

See you next time!