Loot Entertainment Presents:

The Light Probe Region Tool

This Instructional Manual assumes that the reader has working knowledge of the Unity Editor, as well as how to manipulate and layout Light Probes (don't worry, we will make it easier on you, but you need to know how to do it the manual way first) For more reading on how to handle Light Probes manually, refer to Unity's Light Probe Tutorial.

Setup

Step One: Unzip the package into your project folder.
Step Two: Start up your project in Unity and proceed to section 'Use Instructions'.

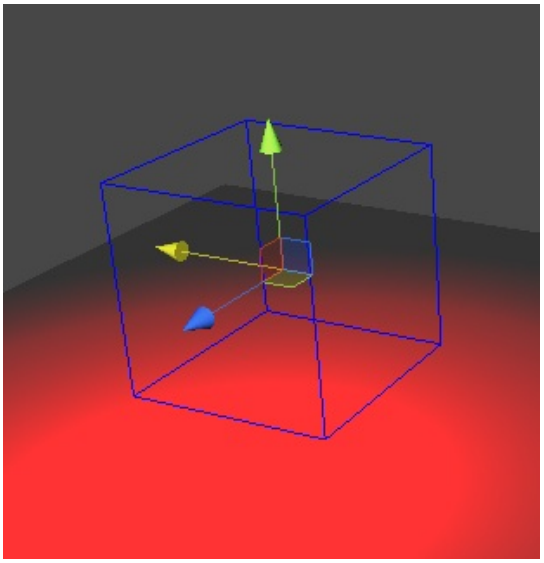
Use Instructions

The first thing you will want to do is create a level that will use **Light Probes**, and examine the level to get a general idea where you will need the probes. Once you know generally where you will need your probes, Go to your toolbar and select **Tools>LOOT Entertainment>Add Light Probe Region**:

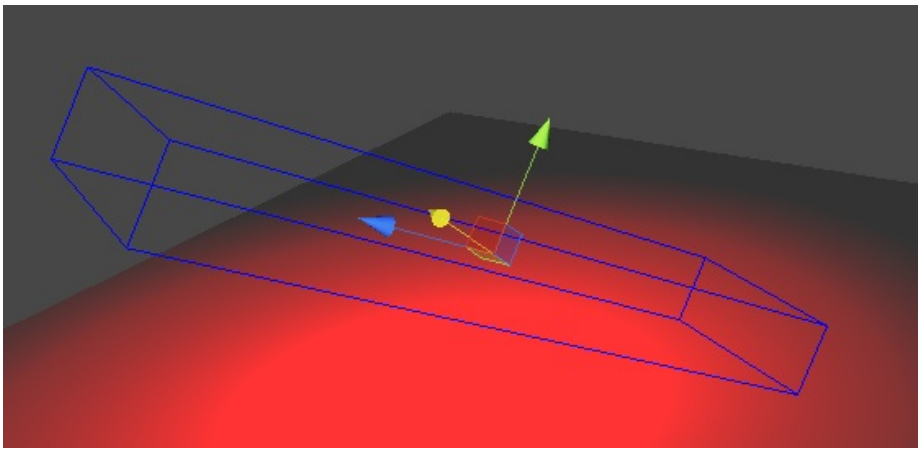
This will create a new GameObject in your hierarchy called **Light Probe Universe**. This Object stores all of your **Light Probe Regions**, and can be used to quickly move all of your Light Probe Regions at once. Try opening the Light Probe Universe in your Hierarchy now. Inside you will find your first Light Probe Region. If you select it, your **Inspector** will update with the controls you will need. We will come back to those in a moment, but lets have a look at the main perspective window first.

Main Editor View

You may have also noticed a blue wireframe cube appear in your world:

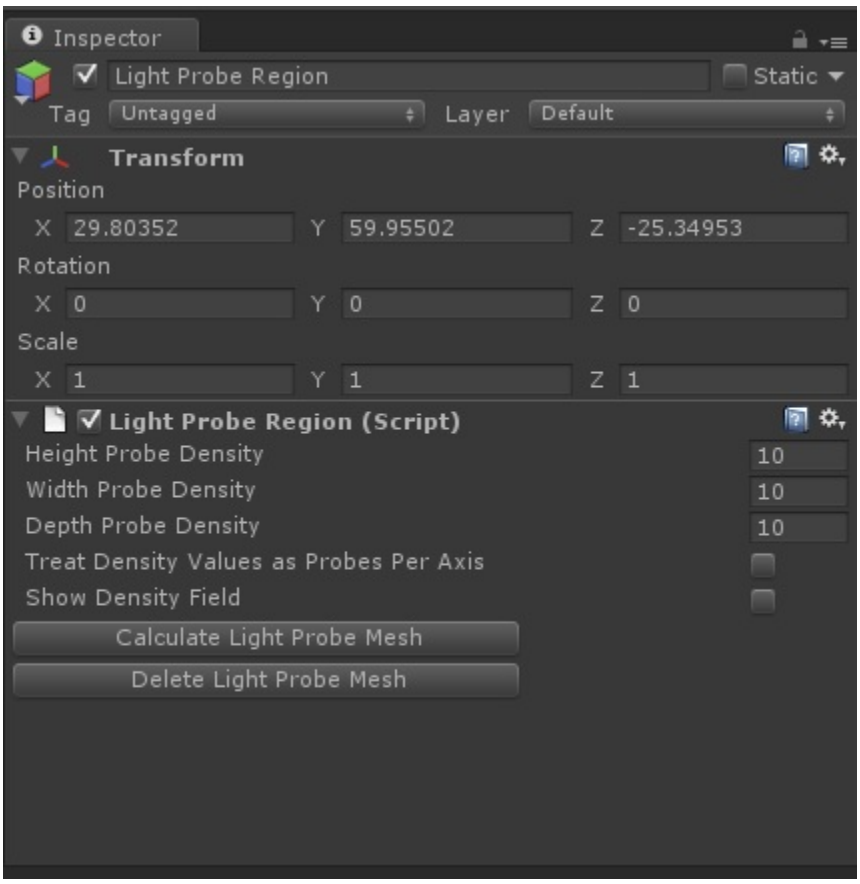


This is the bounding volume of your Light Probe Region. With the Light Probe Region selected you can manipulate this cube using any of the standard transformation tools. Try to fit the cube into an area where you want an even spread of Light Probes. Once it is in place go back to your toolbar and create another Light Probe Region (i.e. Tools>LOOT Entertainment>Add Light Probe Region). This will spawn another blue box and add a second Light Probe Region into your Light Probe Universe Object. This second region can be manipulated separately from the first, being placed into its own area. Also note that you can move both regions at once by selecting the Light Probe Universe object and using the standard transformation tools.



Inspector

Ok, back the the **Inspector** for the details of making this thing work:



The first three settings control how many probes you want in your field:

Height Probe Density
Width Probe Density
Depth Probe Density

When you tell the Light Probe Region to generate a Light Probe Mesh in a minute, it will start in one corner on the box you positioned, and then move a number of Unity units along each axis respectively before placing the next Probe. So with the default settings of 10 on all fields, it will place one probe at the starting corner, and then another probe every ten units throughout the field you created with the blue cube.

The next Attribute allows for an alternative treatment of the Density Values:

Treat Density Values as Probes Per Axis

If this box is checked, instead of treating the density values as a number of Unity units, the Light Probe Region will treat the values as a total number of Probes to fill along that Axis, changing the spacing to fit the designated number. So with the default values of 10, your region, no matter how big or small will have a total of 100 probes (10 deep, 10 wide, and 10 high).

[TIP: Regardless of which method you use for density, always make sure you have at least two probes in each direction, otherwise the Light Probe system will not function correctly, if at all]

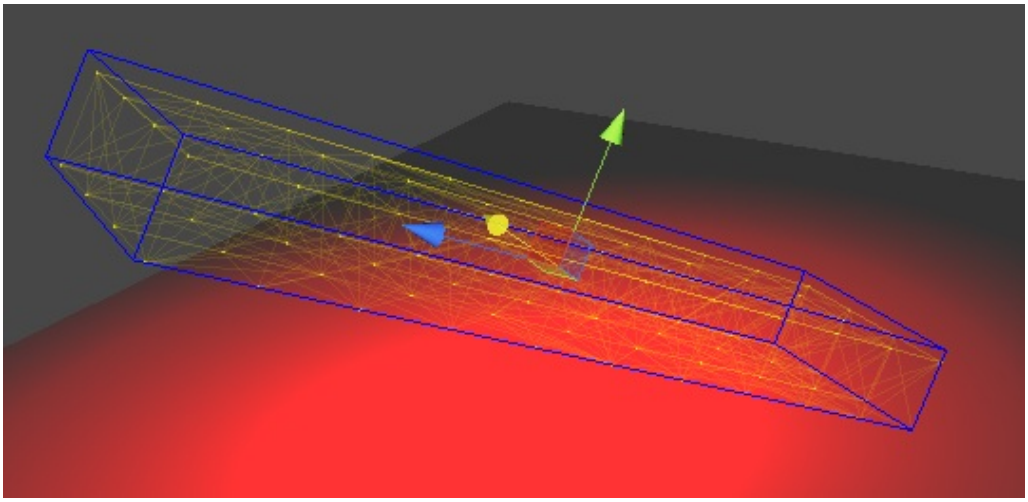
The last Attribute allows you to toggle the display of the Density Field:

Show Density Field

This lets you check the density you have the field set to before generating the Light Probe Mesh, to be sure it is at the density you intend to have (Don't get carried away with overly dense fields, positioning is often more important than number of probes, and too many probes can waste memory).

Creating The Light Probes

Now that we have our settings the way we want them, creating the field is as simple as clicking the **Calculate Light Probe Mesh** button. Do so now and you will see a **LightProbe** placed at each spot where the lines crossed in your Density Field.



Now What?

So now you have a bunch of light probes, but what else can you do with them? Well, the Light Probe Region code is built on top of and using the existing **LightProbeGroup** code, so you can still do all of the fine tuning and tweaking that you need to do to each individual Node, move them, duplicate and reposition them, remove unneeded ones, etc. Additionally, all of the Light Probe Regions operate on the same **LightProbeGroup**, and so you can use as many as you want to create a unified mesh of varying density throughout your level.

[TIP: Using the **Caculate Light Probe Mesh** button will forcibly delete all Light Probes previously associated with the selected Light Probe Region, use with caution if you've already done a lot of customizing of the Light Probes.]

Deleting a Light Probe Region

The final button on the inspector gives you the option to delete the group of **LightProbes** associated with the selected Light Probe Region (including ones added after the initial Mesh Calculation through the LightProbeGroup's *Add Probe* or *Duplicate* commands), this means you can easily wipe out a single section of Light probes and reformat the area without affecting the rest of the level. If you just don't need light probes in the area anymore, or accidentally created too many Regions, just delete the object out of your hierarchy view as normal, and it will clean up any light probes associated with it.