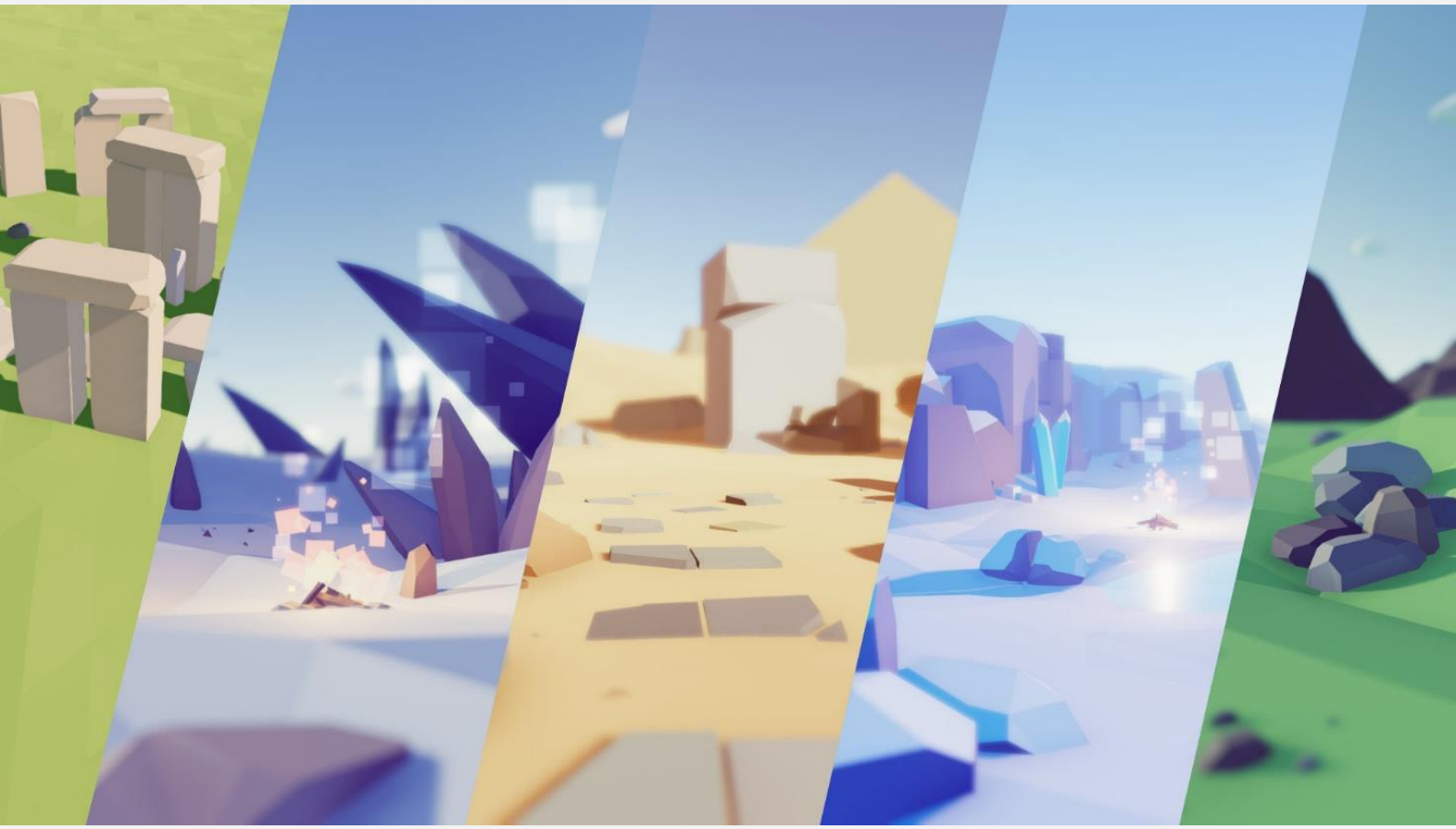
LOW POLY ROCKS PACK



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Follow me on **Twitter** to see what I'm working on right now:

https://twitter.com/lmhpoly

LMHPOLY

Don’t miss out, and be the first!

Get notified about the new “Low Poly Rocks Pack” and other asset updates + my new game asset releases straight to your inbox.

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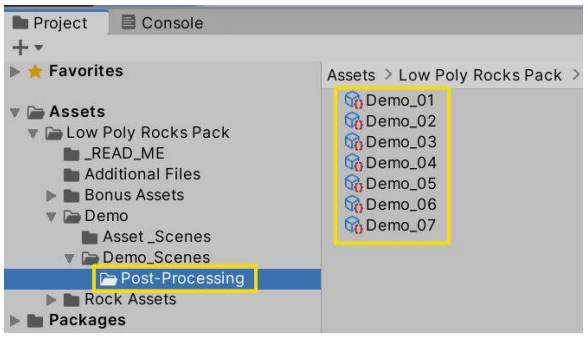
Content

Demo scenes

Now as you have imported the whole "**Low Poly Rocks Pack**" to your Unity project, go to *Low Poly Rocks Pack/Demo/Demo_Scenes* - and open any Demo Scene (here is a **Demo_07** example). By default, the scene should look like this inside the **Game** view using Gamma Color Space and without any image effects applied.

To make it look like this:

you need to use **Post-Processing Profile** on each demo scene.



Follow the steps below to setup **Post-Processing** image effects for Demo Scenes!

Post-Processing in Unity 2019.4 LTS and up

*You need at least Unity 2019.4 LTS to setup Post-Processing by following my tutorial!

BONUS

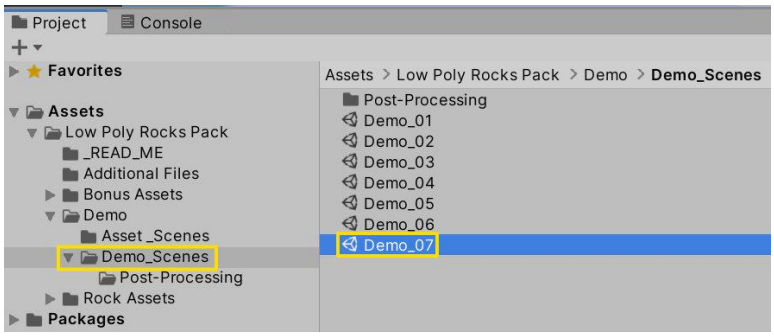
UPDATE! You can watch my video tutorial on the lighting and post-processing workflow I use for my low poly scenes if you want to light your own newly created scene in Unity:

Unity URP Tutorial - Lighting And Post-Processing

Unity 2020 Tutorial - Lighting And Post-Processing Low Poly Scene

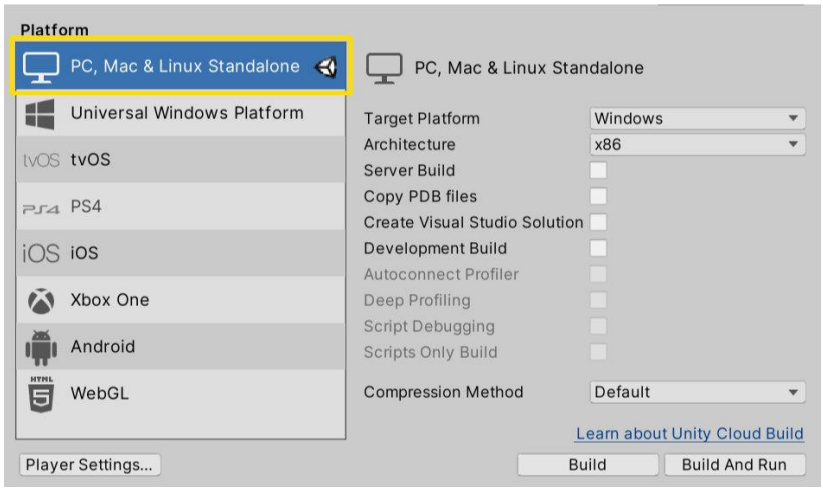
How to Setup Demo Scenes (Post-Processing) in Unity 2019.4 LTS and up (For PC)

Before we start, let's open the **Demo_07** scene located at: *Low Poly Rocks Pack/Demo/Demo_Scenes*



Then go to *File > Build Settings*

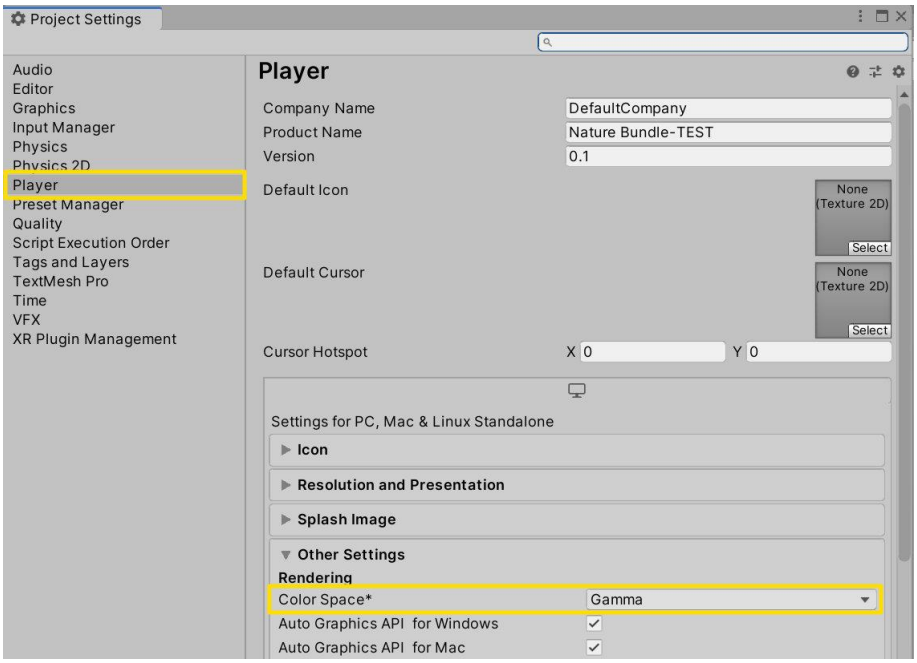
Make sure you are using a **PC, Mac & Linux Standalone** build.



1. Change to the Linear Color Space

Go to the *Edit > Project Settings*

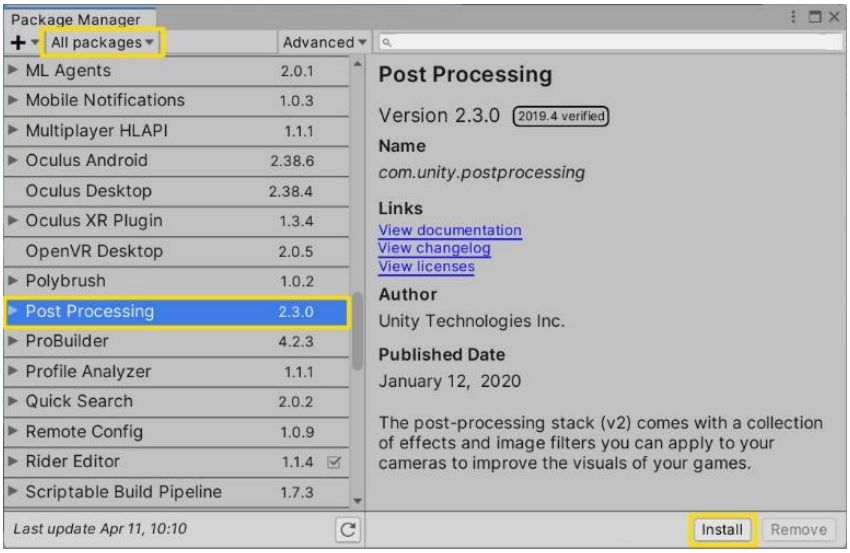
Open the **Player** tab, **Other Settings** section, and set the **Color Space*** to **Linear**.



2. Install the Post-Processing

Go to the *Window > Package Manager*

Set view to **All packages**, search for the **Post Processing**, select it, and click **Install**.

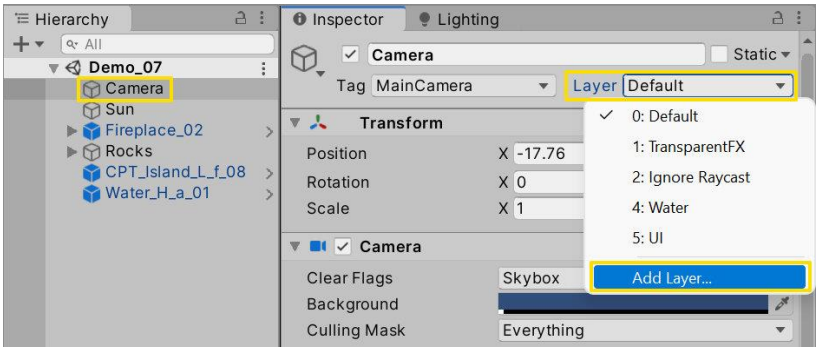


***NOTE:** If you have problems in the later steps setting up the Post-Processing:

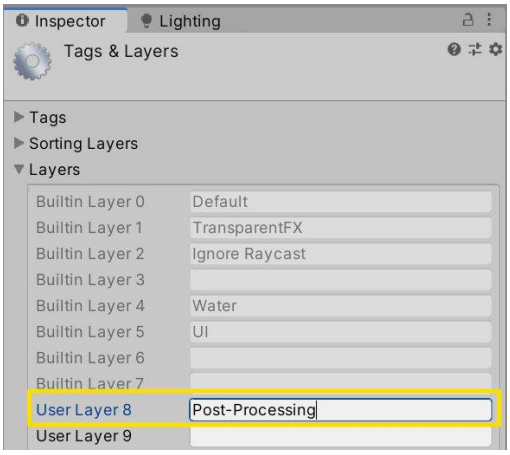
- Restart Unity.
    - If it still doesn't work, go to *Window > Package Manager*, and remove the **Post Processing** package.
    - Restart Unity
    - Install the **Post Processing** package again. Now it should work.

3. Set up the Post-Processing

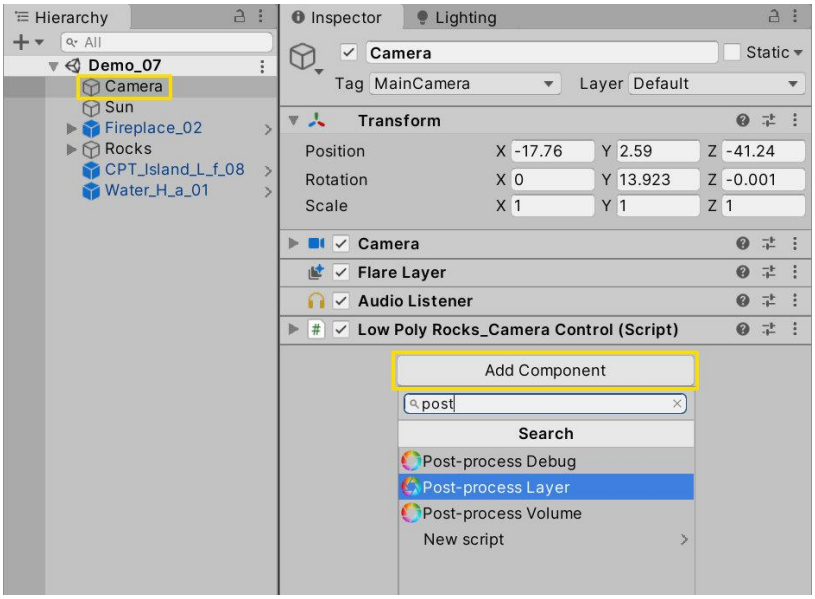
Select the **Camera** in the **Hierarchy**, click on **Layer > Add Layer**



Let's add a new layer to any blank space and call it ***Post-Processing*** *(you can call it however you want)*.

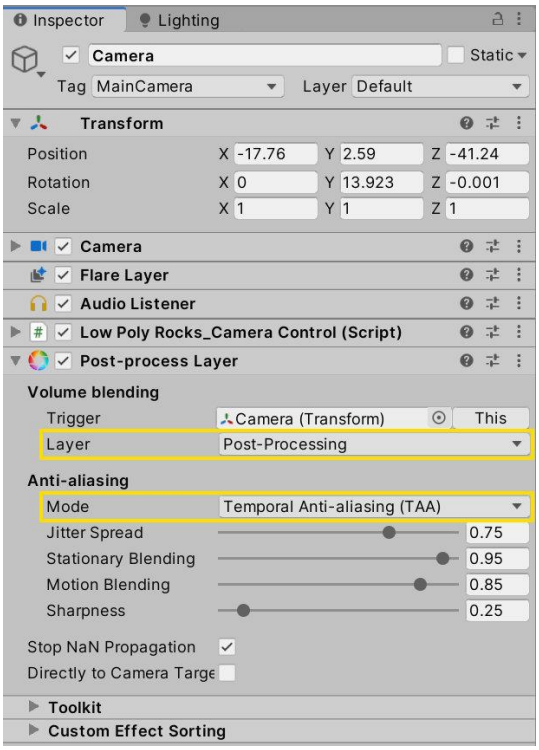


Select the **Camera** again, click on **Add Component**, and type **post** in the search bar. You should see 3 Post-process components. Click on **Post-process Layer** to add it to the **Camera**.

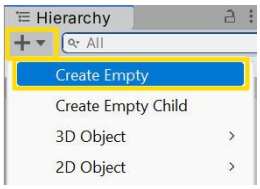


And set the **Layer** to **Post-Processing** *(the Layer we just created).*

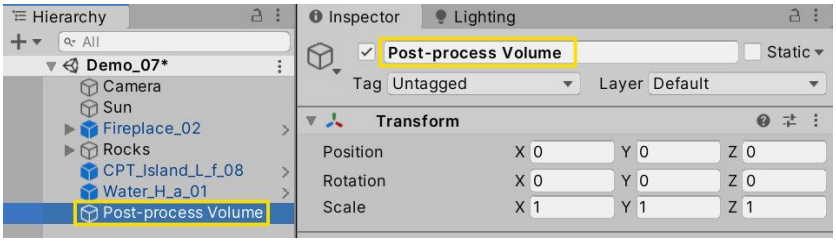
Also, I like to set **Anti-aliasing** to **Temporal Anti-aliasing (TAA)** - to get rid of those jagged edges and some screen tearing when moving the Camera in the game.



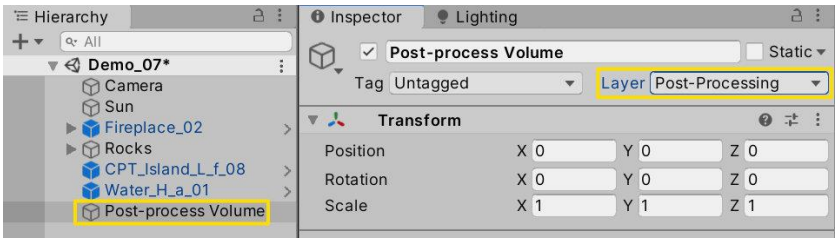
Now, inside the **Hierarchy**, we need to **Create Empty** gameObject



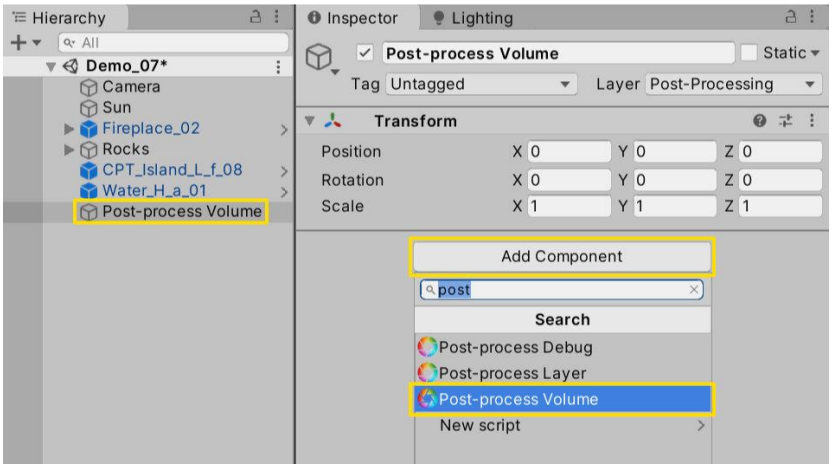
Let's call it **Post-process Volume**



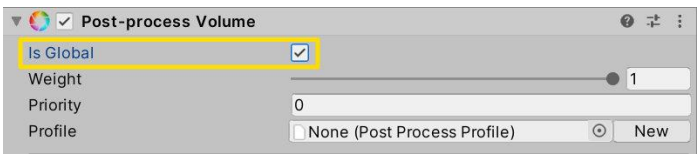
Set the **Layer** to **Post-Processing** *(the Layer we created before).*



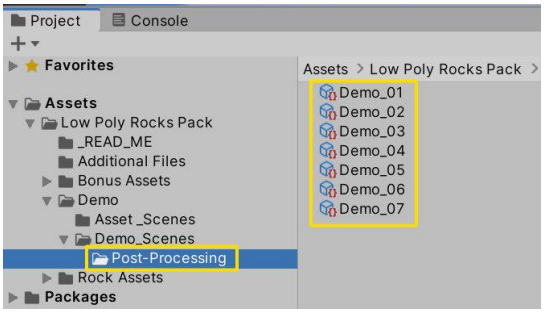
Add Component > Post-process Volume



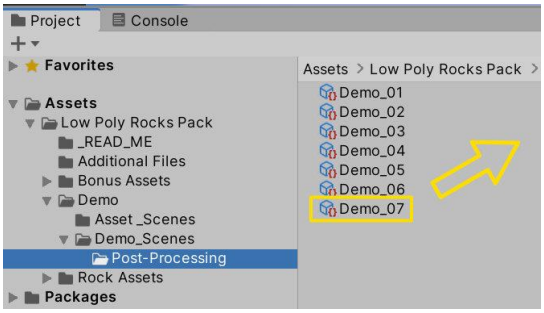
Enable **Is Global**



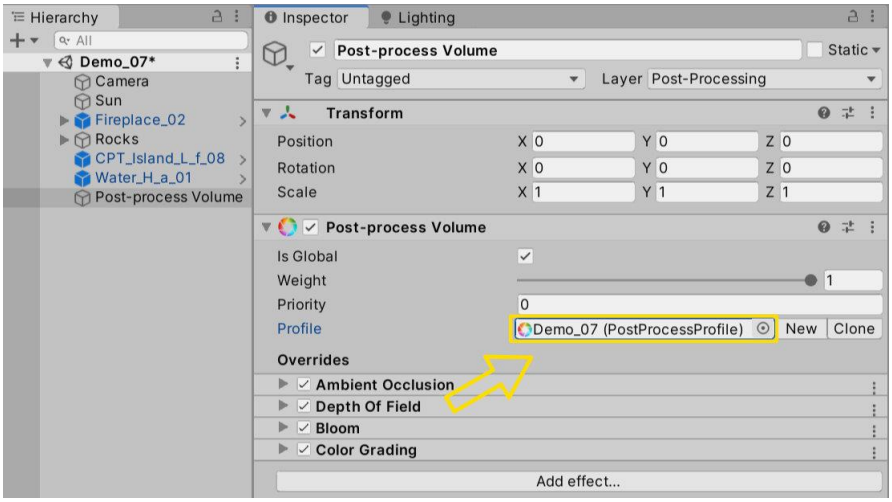
Then go to *Low Poly Rocks Pack/Demo/Demo_Scenes/Post-Processing.* Here you can find my pre-made custom **Post-Processing Profiles**, which we can use for every Demo scene to quickly apply effects like Color Grading, Ambient Occlusion, etc.



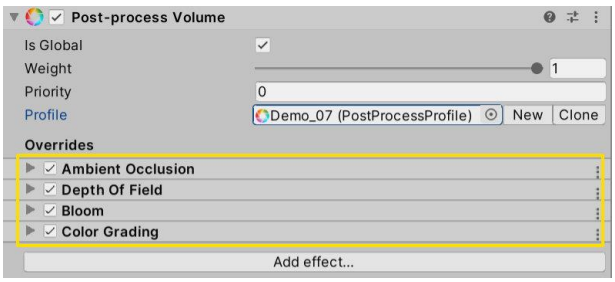
Drag and drop **Demo_07** *(Post-Process Profile)*



To the **Profile** area in the **Post-process Volume** section



Here you can see what effects this scene is using, which you can easily edit



After completing these steps, your scene should look like this:

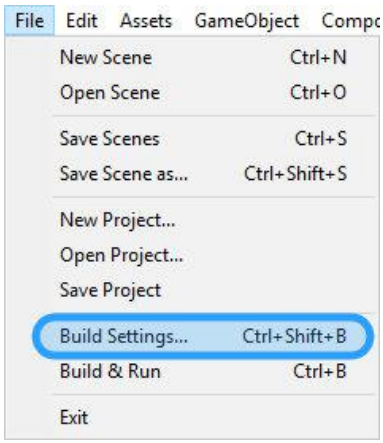
*__For Low-End PC's__ - if you hit play and it lags, try disabling Post-Processing effects one by one on the Post-Processing Profile settings!

To quickly add the Post-Processing effects to any other Demo scene by applying my custom Post-Processing profiles, you need to repeat all the steps from: adding **Post-process Layer** to the **Camera**.

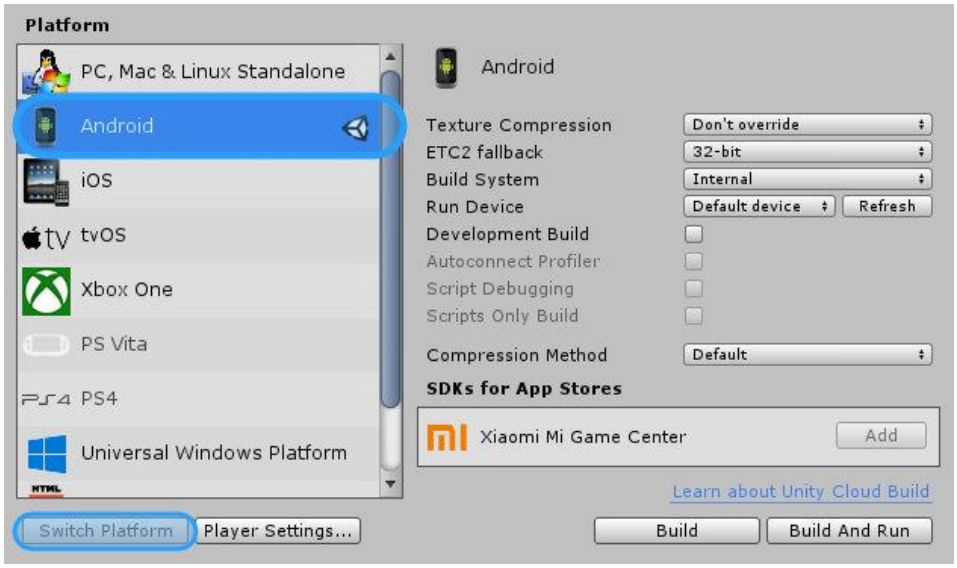
How to Setup Demo Scenes in Unity 2019.4 LTS and up (For Android)

1. Make sure you are using **Android** build!

Go to *File > Build Settings*



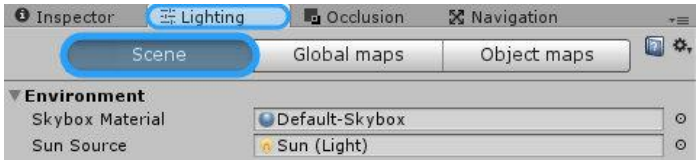
Select **Android** and hit the **Switch Platform** button.



2. Clean GI Cache (Optional – **Skip** this if you don't have any light baking errors!)

Before you go to the next step, you need to disable **Auto** build/bake feature.

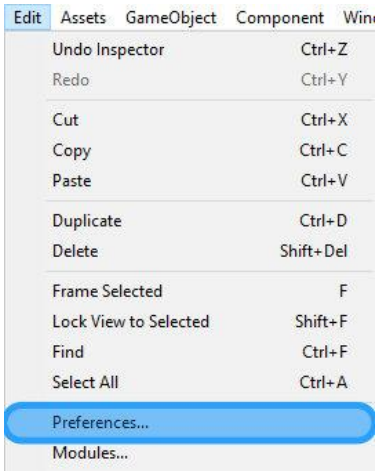
You can find it in **Lighting** and select **Scene** tab (If you don't see Lighting tab go to *Window > Lighting > Settings).*



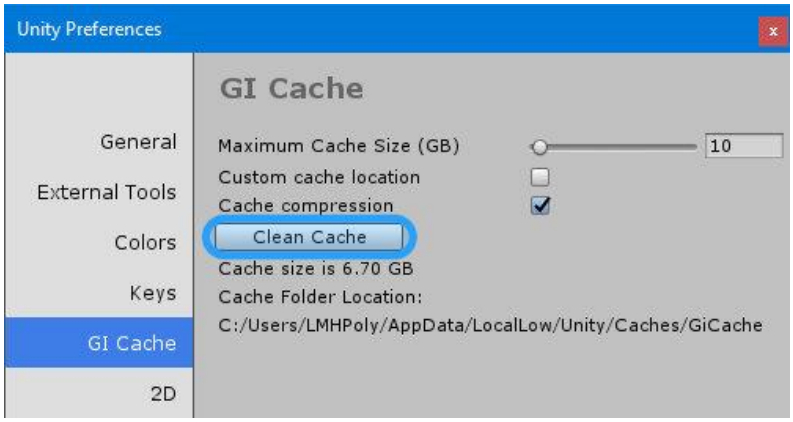
At the bottom you will see this:

uncheck **Auto Generate**.

Go to *Edit > Preferences*



Select **Gi Cache** tab and press on **Clean Cache** button!

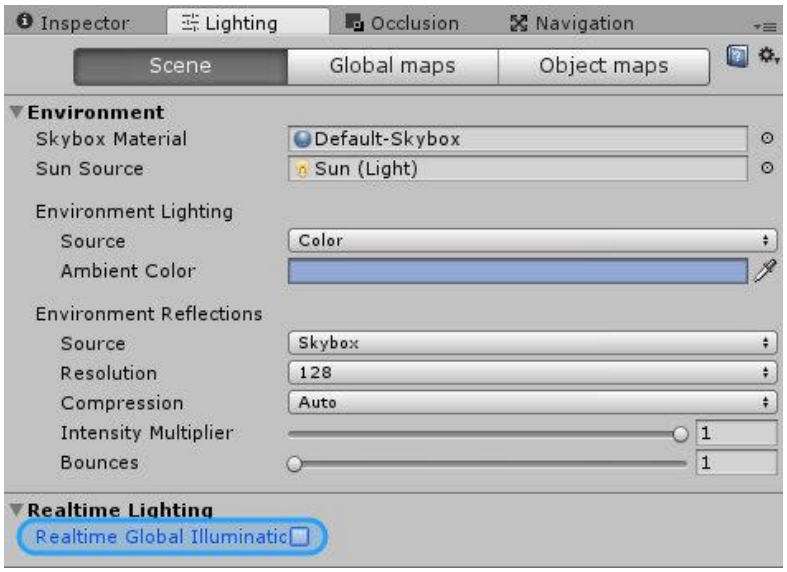


Enable **Auto Generate** / bake feature

and wait until the generation is done (blue loading bar at the right bottom corner).

3. Disable **Realtime Global Illumination** (Optional – for slightly better performance)

You can find it in **Lighting** and select **Scene** tab (If you don't see Lighting tab go to *Window > Lighting > Settings).*

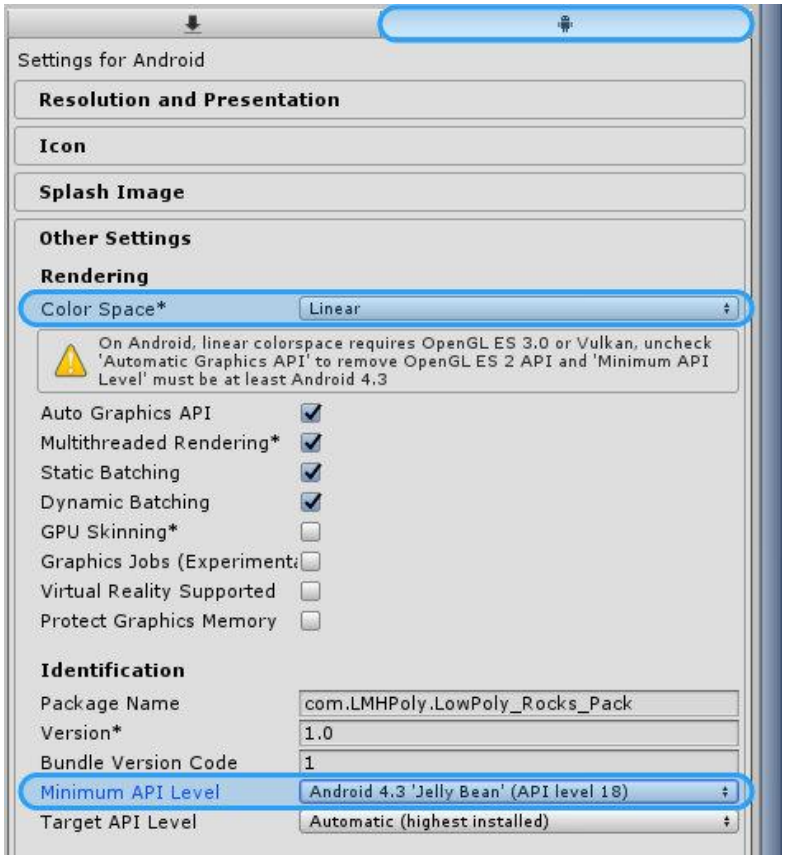


4. Make sure that **Color Space** is set to **Linear** (not all devices support it).

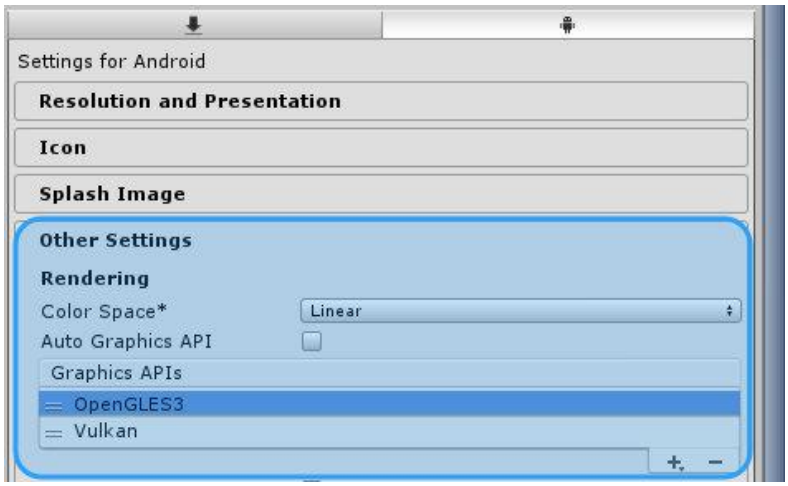
Go to *Edit > Project Settings > Player*

In the **Other Setting** tab, you will find **Color Space***, set it to **Linear**.

To use **Linear** Color Space on Android, you need to set **Minimum API level** to at least **Android 4.3 (API level 18)** or higher!

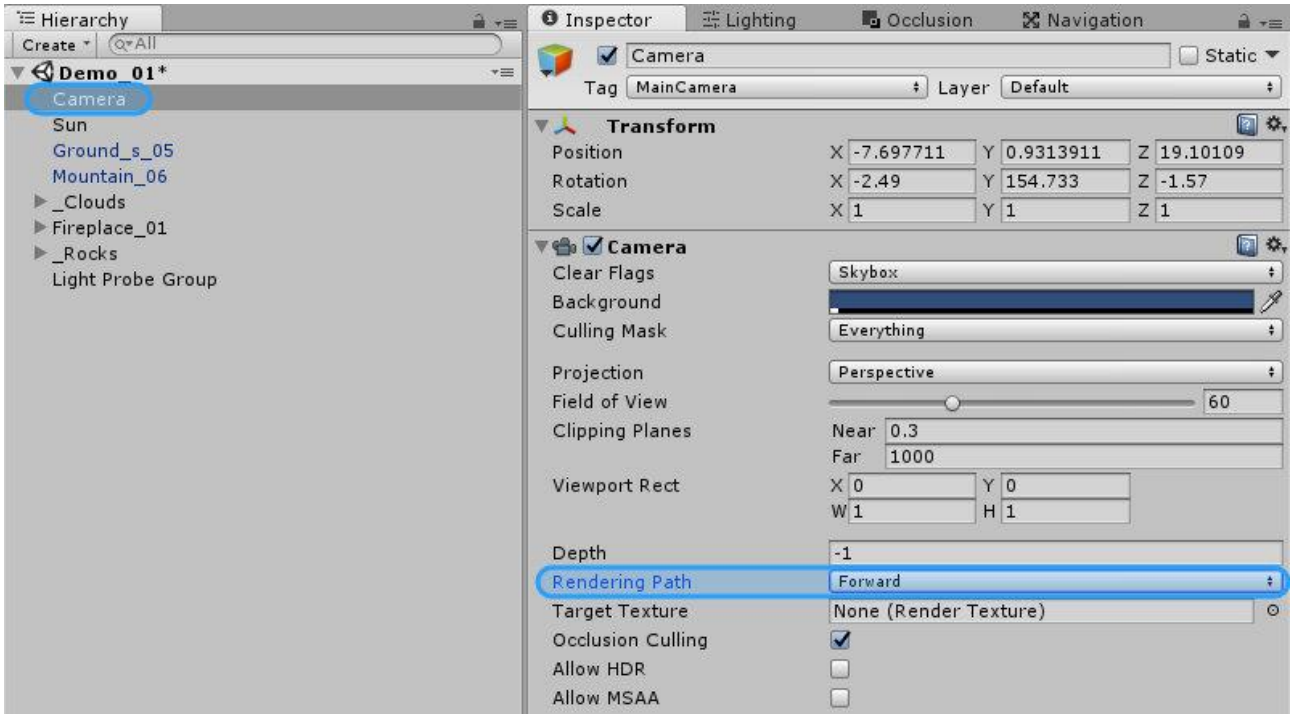


Also, uncheck **Auto Graphics API** and remove all Graphic APIs from the list, leave only **OpenGLES3** and **Vulkan** (if you can't see it, press on **+** to add it). Make sure your Android device supports one of those graphic APIs!



5. Make sure that you are using **Forward Rendering**. (Use Forward Rendering instead of Deferred for better mobile performance).

Select the **Camera** and make sure that **Rendering Path** is set to **Forward.**

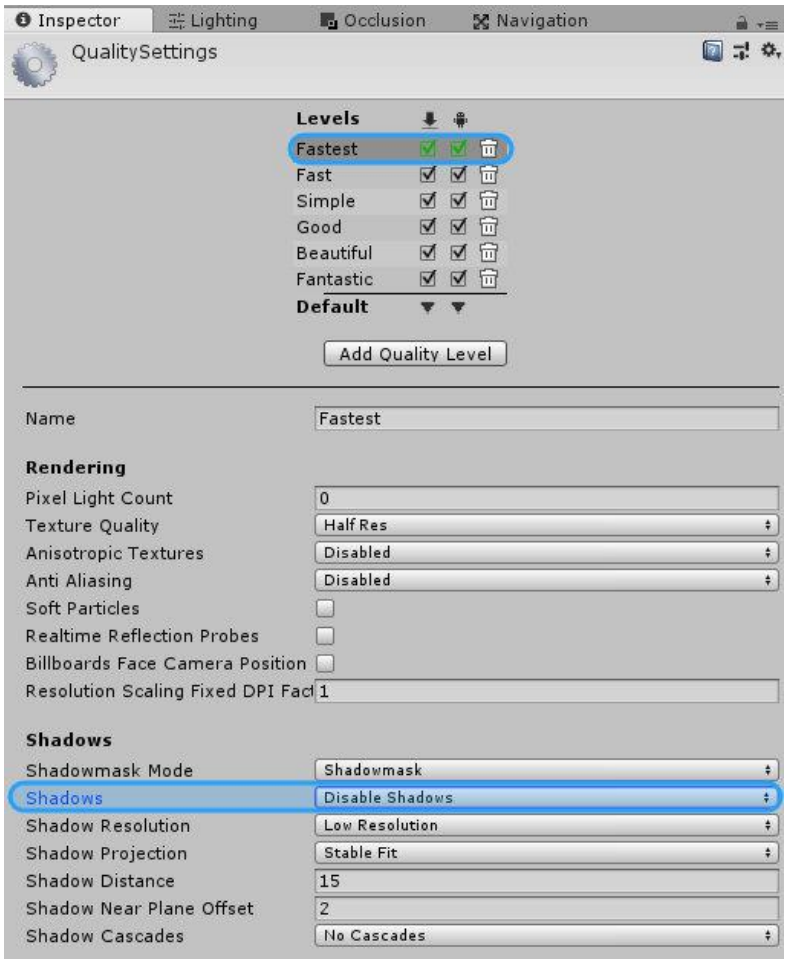


*If you set **Rendering Path** to **Deferred**, the game might slow down a lot on mobile!

6. Disable **Real-time Shadows** (Optional – for much better performance).

Go to *Edit > Project Settings > Quality*

Select Android quality level, which is in **Green Color**, for me, it's **Fastest**. And set **Shadows** to **Disable Shadows**.



*Realtime shadows are not recommended to use on mobile devices because they decrease the performance significantly. You should bake them instead. Or use them only on high-end devices.

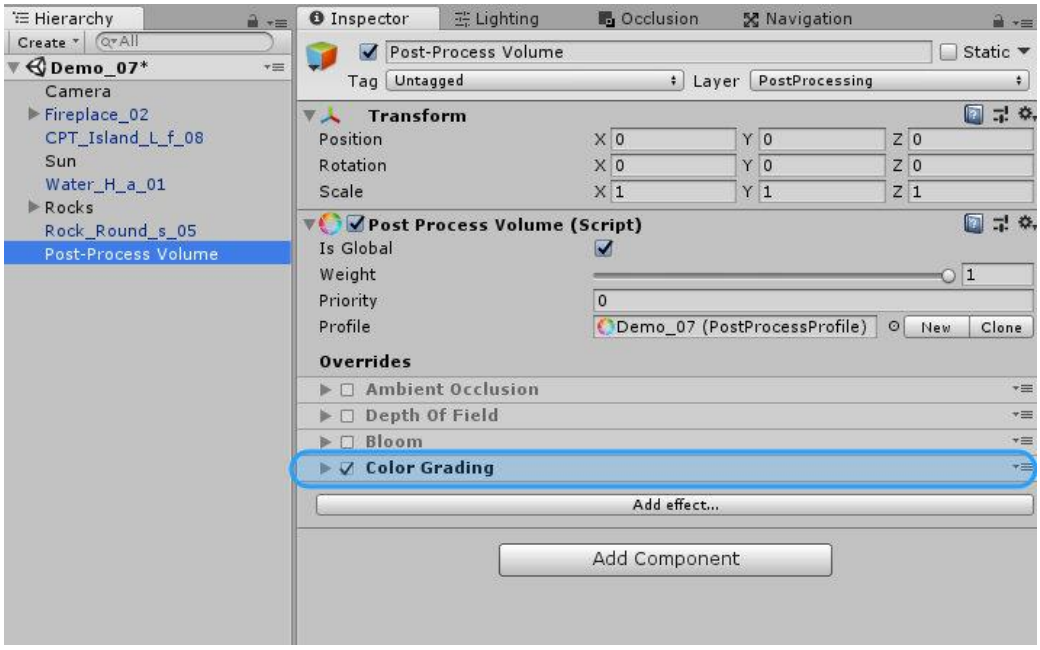
7. Import and enable **Post Processing** image effects (Optional – **Big** performance hit for mobile devices!).

Go to the part of the documentation: [Post-Processing in Unity 2019.4 LTS and up]

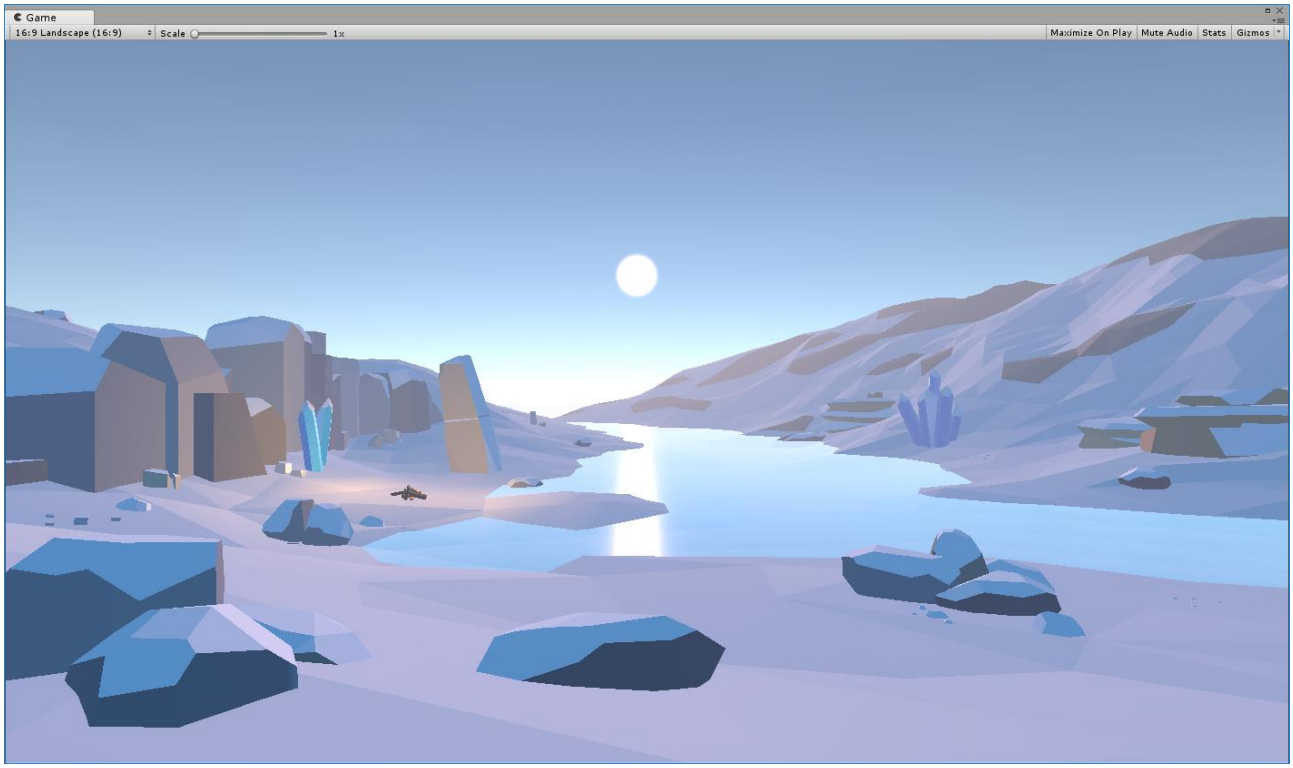
And follow those steps.

*I highly recommend not to use Post-Processing effects on mobile devices because it's a huge hit to performance!

If you will use **Post-Processing** effects, use **Color Grading** only, and leave everything else disabled. It will look nice, and it will work great on high-end devices (Tested on Google Pixel 2 XL).



Now your **Demo_07** scene should look like this (if you skipped all **Optional** steps, and with Realtime Shadows **Disabled**):

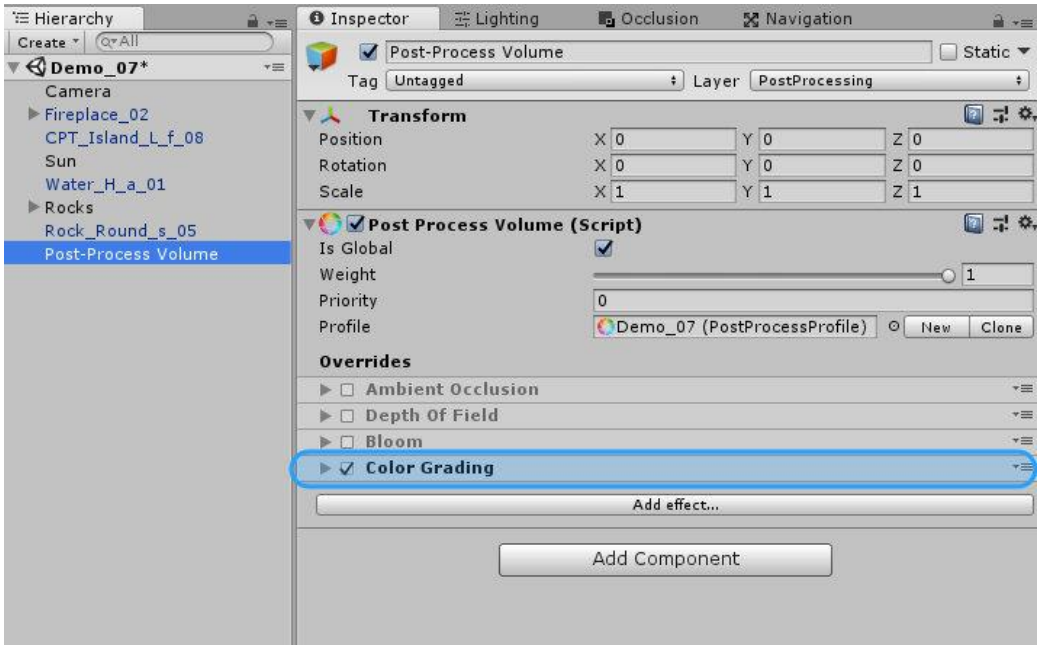


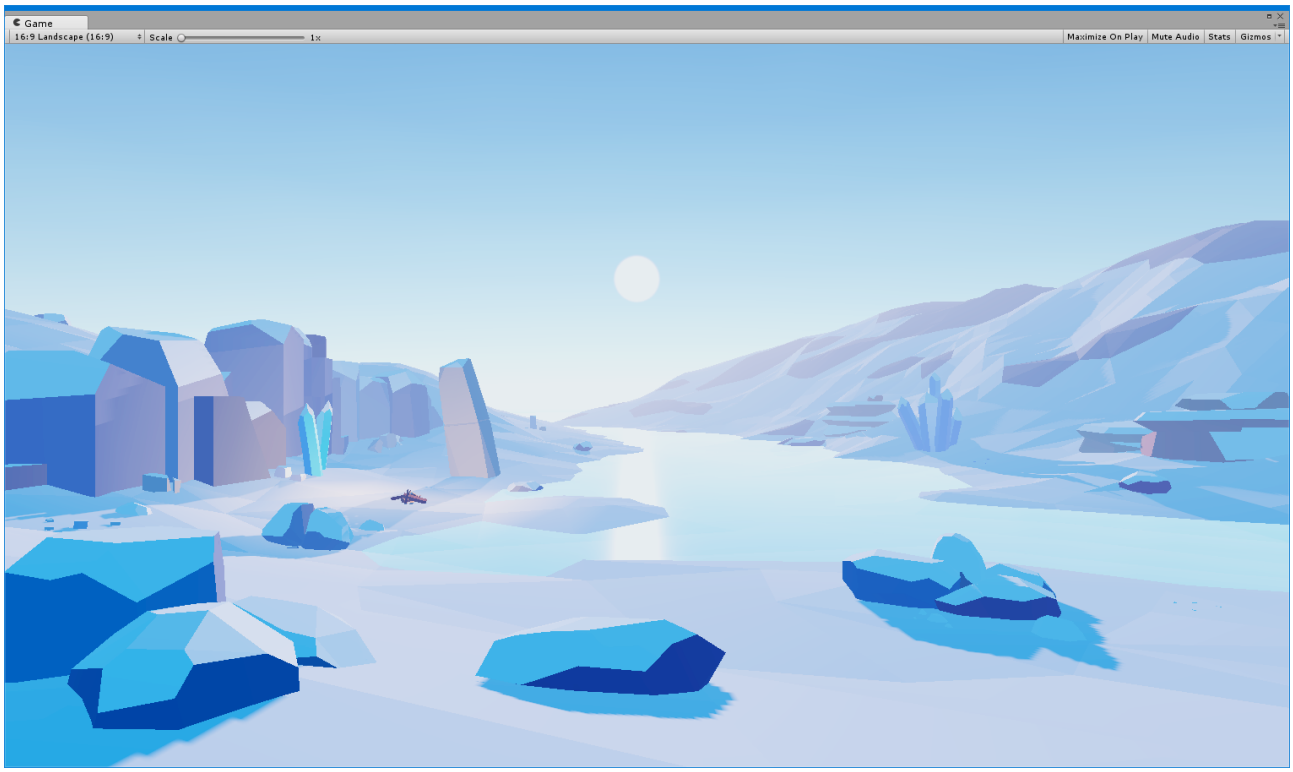
By using **Linear** lighting feature for **Android** and **iOS**, you can achieve much better results than using **Gamma** lighting!

All demo scenes including **Demo_07** has been tested on old Xperia Z Ultra (runs at solid 60FPS): without Post Processing effects, using Realtime GI, Linear Color Space, Forward Rendering Path and Real-time Shadows disabled.

*I don't have an **iOS** device, so I can't test it on that!

Demo_07 scene with the same settings + Post Processing (**Color Grading** enabled only) + **Realtime Shadows**: medium resolution enabled:

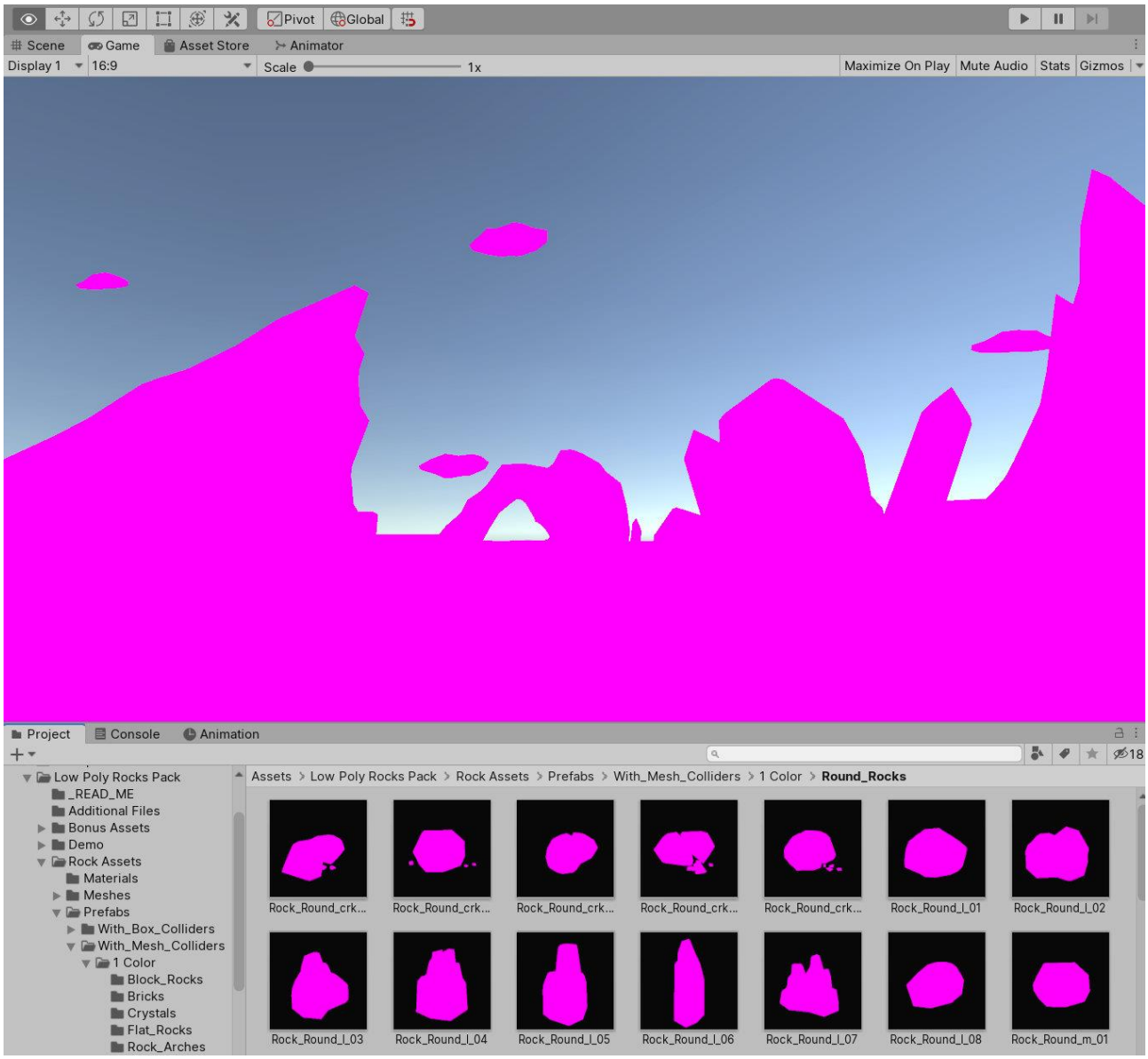




Tested on Google Pixel 2 XL – runs at solid 60fps. Xperia Z Ultra drops to 26fps for using Realtime shadows and Color Grading.

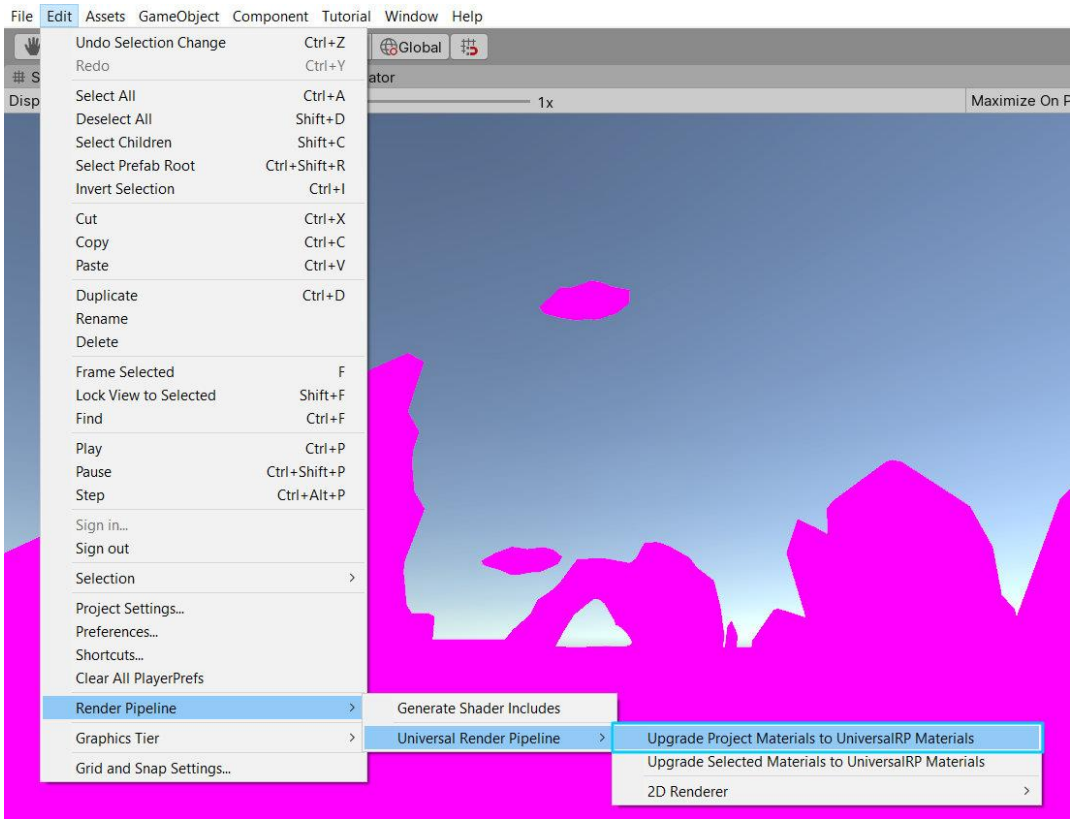
Unity 2019.3 and up - Universal Render Pipeline (URP)

You might encounter pink textures after importing **Low Poly Rocks Pack** to your Unity project, which is using **Universal Render Pipeline (URP)**.

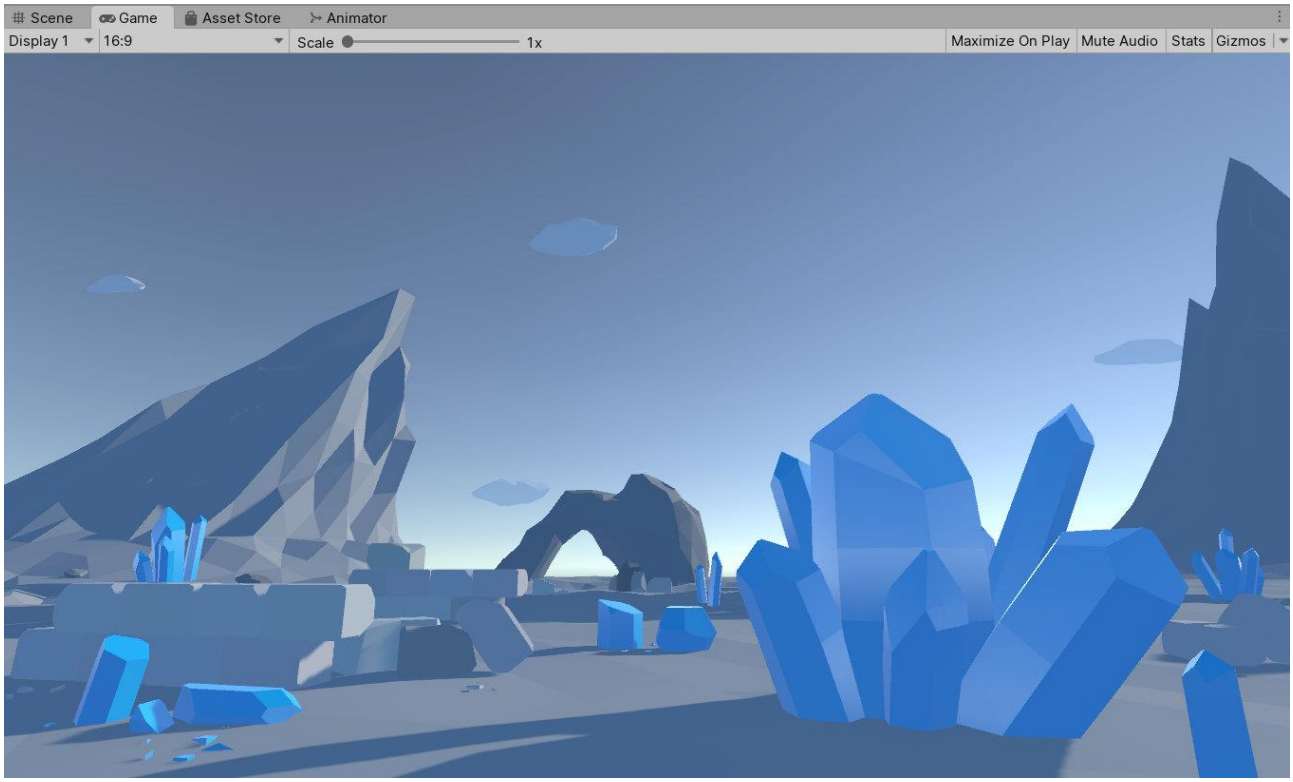


It's because all of **Low Poly Rocks Pack** assets use material with a default **Standard Unity shader**. **URP** use different materials and shaders. So we need to change all materials from **Standard shader** to **Universal Render Pipeline/Lit shader**.

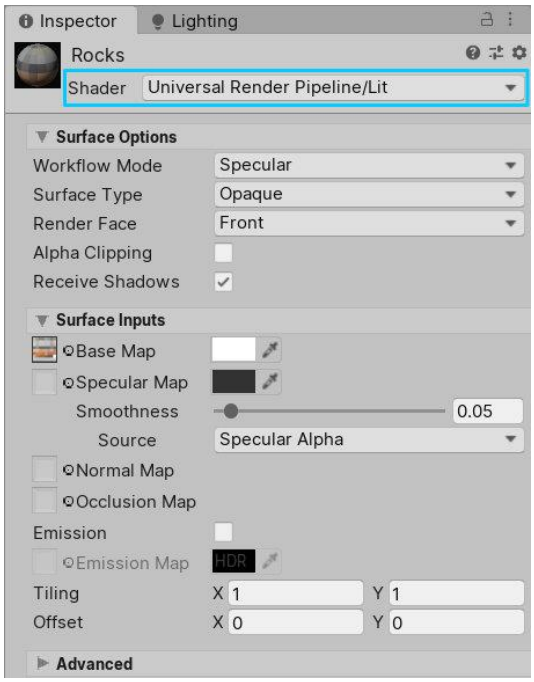
Go to *Edit > Render Pipeline > Universal Render Pipeline >* **Upgrade Project Materials to UniversalRP Materials**



And it's done!

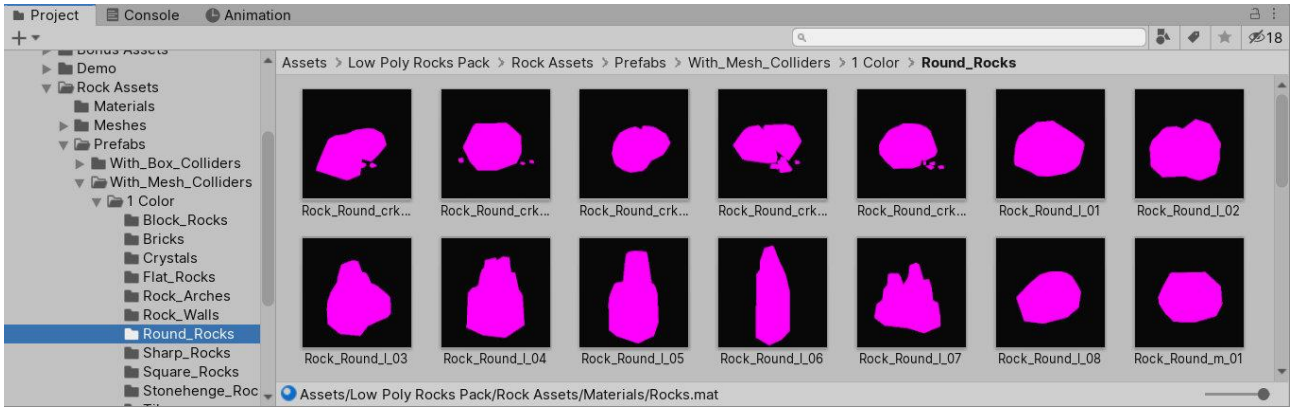


All project **Material** shaders were changed to **Universal Render Pipeline/Lit**

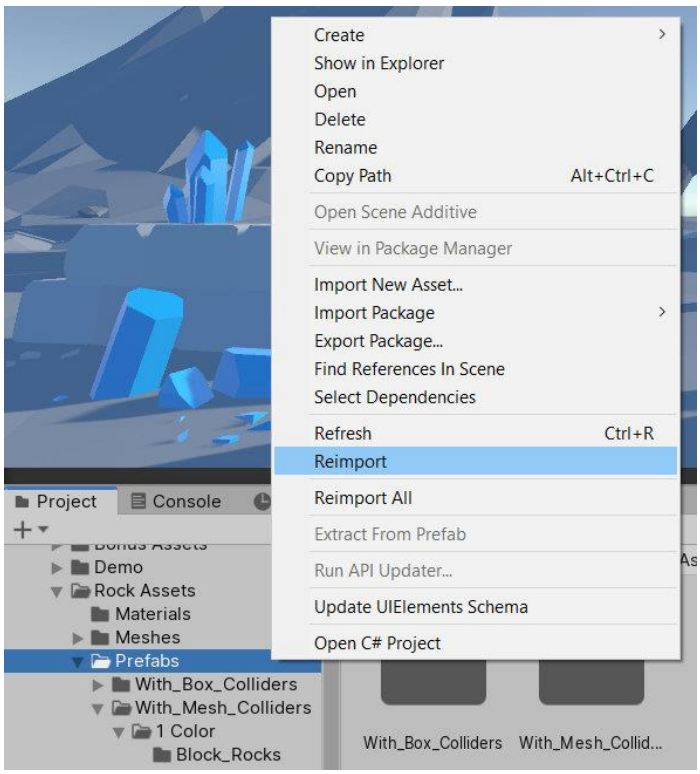


*You can do it manually by selecting **Material** and changing the **Shader** but it's much slower.

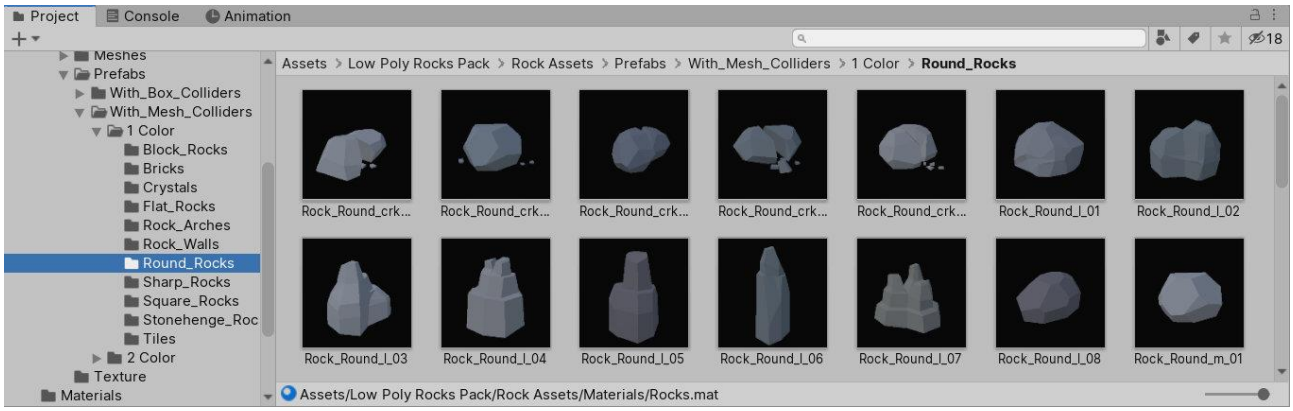
Now if you go to *Low Poly Rocks Pack/Rocks Assets/Prefabs/With_Mesh_Colliders/1 Color/Round_Rocks* or inside any other rocks folder. You might see all of the prefabs in **Pink** color.



To fix that - press **RMouse** on the **„Prefabs"** folder and select **Reimport**.

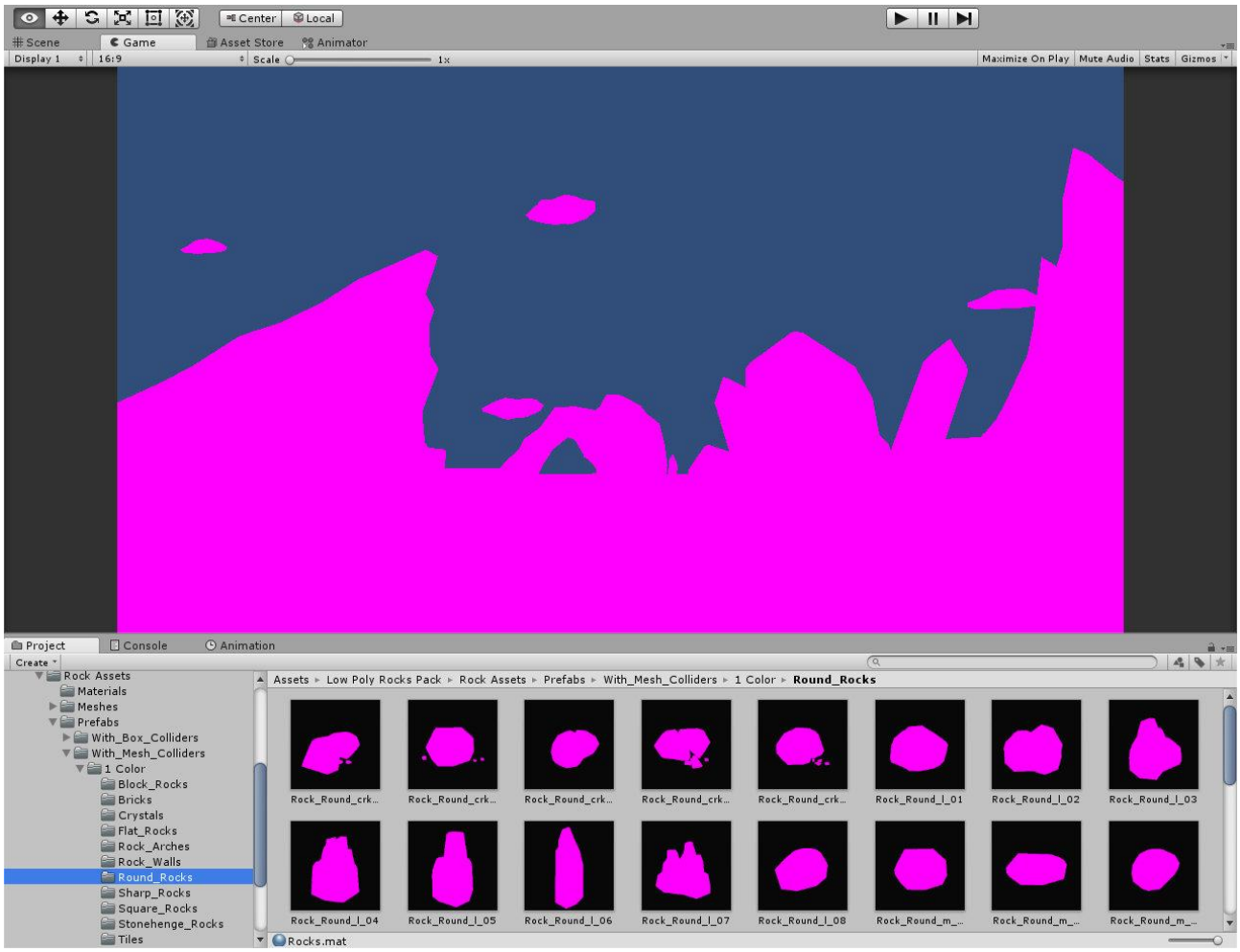


And it's fixed!



Unity 2019.4 LTS and up - High Definition Render Pipeline (HDRP)

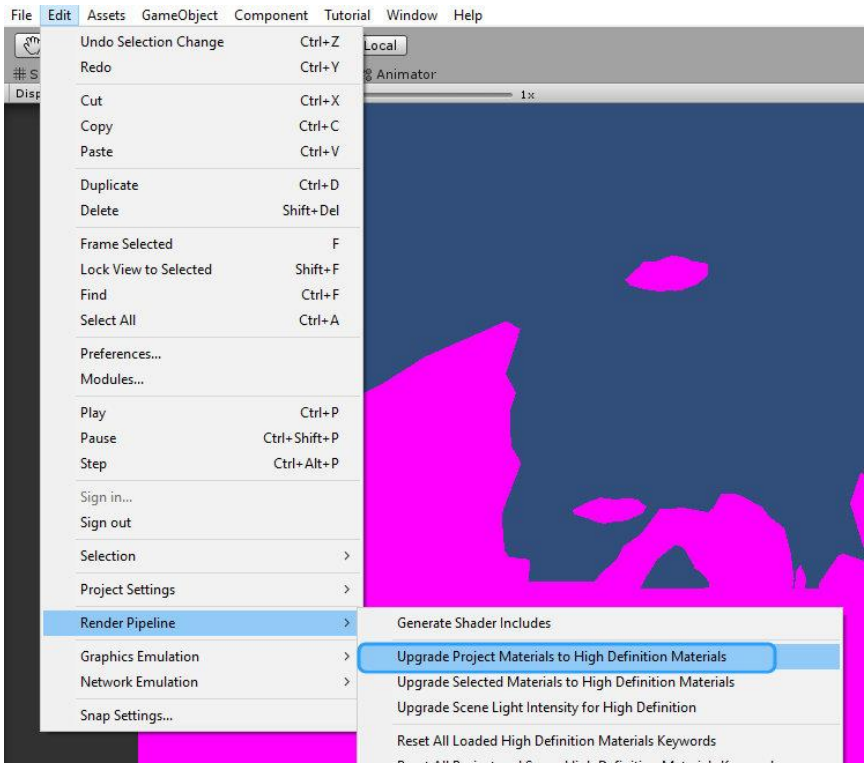
You might encounter pink textures after importing **Low Poly Rocks Pack** to your Unity project, which is using **High Definition Render Pipeline (HDRP)**.



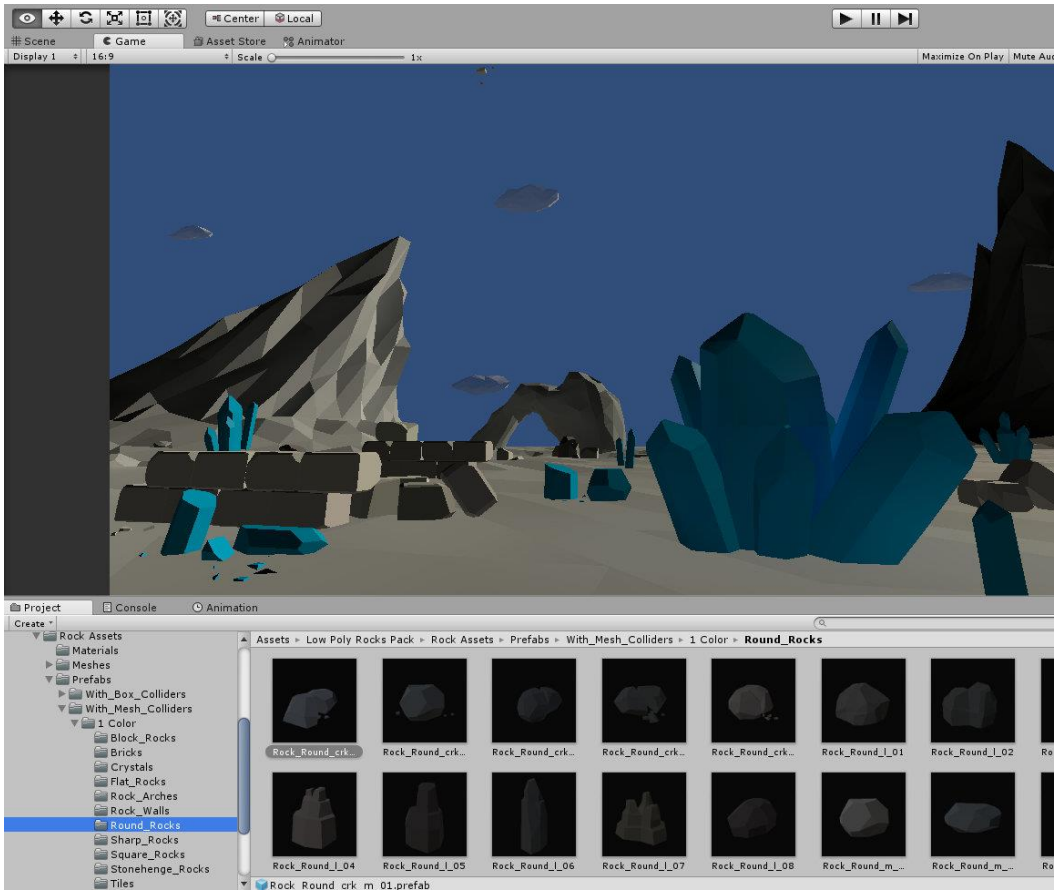
It's because all of **Low Poly Rocks Pack** assets use material with a default **Standard Unity shader**. **HDRP** use different materials and shaders. So we need to change all materials from Standard shader to HDRenderPipeline shader.

1. Fix **Purple Materials**

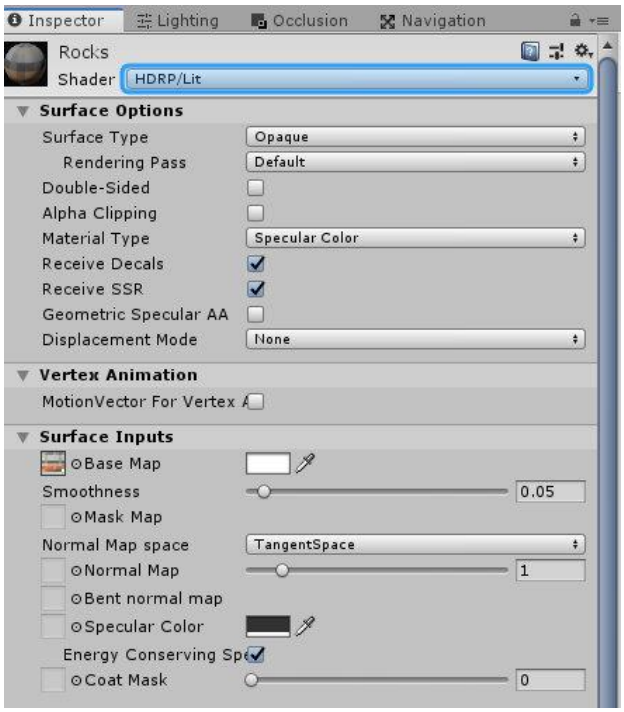
Go to *Edit > Render Pipeline >* **Upgrade Project Materials to High Definition Materials**



And it's done!

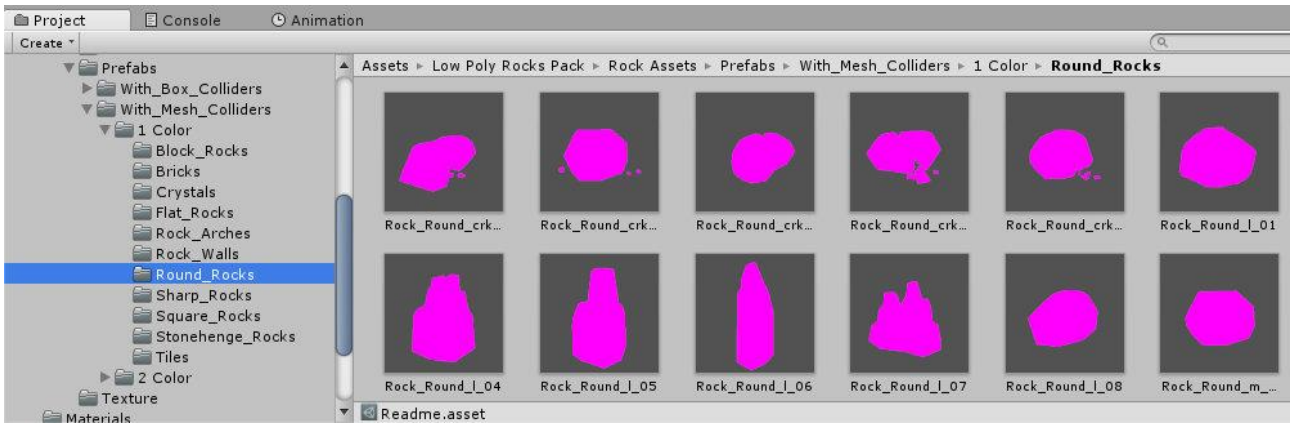


All project **Material** shaders were changed to **HDRP/Lit**.

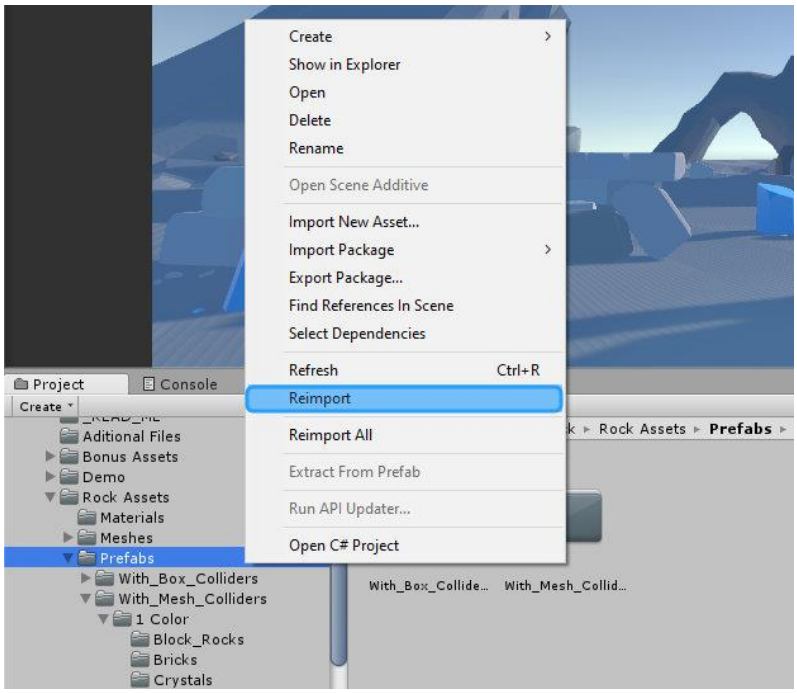


*You can do it manually by selecting **Material** and changing the **Shader** but it's much slower.

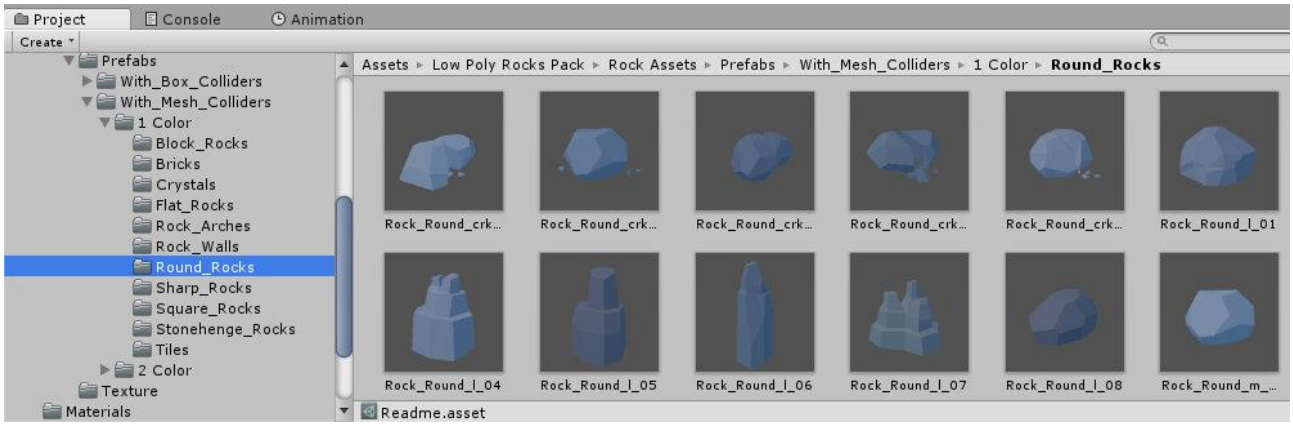
Now if you go to *Low Poly Rocks Pack/Rocks Assets/Prefabs/With_Mesh_Colliders/1 Color/Round_Rocks* or inside any other rocks folder. You might see all of the prefabs in **Pink** color.



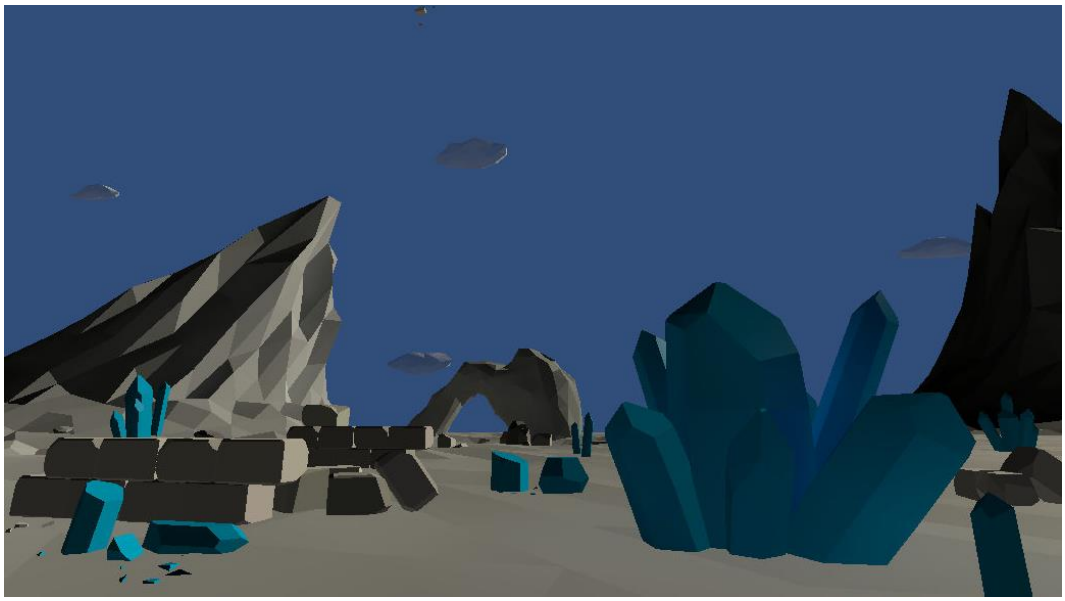
To fix that - press **Right Mouse Button** on **Prefabs** folder and select **Reimport**.



And it's fixed!

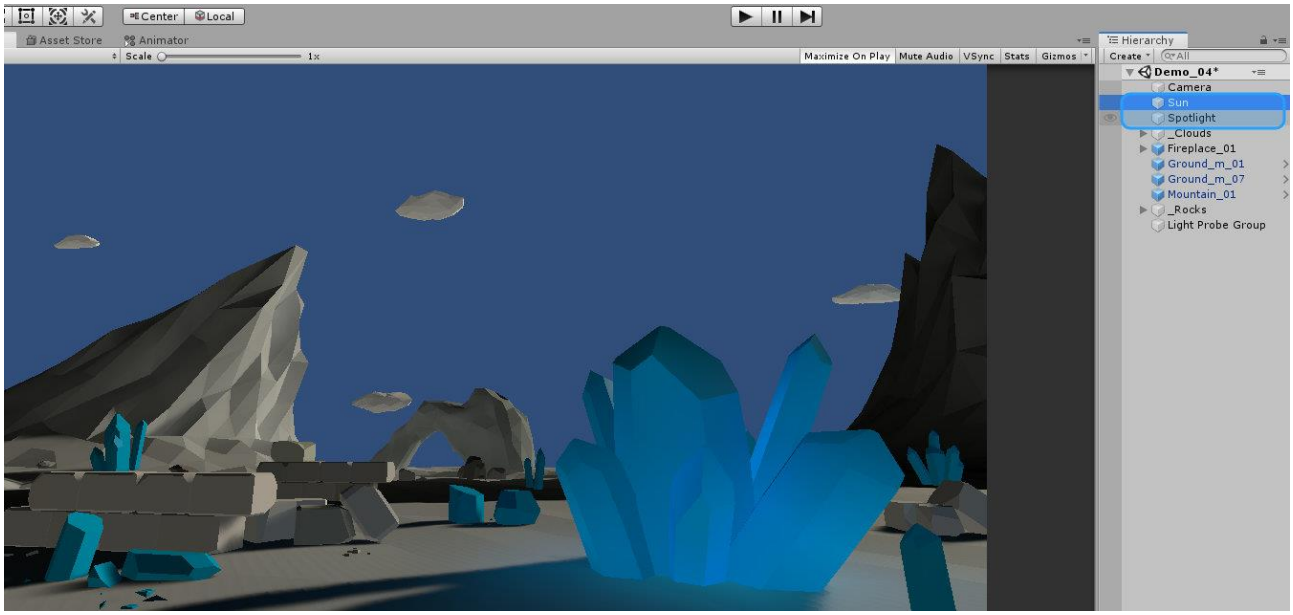


As you can see, the scene looks very dull. It has no skybox and proper lighting.



2. Fix **Shadows** and **Lighting**

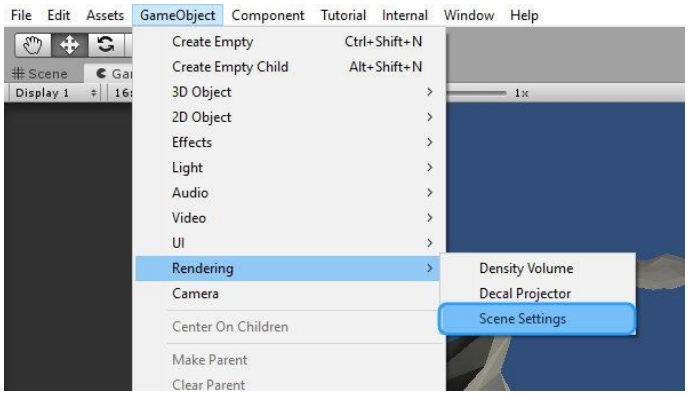
Just select the **Sun** and **Spotlight** in the **Hierarchy** for lighting and shadows to show up in the scene.



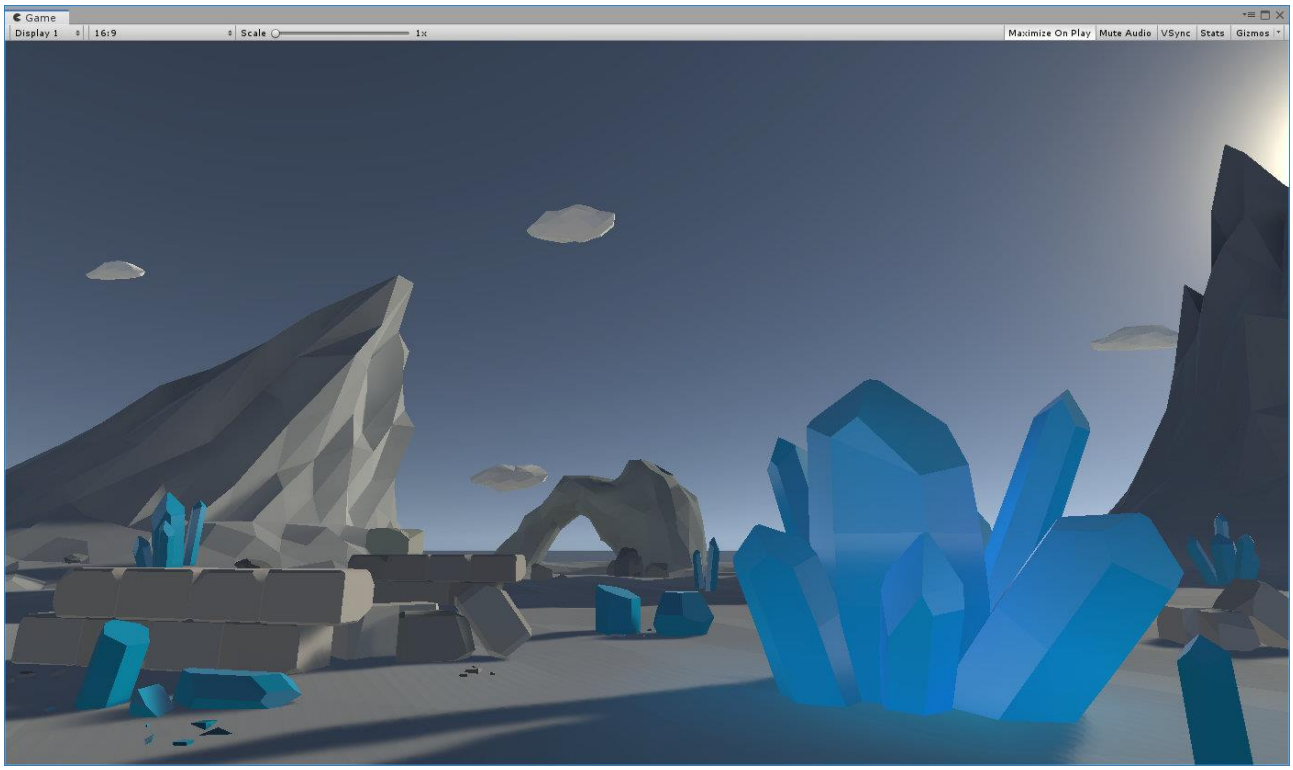
*If Unity freezes after selecting the light, upgrade your project to Unity 2019.1 or up

3. Fix the **Skybox**

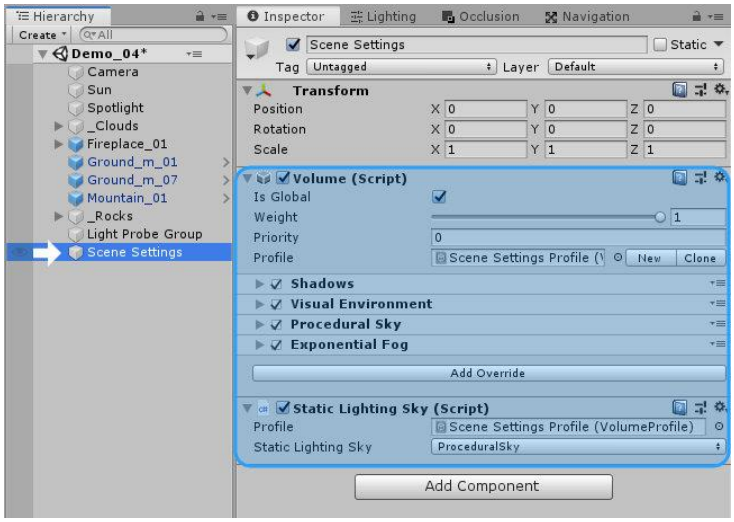
Using HDRP, you need to use **Scene Settings** - to change the **Skybox** and other scene settings. Go to *GameObject > Rendering > Scene Settings*



And you will see that the **Skybox** is applied to the scene right away.



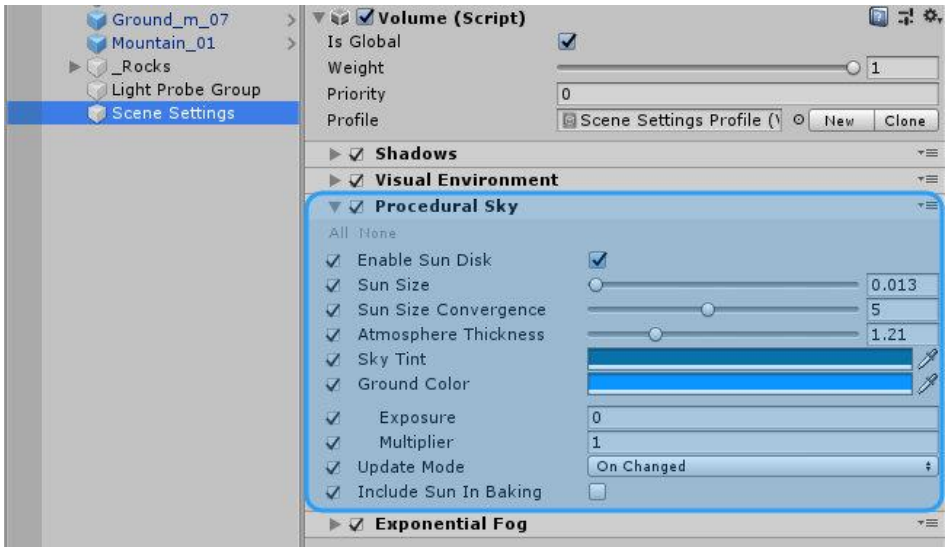
With a **Scene Settings** selected, you can change a bunch of scene settings like (Shadows, Skybox, Fog, and much more).



You need to play a bit with all of those settings to achieve similar results which you can get by default using Unity without HDRP.

4. Edit the **Procedural Sky** (Skybox)

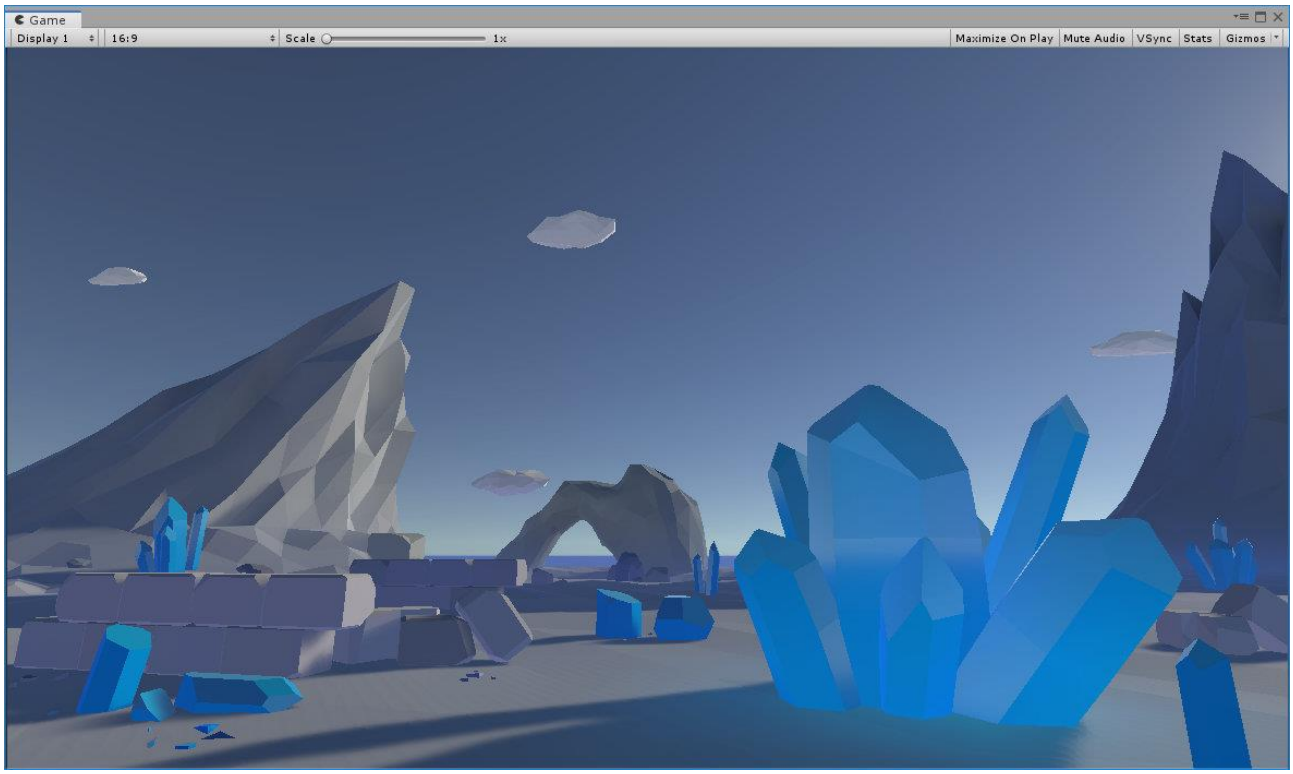
Use my **Procedural Skybox** settings:



Sky Tint (Color code): 006290

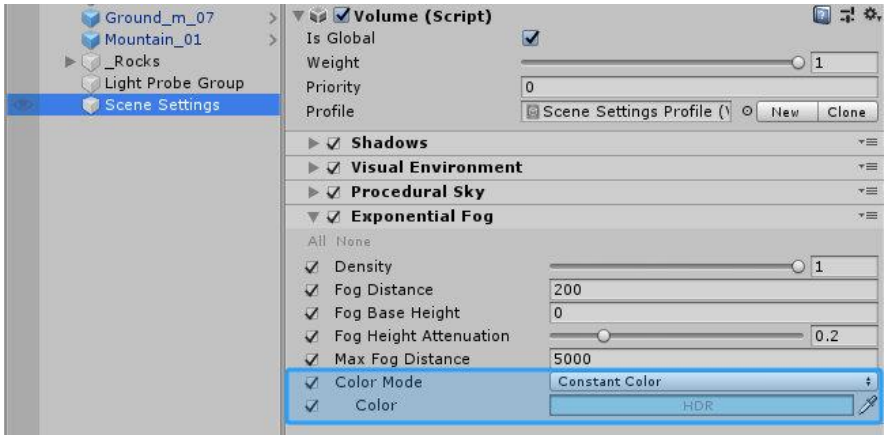
Ground Color (Color code): 0092FF

to achieve this:

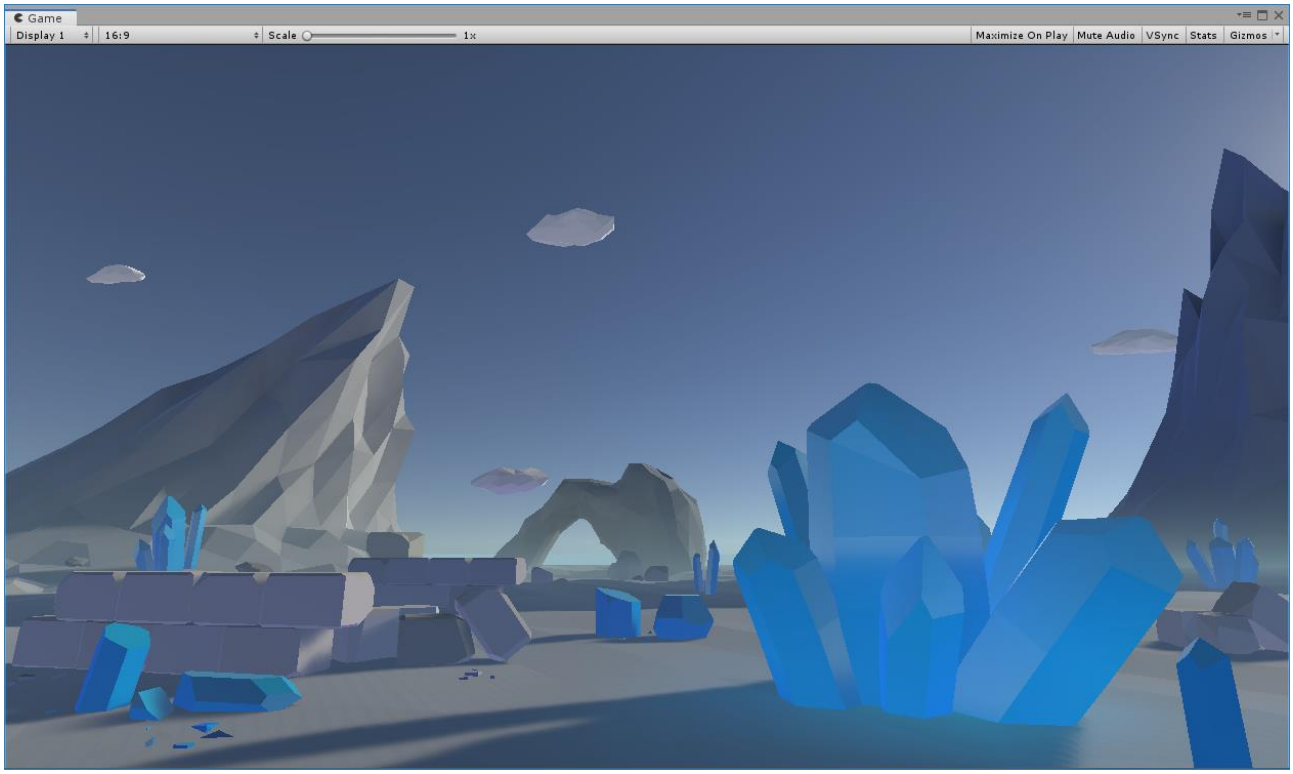


5. Edit the **Exponential Fog**

Set **Color Mode** to **Constant Color** and use this **Color** (R: 93; G:147; B:168)



Final result



How to use “Low Poly Rocks Pack”

Go to *Assets/Low Poly Rocks Pack/Rock Assets/Prefabs*

Select the Collider type:

- **With_Box_Colliders** – Prefabs use Box Colliders for Unity Terrain support (you can paint Prefabs on the Terrain). Also, Box Colliders are better in performance than Mesh Colliders!
- **With_Mesh_Colliders** – Prefabs use accurate Mesh Colliders (you can use Prefabs by placing with your mouse manually or using “Polybrush” from the Asset Store / Package Manager - recommended).

So, let’s say that you want to palace Prefabs by hand and use more accurate Colliders - open folder **With_Mesh_Colliders**. Select Color type:

- **1 Color** – One Rock Prefab use 1 color.
- **2 Color** – One Rock Prefab uses 2 colors (by default, the second color is white for snow. Also, it can be used for (sand, dirt, moss, etc.).

Select which rock type you want to import to your scene. For example, open folder **Round_Rocks** - select and drag **Prefab** to your scene. That’s it.

Same for **Bonus Assets.**

Go to *Assets/Low Poly Rocks Pack/Bonus Assets/Prefabs*

Select what you want and drag it to the scene.

Every model pivot is at the center bottom of the model, so you can quickly drop it on the ground, scale and rotate.

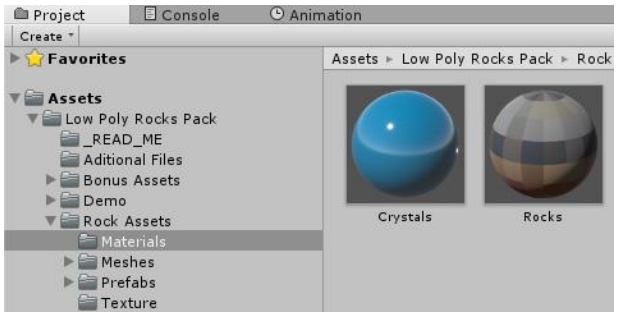
*Use **Pivot** and **Global** settings for the best experience!

You can change it by tapping on the **buttons**, which are near Move, and Scale tools.

How to Change Prefabs Color / Texture

Rocks / Crystals

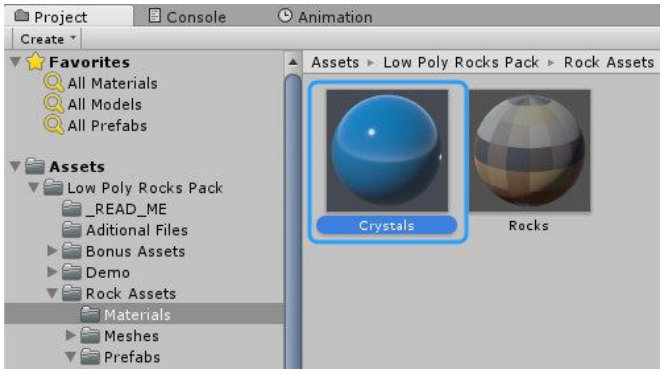
Go to *Low Poly Rocks Pack/Rock Assets/Materials* - here you will find 2 materials.



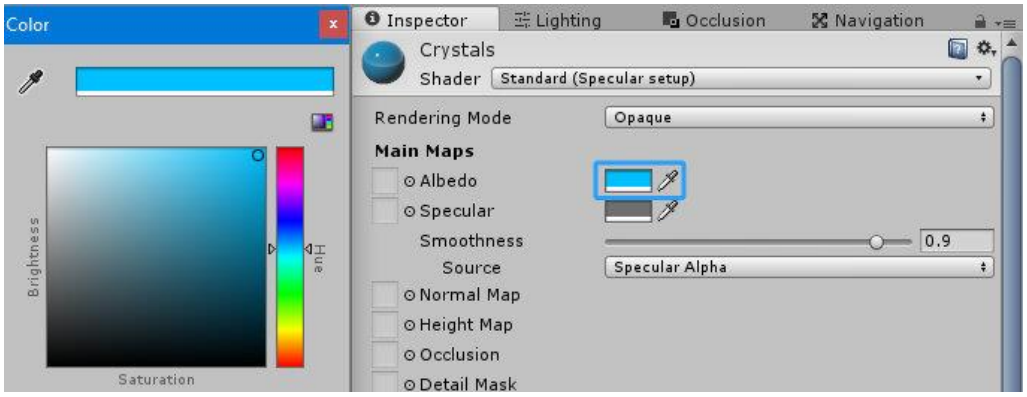
- Material **Rocks** used for all **Rock Prefabs**
- Material **Crystals** used for all **Crystal Prefabs**

Change Crystals Color

Select **Crystals** Material



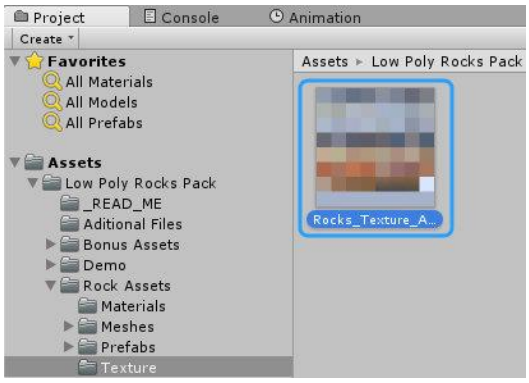
and change **Albedo** Color



Change Rocks Color

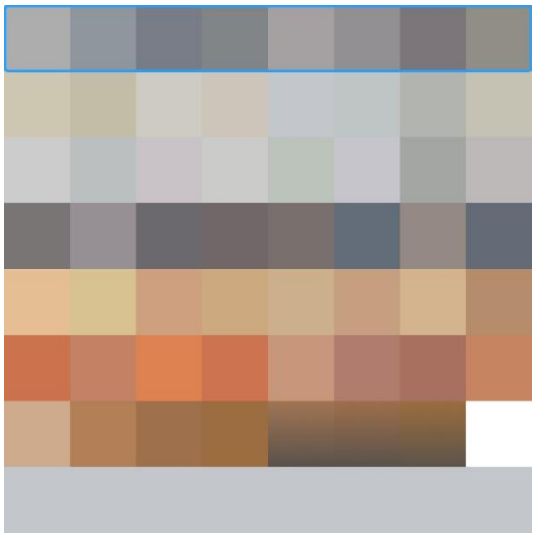
Rocks Material use **1 Texture Atlas**. So, we need to change colors for that texture to change Rock Prefab colors.

Go to *Low Poly Rocks Pack/Rock Assets/Texture*

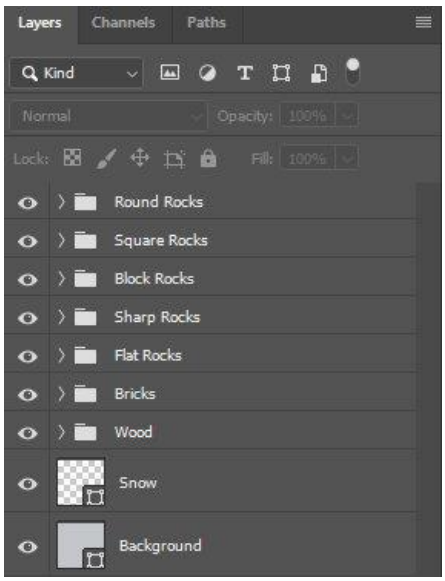


And open **Rocks_Texture_Atlas.png** inside Photoshop, Gimp, Affinity or any other image editing software. Every color square used for one random rock.

The first line of colors used for **Round Rocks**. That means every Round Rock is using one of these colors.



I also included **.psd** file of this texture inside *Low Poly Rocks Pack/Additional Files* folder. Extract **Rocks_Texture_Atlas_PSD.rar** file and open **.psd** inside **Photoshop**, **Gimp, Affinity Designer, etc**. This way, you can see which colors are for which rock type by looking into **Layer Names**, and edit those colors more easily.

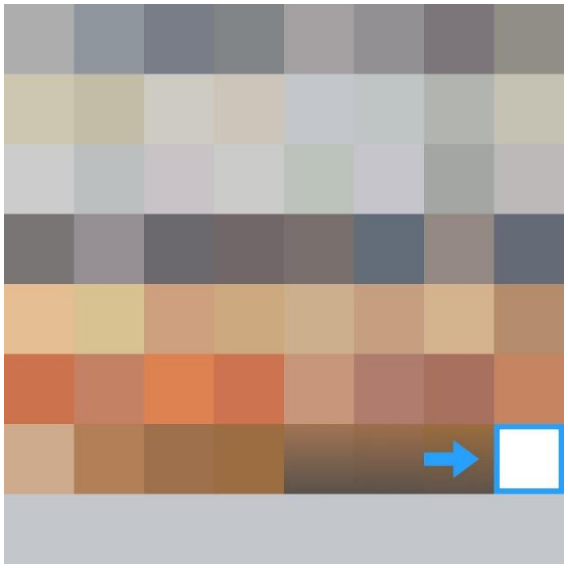


Change The Second Color For (2 Color - Rock Prefabs)

Go to *Low Poly Rocks Pack/Rock Assets/Texture*

And open **Rocks_Texture_Atlas.png** inside Photoshop, Gimp, Affinity or any other image editing software. Every color square used for one random rock.

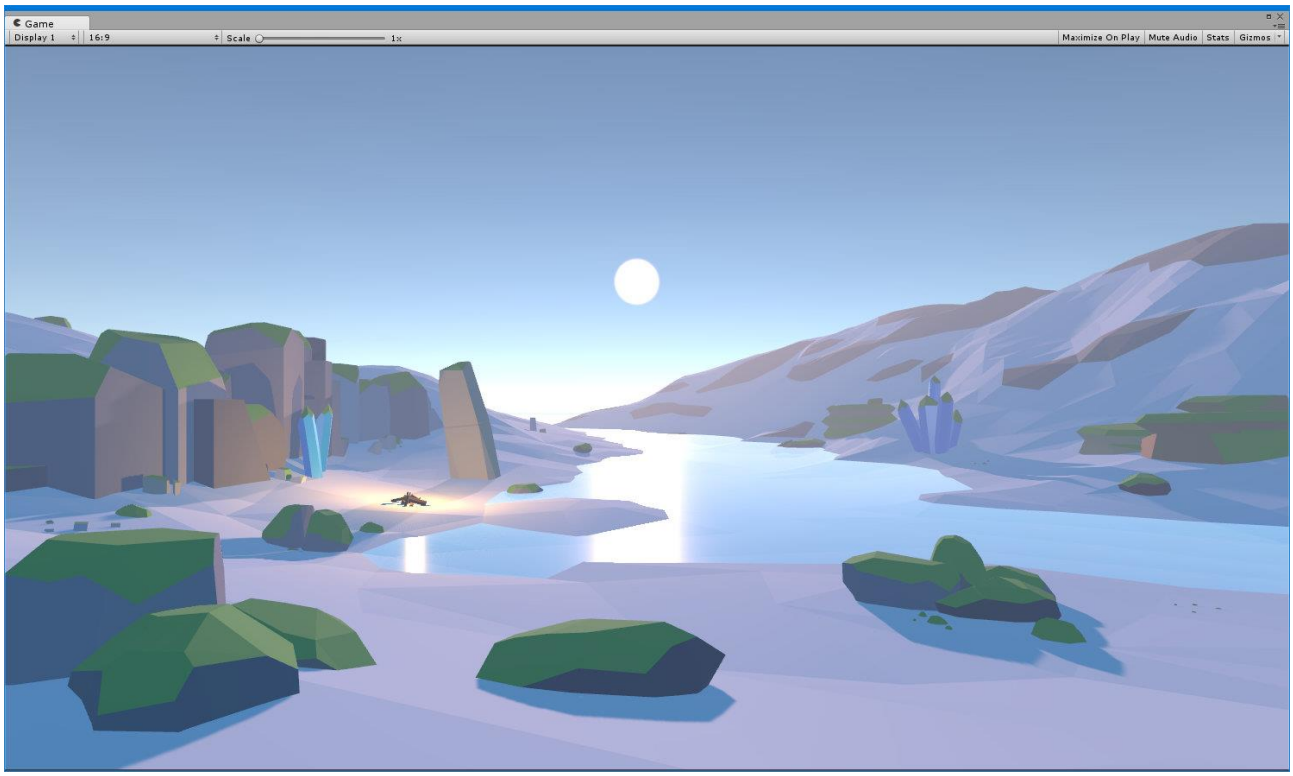
The **White** color square at the bottom right used as a second color for 2 Color prefabs (Snow color by default).



You can easily change it to any other color - like yellow for sand, green for moss, etc.

Here is an example of the same scene with a **White** color

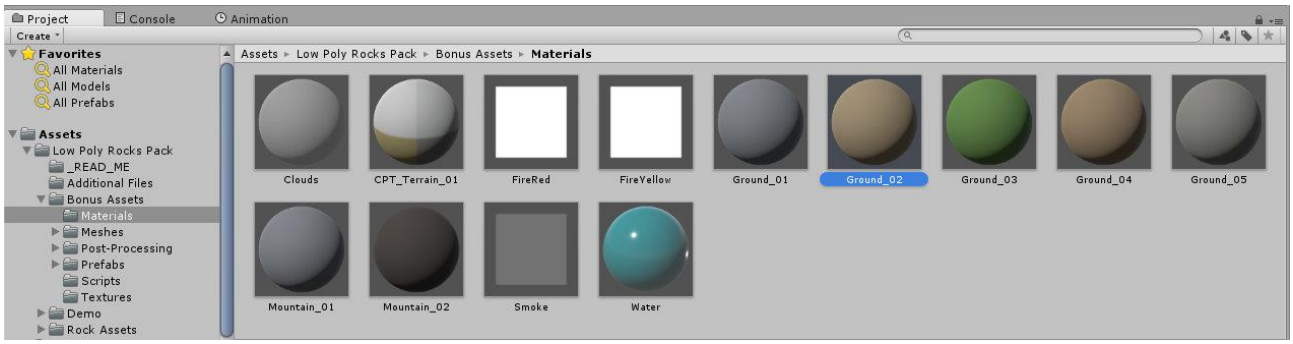
And with a **Green** color



*To change the terrain color, follow these steps!

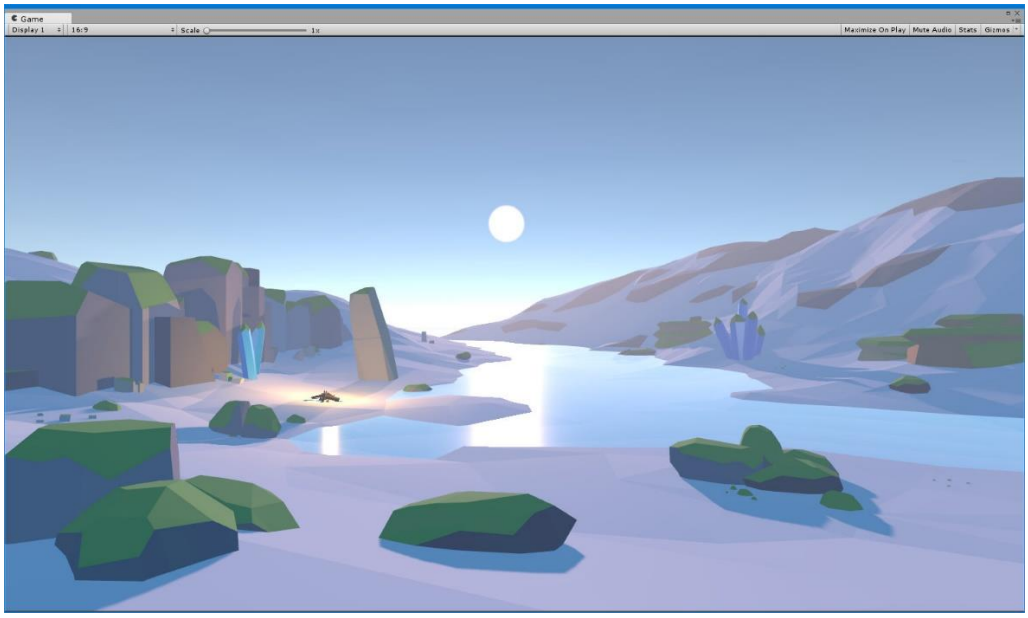
Change Bonus Assets Color

To change colors for Bonus Assets (Clouds, Fireplace, Ground, Mountains, Pyramid, and Water), go to *Low Poly Rocks Pack/Bonus Assets/Materials.*

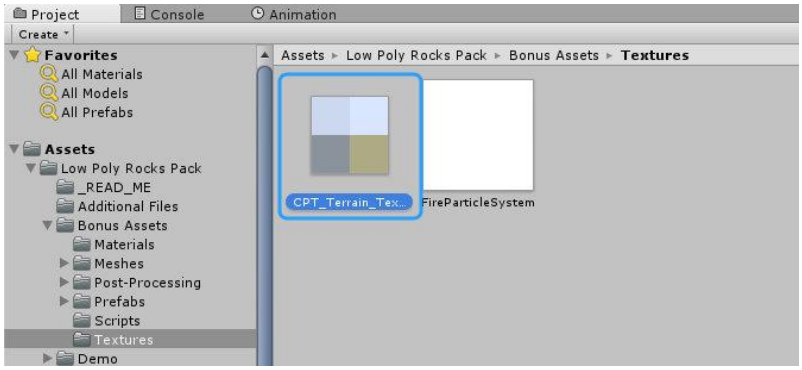


Select the Material you want to edit and in the **Inspector** change **Albedo Color**.

There is a **CPT_Terrain_01** material which is applied to the Terrain prefab - **CPT_Island_L_f_08.** This Terrain prefab is used in **Demo_07** scene. Snow terrain:

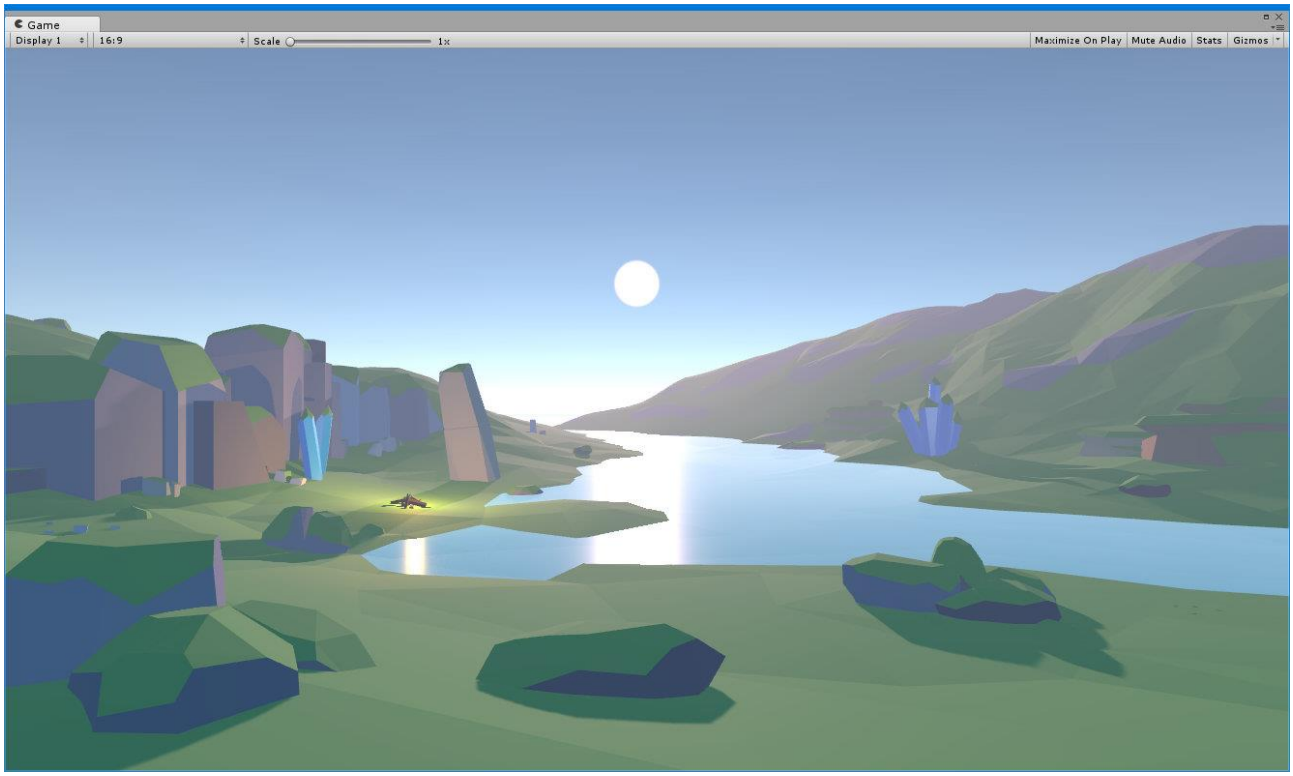


It uses two colors from the texture atlas. You can change those colors by editing the **CPT_Terrain_Texture_Atlas.png**. Texture located in *Low Poly Rocks Pack/Bonus Assets/Textures.*



Open **CPT_Terrain_Texture_Atlas.png** inside Photoshop, Gimp, Affinity, or any other image editing software.

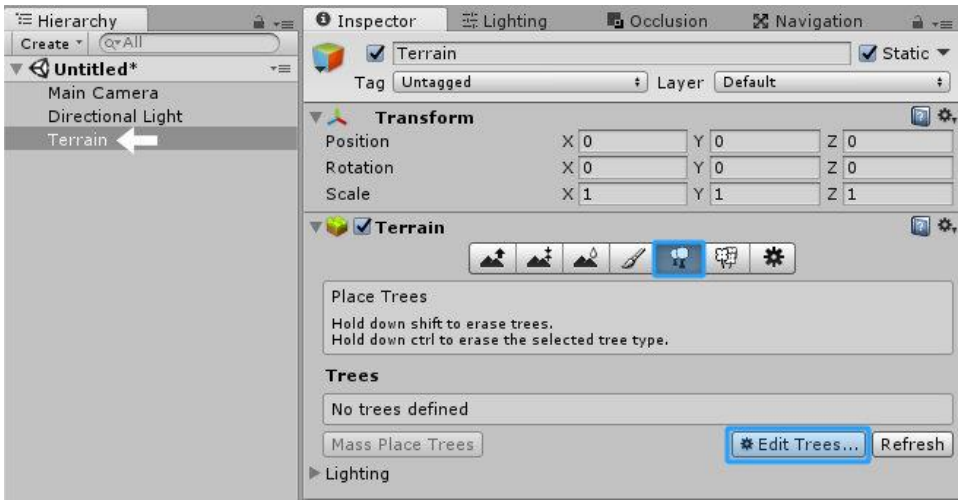
The 1st **White** color square at the top left is used as a Snow. 2nd Dark Grey color at the bottom left is used for terrain rocks.



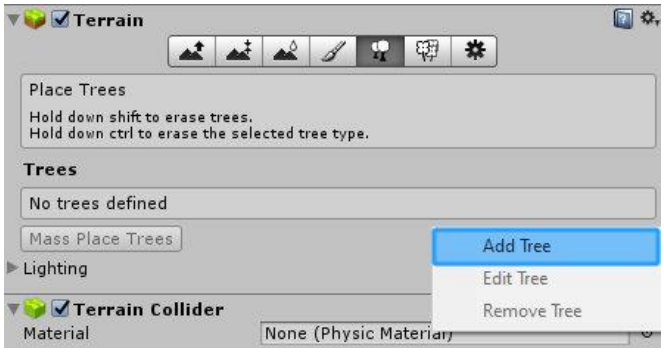
At this point, I just changed the 1st **White** color to **Green**.

How to Paint Rock Prefabs on Unity Terrain

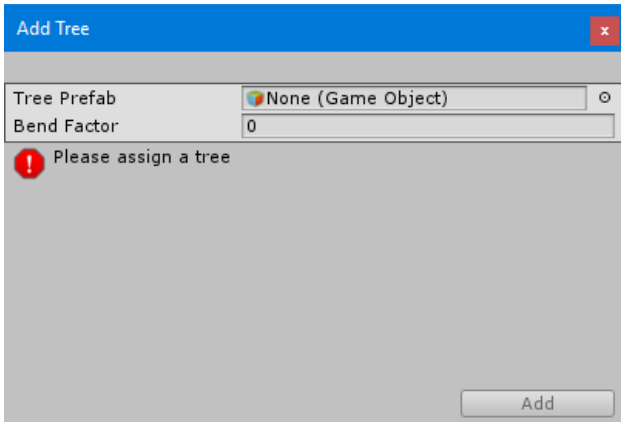
Select your Unity Terrain and go to **Place Trees** tab. Click on **Edit Trees...**



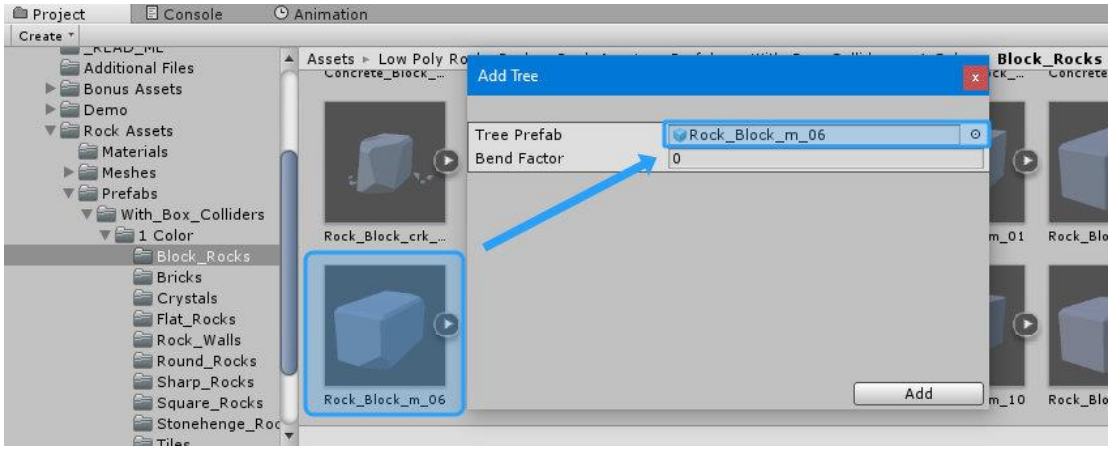
...and press on **Add Tree**



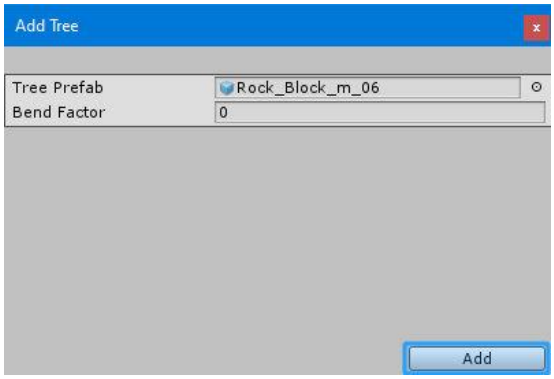
You should see a popup window **Add Tree**



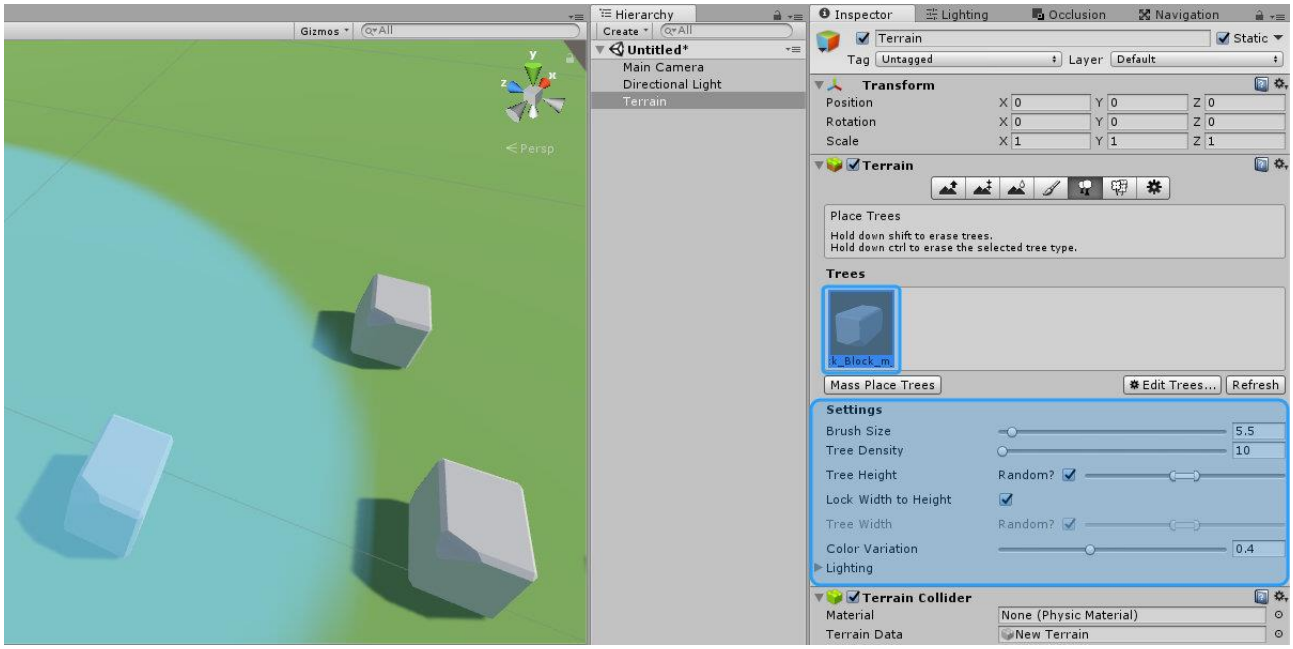
Go to *Low Poly Rocks Pack/Rock Assets/Prefabs/With_Box_Colliders* and select any Rock Type you want to use (I used **1 Color** > **Block_Rocks**), drag and drop Prefab to **Tree Prefab** tab:



Press **Add**



That's it! Select **Rock Prefab**, change **Settings,** and paint.



How to Paint Rock Prefabs on Mesh Terrain Using Polybrush

UPDATE! **Watch my new Polybrush Tutorial on how to use it properly** (including texture painting, prefab painting on other meshes, and mesh/terrain sculpting)!

*To use Polybrush - you need at least **Unity 2019.4 LTS!** It was removed from the Asset Store and it's the part of the Package Manager now.

Additional Info

Naming Conventions

Prefab name example 1: **Rock_Round_crk_m_01**

- **Rock_Round** – Rock Type
- **crk** – means the rock is cracked
- **m** – medium size
- **01** – Prefab number

Prefab name example 2: **Rock_Round_crk_m_2C_01**

- **2C** – 2 Color (rock uses 2 colors. By default, the second color is white - snow)

You can find these letters:

s – small size

m – medium size

l – large size

crk – means the rock is cracked.

*Keep in mind that every rock mesh is different, no matter is it small or large.

Scripts

Every scene **Camera**, **Directional Light,** and **_Clouds** (an empty game object which contains all clouds on the scene) have movement controls.

For example, select the **Camera** and on **Inspector** scroll down to the bottom, you will see **LowPolyRocks_Camera Control (Script)** attached to it. Here you can control **Camera Movement Speed** using sliders.

Same with **Direction Lights** and **_Clouds**.

Contacts

If you have any questions, suggestions on what to improve or create. Maybe found any bugs, please send me an e-mail!

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