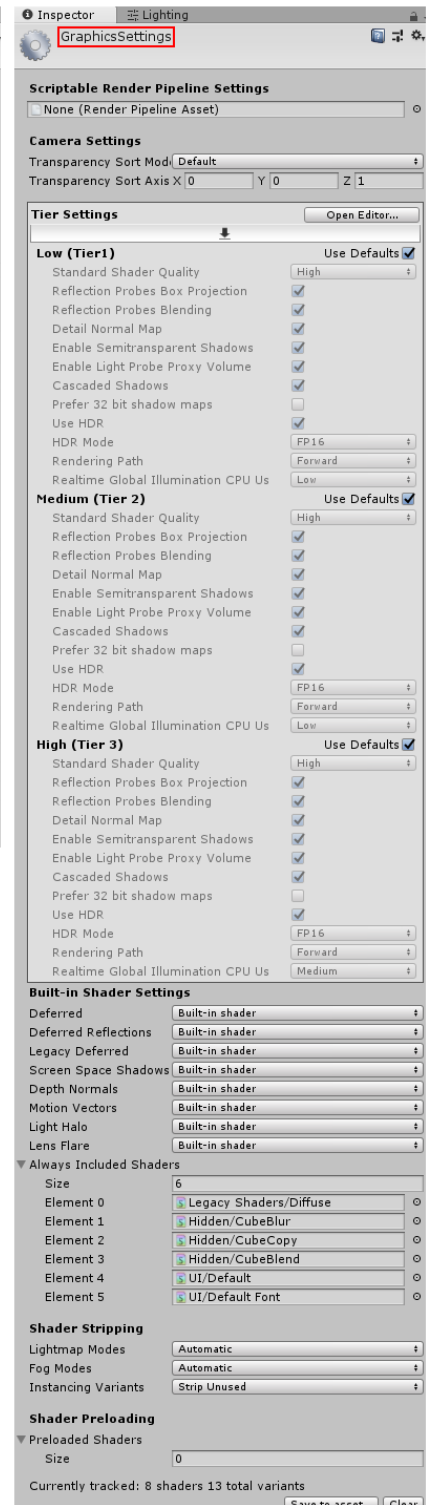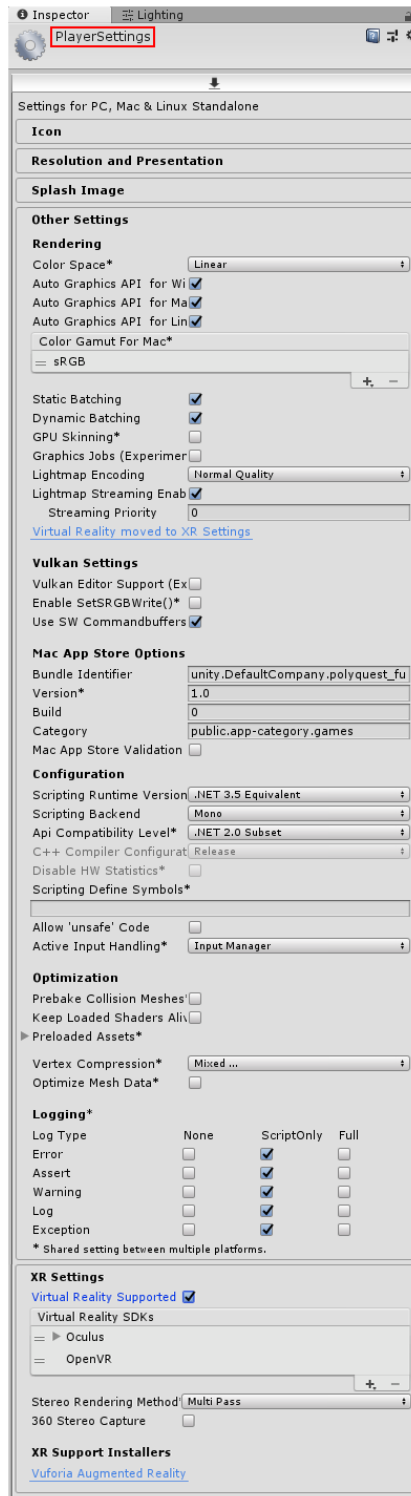# Polyquest Guidelines:

## A- Project Quality and Player Settings:

Before you start using the pack, make sure you have the right player & quality setting (see below):

**PlayerSettings**

Settings for PC, Mac & Linux Standalone

Icon
Resolution and Presentation
Splash Image

**Other Settings**

**Rendering**
Color Space* — Linear
Auto Graphics API for Wi ✔
Auto Graphics API for Ma ✔
Auto Graphics API for Lin ✔
Color Gamut For Mac*
= sRGB

Static Batching ✔
Dynamic Batching ✔
GPU Skinning*
Graphics Jobs (Experimen
Lightmap Encoding — Normal Quality
Lightmap Streaming Enab ✔
Streaming Priority — 0
Virtual Reality moved to XR Settings

**Vulkan Settings**
Vulkan Editor Support (Ex
Enable SetSRGBWrite()*
Use SW Commandbuffers ✔

**Mac App Store Options**
Bundle Identifier — unity.DefaultCompany.polyquest_fu
Version* — 1.0
Build — 0
Category — public.app-category.games
Mac App Store Validation

**Configuration**
Scripting Runtime Version — .NET 3.5 Equivalent
Scripting Backend — Mono
Api Compatibility Level* — .NET 2.0 Subset
C++ Compiler Configurat — Release
Disable HW Statistics*
Scripting Define Symbols*

Allow 'unsafe' Code
Active Input Handling* — Input Manager

**Optimization**
Prebake Collision Meshes
Keep Loaded Shaders Aliv
▶ Preloaded Assets*
Vertex Compression* — Mixed ...
Optimize Mesh Data*

**Logging***

| Log Type | None | ScriptOnly | Full |
|---|---|---|---|
| Error | | ✔ | |
| Assert | | ✔ | |
| Warning | | ✔ | |
| Log | | ✔ | |
| Exception | | ✔ | |

* Shared setting between multiple platforms.

**XR Settings**
Virtual Reality Supported ✔
Virtual Reality SDKs
= ▶ Oculus
= OpenVR
Stereo Rendering Method — Multi Pass
360 Stereo Capture

**XR Support Installers**
Vuforia Augmented Reality

---

**QualitySettings**

**Levels**
Fastest ✔
Fast ✔
Simple ✔
Good ✔
Beautiful ✔
Fantastic ✔
Default ▼

Add Quality Level

Name — Fantastic

**Rendering**
Pixel Light Count — 10
Texture Quality — Full Res
Anisotropic Textures — Forced On
Anti Aliasing — 8x Multi Sampling
Soft Particles
Realtime Reflection Prob ✔
Billboards Face Camera I ✔
Resolution Scaling Fixed — 1
Texture Streaming

**Shadows**
Shadowmask Mode — Distance Shadowmask
Shadows — Hard Shadows Only
Shadow Resolution — Very High Resolution
Shadow Projection — Close Fit
Shadow Distance — 3000
Shadow Near Plane Offse — 2
Shadow Cascades — No Cascades

**Other**
Blend Weights — 4 Bones
V Sync Count — Every V Blank
Lod Bias — 2
Maximum LOD Level — 0
Particle Raycast Budget — 4096
Async Upload Time Slice — 2
Async Upload Buffer Size — 4

---

**GraphicsSettings**

**Scriptable Render Pipeline Settings**
None (Render Pipeline Asset)

**Camera Settings**
Transparency Sort Mod — Default
Transparency Sort Axis X — 0   Y — 0   Z — 1

**Tier Settings**          Open Editor...

Low (Tier1) — Use Defaults ✔
Standard Shader Quality — High
Reflection Probes Box Projection ✔
Reflection Probes Blending ✔
Detail Normal Map ✔
Enable Semitransparent Shadows ✔
Enable Light Probe Proxy Volume ✔
Cascaded Shadows ✔
Prefer 32 bit shadow maps
Use HDR ✔
HDR Mode — FP16
Rendering Path — Forward
Realtime Global Illumination CPU Us — Low

Medium (Tier 2) — Use Defaults ✔
Standard Shader Quality — High
Reflection Probes Box Projection ✔
Reflection Probes Blending ✔
Detail Normal Map ✔
Enable Semitransparent Shadows ✔
Enable Light Probe Proxy Volume ✔
Cascaded Shadows ✔
Prefer 32 bit shadow maps
Use HDR ✔
HDR Mode — FP16
Rendering Path — Forward
Realtime Global Illumination CPU Us — Low

High (Tier 3) — Use Defaults ✔
Standard Shader Quality — High
Reflection Probes Box Projection ✔
Reflection Probes Blending ✔
Detail Normal Map ✔
Enable Semitransparent Shadows ✔
Enable Light Probe Proxy Volume ✔
Cascaded Shadows ✔
Prefer 32 bit shadow maps
Use HDR ✔
HDR Mode — FP16
Rendering Path — Forward
Realtime Global Illumination CPU Us — Medium

**Built-in Shader Settings**
Deferred — Built-in shader
Deferred Reflections — Built-in shader
Legacy Deferred — Built-in shader
Screen Space Shadows — Built-in shader
Depth Normals — Built-in shader
Motion Vectors — Built-in shader
Light Halo — Built-in shader
Lens Flare — Built-in shader

▼ Always Included Shaders
Size — 6
Element 0 — Legacy Shaders/Diffuse
Element 1 — Hidden/CubeBlur
Element 2 — Hidden/CubeCopy
Element 3 — Hidden/CubeBlend
Element 4 — UI/Default
Element 5 — UI/Default Font

**Shader Stripping**
Lightmap Modes — Automatic
Fog Modes — Automatic
Instancing Variants — Strip Unused

**Shader Preloading**
▼ Preloaded Shaders
Size — 0

Currently tracked: 8 shaders 13 total variants
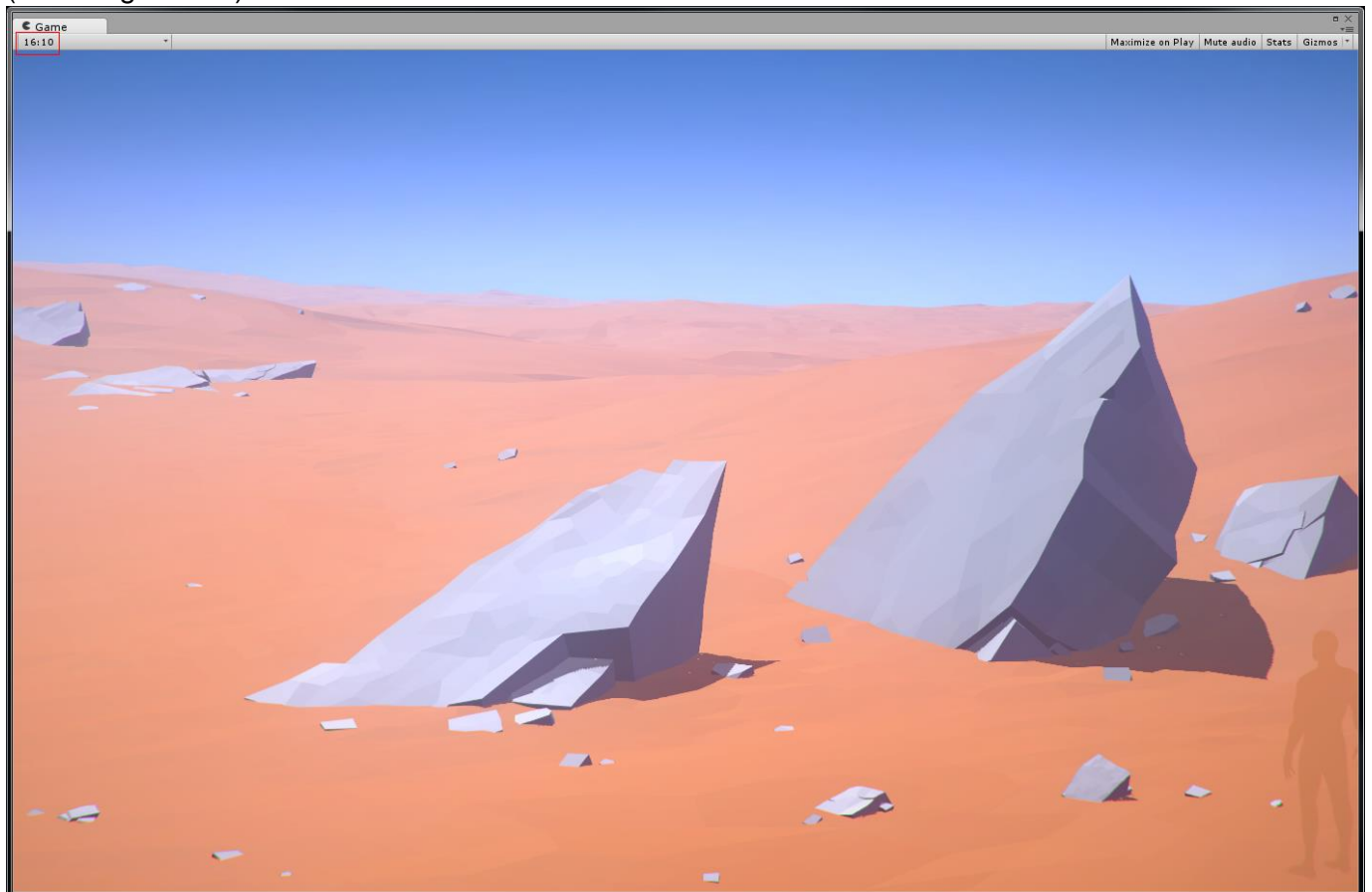
Save to asset...   Clear

## B- Project Resolution:

Before you start using the pack, make sure you have the right resolution settings in the game window, make sure you set it to 960x600 (see images below):
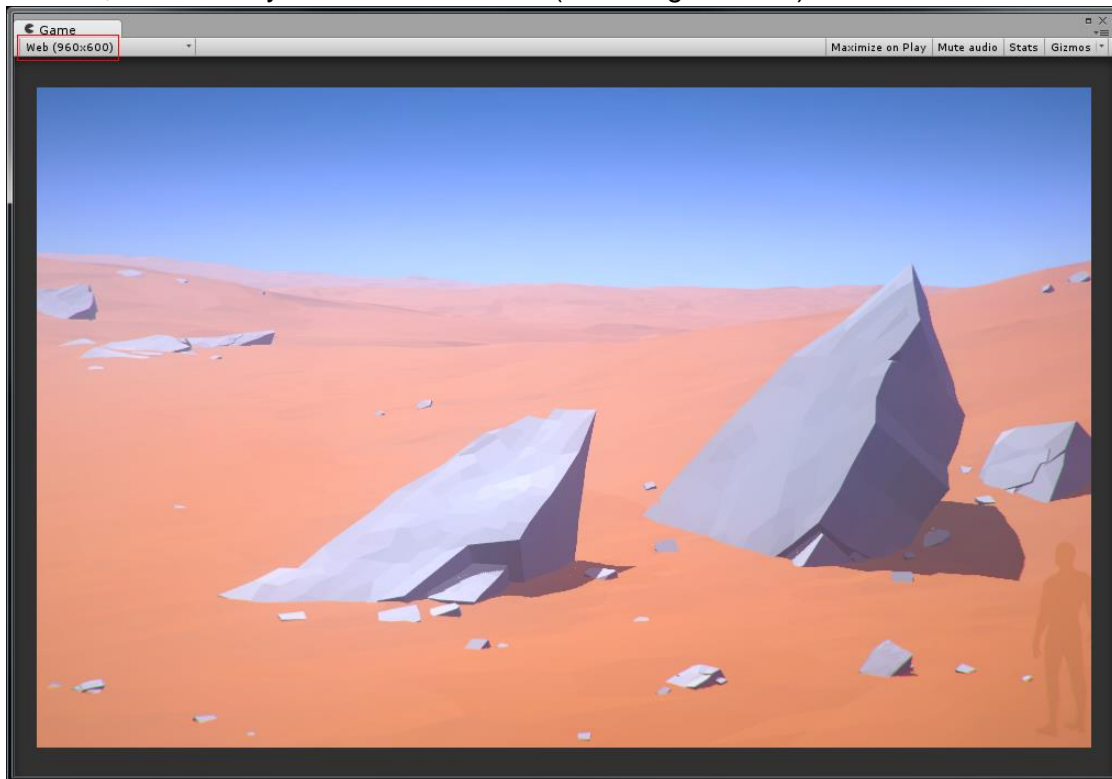


Or you can set it to any resolution that has the 1.6 resolution, for instance like the 16:10 preset (see image below):
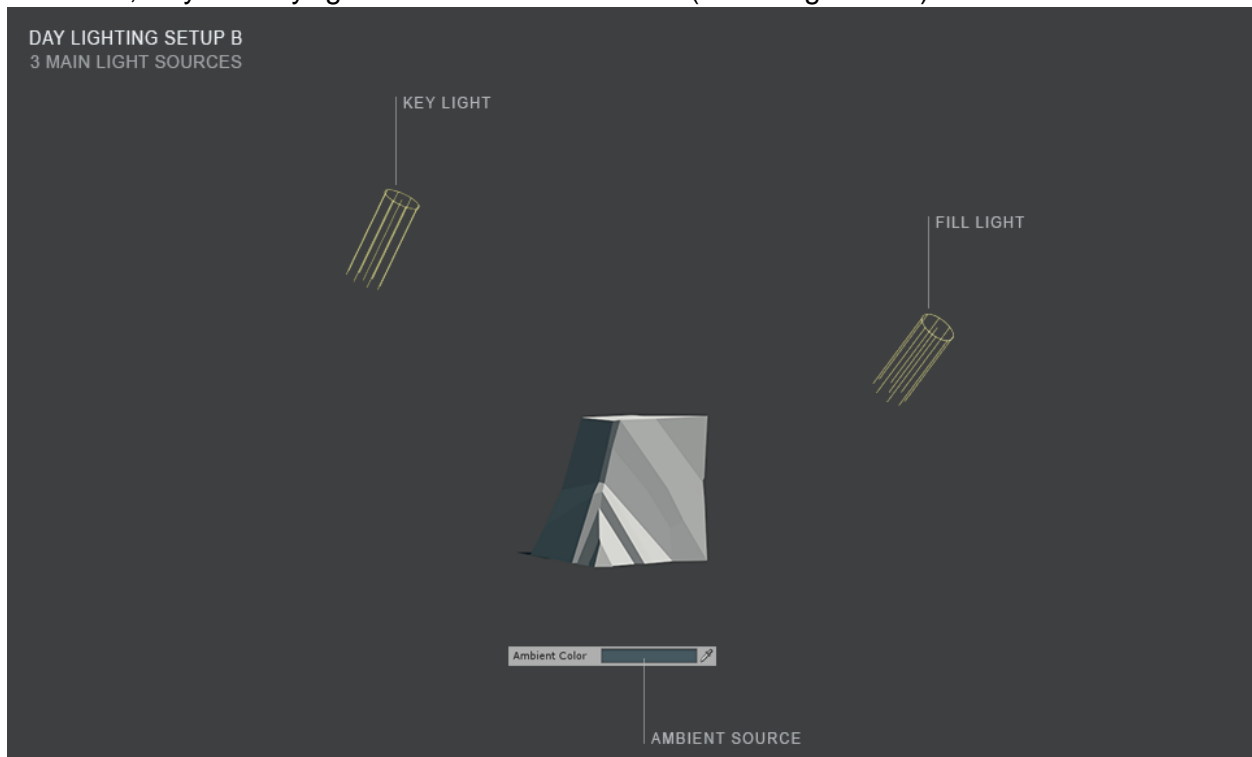
# C- Lighting:

## 1-Day Lighting Setup A:

The day lighting used in the package is a very simple one, it consists of one directional key light, one directional fill light and the default ambient light found in the lighting tab, note that the ambient source could be a simple color or a skybox (see image below):



**DAY LIGHTING SETUP A**
3 MAIN LIGHT SOURCES

KEY LIGHT

FILL LIGHT

Ambient Color
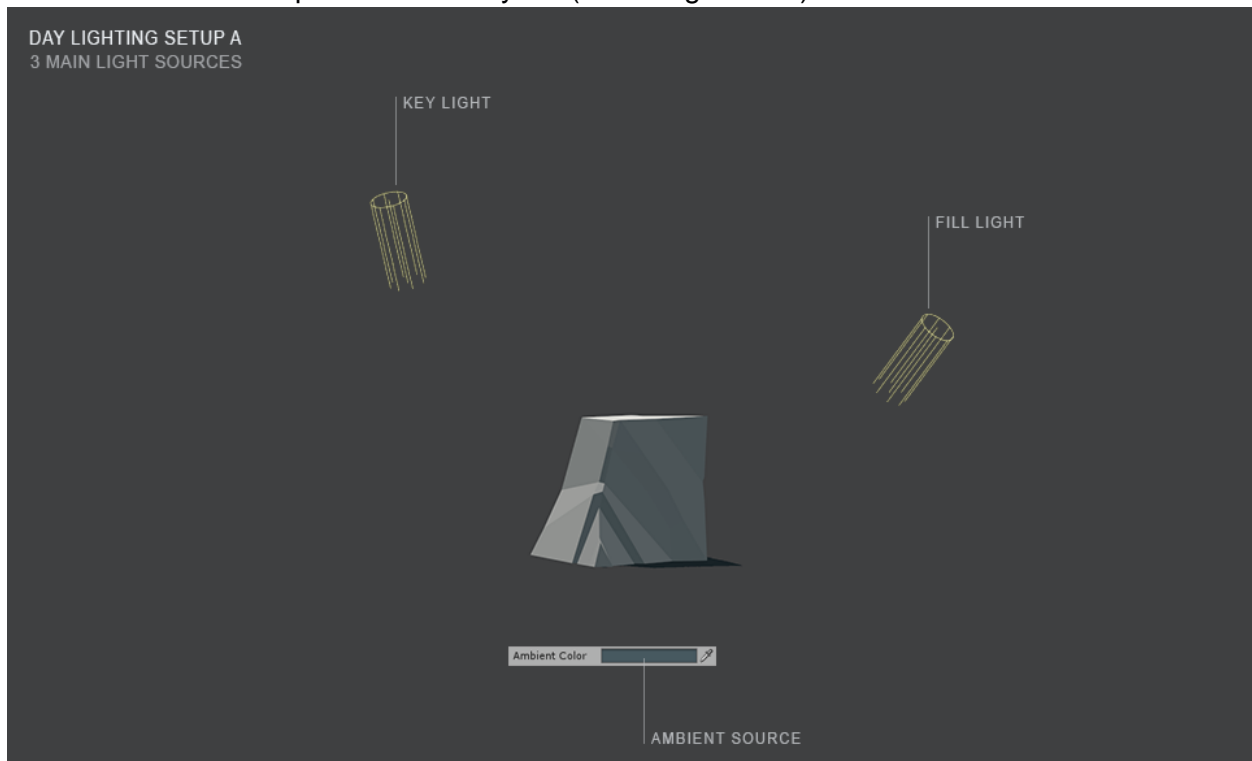
AMBIENT SOURCE

"Day Lighting Setup A" provided in the "scenes" folder.

## 2-Day Lighting Setup B:

This lighting setup is simply a variant of "Lighting Setup A", the fill light and ambient source are the same, only the Key light has a different direction (see image below):



**DAY LIGHTING SETUP B**
3 MAIN LIGHT SOURCES

KEY LIGHT

FILL LIGHT

Ambient Color

AMBIENT SOURCE

"Day Lighting Setup A" provided in the "scenes" folder.

## 3-Night Lighting Setup:

To create a night lighting setup, just start by dropping on of the day lighting setups ( A or B) into your scene and tone down the intensities of your 3 light source. Then start adding point lights, spot lights or area lights and adjust their intensities and colors to get the look you want. Now that lighting is setup, start placing your models so they look good in it. This is how it was done in the night example scenes (see image below):



## 4-Lighting & Layout:

If you open the provided "lighting_day_setup_A" scene or the "lighting_day_setup_B" scene, and just drop the models into it, everything will look great. You now have 2 lighting situations where all your models are looking great. Not only that, if you rotate any of those models 180° in the Y direction in either of the lighting setups A or B, the models will also look great (see below):
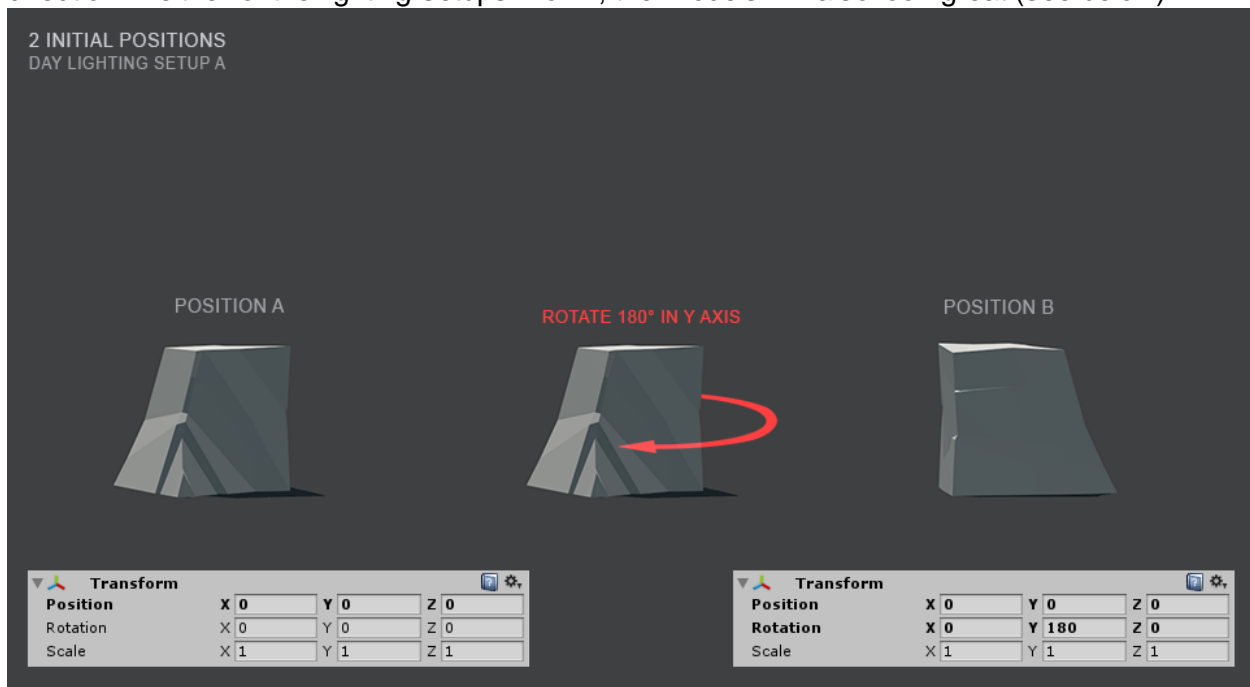
So now you have 4 situations (situation 1,2,3 & 4 as you can see in the image below) where all your models are looking great (see image below):
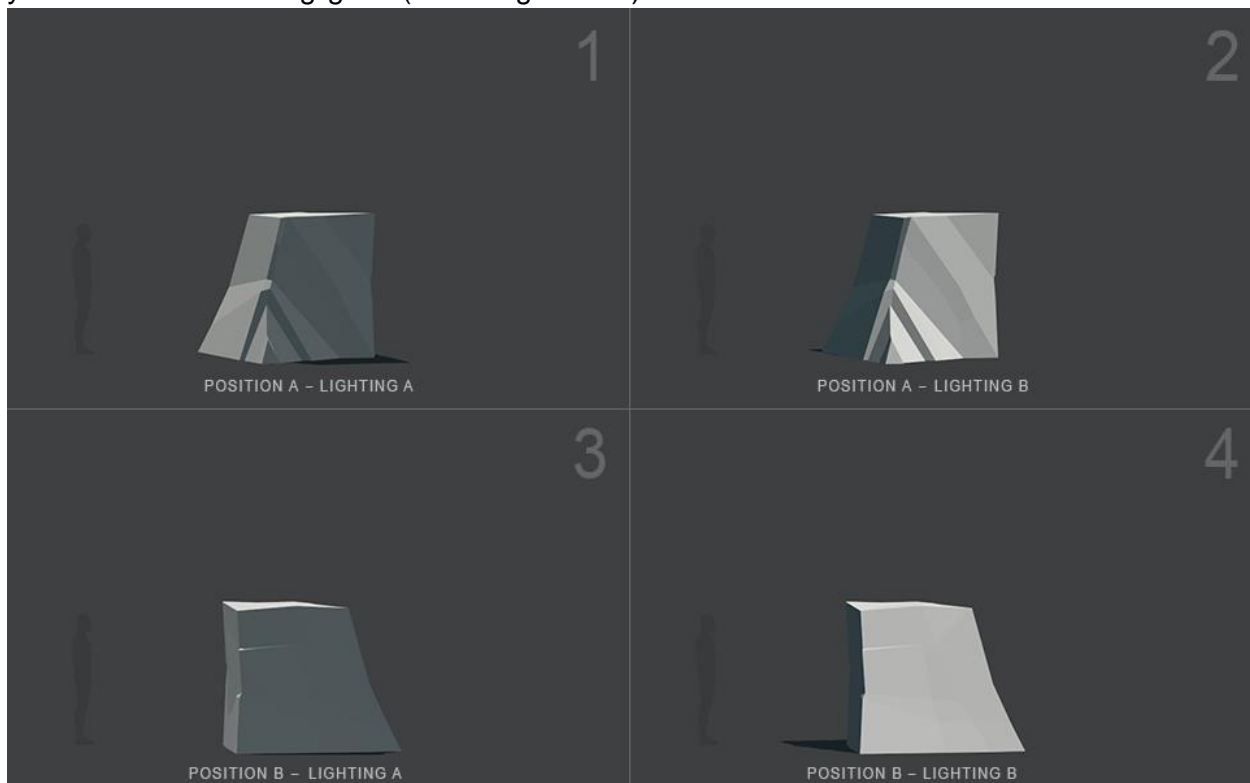


Those 4 situations are a great starting point. Ideally one with start with one of them, for example in situation 1 you have the "day lighting setup A" plus the default position of the model (no 180° rotation), then **from here** you can start rotating the lights a bit or rotating the geometry in another direction to obtain the look you want. This is how the example scenes where made.

**5-Layout:**
The **most efficient** way for laying out your scene is to display the **"scene" window" and the "game window" at the same time**. Then you move stuff in the "scene" window while constantly checking what's happening in the "game" window.

## D- Models Versions:
All cliff, rock, stone, gravel and ground models come in 3 different versions (see below):
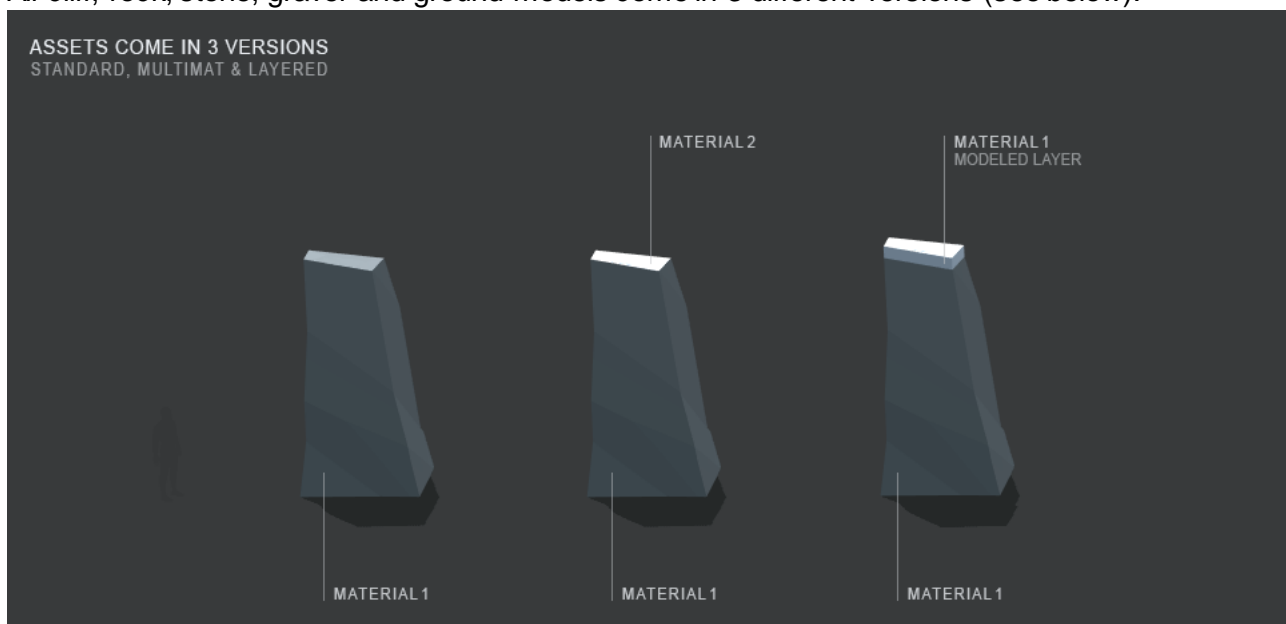
The **"standard"** version means the models have simply 1 material. The **"multimat"** version means that the models have 2 materials, the first material for all the faces facing up (in the Y direction) and the second material for all the rest. This version is very useful if you want different material properties, for example one for the rock surface (material 1) and another one the snow surface (material 2) (see below):
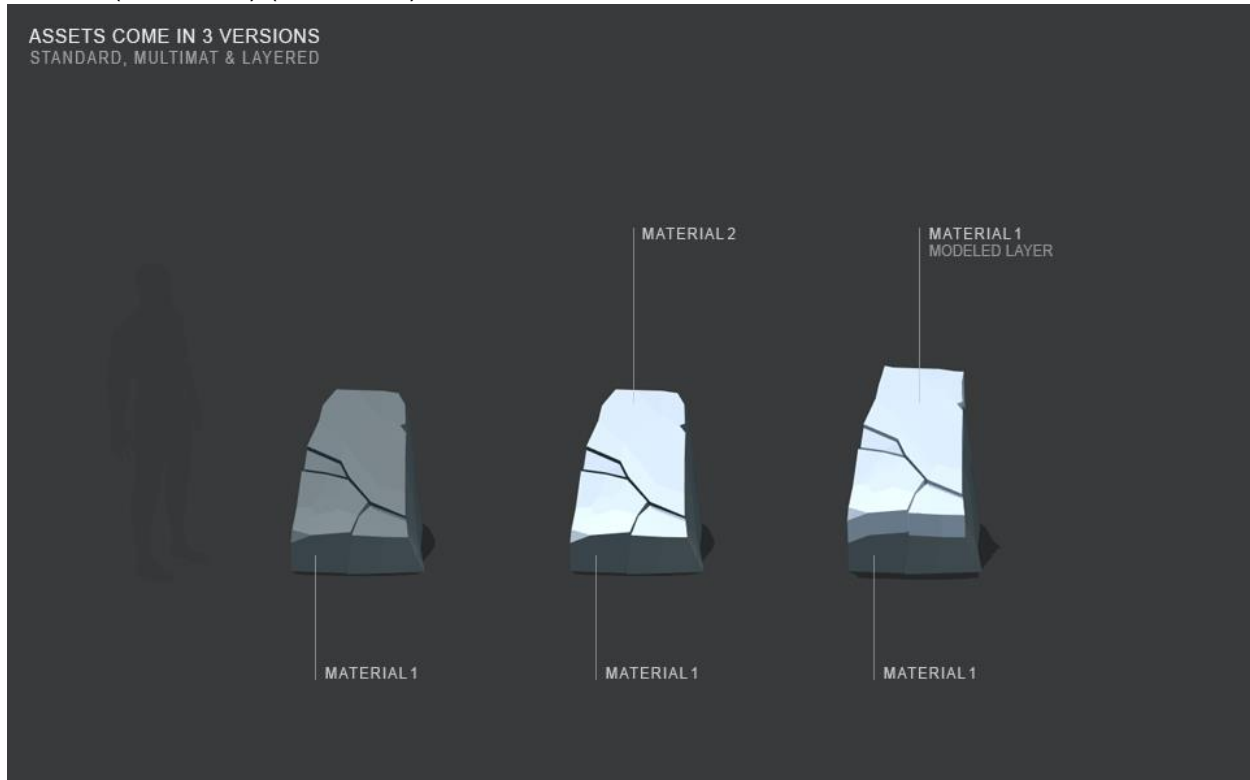


The **"layered"** version means the models have a layer of snow, ice, grass, sand or any type of other material (depending on what you need). This thickness is modeled into the geometry itself (see image below):
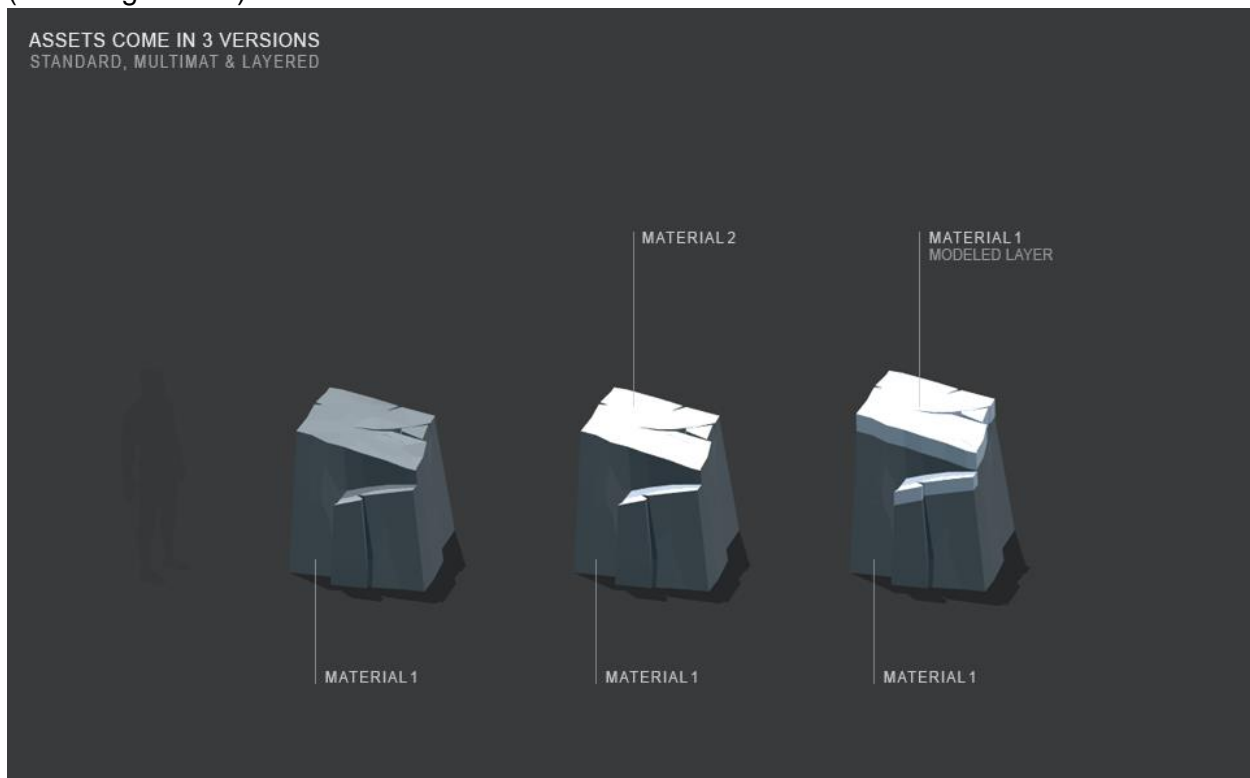


Not that in the project "models" folder you have 3 subfolders clearly labeled as "standard", "multimat" & "layered" where you will find the 3 different versions for all the assets.

## E- Models Smoothing Groups:

Note that every vertex of each model was carefully placed during the modeling process in Autodesk Maya. As a result of that, smoothing groups are carefully crafted and in order to preserve this in Unity, so you **must always** keep the "Hard Angle" option of the "Advanced" settings in the "model import settings" to **0** which is already set by default (see image below):
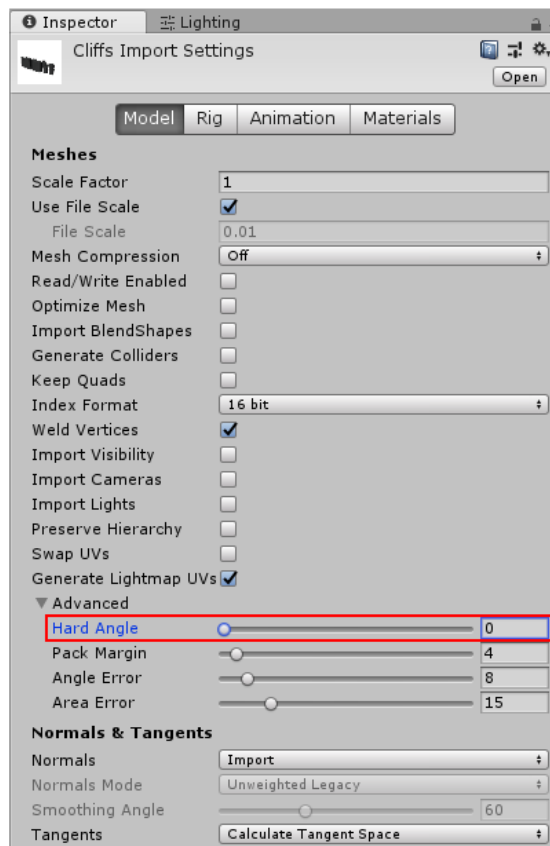


Otherwise Unity will create its own smoothing groups which can lead to undesired results.

## F- Models UVs:

**1- Two separate UV sets:**

Each asset comes with 2 UV sets (see image below):
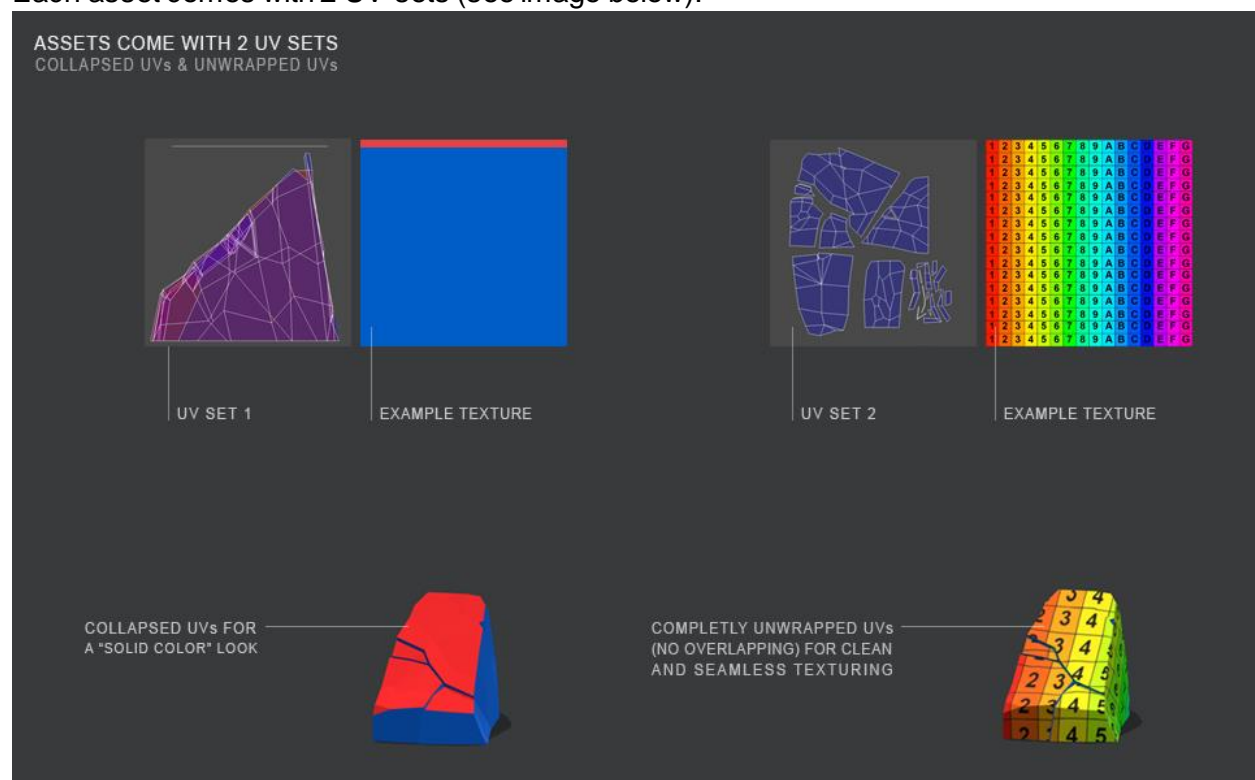
## 2- UV set 1:

UV set 1 should be used when you're going for a "solid color" look, where each face has one color value. In this case there is no traditional texturing and the used texture is simply a color swatch that gives one solid color for each face. To give you more control, all faces facing up, have their UV shells collapsed in the upper part of the UV space (see image below):
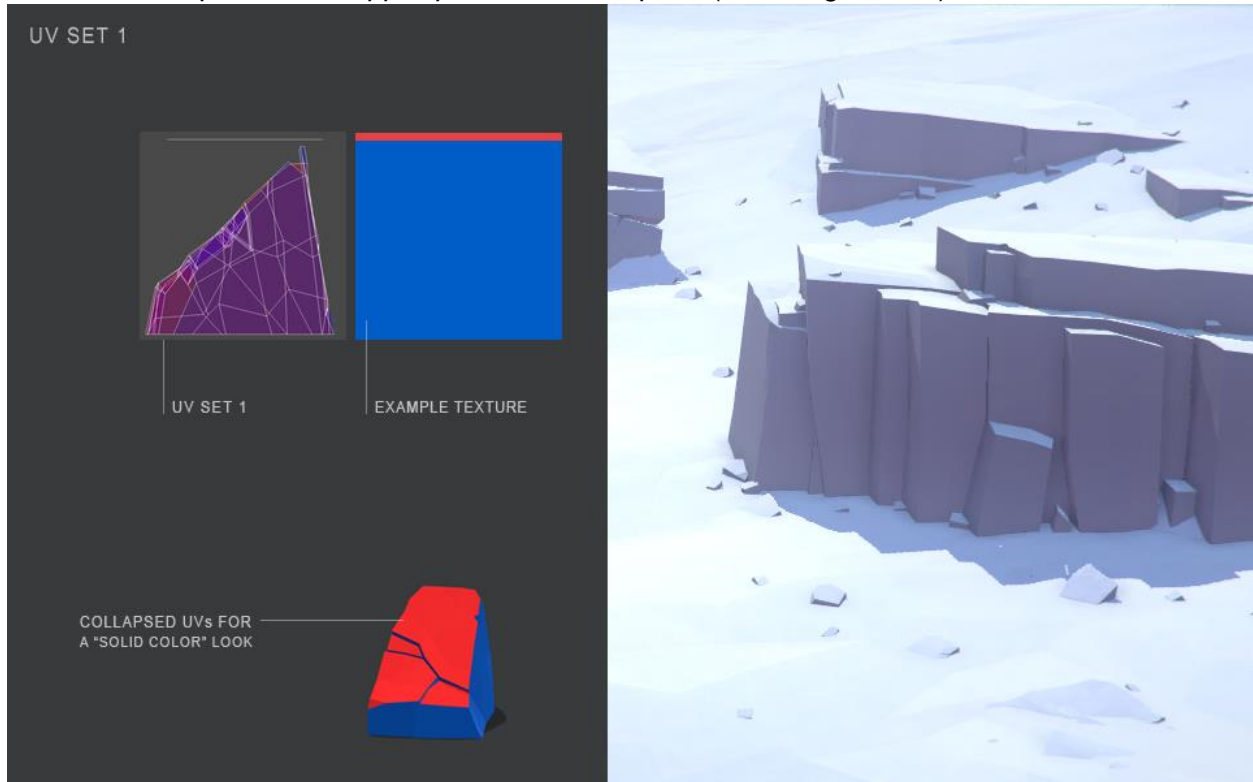


*Not that you apply a gradient if you want that by simply putting it in the blue part of the texture.

## 3- UV set 2:

UV set 2 set is carefully unwrapped by hand and there is no overlapping faces. This UV set should be used when you are applying a texture to your models (see image below):
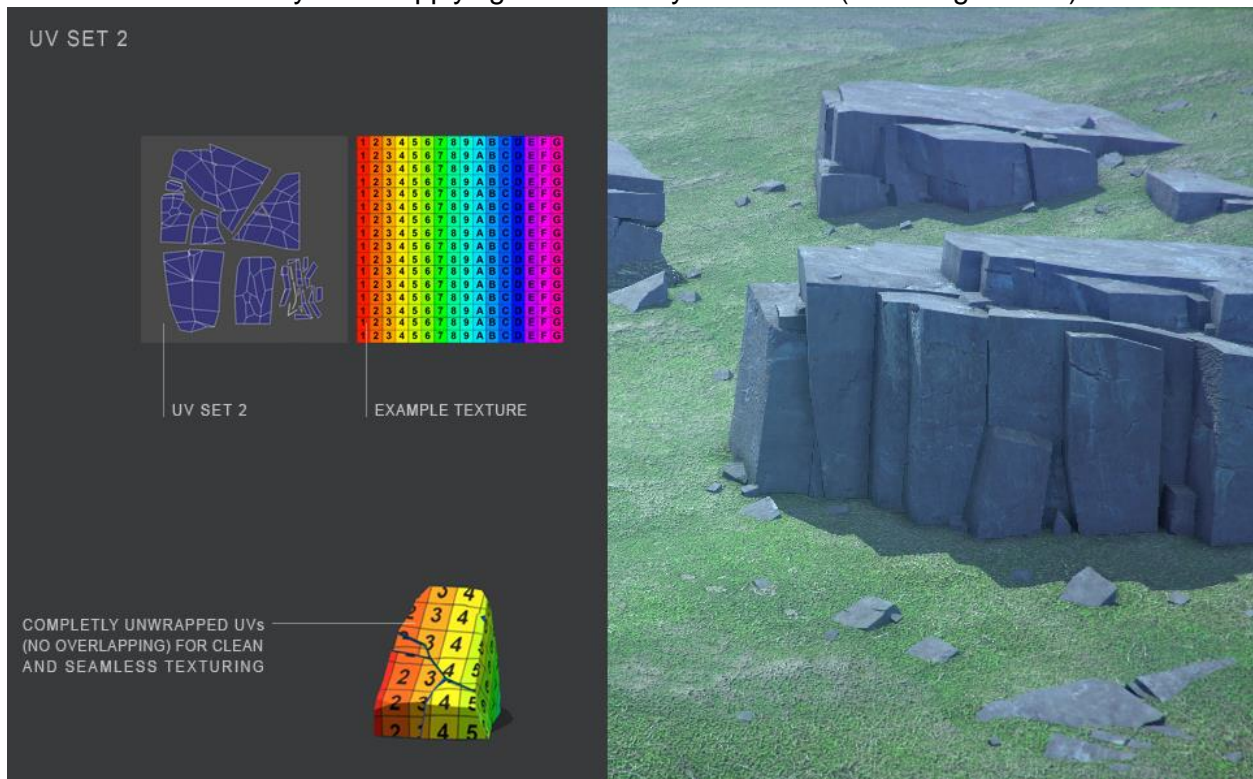
**4- Switching between UV set 1 & UV set 2:**
When you want to use an image textures in the material applied to your scene models, or when you simply **open the example scenes** ending with "_TX" **make sure** you check the **"Swap UVs"** option **ON** in the "model import settings" (see image below):
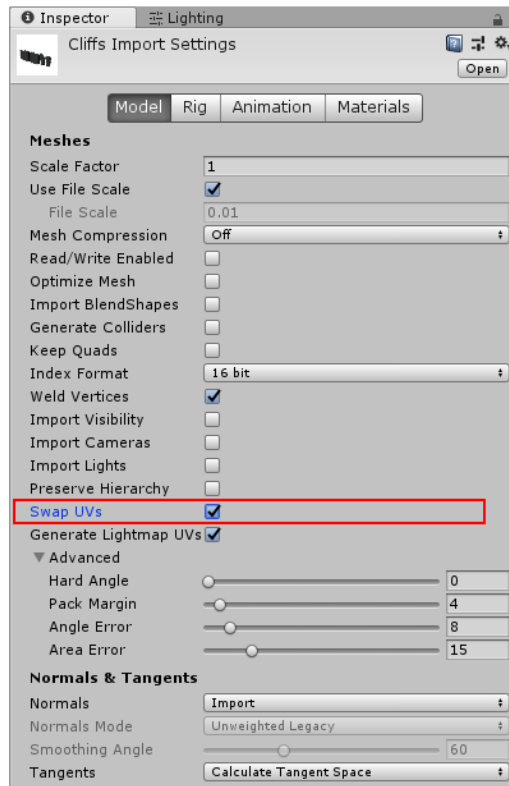


Make sure you do that for all models located in these 3 folders:
Assets/models/models standard
Assets/models/models multimat
Assets/models/models layered

## G- Lightmapping Troubleshooting:

If you are creating new lightmaps in a new scene and you are getting some black lines seams on your objects that's because in Unity 5 the "Baked padding" option for lightmaps (in the "Lighting/baked GI" tab) which normally fixes this problem (when set to 6 or 7) doesn't work, it's broken.

-The first solution would be to tweak the "Scale In Lightmaps" value in the "lighting/Object" tab for the object having the black lines. Start with 6 then you can go up to 20,30 or 40 this really depends on each scene. Refer to the lightmapped example scenes ending with "_LM", this will give you an idea on how to fix this problem.

-If you are still getting black lines, you can resort to the second solution. Select the models in the "models" folder, and in the "import settings" in the inspector, under "advanced" set "Hard Angle" to 10. This will affect the smoothing groups a bit but will get rid of the black lines, only do this as a last resort.

-Hopefully in the future, Unity will fix the "Baked padding" bug and the black lines will disappear forever.

## H- Vertical Fog Shader:

**1-intro:**
This is a very simple and powerful shader, that has a very low impact on performance and runs great even on low end mobile devices.

You can mimic a variety of different effects and materials with it like height fog, mist, sub surface scattering, murky waters, glowing light, overheated material, gel, plastic, wax…

**2-propreties:**
color: choose the color and always **set the alpha to 255.**
Height fog Start: where the vertical fog starts in world units.
Height fog End: where the vertical fog ends in world units.

Note that you can have the fog start from the bottom or the top, this depends on the numbers you enter in the "Height fog Start" and "Height fog End" whether they are positive or negative.

## I- Special Notes:
1-Male Character silhouette seen in screenshots is not included in the package.

2-"Simple Pixelizer" camera shader used to make the pixelated looking effect in the screenshots is not included in the package but could be feely downloaded here:
https://www.assetstore.unity3d.com/en/#!/content/3579

3-"One or more textures on this 3D-model have been created with images from cgTextures. These images may not be redistributed by default. Please visit cgTextures for more information."

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