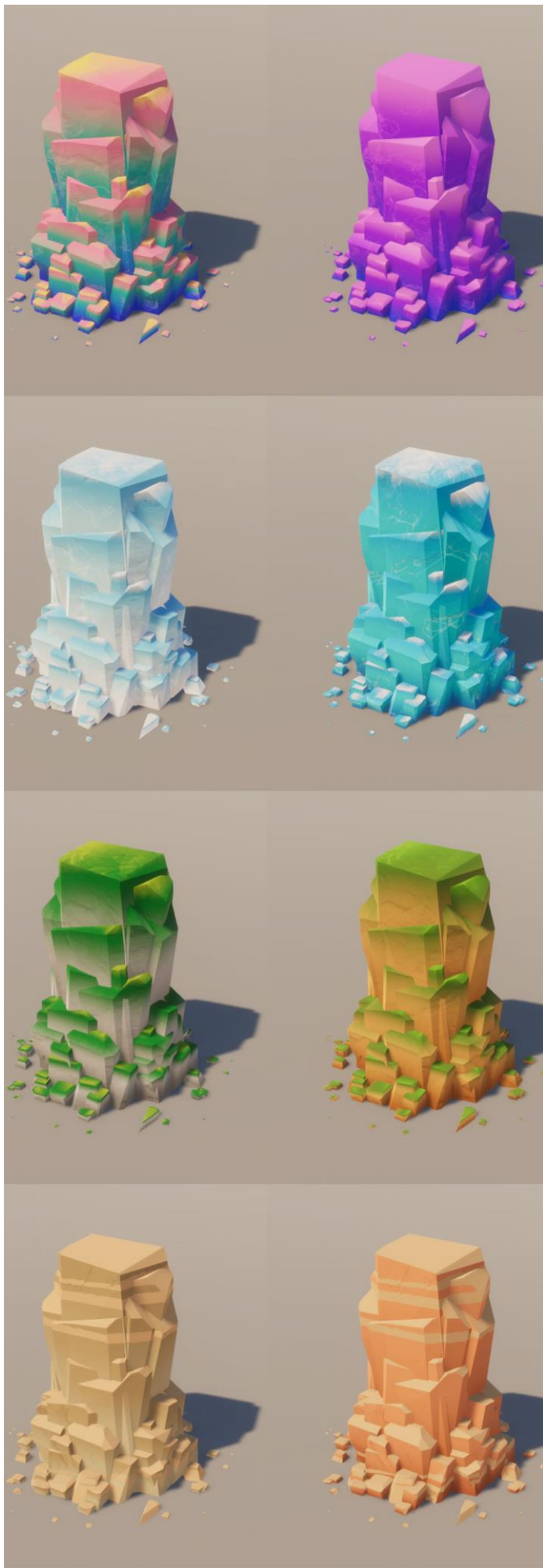


A stylized 3D rendering of a desert landscape with various rock formations. The rocks are composed of flat, polygonal surfaces in shades of orange and tan, creating a low-poly aesthetic. Long shadows are cast across the sandy ground, suggesting a low sun position. The scene includes tall, layered rock walls on the left, a central spire-like rock, and numerous smaller rock blocks and boulders scattered throughout the terrain.

# **STYLIZED ROCK GENERATOR**

Documentation (1.0.0)



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# INTRODUCTION

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Thank you for purchasing the **Stylized Rock Generator** asset. This document shows you how the tool works and helps you make the best. There is a FAQ section at the end of this document. However, if you have any questions, don't hesitate to contact us at [info@dotproducts.com](mailto:info@dotproducts.com). You can also always find us at [www.dot-products.com](http://www.dot-products.com).

## What is the Stylized Rock Generator?

As you may already know, this is an editor tool for creating stylized rocks inside unity with a few simple steps. With this tool, you can change parameters and see a real-time preview of your changes. And above that, you can select from our custom-made materials or use your materials to accomplish your desired look and feel.

## Package contents

Each project has its requirements regarding art style. The main goal of this asset is to allow users to create their customized rocks. But like many other assets, we provided several demo scenes that you can take a look at. They are all nested under a folder called **demo**.

You can delete the demo folder if you want. The only thing that shouldn't be removed is a file called **rock-binary**. This file should always be a child of a folder named **resources**.

The package includes various shaders and materials designed to be used in the Universal render pipeline (URP) and the High definition pipeline (HDRP). The Standard (built-in) render pipeline is not supported yet. So if you are interested in using our custom shaders and materials, please make sure to import the required render pipeline packages from the package manager.

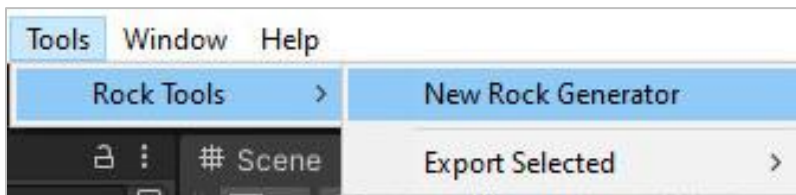
After importing the stylized rock generator package, you should be able to see demo scenes that have been set up for URP. If you are using HDRP, you should open a file inside the package named HRP.

# HOW TO USE

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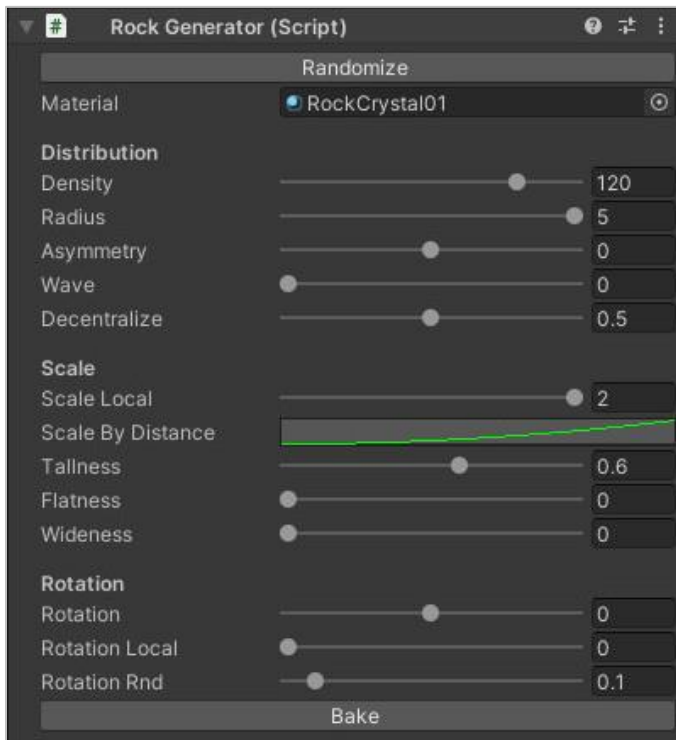
## Getting started

You need to add a Rock Generator to the scene to start generating rocks. So go ahead and add a new one from the tools menu: Tools > Rock Tools > New Rock Generator.



## Rock generator parameters

You can customize your rock by changing parameters on Rock Generator's component.



While you are customizing your rock and changing parameters, each part of the rock is a game object on its own, so you can rotate/scale it as you please.

### Baking

When satisfied with your rock, press the Bake button to optimize and merge rock parts into a single mesh. You have to save the scene before you can bake the rock.

The baking process shouldn't take longer than a few seconds. It does some operations as follows:

- Merge all rock parts into a single mesh.
- Generate a UV map for the generated rock. That can be used in Light Baking.
- Remove unseen triangles and extra vertices.
- Save the generated rock mesh in a folder next to your scene file.

After baking, you can delete the rocks generator from the scene if you have done with it.

### Baking Optimization

From the mesh point of view, the generated rocks are currently as optimized as possible. The number of triangles and vertices is minimum, and there are no extra faces or vertices left behind after the baking process.

We split the rock horizontally on baking, held the upper part, and deleted the rest.

### Notes on deleting a baked rock

Please note that if you delete a baked rock from the scene, the related mesh remains in the Meshes folder, where the scene is saved. If you do this process several times, there will be several redundant, unused meshes in your project. So the best solution is that you first delete the connected mesh and then delete the game object. (Be sure that the mesh file isn't in use in another scene).

### Export the Rock Mesh

After baking the rock, you can export the mesh for further enhancements (OBJ format). You can find it on Tools > Rock Tools > Export Selected.

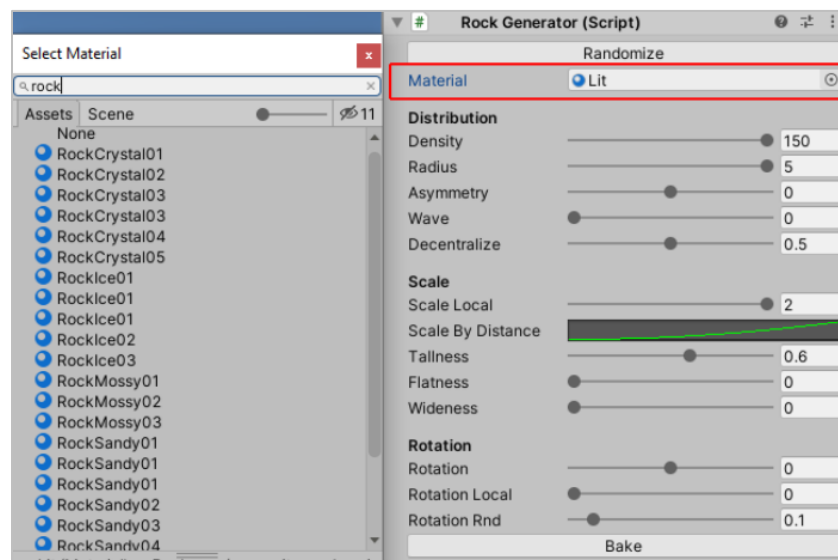
But be aware that by exporting the mesh, we lose some data we stored into vertex color (the data used in rock shader). So, rock shaders would not work correctly on meshes after reimporting them into unity.

# SHADERS & MATERIALS

The package includes seven Base shaders and 19 rock variation materials (mossy rock, sandy rock, snowy rock, Crystal, etc.). You can also change shaders in Shader Graph.

Rock shaders use tri-planar projection instead of UV maps. So you can assign one material to all rocks in the scene, which helps reduce draw calls.

After adding the rock generator to the scene, you can assign a rock material from the Material field.



## Some tips on rock materials

- Before using materials, we recommend using a copy of the primary material. Leave the main material parameters unchanged for future use.
- The shaders are UV-independent. We use the World Space Coordinate system to handle textures.
- We use pre-stored data from rock meshes vertex color in rock shaders. So, rock shaders only work on rock generators.
- All shaders were made in the Shader Graph. So you can make changes in every one of them. But make sure you have a copy before changing.
- All shaders use two types of texture: An ambient occlusion map and a normal map.
- Materials only work in the URP and HDRP render pipeline.



## FAQ

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### **It looks like it primarily does cubed rocks. Is it have to do other shapes?**

It was a little challenging to make rocks pretty and optimized simultaneously. So we decided to focus on the cubed rock type for now. We plan to add different forms of rock in future versions.

### **Can it also make highly detailed rocks?**

The primary purpose was to generate rocks as simple and low detailed as possible.

### **Are you able to export the generated rock as a single mesh?**

Yes, you can export rock mesh after the mesh Baking process. Currently supports OBJ as export format.

### **Does the Bake option combine it into only one mesh?**

Yes, the bake option combines everything into a single mesh, generates a UV map, and does optimization.

### **Are your materials built using the shader graph?**

Yes. All shaders are developed using the Shader Graph, and the source is also included in the package.

### **Do the rock meshes have a UV map or do they use a tri-planar shader?**

Our rock shaders use a tri-planar coordinate to handle patterns. However, we generate a UV map for the rock to use in light baking.

### **Are the rocks compatible with custom shaders/materials?**

You can use your custom shader. But we recommend using our tri-planar shaders and changing them in the Shader Graph to desire your look.

### **Is that a custom height-based shader?**

Yes, the shader is custom.

We store data in vertex color that is used later in our shaders to find peaks of the rocks.

### **How does it handle mesh generation? Can I use it in production, or will it hurt performance?**

Performance is a critical topic for us. The final rock is the most optimized possible. As this is a stylized rock generator, we used simple low poly meshes as rock parts, and it has no cost in runtime.

### **Is it an entire mesh generated at runtime or an extensive collection of prefabs that are just transformed?**

We have an algorithm that could create prefabs of different shapes of rock meshes. After that, it's just placement and transforming.

### **Is it possible / will it ever be possible to modify the rock's settings (Density, Radius, etc.) through code, or is it pre-runtime only?**

It will be possible with just a slight change. We didn't think of many potential uses for this, but it's not difficult to implement.

### **After generating a complicated rock, your algorithm cuts intersect meshes?**

At first, we did that. But as we developed this tool, we came across this as a big challenge because cutting intersections add so many vertices to the mesh. The only benefit was a cleaner or more optimized UV map. And as our shaders didn't use UV, we decided not to cut the intersections. We were only removing completely hidden faces.

### **Can we edit the rock in runtime?**

Yes, everything could be edited in runtime. We have a process for optimizing the final rock that may take a few seconds, but the un-optimized rock is not so bad itself. We do not have a specific API for editing the rock in runtime, but the codes are clear, and with a bit of programming knowledge, you can perform all operations in runtime.

### **Can you animate the parameters?**

It's not possible right now, but it could be with some changes.



## CONTACT US

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Thank you for using our asset. If you need any help using the asset or have any comments, we always love to hear from you. Feel free to send us a message, and we will get back to you ASAP.

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**Website**    [www.dot-products.com](http://www.dot-products.com)