

## Table of Contents

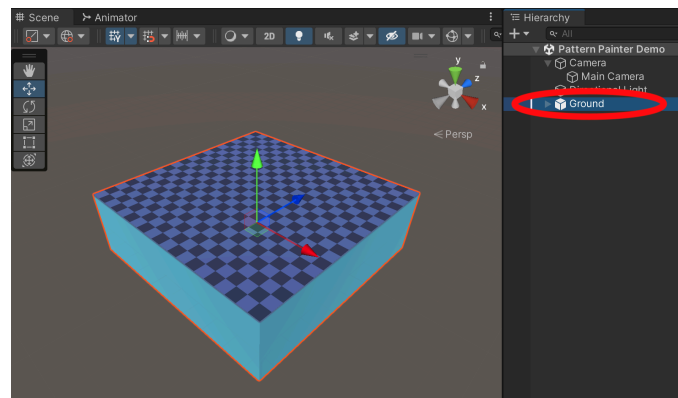
<a href="#">Table of Contents</a>	1
<a href="#">Introduction</a>	2
<a href="#">Key Features</a>	4
<a href="#">Getting Started</a>	6
<a href="#">Step 1: Placement Mode</a>	6
<a href="#">Step 2: Prefab Settings</a>	8
<a href="#">Step 3: Alignment Settings (Optional)</a>	9
<a href="#">Notes and Known Limitations</a>	11
<a href="#">Language Selection</a>	13
<a href="#">Support</a>	13

# Introduction

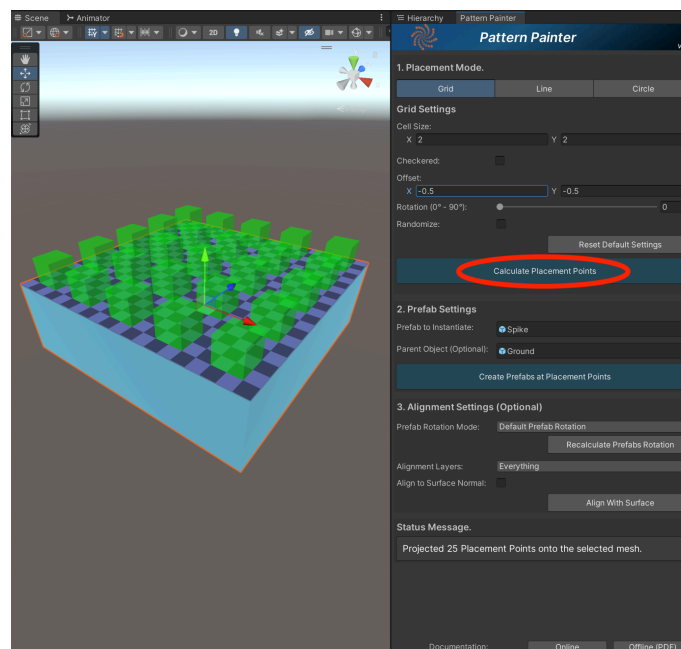
Pattern Painter is a Unity Editor tool to help you speed up your level design, prototyping and game development workflows.

It empowers you to efficiently place Game Objects in your scene in various geometric patterns:

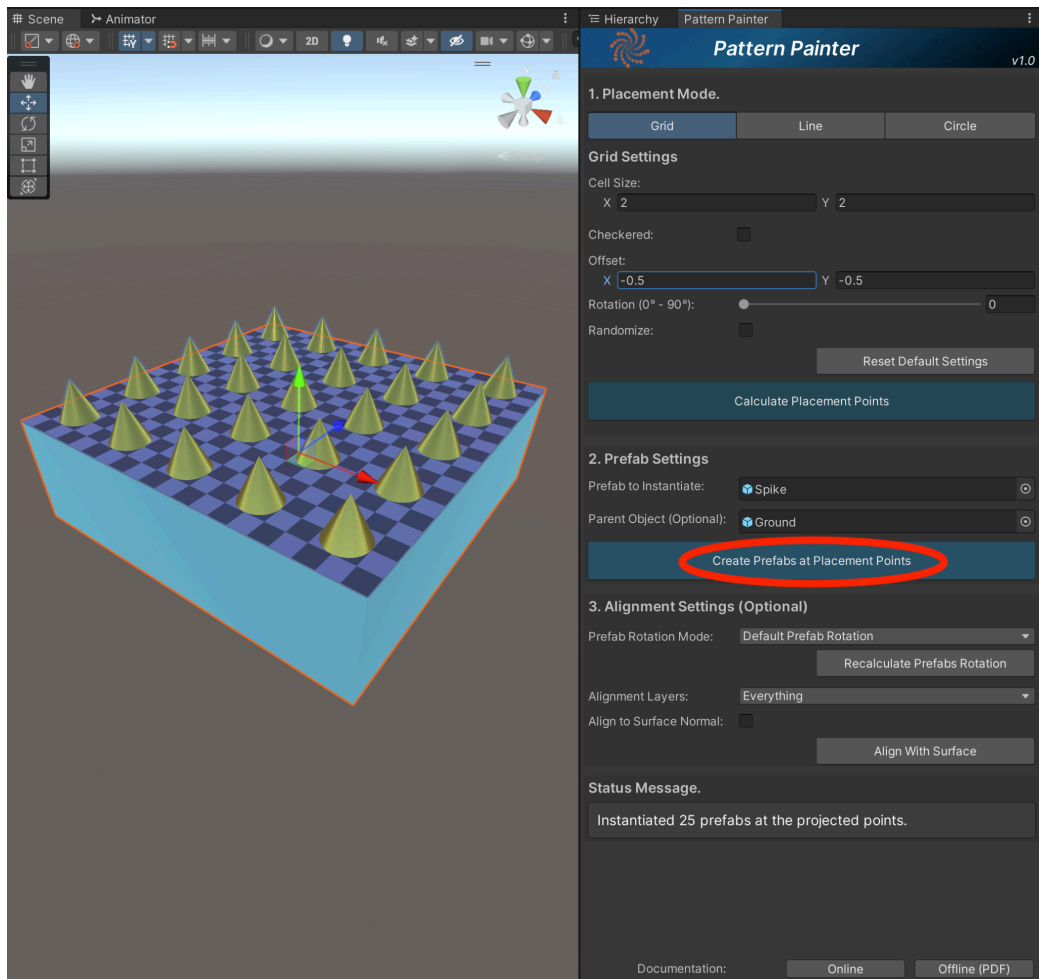
1. Select a Game Object from your Scene View / Hierarchy to serve as a base surface on which to project the geometric pattern.



2. Project a pattern of “Placement Points” onto the selected Game Object and tweak the pattern to your specific needs.



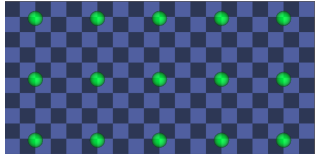
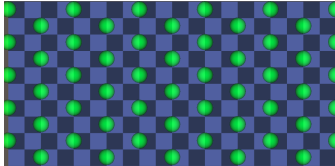
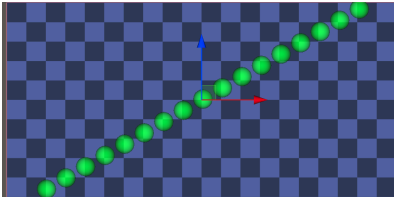
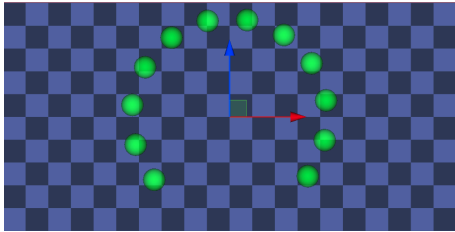
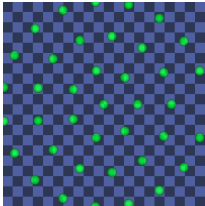
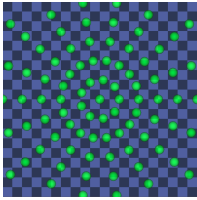
3. Create a copy of a specified Prefab at each Placement Point, or optionally align them to other surfaces based on the selected Layers.



# Key Features

Pattern Painter was made with usability and efficiency in mind to help you truly speed up your game development.

- Project various geometric patterns, such as:

<p>A rectangular grid.</p> 	<p>A checkered rectangular grid.</p> 
<p>A straight line.</p> 	<p>A circular line.</p> 
<p>Concentric circles.</p> 	<p>Radial spokes outward from the center.</p> 

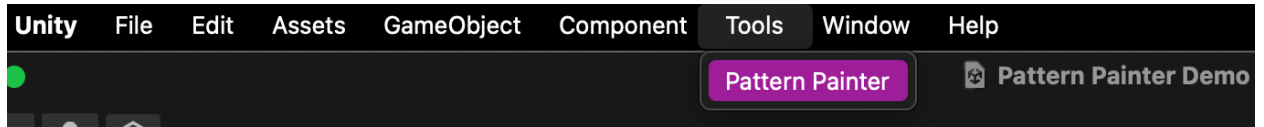
- Customize the patterns to fit your needs:
  - Center offset.
  - Pattern rotation.
  - Randomized points.
  - Cell size.
  - Checkered.
  - In-line spacing.
  - Circle circumference.
  - Concentric circle intervals.
  - Inner hole radius.
- See a live preview of where the prefabs will be instantiated, even with a rough size estimate to avoid overcrowding your base surface.
- Nest all created Prefabs under a “parent” Game Object of your choice to keep your Scene organized.
- Recalculate the rotation of the created Prefabs:
  - Towards the center of the pattern.
  - Away from the center of the pattern.
  - Random.
- Project the created Prefabs onto terrains or other surfaces on a Layer Mask.
  - Set up the pattern you want on a temporary flat surface, then project it onto an uneven terrain.
- Optionally align the “up” vector of the created Prefabs with the surface normal.
- You can “Undo” the Prefab creation and the Prefab alignment onto other surfaces if needed.
- Helpful status messages and tips in an integrated “Status Messages” text area.
- Ability to cancel long-running processes at any time
- Online and Offline (PDF) documentation.
- UI translated to multiple languages.
- Works with any rendering pipeline: Built-in, Universal and HD.

# Getting Started

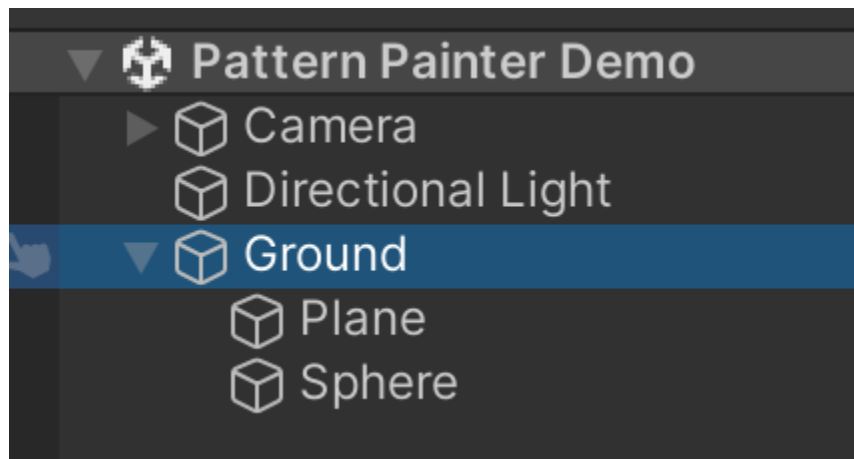
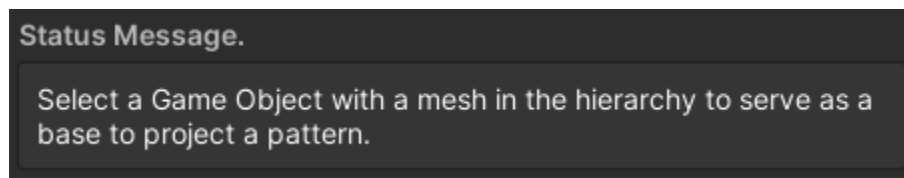
To create your first pattern:

## Step 1: Placement Mode

- a) Open the Pattern Painter user interface by clicking “Tools > Pattern Painter”.



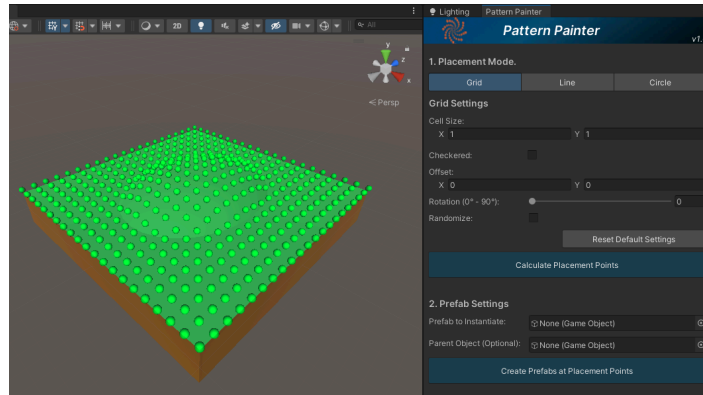
- b) Select a single Game Object in the scene to serve as a “base surface” onto which the pattern will generate Placement Points. The selected Game Object or at least one of its children must have a Mesh.



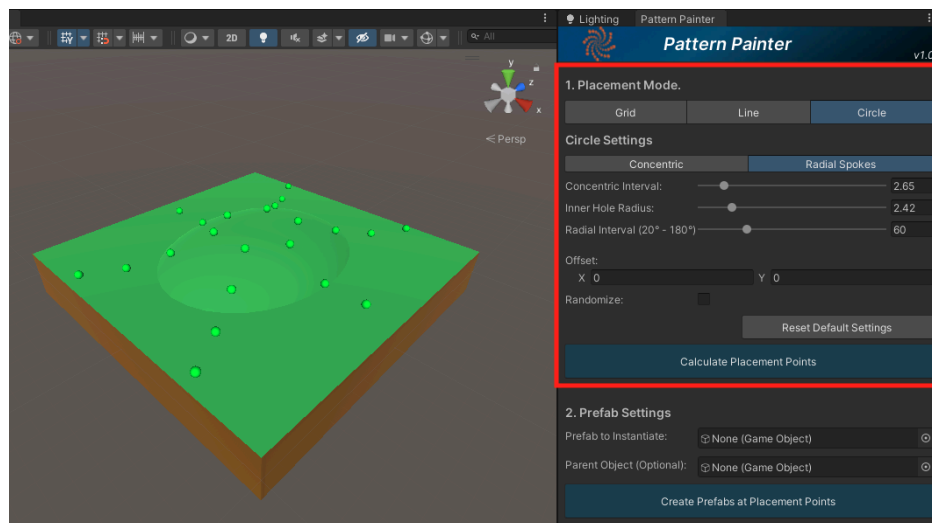
- i) This should show a pattern of green spheres in your Scene view projected on top of your selected Game Object. This is a “live preview” of the Placement Points where your selected Prefab will be created in the next step (Step 2).
- ii) The selected Game Object must have at least one Mesh on itself, or its children; it may or may not have a Collider, but the Placement

Points are calculated off of the Meshes found under the selected Game Object.

- iii) You can combine different Game Objects with Meshes under a single parent and select the parent Game Object as the “base surface”.
- iv) If you do not see the pattern of green spheres:
  - Move the camera closer to the selected Game Object.
  - Tweak the selected pattern’s settings to reduce the number of projected Placement Points.

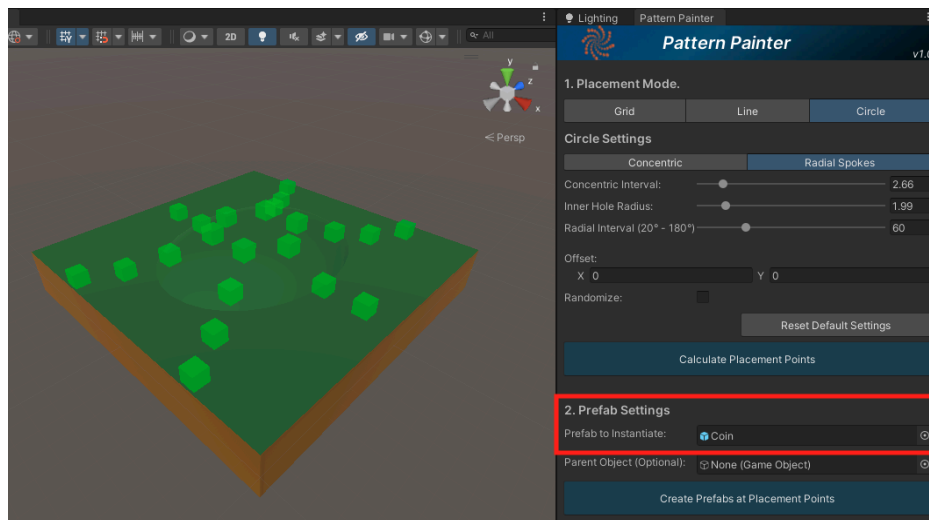


c) Select the pattern you wish to create and click “Calculate Placement Points”.



## Step 2: Prefab Settings

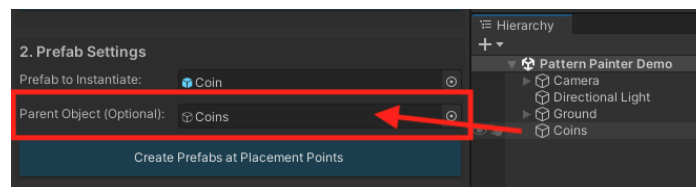
- a) Set a Prefab or a Game Object from the scene Hierarchy in the “Prefab to Instantiate” field. This is the prefab that will be generated at each projected Placement Point.
  - i) The green spheres that represent the pattern points will be updated to a box the size of the selected Prefab’s bounding box so you can adjust the pattern size specifically for the selected prefab.



### Status Message.

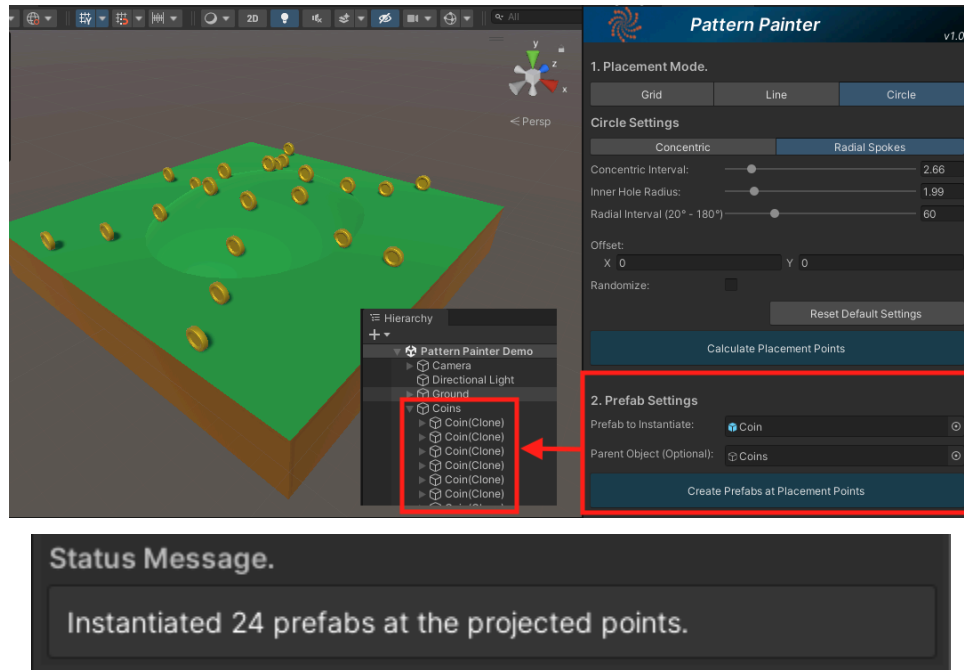
Projected 24 Placement Points onto the selected mesh.

- b) You can optionally set a Game Object from your Scene Hierarchy as the “Parent Object”. This will nest all new instances of the Prefab under that parent object to keep your scene organized. Make sure you select the parent from the Scene Hierarchy itself, not from a project Prefab.





c) Click “Create Prefabs at Placement Points”.



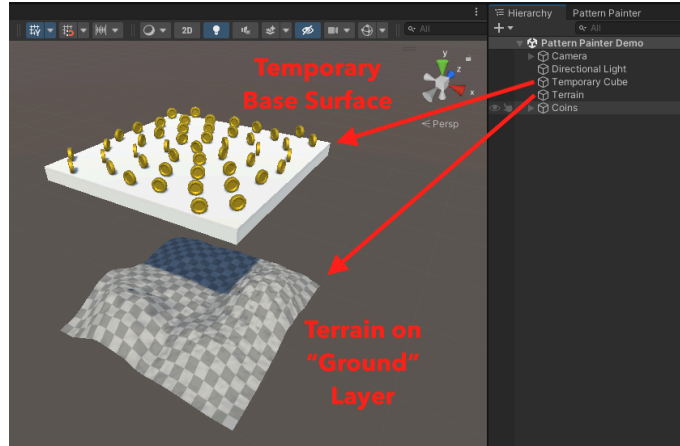
### Step 3: Alignment Settings (Optional)

a) You can change the initial rotation of the generated Game Objects by selecting an option from the “Prefab Rotation Mode” dropdown menu and clicking the “Recalculate Prefab Rotation” button.

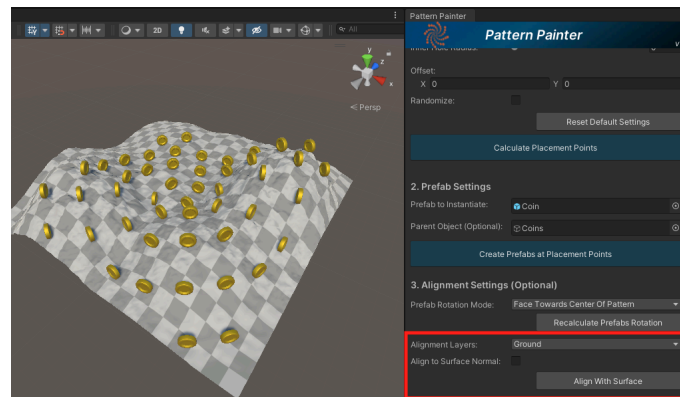


b) To align the created Game Objects onto a terrain - or any surface other than the “base surface” you selected:

- i) First, create a temporary cube to serve as a surface to project your pattern.



- ii) Then select the Alignment Layer of the terrain and click “Align With Surface”:



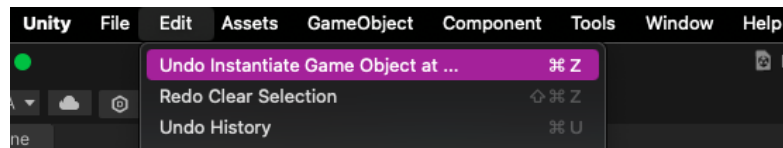
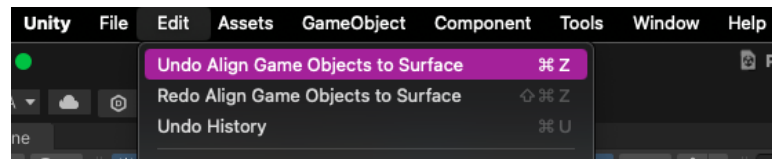
- iii) To align the created Game Objects to a surface in a targeted Layer, the following requirements must be met:
- 1) The Layer of the target surface must be selected Alignment Layers.
  - 2) Your target surface must have a Collider (in the case of aligning to a terrain or other target surface, a Collider IS required)
  - 3) Your surface must be placed below (at a lower Y position in the world-space) the “base surface” where the Game Objects are created.

# Notes and Known Limitations

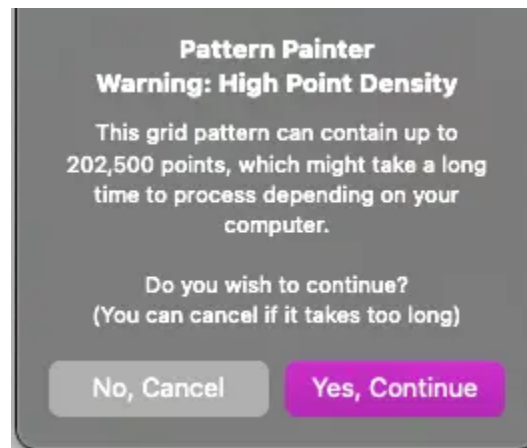
Pattern Painter can greatly improve the speed of your level design in multiple use cases; but there is always room for improvement.

Here are some examples of developer notes and known limitations in the current version:

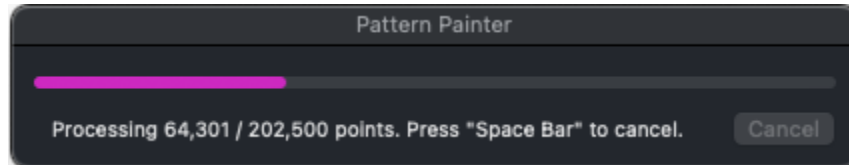
- Pattern Painter is currently meant to work for 3D workflows only. It has not been tested with 2D yet and since it projects pattern points downward along the Y-axis, it might not work at all for 2D yet.  
If there is a demand for it, I will work on adding that functionality to also help fellow game creators working on 2D games.
- You can undo and redo the creation of prefab Game Objects in your scene, as well as the projection onto another surface.



- If you try to create a pattern that is “too dense” because it has too many points closer together or it covers a very large base surface, Pattern Painter will show you a warning that it might take a long time to process.



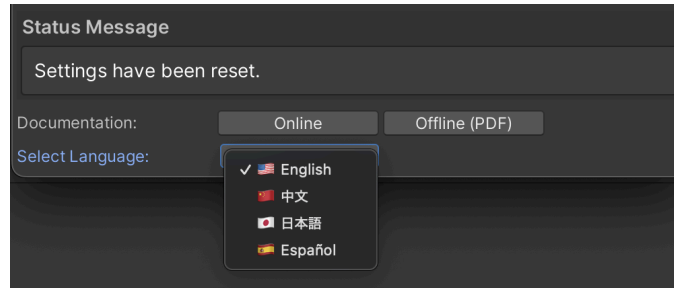
- If you decide to continue and create the pattern anyway, but you find it is taking too long, you can cancel the operation at any point by pressing “space bar”.



- While Pattern Painter can technically work with very large base surfaces, it is not recommended at all to do this in an actual project. There is a lot of overhead that will go hand-in-hand with keeping track of that many pattern Placement Points or instantiating that many Game Objects. This is not a recommended tool for placing flora in a large terrain - for example. For that kind of use-cases please explore terrain tools, object pooling, etc.
- By the same token, if you use Pattern Painter to create new Prefabs out of projecting patterns onto other Game Objects (like spikes onto a cylinder, for example), remember to combine or bake the meshes to improve performance, rather than having the engine keep track of multiple transformers in published project.
- In this current version, the Game Object you select as a base surface is required to have a height. This means that Pattern Painter might have trouble projecting points onto a single Plane, but if it is a child of another game object that has a mesh with some “height”, it should work okay.
- In this current version, Pattern Painter will only recognize one selected Game Object as the “base surface”.

# Language Selection.

To change the interface language, select the desired language from dropdown at the bottom of the UI window:



# Support

For more information, customer support or to request a feature, please feel free to contact us using our contact through our website: [🌐 PatternPainter.com](https://www.patternpainter.com)