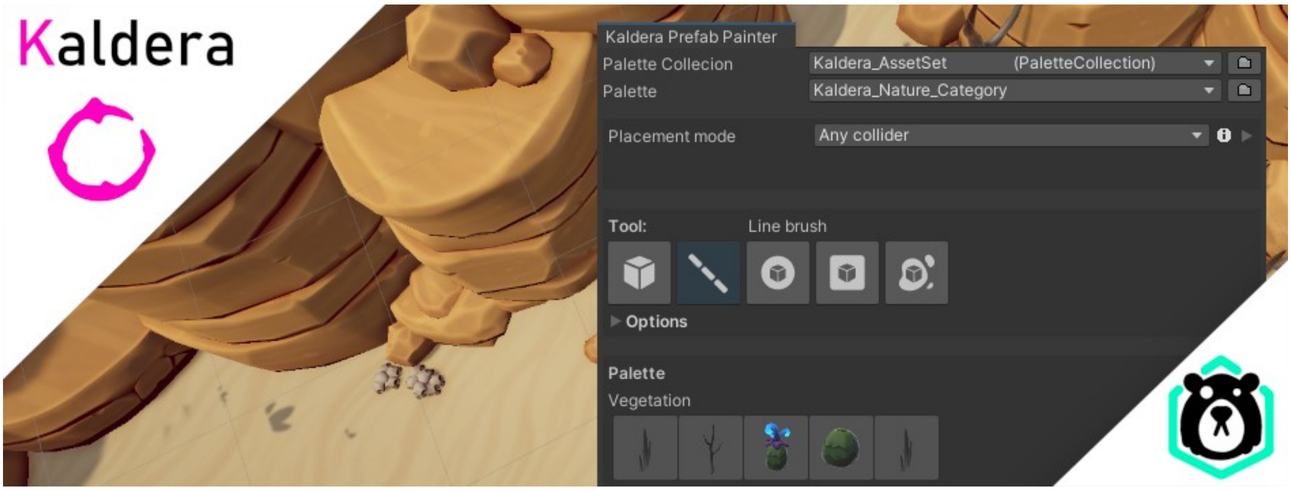


Kaldera Prefab Painter

Palette Collecion: Kaldera_AssetSet (PaletteCollection)

Palette: Kaldera_Nature_Category

Placement mode: Any collider

Tool: Line brush

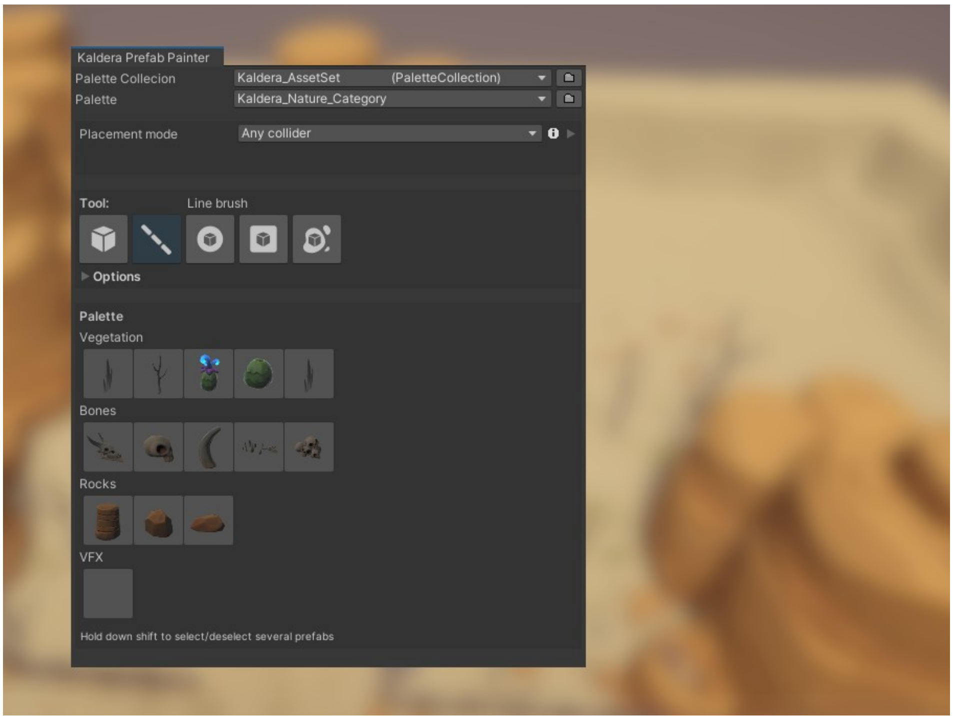
Kaldera Prefab Painter

Paint out Unity scenes with Prefabs to your heart's content with ease.

Kaldera Prefab Painter is productivity and level design tool with then purpose of, with ease, enable Artists and Level designers to paint prefabs of your liking into the scene the way you want them to. We initially built this Prefab Painter as a tool for our own projects, to help with level design and for filling out scenes with assets without the tedious job of having to search through folder upon folder to find the exact prefab needed at the moment. The painter instead give you all available Prefabs in a Palette window, where you can see and select the one you want for the moment. You can in theory display hundreds of Prefabs in a single Palette window and maintain a sense of organization.

When importing new prefabs to your projects, you can easily add them to a Palette, making them available in the Palette window.

The prefab painter is a great tool whether you need to place a few Prefabs with high precision, fill out large areas with random trees or rocks, or anything in between.



Kaldera Prefab Painter

Palette Collecion: Kaldera_AssetSet (PaletteCollection)

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Tool: Line brush

Hold down shift to select/deselect several prefabs

The Palette window in display with prefabs split into four groups

Main feature set

Palette window with Preview for assets

View and select prefabs from a Palette with previews.

Brush stroke visualization.

See the brush stroke before you place them.

On the fly scaling and rotating.

Easily Rotate and Scale brush strokes while painting.

Can place any Prefab.

Works with any prefabs you have in your project. Meshes, VFX, empty objects, or even gameplay assets like moving platforms, enemy units etc.

Shift multi select.

Select multiple prefabs on the fly, and paint them together in single brush stroke.

Five different brushes shipped with the editor.

Kaldera has a solid set of brushes out of the box. Includes the most obvious ones, such as a single paint brush tool, a spray tool and a line tool.

Customizable Palettes

Customize prefab details on an individual level, letting you tweak random rotations, offset, scale and much more.

[Image of the Palette editor]

Minimal initial setup.

After downloading the Prefab painter, you can setup your first palette within minutes and is then ready to start painting.

Full source included in the package.

At Collision Bear we believe that you know your own needs best. For that, we include the full source code, open for editing and/or expanding, to suite your current and future needs.

Additional features

Automatic spacing

We use an estimate of how big a prefab is, based on the size of its **Renderer component.**. Though not perfect for complex prefabs, the rough estimate is good enough for most use cases.

Automatic height detection.

You can paint on any surface as your prefabs correctly place themselves on top of any collider, such as terrain, mesh collider, or even recently placed prefabs.

Orient with brush.

Paint lines of prefabs facing in the direction of the brush. Perfect for fences and walls.

Surface alignment

Aligns the object along the surface normal that it's placed upon.

Hotkey support.

We support hotkeys for most of the commonly used tool and features.

Scaling and rotation randomness.

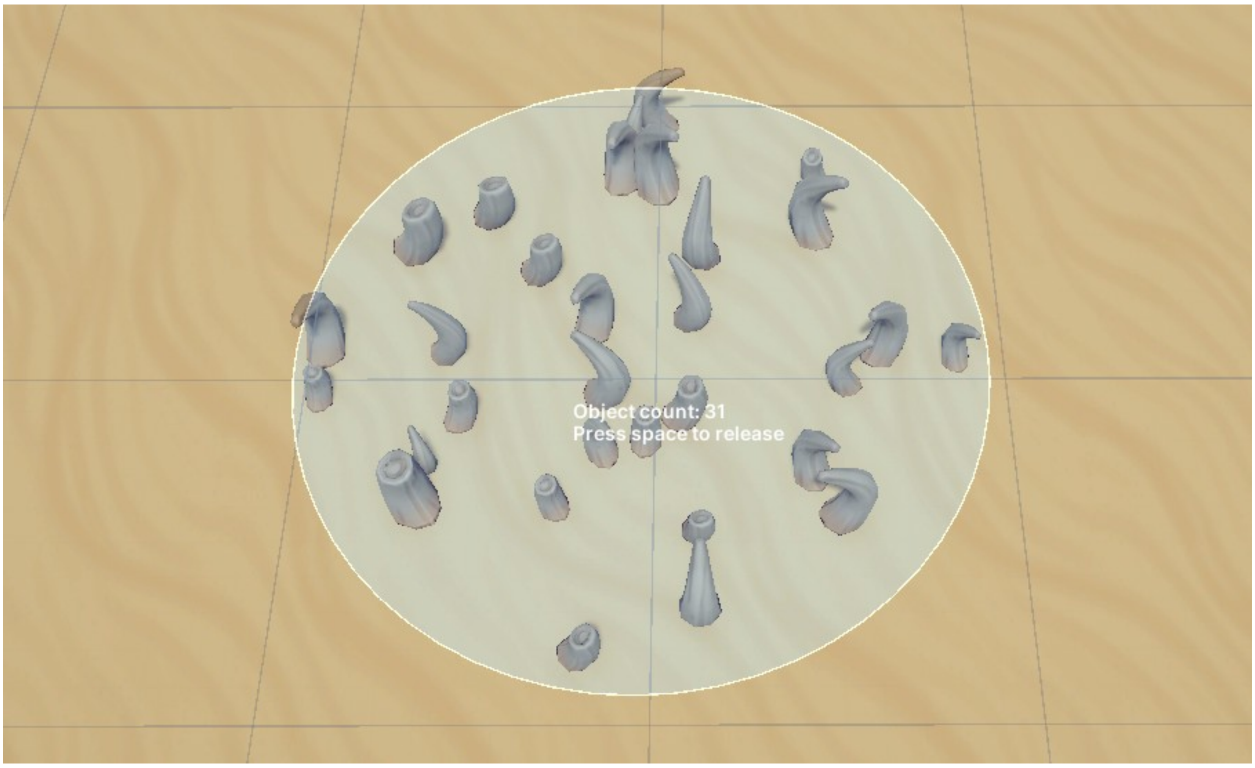
In the palette configuration, you can set predefined random rotation and scale for your prefabs, allowing automatic asset variation when placed in the scene.

Distribution randomness.(Spatial randomness)

Choose between uniform spatial distribution, or a managed randomness for a more organic and natural feel.

Prefab variant randomization.(Prefab randomness)

While painting, Kaldera can randomly pick prefabs within your **Prefab variation set** to quickly create variation instead of switching back and forth between different prefabs of a similar type.



A Circle brush full of Bones, with four degrees of randomness. Spatial, rotation, scaling and variants

Supports Unity's Undo/Redo flow.

Naturally, the editor fully supports Unity's Undo/Redo flow. This goes for both when painting with the brushes and editing the Palettes.

***Tools agnostic* prefabs.**

Once an object is placed, there is no lingering data from the Prefab painter. No custom scripts are added to your Prefabs. A prefab placed with Kaldera is literally identical as one dragged into the scene from the project view.

Open to community feedback.

We're always ready to hear feedback and feature requests from you, the user. In fact, many of our current features started as suggestions from our user base.

Details

Kaldera Prefab Painter is an Editor Extension made primarily for Level Design and scene creation.

In technical terms, it's a Unity Editor Window used to select and then instanciate Prefabs of your choice in the scenes. The editor allows you to create **Palette** and **Palette Collection** assets from the Asset -> Create menu and save them in your project. As they are Assets, they can (and should) be added to source control, such as **GIT** or **SVN**.

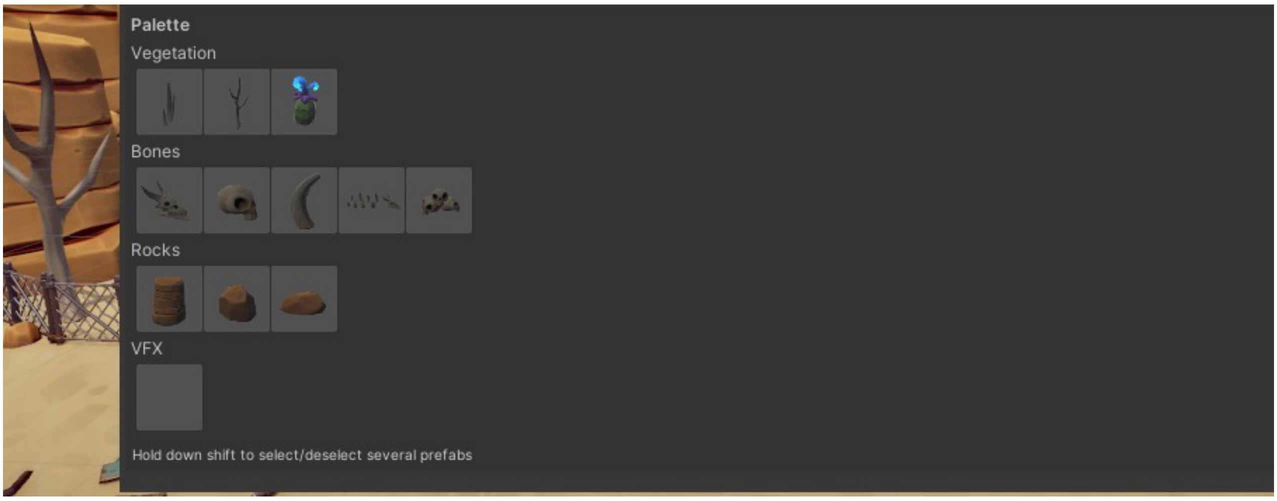
Note

Internally the Prefab Painter uses PrefabUtility.InstantiatePrefab(UnityEngine.Object assetComponentOrGameObject) to instanciate prefabs. This is a built-in Unity utility method and does the exact thing as if you were to drag Prefabs into your scene from the project view.

As a result, Unity is *Agnostic* to the editor. It does not know the Prefabs have been placed using a custom Editor extension. You can remove the Editor without causing any damage to scenes painted with it.

Palette Window

This Editor Window is the central part of the Prefab Painter. From the Palette Window, the prefabs in your Palette can be viewed as a collection of tiny prefab buttons, each with a preview image of the prefab, available for selection. The preview is there to let you see your current selection, and what prefabs you have available. By holding down **Shift**, multiple prefabs can be selected and painted together.



Hold down shift to select/deselect several prefabs

Prefabs split into named groups on display

General controls

Note

The controls depends on the current brush. The instructions here are general but won't apply to all brushes equally. We tried to make every brush as intuitive within its use case.

Left click

Paint with the current brush.

Left drag

Rotates the Brush in place towards the position of the mouse pointer.

Shift + Left Drag

Rotates the Brush in place towards to position of the mouse pointer, but snaps to even 22.5 degrees in rotation.

Scroll Wheel

Scales the every prefab in the brush up or down, depending on scroll wheel direction.

Shift + Scroll wheel (Paint brush)

Cycles among variants of the selected Prefab.

Shift + Scroll wheel (Area brushes)

Randomizes a new brush stroke.

Space

Instantly **clears** (deselects selected prefabs) the current Brush and gives back control to Unity. Use this when you want to stop painting for a moment.

Brushes

Included with the Prefab painters comes five different brushes for you to use directly from the Palette window.

Paint brush (Shift + Q)

Instantly paints a single prefab at the time at the position of the brush.

Line brush (Shift + W)

Paints a straight line of prefabs while dragging.

Square brush (Shift + E)

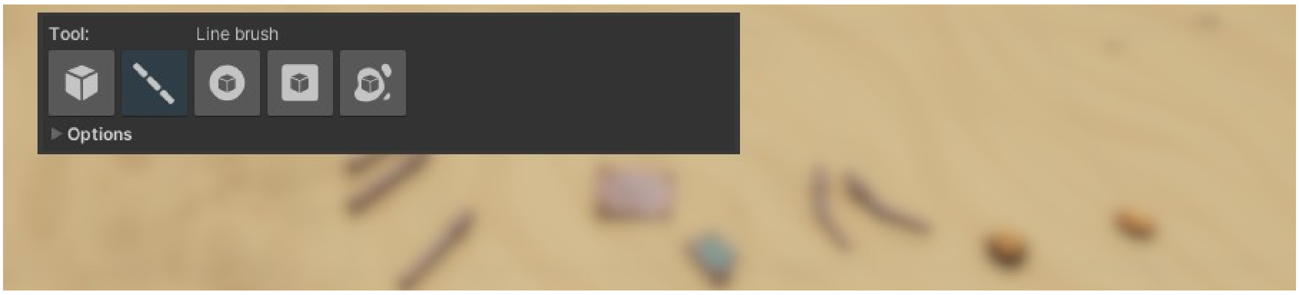
Instantly paints as many prefabs as fits within the boundaries of the square.

Circle brush (Shift + R)

Instantly paints as many prefabs as fits within the boundaries of the circle.

Spray brush (Shift + T)

Continuously scatters out prefabs within the bounds of brush as long as you keep dragging the stroke.



All currently available tools lined up

Note

You can implement your own custom brushes by inheriting from CollisionBear.WorldEditor.Brushes.BrushBase

Advanced options

Most brushes has their own sets of options. Some are shared between a few different brushes. We'll explain the most common ones.

Area brushes comes with a distribution option determining how they are spread of over the area.

Even Random (Area brushes only)

The distribution of Prefabs within the brush is evenly spread out, but with some randomness to it for a more "natural" look.

Perlin Random(Area brushes only)

Randomized with the help of a perlin noise map. Items spread out randomly but also has tendency to cluster up in places.

Grid distribution

The distribution of Prefabs within the brush is spread out in an exact grid

Brush size (Area brushes only)

Determines how big area the brush covers.

Prefab Density

Determines how close prefabs are placed next to each other in the brush. Higher values generally means more prefabs in the brush.

Orient to normal

If you have uneven ground, the Prefabs are place perpendicular to whatever angle the ground has, as opposed to just pointing up.

Object Limit

Limits the count of Prefabs generated in a brush stroke. This can be lowered to improve performance if that's an issue. We've set a hard limit on 100 objects.

Palettes

Palettes (not to be confused with the Palette window) are a selection of available Prefabs you want to make available for painting. The Palettes themselves are Assets that lives in your Project.

You can create as many palettes as you like, and fill up a Palette with as many Prefabs as you like. We suggest having some sort of logical grouping of when assigning assets to a Palette, like Prefabs belonging to the same Biome or level type.

Within a Palette, Prefabs are grouped into, well, groups. The Palette window renders the groups on their own rows and is a great way to visually separate your Prefabs, making them easier to find.

Note

Palettes are based on ScriptableObjects. They're serialized as Yaml, which is text format, per default. This makes these assets easy to have in Source control software such as GIT or SVN.

Prefab configuration

To help you with your workflow, the Prefabs in Palette are customizable to a high degree on an individual level. Not all options are needed for all use cases and the default values are usually good enough for an estimated half of all assets.

Rotation

Specifies the limit for random rotation for each the **X**, **Y** and **Z** axis.

Scale

Specifies the limit for random scaling for each the **X**, **Y** and **Z** axis. If **Uniform scaling** is checked, all axis will be scaled equally. Otherwise, they're randomized individually.

Spacing factor

Object spacing (the distance between objects when painted) is based on the size of Prefab's Rendered components. Spacing factor gives the option to tweak the distance up or down.

Multiply Prefab scale

If checked, takes the scale of the Transform component of Prefab into consideration as the base for its scaling. Otherwise, default to a value of 1.0.

Use Prefab rotation

If checked, defaults any rotation to that of the Transform component's Rotation value. Otherwise, defaults to (0, 0, 0).

Use Prefab height

If checked, the position of the Prefab placement is offset in height by the Prefab's Transform component's **Position.y** value. For example, if a Prefab has a position of (0, -5, 0) it will be placed 5 units below ground level.

Extra rotation

Rotation that is applied to any placements before any other rotation is done.

Individual ground height

If checked, every Prefab in the brush does their own check against the ground to find what height they are to be placed at. Otherwise, the height is determined from the center of the brush.

Item naming

Determines how the instanced Prefab in the scene is named. Usually only relevant for Prefabs with a Variant.

Prefab Variation sets

Despite its name prefab in the Palette in is not limited to a single prefab object. You can configure prefab variant set and group together similar prefabs. When painting with a variants, the default behaviour is to select a prefab at random from the variant set. This is a great and easy way avoid the monotony of a scene.

Certain brushes allows for **Variant cycling** by using the **Shift + Scroll wheel**, giving you some control of what variant you end up painting anyway.

Example

Rocks and foliage are area where you often have large amount of similar looking meshes and you (usually) don't care which one's being painted.

These are great candidates for prefab variant sets. Group all similar sizes rocks together and paint them together.

Placement modes

In order to correctly place Prefabs at the right height in the scene, the Prefab painter uses a Raycast straight down into ground,at the position of the prefab. Raycasts can only detect Colliders, so naturally it can only find the height of objects with a Collider component.

Placement modes gives you a few options for what they Raycast is allowed to collide with when determining the ground height.

Any Collider

Any collider in the scene works. Prefabs, just recently painted, with colliders .

Parent collider

A single collider is selected from the scene. Great if you have a Terrain object or a single large plane.

Layer placement

A single layer is selected. Any collider on that layer is picked up by the raycast. Wer suggest you create a special Layer, like a **Ground** layer for easy use.

See also: Individual ground height option

Palette collection

If you have a large project with many assets, a single Palette might be overwhelmed with too many prefabs. Our solution to this is what we call a **Palette Collection**. This is exactly what it sounds like, a collection a Palettes. When using a Palette Collection, you can quickly switch between the palettes in the collection either by using their hotkey, or from the dropdown.

Note

All Palette hotkeys are prefixed with Shift.

Setting the Hotkey to **F** turns into **Shift + F**

Getting started

Getting a copy of the Prefab Painter

The first step is to add Kaldera Prefab Painter to your project. It is exclusively distributed through Unity Asset store.

When Imported into your project, Unity will place it in Assets/KalderaPrefabPainter. Just let Unity recompile with the new code assets, and you're good to go.

Setting up your first Palette

In order to use Kaldera prefab Painter, you need to set up a Palette with the assets you want to use. This is a quick and pain free procedure that only takes a few minutes. Palettes are Assets that live in the Project folder. You can create new ones from the Asset Menu or by right-clicking in the Project View window.

Create -> Kaldera Prefab Painter -> Prefab Palette

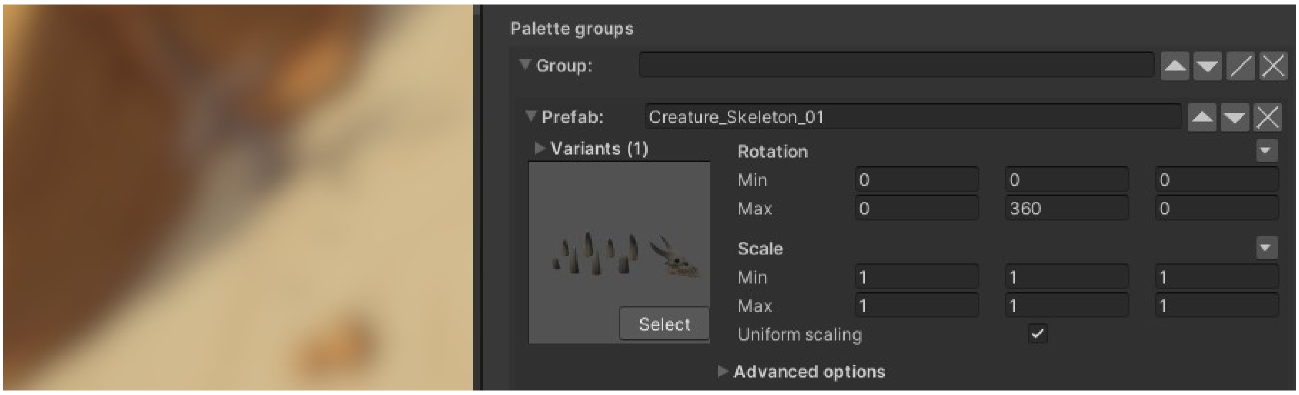
This will create a new Palette asset in your project and prompt you to name it.

Leave the Shortcut empty. This is only relevant when grouping many Palettes up together in a **Palette Collection.**

The Palette is split up into groups and starts out empty. Press the **Add new Palette group** to create your first group. The group name will be visible in the Prefab Palette window when painting so give it a descriptive name for what it will contain.

This newly created group is naturally also empty at first. We give you two options for adding Prefabs to it. **Add Prefab** lets you select an Object from your Project and add it to the Palette. **Add empty Prefab** creates an empty item you have to fill out yourself from scratch.

Use **Add prefab** (it's the easier option) and select a prefab of your liking.



Group:

Prefab: Creature_Skeleton_01

Rotation			
Min	0	0	0
Max	0	360	0

Scale			
Min	1	1	1
Max	1	1	1

Uniform scaling ✓

Above, you can see a single prefab, 'Creature_Skeleton_01', added to an unnamed group

Though minimal, this is all you need in this Palette for now. You are ready to start Painting this specific Prefab into your scene.

Create a Ground object

Kaldera Prefab Painter can only paint on colliders. This means you need to set up at least one collider in the scene to act as your *ground*. We suggest creating a simple Plane or a Terrain object with a Collider component attached.

If you keep **Any** collider as your Placement mode (this is the default), this is *ground object* is enough to start painting.

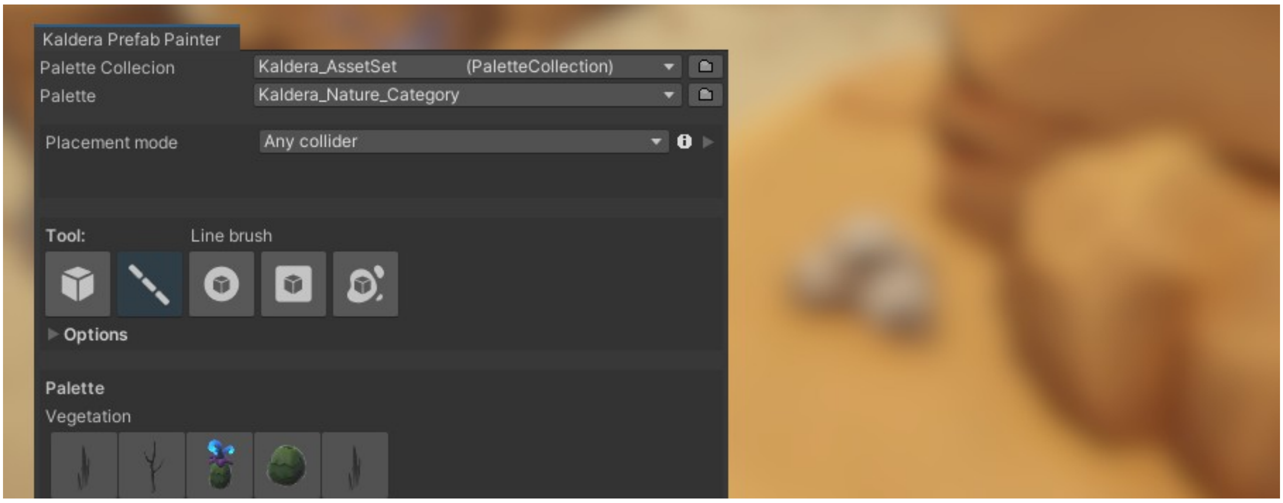
The Palette window

To open up the Palette window, go to Window -> Kaldera Prefab Painter. First comes the Palette selection section where you get to select a Palette from a drop-down menu. If your project only has a single Palette, it will be selected already. Otherwise, you have to select it the one you want to use manually.

Under the Palette selection lies the Placement modes section where you can pick what Placement Mode to use. It defaults to **Any collider** and you should leave it as such for now.

Next up is the Brush section. At far left you have the standard **Paint brush**. this places a single prefab at the time and will work fine for now. It should be selected per default. Otherwise, you can click on it to activity it.

Under the brushes comes the Palette section. Here the prefabs in your Palette is displayed as tiny buttons with an easy identifiable preview of the prefab you added to the Palette in the earlier step.



Kaldera Prefab Painter

Palette Collecion: Kaldera_AssetSet (PaletteCollection)

Palette: Kaldera_Nature_Category

Placement mode: Any collider

Tool: Line brush

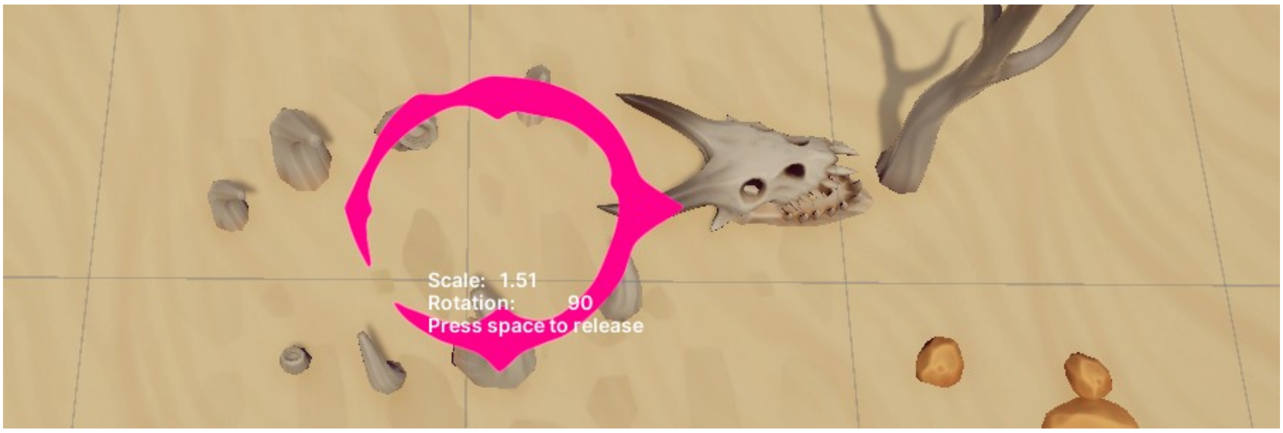
The 'Creature_Skeleton_01' from our Palette displayed in the Palette window

Painting

Once a brush and Prefab has been selected, you can start painting in the scene. When moving your mouse in the scene, a visualization of your brush stroke will be shown, giving you a preview of your next stroke.

Each brush works a bit different, so the following instructions assumes you use the brushes suggestion above (**Paint brush**). It paints a single Prefab at the time each time you press the left mouse button.

By left-clicking and dragging, you will rotate the prefab in place, towards the position of the mouse. To help you rotate with precision, it also brings up a tiny compass to use a reference.



Scale: 1.51
Rotation: 90
Press space to release

Here you can see the compass hint when holding down the mouse button with a brush selected

Congratulations

You have successfully set up a new Palette for Kaldera Prefab Painter and used it to paint prefabs in your scene.

You can now go back to your project and start setting up Palettes according to your need, and start producing scenes and levels with an increased efficiency and of a higher quality.

A beautiful scene made with Kaldera Prefab Painter.