Prefab World Builder Documentation

Shortcuts

All shortcuts can be edited in the preferences window.

Common

Command	Shortcut
Deselect tool. Deselect handle.	Esc
Snap to vertex	V

Toolbar

Command	Shortcut
Toggle floor tool	Alt + Shift + F
Toggle wall tool	Alt + Shift + W
Toggle pin tool	Alt + Shift + 1
Toggle brush tool	Alt + Shift + 2
Toggle gravity tool	Alt + Shift + 3
Toggle line tool	Alt + Shift + 4
Toggle shape tool	Alt + Shift + 5
Toggle tiling tool	Alt + Shift + 6
Toggle replacer tool	Alt + Shift + 7
Toggle eraser tool	Alt + Shift + 8
Toggle selection tool	Alt + Shift + 9
Toggle circle select Tool	Alt + shift + O
Toggle extrude tool	Alt + Shift + X
Toggle mirror tool	Alt + Shift + M

Gizmos

Command	Shortcut
Toggle Info text	Ctrl + Alt + I

Pin Tool

Pin Tool - Handles

Command	Shortcut
Position handles at top or bottom	P0: U or J P1: Ctrl + Shift + U or J P2: Page Up or Page Down
Set the pivot as the active handle	P0: L P1: Ctrl + Shift + T P2: Home
Set the previous handle as active	P0: I P1, P2: Ctrl + Shift + H

Pin Tool - Multibrush Item

Command	Shortcut
Select next item in the multi-brush	**Ctrl + Alt + Mouse scroll wheel** P0: D P1, P2: Ctrl + Alt + O or N
Toggle repeat item option	P0: 0 P1, P2: Ctrl + T

Pin Tool - Scale

Command	Shortcut
Scale	**Ctrl + Mouse scroll wheel**
Reset Scale	P0: Period P1: Ctrl + Shift + Period P2: Ctrl + Shift + Home

Pin Tool - 2D

Command	Shortcut
Flip sprite horizontally	P0: Minus P1, P2: Shift + U

Pin Tool - Surface Distance

Command	Shortcut
Reset the distance from the surface to zero	P0: M P1, P2: Shift + B

P0: Default Profile 0. P1: Default Profile 1. P2: Default Profile 2.

Pin Tool - Rotation

Command	Shortcut
Rotate freely around local Y axis	**Ctrl + Hold down the right mouse button + Move the mouse horizontally**
Rotate freely around local X axis	Ctrl + Hold down the middle mouse button + Move the mouse vertically
Rotate freely around local Z axis	Ctrl + Shift + Hold down the middle mouse button + Move the mouse vertically
Snap rotation while rotate freely[1]	Hold down the **Alt** key while rotate freely
Add 90º or -90º to the rotation around local Y axis	P0: S P1: Ctrl + Q or W P2: Ctrl + ← or →
Add a step[1] to the rotation around local Y axis	P0: Alt + S P1: Ctrl + Shift + Q or W P2: Ctrl + Shift + ← or →
Add 90º or -90º to the rotation around local X axis	P0: V P1: Ctrl + Alt + K or L P2: Ctrl + Alt + ← or →
Add a step[1] to the rotation around local X axis	P0: Alt + V P1: Ctrl + Alt + Shift + K or L P2: Ctrl + Alt + Shift + ← or →
Add 90º or -90º to the rotation around local Z axis	P0: B P1, P2: Ctrl + Alt + Period or Comma
Add a step[1] to the rotation around local Z axis	P0: Alt + B P1, P2: Ctrl + Alt + Shift + Period or Comma
Reset rotation to zero	P0: Comma P1: Ctrl + Shift + M P2: Ctrl + Home
Snap rotation to grid	P0: G P1, P2: Shft + G

P0: Default Profile 0. P1: Default Profile 1. P2: Default Profile 2.

[1] The step size can be changed in the preferences window.

Pin Tool And Gravity Tool

Command	Shortcut
Add 1 or -1 unit to the distance from surface	P0: H or N P1: Ctrl + Alt + U or J P2: Ctrl + Alt + ↑ or ↓
Add 0.1 or -0.1 units to the distance from surface	P0: Shift + H or N P1: Ctrl + Alt + Shift + U or J P2 Ctrl + Alt + Shift + ↑ or ↓
Edit distance to the surface	**Ctrl + Shift + Hold down the right mouse button + Move the mouse vertically**

Brush Tool, Gravity Tool, Eraser, Replacer and Circle Select

Command	Shortcut
Change radius	P0, P1: Ctrl + Mouse scroll wheel P2: Shift + Hold down the right mouse button + Move the mouse horizontally

Brush Tool and Gravity Tool

Command	Shortcut
Update brushstroke	P0: U P1, P2: Ctrl + Shift + Period
Edit density	Ctrl + Alt + Mouse scroll wheel
Rotate Brush	Ctrl + Hold down the right mouse button + Move the mouse horizontally
Reset brush rotation	P0: Comma P1, P2: Ctrl + M

P0: Default Profile 0. P1: Default Profile 1. P2: Default Profile 2.

Line, Shape and Tiling Edit Mode

Command	Shortcut
Apply	Enter
Delete selected persistent item and its children	Alt + Delete (In Edit Mode)
Delete selected persistent item but not its children	Alt + Shift + Delete (In Edit Mode)
Select parent object	P0: T P1, P2: Ctrl + Shift + T
Toggle Edit Mode	P0: Period P1, P2: Ctrl + Shift + Period

Line and Shape

Command	Shortcut
Edit gap size	Ctrl + Shift + Hold down the right mouse button + Move the mouse horizontally

Line

Command	Shortcut
Add new midpoint	Click Midpoint
Add New point	Ctrl + Right Click
Remove selected points	Delete
Select points	Shift + Hold down the right mouse button + Draw a selection rectangle
Select all points	P0: A P1, P2; Ctrl + Shift + A
Deselect all points	P0: S P1, P2: Ctrl + Shift + D
Set the previous segment as a **Curved or Straight Line**	P0: U P1: Ctrl + Shift + Y P2: Page Down
Close or open the line	P0: O P1: Ctrl + Shift + O P2: End
Snap to control points	V
Toggle Edit Mode Type (Line nodes or Line position and rotation)	P0: Comma P1, P2: Ctrl + Shift + Comma

P0: Default Profile 0. P1: Default Profile 1. P2: Default Profile 2.

Tiling and Selection Tool

Command	Shortcut
Rotate 90º or -90º around Y axis	P0: S or Alt + S P1: Ctrl + Alt + K or L P2: Ctrl + Alt + ← or →
Rotate 90º or -90º around X axis	P0: V or Alt + V P1: Ctrl + Shift + U or J P2: Ctrl + Shift + ↑ or ↓
Rotate 90º or -90 around Z axis	P0: B or Alt + B P1: Ctrl + Alt + U or J P2: Ctrl + Alt + ↑ or ↓

Tiling

Command	Shortcut
Edit spacing	(Shift or Shift + Ctrl) + Hold down the right mouse button + Move the mouse

Selection Tool

Command	Shortcut
Toggle position handle	W
Toggle rotation handle	E
Toggle scale handle	R
Toggle Space Global/Local	P0: A P1, P2: Shift + X
Move to other selection handle	Return, select the other objects, select the destination handle and press Return again to confirm the move.
Edit custom handle	U to start editing and U or Return to confirm

Floor

Command	Shortcut
Rotate 90º around Y	S

Wall

Command	Shortcut
Rotate 180º around Y	S

Floor and Wall

Command	Shortcut
Delete Mode	Hold down Ctrl

P0: Default Profile 0. P1: Default Profile 1. P2: Default Profile 2.

Grid

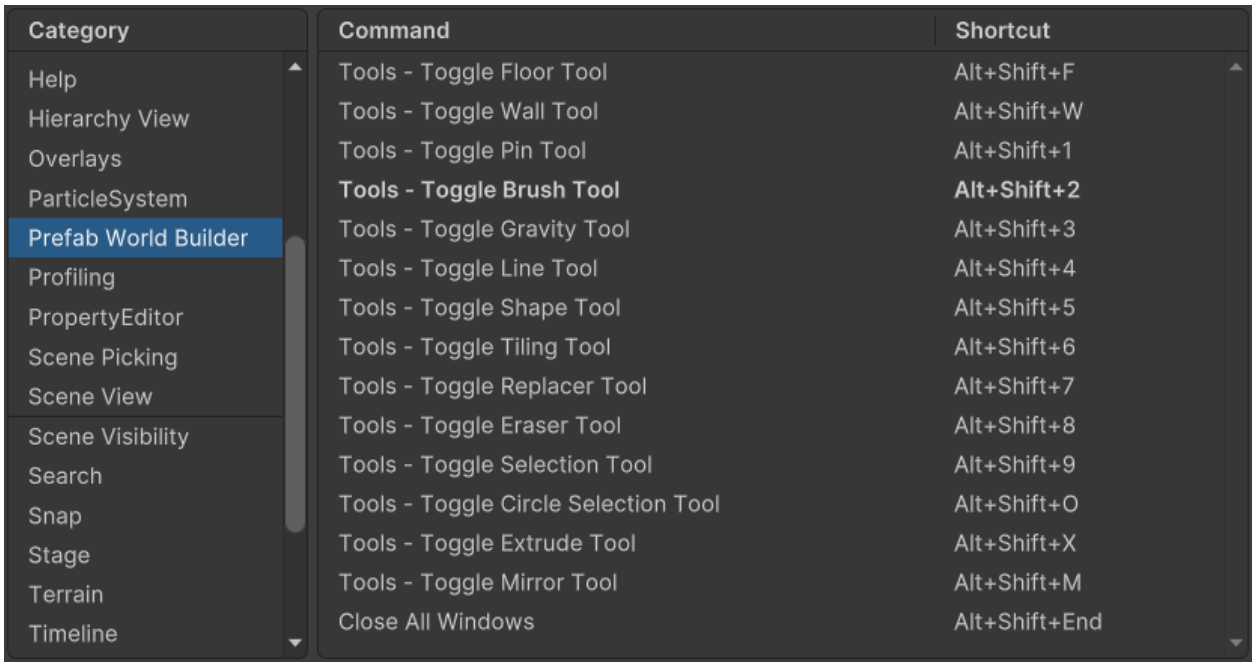
Command	Shortcut
Toggle grid	P0: Ctrl + G P1, P2: Ctrl + G then Ctrl + G
Toggle snapping	P0: Ctrl + H P1, P2: Ctrl + G then Ctrl + H
Toggle grid Lock	P0: Ctrl + L P1, P2: Ctrl + G then Ctrl + L
Set the origin to the active gameobject position	P0: Ctrl + W P1, P2: Ctrl + G then Ctrl + W
Set the grid rotation to the active gameobject rotation	P0: Ctrl + E P1, P2: Ctrl + G then Ctrl + E
Set the snap value to the size of the active gameobject	P0: Ctrl + R P1, P2: Ctrl + G then Ctrl + R
Frame grid origin	P0: Ctrl + Q P1, P2: Ctrl + G then Ctrl + Q
Toggle position handle	P0: Ctrl + Alt + W P1, P2: Ctrl + G then Ctrl + Alt + W
Toggle rotation handle	P0: Ctrl + Alt + E P1, P2: Ctrl + G then Ctrl + Alt + E
Toggle spacing handle	P0: Ctrl + Alt + R P1, P2: Ctrl + G then Ctrl + Alt + R
Move the origin one step up	P0: Ctrl + Alt + J P1, P2: Ctrl + G then Ctrl + Alt + J
Move the origin one step down	P0: Ctrl + Alt + M P1, P2: Ctrl + G then Ctrl + Alt + M

Palette

Command	Shortcut
Select next brush	**Ctrl + Shift + Mouse scroll wheel** or (Ctrl + Shift + Z or X)
Select next palette	Ctrl + Alt + Shift + Mouse scroll wheel or (Ctrl + Alt + Shift + Z or X)
Delete selected brushes	Ctrl + Shift + Delete
Replace selected objects in scene	Ctrl + Shift + I
Pick or add a Brush	**Hold Shift + 1 + Click on the object**
Drag a prefab to the scene	Ctrl + Drag the brush to the scene

P0: Default Profile 0. P1: Default Profile 1. P2: Default Profile 2.

The following shortcuts are customizable via shortcuts manager.

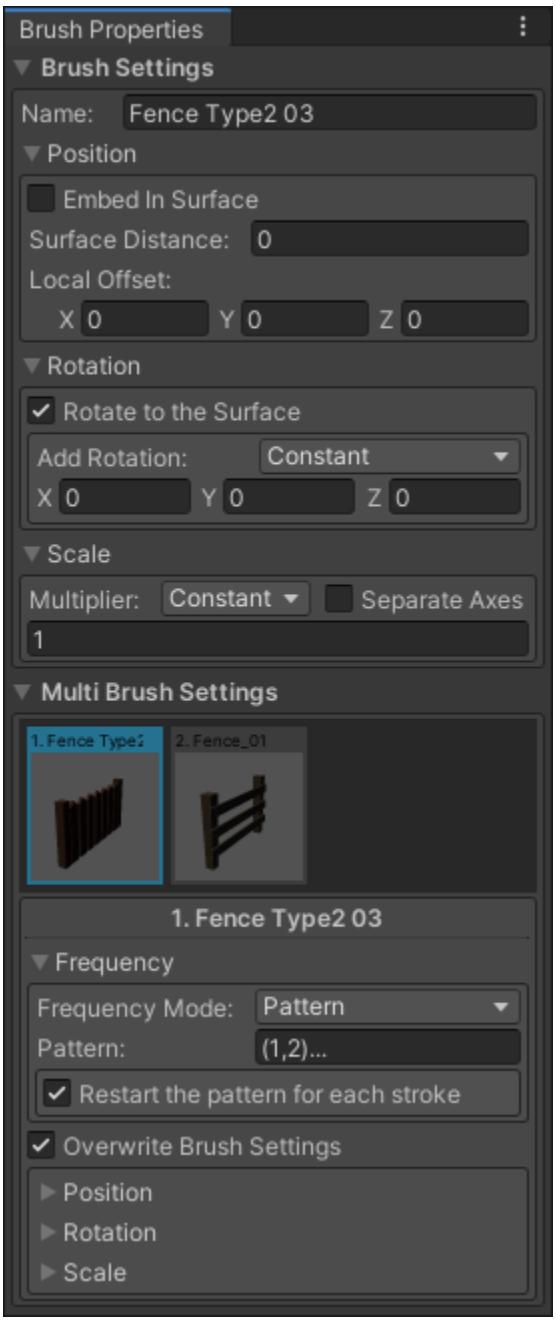


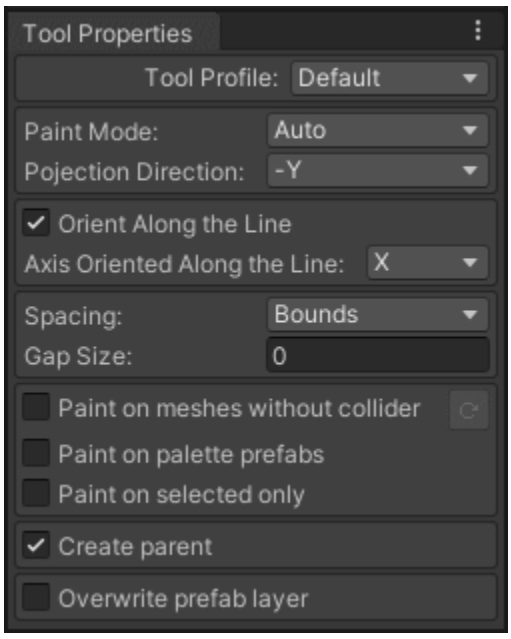
The Shortcuts manager lets you view and manage keyboard shortcuts, you can access it from Unity's main menu **Edit/Shortcuts**.

Shortcuts Overlay: displays available shortcuts directly within the scene view for quick reference. You can access it by going to the **Overlay Menu** and selecting **PWB Shortcuts**.

Interface

PWB consists of a comprehensive set of tools to help you design levels in no time.

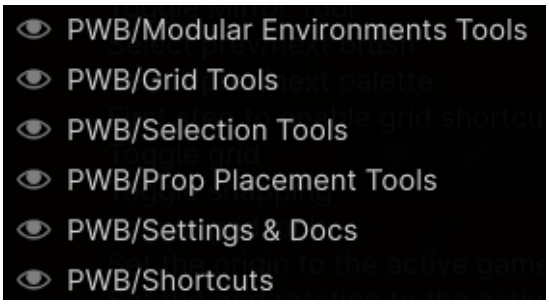




The interface consists of the toolbars and three main windows: Palette, Tool Properties, and Brush Properties.

Toolbars

In Unity 2021.2 and newer, **PWB tools are available as overlay panels** in the Scene View, making them more accessible and improving workflow efficiency.



For more information on overlays, visit the unity manual

Displaying and hiding Overlays

1. Click anywhere in the Scene view and press the backtick (`) Key to open the overlays menu. You can also open the Overlay menu from the More (⋮) menu in the top right corner of the Scene view.
2. Click on an overlay to display or hide it. If an overlay is already displayed, a checkmark or an eye icon appears to its left. Hovering over a displayed option highlights the corresponding overlay in blue in the Scene View.

There are **five overlay toolbars**, which can be shown, hidden, or collapsed independently:

	Description
	**Modular Environment Tools** **Floor Tool**: Creates a tiled floor by placing objects in a grid pattern. **Wall tool**: Generates walls by aligning objects along a grid.
	**Prop Placement Tools** Placement tools allow you to preview and place props in the scene. **Pin Tool**: Place one object at a time. **Brush Tool**: Place large amounts of randomly scattered objects. **Gravity Tool**: Place objects using physics-based interactions. **Line Tool**: Arrange objects along a Bezier path (ideal for fences). **Shape Tool**: Place objects along a shape (Circle, triangle square or polygon) **Tiling Tool**: Place objects arranged in a grid. **Replacer**: Replaces scene objects with prefabs from the selected brush. **Eraser**: Remove objects as in a drawing editor.
	**Selection Tools** **Selection Tool**: Adds handles to the vertices of the bounding box around selected objects. Extends and complements Unity's transform controls. The **TRS buttons** toggle position, rotation, and scale handles. **Circle Select Tool**: Quickly select objects within a circular area. **Extrude Tool**: Create copies of selected objects in a specific direction. The extrusion length can be adjusted by moving the handle away from the selection. **Mirror Tool**: Create mirrored copies of selected objects.
	You can switch between tools using the keyboard shortcuts.

	**Grid and Snapping Tools** **Grid Type**: Choose between **Rectangular** or **Radial**. **Enable/Disable Grid Snapping**: Allows you to toggle snapping on each axis. **Show/Hide Grid**: Select which grid plane is currently visible. **Lock/Unlock Grid**: When unlocked, the grid follows the cursor along the plane's normal direction. When locked, it remains in place.
	**Settings & Docs** **Tool Properties**: Opens the Tool Properties window. **Grid and snapping settings**: Open the grid and snapping settings. **Preferences**: Open the preferences window. **Documentation**: Opens the Documentation pdf file. (This file)

Toolbar Window (Unity 2021.1 and Earlier)

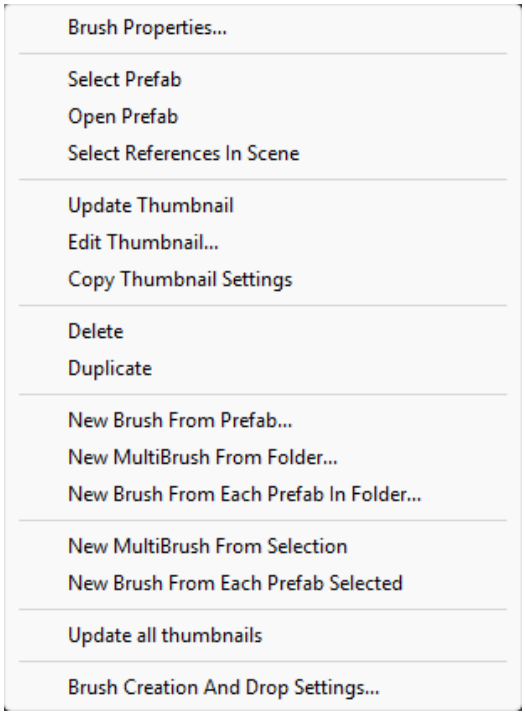
In Unity versions **prior to 2021.2**, where overlays are not available, you can open the **Toolbar Window** by clicking **Tools > Plugin Master > Prefab World Builder > Toolbar**. The functionality remains the same as the overlay toolbars.

Palette

The Palette Window allows you to manage brushes and prefabs efficiently, providing robust tools for searching, organizing, and customizing your brushes.

Brush Management

Drag and Drop: Drag and drop prefabs or folders directly from the Project window or Hierarchy into the palette.



Context Menu: Right-click on the empty prefab space between brushes to open the context menu.Options include:

- Open the Brush Properties.
- Create new brushes from prefabs or folders. See the Brush Creation section.
- Create brushes from selected objects in the Scene.
- Update all thumbnails.
- Open the Brush Creation and Drop Settings window.

Context Menu (Brush): Right-click on an existing brush to display more options, such as:

- Select Prefabs: Select the brush prefabs in the Project window.
- Select Scene References: Select prefab references in the Scene.
- Update or Edit Thumbnail: Update or customize the brush thumbnail.
- Duplicate or Delete: Duplicate or delete the brush

Search Bar

Filter Brushes By Name 

Use the Search field to quickly find brushes based on their names, prefab names, or labels:

- In the Search field write single words or separate multiple words with commas. Example: `tree, rock` – This will show brushes containing "tree" or "rock" in their names or in their prefabs names.
- Use **(l:)** to search for brushes with specific prefab labels. Example: `l:vegetation` – This will filter brushes with the label "vegetation".
- Use **(w:)** to search for whole words only. Example: `w:house` – This will only show brushes with "house" as a complete word, ignoring names like "greenhouse" or "treehouse".
- Combine multiple search filters to refine your results further. Example: `tree, l:vegetation, w:rock` – This will show brushes that: Contain "tree" in their name or prefab name, OR Have the label "vegetation", OR Contain "rock" as a whole word only.

Filter Brushes By Labels 

1. Click the filter by labels button located to open the label menu.
2. Choose the prefab labels you want to filter brushes by.

Filter Brushes By Selection 

1. Select objects in the Scene to filter brushes that contain those prefabs.
2. Click the filter by selection button.

Filter Brushes By Folder 

The Filter By Folder feature allows you to filter brushes more efficiently using your project's folder structure:

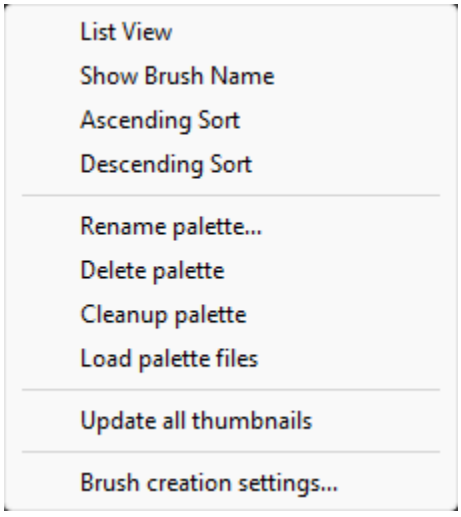
1. Click the filter by folder button to open the Filter By Folder window.
2. In the Filter By Folder window, you can:
   - Expand/Collapse: Navigate through the folder hierarchy.
   - Show/Hide: Use the eye button to control which folders are visible in the palette.
   - Prefab Counter: View the number of prefabs each folder contains (displayed on the right).
   - Show All / Hide All: Use these buttons to quickly show or hide all folders.

Bottom Bar

The Bottom Bar provides quick access to essential palette tools and settings:

- **Adjust Brush Button Size**: Use the slider to adjust the size of the brush thumbnails.
- **Picker**: Add a brush based on a selected object in the Scene.
- **Add and Delete Buttons**: Use these to add or remove brushes.
- **Palette Menu Button**: Located in the **bottom-right corner** of the Palette Window, this button opens the **Palette Menu** for additional customization options.

Palette Menu



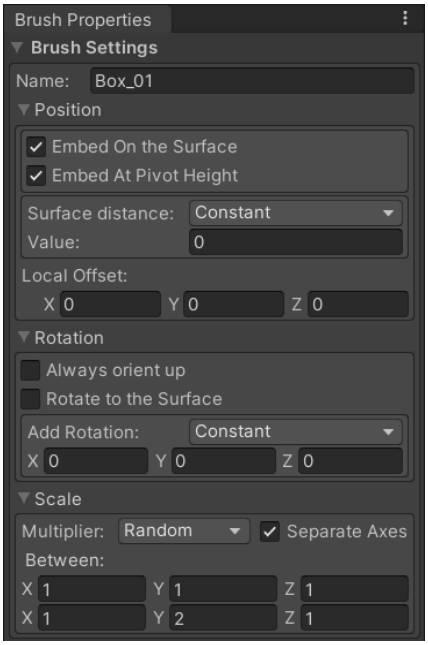
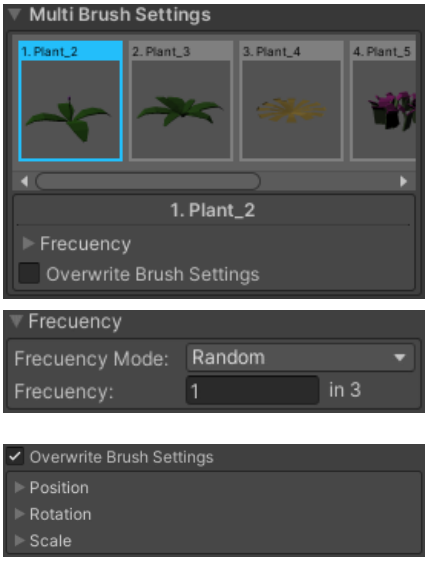
The **Palette Menu** contains advanced tools for managing and customizing your palette:
Grid or List View: Switch between grid and list views for optimal organization.
Show/Hide Brush Names: Toggle brush names on or off.
Sort Brushes: Sort brushes alphabetically.
Cleanup: Use the Cleanup option to repair corrupted palettes caused by missing prefabs.
Load Palette Files: Use this option after importing palette files.
Brush Creation Settings: Open the Brush Creation and Drop Settings window for further customization.

Shortcuts

Command	Thumbnail Editing Shortcuts
Rotate the target	Hold down the right mouse button + Move the mouse
Move the target	Ctrl + Hold down the right mouse button + Move the mouse
Zoom	Ctrl + Mouse scroll wheel

For a full list of palette shortcuts, please refer to the shortcuts section.

Brush Properties

Control	Description
	**Embed in surface**: If selected, objects are placed so that the bottom vertices are below the surface. This is very useful for placing trees. **Embed at pivot height**: If selected, objects are positioned so that their pivots are on the surface. **Surface distance**: Distance from the point of contact of the object with the surface, can be a constant or random value within a range. its value can be positive above the surface or negative below the surface. **Local offset**: Adds the offset value to the object position in local space. **Always orient up**: If checked, objects are positioned so that their local vertical axis is aligned with the world vertical axis. **Rotate to the surface**: If selected, objects are placed oriented perpendicular to the surface. **Add Rotation:** Can be a constant or random value within a range. **Scale multiplier:** Can be a constant or random value within a range. **Flip**: For 2D assets only. Allows you to define whether it is enabled, disabled or random in both X and Y.
	**Multi brush items**: Add or remove prefabs to the brush to create a multibrush that allows different objects to be instantiated at random frequency or following a pattern. **Frequency - Random**: Define how often each item appears. **Overwrite Brush Settings**: if selected, the brush settings for the current item are overridden by the values below.

Multi-Brush Frequency Pattern

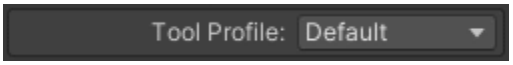
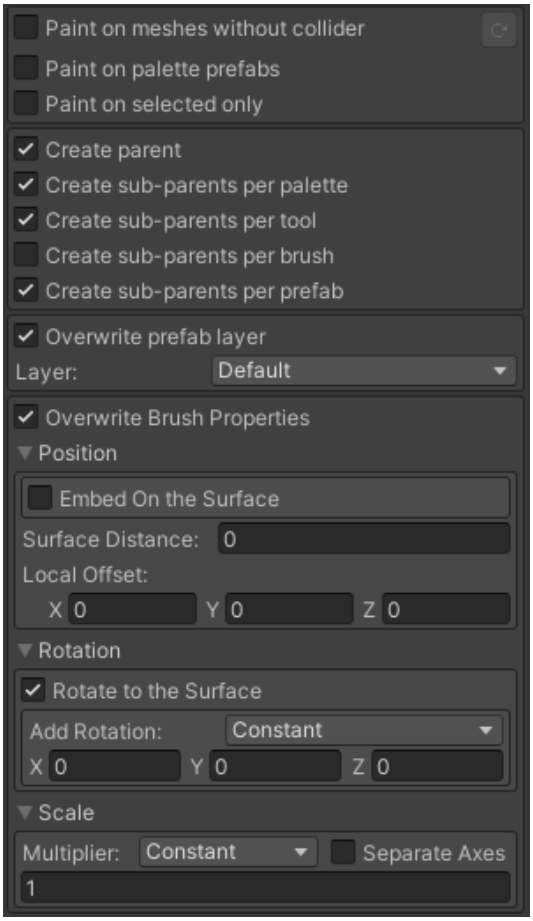
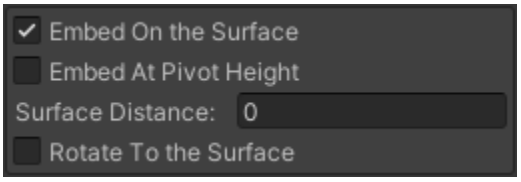
Defines the order in which the items appear. Each item is identified by a number ranging from 1 to the number of items, with 0 representing an empty space. Patterns can include:

- **Comma-separated values (,)**: Defines a sequence of items.
- **Ellipsis (. . .)**: Repeats the preceding item indefinitely.
- **Parentheses (( ))**: Groups items into subsequences.
- **Asterisk (*)**: Repeats the preceding item or subsequence a specified number of times.
- **Brackets ([ ]) with vertical bars (|)**: Allows random selection of items. Items can be assigned weights using a colon (:), with weights supporting decimal values. For example:
  - `[1|2|3]` : Randomly selects 1, 2, or 3 with equal probability.
  - `[1|2:0.7|3:0.1]` : Selects 1 with a weight of 1, 2 with a weight of 0.7, and 3 with a weight of 0.1.
- **Combinations**: Complex patterns can combine these features.

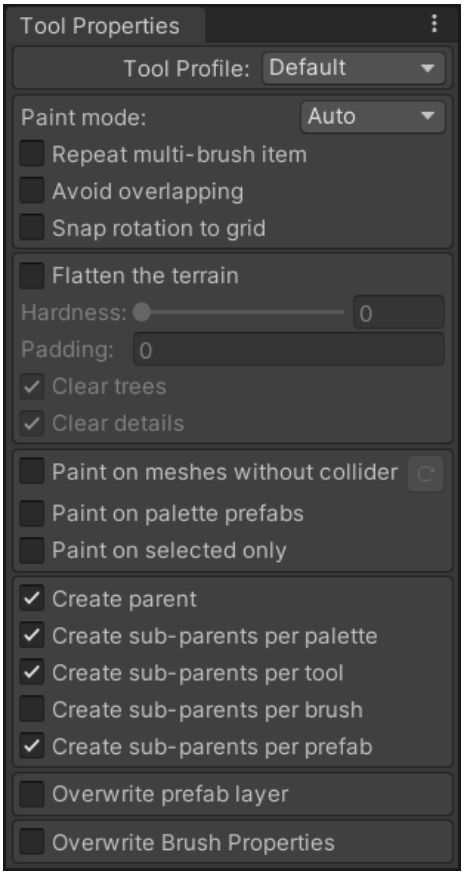
Examples:

Pattern	Result
1,2	1,2
1...	1,1,1,...
1*3	1,1,1
(1,2)*3	1,2,1,2,1,2
1,2,...,3	1,2,2,2,...,3 (This only works with lines)
[1|2|3]	Randomly selects 1, 2, or 3
[1:2|2:1]	Selects 1 twice as often as 2
[1|2]...	Repeats random choices of 1 or 2 indefinitely
(1,[2|3])...	Combines sequence with random selection, e.g., 1,2,1,3,...

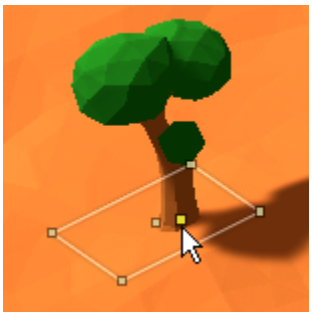
Common Tool Properties

Control	Description
	**Tool profile**: allows you to quickly save and load different settings.
	**Paint on meshes without collider**: When enabled, generates temporary mesh-colliders for all meshes without colliders. The button on the right allows you to generate the colliders manually. **Paint on palette prefabs**: When unchecked, does not allow drawing on prefabs within the same palette. **Paint on selected only**: When selected, It filters the target surfaces by the ones that are currently selected. **Create parent**: Automatically creates a parent for new objects. **Create sub-parent per palette, tool, brush, prefab**: Automatically creates a sub-parent for new objects with the same (palette, tool, brush, prefab). **Parent transform**: defines the parent of the newly created objects. **Overwrite prefab layer**: Allows you to define the layer of newly created objects. **Overwrite brush properties**: Allows you to overwrite the properties of the brush.
	**Embed on the surface**: If selected, objects are placed so that the bottom vertices are below the surface. **Embed at pivot height**: If selected, objects are positioned so that their pivots are on the surface. **Surface distance**: Distance from the point of contact of the object with the surface, it can be positive above the surface or negative below the surface. **Rotate to the surface**: If selected, objects are placed oriented perpendicular to the surface.

Pin

Control	Description
	**Paint Mode**: ● **Auto**: Paints on surfaces and if no surface is found, objects are painted on the current grid plane. ● **Paint on surface**: Paints objects only on surfaces. ● **Paint on grid**: Paints objects only on the current grid plane. **Repeat multi-brush item**: If selected, It ignores the frequency (random or pattern) defined in the brush properties. Use it with the next item shortcut for quick access to multi-brush items. **Avoid overlapping**: If selected, it prevents overlap with the bounding box of the object to be placed. **Snap rotation to grid**: Enables automatic alignment of object rotation with grid axes. **Flatten the terrain**: If enabled it flattens the terrain under the new objects. **Hardness**: determines how smooth or abrupt the transition is between flattened terrain and the existing terrain. **Padding**: Defines how much flat space to add around the object's bounding box. **Clear trees**: Removes any trees under the new object. **Clear details**: Removes any details under the new object. Please check out the Common Tool Properties section.

How to use



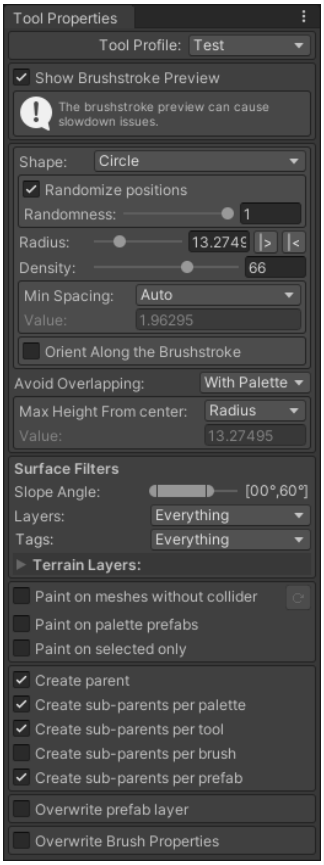
Normal use case:

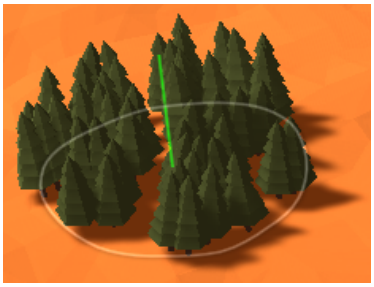
1. Toggle on the pin tool.
2. Select the brush on the palette.
3. Use the handles and shortcuts to preview the position, rotation, and scale of the object to create.
4. Click to instantiate the object.

Alternative use case:

1. Drag and drop a brush from the palette to the scene view.
2. Use the handles and shortcuts to preview the position, rotation, and scale of the object to create.
3. Click to instantiate the object.

Brush

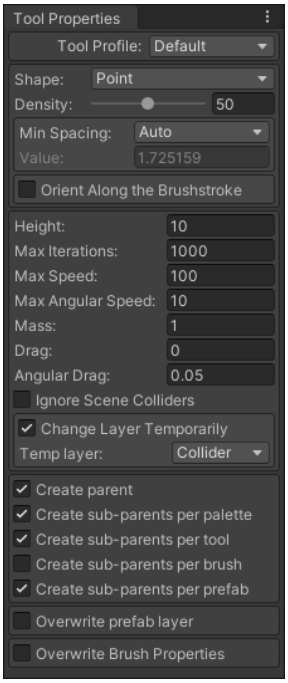
Control	Description
	**Show brushstroke preview:** When enabled it can cause slowdown issues. **Shape**: Point, circle or square. If circle or square is selected, you can define the density and the maximum height from the center. **Randomize positions**: If unchecked, objects are placed in a grid layout within the brush area. If selected, allows you to define the randomness value. **Density**: Value from 0 to 100 where 100 represents the maximum density taking into account the minimum spacing between objects. **Min spacing**: Minimum spacing between objects. It can be automatic or customized. **Orient along the brushstroke**: Orient current objects in the direction of mouse movement. It allows you to add an angle to the local rotation. **Avoid overlapping**: If enabled, new objects are positioned away from existing objects, preserving density and spacing values. **Max height from center**: set the limit value for the distance from the plane that passes through the center of the circle in the normal direction. It can be automatic, equal to the radius of the circle or custom. **Surface filters**: allows you to define the maximum and minimum value of the slope of the surfaces where objects are going to be placed. You can also ignore surfaces depending on their layer, tag or terrain layer. Please check out the Common Tool Properties section.



How to use

1. Toggle on the brush tool.
2. Select the brush on the palette.
3. Use the shortcuts to change the radius and update the brushstroke.
4. Hold down the left mouse button and move the mouse to instantiate the new objects.

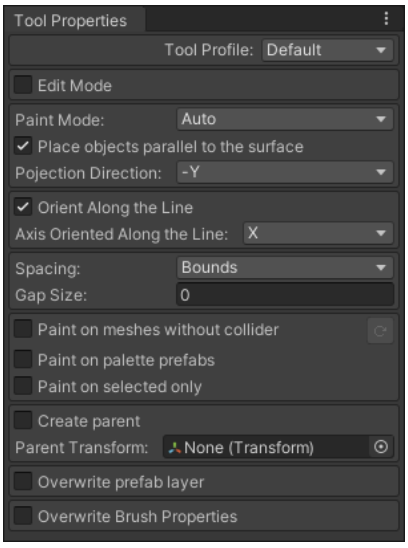
Gravity Brush

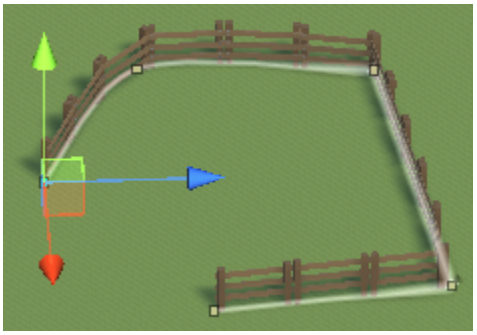
Control	Description
	**Shape**: Point, circle or square. If circle or square is selected, you can define the density. **Randomize positions**: If unchecked, objects are placed in a grid layout within the brush area. If selected, allows you to define the randomness value. **Density**: Value from 0 to 100 where 100 represents the maximum density taking into account the minimum spacing between objects. **Min spacing**: Minimum spacing between objects. It can be automatic or customized. **Orient along the brushstroke**: Orient current objects in the direction of mouse movement. It allows you to add an angle to the local rotation. **Height**: Height from the surface. **Max Iterations**: The simulation runs until all selected objects are at rest or up to a maximum of iterations. **Physical quantities**: You can define some physical quantities such as mass, drag, maximum speed and also the gravity force. **Ignore Scene Colliders**: If checked, all colliders in the scene will be ignored during the simulation. **Change Layer Temporarily**: You can temporarily change the layer of objects to make sure they collide with the surface. Please check out the Common Tool Properties section.

How to use

1. Toggle on the gravity tool.
2. Select the brush on the palette.
3. Use the shortcuts to change the radius, update the brushstroke or increase/decrease height.
4. Click to instantiate the new objects.

Line

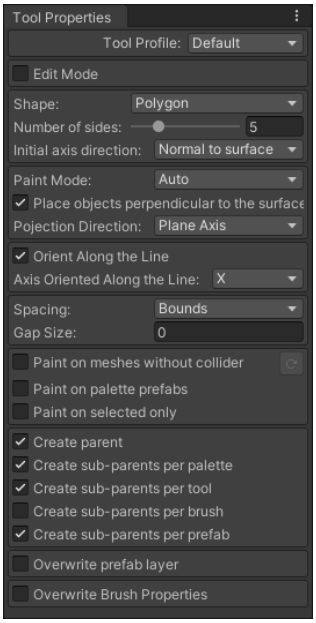
Control	Description
	**Edit mode**: If selected, you can edit previously created lines. You can choose between editing nodes or editing the position and rotation of the line. Please refer to the Edit Mode section. **Show Pre-existing elements**: Uncheck this option if you want to hide pre-existing lines. **Paint mode**: ● **Auto**: Paints on surfaces and if no surface is found, objects are painted on the line. ● **Paint on surface**: Paints objects only on surfaces. ● **Paint on the line**: Paints objects only on the line. **Place objects parallel to the surface**: if unchecked, objects are placed parallel to the line. **Projection direction**: Defines the direction in world space in which the objects on the line will be projected onto the surface. **Orient along the line**: Very useful for creating fences and walls. Allows you to select which axis of the objects is oriented along the line. **Spacing**: Defines how the distance between objects on the line is calculated. It can be based on the bounding box size or customized by the user. **Gap size**: Defines the size of the gap between objects. Please check out the Common Tool Properties section.



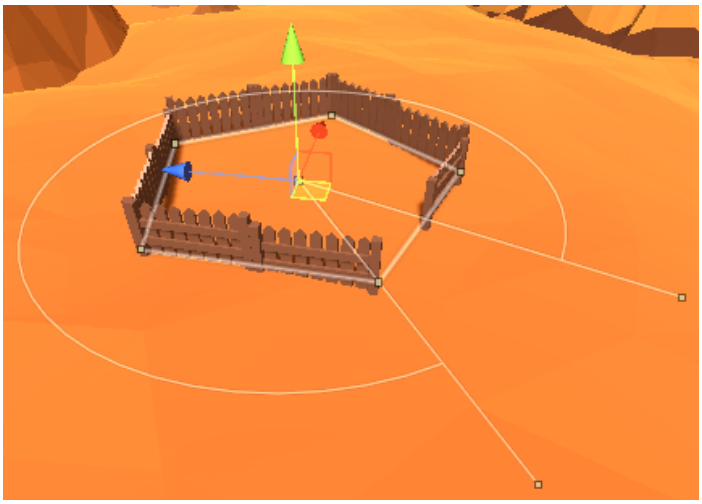
How to use, create mode

1. Toggle on the line tool.
2. Select the brush on the palette.
3. Press the left click to create the first point.
4. Move the mouse to preview the line.
5. Click again to create the line and preview the objects.
6. Press **Ctrl + Right Click** to add new points.
7. Select the handles and use the shortcuts to edit the shape of the line.
8. Press Enter to confirm and instantiate the objects.

Shape

Control	Description
	**Edit mode**: If selected, you can edit previously created shapes. Please refer to the Edit Mode section. **Show Pre-existing elements**: Uncheck this option if you want to hide pre-existing shapes. **Shape**: Circle or polygon. In the case of the polygon you can choose the number of sides. **Initial axis direction**: Defines the initial direction of the axis of the plane from the center point, it can be normal to the surface or a global direction. The other properties are the same as in the line tool. Please check out the Common Tool Properties section.

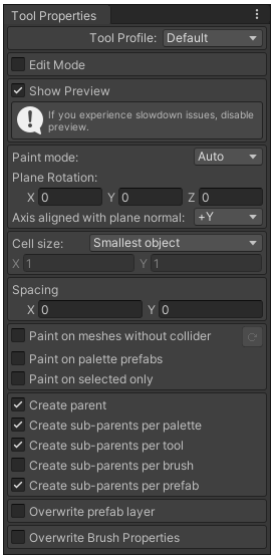
How to use

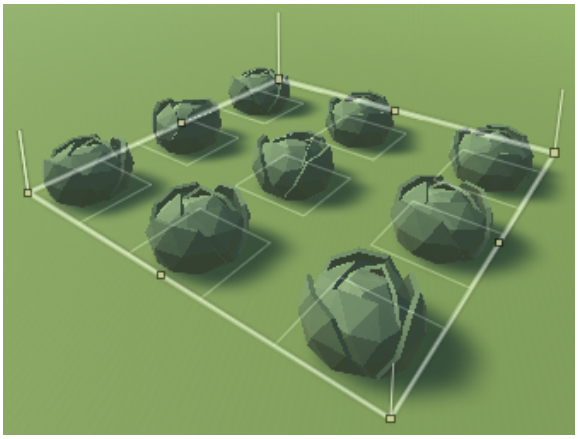


1. Toggle on the shape tool.
2. Select the brush on the palette.
3. Press the left click to create the center point.
4. Move the mouse to preview the shape.
5. Click again to create the shape and preview the objects.
6. Select the handles to edit the radius and the angle of the arc.
7. Press Enter to confirm and instantiate the objects.

Please refer to the shape shortcuts section.

Tiling

Control	Description
	**Edit mode**: If selected, you can edit previously created objects. Please refer to the Edit Mode section. **Show Pre-existing elements**: Uncheck this option if you want to hide pre-existing tilings. **Show preview:** When enabled it can cause slowdown issues. **Paint mode**: ● **Auto**: Paints on surfaces and if no surface is found, objects are painted on the plane. ● **Paint on surface**: Paints objects only on surfaces. ● **Paint on the plane**: Paints objects only on the plane. **Plane Rotation**: Defines rotation of the plane. **Axis aligned with plane normal**: Defines which object axis is aligned with the normal of the plane. **Cell size**: Defines how the cell size is calculated. It can be calculated from the size of the smallest object bounding box, the largest object bounding box, or by a user-defined custom value. **Spacing**: Spacing between objects. Please check out the Common Tool Properties section.

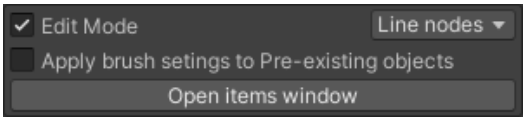


How to use

1. Toggle on the tiling tool.
2. Select the brush on the palette.
3. Click to create the first point.
4. Move the mouse to preview the rectangle.
5. Click again to create the tiling rectangle and preview the objects.
6. Select the handles to edit the shape, the position and the rotation of the rectangle.
7. Press Enter to confirm and instantiate the objects.

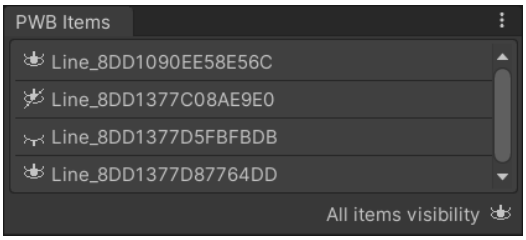
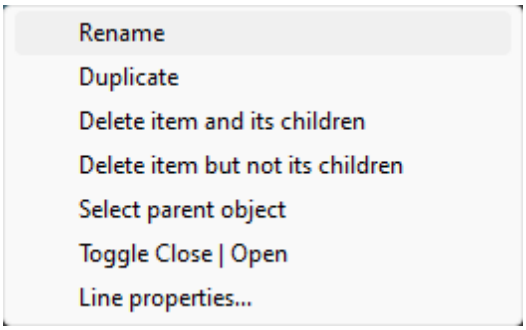
You can use the shortcuts to set the spacing between objects

Edit Mode

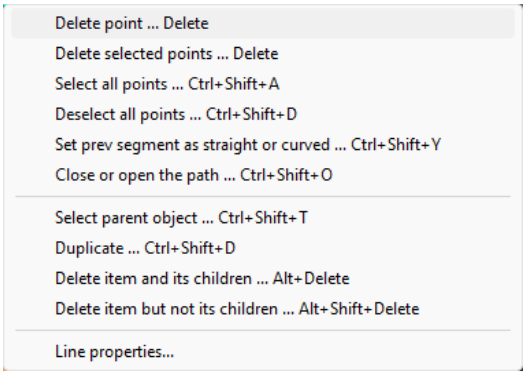
Control	Description
	When you enable edit mode and start editing a line, shape, or tile, all changes made to individual objects are lost and the objects are repositioned to fit the shape you are editing. When editing lines, you can choose to edit line nodes or edit the position and rotation of the line. **Apply brush settings to Pre-existing objects**: When this option is enabled, the current brush settings are applied to the objects in the selected item.

Command	Shortcut
Toggle Edit Mode	Ctrl + Shift + Period
Delete selected persistent item and its children	Alt + Delete
Delete selected persistent item but not its children	Alt + Shift + Delete
Select parent object	Ctrl + Shift + T

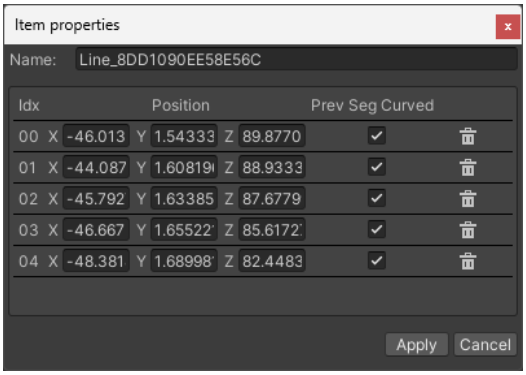
Items Window

Control	Description
 	Provides a comprehensive overview of all elements created in Edit Mode, making it easier to manage and edit them. **Item visibility**: The eye icon to the left of each item allows you to control the visibility of the item and its children. To improve performance, you can hide all items at once using the button at the bottom right. **Context menu**: Right-clicking on an item in the Items Window displays a context menu with various options, such as: Rename, Duplicate, Delete. Select parent object, open item properties, and other options depending on the type of item.

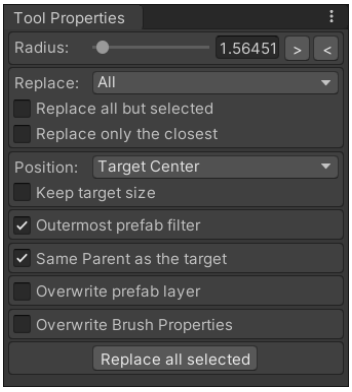
Edit Mode Context Menu

Control	Description
	Provides quick access to common actions for manipulating items directly within the scene view. To access this menu, right-click on a control point of a line, shape, or tile. The context menu typically offers options such as: Rename, Duplicate, Delete. Select parent object, open item properties, and other options depending on the type of item.

Item Properties

Control	Description
	This window provides a detailed view of the selected item's properties and allows you to: **Rename the Item**: Assign a custom name to the item for better organization. **Manage Control Points (only for lines):** ● Edit the position of control points to adjust the shape of the line. ● Toggle between straight and curved segments for each control point. ● Delete unwanted control points.

Replacer

Control	Description
	**Replace**: ● **All**: Replaces any object under the cursor. ● **Palette prefabs**: Replaces only prefabs from the current palette ● **Brush prefabs**: Replace only prefabs from the current brush. **Replace all but selected**: Useful when you don't want to replace surface objects. **Replace only the closest**: Replaces only the closest object. **Position**: determines where the new object is placed relative to the original object. You can choose: ● **Target center**: Place it in the center of the original object's bounding box. ● **Target Pivot**: Place it at the original object's pivot point. ● **On surface**: Positions it on the underlying surface, below the original object. **Keep target size**: Maintains the original object's size. **Maintain proportions**: Keep the proportions of the new object. **Outermost prefab filter**: Ignores child objects if enabled. When disabled, if you replace a child of a prefab, the parent will be unpacked. **Same parent as the target**: Inherits the original object's parent (enabled) or lets you choose a new one (disabled). **Replace all selected**: This functionality is useful to replace empty objects.

How to use

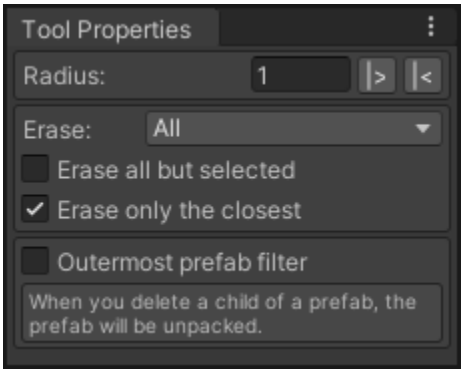
Normal use case:

1. Toggle on the replacer tool.
2. Select the brush on the palette.
3. Use the shortcut to change the radius.
4. Click to replace the objects.

Replace all selected:

1. Select the objects to be replaced.
2. Toggle on the replacer tool.
3. Select the brush on the palette.
4. Press the "Replace all selected" button.

Eraser

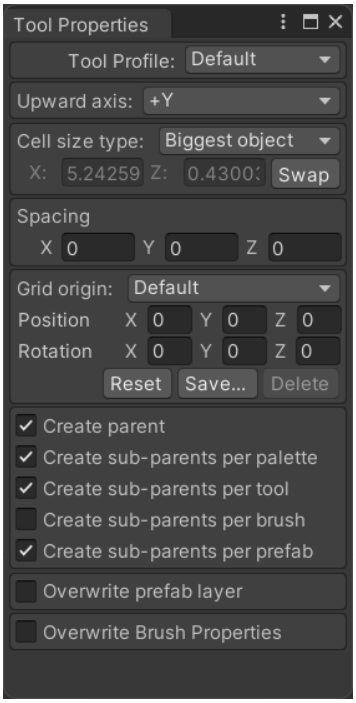
Control	Description
	**Erase**: ● **All**: Erase all objects inside the circle. ● **Palette prefabs**: Erase only the prefabs that belong to the current palette. ● **Brush prefabs**: Erase only prefabs that belong to the current selected brush. **Erase all but selected**: This option is especially useful when you don't want to delete surface objects. **Erase only the closest**: If selected, only the closest object will be deleted. **Outermost prefab filter**: If selected, the tool ignores the children of the prefab and only detects the parent object. When disabled, if you delete a child of a prefab, the parent will be unpacked.

How to use

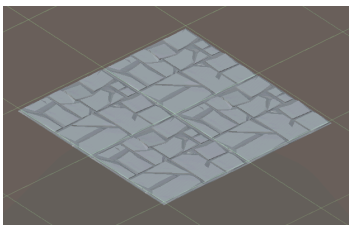
1. Toggle on the eraser tool.
2. Use the shortcut to change the radius. Objects must fit inside the circle to be detected.
3. Click to erase the objects.

Floor

The Floor tool allows you to create tiled floors by placing objects in a grid pattern.

Control	Description
	**Upward Axis**: Defines the axis that aligns objects with the up direction. **Cell size**: Determines how the cell size is calculated. Options include: ● **Smallest Object:** Uses the smallest object's bounding box size. ● **Biggest Object:** Uses the largest object's bounding box size. ● **Custom Value:** Allows you to manually define the cell size. **Spacing**: Sets the spacing between objects. **Grid Origin:** Allows you to save and manage grid origin positions and rotations for quick switching. This feature simplifies working with multiple grid setups in different areas of your scene. For additional tool settings, check out the Common Tool Properties section.

How to use



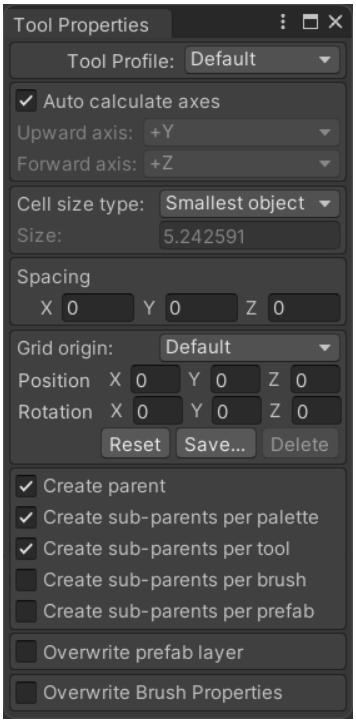
1. Activate the Floor Tool by toggling it on.
2. Select a brush from the palette.
3. Press and hold the left mouse button to define the first tile.
4. Move the mouse to expand the area.
5. Release the mouse button to confirm and instantiate the objects.

Additional Controls

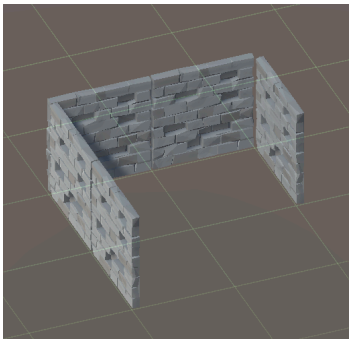
● Press **Esc** to cancel.
● Hold **Ctrl** To activate **delete mode**.
● Use shortcuts to adjust tile rotation.

Wall

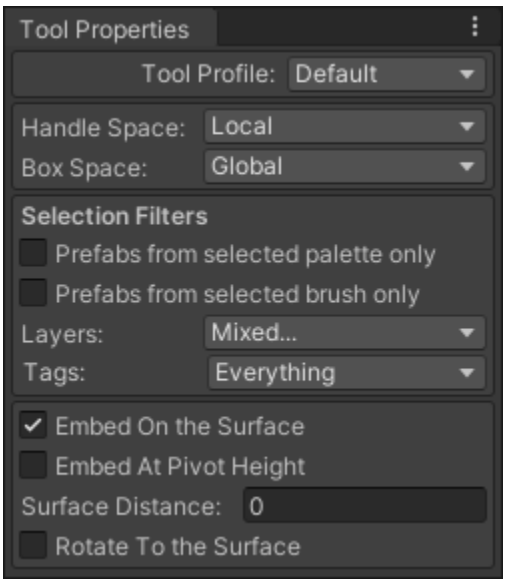
The Wall tool allows you to create tiled walls by placing objects in a grid pattern.

Control	Description
	**Auto calculate axes**: When enabled, the tool automatically determines the up and forward axes based on the brush object's dimensions. When disabled, you can manually define the axes. **Upward Axis**: Defines the axis of the object that is pointing up **Forward Axis**: Defines the axis that extends perpendicularly from the wall's surface, determining the direction in which the objects face. **Wall size**: Determines how the cell size is calculated. Options include: ● **Smallest Object:** Uses the smallest object's bounding box size. ● **Biggest Object:** Uses the largest object's bounding box size. ● **Custom Value:** Allows you to manually define the cell size. **Spacing**: Sets the spacing between objects. **Grid Origin:** Allows you to save and manage grid origin positions and rotations for quick switching. This feature simplifies working with multiple grid setups in different areas of your scene. For additional tool settings, check out the Common Tool Properties section.

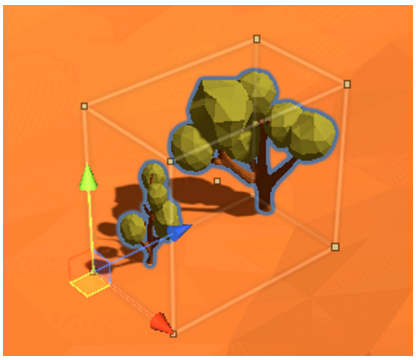
How to use

	1. Activate the Wall Tool by toggling it on. 2. Select a brush from the palette. 3. Press and hold the left mouse button to define the wall tile. 4. Move the mouse to expand the wall area. 5. Release the mouse button to confirm and instantiate the objects. **Additional Controls** ● Press **Esc** to cancel. ● Hold **Ctrl** To activate **delete mode**. ● Use shortcuts to adjust tile rotation.

Selection

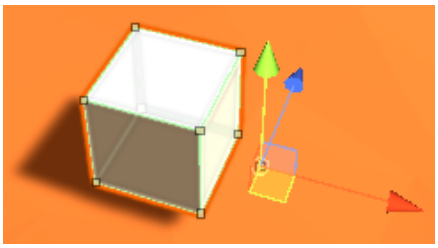
Control	Description
	**Handle Space**: Global or local. **Box Space**: Global or local. **Selection filters**: Allows you to filter the selection by palette, brush, layer and tag. **Embed in surface**: If selected, objects are placed so that the bottom vertices are below the surface. **Embed at pivot height**: If selected, objects are positioned so that their pivots are on the surface. **Surface distance**: Distance from the point of contact of the object with the surface, it can be positive above the surface or negative below the surface. **Rotate to the surface**: If selected, objects are placed oriented perpendicular to the surface.

Normal use case



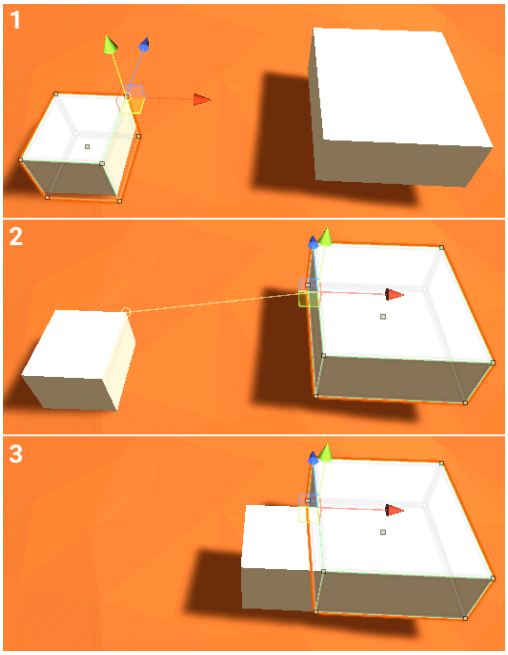
1. Toggle on the selection tool.
2. Select the objects you want to edit.
3. Use the handles:
   a. Select one of the handles to translate, rotate or scale the selection from there. There are handles in the corners of the bounding box, but also in the middle of each side and each plane.
   b. Use the mini buttons T, R and S to toggle the position, rotation and scale handles.

Edit custom handle



1. Press U to start editing the custom handle position.
2. Move the handle to the desired position.
3. Press U or Return to confirm.
4. Now you can use the custom handle to translate, rotate and scale the selection from there.

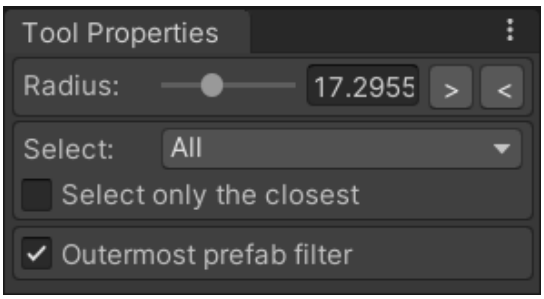
Move to other selection handle



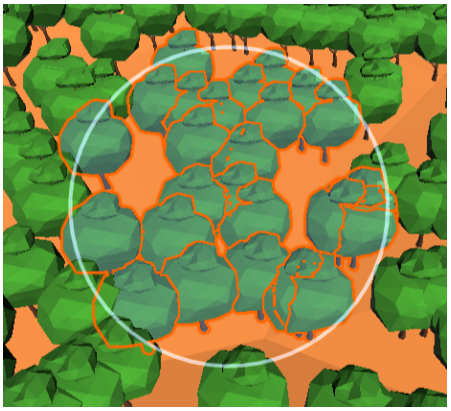
1. Select one of the handles and press Return to enable the “Move to other selection handle” mode.
2. Select the other objects. Select the destination handle.
3. Press Return again to confirm the move.

Please refer to the shortcuts section.

Circle Select

Control	Description
	**Select**: ● **All**: Select all objects inside the circle. ● **Palette prefabs**: Select only the prefabs that belong to the current palette. ● **Brush prefabs**: Select only prefabs that belong to the current selected brush. **Select only the closest**: If selected, only the closest object will be selected. **Outermost prefab filter**: If selected, the tool ignores the children of the prefab and only detects the parent object.

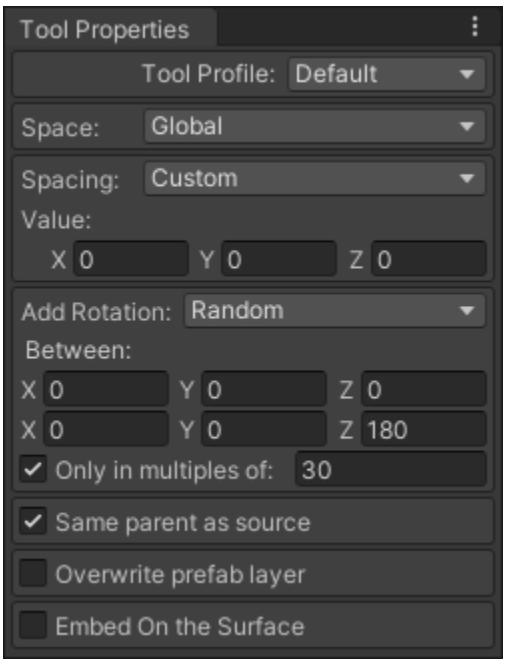
How to use



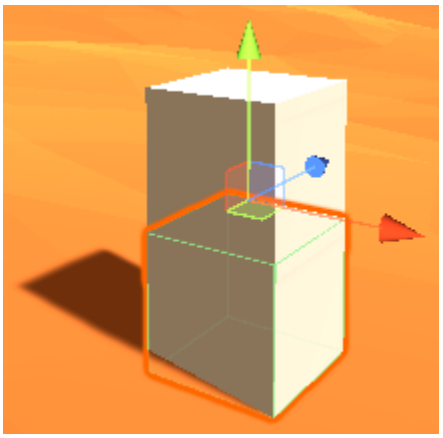
1. Toggle on the Circle Select Tool.
2. Use the shortcut to change the radius. Objects must fit inside the circle to be detected.
3. Click to Select the objects.

Command	Shortcuts
Add to selection	Shift + Left Click or Drag
Add / Remove from selection	Ctrl + Left Click

Extrude

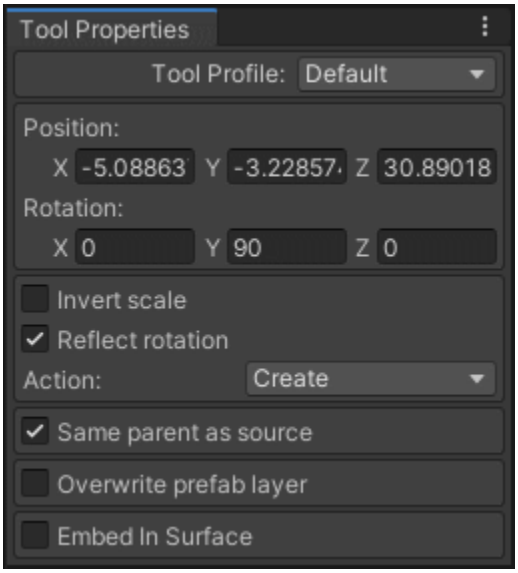
Control	Description
	**Space**: Global or local. If local space is selected, you can choose whether the selection rotation is equal to that of the first selected object or that of the last selected object. **Spacing**: Defines the space between objects, it can be equal to the size of the box multiplied (component-wise) by a multiplier or it can be custom defined. **Add Rotation:** Can be a constant or random value within a range. This functionality is available only when global space is selected. **Same parent as source**: If not selected, allows you to define the parent of newly created objects. **Embed in surface**: If selected, objects are placed so that the bottom vertices are below the surface. **Embed at pivot height**: If selected, objects are positioned so that their pivots are on the surface. **Surface distance**: Distance from the point of contact of the object with the surface, it can be positive above the surface or negative below the surface.

How to use

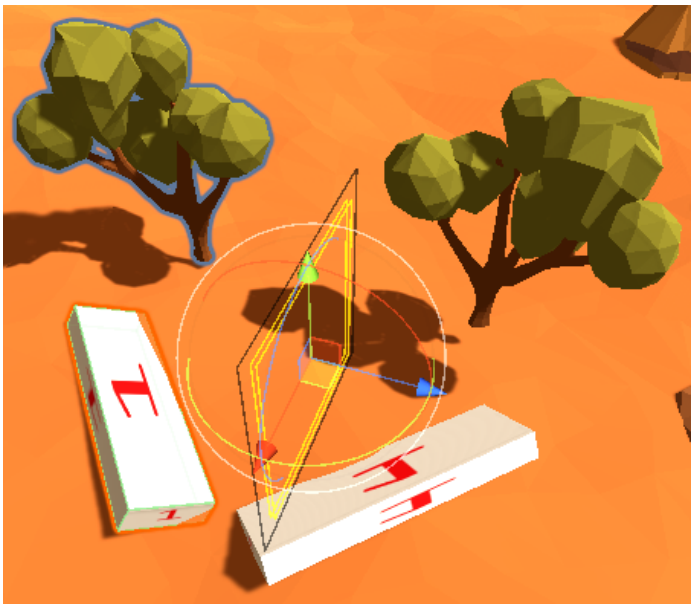


1. Select the objects you want to extrude.
2. Toggle on the extrude tool.
3. Move the position handle to preview the extrusion.
4. Press Return to confirm and instantiate the objects. Another way to confirm object creation is by changing the extrusion direction.

Mirror

Control	Description
	**Position and Rotation**: Current mirror position and rotation. **Invert scale**: If checked, inverts the scale of objects on the other side of the mirror. **Reflect rotation**: if checked, the rotation of the new objects is a reflection of the source objects; otherwise, the rotation remains the same as that of the source objects.. **Action**: Transform or create. If transform is selected, the selected objects are moved and rotated to the other side of the mirror, if create is selected, new objects are created as a reflection of the originals. **Embed in surface**: If selected, objects are placed so that the bottom vertices are below the surface. **Embed at pivot height**: If selected, objects are positioned so that their pivots are on the surface. **Surface distance**: Distance from the point of contact of the object with the surface, it can be positive above the surface or negative below the surface. **Rotate to the surface**: If selected, objects are placed oriented perpendicular to the surface.

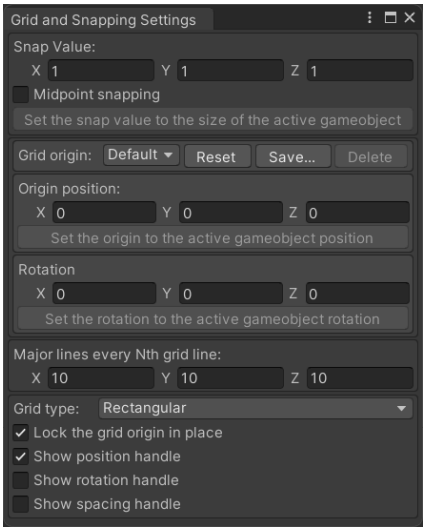
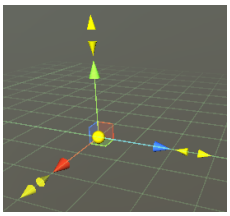
How to use



1. Select the objects you want to mirror.
2. Toggle on the mirror tool.
3. Move and rotate the mirror to the desired position.
4. Press Return to confirm.

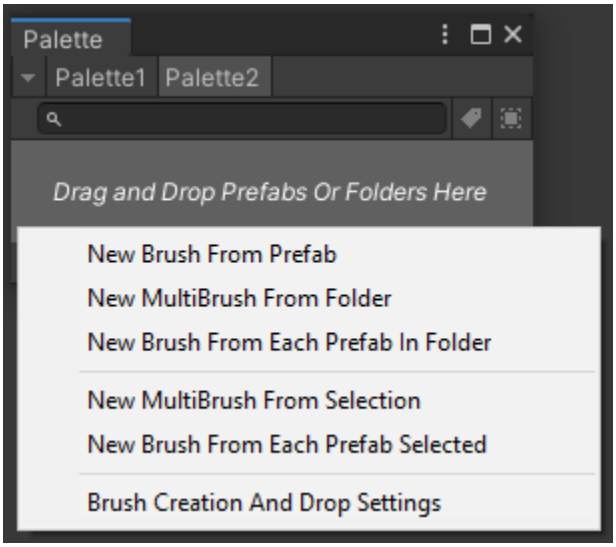
* Press Escape to deselect the mirror handle.

Grid and Snap Settings

Control	Description
	**Snap Value:** Sets the size of the grid cells. You can manually input the XYZ values or use the button to match the cell size to the dimensions of the active GameObject. **Radial Snap Value:** Defines the radius step for the radial grid. **Radial Sectors:** Sets the number of sectors for the radial grid. **Grid Origin:** Manually set the XYZ values or use the button to align the grid origin with the position of the active GameObject. **Grid Rotation:** Manually set the Euler angle values or use the button to match the grid's rotation to the active GameObject. **Saved Grid Origins:** Allows you to save and manage grid origin positions and rotations for quick switching. This feature simplifies working with multiple grid setups in different areas of your scene. **Grid Type:** Choose between a rectangular or radial grid layout. **Lock the Grid Origin in Place:** When unlocked, the grid moves along the normal direction of the grid plane, following the cursor. When locked, the grid remains fixed in place.
	When the grid origin is locked, the rotation, position, and spacing handles can be enabled. The position handle has two additional widgets on each axis that allow you to move the origin in steps.

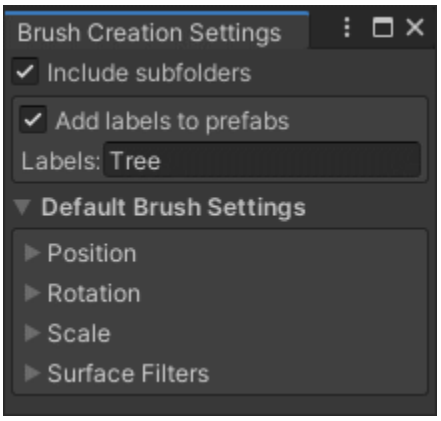
Please check out the shortcut section.

Brush Creation

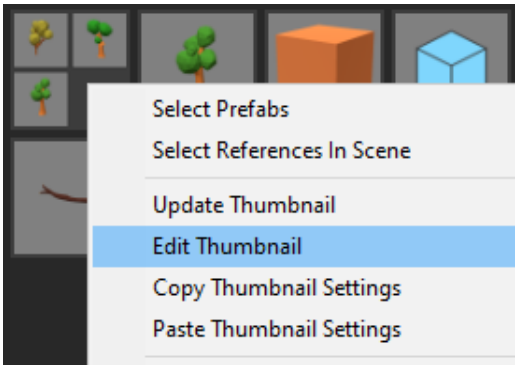
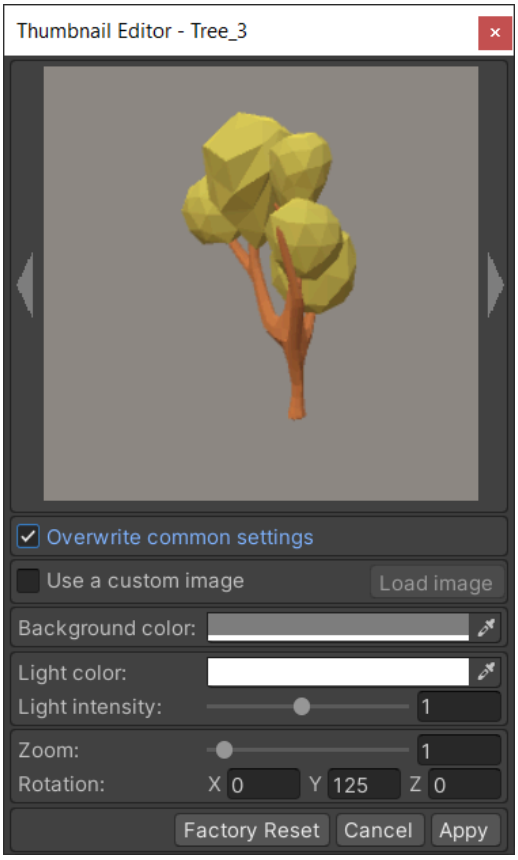
Control	Description
Drag and drop You can add new brushes to the palette by dragging and dropping prefabs and folders from the project window or hierarchy window to the palette. **Palette context menu** 	**New brush from prefab**: Lets you select a prefab to create a brush. **New multi brush from folder**: Allows you to select a folder to create a multi brush containing all the prefabs in the folder. **New brush from each prefab in folder**: Allows you to select a folder to create a brush for each prefab in the folder. **New multi brush from selection**: Creates a multi brush containing all prefabs or brushes selected. **New brush from each prefab selected**: Creates a brush for each selected prefab. **Brush Creation and drop settings**: Opens the brush creation settings window.

For more information on managing and organizing brushes, see the **Palette Window** section.

Brush creation settings Window

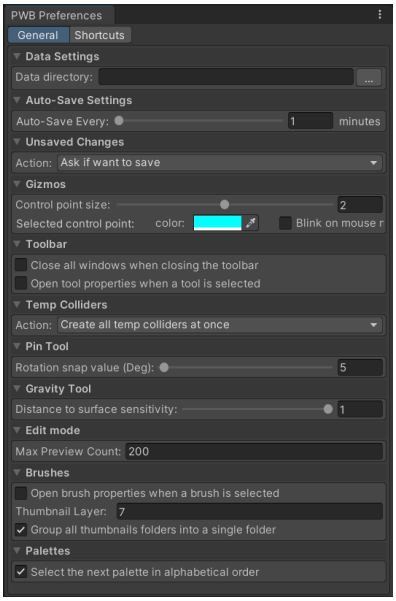
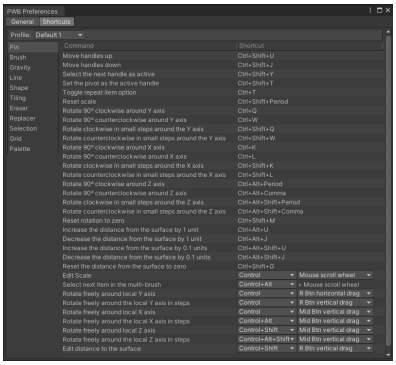
Control	Description
	These settings are different for each palette, the window shows the settings of the currently selected palette. **Include subfolders**: It includes subfolders when dropping folders or when using the second and third options of the context menu. **Add labels to prefabs**: When checked, define which labels will be added to prefabs when new brushes are created. **Default Brush Settings**: Defines the default setting for new brushes.

Thumbnail Editor

Control	Description
 	To open the thumbnail editor, right-click the thumbnail you want to edit, and then from the context menu select **Edit Thumbnail**. The context menu allows you to update the thumbnail in case the prefab has changed. It also allows you to copy and paste settings between thumbnails. **Thumbnail Preview**: It allows you to move, rotate and scale the target. It also allows you to rotate the light. **Overwrite common settings**: If selected, allows you to edit thumbnail settings for an individual item in a multibrush. **Use a custom Image**: When selected you can choose a custom image as a thumbnail. The other settings are self-explanatory: background color, light color and intensity, zoom and rotation. **Apply Button**: changes are only applied after pressing this button. **Multi-thumbnail Toggle**: The bottom right toggle in *Brush Properties/ Multibrush Settings* allows you to define which items are displayed in the multi-thumbnail in the palette. 

Preview Command	Shortcut
Rotate the target	Hold down the right mouse button + Move the mouse
Move the target	Ctrl + Hold down the right mouse button + Move the mouse
Zoom	Mouse scroll wheel
Rotate the light	Shift + Hold down the right mouse button + Move the mouse

Preferences

Control	Description
 	To open the preferences window, click the menu item **Tools > Plugin Master > Prefab World Builder > Preferences**. **Data Settings**: Defines the directory containing the PWBData file and the palettes directory. When you change the data folder, the palette files are moved to the new location. **Unsaved Changes**: Determines what action to take when there are unsaved changes: ● **Ask to save**: Prompts you to save. ● **Save**: Saves automatically. ● **Discard**: Discards changes. **Gizmos**: Allows customization of the control point size and color. Also lets you enable or disable the info text displayed next to the mouse cursor. **Toolbar**: Configures whether to close all PWB windows when closing the toolbar and toggles the automatic opening of the Tool Properties window when a tool is selected. **Temp Colliders**: Defines the action for creating temporary colliders: ● **Never create temp colliders**: Disables temporary colliders. ● **Create all temp colliders at once**: Creates all temporary colliders simultaneously. ● **Create temp colliders within the frustum**: Creates temporary colliders only within the camera frustum. *Temporary colliders allow you to place objects on surfaces without colliders*. **Pin Tool**: Sets the rotation snap increment in degrees. **Gravity Tool**: Adjusts mouse sensitivity for changing the distance from the surface. **Edit Mode**: Defines the maximum number of existing objects displayed as previews in Edit Mode. This setting can help optimize performance in scenes with many objects. **Brushes**: Specifies the layer where thumbnails are rendered (default is 7 to avoid conflicts), toggles the automatic opening of the Brush Properties window, and allows grouping all thumbnail folders into a single folder, simplifying the process of ignoring these folders in version control systems. **Palettes**: Configures how the shortcut for selecting the next palette works: alphabetical order or the order in which palettes are displayed. **Shortcuts**: All keyboard shortcuts can be customized here. You can reset them to their default values by right-clicking on the shortcut and selecting "Reset."

Limitations

- Most of the tools only work in scene view. Do not use it in the prefab view.
- It doesn't work with UI components.

Support and feedback

Please send me feedback or ask for support via the Unity forum or the Discord server. I do my very best to reply to all inquiries within 24 hours.

I hope you love it! If you do, would you consider posting an online review? This helps me to continue providing great products and helps other developers to make confident decisions.