



# Documentation

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# Shortcuts

All shortcuts can be edited in the [preferences window](#).

Tool	Command	Shortcut
<b>Common</b>	Deselect tool. Deselect handle.	Esc
	Snap to vertex	V
<b>Toolbar</b>	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

Tool	Command	Shortcut
Pin Tool	Position handles at top, bottom or pivot height	(Ctrl + Shift + U or J) <sup>p1</sup> or (Page Up or Page Down) <sup>p2</sup>
	Set the pivot as the active handle	(Ctrl + Shift + T) <sup>p1</sup> or (Home) <sup>p2</sup>
	Set the previous handle as active	Ctrl + Shift + H
	Select the next handle as active	(Ctrl + Shift + Y) <sup>p1</sup> or (End) <sup>p2</sup>
	<b>Select next item in the multi-brush</b>	<b>Ctrl + Alt + Mouse scroll wheel</b> or (Ctrl + Alt + O or N)
	Toggle repeat item option	Ctrl + T
	<b>Scale</b>	<b>Ctrl + Mouse scroll wheel</b>
	Reset Scale	(Ctrl + Shift + Period) <sup>p1</sup> or (Ctrl + Shift + Home) <sup>p2</sup>
	<b>Rotate freely around local Y axis</b>	<b>Ctrl + Hold down the right mouse button + Move the mouse horizontally</b>
	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 <sup>1</sup>	Hold down the <b>Alt</b> key while rotate freely
	Add 90° or -90° to the rotation around local Y axis	(Ctrl + Q or W) <sup>p1</sup> or (Ctrl + ← or →) <sup>p2</sup>
	Add a step <sup>1</sup> to the rotation around local Y axis	(Ctrl + Shift + Q or W) <sup>p1</sup> or (Ctrl + Shift + ← or →) <sup>p2</sup>
	Add 90° or -90° to the rotation around local X axis	(Ctrl + Alt + K or L) <sup>p1</sup> or (Ctrl + Alt + ← or →) <sup>p2</sup>
	Add a step <sup>1</sup> to the rotation around local X axis	(Ctrl + Alt + Shift + K or L) <sup>p1</sup> or (Ctrl + Alt + Shift + ← or →) <sup>p2</sup>
	Add 90° or -90° to the rotation around local Z axis	Ctrl + Alt + Period or Comma
	Add a step <sup>1</sup> to the rotation around local Z axis	Ctrl + Alt + Shift + Period or Comma
	Reset rotation to zero	(Ctrl + Shift + M) <sup>p1</sup> or (Ctrl + Home) <sup>p2</sup>
	Snap rotation to grid	Shft + G
	Reset the distance from the surface to zero	Shift + B
	Flip sprite horizontally	Shift + U

<sup>1</sup> The step size can be changed in the [preferences window](#).

<sup>p1</sup> Default Profile 1

<sup>p2</sup> Default Profile 2

Tool	Command	Shortcut
<b>Pin Tool And Gravity Tool</b>	Add 1 or -1 unit to the distance from surface	(Ctrl + Alt + U or J) <sup>p1</sup> or (Ctrl + Alt + ↑ or ↓) <sup>p2</sup>
	Add 0.1 or -0.1 units to the distance from surface	(Ctrl + Alt + Shift + U or J) <sup>p1</sup> or (Ctrl + Alt + Shift + ↑ or ↓) <sup>p2</sup>
	<b>Edit distance to the surface</b>	<b>Ctrl + Shift + Hold down the right mouse button + Move the mouse vertically</b>
<b>Brush Tool, Gravity Tool, Eraser, Replacer and Circle Select</b>	Change radius	(Ctrl + Mouse scroll wheel) <sup>p1</sup> or (Shift + Hold down the right mouse button + Move the mouse horizontally) <sup>p2</sup>
<b>Brush Tool and Gravity Tool</b>	Update brushstroke	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	Ctrl + M
<b>Line, Shape and Tiling</b>	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	Ctrl + Shift + T
	Toggle Edit Mode	Ctrl + Shift + Period
<b>Line and Shape</b>	Edit gap size	Ctrl + Shift + Hold down the right mouse button + Move the mouse horizontally
<b>Line</b>	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	Ctrl + Shift + A
	Deselect all points	Ctrl + Shift + D
	Set the previous segment as a <b>Curved or Straight Line</b>	(Ctrl + Shift + Y) <sup>p1</sup> or (Page Down) <sup>p2</sup>
	Close or open the line	(Ctrl + Shift + O) <sup>p1</sup> or (End) <sup>p2</sup>
	Snap to control points	V
	Toggle Edit Mode Type (Line nodes or Line position and rotation)	Ctrl + Shift + Comma

Tool	Command	Shortcut
<b>Tiling and Selection Tool</b>	Rotate 90° or -90° around X axis	(Ctrl + Shift + U or J) <sup>p1</sup> or (Ctrl + Shift + ↑ or ↓) <sup>p2</sup>
	Rotate 90° or -90° around Y axis	(Ctrl + Alt + K or L) <sup>p1</sup> or (Ctrl + Alt + ← or →) <sup>p2</sup>
	Rotate 90° or -90 around Z axis	(Ctrl + Alt + U or J) <sup>p1</sup> or (Ctrl + Alt + ↑ or ↓) <sup>p2</sup>
<b>Tiling</b>	Edit spacing	(Shift or Shift + Ctrl) + Hold down the right mouse button + Move the mouse
<b>Selection Tool</b>	Toggle position handle	W
	Toggle rotation handle	E
	Toggle scale handle	R
	Toggle Space Global/Local	Ctrl + 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
<b>Grid</b>	Toggle grid	Ctrl + G then Ctrl + G
	Toggle snapping	Ctrl + G then Ctrl + H
	Toggle grid Lock	Ctrl + G then Ctrl + L
	Set the origin to the active gameobject position	Ctrl + G then Ctrl + W
	Set the grid rotation to the active gameobject rotation	Ctrl + G then Ctrl + E
	Set the snap value to the size of the active gameobject	Ctrl + G then Ctrl + R
	Frame grid origin	Ctrl + G then Ctrl + Q
	Toggle position handle	Ctrl + G then Ctrl + Alt + W
	Toggle rotation handle	Ctrl + G then Ctrl + Alt + E
	Toggle spacing handle	Ctrl + G then Ctrl + Alt + R
	Move the origin one step up	Ctrl + G then Ctrl + Alt + J
	Move the origin one step down	Ctrl + G then Ctrl + Alt + M
<b>Palette</b>	<b>Select next brush</b>	<b>Ctrl + Shift + Mouse scroll wheel</b> 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
	<b>Pick or add a Brush</b>	<b>Hold Shift + 1 + Click on the object</b>
	Drag a prefab to the scene	Ctrl + Drag the brush to the scene

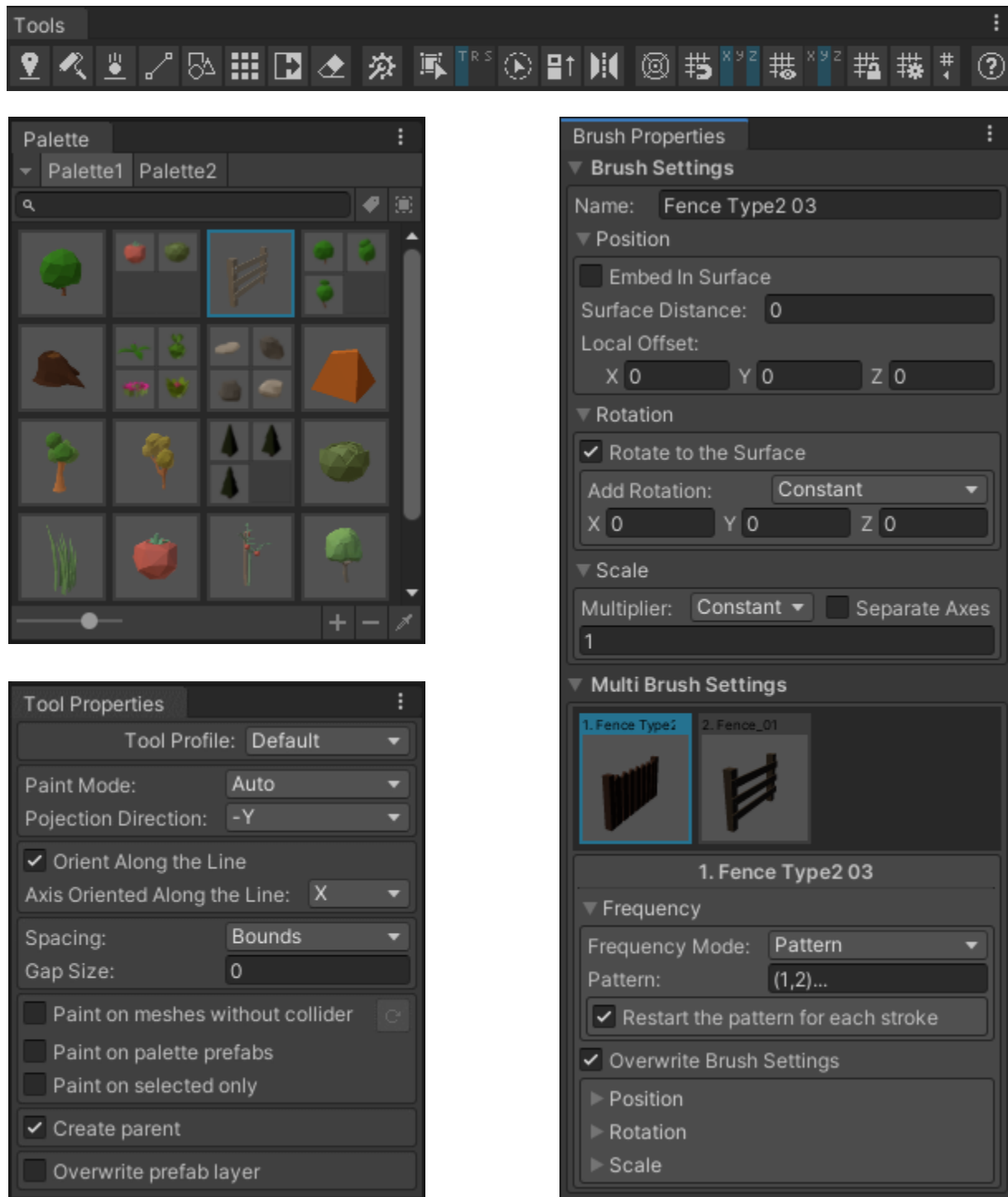
Category	Command	Shortcut
All Unity Commands	Tools - Toggle Pin Tool	Alt+Shift+1
Binding Conflicts	Tools - Toggle Brush Tool	Alt+Shift+2
Main Menu	Tools - Toggle Gravity Tool	Alt+Shift+3
3D Viewport	Tools - Toggle Line Tool	Alt+Shift+4
Animation	Tools - Toggle Shape Tool	Alt+Shift+5
Camera	Tools - Toggle Tiling Tool	Alt+Shift+6
Curve Editor	Tools - Toggle Replacer Tool	Alt+Shift+7
Grid	Tools - Toggle Eraser Tool	Alt+Shift+8
Hierarchy View	Tools - Toggle Selection Tool	Alt+Shift+9
ParticleSystem	Tools - Toggle Circle Selection Tool	Alt+Shift+0
Prefab World Builder	Tools - Toggle Extrude Tool	Alt+Shift+X
Profiling	Tools - Toggle Mirror Tool	Alt+Shift+M
PropertyEditor	Close All Windows	Alt+Shift+End

**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**.

Shortcut	Command
Ctrl+Shift+Delete	Delete selected brushes
Ctrl+Shift+Z	Select previous brush
Ctrl+Shift+X	Select next brush
Ctrl+Alt+Shift+Z	Select previous palette
Ctrl+Alt+Shift+X	Select next palette
Hold Shift+Alpha1 + Click	Pick or add a brush
Alt+Shift+Alpha1	Toggle Pin Tool
Alt+Shift+Alpha2	Toggle Brush Tool
Alt+Shift+Alpha3	Toggle Gravity Tool
Alt+Shift+Alpha4	Toggle Line Tool
Alt+Shift+Alpha5	Toggle Shape Tool
Alt+Shift+Alpha6	Toggle Tiling Tool
Alt+Shift+Alpha7	Toggle Replacer Tool
Alt+Shift+Alpha8	Toggle Eraser Tool
Alt+Shift+Alpha9	Toggle Selection Tool
Alt+Shift+X	Toggle Extrude Tool
Alt+Shift+M	Toggle Mirror Tool
Ctrl+Shift+Scroll wheel	Select prev/next brush
Ctrl+Alt+Shift+Scroll wheel	Select prev/next palette
Ctrl+G	Enable grid shortcuts
Ctrl+G	Toggle grid
Ctrl+H	Toggle snapping
Ctrl+L	Toggle grid lock
Ctrl+W	Set the origin to the active gameobject position
Ctrl+E	Set the grid rotation to the active gameobject rotation
Ctrl+R	Set the snap value to the size of the active gameobject
Ctrl+Q	Frame grid origin
Ctrl+Alt+W	Toggle Position Handle
Ctrl+Alt+E	Toggle Rotation Handle
Ctrl+Alt+R	Toggle Spacing Handle
Ctrl+Alt+J	Move the origin one step up
Ctrl+Alt+M	Move the origin one step down

## Interface

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






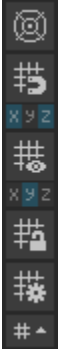

The interface is made up of four main windows: toolbar, palette, tool properties, and brush properties.

## Toolbar



To open the toolbar, click the menu item **Tools > Plugin Master > Prefab World Builder > Toolbar**.

The toolbar consists of three groups of controls:

Description	
	<p><b>Prop Placement Tools</b>                      Placement tools allow you to preview the props you are going to add to the scene.  <b>Pin Tool:</b> Place one object at a time.  <b>Brush Tool:</b> Place large amounts of randomly scattered objects.  <b>Gravity Tool:</b> Physics-based placing tool.  <b>Line Tool:</b> Place objects along a bezier path.(Create fences easily)  <b>Shape Tool:</b> Place objects along a shape (Circle, triangle square or polygon)  <b>Tiling Tool:</b> Place several objects arranged in a grid. (ideal for creating floor and walls)  <b>Replacer:</b> Replaces scene objects with prefabs from the selected brush.  <b>Eraser:</b> Erase objects as in a drawing editor.</p>
	<p><b>Tool Properties:</b> Opens the Tool Properties window.</p>
	<p><b>Selection Tools</b>  <b>Selection Tool:</b> It adds handles to the vertices of the bounding box containing the selected objects. Extends and complements the functionality of the unity transform controls. The TRS buttons toggle the position, rotation, and scale handles respectively.  <b>Circle Select Tool:</b> Allows you to efficiently select objects within a circular area.  <b>Extrude Tool:</b> Creates copies of the selected objects in the direction of the handle. The extrusion length can be specified by moving the handle away from the selection.  <b>Mirror Tool:</b> Create a mirrored copy of selected objects.</p>
	<p><b>Grid and Snapping Tools</b>  <b>Grid Type:</b> Rectangular or Radial.  <b>Enable/Disable Grid Snapping:</b> XYZ buttons toggle snapping on each axis. RC buttons toggle radius and circumference snapping.  <b>Show/Hide Grid:</b> Use XYZ buttons to select which grid plane is currently visible.  <b>Lock/Unlock Grid:</b> When unlocked, the grid follows the cursor along the normal direction of the grid plane. Otherwise, the grid remains in the same place.  <b>Grid and snapping settings:</b> Open the grid and snapping settings.</p>
	<p><b>Documentation:</b> Opens the Documentation pdf file. (This file)</p>

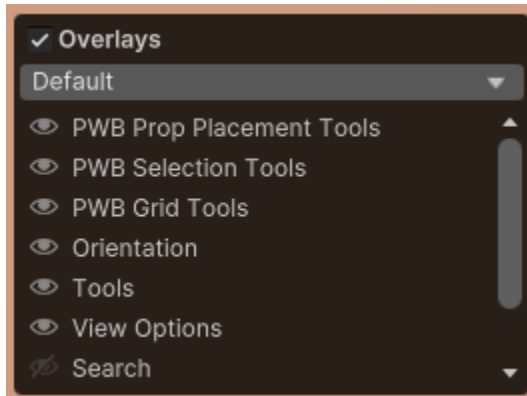
You can switch between tools using the keyboard [shortcuts](#).



## Toolbar Overlays

### Description

PWB tools are available as overlay panels in the scene view window (in **Unity 2021.2 or higher**) to make them more accessible and improve your workflow.



### Displaying and hiding Overlays

1. Click anywhere in the Scene view and press the ` Key to open the overlays menu.
2. Click the overlay you want to display or hide. If the Overlay is already displayed, an eye icon appears to its left. When you rollover a displayed option, the Overlay highlights in blue in the Scene view.

There are three different overlays: prop placement tools, selection tools and grid tools. Each can be shown, hidden, or collapsed independently.

For more information on overlays, visit the [unity manual](#)



## 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.

Brush Properties... <hr/> Select Prefab Open Prefab Select References In Scene <hr/> Update Thumbnail Edit Thumbnail... Copy Thumbnail Settings <hr/> Delete Duplicate <hr/> New Brush From Prefab... New MultiBrush From Folder... New Brush From Each Prefab In Folder... <hr/> New MultiBrush From Selection New Brush From Each Prefab Selected <hr/> Update all thumbnails <hr/> Brush Creation And Drop Settings...	<p><b>Context Menu:</b> Right-click on the empty prefab space between brushes to open the context menu. Options include:</p> <ul style="list-style-type: none"> <li>• Open the <a href="#">Brush Properties</a>.</li> <li>• Create new brushes from prefabs or folders. See the <a href="#">Brush Creation</a> section.</li> <li>• Create brushes from selected objects in the Scene.</li> <li>• Update all thumbnails.</li> <li>• Open the <a href="#">Brush Creation and Drop Settings window</a>.</li> </ul> <p><b>Context Menu (Brush):</b> Right-click on an existing brush to display more options, such as:</p> <ul style="list-style-type: none"> <li>• Select Prefabs: Select the brush prefabs in the Project window.</li> <li>• Select Scene References: Select prefab references in the Scene.</li> <li>• Update or Edit Thumbnail: Update or customize the brush thumbnail.</li> <li>• Duplicate or Delete: Duplicate or delete the brush</li> </ul>
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### 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.

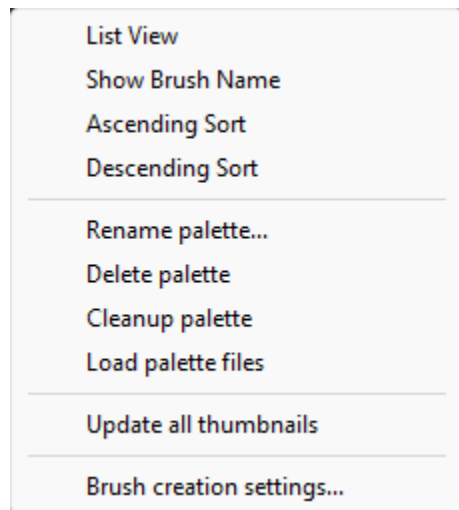
## Bottom Bar



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.

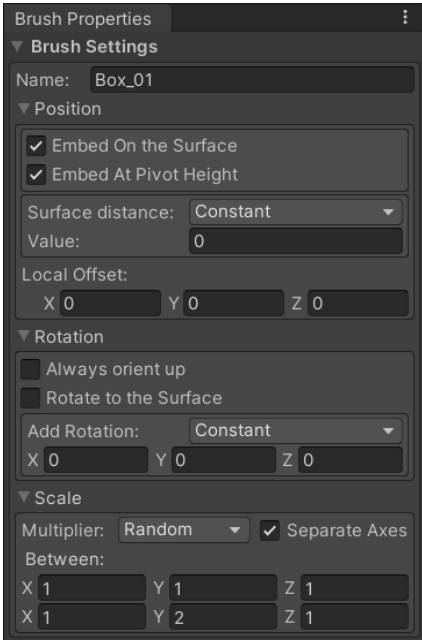
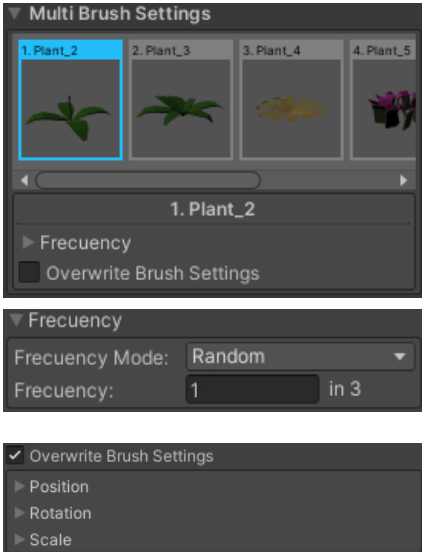
**Brush Creation Settings:** Open the [Brush Creation and Drop Settings window](#) for further customization.

## 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
 <p>Brush Properties</p> <p>▼ Brush Settings</p> <p>Name: Box_01</p> <p>▼ Position</p> <p><input checked="" type="checkbox"/> Embed On the Surface</p> <p><input checked="" type="checkbox"/> Embed At Pivot Height</p> <p>Surface distance: Constant</p> <p>Value: 0</p> <p>Local Offset:</p> <p>X 0 Y 0 Z 0</p> <p>▼ Rotation</p> <p><input type="checkbox"/> Always orient up</p> <p><input type="checkbox"/> Rotate to the Surface</p> <p>Add Rotation: Constant</p> <p>X 0 Y 0 Z 0</p> <p>▼ Scale</p> <p>Multiplier: Random <input checked="" type="checkbox"/> Separate Axes</p> <p>Between:</p> <p>X 1 Y 1 Z 1</p> <p>X 1 Y 2 Z 1</p>	<p><b>Embed in surface:</b> If selected, objects are placed so that the bottom vertices are below the surface. This is very useful for placing trees.</p> <p><b>Embed at pivot height:</b> If selected, objects are positioned so that their pivots are on the surface.</p> <p><b>Surface distance:</b> 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.</p> <p><b>Local offset:</b> Adds the offset value to the object position in local space.</p> <p><b>Always orient up:</b> If checked, objects are positioned so that their local vertical axis is aligned with the world vertical axis.</p> <p><b>Rotate to the surface:</b> If selected, objects are placed oriented perpendicular to the surface.</p> <p><b>Add Rotation:</b> Can be a constant or random value within a range.</p> <p><b>Scale multiplier:</b> Can be a constant or random value within a range.</p> <p><b>Flip:</b> For 2D assets only. Allows you to define whether it is enabled, disabled or random in both X and Y.</p>
 <p>▼ Multi Brush Settings</p> <p>1. Plant_2 2. Plant_3 3. Plant_4 4. Plant_5</p> <p>1. Plant_2</p> <p>► Frequency</p> <p><input type="checkbox"/> Overwrite Brush Settings</p> <p>▼ Frequency</p> <p>Frequency Mode: Random</p> <p>Frequency: 1 in 3</p> <p><input checked="" type="checkbox"/> Overwrite Brush Settings</p> <p>► Position</p> <p>► Rotation</p> <p>► Scale</p>	<p><b>Multi brush items:</b> 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.</p> <p><b>Frequency - Random:</b> Define how often each item appears.</p> <p><b>Overwrite Brush Settings:</b> if selected, the brush settings for the current item are overridden by the values below.</p>

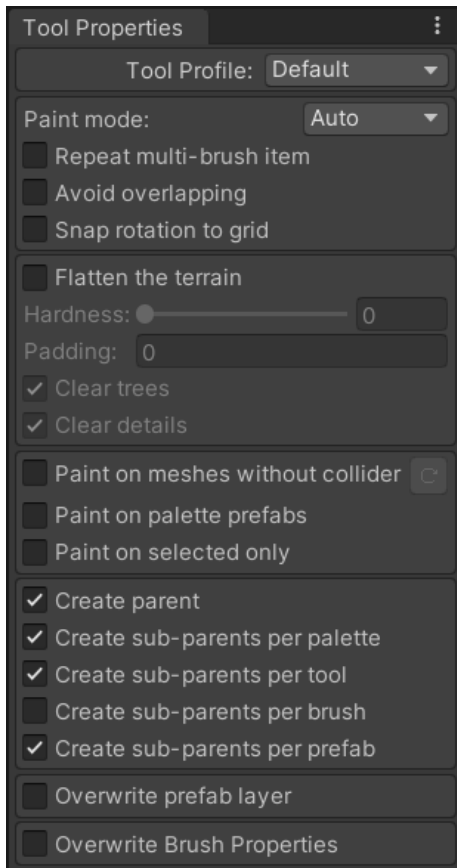


## Common Tool Properties

Control	Description
<div>                     Tool Profile: <span>Default</span> </div>	<p><b>Tool profile:</b> allows you to quickly save and load different settings.</p>
<div> <input type="checkbox"/> Paint on meshes without collider                     <input type="checkbox"/> Paint on palette prefabs                     <input type="checkbox"/> Paint on selected only                       <input checked="" type="checkbox"/> Create parent                     <input checked="" type="checkbox"/> Create sub-parents per palette                     <input checked="" type="checkbox"/> Create sub-parents per tool                     <input type="checkbox"/> Create sub-parents per brush                     <input checked="" type="checkbox"/> Create sub-parents per prefab                       <input checked="" type="checkbox"/> Overwrite prefab layer                     Layer: <span>Default</span>   <input checked="" type="checkbox"/> Overwrite Brush Properties   ▼ Position                     <div> <input type="checkbox"/> Embed On the Surface                     </div>                     Surface Distance: <span>0</span>                     Local Offset:                     <div>                         X <span>0</span> Y <span>0</span> Z <span>0</span> </div>                     ▼ Rotation                     <div> <input checked="" type="checkbox"/> Rotate to the Surface                     </div>                     Add Rotation: <span>Constant</span> <div>                         X <span>0</span> Y <span>0</span> Z <span>0</span> </div>                     ▼ Scale                     Multiplier: <span>Constant</span> <input type="checkbox"/> Separate Axes                     <div> <span>1</span> </div> </div>	<p><b>Paint on meshes without collider:</b> When enabled, generates temporary mesh-colliders for all meshes without colliders. The button on the right allows you to generate the colliders manually.</p> <p><b>Paint on palette prefabs:</b> When unchecked, does not allow drawing on prefabs within the same palette.</p> <p><b>Paint on selected only:</b> When selected, It filters the target surfaces by the ones that are currently selected.</p> <p><b>Create parent:</b> Automatically creates a parent for new objects.</p> <p><b>Create sub-parent per palette, tool, brush, prefab:</b> Automatically creates a sub-parent for new objects with the same (palette, tool, brush, prefab).</p> <p><b>Parent transform:</b> defines the parent of the newly created objects.</p> <p><b>Overwrite prefab layer:</b> Allows you to define the layer of newly created objects.</p> <p><b>Overwrite brush properties:</b> Allows you to overwrite the properties of the brush.</p>
<div> <input checked="" type="checkbox"/> Embed On the Surface                     <input type="checkbox"/> Embed At Pivot Height                     Surface Distance: <span>0</span> <input type="checkbox"/> Rotate To the Surface                 </div>	<p><b>Embed on the surface:</b> If selected, objects are placed so that the bottom vertices are below the surface.</p> <p><b>Embed at pivot height:</b> If selected, objects are positioned so that their pivots are on the surface.</p> <p><b>Surface distance:</b> Distance from the point of contact of the object with the surface, it can be positive above the surface or negative below the surface.</p> <p><b>Rotate to the surface:</b> If selected, objects are placed oriented perpendicular to the surface.</p>

## 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.

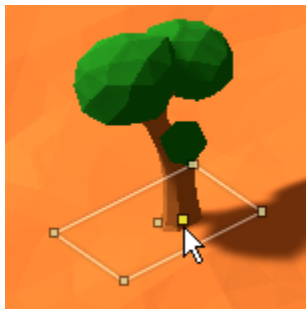
**Hardness:** determines how smooth or abrupt the transition is between flattened terrain and the existing terrain.

**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.

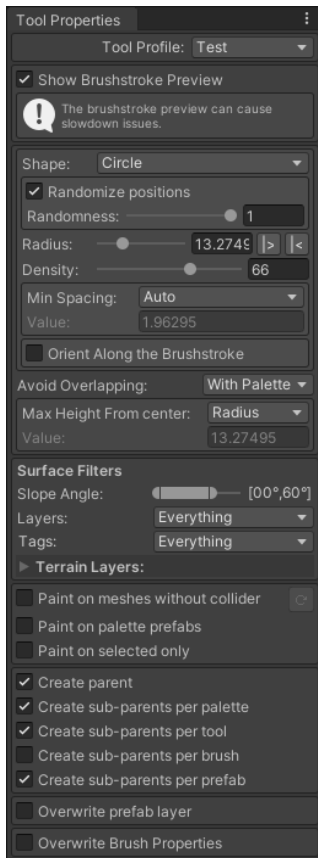
#### Alternative use case:

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.

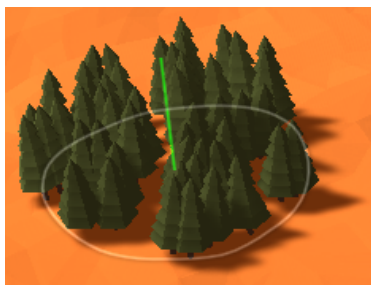
**Orient along the brushstroke:** Orient current objects in the direction of mouse movement. It allows you to add an angle to the local rotation.

**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.



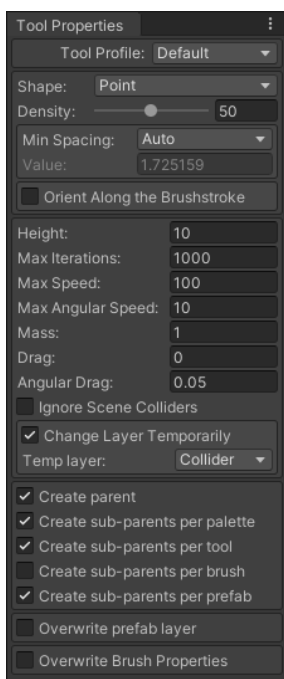
### How to use

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.

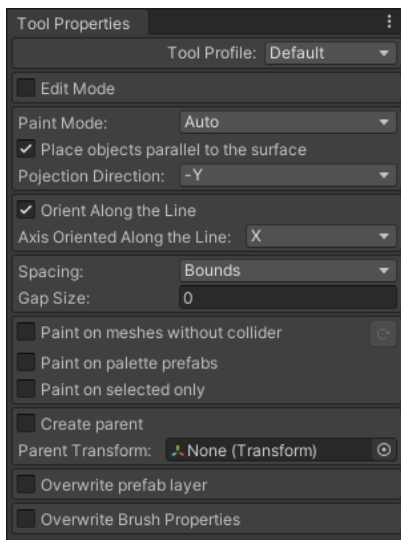


### How to use

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.

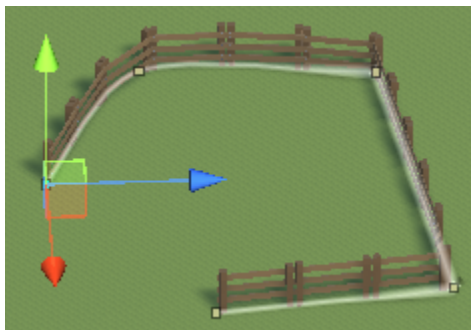
**Projection direction:** Defines the direction in world space in which the objects on the line will be projected onto the surface.

**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.

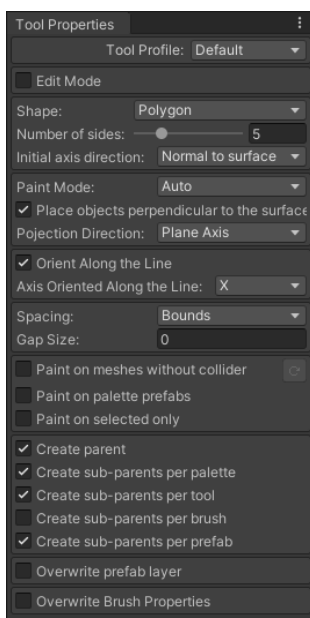


### How to use, create mode

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.

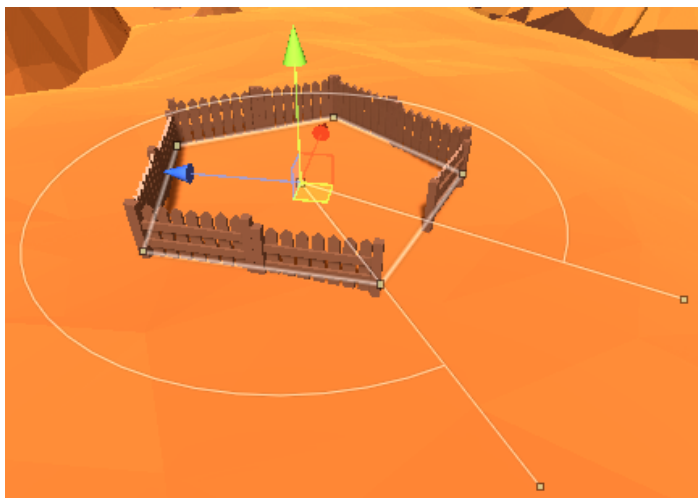
**Shape:** Circle or polygon. In the case of the polygon you can choose the number of sides.

**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

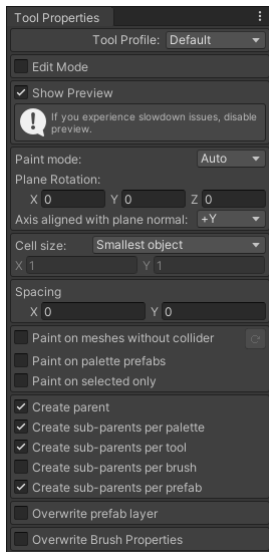


1. Toggle on the shape tool.
2. Select the brush on the palette.
3. Press the left click to create the center point.
4. Move the mouse to preview the shape.
5. Click again to create the shape and preview the objects.
6. Select the handles to edit the radius and the angle of the arc.
7. Press Enter to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

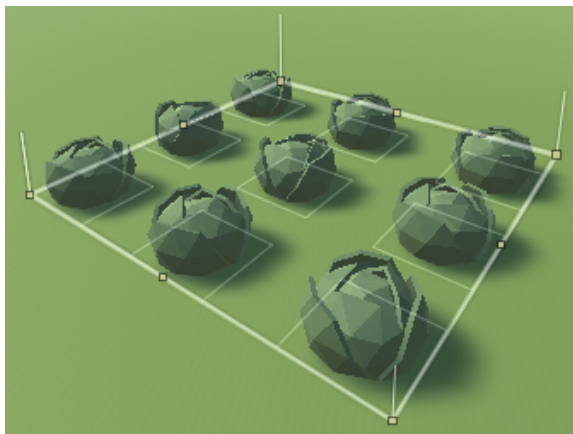
**Plane Rotation:** Defines rotation of the plane.

**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.

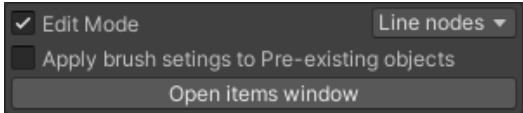
Please check out the [Common Tool Properties](#) section.



### How to use

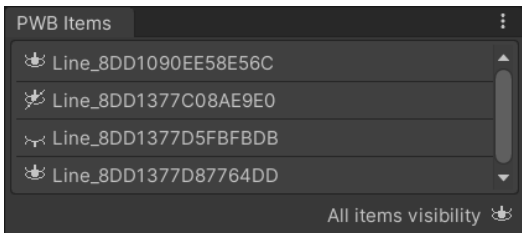
1. Toggle on the tiling tool.
2. Select the brush on the palette.
3. Click to create the first point.
4. Move the mouse to preview the rectangle.
5. Click again to create the tiling rectangle and preview the objects.
6. Select the handles to edit the shape, the position and the rotation of the rectangle.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

You can use the [shortcuts](#) to set the spacing between objects

Control	Description
	<p>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.</p> <p>When editing lines, you can choose to edit line nodes or edit the position and rotation of the line.</p> <p><b>Apply brush settings to Pre-existing objects:</b> When this option is enabled, the current brush settings are applied to the objects in the selected item.</p>

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
 <p>The screenshot shows the 'PWB Items' window with a list of four items, each preceded by an eye icon. Below the list is a button labeled 'All items visibility'. A context menu is open, showing options: 'Rename', 'Duplicate', 'Delete item and its children', 'Delete item but not its children', 'Select parent object', 'Toggle Close   Open', and 'Line properties...'.</p>	<p>Provides a comprehensive overview of all elements created in Edit Mode, making it easier to manage and edit them.</p> <p><b>Item visibility:</b> 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.</p> <p><b>Context menu:</b> 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.</p>

## Edit Mode Context Menu

Control	Description
<div>                     Delete point ... Delete                      Delete selected points ... Delete                      Select all points ... Ctrl+Shift+A                      Deselect all points ... Ctrl+Shift+D                      Set prev segment as straight or curved ... Ctrl+Shift+Y                      Close or open the path ... Ctrl+Shift+O  <hr/>                     Select parent object ... Ctrl+Shift+T                      Duplicate ... Ctrl+Shift+D                      Delete item and its children ... Alt+Delete                      Delete item but not its children ... Alt+Shift+Delete  <hr/>                     Line properties...                 </div>	<p>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.</p> <p>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.</p>

## Item Properties

Control

Item properties

Name: Line\_8DD1090EE58E56C

Idx	Position	Prev Seg Curved
00 X -46.013 Y 1.54333 Z 89.8770	<input checked="" type="checkbox"/>	
01 X -44.087 Y 1.60819 Z 88.9333	<input checked="" type="checkbox"/>	
02 X -45.792 Y 1.63385 Z 87.6779	<input checked="" type="checkbox"/>	
03 X -46.667 Y 1.65522 Z 85.6172	<input checked="" type="checkbox"/>	
04 X -48.381 Y 1.68998 Z 82.4483	<input checked="" type="checkbox"/>	

Apply

Cancel

Description

This window provides a detailed view of the selected item's properties and allows you to:

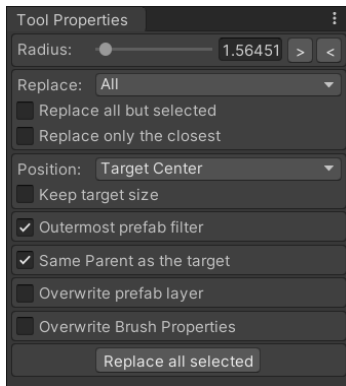
**Rename the Item:** Assign a custom name to the item for better organization.

**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.

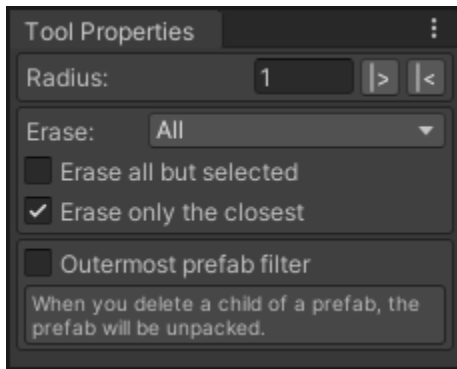
#### Replace all selected:

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

#### Eraser:

- **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



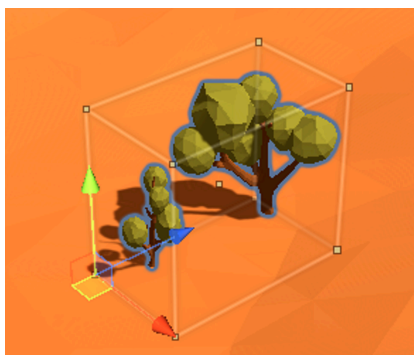
1. Toggle on the eraser tool.
2. Use the [shortcut](#) to change the radius. Objects must fit inside the circle to be detected.
3. Click to erase the objects.



## Selection

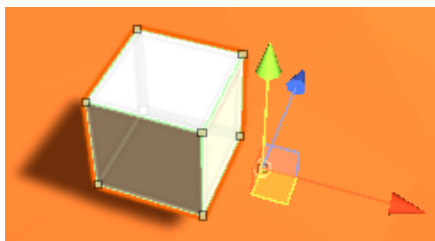
Control	Description
<div> <div> <div>Tool Properties</div> <div> <div>Tool Profile: Default</div> <div> <div>Handle Space: Local</div> <div>Box Space: Global</div> </div> </div> </div> <div> <div>Selection Filters</div> <div> <div> <input type="checkbox"/> Prefabs from selected palette only                     <input type="checkbox"/> Prefabs from selected brush only                 </div> <div> <div>Layers: Mixed...</div> <div>Tags: Everything</div> </div> <div> <input checked="" type="checkbox"/> Embed On the Surface                     <input type="checkbox"/> Embed At Pivot Height                 </div> <div> <div>Surface Distance: 0</div> <input type="checkbox"/> Rotate To the Surface                 </div> </div> </div> </div>	<p><b>Handle Space:</b> Global or local.</p> <p><b>Box Space:</b> Global or local.</p> <p><b>Selection filters:</b> Allows you to filter the selection by palette, brush, layer and tag.</p> <p><b>Embed in surface:</b> If selected, objects are placed so that the bottom vertices are below the surface.</p> <p><b>Embed at pivot height:</b> If selected, objects are positioned so that their pivots are on the surface.</p> <p><b>Surface distance:</b> Distance from the point of contact of the object with the surface, it can be positive above the surface or negative below the surface.</p> <p><b>Rotate to the surface:</b> If selected, objects are placed oriented perpendicular to the surface.</p>

### Normal use case



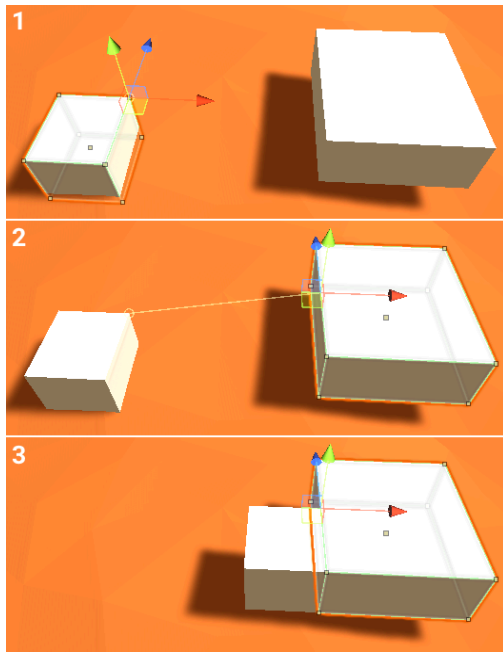
1. Toggle on the selection tool.
2. Select the objects you want to edit.
3. Use the handles:
  - a. Select one of the handles to translate, rotate or scale the selection from there. There are handles in the corners of the bounding box, but also in the middle of each side and each plane.
  - b. Use the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

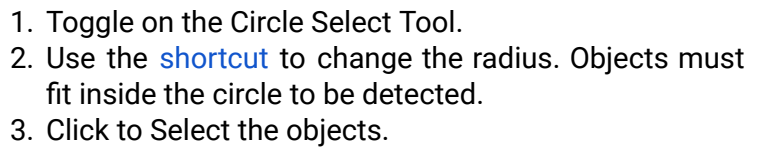
## Move to other selection handle



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.

## How to use

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## Extrude

### Control

Tool Properties

Tool Profile: Default

Space: Global

Spacing: Custom

Value:

X 0

Y 0

Z 0

Add Rotation: Random

Between:

X 0

Y 0

Z 0

X 0

Y 0

Z 180

☒ Only in multiples of: 30

☒ Same parent as source

☐ Overwrite prefab layer

☐ Embed On the Surface

### 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.

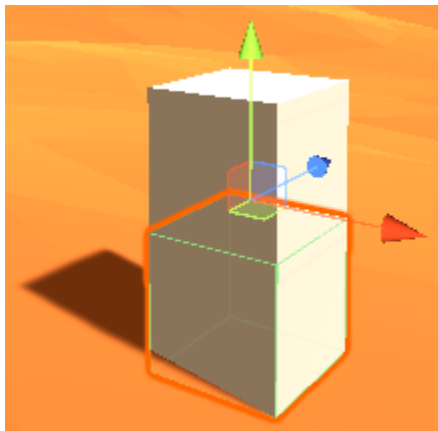
**Same parent as source:** If not selected, allows you to define the parent of newly created objects.

**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

Tool Properties

Tool Profile: Default

Position:

X -5.08863

Y -3.22857

Z 30.89018

Rotation:

X 0

Y 90

Z 0

☐ Invert scale

☒ Reflect rotation

Action: Create

☒ Same parent as source

☐ Overwrite prefab layer

☐ Embed In Surface

### 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.

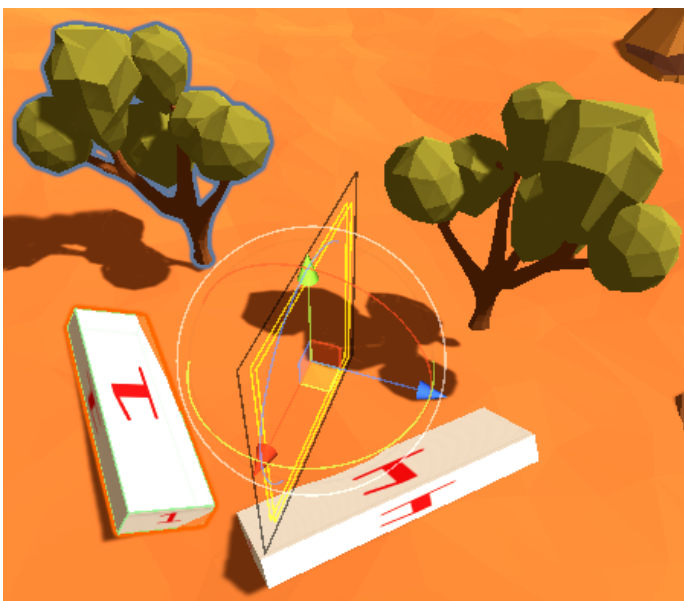
**Embed in surface:** If selected, objects are placed so that the bottom vertices are below the surface.

**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.

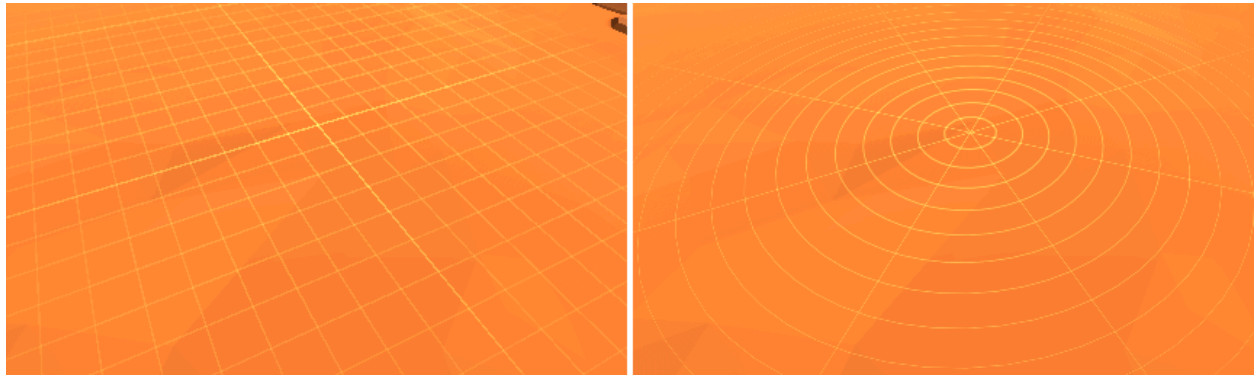
### How to use



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.

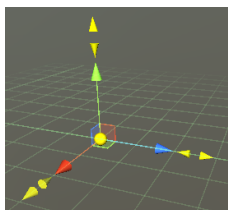
\* Press Escape to deselect the mirror handle.

## Grid and Snapping



### Grid and snapping settings

Control	Description
<div>                     Grid and Snapping Settings                 </div> <div>                     Snap Value:                      X 1 Y 1 Z 1                      Set the snap value to the size of the active gameobject                 </div> <div>                     Grid Origin                      X 94.12199 Y 3.29776 Z 184.9022                      Set the origin to the active gameobject position                 </div> <div>                     Rotation                      X 0 Y 0 Z 0                      Set the rotation to the active gameobject rotation                 </div> <div>                     Major lines every Nth grid line:                      X 3 Y 2 Z 5                 </div> <div>                     Grid type: Rectangular                 </div> <div> <input checked="" type="checkbox"/> Lock the grid origin in place  <input checked="" type="checkbox"/> Show position handle  <input type="checkbox"/> Show rotation handle  <input type="checkbox"/> Show spacing handle                 </div>	<p><b>Snap value:</b> Allows you to set the size of the cells. Set the XYZ values manually or press the button to set the value to the size of the active gameobject.</p> <p><b>Radial snap value:</b> Allows you to set the radius step of the radial grid.</p> <p><b>Radial sectors:</b> Define the amount of sectors for the radial grid.</p> <p><b>Grid origin:</b> you can set the XYZ values manually or press the button to set the grid origin to the active gameobject position.</p> <p><b>Rotation:</b> you can set the euler angle values manually or press the button to set the grid rotation to the active gameobject position.</p> <p><b>Grid Type:</b> Rectangular or radial.</p> <p><b>Lock the grid origin in place:</b> When unlocked, the grid follows the cursor along the normal direction of the grid plane. Otherwise, the grid remains in the same place.</p>



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.

For more information on managing and organizing brushes, see the [Palette Window](#) section.

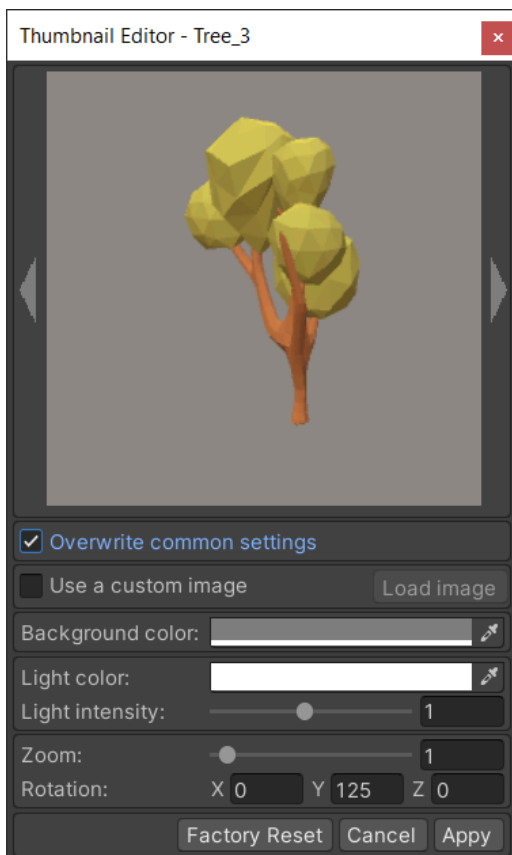
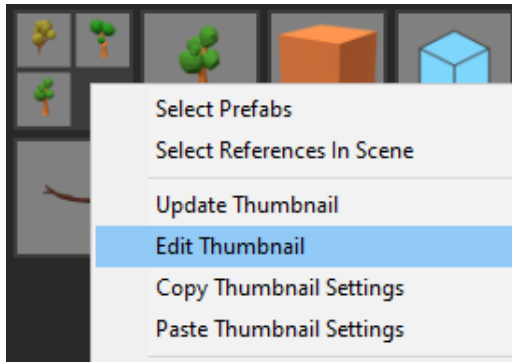
## Brush creation settings Window

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## 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.

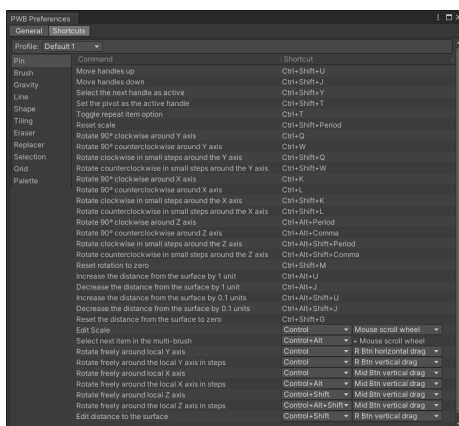
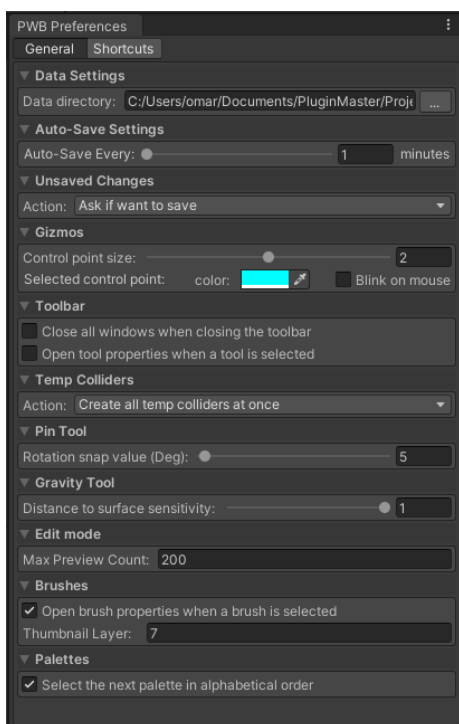
**Multi-thumbnail Toggle:** The bottom right toggle in *Brush Properties/ Multibrush Settings* allows you to define which items are displayed in the multi-thumbnail in the palette.



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.

**Auto-Save:** Sets the auto-save interval in minutes.

**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.

**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) and toggles the auto-opening of the [Brush Properties](#) window.

**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.

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## 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.