

This document describes the setup procedure, usage and various options of this tool. This document is not intended to describe the purpose of this tool. Please read the description on the asset store to understand what this tool does.

Installation procedure:

- >> Download and import the package from the asset store. Make sure you import everything in the package.
- >> Make sure you don't delete or modify anything that is newly imported and related to the package.
- >> Click on any game object. You will see the PolyFew inspector in the bottom of the components hierarchy.

Options Description:

The image shows the PolyFew inspector panel with various options and callouts explaining their functions:

- Reduce Deep** (checked): Check this option to apply reduction with the current settings to this mesh and all of the children meshes. If this option is unchecked the reduction is only applied to the currently selected object, if it has a mesh. This might be slow for complex object hierarchies containing lots of meshes.
- Undo** (arrow icon): Undo or redo the last reduction operation. Please note that you will have to save the scene to keep these changes persistent.
- Reduce** (button): Apply reduction to this object with the current settings. If you don't reduce the object the changes will be lost when this object gets out of focus. Please note that you must save this scene after reducing the object otherwise the reduce operation will be reset on Editor restart.
- Preserve UV Foldover** (unchecked): Check this option to preserve UV foldover areas. Usually these are the areas where sharp edges, corners or dents are formed in the mesh or simply the areas where the mesh folds over.
- Preserve UV Seams** (unchecked): Preserve the mesh areas where the UV seams are made. These are the areas where different UV islands are formed. Usually the shallow polygon congested areas.
- Preserve Borders** (unchecked): Check this option to preserve border edges of the mesh. Border edges are the edges that are unconnected and open. Preserving border edges might lead to lesser polygon reduction but can be very helpful where you see mesh distortions.
- Smart Linking** (checked): Smart linking links vertices that are very close to each other. This helps in the mesh simplification process where holes or other serious issues could arise. Disabling this (where not needed) can cause a minor performance gain.
- Aggressiveness** (7): The aggressiveness of the reduction algorithm. Higher number equals higher quality, but more expensive to run. Lowest value is 7.
- Max Iterations** (100): The maximum passes the reduction algorithm does. Higher number is more expensive but can bring you closer to your target quality. 100 is the lowest allowed value.
- Tolerance Sphere** (checked): Check this option to enable the tolerance sphere. The tolerance sphere allows you to encompass specific areas of the mesh that you want to ignore during the reduction process leaving such areas with the original quality by ignoring them during the reduction process. Please note that reduction with preservation sphere might get slow.
- Colour** (yellow): Change the color of the tolerance sphere.
- Relative Size** (0.5): The diameter of the tolerance sphere relative to the selected object's scale.
- Position** (X: 0.75, Y: 0, Z: 0): The current position of the preservation sphere in world space.
- Reduction Strength** (50 %): The intensity of the reduction process. This is the amount in percentage to reduce the model by.
- Triangles Count** (8024): The current number of triangles in the selected mesh. If "Reduce Deep" option is checked then this shows the total number of triangles considering the nested meshes as well.
- AUTOMATIC LOD** (expandable): Click to expand the automatic LOD section.

Change the path where the generated LODs mesh assets will be saved. If you don't select a path the default path will be used.

The intensity of the reduction process. This is the amount in percentage to reduce the model by in this LOD level. The lower this value the higher will be the quality of this LOD level. For the base level or level 1 you should keep this to 0.

The screen relative height controls how far the viewing camera must be from the object before a transition to the next LOD level is made.

Expand this section to see further options for simplifying the meshes in this LOD level.

Check this option if you want this LOD level to regard the tolerance sphere and retain the original quality of the mesh area enclosed within the tolerance sphere. Please note that the LOD generation for an LOD level with "Regard Tolerance" checked can get slower.

Add an LOD level.

Generate LODs for this mesh with the settings specified. Please note that you must save the scene after successful generation of LODs.

Destroy the generated LODs for this mesh. This will also delete the mesh files that were created for this object during the LOD generation process. Please note that you will have to delete the empty folders manually.

Deletes this LOD level.

The individual LOD levels. Each LOD level has a variety of settings that can be changed for the simplification of meshes in that level. The settings are exclusive to an LOD level and don't effect other levels.

The screenshot shows the 'AUTOMATIC LOD' settings panel. At the top, there are buttons for 'Change Save Path', 'Add', 'Generate LODs', and 'Destroy LODs'. Below these are three sections for 'Level 1 (Base)', 'Level 2', and 'Level 3'. Each section contains sliders for 'Reduction Strength' and 'Transition Height', a 'Reduction Options' dropdown, and a 'Regard Tolerance' checkbox. Callout lines connect various parts of the panel to explanatory text boxes. For example, a line points from the 'Add' button to 'Add an LOD level.', and another points from the 'Generate LODs' button to 'Generate LODs for this mesh with the settings specified...'. A line points from the 'Destroy LODs' button to 'Destroy the generated LODs for this mesh...'. Another line points from the 'X' button next to 'Level 1 (Base)' to 'Deletes this LOD level.'. A bracket on the right side of the panel points to the individual level sections with the text 'The individual LOD levels. Each LOD level has a variety of settings...'. On the left, three callouts explain the 'Reduction Strength', 'Transition Height', and 'Regard Tolerance' settings.

Level	Reduction Strength (%)	Transition Height	Regard Tolerance
Level 1 (Base)	0	0.6	<input type="checkbox"/>
Level 2	30	0.4	<input type="checkbox"/>
Level 3	60	0.15	<input type="checkbox"/>

NOTES:

- >> To ensure proper functionality of this tool please don't modify the package contents in any way.
- >> As stated in the tool requirements on the asset store, this asset requires unity version 2017 and above. Otherwise the tool won't work as expected.
- >> Currently PolyFew is incompatible with AssetDatabase V2. Therefore, In Unity 2019.2 and above please make sure that AssetDatabase version 2 is not chosen. You can switch to version1 by going to ProjectSettings > Editor > Asset Pipeline and change the mode to version 1.
- >> PolyFew requires that the gizmos from the scene view are enabled, and have the Transform gizmos checked.
- >> There are various operations that will prompt you to save the scene after completion. If the scene is not saved in such cases before exiting the Unity Editor the changes might get lost.
- >> If you don't see the PolyFew panel in the inspector after selecting a GameObject then verify the following for the selected GameObject:
 - * It is not a connected prefab instance (highlighted blue). In this case you can disconnect/Unpack the prefab instance by right-clicking on it in the Hierarchy and selecting Unpack Prefab. Depending on your unity version you might not see the option to unpack prefab in which case you can select the prefab instance, go to GameObject menu -> Break Prefab Instance.
 - * It is active and if it is parented to any GameObject then the parent should also be active.
 - * It has a Mesh Renderer component attached.
 - * It has a Mesh Filter attached.
 - * You have enabled Gizmos in the scene view, particularly the Transform gizmo.

THIRD PARTY CREDITS:

☯ Special thanks to Mattias Edlund for his work on Unity Mesh Simplifier project. Poly few would not have been possible without his existing work.

<https://github.com/Whinarn/UnityMeshSimplifier>

☯ Thanks to gpvigano and all other people involved in the development of for Asynchronous Importer and run-time Loader for Unity. The runtime API for importing wavefront OBJ files is based on top of this project.

<https://github.com/gpvigano/AsImpL>

☯ Thanks to Dummiesman for Scene OBJ Exporter for Unity. The runtime API for exporting wavefront OBJ files is based on top of his work.

<https://assetstore.unity.com/packages/tools/utilities/scene-obj-exporter-22250>

☯ Thanks to Silvano Junior for his great artwork on the Cave Troll. The asset's introduction video made use of this 3D model for demonstration purposes.

<https://assetstore.unity.com/packages/3d/characters/creatures/creature-cave-troll-115707>

☯ Thanks to AdvancedSkeleton for his great piece of art the Barbarian Warrior. The asset's WebGL demo makes use of this 3D Model.

<https://assetstore.unity.com/packages/3d/characters/humanoids/barbarian-warrior-75519>

☯ Thanks to Unity Technologies Japan for sharing their skills in the form of a cute looking anime girl, the Unity Chan Model is used in the asset's demonstration video.

<https://assetstore.unity.com/packages/3d/characters/unity-chan-model-18705>

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OR

<https://connect.unity.com/u/594e404f32b306001c1b2711>