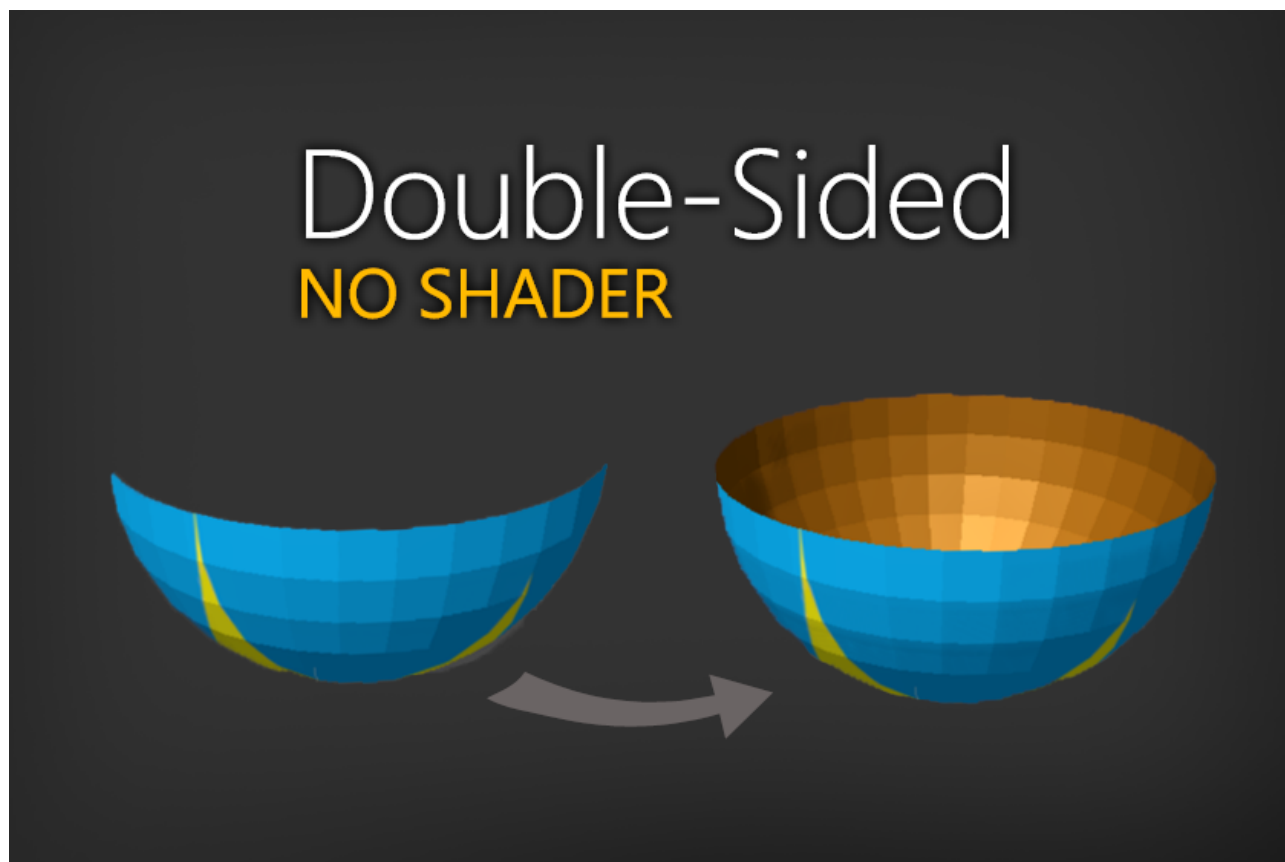


Make Mesh Double-Sided



You need to make your mesh double-sided but also need to use a custom shader?

Make Mesh Double Sided can help. It generates a new double-sided mesh for you.

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1. Making a mesh double-sided

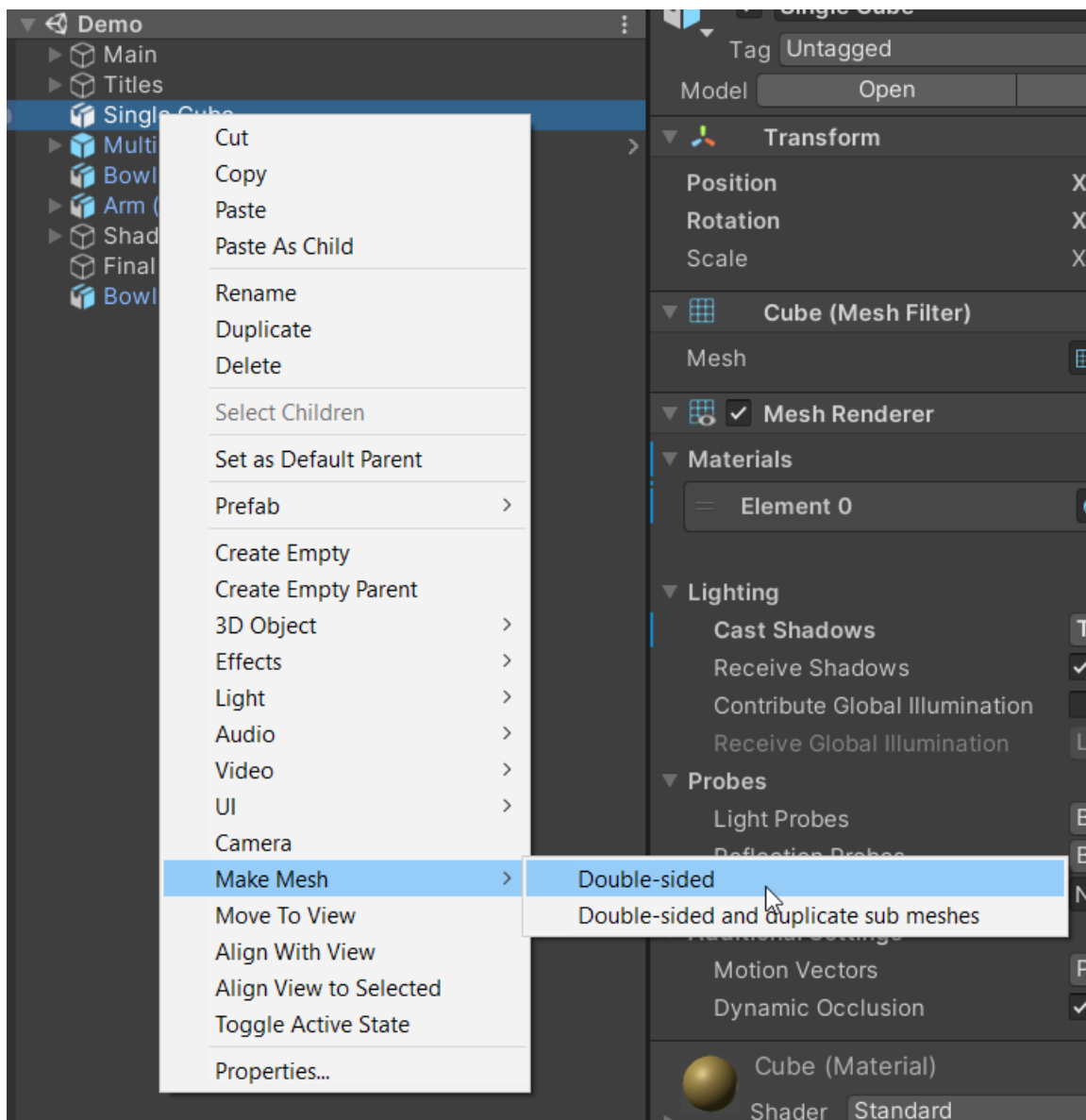
There are two possibilities to make a single-sided mesh double-sided.

The first is to use a custom shader which renders both sides. There are plenty of assets to do that in the asset store. - This has the advantage that it works with all meshes without any modifications. The disadvantage is that it does not support custom shaders (you would have to implement/enable double sided rendering in your shader).

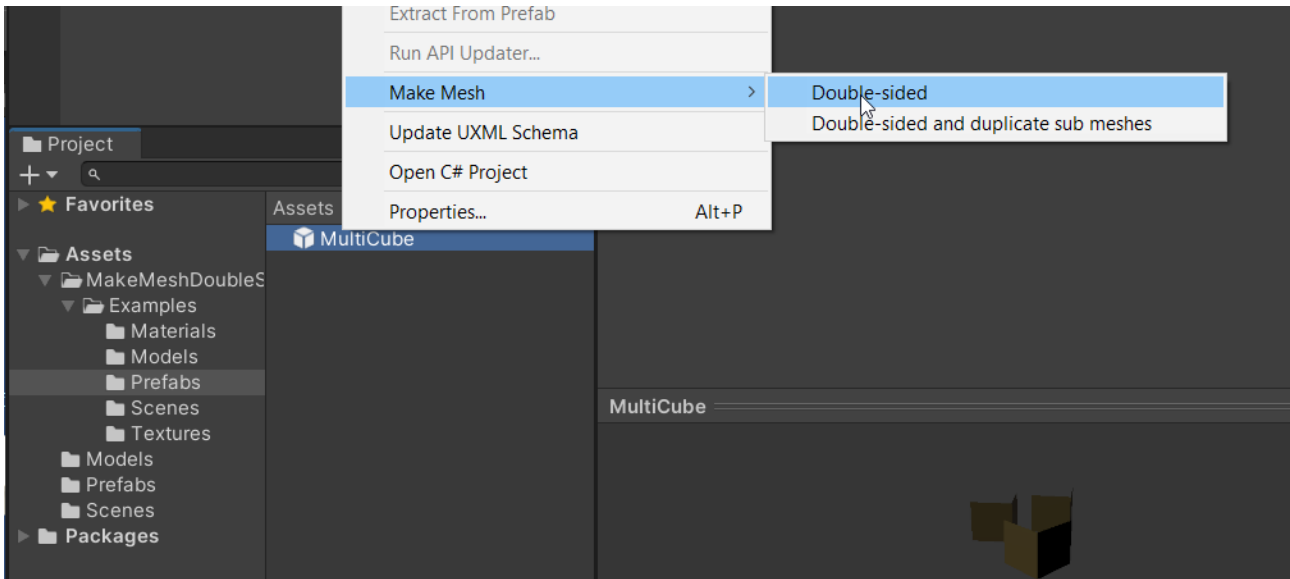
The second is to convert the mesh into a real double-sided mesh by duplicating and inverting the vertices and triangles. This has the advantage that it is shader independent. The disadvantage is that you just doubled the triangles count (more data, though most will be culled anyways).

To make a mesh double sided right-click on the object and choose:

Make Mesh > Double-sided

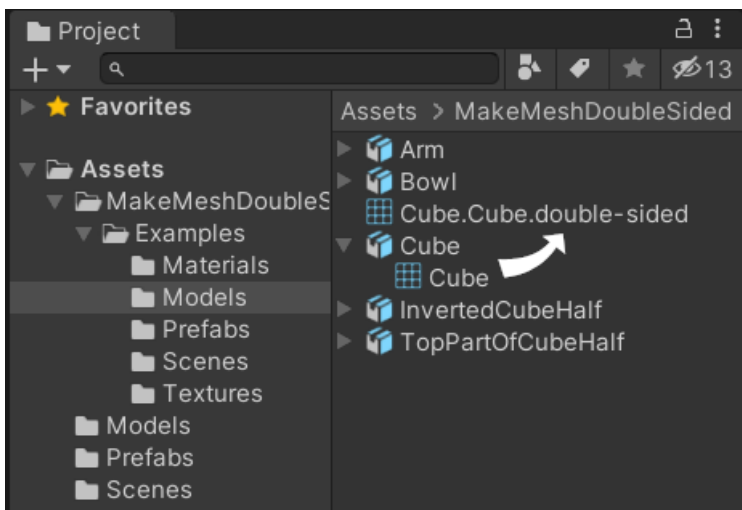


You can also make assets (like prefabs) double-sided.

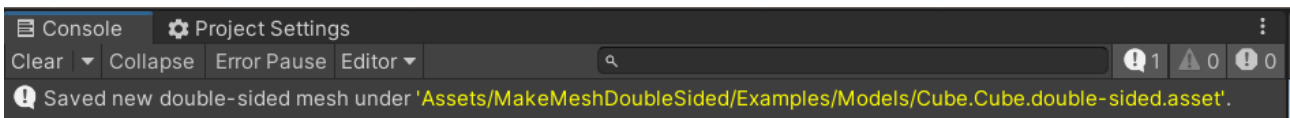


The tool searches for all „MeshFilter“ and „SkinnedMeshRenderer“ Components within the selected objects and converts the meshes.

All meshes are saved as **<name>.asset** files in your project. They are located right next to the original file so you can find them easily.



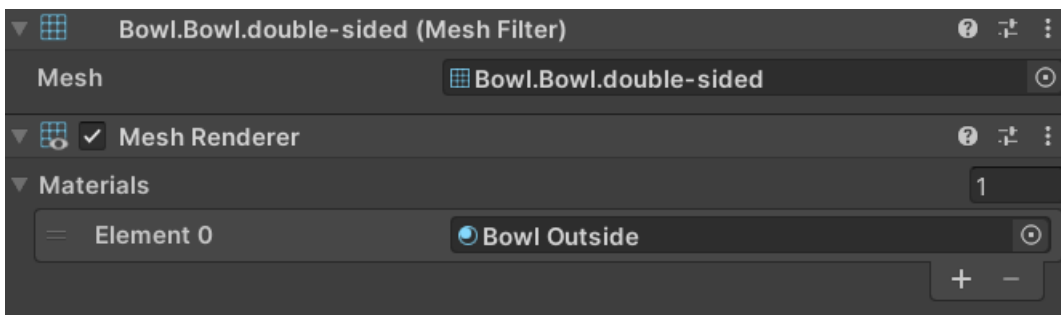
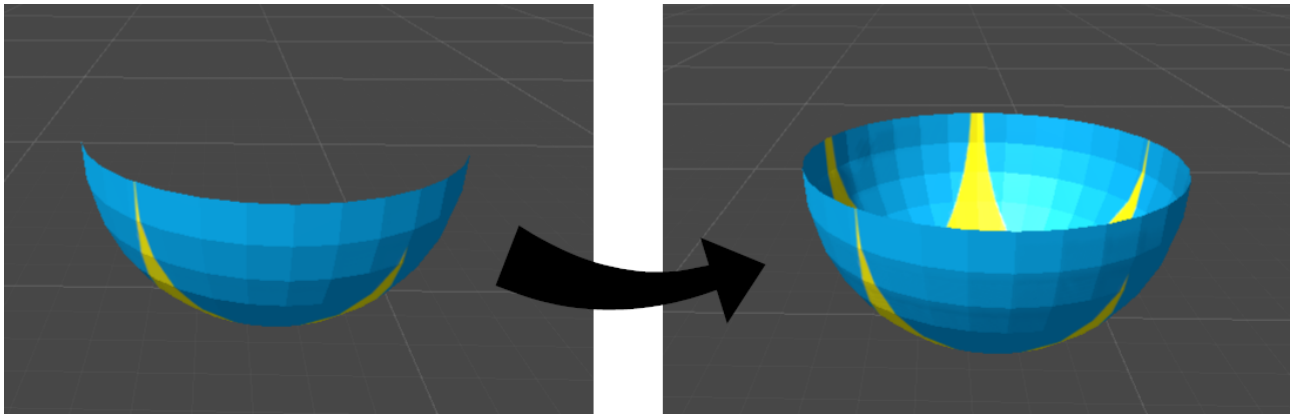
It also logs the location in the console:



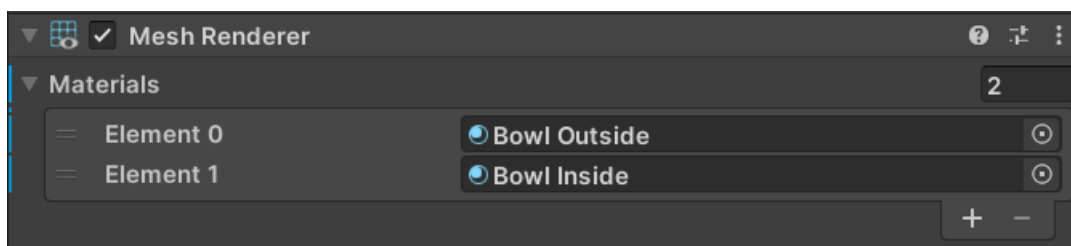
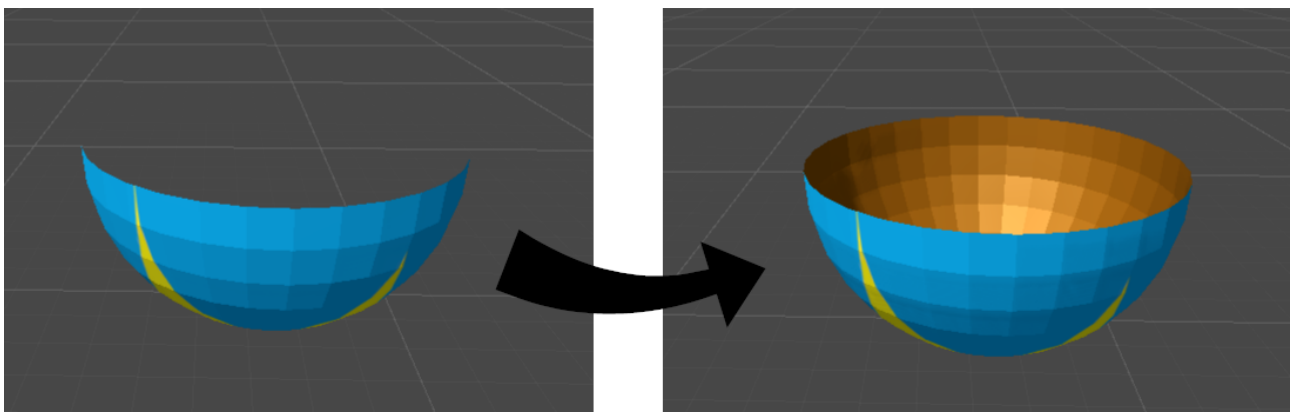
2. Duplicate Sub Meshes

What does the „... and duplicate sub mesh“ option do differently?

If you use the normal „**make mesh > double-sided**“ command then all parts of the mesh will retain their sub meshes. This means that the outside and the inside share the same material.

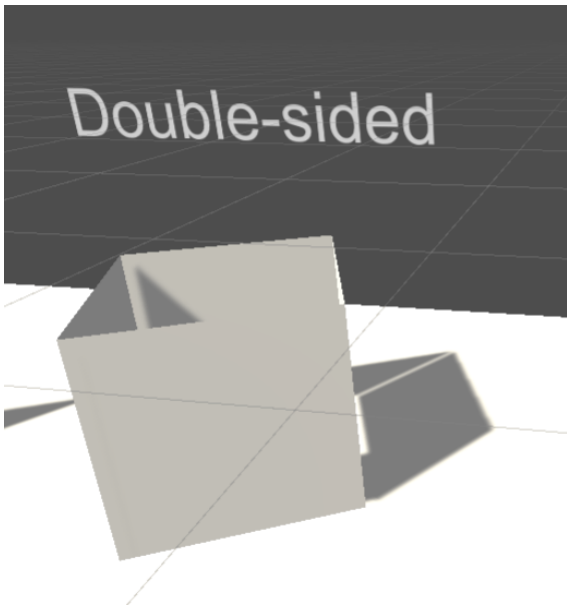


If you use the „**make mesh > double-sided and duplicate sub meshes**“ command a new sub mesh will be generated and the material list will be twice as long. This means you can assign a different material to the newly generated submesh. Think of this like two sides of a coin.

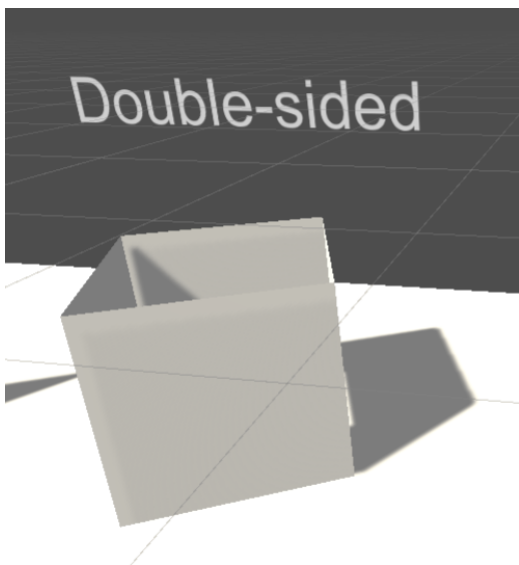
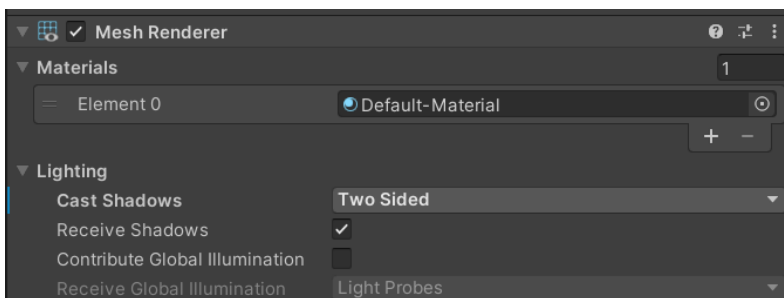


3. Beware of the shadows

You may be surprised by some of the shadows. First, there is nothing wrong with the mesh. This is due to the shadow rendering technique that Unity uses and it applies to all meshes.



Some of these shadows can be improved. One way (as suggested by the [Unity documentation](#)) is to enable „**Two Sided**“ shadows.



Two Sided shadows are enabled automatically after a double-sided mesh has been generated. You can find more information on how to improve shadows in the [Unity Manual](#).