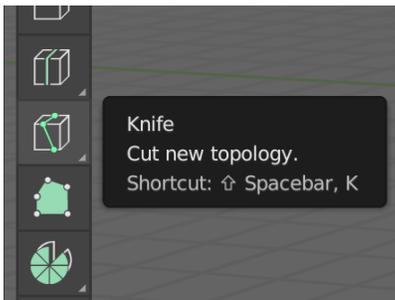


Advanced Blender Tools - Knife & Bisect Tools

Updated August 2022

Knife Tool - Located on Left Toolbar within 'Edit Mode'



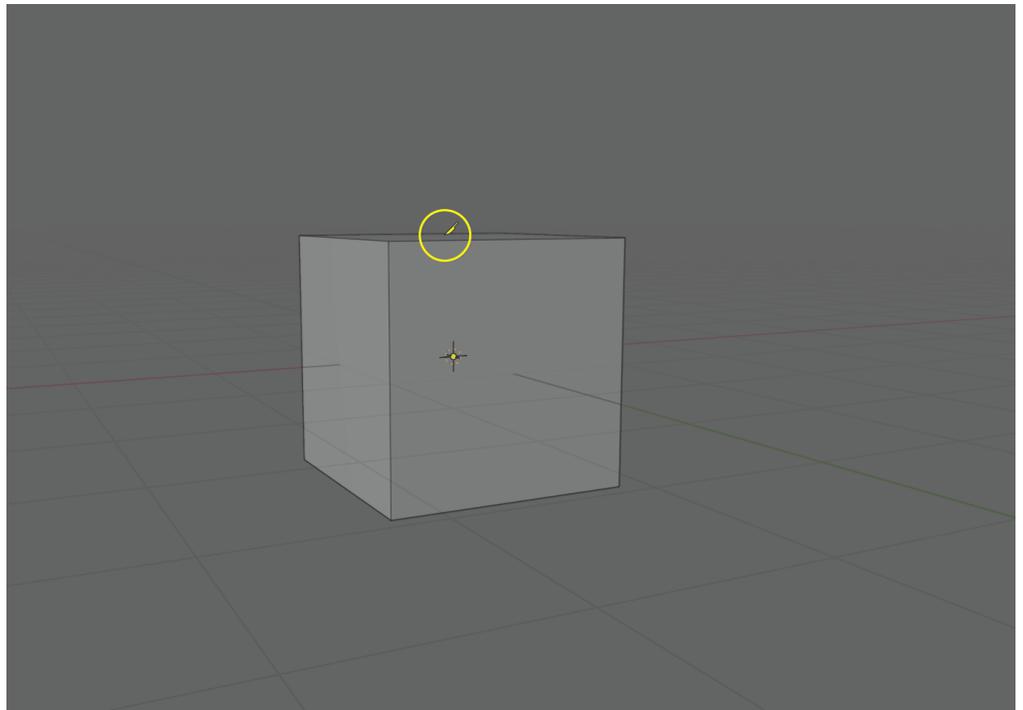
The knife tool provides you the opportunity to make custom vertices on the face of a mesh object in order for it to be altered / manipulated. The knife tool can be used to create various patterns on faces, and is ended by pressing the 'Enter' button on the keyboard.

Note: You cannot begin a cut in the center of a face. You must begin at a vertex.

To make multiple cuts in one succinct "cut" you'd want to make an initial cut, and then press the 'E' button on your keyboard to make more cuts. Press 'Enter' to finish your cut.

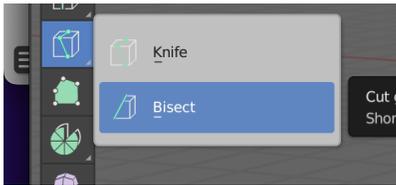
By toggling the 'Ctrl' button on and off while using the knife tool you can snap the tool at the 'midpoint' between two vertices.

Toggling the 'Shift' button will



'Ignore Snap', allowing you to create a point anywhere.

Bisect Tool - Located within the 'Knife Tool' section in the 'Edit Mode' Toolbar



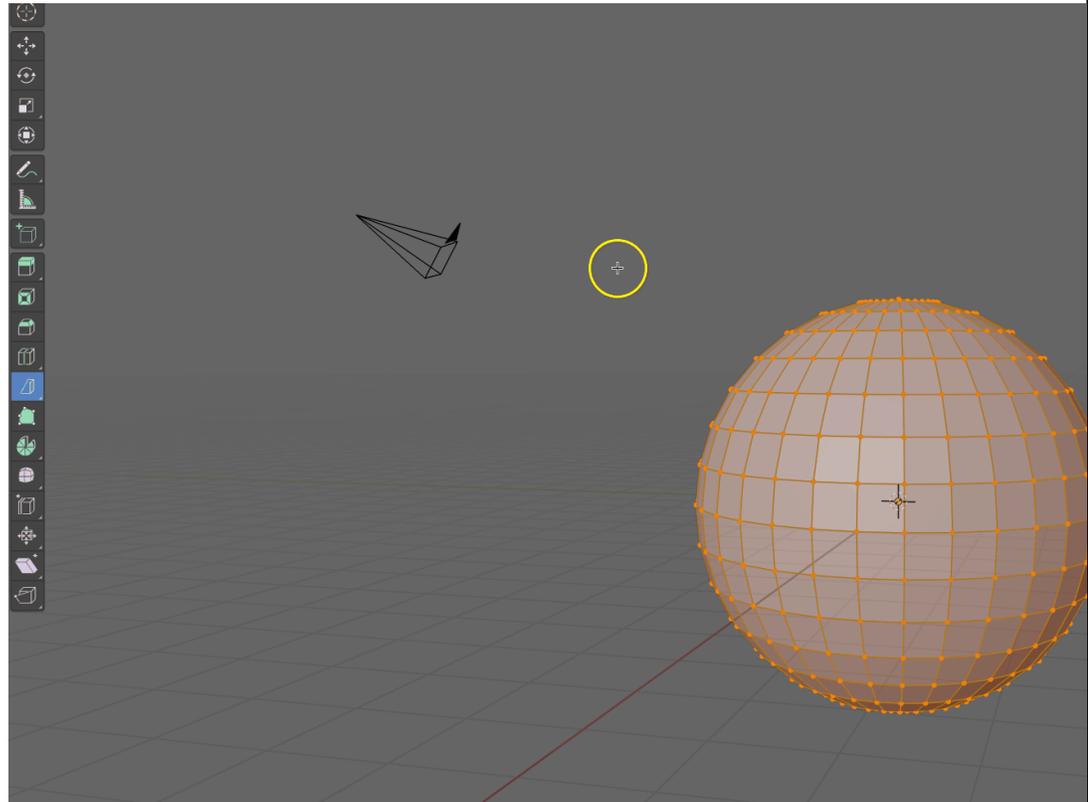
The Basics

Essentially, think of this as a tool with the ability to chop meshes where you want!

Using a sphere as an example, you'd want to have your UV Mesh entirely selected, and beginning from the outside of your mesh (meaning not having selected any part of the mesh itself) and dragging across the mesh, you can make a cut.

You can also change your selected cut area, and rotation using the Blue circle with Yellow Arrow.

Now, there are various options in the Bisect Toolbar on the bottom left corner, toggling Clear Inner or Outer will remove the top or bottom portion of your cut, and selecting the 'Fill' will create a face for the entire section that you cut.



Bisect Tool to cut Meshes in Half

Assuming we have a sphere, you will want to use the Bisect Tool to make a cut in your sphere.

Once you have done that, do not select 'Clear Inner/Outer', but have 'Fill' selected.

Once that is complete, instead of attempting to drag the selection out (it won't work!) you need to highlight a whole section. We can do that by going to the 'Select' button at the top of the 3D Viewport, Going down to 'Select Loops' → 'Select Loops Inner-Region'. (Figure 1)

You will notice that once that is done, you will have an option at the bottom left corner. Ensure 'Select Bigger' is toggled on. You will now notice that half of your sphere is now selected.

Once that is done, press the 'P' button (P = Separate Tool) and press 'Selection'. Head back into 'Object Mode' and press 'G' (Grab) and move that selection away from the other.

One half will have the fill applied, but the other will not. (Figure 2)

To fix this, have your Viewport in 'Edge View', Press Alt while selecting the outer edge and press 'F' and it will fill that gap.

Note: Once separated, the origin point of the new half

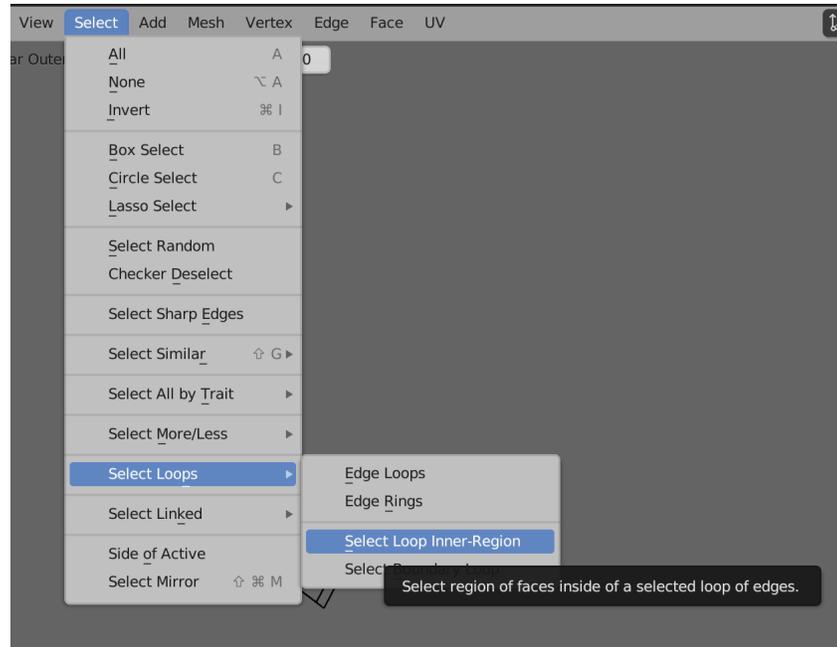


Figure 1

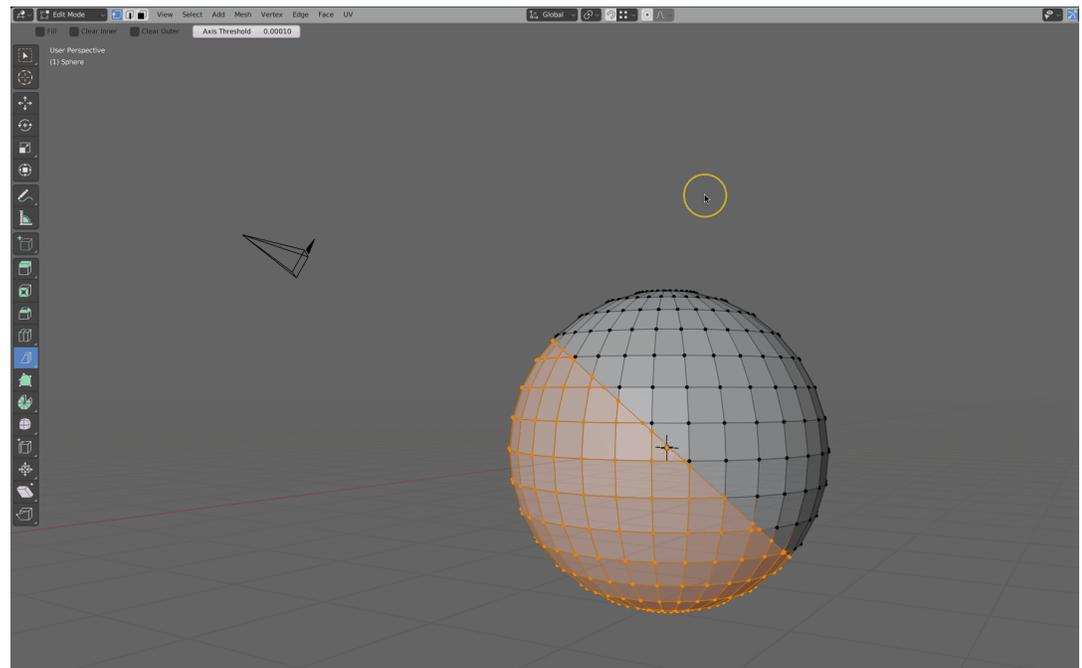


Figure 2

sphere will be a bit off. Be sure to (in object mode) go to the top of the 3D Viewport press 'Object' → 'Set Origin' → 'Origin to Geometry'