

Subdivide

Reference

Mode:

Edit Mode

Menu:

Edge ▸ Subdivide

Subdividing adds resolution to the mesh by dividing faces or edges into smaller units.

This process follows a few rules depending on the situation:

- When only one edge of a triangle or [quad](#) is selected, that face is turned into a quad or [N-gon](#) respectively. If the *Create N-Gons* option is disabled, the face is split into triangles instead.
- When two edges of a face are selected:
 - If the face is a triangle, a new edge is created between the two new vertices, subdividing the triangle into a triangle and a quad.
 - If the face is a quad and the edges are neighbors, the face is split according to the *Quad Corner Type* setting (see below).
 - If the face is a quad and the edges are opposite, the quad is just subdivided in two quads by the edge linking the two new vertices.
- When three edges of a face are selected:
 - If the face is a triangle, this means the whole face is selected and it is subdivided into four smaller triangles.
 - If the face is a quad, first the two opposite edges are subdivided as described above. Then, the “middle” edge is subdivided, affecting its new “sub quad” as described above for only one edge.
- When all four edges of a quad are selected, the face is subdivided into four smaller quads.
- When one or more edges of an N-gon are selected, the individual edges will be subdivided but the face will stay unsubdivided.

Options

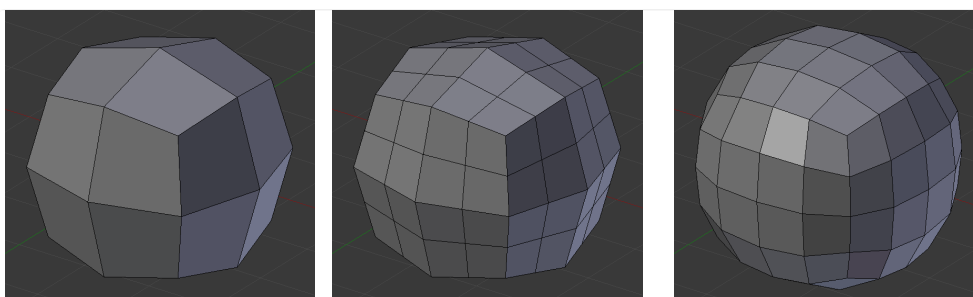
These options are available in the [Adjust Last Operation](#) panel after running the operator:

Number of Cuts

The number of cuts per edge to make. By default this is 1, cutting edges in half. A value of 2 will cut them into thirds, and so on.

Smoothness

Displaces subdivisions to maintain approximate curvature. The effect is similar to the way the [Subdivision Surface Modifier](#) might deform the mesh



Mesh before subdividing

Subdivided with no smoothing

Subdivided with smoothing of 1.

Create N-Gons

When unchecked, forces the subdivision to create triangles or quads instead of n-gons (see examples below).

Quad Corner Type

Controls the subdivision for quads with two selected, neighboring edges.

Inner Vertices

The selected edges are subdivided, then an edge is created between the two new vertices, creating a small triangle. This edge is also subdivided, and the “inner vertex” thus created is linked by another edge to the one opposite to the original selected edges. This results in a

triangle and two quads.

Path

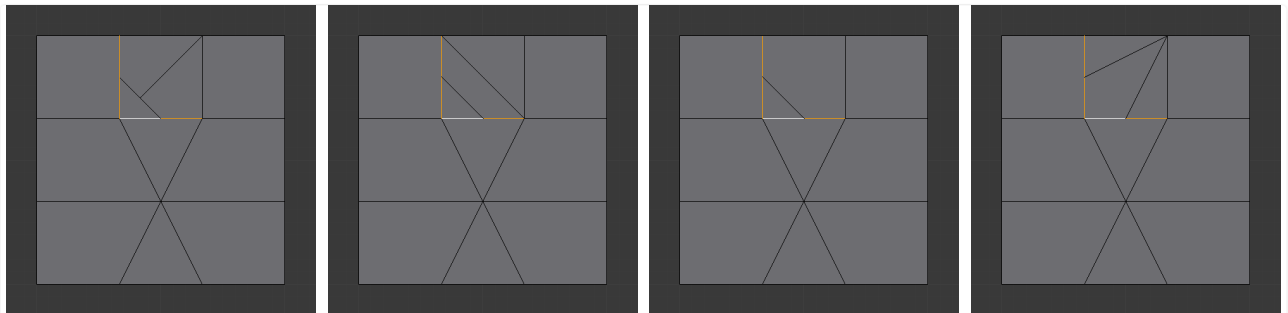
The selected edges are subdivided, then new edges are created between the new vertices as well as the existing outer vertices. This results in two triangles and a quad.

Straight Cut

The selected edges are subdivided, then an edge is created between the two new vertices, creating a small triangle and N-gon. If *Create N Gons* is unchecked, this option works like *Inner Vertices* instead.

Fan

The quad is subdivided into a fan of a quad and two triangles, the common vertex being the one opposite to the selected edges.



Inner Vertices corner type.

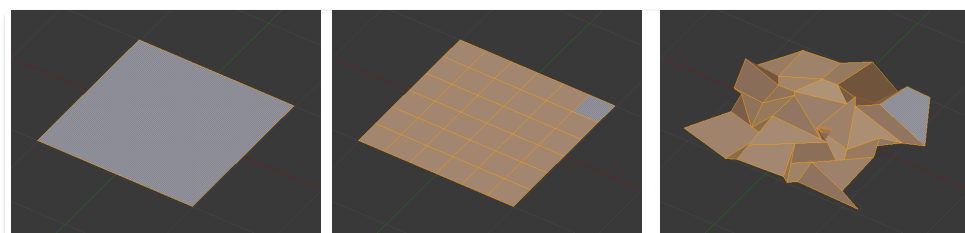
Path corner type.

Straight Cut corner type.

Fan corner type.

Fractal

Displaces the vertices in random directions after the mesh is subdivided.



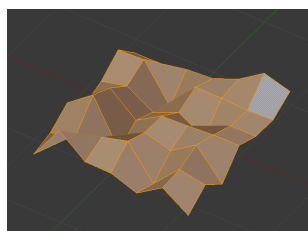
Plane before subdivision.

Regular subdivision.

Same mesh with fractal added.

Along Normal

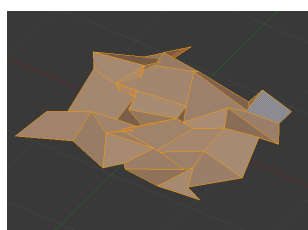
Causes the vertices to move along their normals, instead of random directions.



Along Normal set to 1.

Random Seed

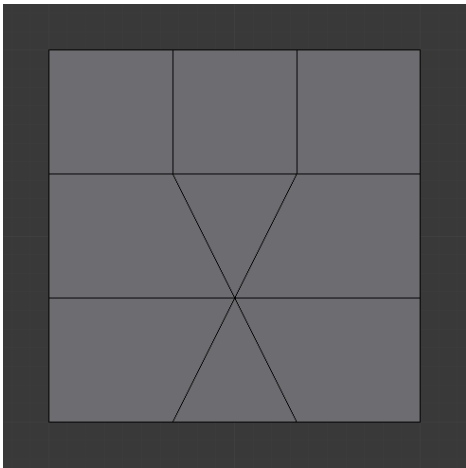
Changes the random seed of the *Fractal* noise function, producing a different result for each seed value.



Same mesh with a different seed value.

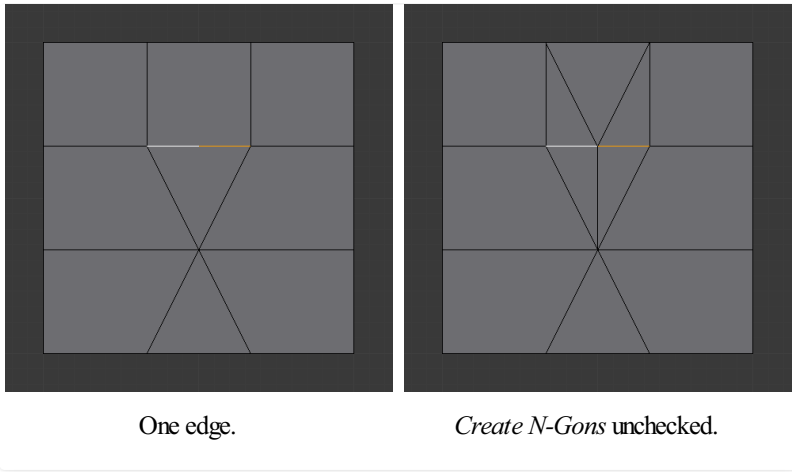
Examples

Below are some examples illustrating edge subdivision in various scenarios.

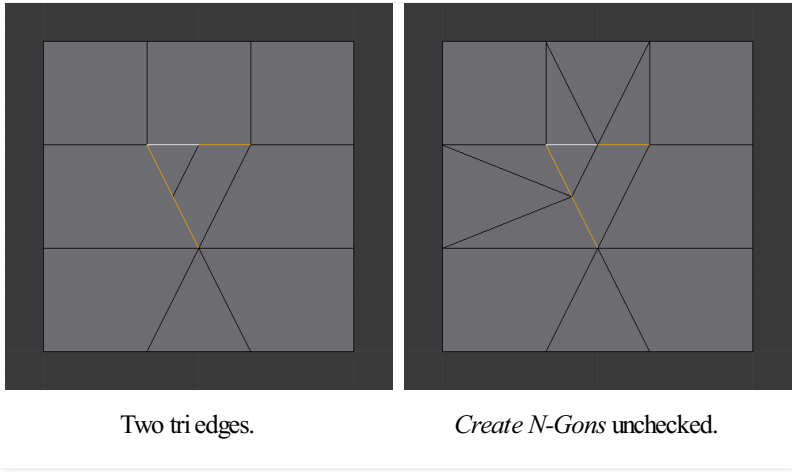


The sample mesh.

One Edge

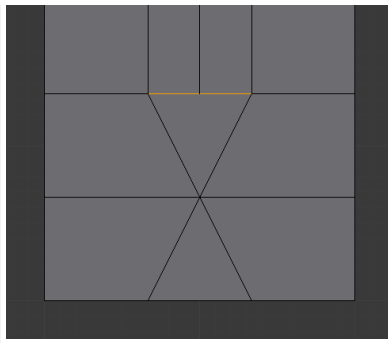


Two Tri Edges

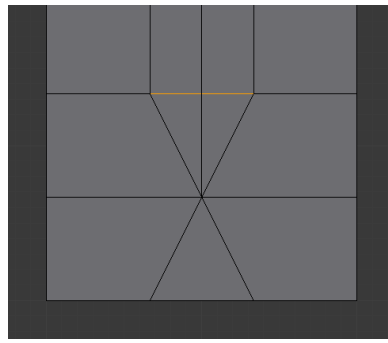


Two Opposite Quad Edges



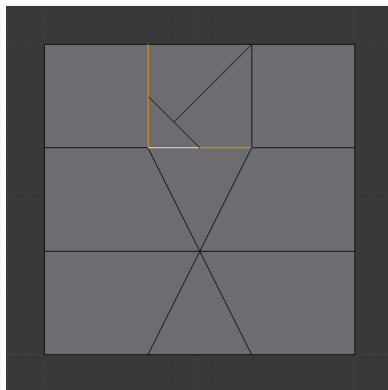


Two quad edges.

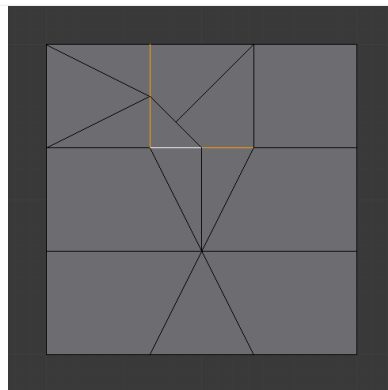


Create N-Gons unchecked.

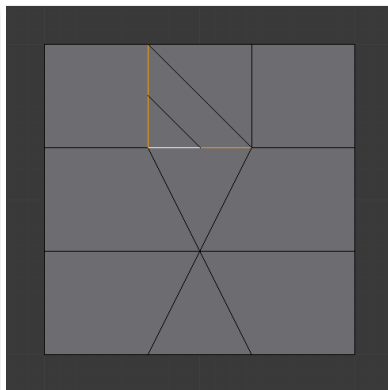
Two Adjacent Quad Edges



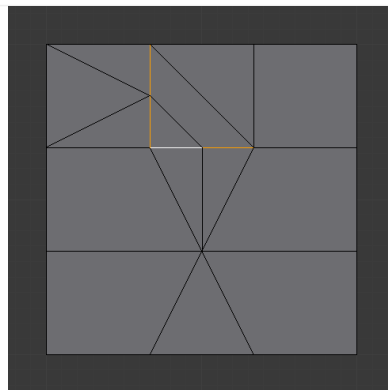
Inner Vertices corner type.



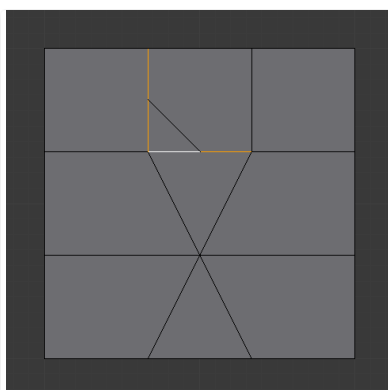
Create N-Gons unchecked.



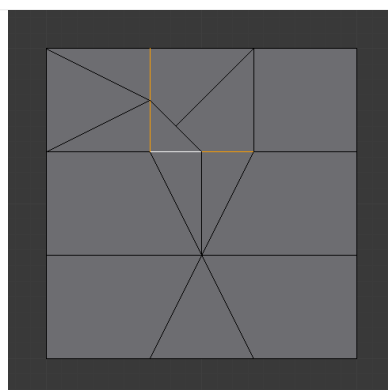
Path corner type.



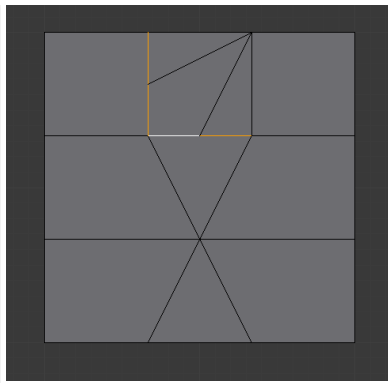
Create N-Gons unchecked.



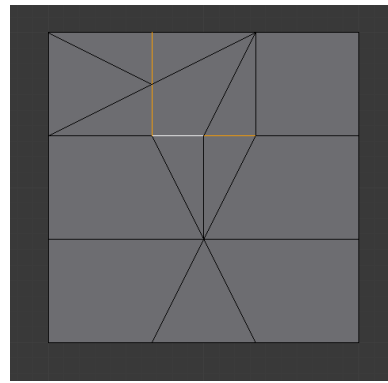
Straight Cut corner type.



Create N-Gons unchecked.

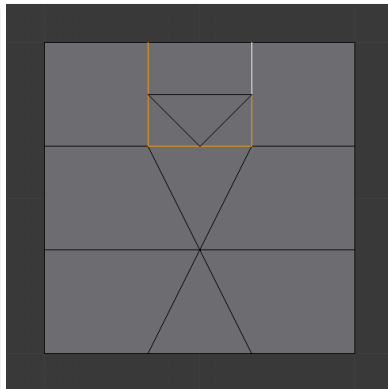


Fan cut type.

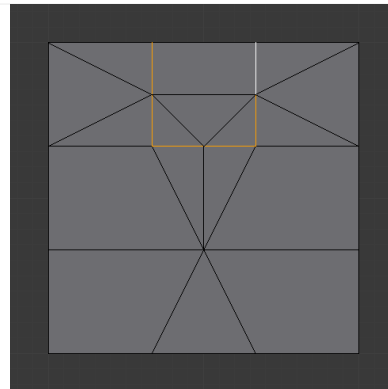


Create N-Gons unchecked.

Three Quad Edges

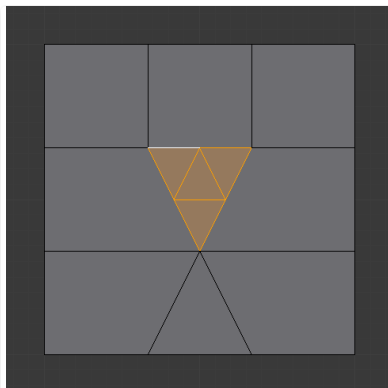


Three edges.

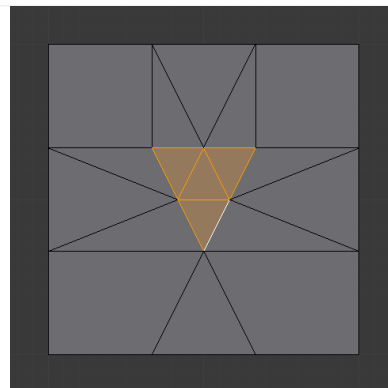


Create N-Gons unchecked.

Full Triangle

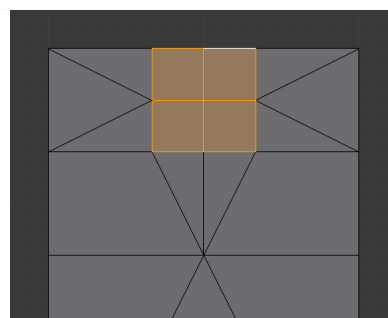
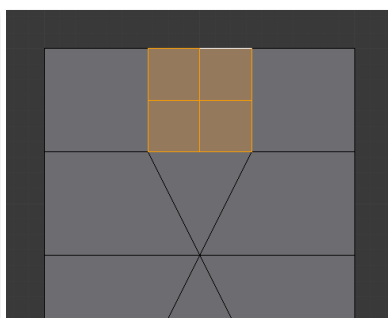


Full triangle.



Create N-Gons unchecked.

Full Quad



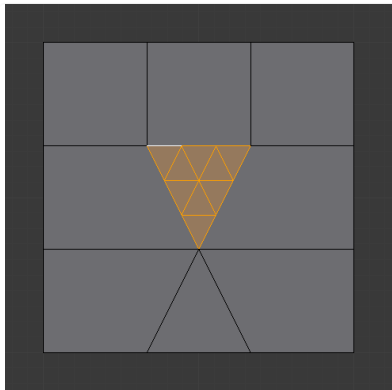


Full quad.

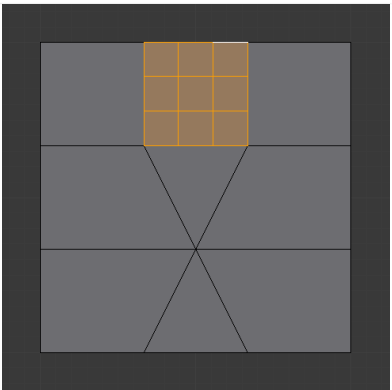


Create N-Gons unchecked.

Multiple Cuts



Triangle with two cuts.



Quad with two cuts.

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