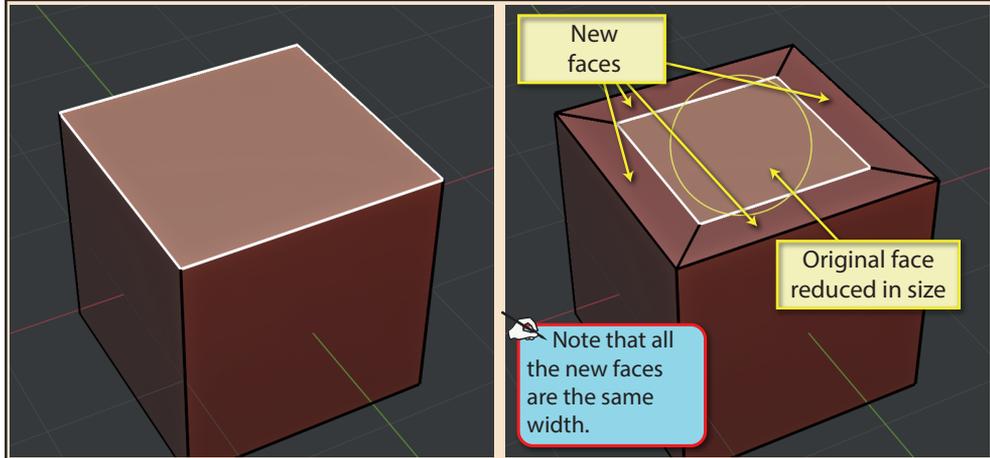


# The Inset Tool



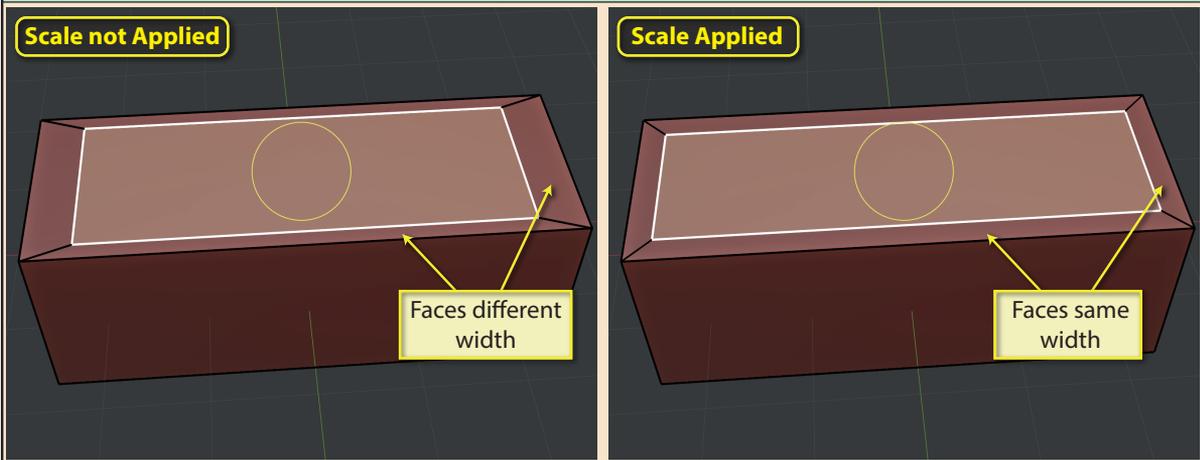
The **Inset** tool is designed to reduce an existing face into a smaller face within the original area. In performing this operation, we end up with an additional set of new faces around the inset face.

Below we can see the effect of using the inset tool on an existing face at the top of a Cube.



Before we look at the Inset operation in more detail, it's worth pointing out that this is an operation where, if a modified mesh that has not had the **Apply Scale** command executed, we'll run into problems.

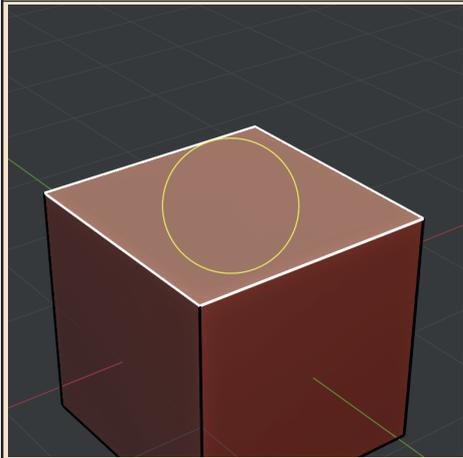
If we perform the Inset operation on the top face of an elongated Cube where the scale has yet to be applied, we end up with the new faces not being of equal width.



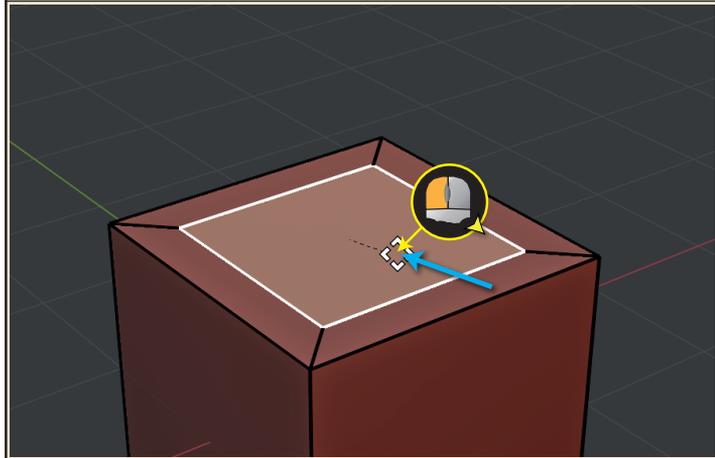
After selecting the Inset tool in the Toolbar...



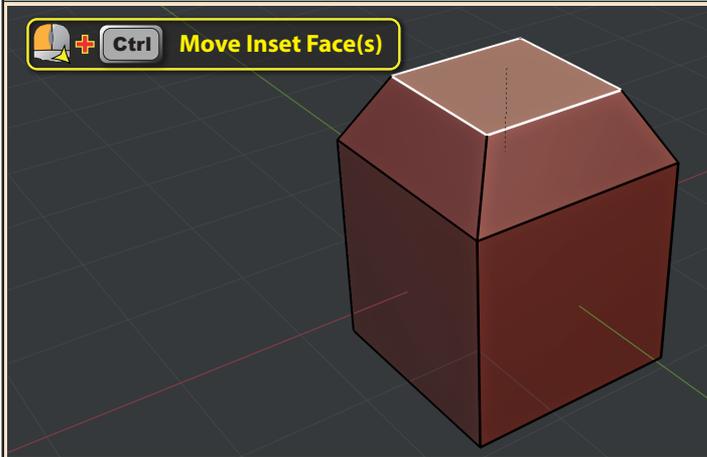
...A yellow circle will appear on the currently selected face(s). This is the Inset gizmo.



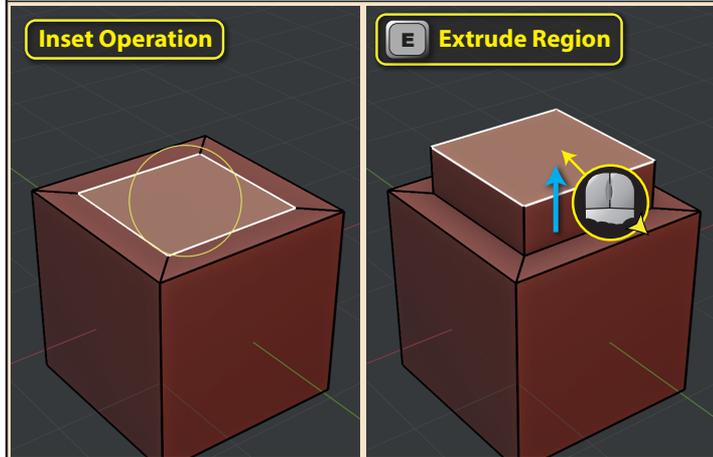
The circle will turn white when the mouse pointer is near or within the circle. Now, if we drag the mouse pointer inward towards the centre of the circle, the selected face will be inset.



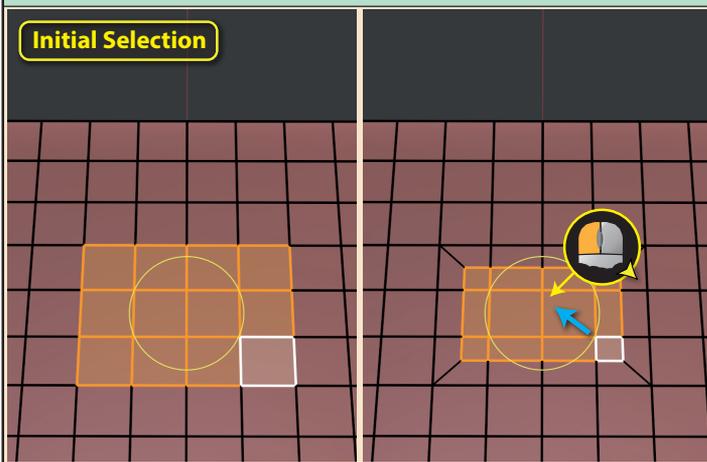
If we hold down the **Ctrl** key while dragging, the inset face will be moved vertically up or down.



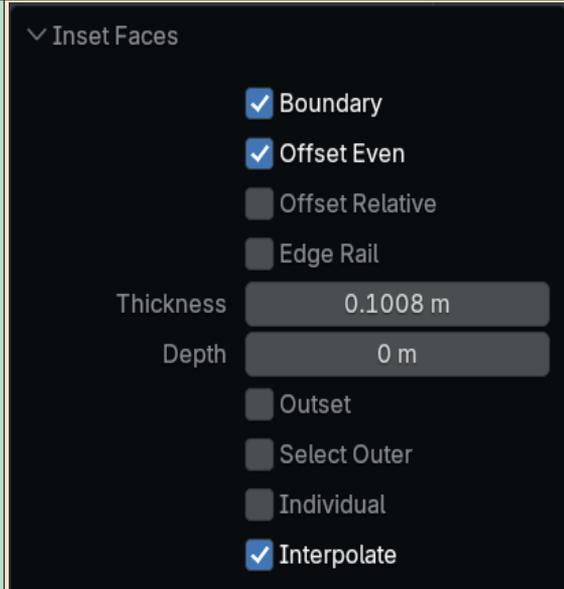
If we don't want the adjoining faces to move, we can finish the Inset operation without moving the inset face and then perform an Extrude operation.



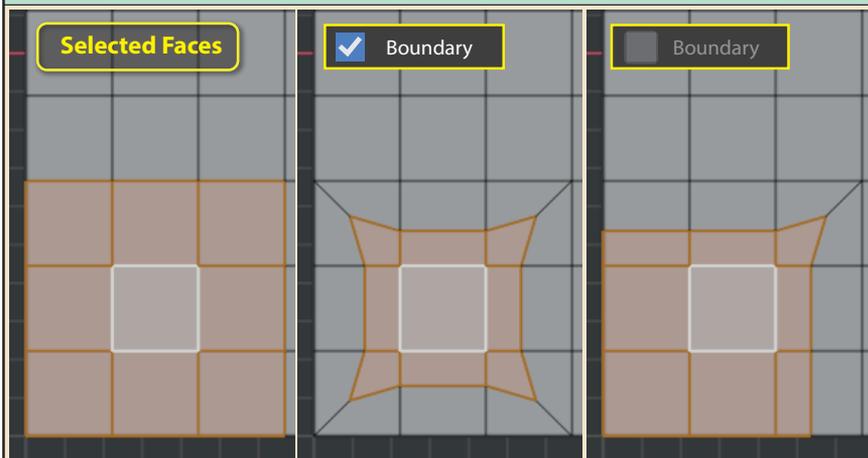
We can inset more than one face as shown in the example below which uses faces in a Grid.



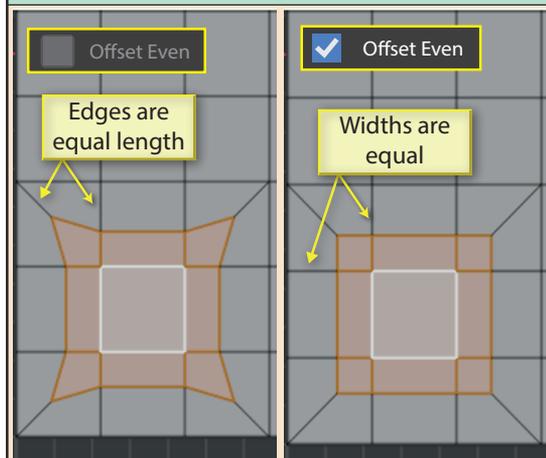
The Inset tool's **Last Op** panel has several parameters.



The **Boundary** option determines if new faces are added at an "open" edge. We can see the effect below when edge faces of a grid are selected for inset.



The **Offset Even** option ensures that the newly created faces are of equal width.



The **Offset Relative** option makes the **Thickness** value relative to the width of the original.

Offset Relative

Offset Even

Thickness 0.8

Thickness 0.2

0.2

0.8

The **Edge Rail** option's purpose is a subtle one that only becomes apparent with certain mesh layouts. To explain, let's start with the structure shown below. The top faces of the mesh have all been selected.

Selected faces

When we inset the selected faces we get the result shown below. Pay attention to the new edges pointed to by the label.

Edge Rail

Edges of interest

When we check **Edge Rail**, the new edges follow the path of the original edges.

Edge Rail

Edges of interest

The **Outset** option places the new faces that are created by the inset operation outwith the space of the originally selected faces, rather than within their initial space. The effect is shown below on faces in a grid.

Initial Selection

Outset

Outset

Selected faces

New faces within original space

New faces outwith original space

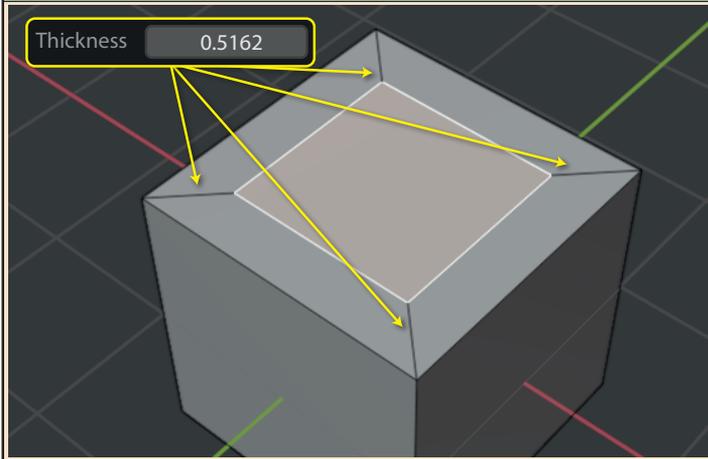
The **Select Outer** option selects the newly created faces rather than those that have been inset.

Select Outer

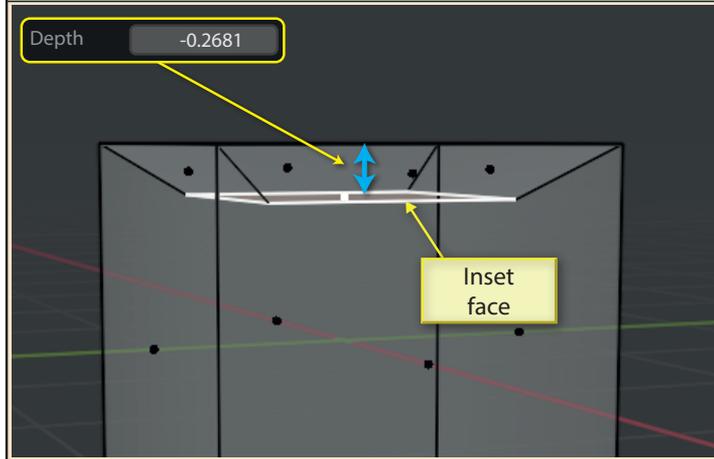
The **Individual** option insets each selected face separately rather than as a group.

Individual

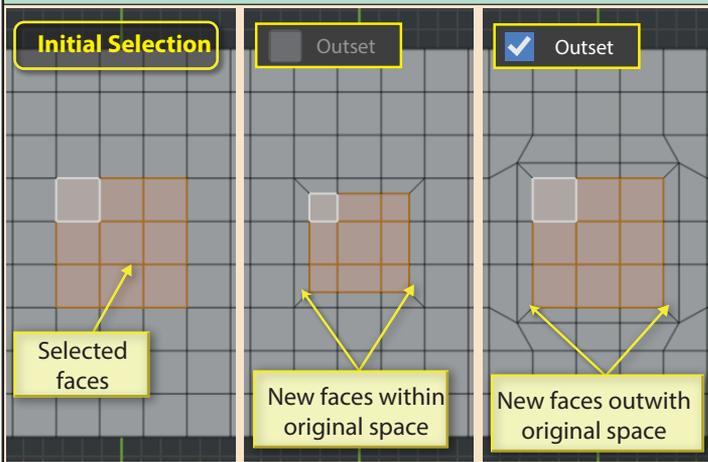
The **Thickness** value normally sets the length of the edges in the new faces.



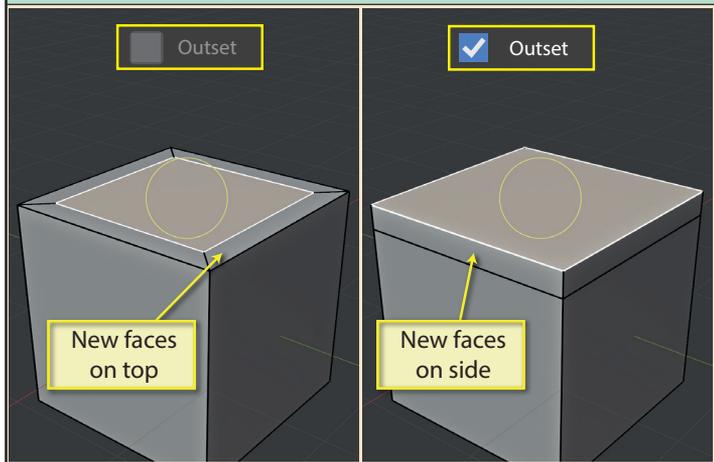
The **Depth** value determines the displacement of the selected face(s) from their original position. Negative values specify a downward displacement.



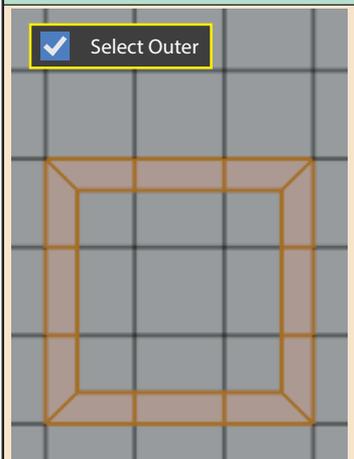
The **Outset** option places the new faces that are created by the inset operation outwith the space of the originally selected faces, rather than within their initial space. The effect is shown below on faces in a Grid.



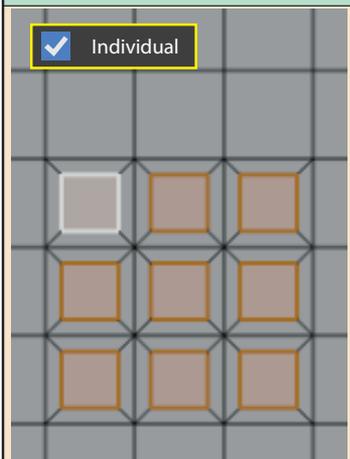
When we activate the **Outset** option on a three dimensional shape, the new faces may move to a different plane from the inset face(s) as we can see below when its used when inseting the top face of a Cube.



The **Select Outer** option selects the newly created faces rather than those that have been inset.



The **Individual** option insets each selected face separately rather than as a group.



**Interpolate** adjusts the UV mapping. This is a topic for another chapter.

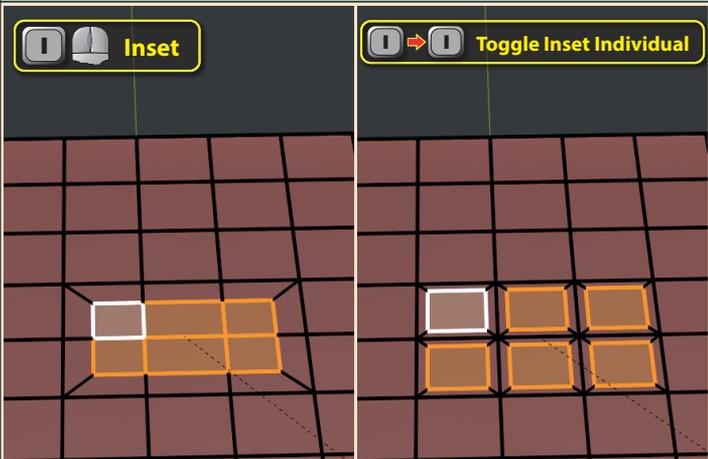
**Inset's** keyboard shortcut is **I** (i). Moving the mouse without pressing any of its keys will resize the selected faces. Left click to complete the inset or right-click or press **Esc** to cancel the operation.



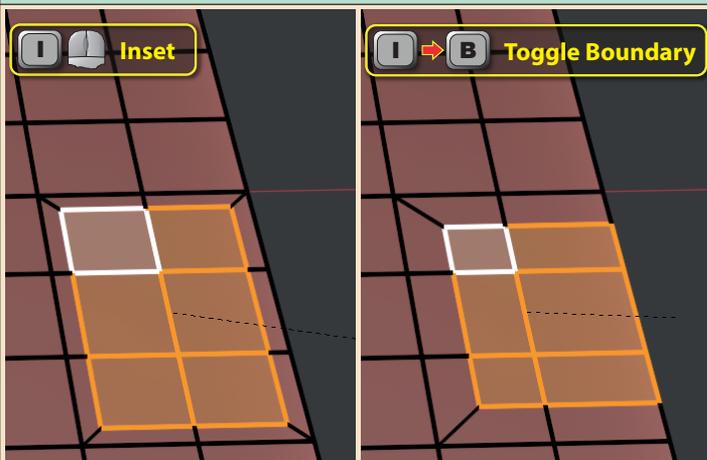
Pressing the **O** key once we've started an Inset operation toggles the **Outset** option we saw previously in the *Last Op* panel.



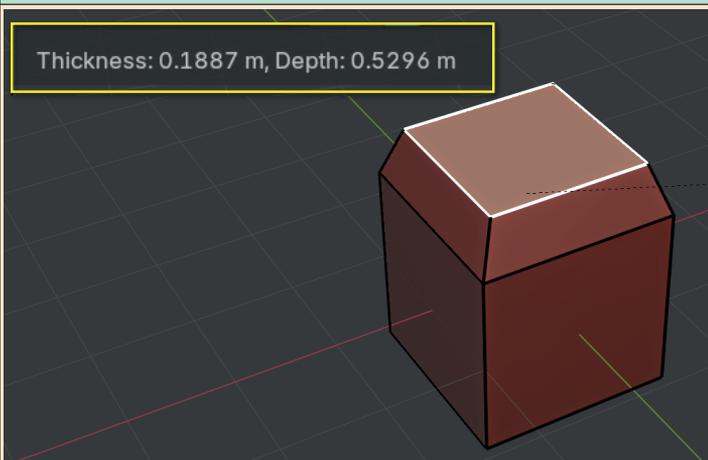
Pressing **I** (i) for a second time, toggles the **Inset Individual** option.



Pressing **B** toggles the **Boundary** option.



When performing an inset operation, the width (*Thickness*) of the new faces and the depth adjustment of the inset face are displayed in the top-left corner of the *3D Viewport*.



The Inset operation is often used in combination with the Extrude operation to give thickness to the walls of a hollow vessel as we can see in the examples below.

