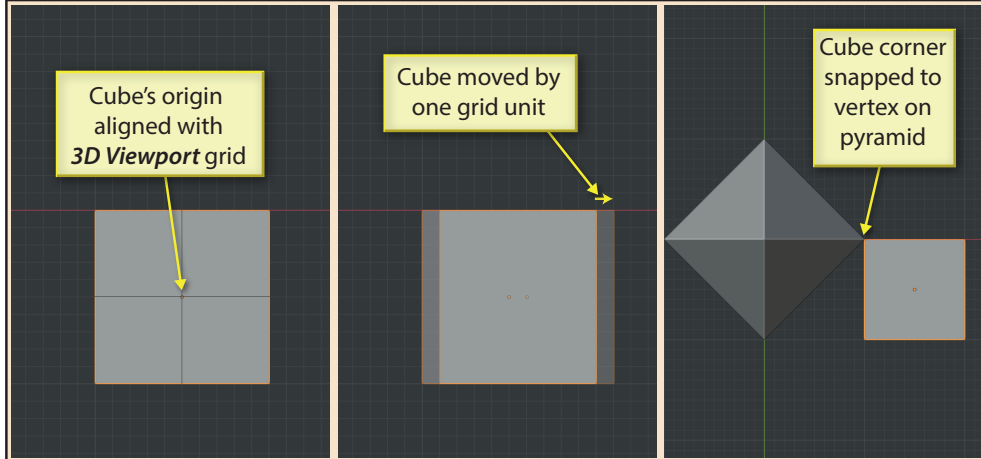When we move an object by dragging the mouse, we generally have total freedom on the placing of that object.

However, there are times when we want exact positioning relative to another object in the scene.

One way of achieving this is to make use of snapping which forces movement to be by fixed increments or to exact positions alongside other objects.

Snapping an object allows us to align it to the grid, move it in discrete steps, or position it exactly over another object. The examples below are shown from a *Top* view perspective.

Cube's origin aligned with *3D Viewport* grid

Cube moved by one grid unit

Cube corner snapped to vertex on pyramid

To activate snapping we must first select the **Snapping icon** in the *3D Viewport*'s header area (this will turn the icon blue) and then select from the options available in the settings dropdown panel.
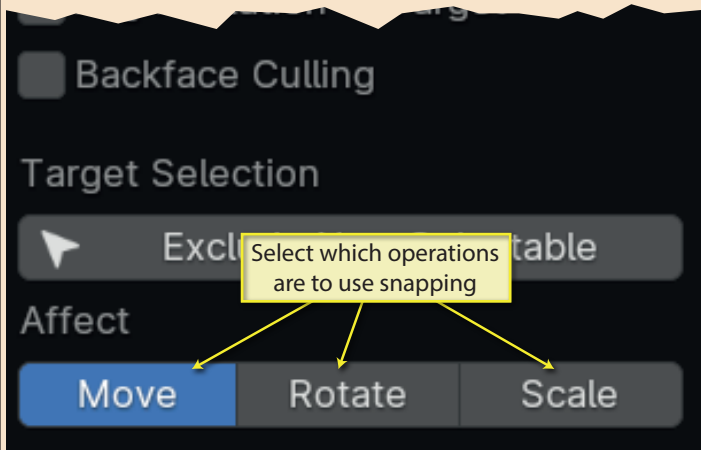
Alternatively, **Shift+Tab** will toggle snapping on and off.

Turn snapping on for the current operation only, hold down the **Ctrl** key.

If snapping is already on, holding down the **Ctrl** key will switch it off for the current operation.
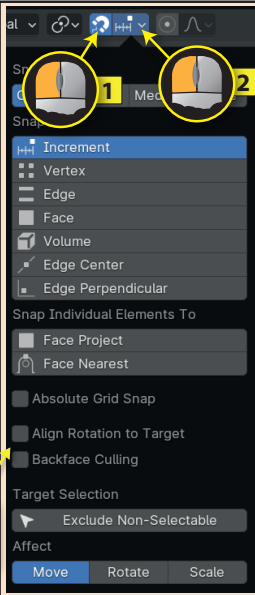
Snapping options

Starting at the bottom of the options panel, we have the **Affect** setting. The buttons here determine which of the three basic operations are to use snapping. By default, only *Move* is activated, but any or all can be selected.

Backface Culling

Target Selection

Exclude Non-Selectable

Select which operations are to use snapping

Affect

Move | Rotate | Scale

The **Snap To** setting determines how the object being moved will be affected by snapping. The default **Increment** option forces the object to move in increments of the scene's grid units.

Snap To
- Increment
- Vertex
- Edge
- Face
- Volume
- Edge Center
- Edge Perpendicular
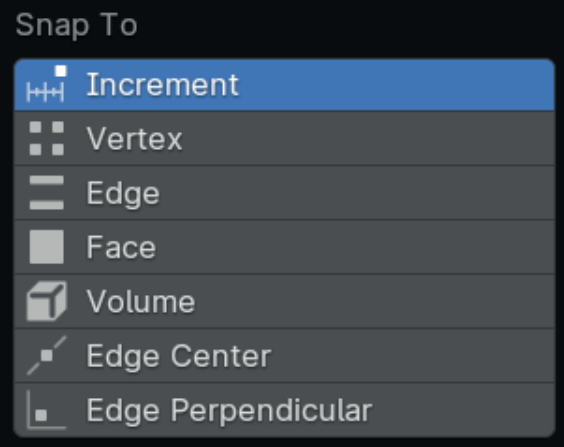
Assuming we are using the default Metric settings as our measurement units, increment snapping will cause the moving object to move in steps of 1 metre - the size of the dislayed grid boxes. Below we can see the effect of moving a Cube as seen from the view.

G **Grab**

Drag

Moved 1 metre

Original position

Grid squares 1 metre
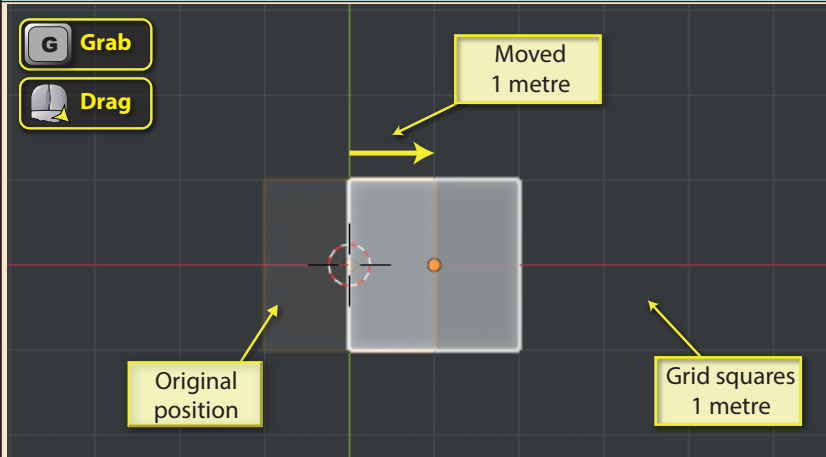
Note that if the initial position of the object being moved is not exactly over a grid intersection, then that will still be true after the object is moved.
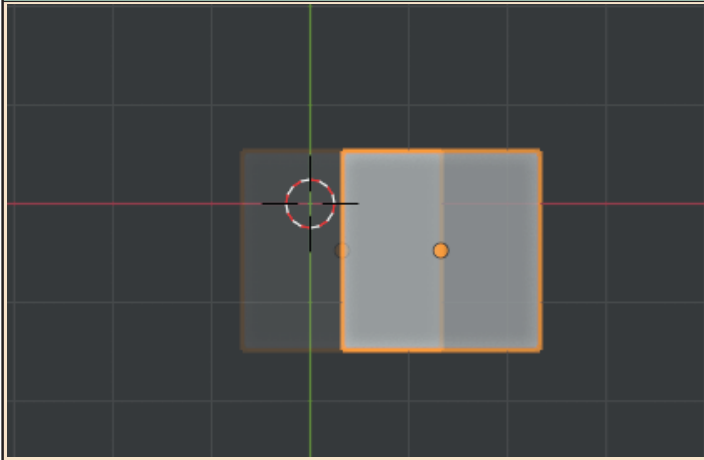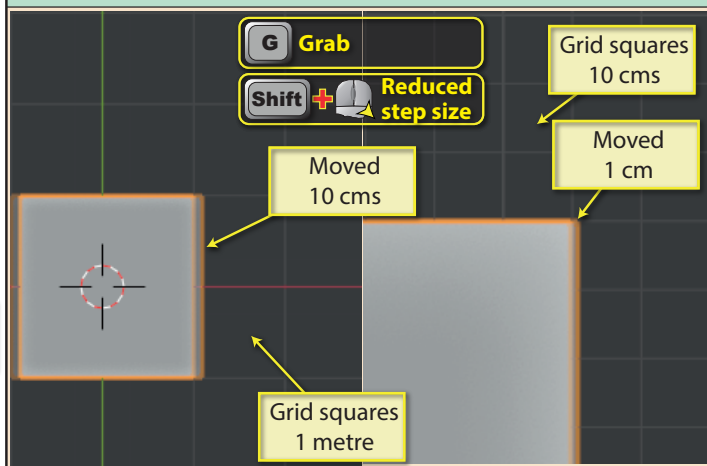

If we want the object's origin always to be on a grid intersection, then we need to return to the snapping options panel and select the **Absolute Grid Snap** checkbox.
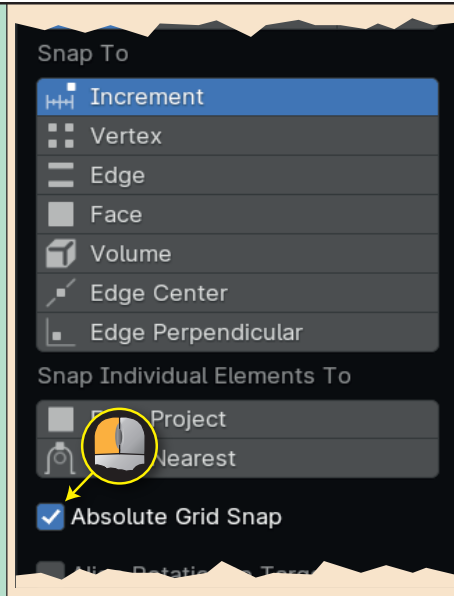

If we zoom in so that the displayed grid shows shows the smaller 10 cm grid, then the step size reduces from 1 metre to 10 centimetres.

Moved 10 cms

Grid squares 10 cms
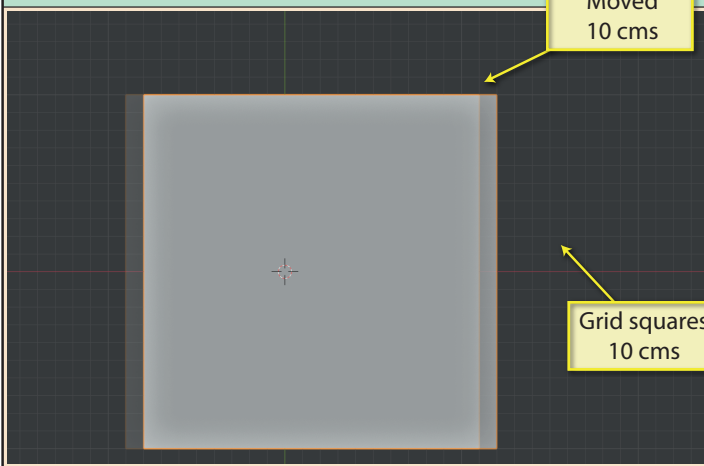
Holding down the **Shift** key while moving and the step size will reduce to 10% of its normal value. That means when using the larger grid, the steps reduce to 10cms and when using the smaller grid size, the steps become 1cm.

G Grab

Shift + Reduced step size

Grid squares 10 cms

Moved 1 cm

Moved 10 cms

Grid squares 1 metre

Another important use for snapping is to attach the moving object to a second, target object. To demonstrate the latest method available to do this, we'll start with a Cube and a Cone which has been reduced to only 3 sides.

Object to be snapped to
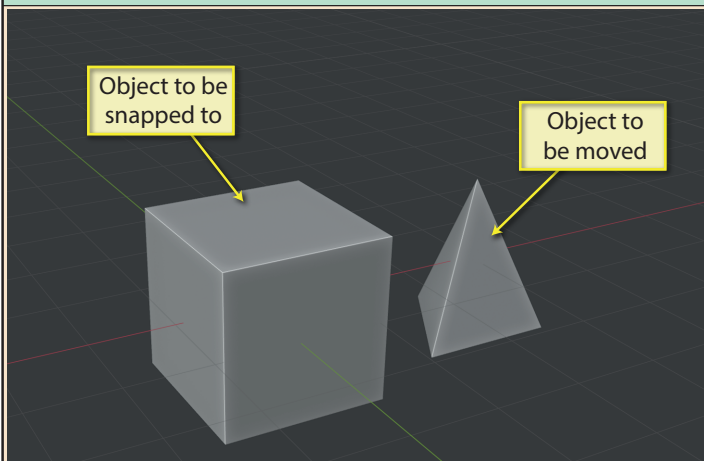
Object to be moved

With the settings in the snapping panel unchanged, we click on the object to be moved (the pyramid) and press the **G** key. But before moving the pyramid, we then press the **B** key. This allows us to choose which part of the pyramid we are to snap with.


G Grab 2

B Begin selection 3

Snap With
Closest
Snap To
Increment

1
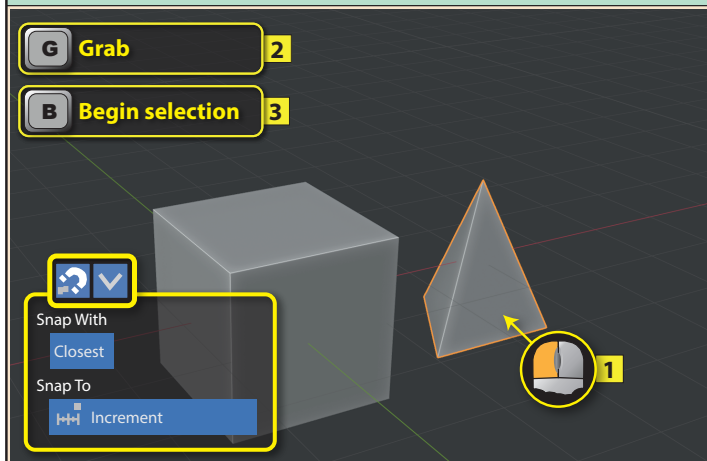
The pyramid no longer moves in response to mouse movement. Instead, various symbols appear under the pointer as it moves over parts of the pyramid.

Over vertex
Over Edge
Over Edge Centre
Over Face
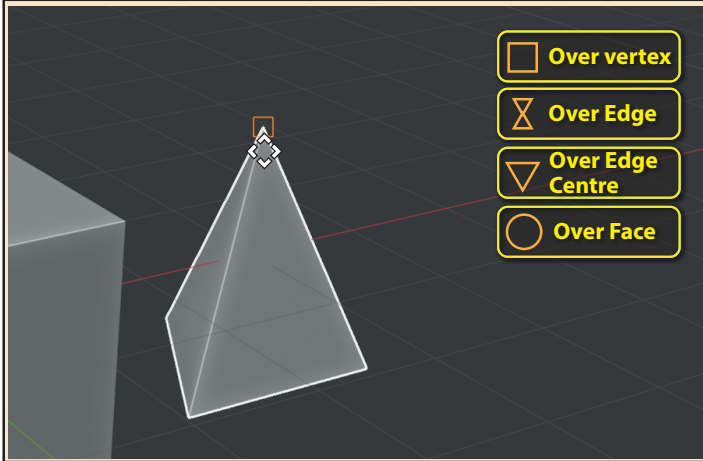
When the mouse pointer is over the element of the pyramid that we want to snap with, we need to press the left mouse button. At this point the pyramid will begin moving again leaving behind a copy of the selected element's symbol.

1
Snap with this vertex
2
Move pyramid towards Cube
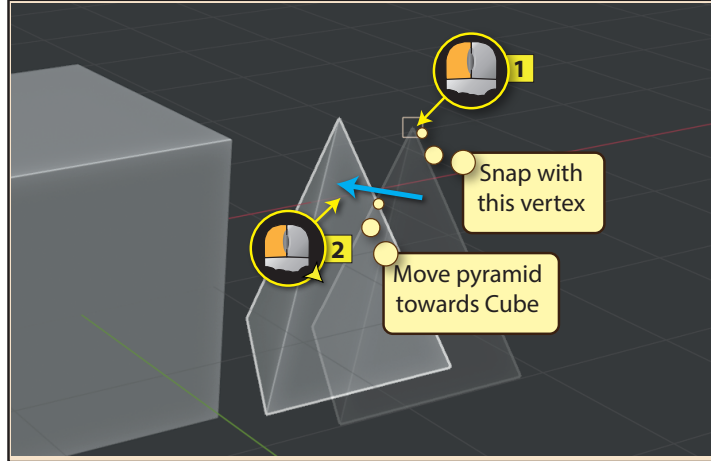
As we move the pyramid over our target object, we'll see the square, circle, triangle and hourglass symbols appear on the Cube.
These represent points we can snap the pyramid to.

Symbol remains at pyramid's original position
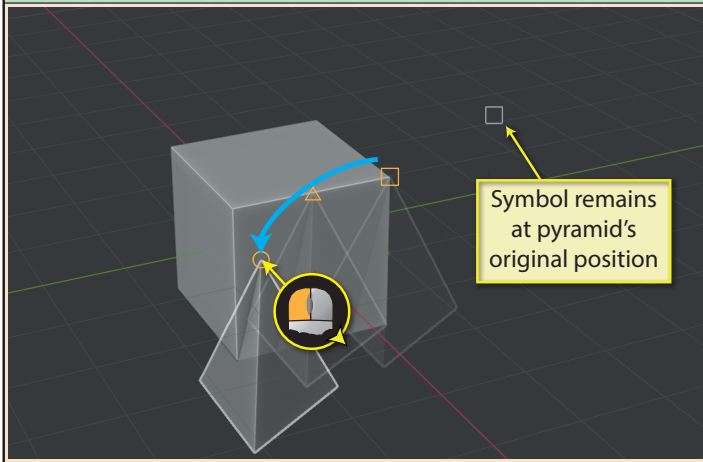
Pressing the left mouse button over the required position completes the snapping operation.

Vertices snapped together
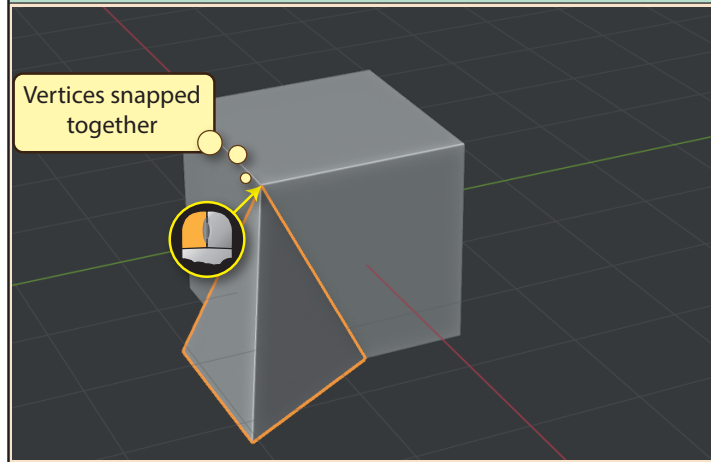
The elements to be selected on the meshes may not be visible from our current viewpoint. To adjust the viewpoint during the move operation, hold down the **Alt** key and drag with the middle mouse button. The move continues after these are released.

Alt + 🖱 **Orbit**

To pan the view, use
Alt + **Shift** + 🖱
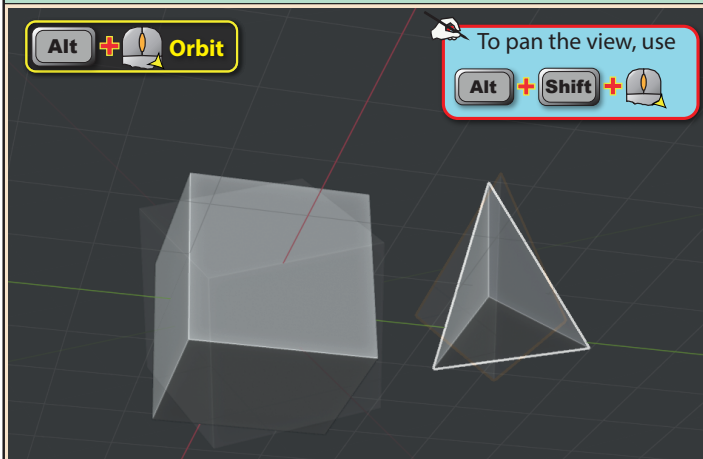
Using the **B** key to select elements on the moving and target objects is relatively new to Blender (in version 4.0) and is generally the best way to approach snapping to an object, but other and older methods are still available.

Snap To's **Vertex** option is used to snap the moving object to a vertex on the target object.

Snap With
Closest Center Median Active
Snap To
Increment
Vertex
Edge
Face
Volume
Edge Center
Edge Perpendicular