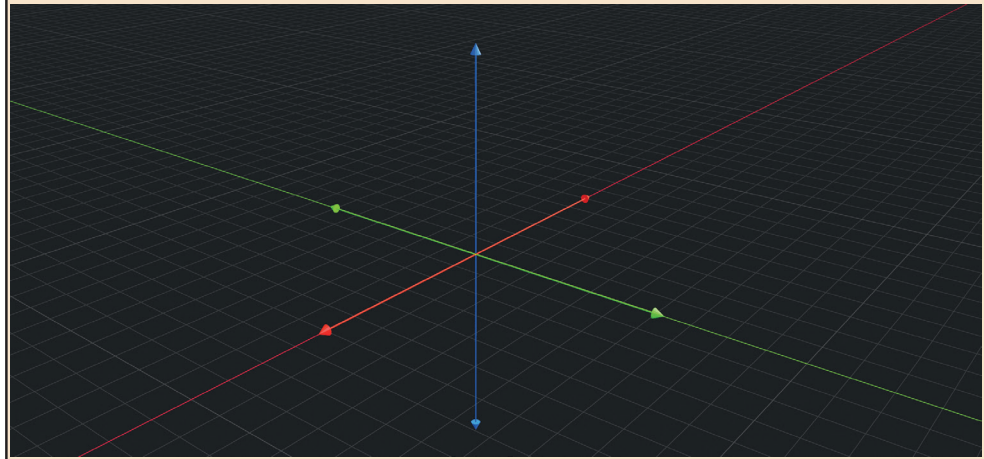


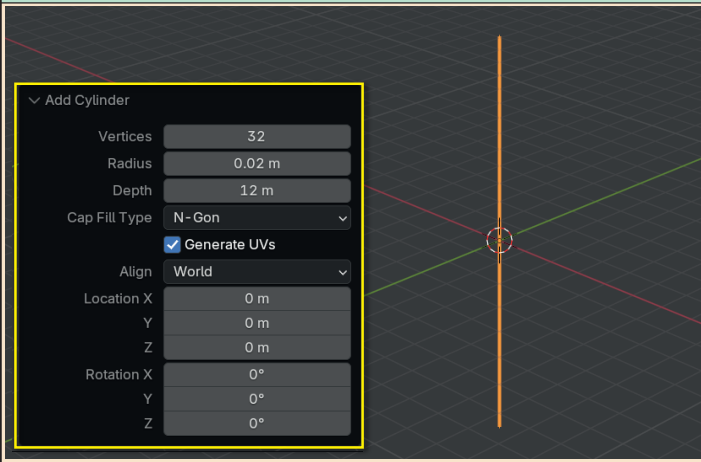


Most of our modelling of a mesh is likely to take place in Edit Mode, but we can also create models while working in Object Mode by joining two or more meshes together to form a single item.

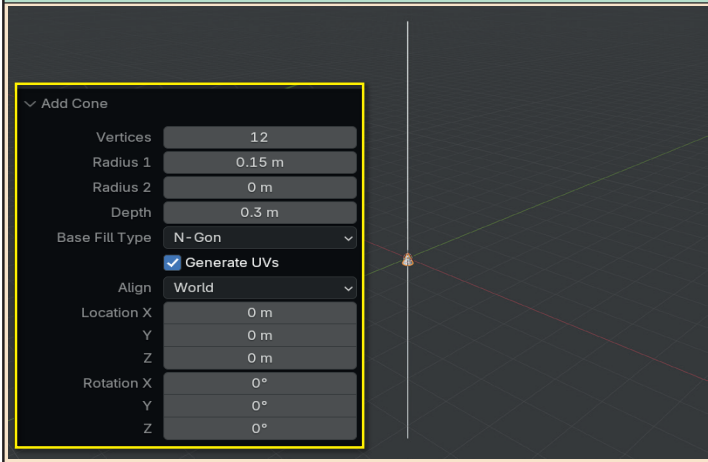
To demonstrate this technique, we are going to create an axes set as shown below.



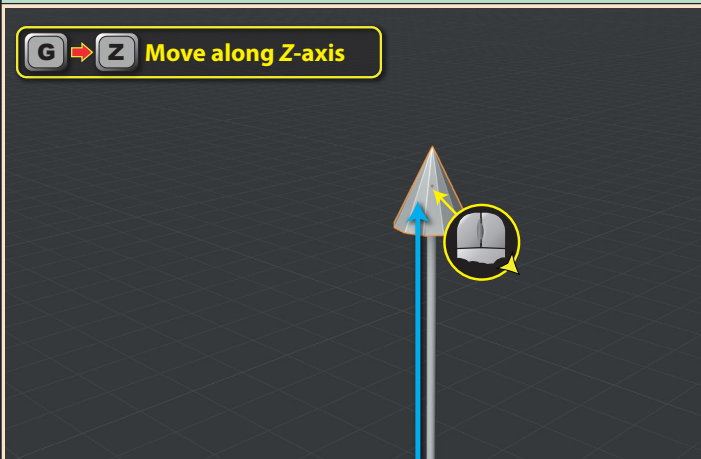
We'll start with a Cylinder and, in the *Last Op* panel, set its radius to 2cm and its depth to 12m.



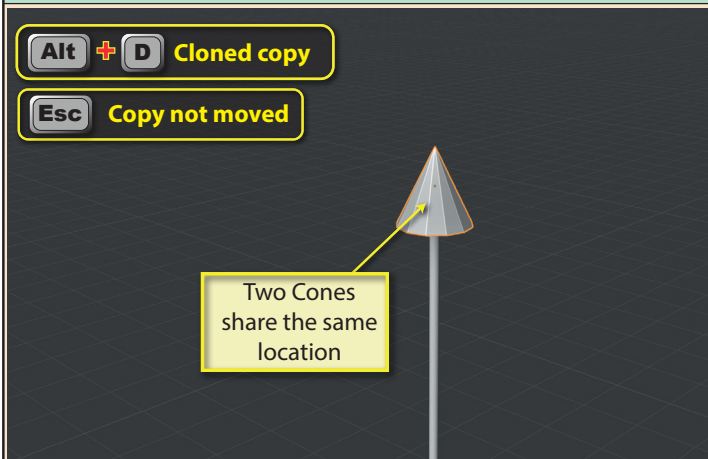
Next we'll add a Cone with *Vertices* set to 12, *Radius 1* to 15cm and *Depth* to 30cm.



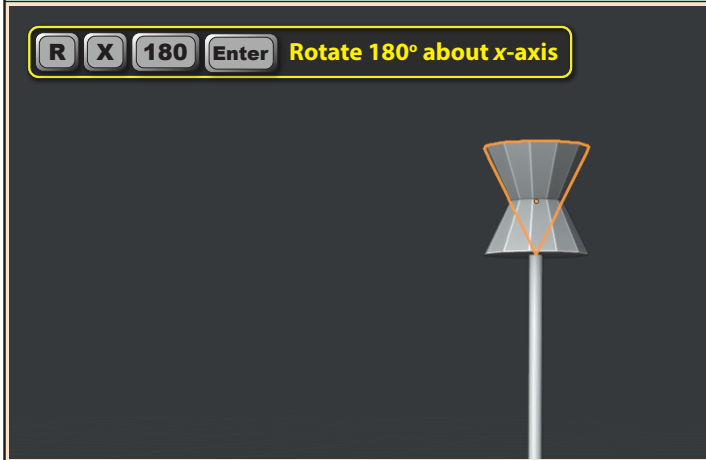
With the Cone selected, we can press **G+Z** and move the Cone to the top of the Cylinder.



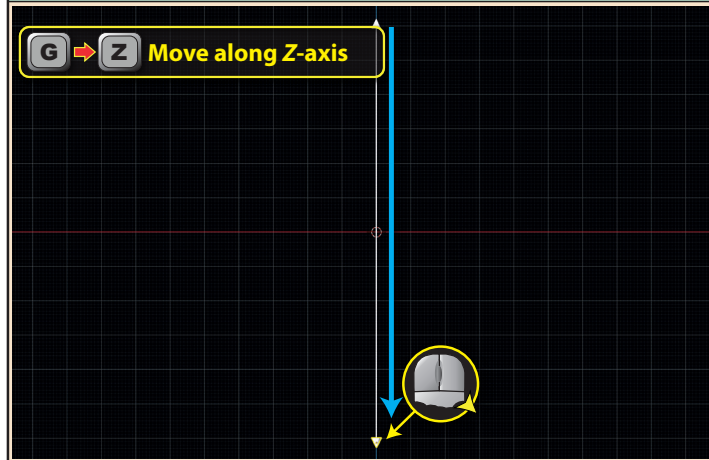
Alt+D will make a cloned copy of the still-selected Cone and pressing **Esc** will leave the copy in the same location as the original.



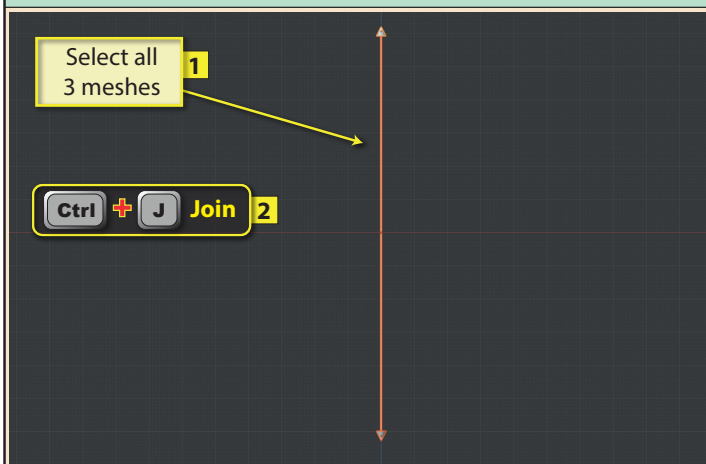
After rotating the new Cone by 180° about its x-axis...



... we'll move it to the bottom of the Cylinder.



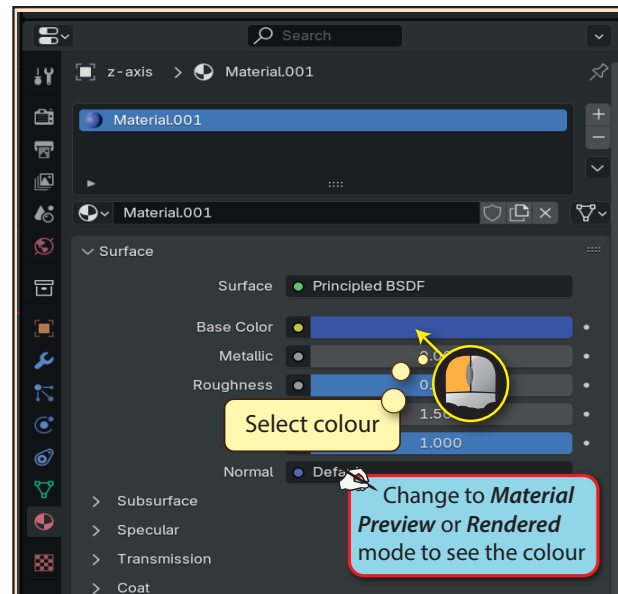
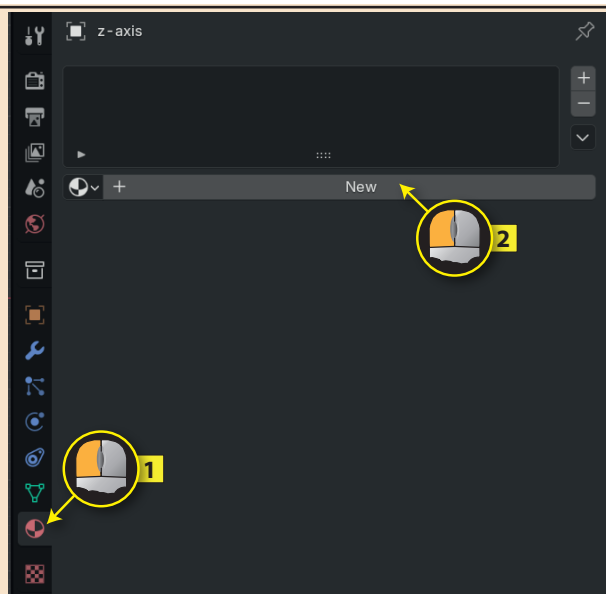
To join the three separate items into a single object, we need to select all three and then press **Ctrl+J** to join the selected objects.



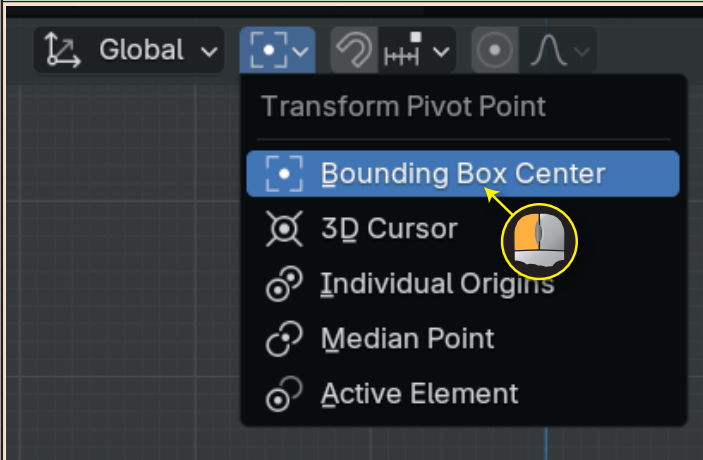
In the *Outliner Editor*, the three objects are now reduced to a single entry using the name of the last of the three objects to be selected. We'll change the name to **z-axis**.



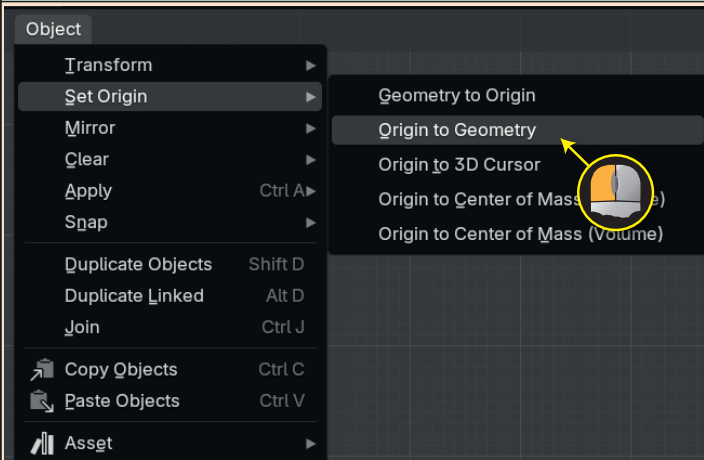
This will represent our z-axis which, in Blender, is coloured blue. To assign a colour to the axis, we'll select it and then go to the *Materials page* of the *Properties Editor* and add a new material.



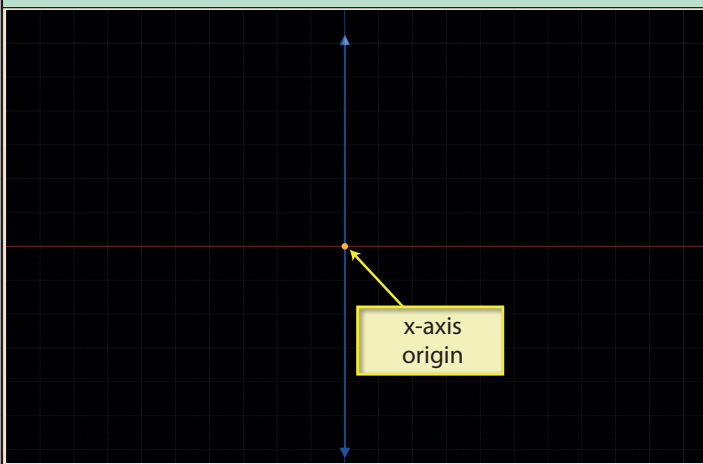
The origin of our new object is in the top cone area. This is because the last object to be selected before the join determines the newly-created object's origin. To change this we need to start by changing the *Transform Pivot Point* to *Bounding Box Center*.



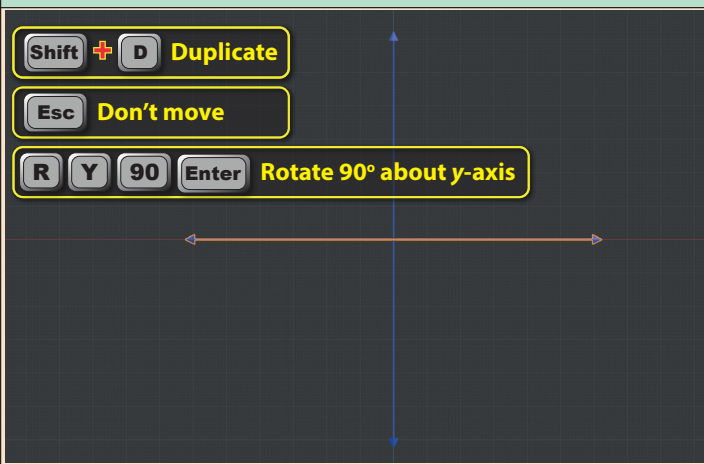
Next, we need to select the *x-axis* object then choose **Object>Set Origin>Origin to Geometry** and this will...



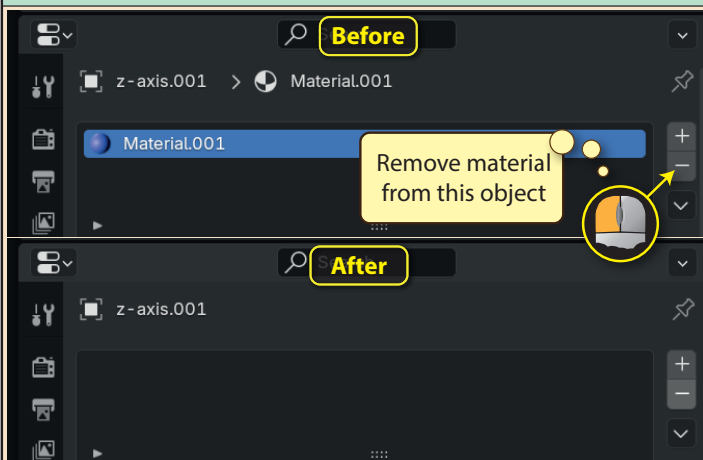
...move the origin to the centre of the object at location (0,0,0)



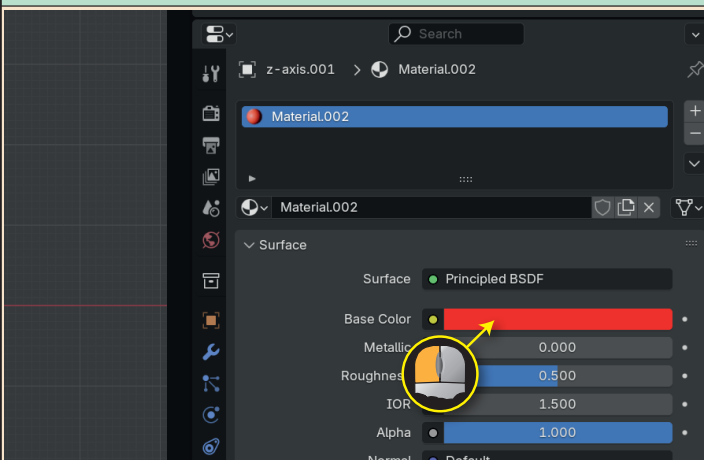
Now we can select the existing axis object and make a copy by pressing **Shift+D**. We'll also press the **Esc** key to stop the new copy from moving. Finally, we rotate it by 90° about its y-axis by pressing **R,Y,90,Enter**.



The copy will have the same blue material as the original, so we have to return to the *Materials page* of the *Properties Editor* and delete the material from our latest axis.



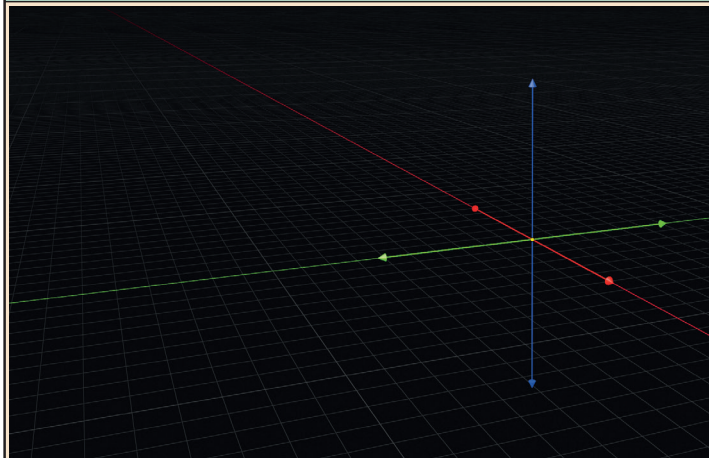
Now we can click on the **New** button and create a red material for the axis.



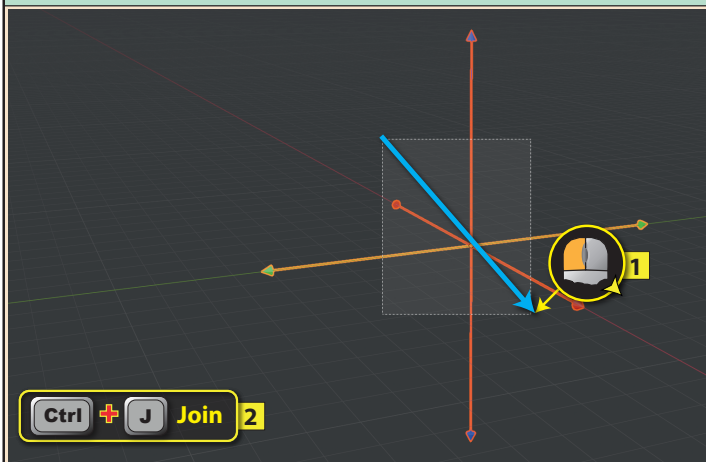
As a last step for the second item, we'll rename it **x-axis** in the **Outliner Editor**.



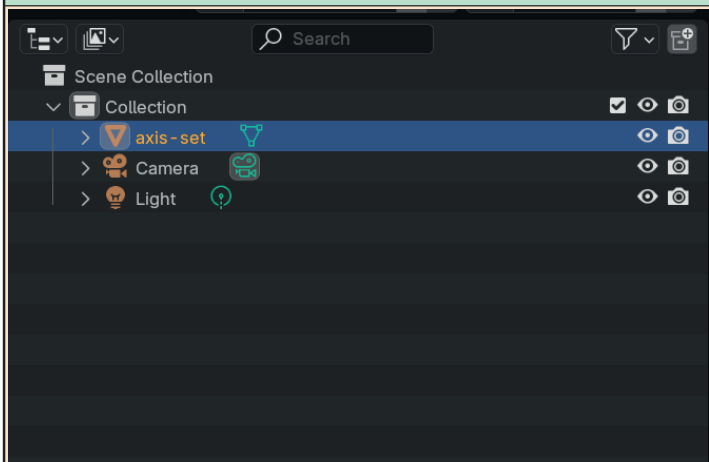
For the last axis, we'll copy the **x-axis**, rotate it 90° about the z-axis, remove the red colour, adding a new green material and finally renaming it **y-axis**.



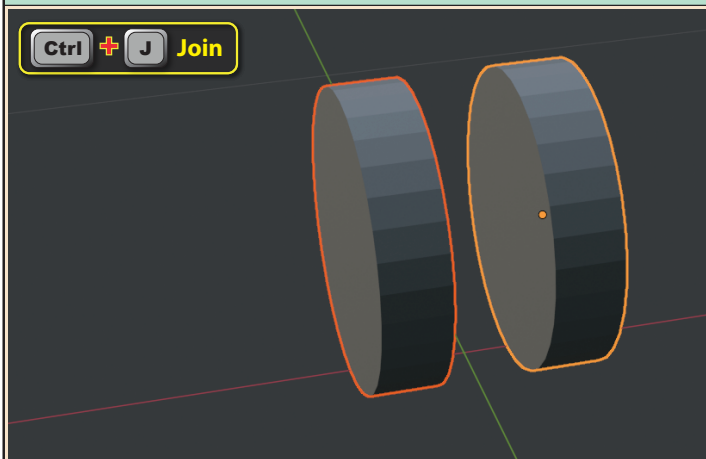
Now we need to select all three objects and press **Ctrl+J** to merge them into a single item.



In the **Outliner Editor** we can rename our object **axis-set**.



Objects don't have to be touching to be joined. For example, below the two discs have been selected and joined using **Ctrl+J**.



If we place a reshaped Cube between the two objects, we can then give the impression of two magnets moving in unison when we drag the discs to a new position.

