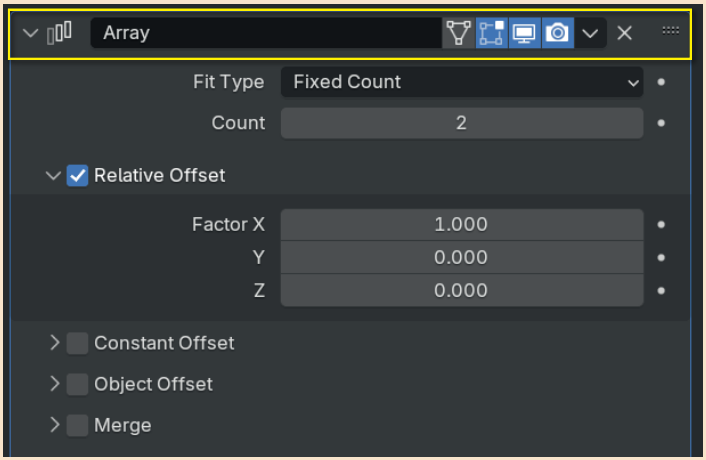
At the very top of the Array modifier page is a row of icons. These appear on every modifier page.



Array

Fit Type	Fixed Count
Count	2

☑ Relative Offset

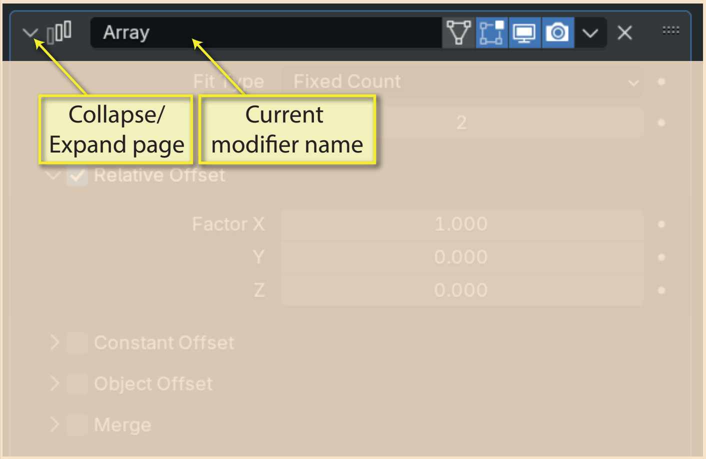
Factor X	1.000
Y	0.000
Z	0.000

☐ Constant Offset

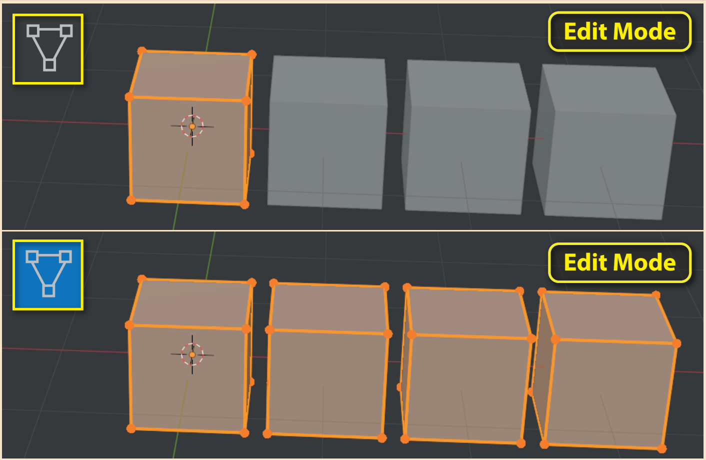
☐ Object Offset

☐ Merge

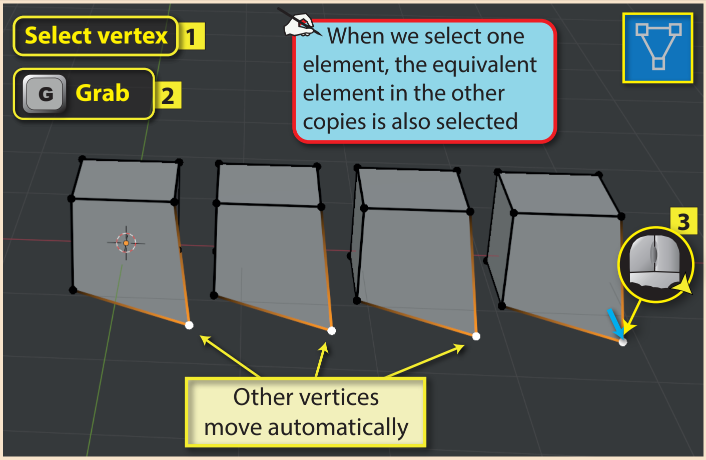
Starting at the left side, the down arrow collapses or expands the complete modifier page. The edit field allows us to rename this instance of the modifier.



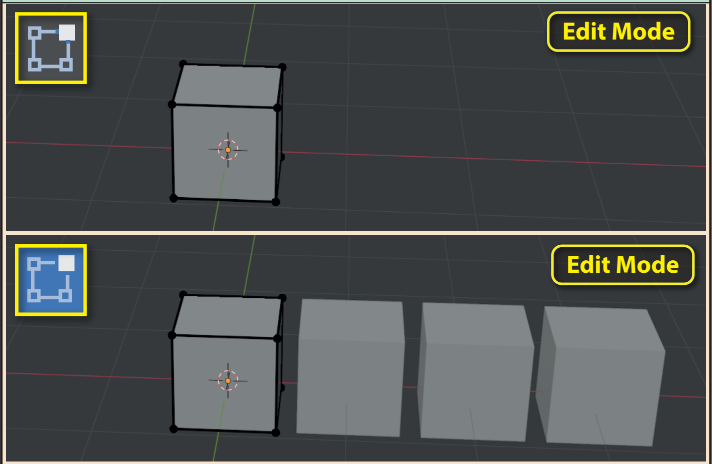
The **On Cage** icon controls access to any new elements created by the modifier when working in ***Edit mode***. When the icon is deselected, those elements cannot be accessed directly.



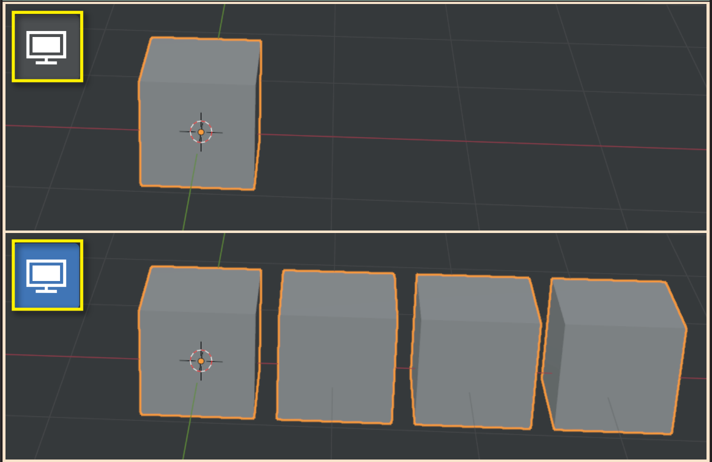
In the case of the Array modifier, access to those additional elements makes little difference, since any change to the original or a copy, is duplicated in all the other objects.


Select vertex
1
G
Grab
2
When we select one element, the equivalent element in the other copies is also selected
3
Other vertices move automatically

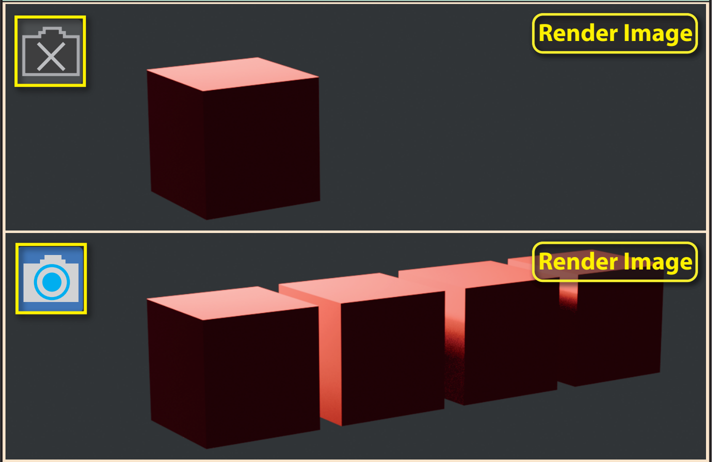
The next icon is the **Edit Mode Display**. If this option is selected, the effects of the modifier will be visible when working in ***Edit Mode***, otherwise the modifiers effect only appears in ***Object Mode***.



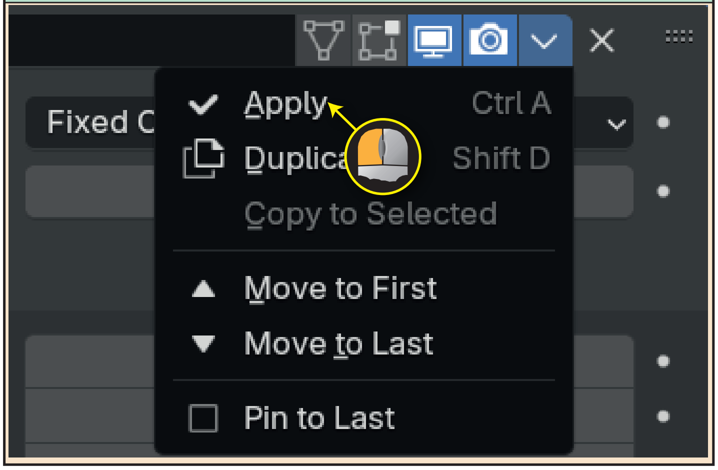
The third icon, **Realtime 3D Viewport Display**, has a higher priority than the previous two, with the modifier's effect only displayed in the ***3D Viewport*** when this option is activated.



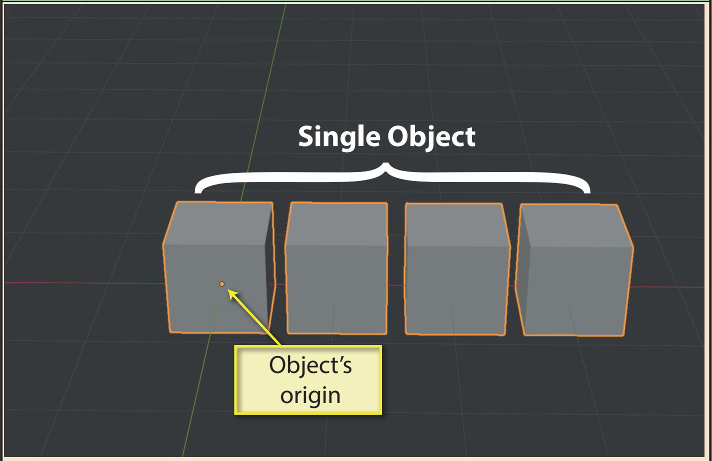
The **Render** icon must be on if the effect of the modifier is to appear in the final render image.



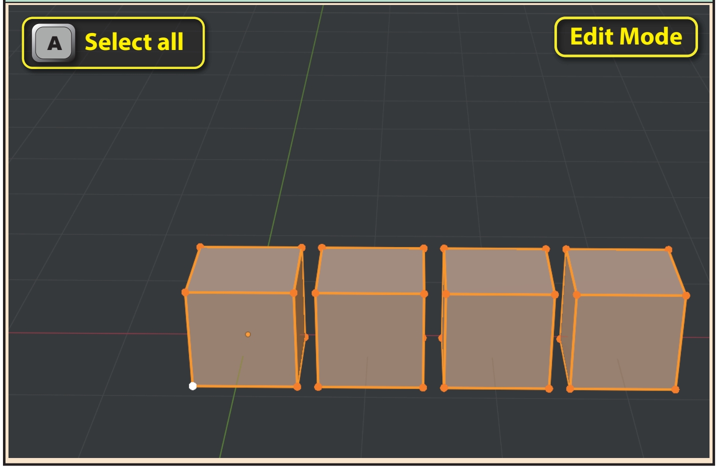
Next, we come to another down button. This lists two options that are useable at this time. Clicking on **Apply** will turn the effects created by the modifier into real meshes and remove the modifier page since its job is now complete.



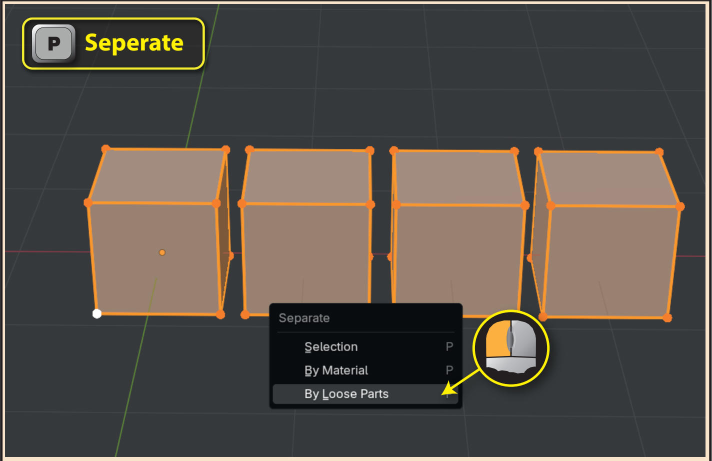
Although each Cube is now a separate mesh after clicking on **Apply**, they are joined together as a single object (equivalent to linking meshes using **Ctrl+J**) with a single origin.



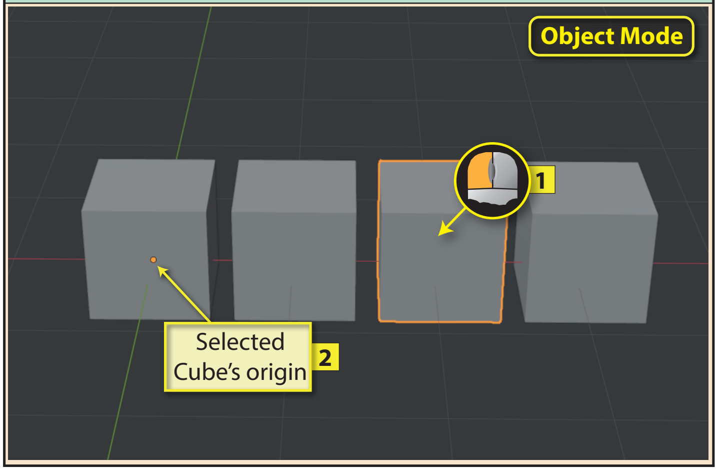
To separate the Cubes so that each is an independent object, we must enter ***Edit Mode*** and press **A** to select all of the elements.



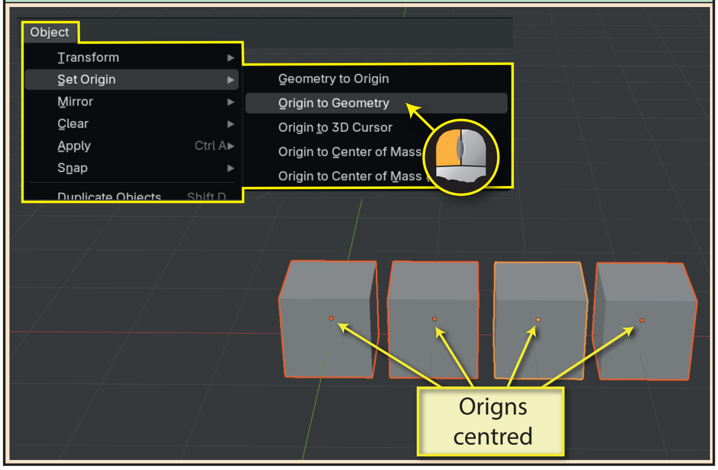
Now, we need to press **P** and in the popup menu, choose **By Loose Parts** to separate each mesh.



When we return to ***Object Mode*** we can see that each Cube can now be selected separately. However, each Cube has its origin in the same place: at the centre of the original Cube.

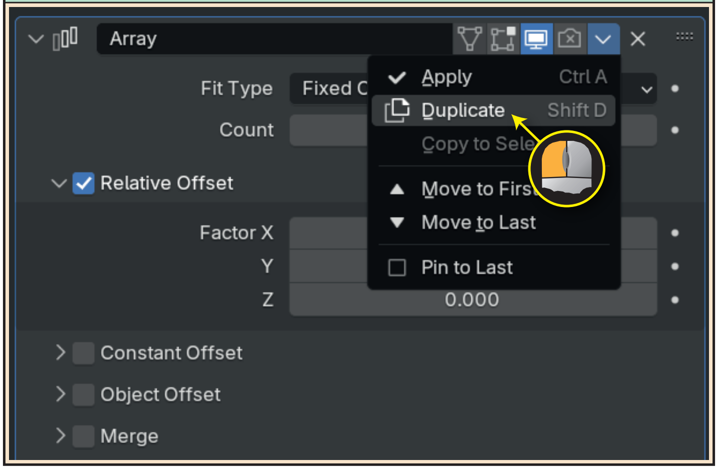


To move each origin to the middle of its own mesh we need to select all the objects and then choose the menu option **Object>Set Origin>Origin to Geometry**.

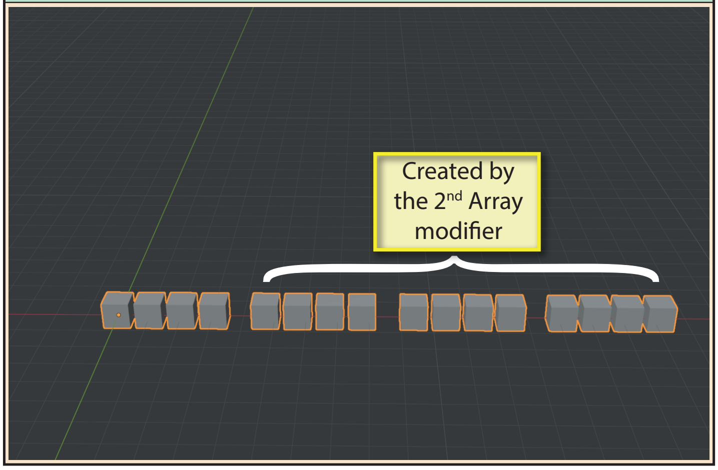


Origns centred

Duplicate is the next option in the ***Array modifier's dropdown list***. Of course, we'll only see this if we haven't clicked on **Apply**.



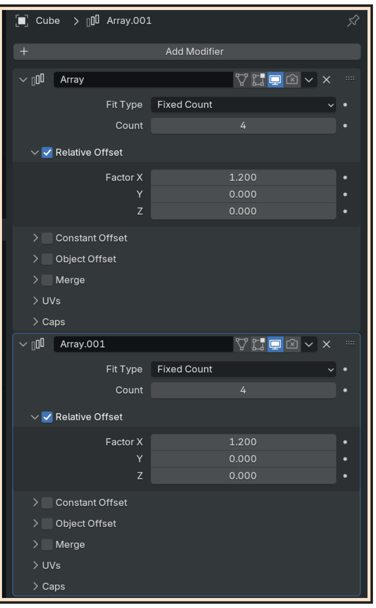
Duplicate creates another instance of the ***Array modifier***. This copy applies the ***Array modifier*** to the results created by the first modifier.



Created by the 2nd Array modifier

And in the ***Properties Editor's Modifiers' page***, there are now two copies of the ***Array modifier*** listed.

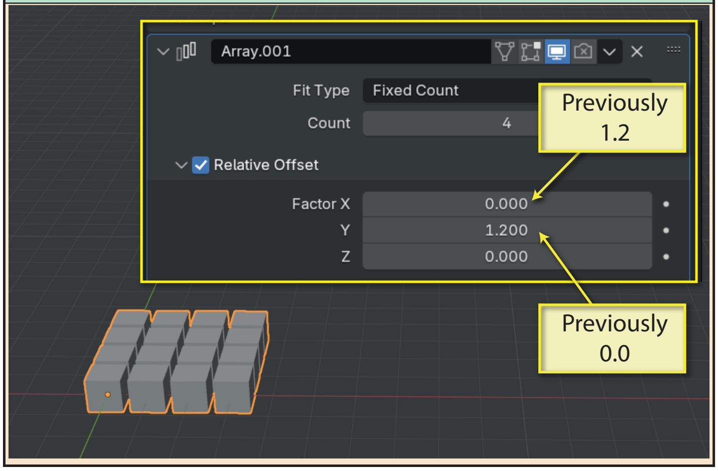
Notice that each has its own unique name. Here the default names are used. ***Array*** and ***Array.001*** and that the latest version has the same parameter values as the original.



Array
Fit Type: Fixed Count
Count: 4
☑ Relative Offset
Factor X: 1.200
Y: 0.000
Z: 0.000

Array.001
Fit Type: Fixed Count
Count: 4
☑ Relative Offset
Factor X: 1.200
Y: 0.000
Z: 0.000

And if we change the parameter values in the second ***Array modifier***, we can, for example, move the position of the latest copies.

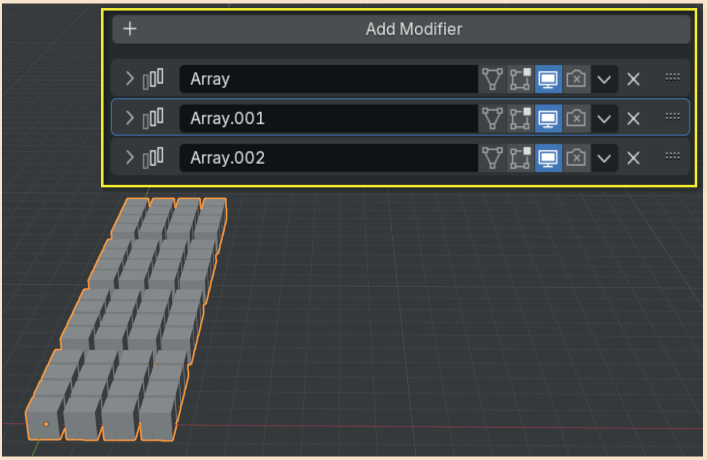


Array.001
Fit Type: Fixed Count
Count: 4
☑ Relative Offset
Factor X: 0.000
Y: 1.200
Z: 0.000

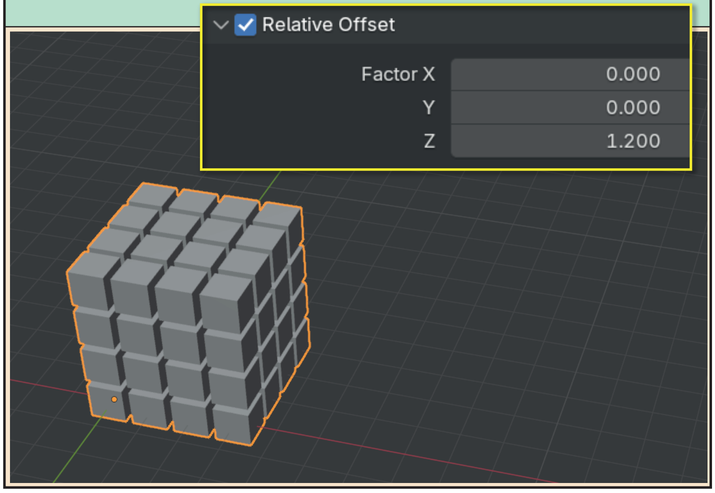
Previously 1.2

Previously 0.0

And if we choose **Duplicate** in the latest ***Array modifier***, we get yet another copy. The pages have been minised in the screen layout shown below. Note that the latest modifier is named ***Array.002***



And, if we adjust the **Relative Offset** values in the third copy of the ***Array modifier***, we can create a cube of Cubes.



☑ Relative Offset

Factor X 0.000

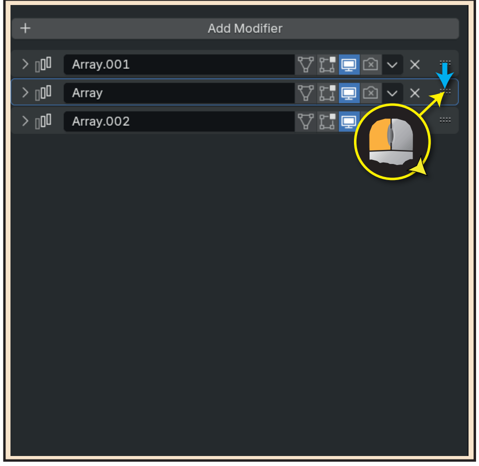
Y 0.000

Z 1.200

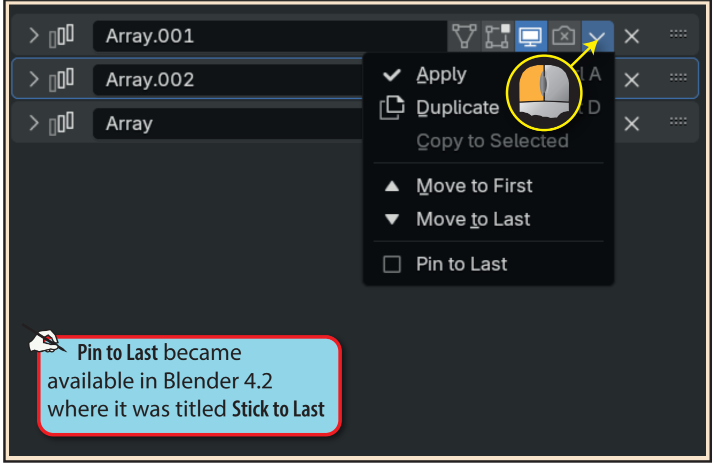
NOTE

When using more than one modifier on an object, Blender executes them in the order they are given in the list - top to bottom. The order matters. When using different modifier types, a different order can produce very different results.

One method of changing the order of the modifiers is to click and drag from the top-right area.

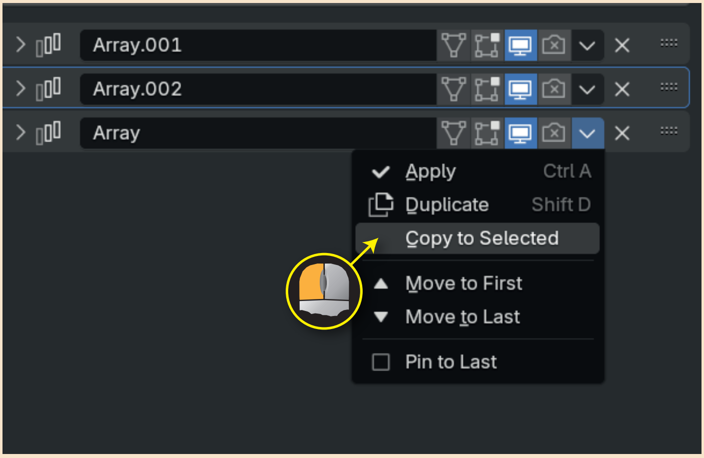


Another option is to click on the down arrow button and choose **Move to First** or **Move to Last**. Choosing **Pin to Last** will ensure the selected modifier always comes at the bottom of the list.

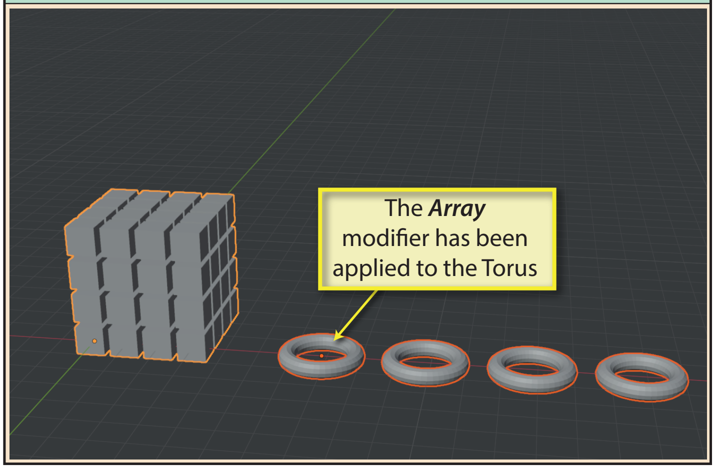


Pin to Last became available in Blender 4.2 where it was titled **Stick to Last**

If we have more than one object selected when we apply a modifier, it will only be applied to the active object. However, once applied, the third option of the dropdown list, **Copy to Selected**, becomes activated.

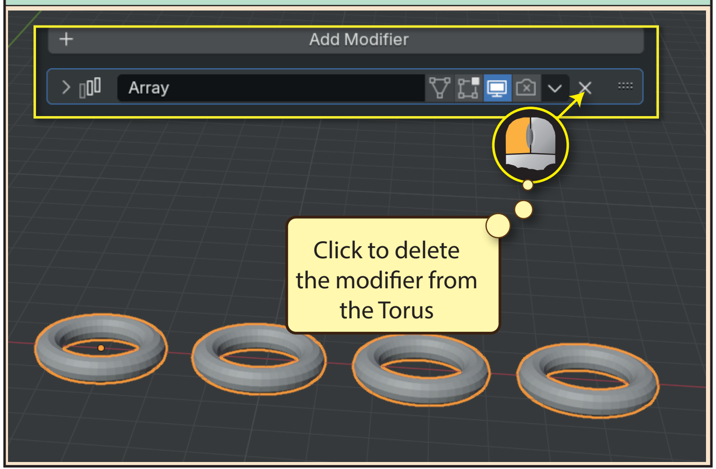


This option applies that modifier to all selected items. In this case, that means we get several new Toruses.



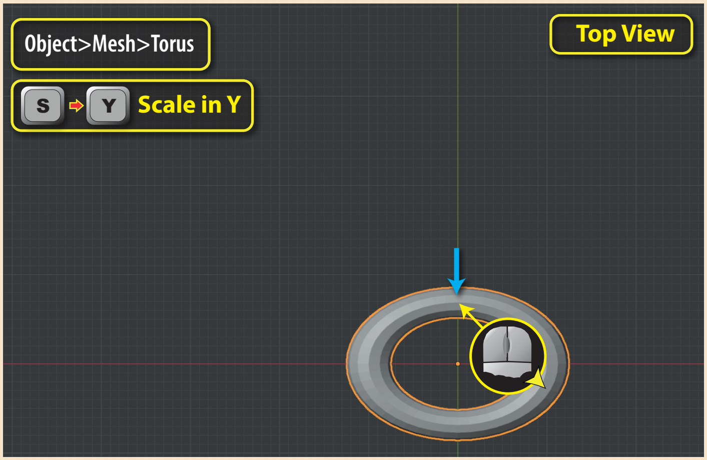
The ***Array*** modifier has been applied to the Torus

Clicking on the x icon of a modifier will delete it from the selected object.



Click to delete the modifier from the Torus

To demonstrate some of the uses of the Array modifier, we'll start by creating a metal chain. The first step is to create a Torus and shrink it in the Y direction.

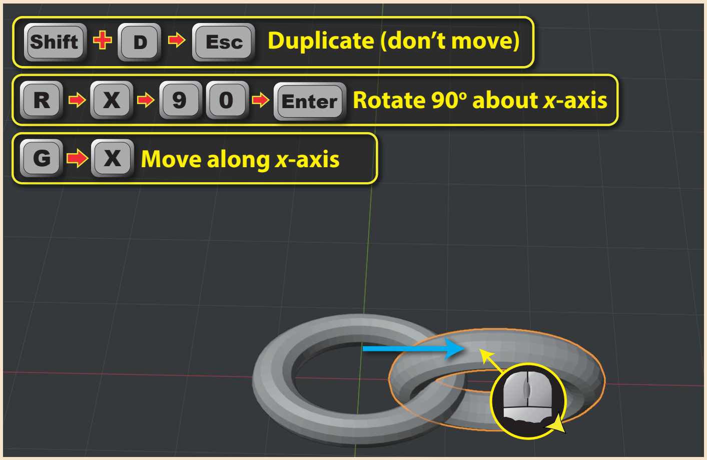


Object>Mesh>Torus

S → Y Scale in Y

Top View

Next, we'll make a copy (**Shift+D**), rotate the copy 90° about its *x*-axis and move it along its *x*-axis so that it is touching the first Torus.

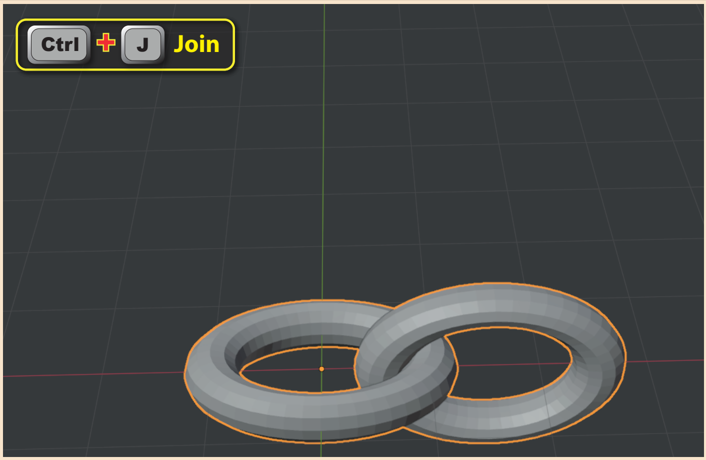


Shift + D → Esc Duplicate (don't move)

R → X → 9 0 → Enter Rotate 90° about *x*-axis

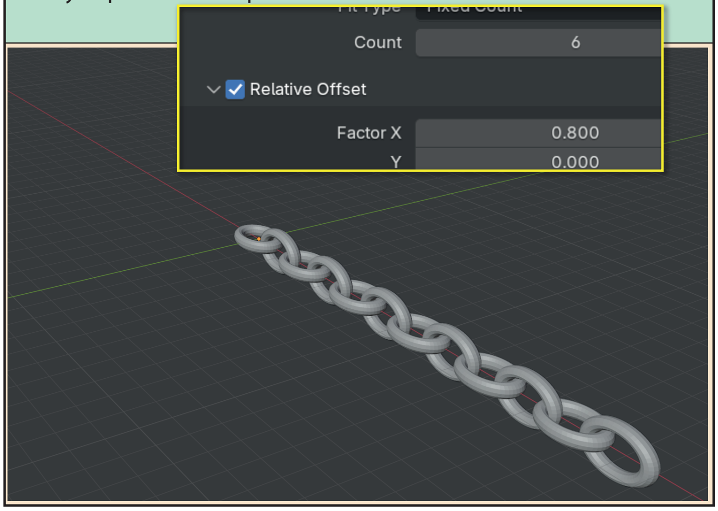
G → X Move along *x*-axis

To make the two Toruses a single object, we'll select them both and press **Ctrl+J**.



Ctrl + J Join

Now all we need to do is apply the ***Array modifier***, adjust the **Relative Offset** in the X direction to around 0.8, and make as many copies as we require.



Fit Type Fixed Count

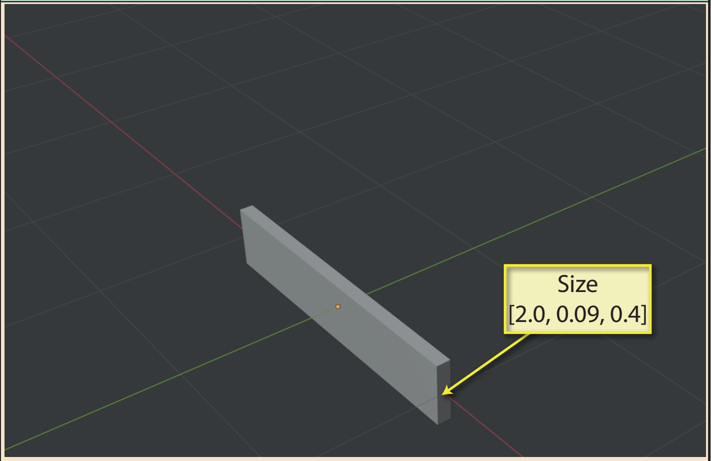
Count 6

☑ Relative Offset

Factor X 0.800

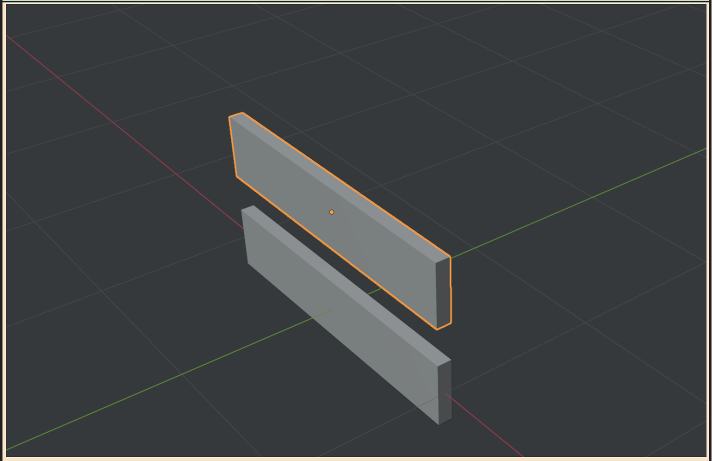
Y 0.000

For the next example, we'll create a basic shape using three Cubes. First we'll resize in each dimension to resemble a plank of wood.

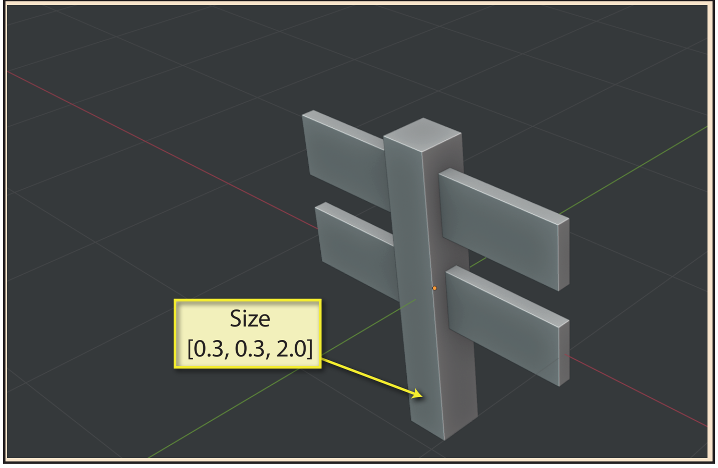


Size
[2.0, 0.09, 0.4]

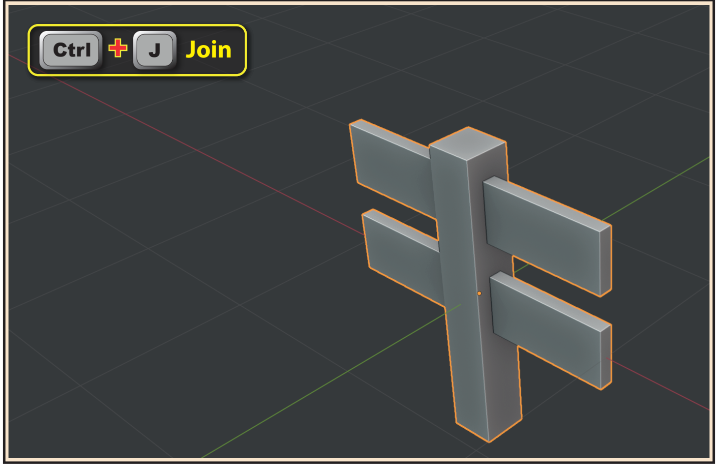
The second step is to make a copy of the first object and move it in the Z direction.



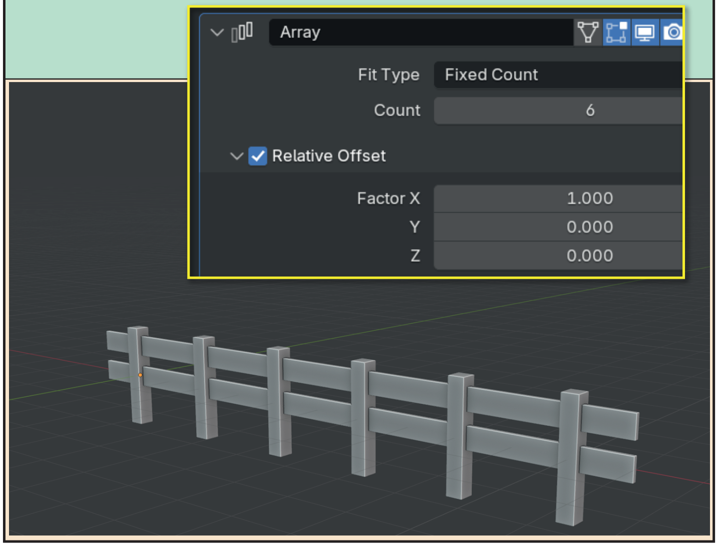
The third Cube represents the wooden post.



With all three elements selected, we can forge them into a single object by pressing **Ctrl+J**.



Now we can apply the Array modifier to create a fence.



Array

Fit Type: Fixed Count

Count: 6

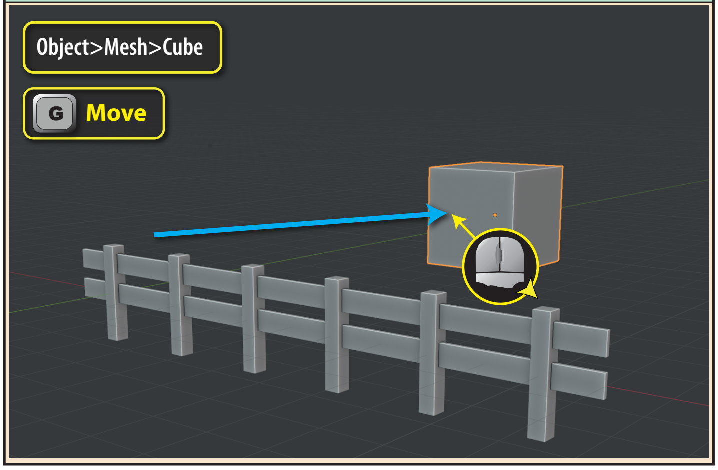
☑ Relative Offset

Factor X: 1.000

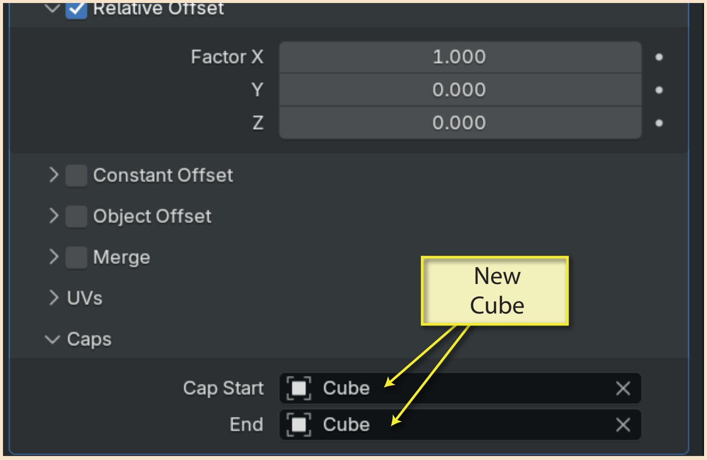
Y: 0.000

Z: 0.000

To complete the model, we'll attempt to place a full-sized Cube at either end of the fence. We'll start by creating a new Cube and moving it away from the fence.



On the Array modifier page, we can set the **Cap Start** and **End** to the new Cube.



☑ Relative Offset

Factor X: 1.000

Y: 0.000

Z: 0.000

□ Constant Offset

□ Object Offset

□ Merge

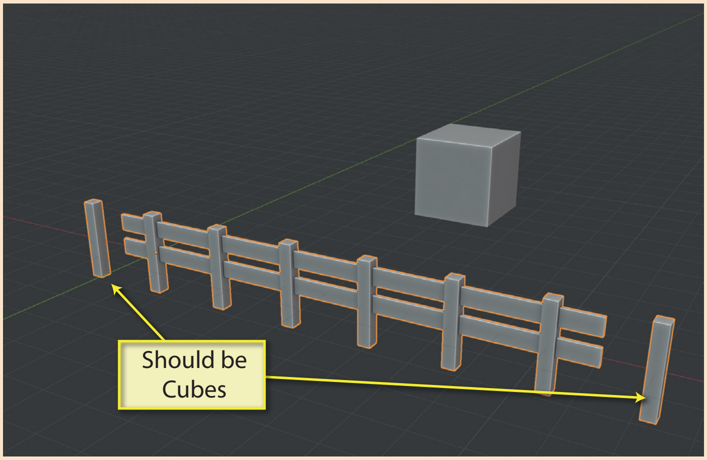
UVs

Caps

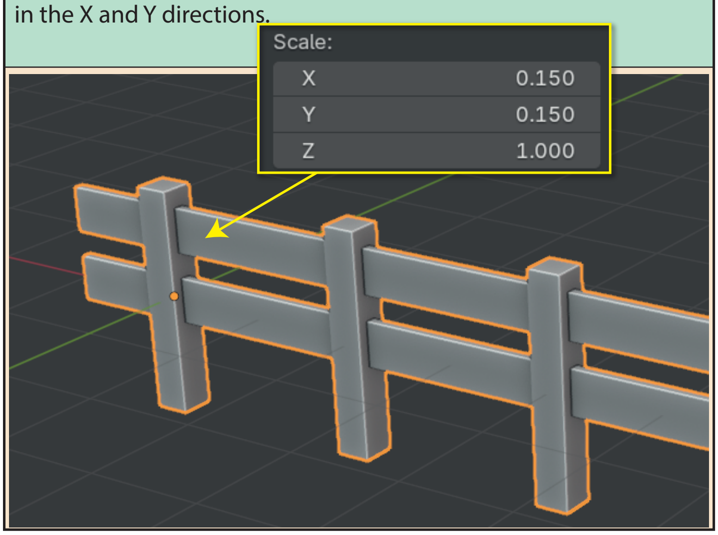
Cap Start: Cube

End: Cube

However, the result is not what we might expect. What should be full-sized Cubes have ended up looking like fence posts.

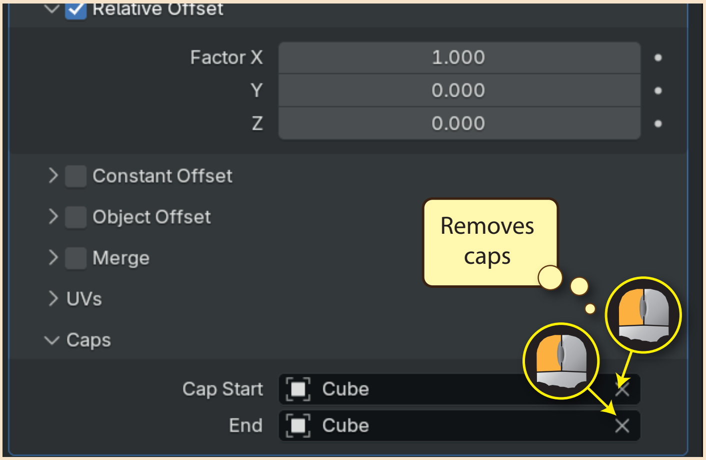


The problem is that we forgot to apply the scale when we created our basic fence element meaning that it has a scale factor of 0.15 in the X and Y directions.



Scale:
X 0.150
Y 0.150
Z 1.000

Those same scale factors have then been applied to any object that is assigned to the ***Cap Head*** and ***End***. Hence, the two Cubes change to look like posts. To solve this problem we must first remove the ***Cap Head*** and ***End*** entries.

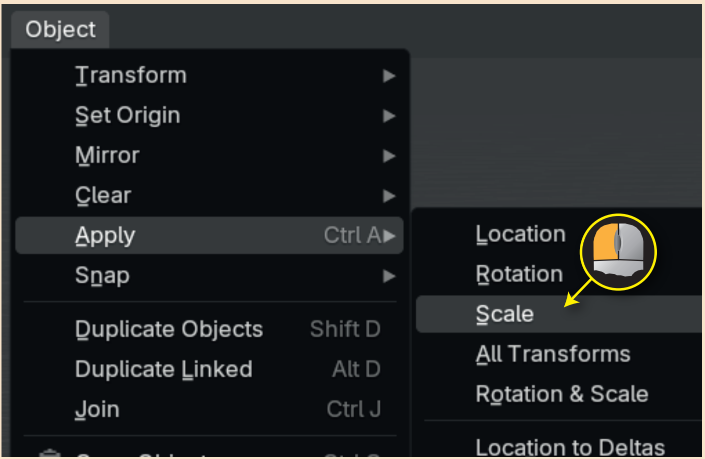


☑ Relative Offset

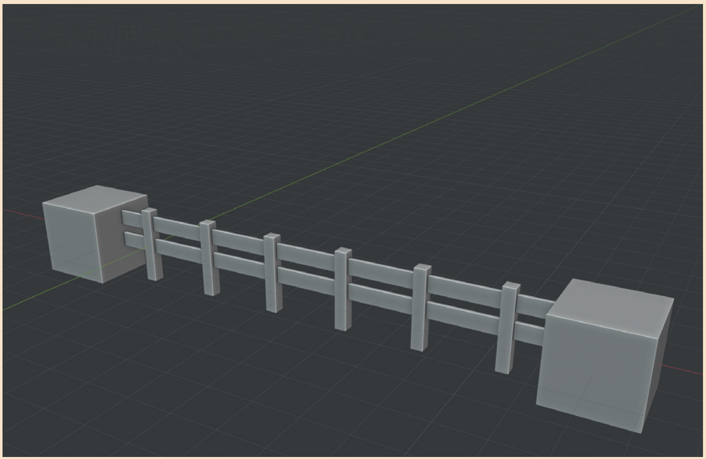
Factor X 1.000
Y 0.000
Z 0.000

Cap Start Cube
End Cube

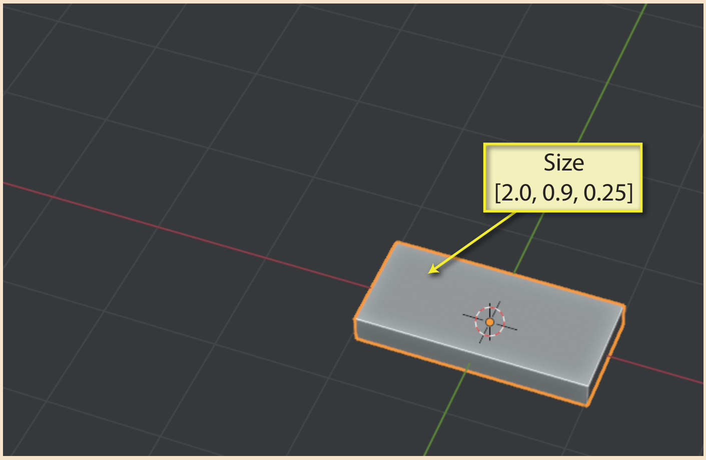
Selecting the fence element, we now need to apply the scale factor which will tell Blender that the current shape is to be taken as the starting shape with scale values of 1.0 in all three directions.



With the problems fixed, we can again set the Cube as the ***Cap Start*** and ***End*** values. After that we can hide the original Cube since we don't want it to appear in the scene.

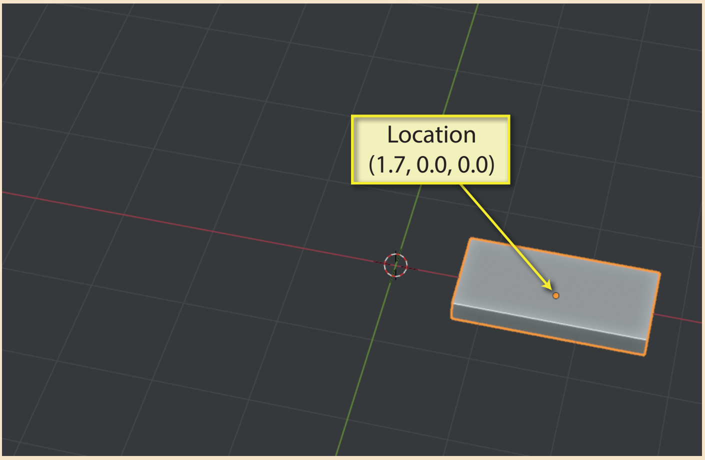


For our next model we'll start with a Cube and resize it in the Y and Z directions.



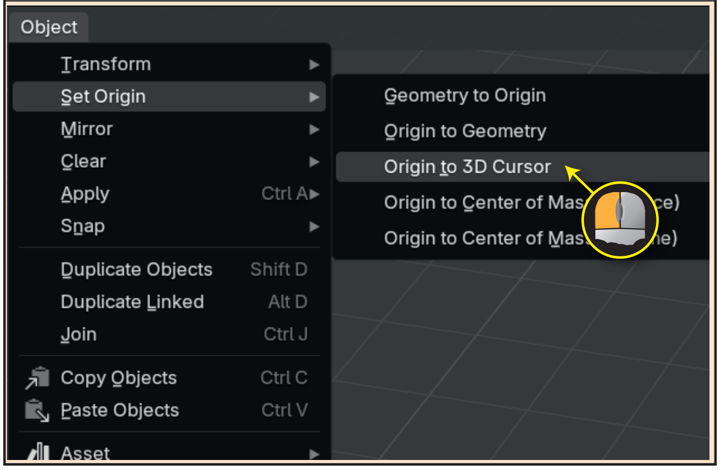
Size
[2.0, 0.9, 0.25]

After applying the scaling, we'll move the Cube 1.7m along the x-axis.

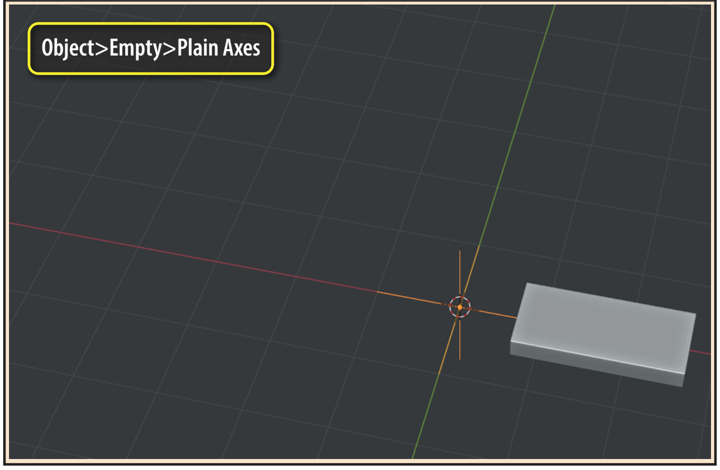


Location
(1.7, 0.0, 0.0)

Next, we'll move the Cube's origin to the World origin (where the 3D cursor is located).

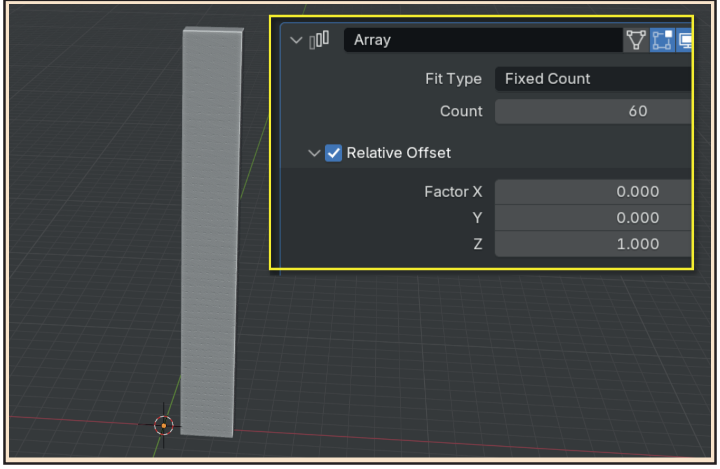


After adding an **Empty** at the World origin...



Object>Empty>Plain Axes

we'll select the Cube and apply an ***Array modifier*** setting the **Count** to 60 and the **Relative Offsets** to (0.0, 0.0, 1.0).



Array

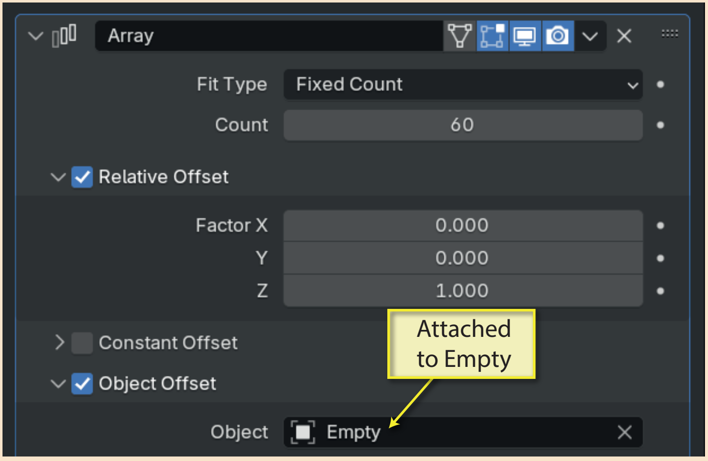
Fit Type: Fixed Count

Count: 60

☑ Relative Offset

Factor X: 0.000
Y: 0.000
Z: 1.000

Next we'll attach the modifier to the Empty...



Array

Fit Type: Fixed Count

Count: 60

☑ Relative Offset

Factor X: 0.000
Y: 0.000
Z: 1.000

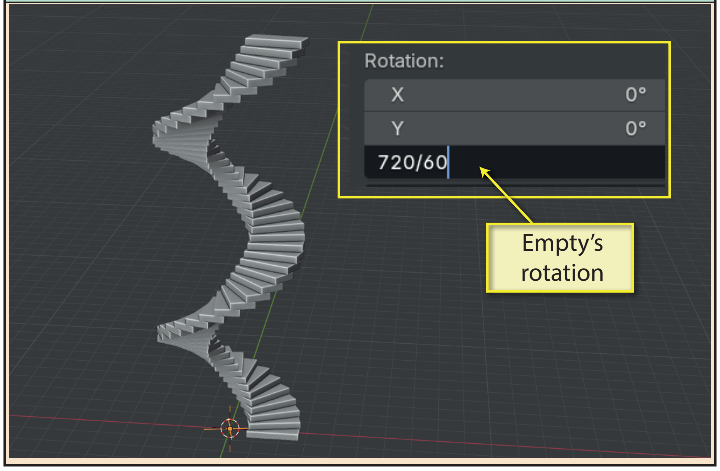
□ Constant Offset

☑ Object Offset

Object: Empty

Attached to Empty

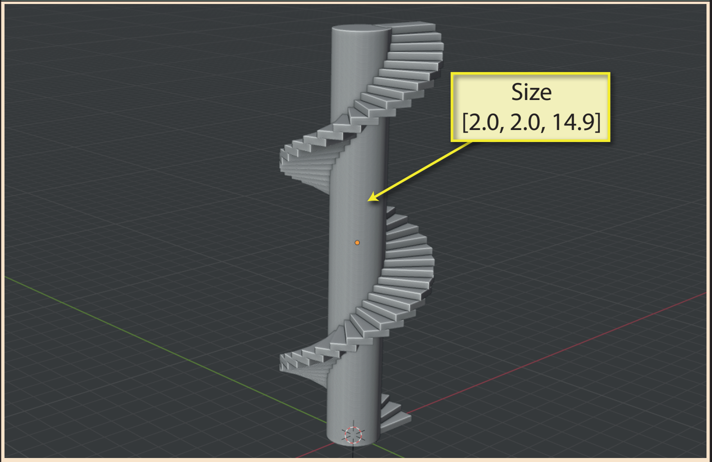
Now, if we rotate the **Empty** about its z-axis making the 60 copies rotate around 720°, we create out spiral staircase.



Rotation:
X 0°
Y 0°
720/60

Empty's rotation

And to add some realism to the result, we'll include a Cylinder resized to fit in the stairwell. And we mustn't forget to apply the scale!



Size
[2.0, 2.0, 14.9]