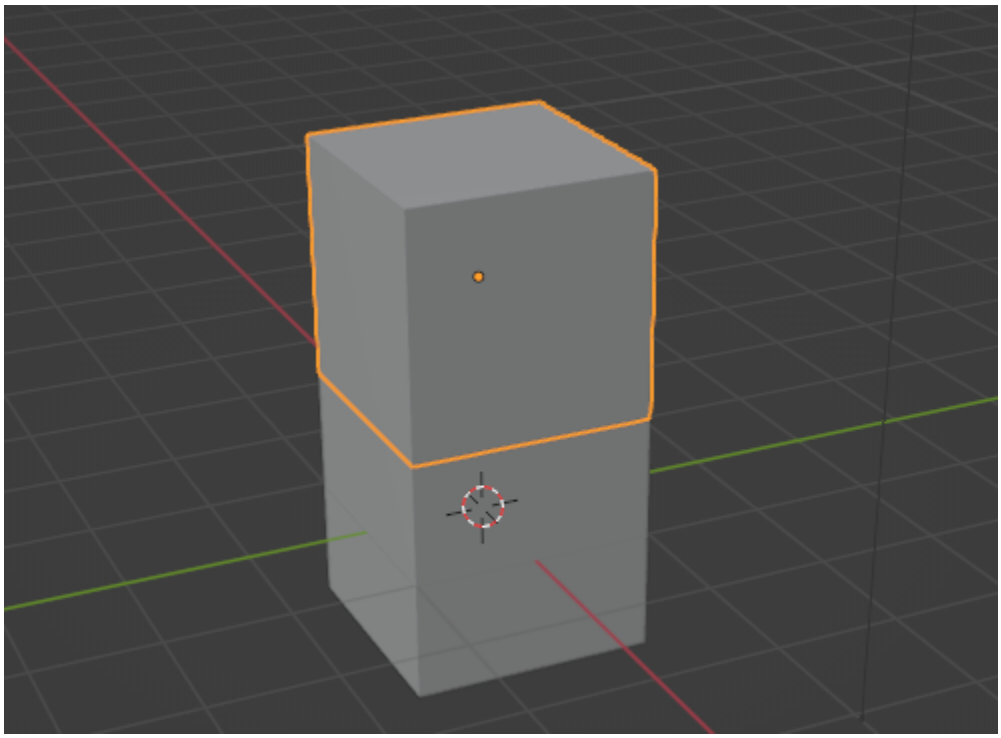
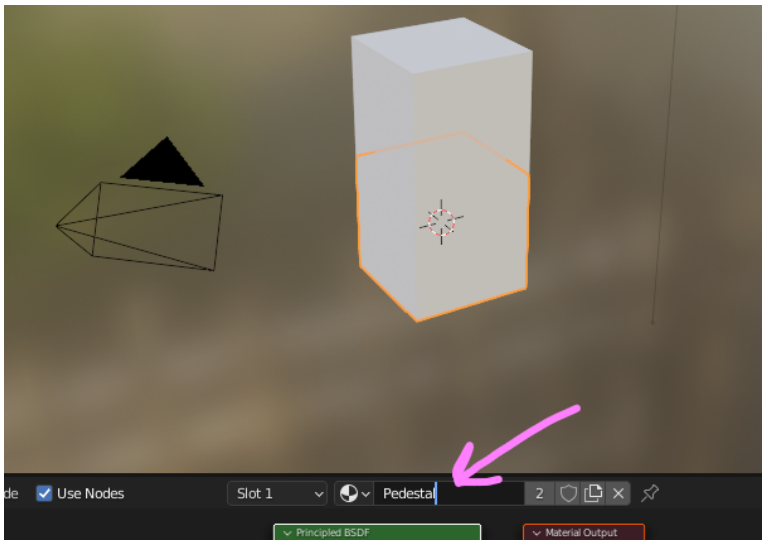
Dealing with Glass

Starting with a new blender file, duplicate the cube and drag it and place it above the first one on the z axis

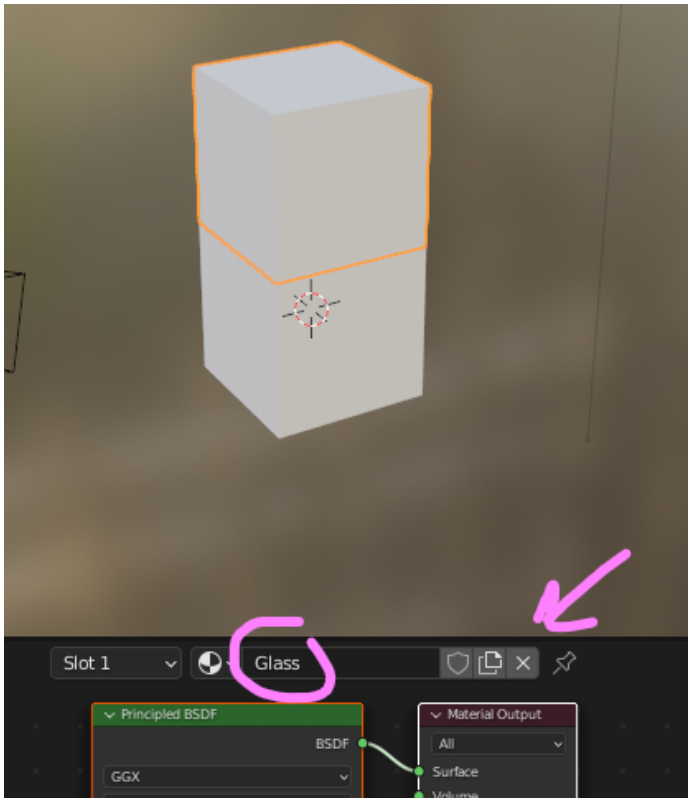


Switch to the shading viewport and let's assign materials to each cube:

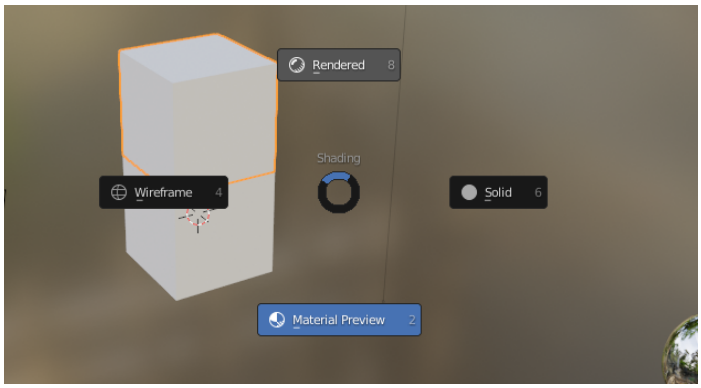
Click the lower cube and add a material. Rename it to Pedestal (if the material was already existent, then just rename it to)



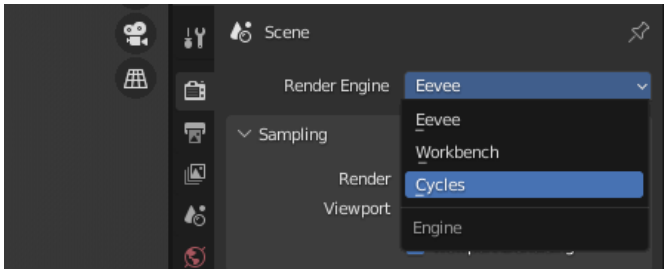
Next select the above cube and assign a new material to it (you may need to first unlink the pedestal material to it and then click the new button to add the new material). Rename this material to Glass



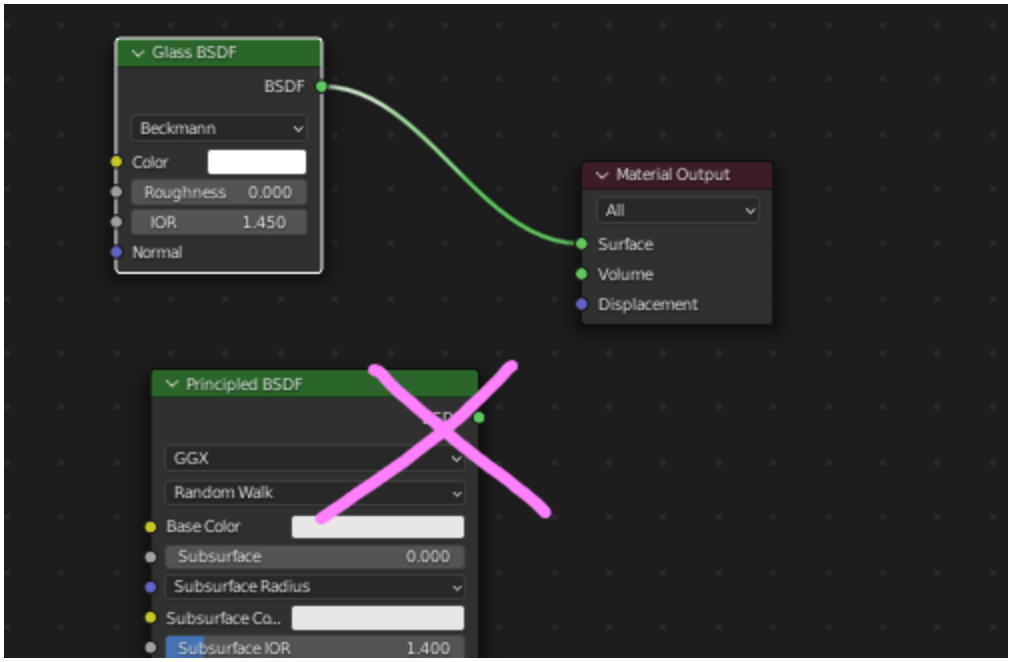
Switch to the rendered viewport by hovering your mouse over the 3d view and pressing the z key and switching to “rendered”



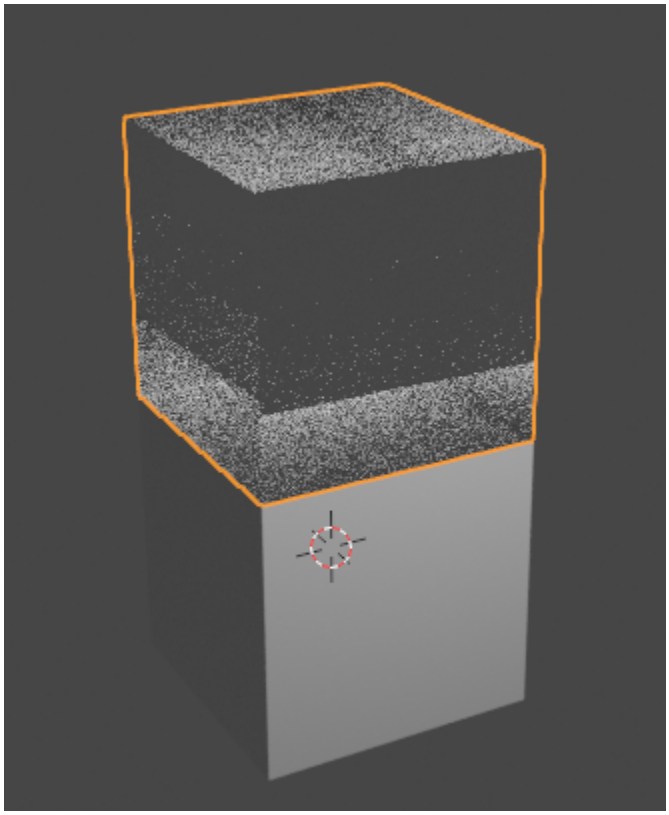
Next, let’s switch the renderer to Cycles in the render settings



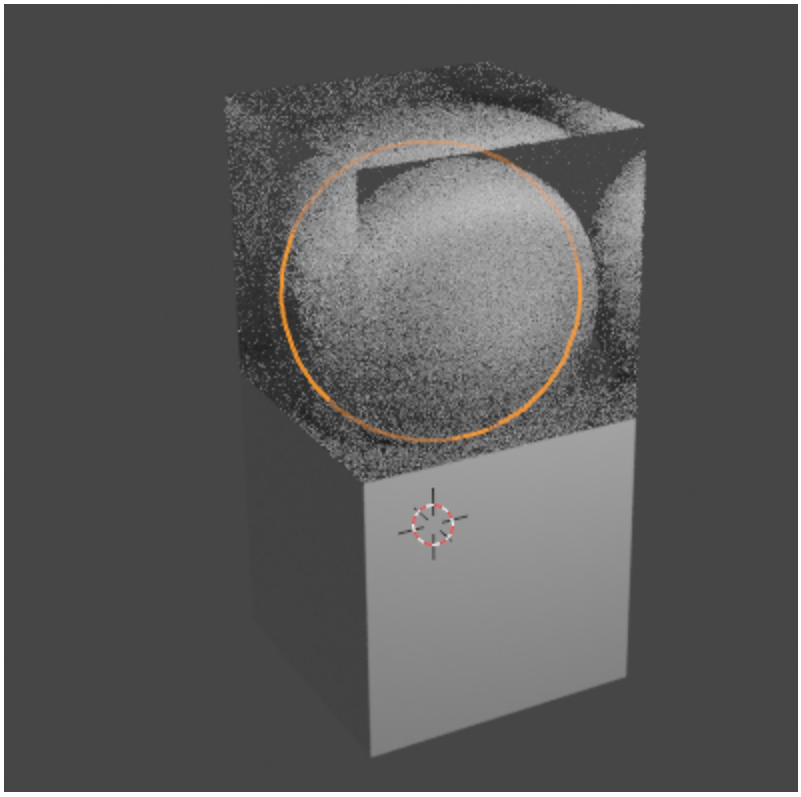
Returning to the shader node editor withthe above cube selected, let's change the material to glass
Shift+a → shader → glass BSDF. Connect the glass shader to the material output node. Delete the original principled BSDF shader.



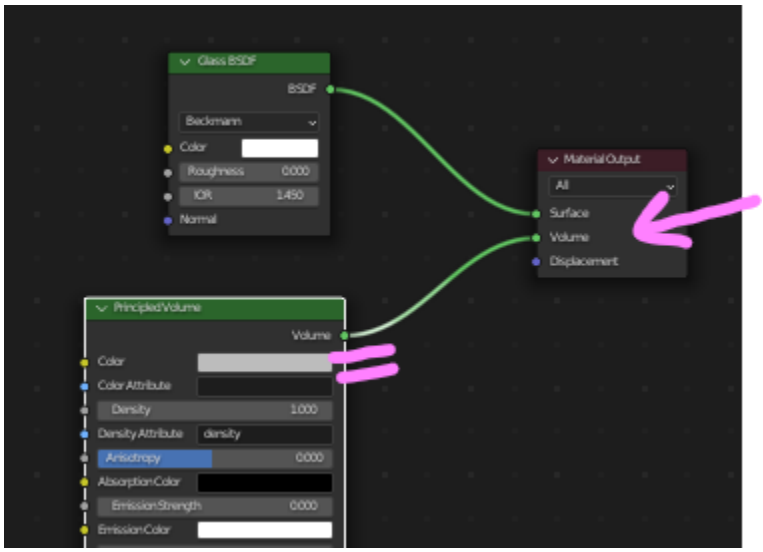
Your cube will now look like glass:



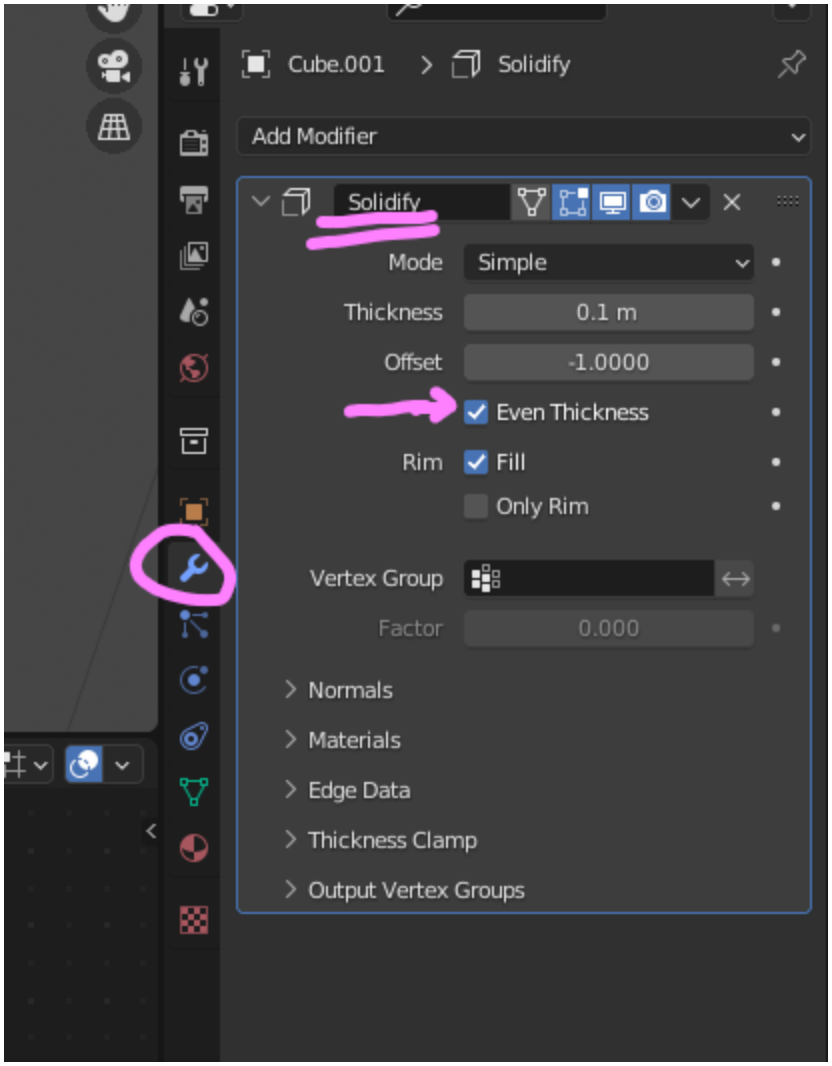
Add a UV Sphere to the scene and drag it upwards so that it is inside the cube



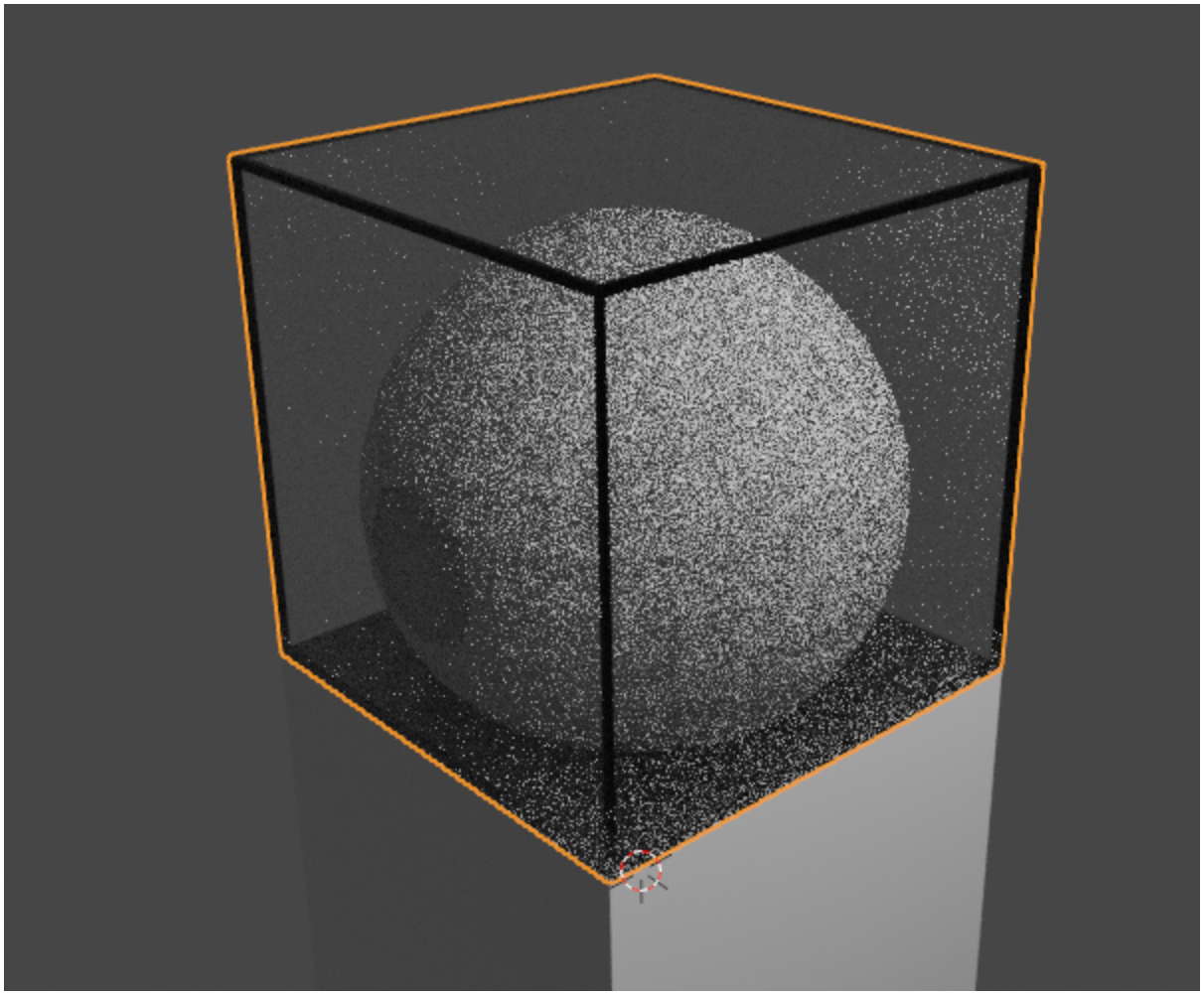
As can be seen, the glass cube is currently made of solid glass.
Select the glass cube again to make it active. Let's add a volume shader to the material to give the glass color and density.
Shift + a → shader → principled Volume and connect it to the VOLUME input of the material output node



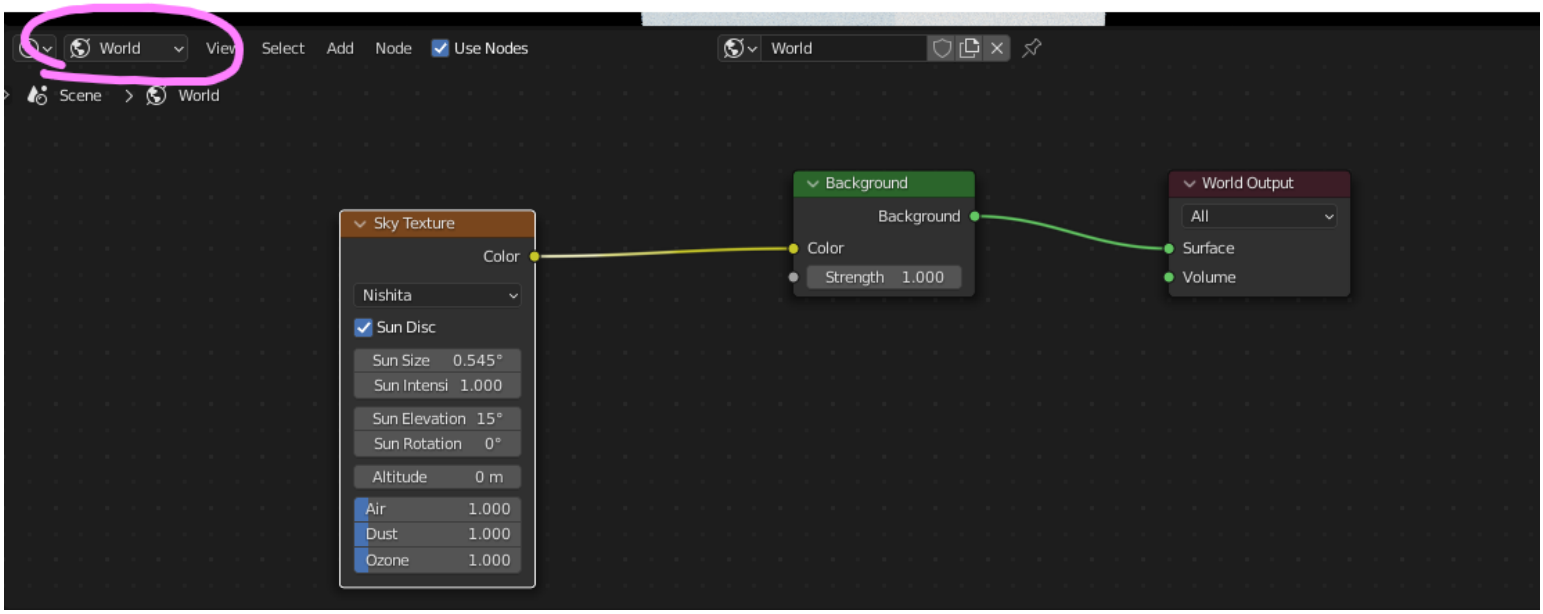
The glass cube will now look smokey
Try changing the density of the cube from values ranging from 0 to 100. The smokeyness of the glass will change in response. Set the density to 1.
Let's fix the glass cube so that it is not a solid block of glass but instead a walled glass case around the sphere. With the glass cube selected, add a Solidify modifier to it and adjust the thickness. To a more realistic value. Also put a checkmark in the Even Thickness box.



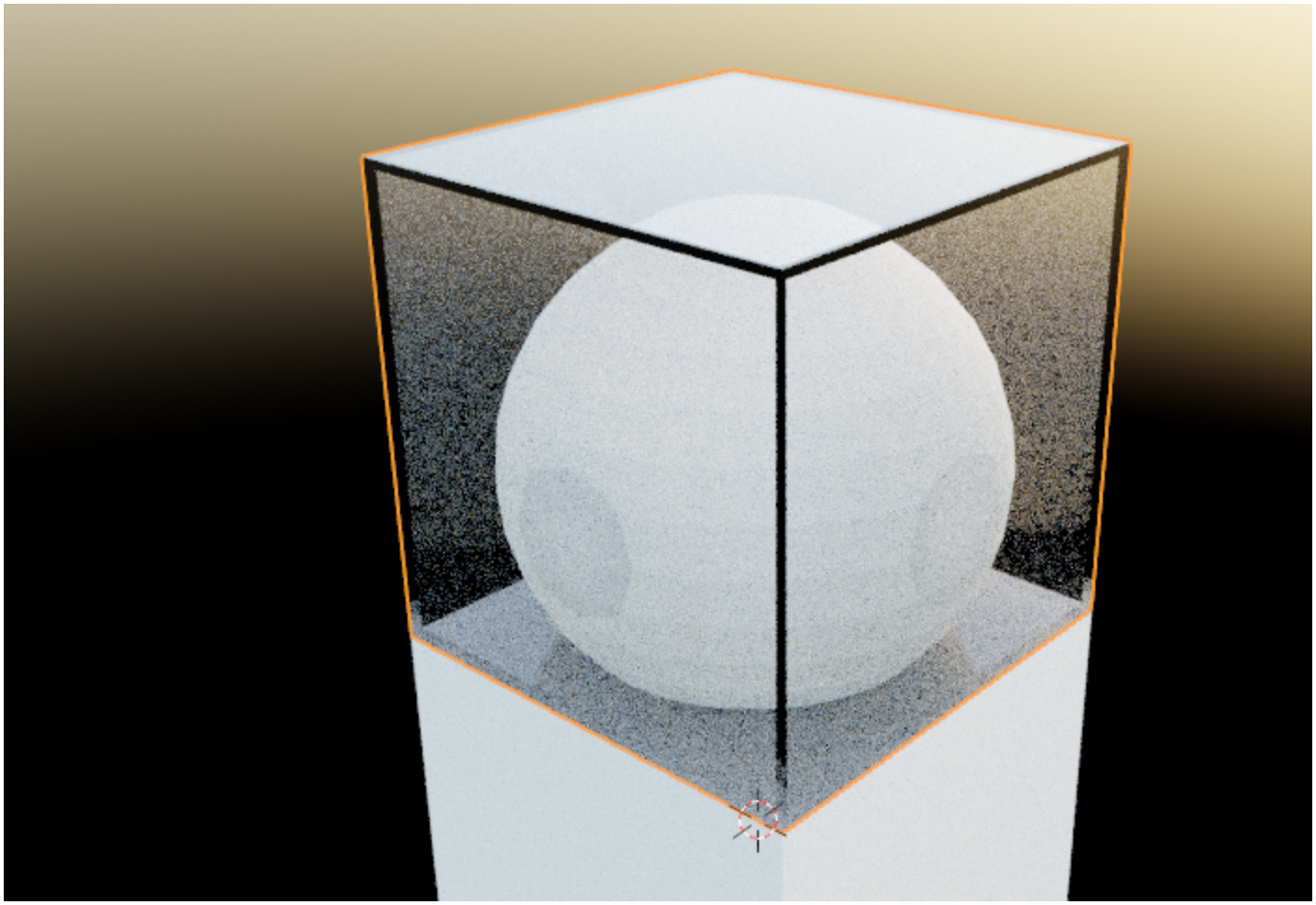
The glass box now looks like a display case, and the sphere inside is visible inside the case



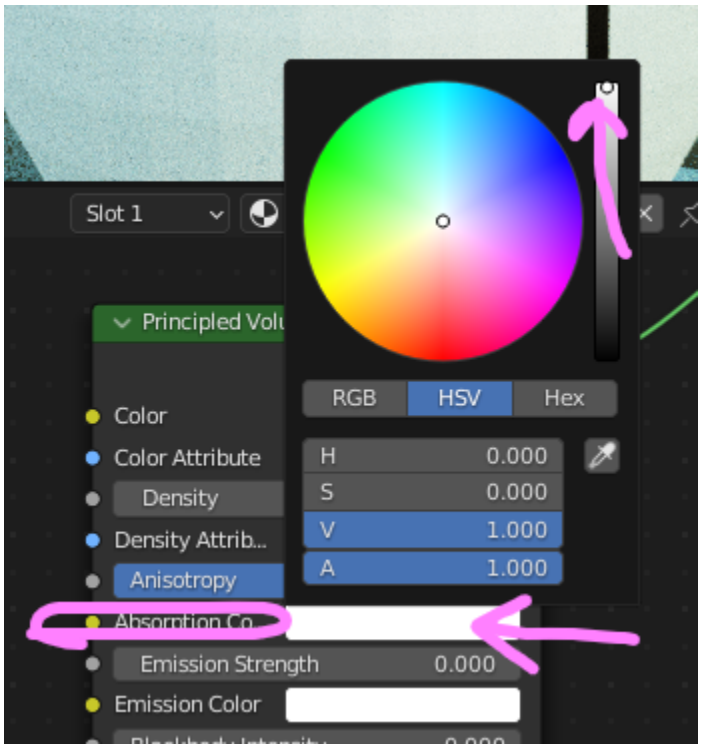
Let’s add a sky texture to the world shader.
Switch to the World mode in the shader editor and add the sky texture
Shift + a → texture → sky texture



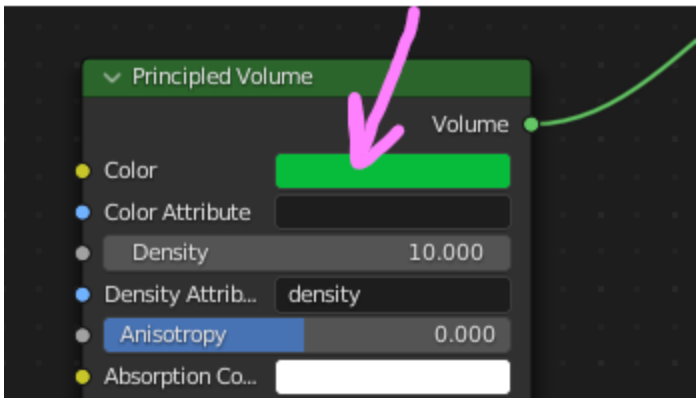
The background now has better lighting and we can see reflections on our glass box



Our sphere is too large for the glass case, lets shrink the size of it. Select the sphere and press s to scale it appropriately
Click the glass box and exit World mode by returning to the object shader editor
Let’s give the glass some color. In order for glass to have color, it must absorb light
In the volume shader, increase the volume absorption color to full white

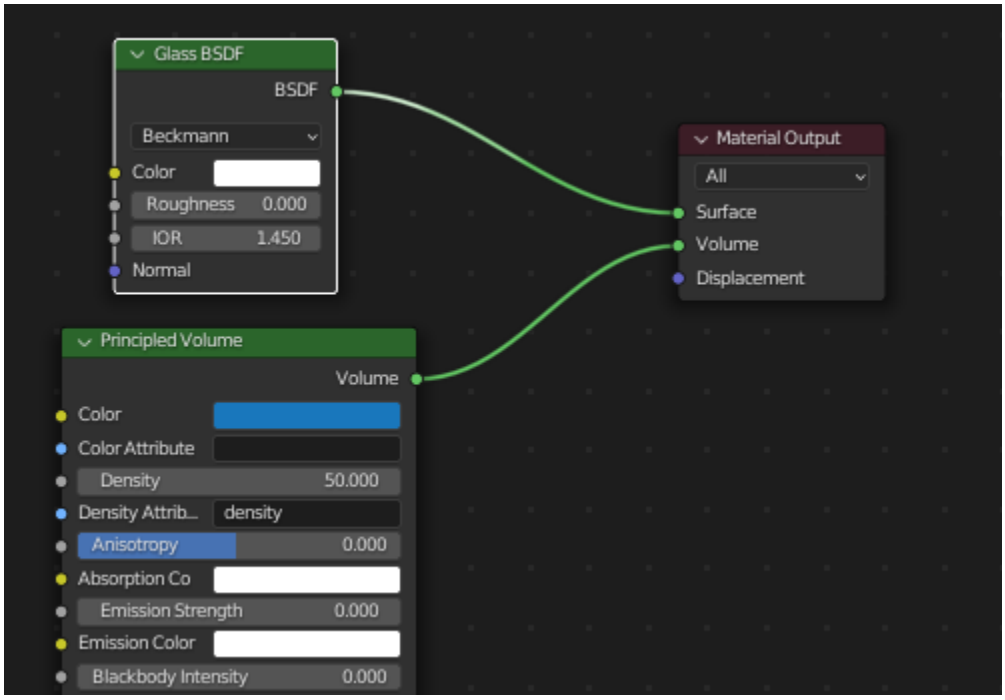


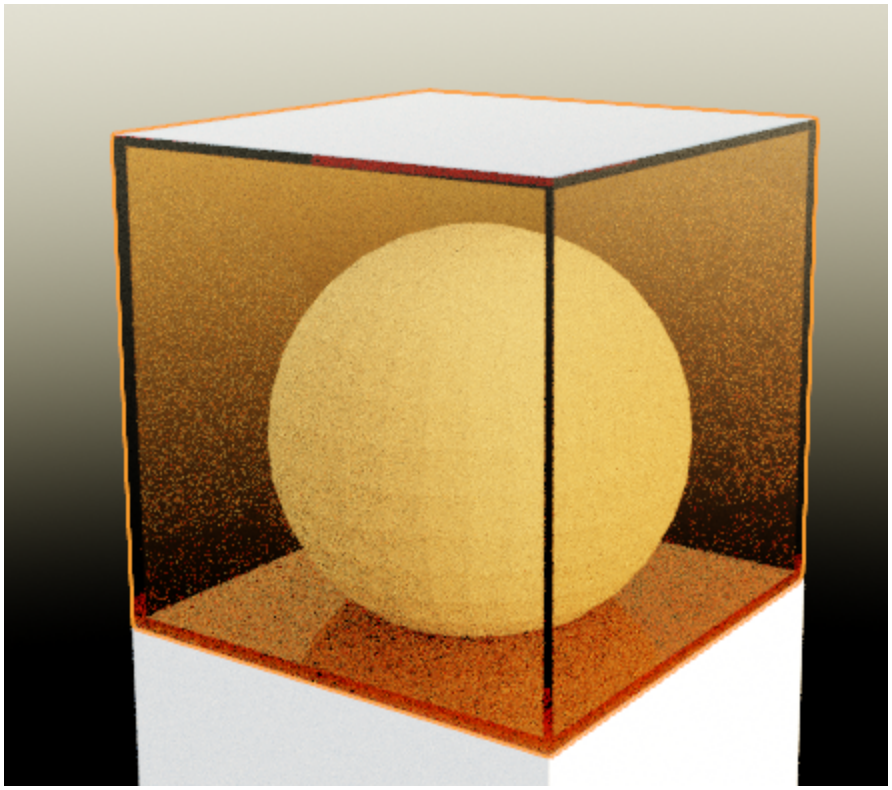
Next change the Color value of the principled Volume shader, it is the color swatch near the top:



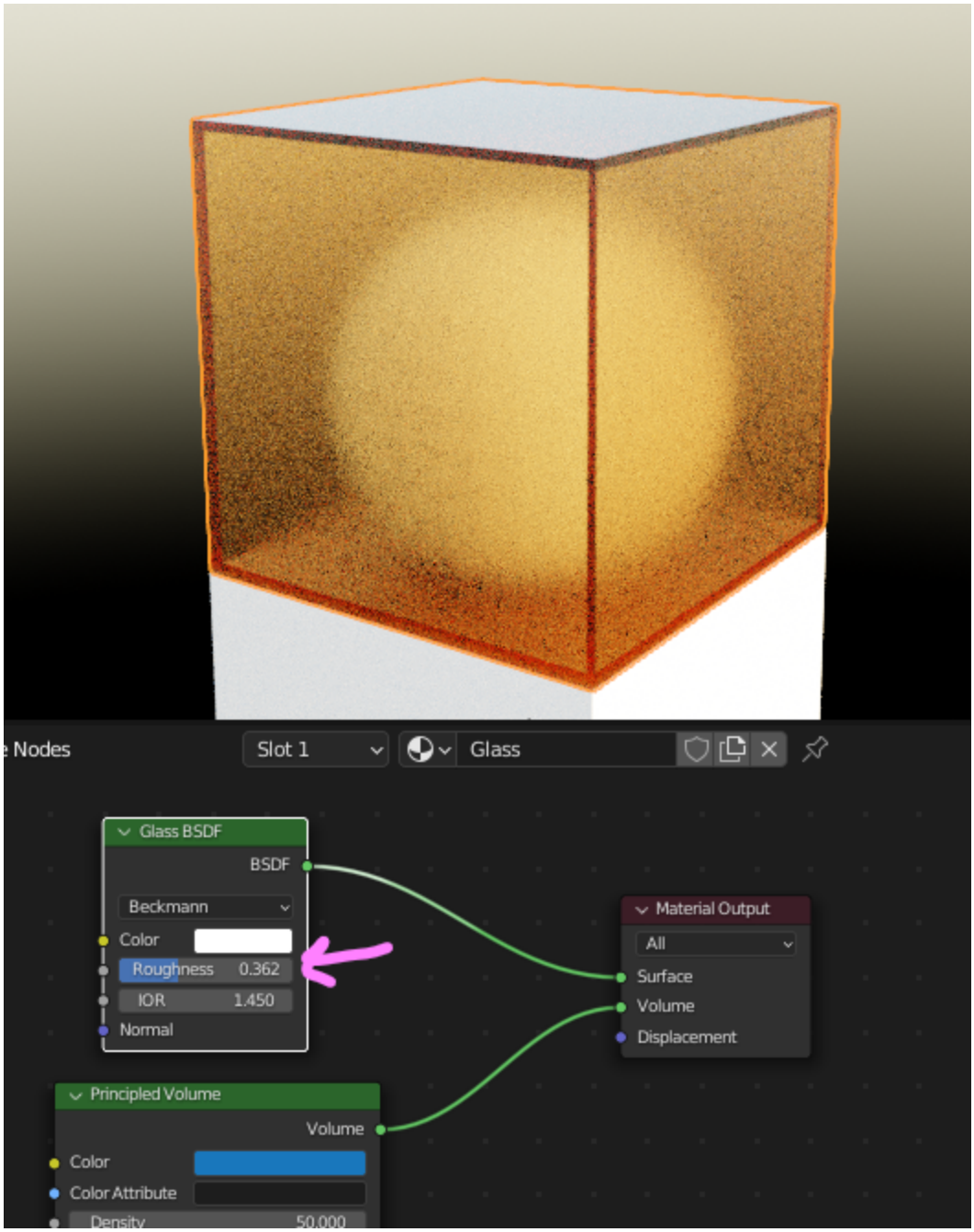
Select a color from the color picker and watch the color of the glass change in response. The color will look opposite of the selected color because this represents the color absorbed into the glass, meaning the color that passess through would be the opposite

Try changing the density of the glass to a higher value such as 50





Our object now appears inside of the colored glass case
To give the glass a frosted surface appearance, adjust the roughness on the glass BSDF node


Nodes
Slot 1
Glass
Glass BSDF
BSDF
Beckmann
Color
Roughness 0.362
IOR 1.450
Normal
Material Output
All
Surface
Volume
Displacement
Principled Volume
Volume
Color
Color Attribute
Density 50.000