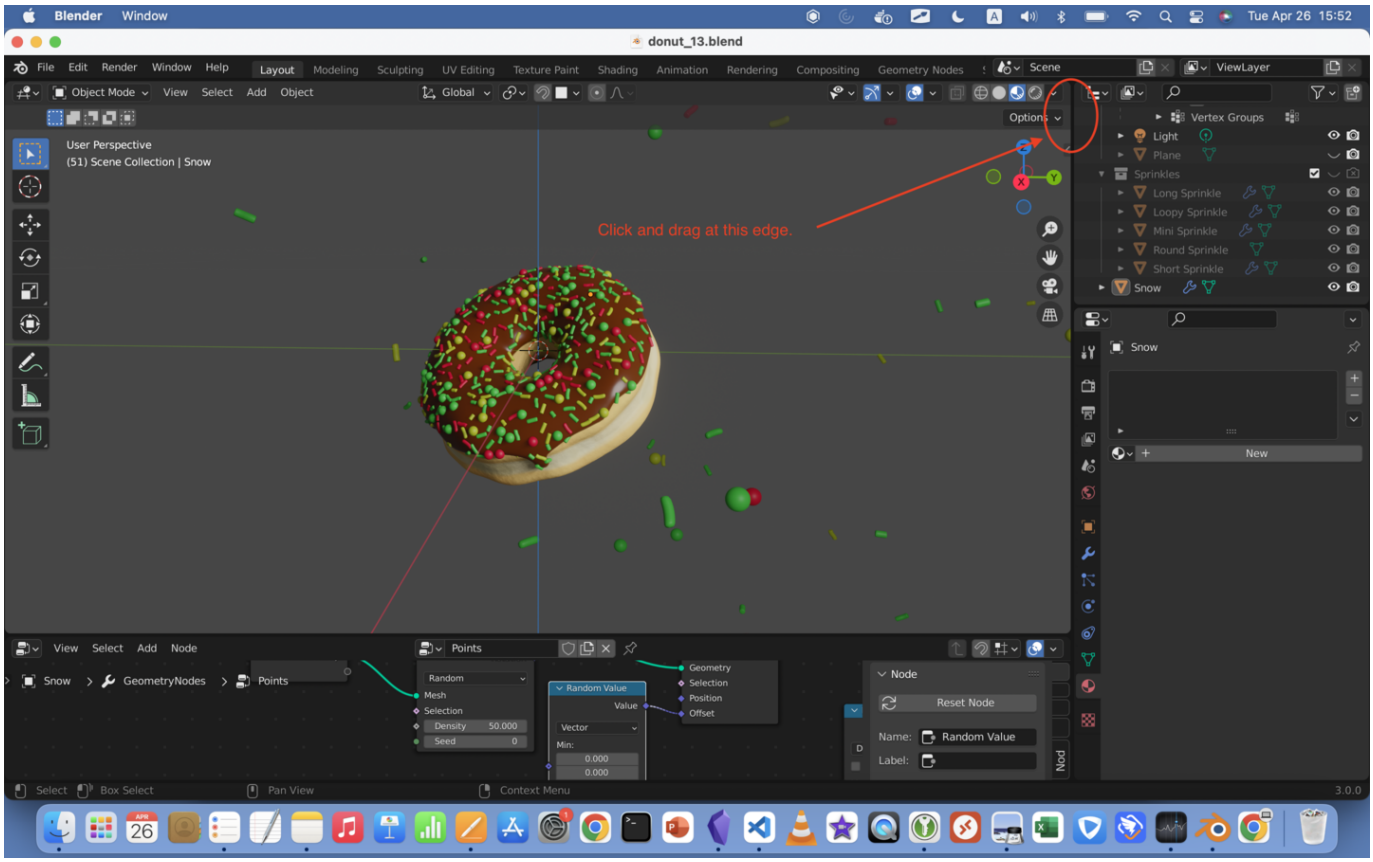
Lighting

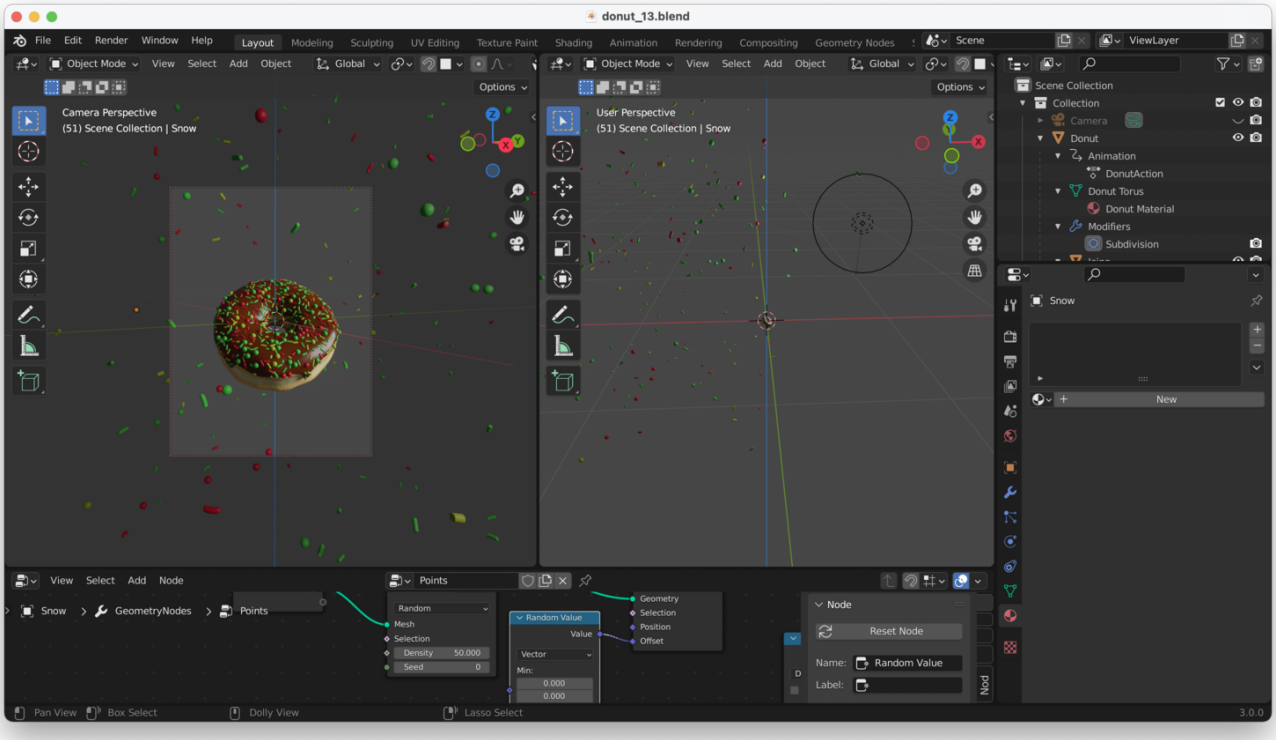
Lighting Basics

Now it's time to add some more pleasant lighting to the scene.

Start by splitting the viewer, which you can do by clicking and dragging from the top right corner:



Now we can simultaneously see what things are going to look like from the camera's perspective (left window) while adjusting the position of the light in the scene (right window):



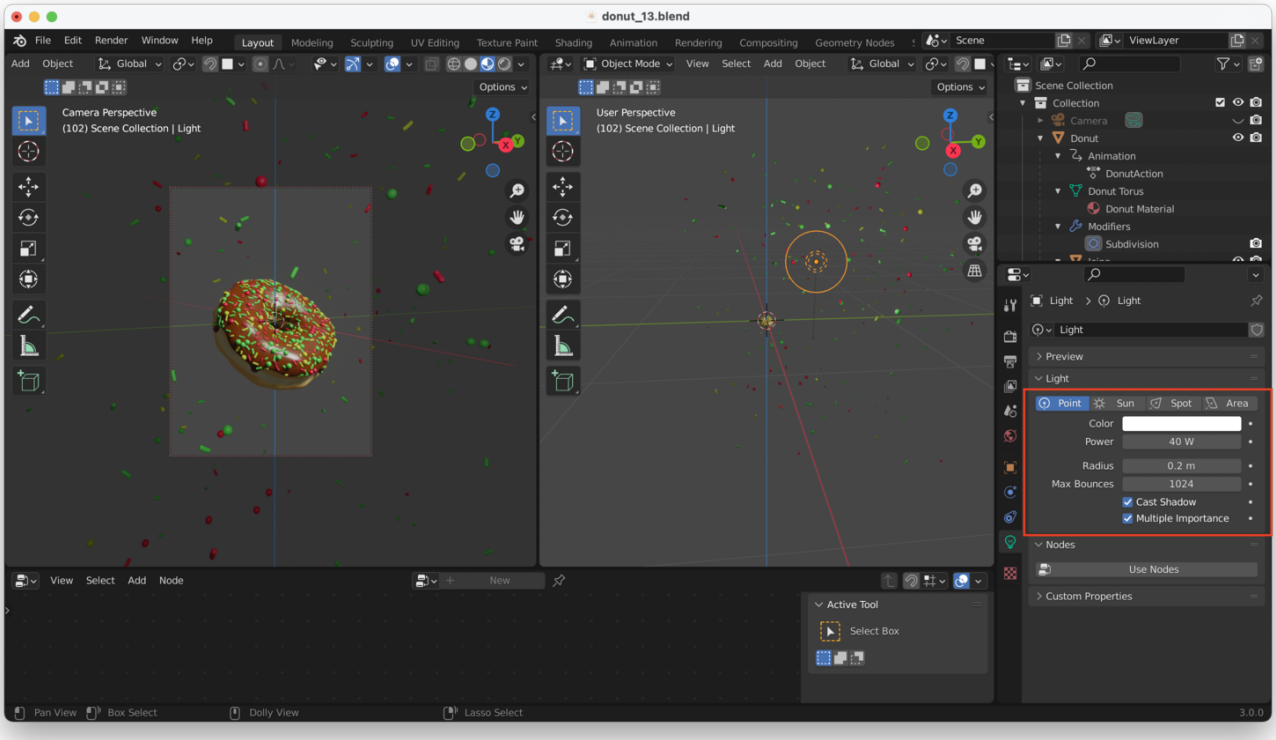
> Tip: lighting strength and position are going to determine a lot of things, in terms of the final "look" of the render. Shadows are an important part of making objects look "defined".

Having the light generally above and offset from the object will provide a pleasant look that has some nice shadows to help us see the contours of our donut and sprinkles.

Important factors to consider:

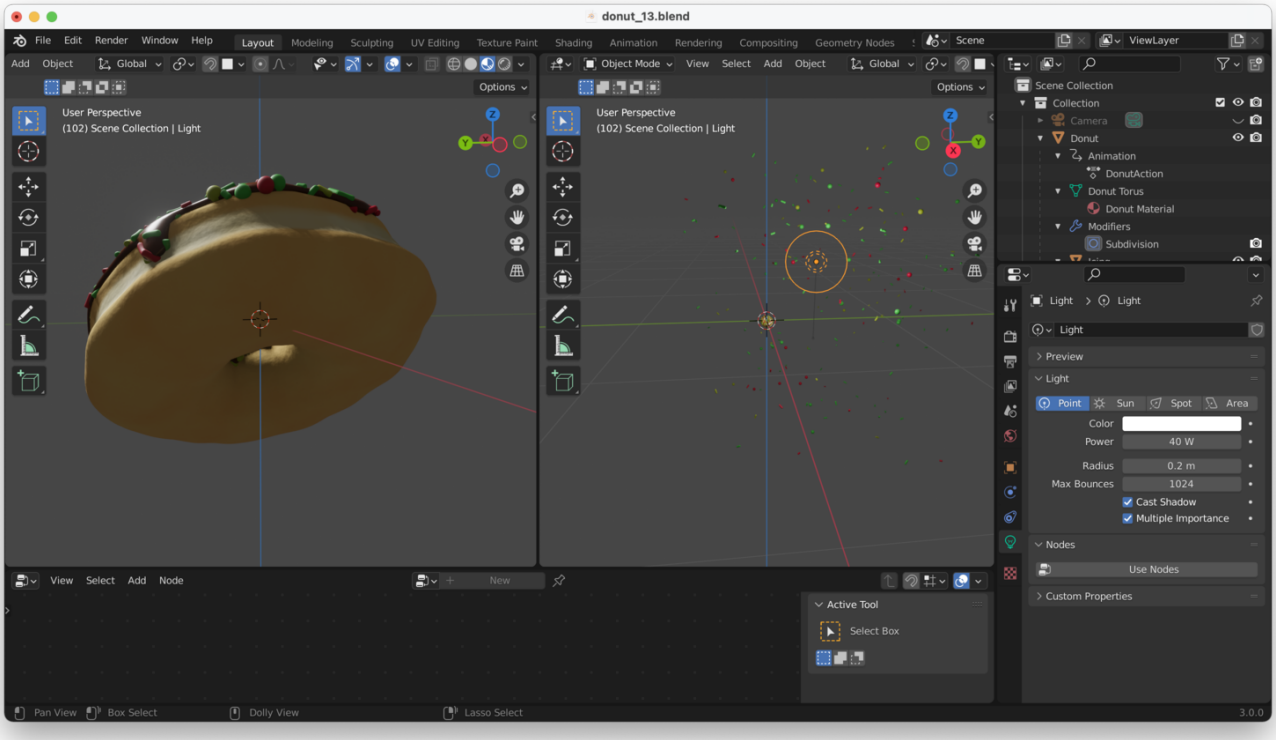
- Strength of the lamp (in watts)
- Distance to the donut
- Radius

Playing with those three will adjust the brightness, size, position of shadows, and how "sharp" shadows appear:

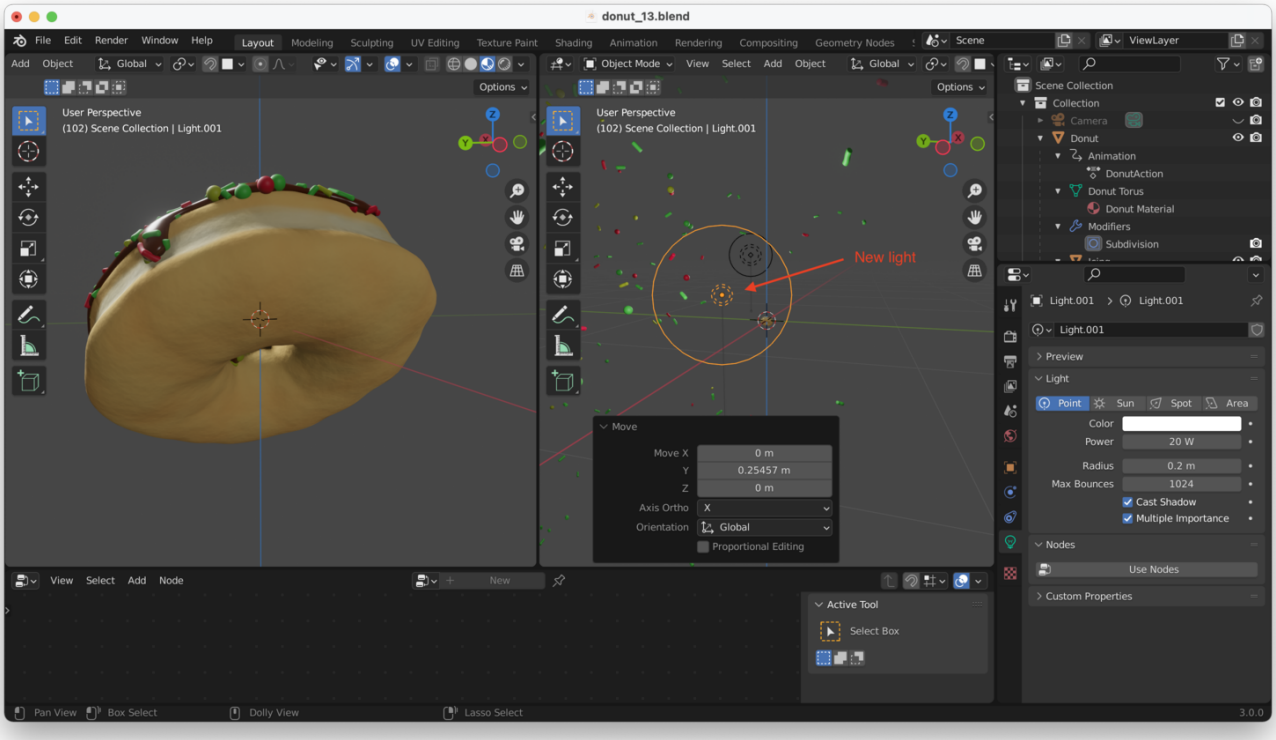


Because I placed my lamp so close to the donut, there's now a pretty strong difference between the lighting at the front of the donut (very bright) and the light at the back (very dark). I can add a weaker "fill light" behind the donut to fix this.

The back of the donut before I add a fill light:



And after I add a fill light:



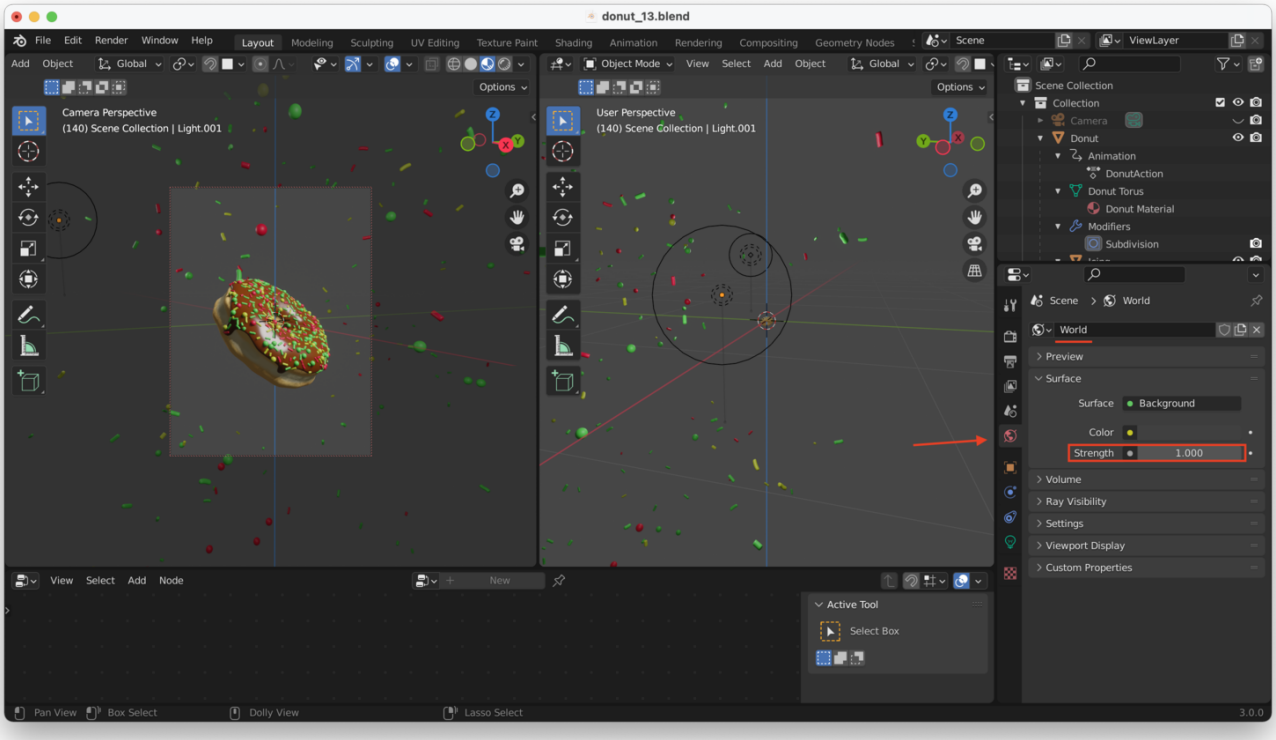
Note that I added the fill light by selecting my original lamp, hitting "Shift + D" to duplicate it, then moving the new light behind the donut and lowering its intensity (to around 20W in my case).

Environmental Light

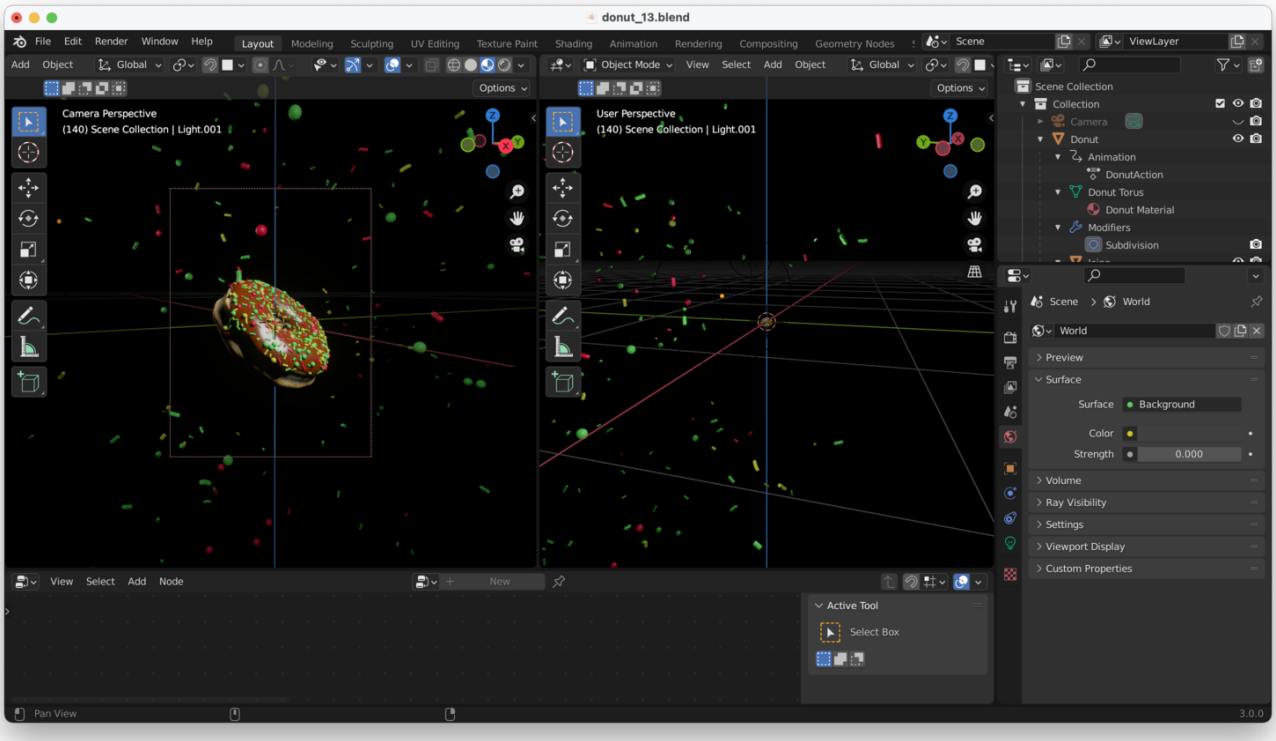
There's also global "world" lighting turned on right now, which is what is creating that "grey" background color in the Object View.

This can be turned off from World Settings, and in this case, we **do** want to turn this off and rely **only** on the lamps we've placed ourselves. We do that by setting the "Strength" of the World lighting to "0".

Here's what things look like before we change the strength:



Take a look at what happens to the Object View after we set the environmental lighting to zero:

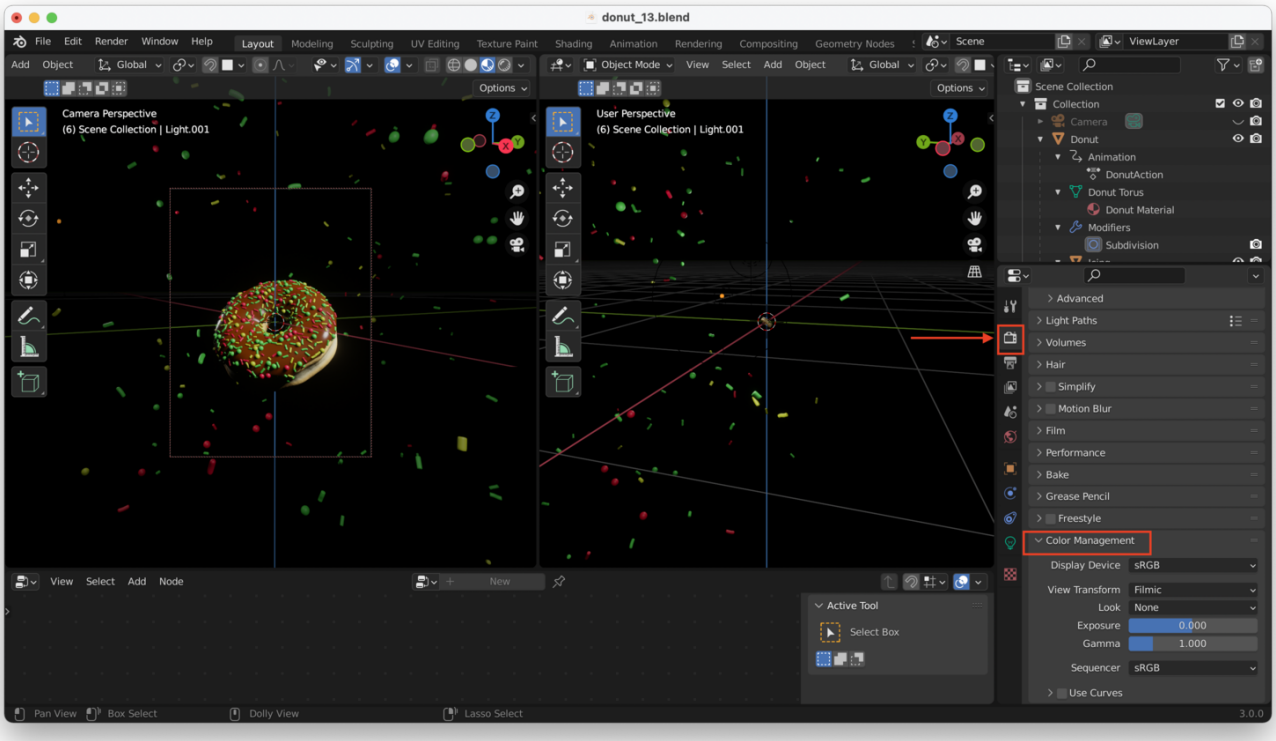


The background has turned black. The only light in the scene now comes from our lamps.

Color Correction

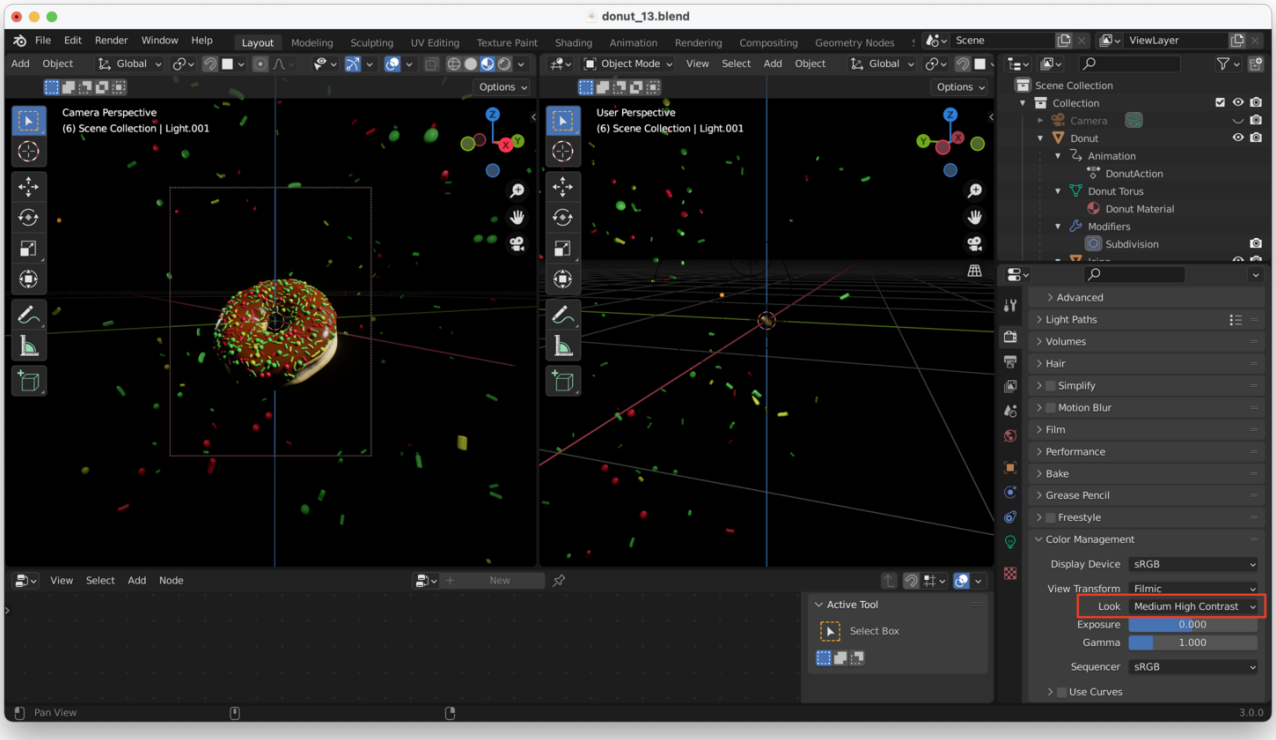
We should also care how things are going to look on a computer screen.

In "Render Properties" under "Color Management", we can see the color profile settings which will be used in our final render:



Normally, the "Look" is set to "None" here, which provides a sort of "medium contrast" render.

This can look a little bit washed out. This might be OK if you're doing your own color adjustments in post-processing software after making your render, but we can get a more high-contrast look by choosing "High Contrast" or "Medium High Contrast" instead:

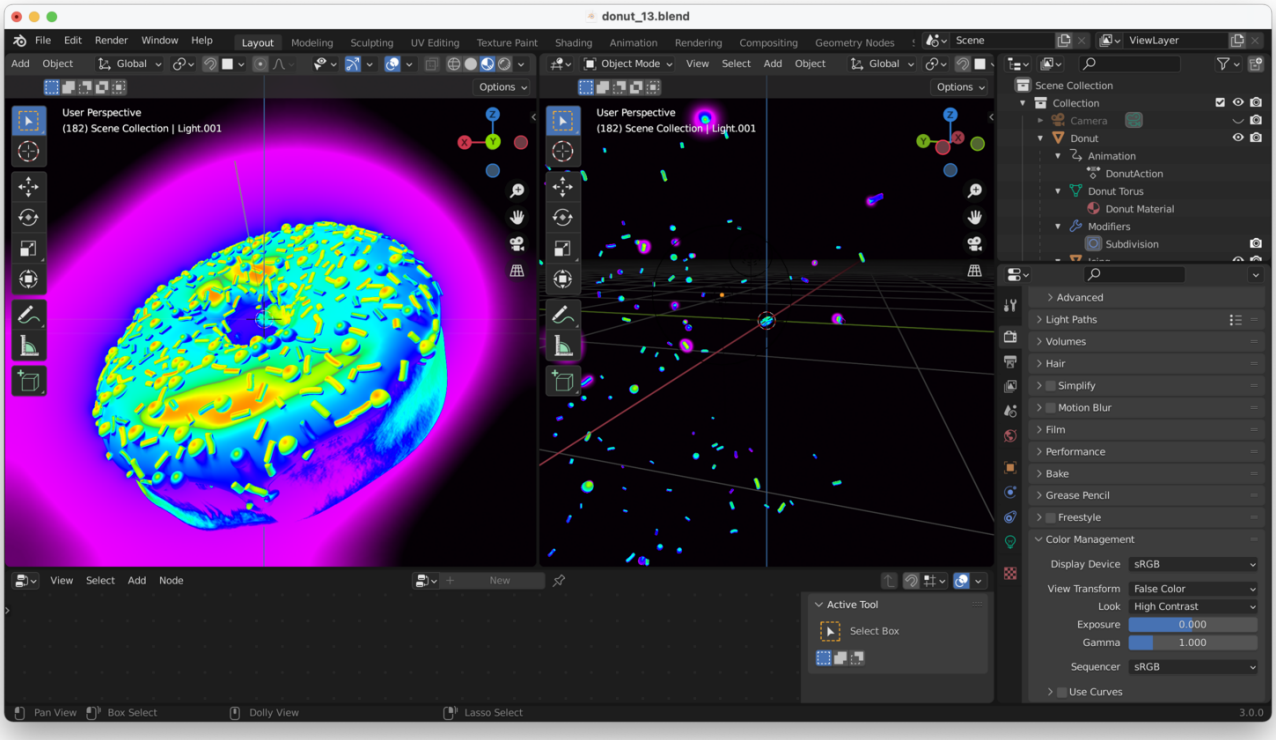


In my case, I ended up choosing "High Contrast" for an even more exaggerated look.

More Exposure Stuff

Unless you have a tool like a SpyderX (basically a color adjustment tool that can sit on your computer monitor and read off colors, allowing you to do accurate color calibration), you might find it hard to set exposures correctly.

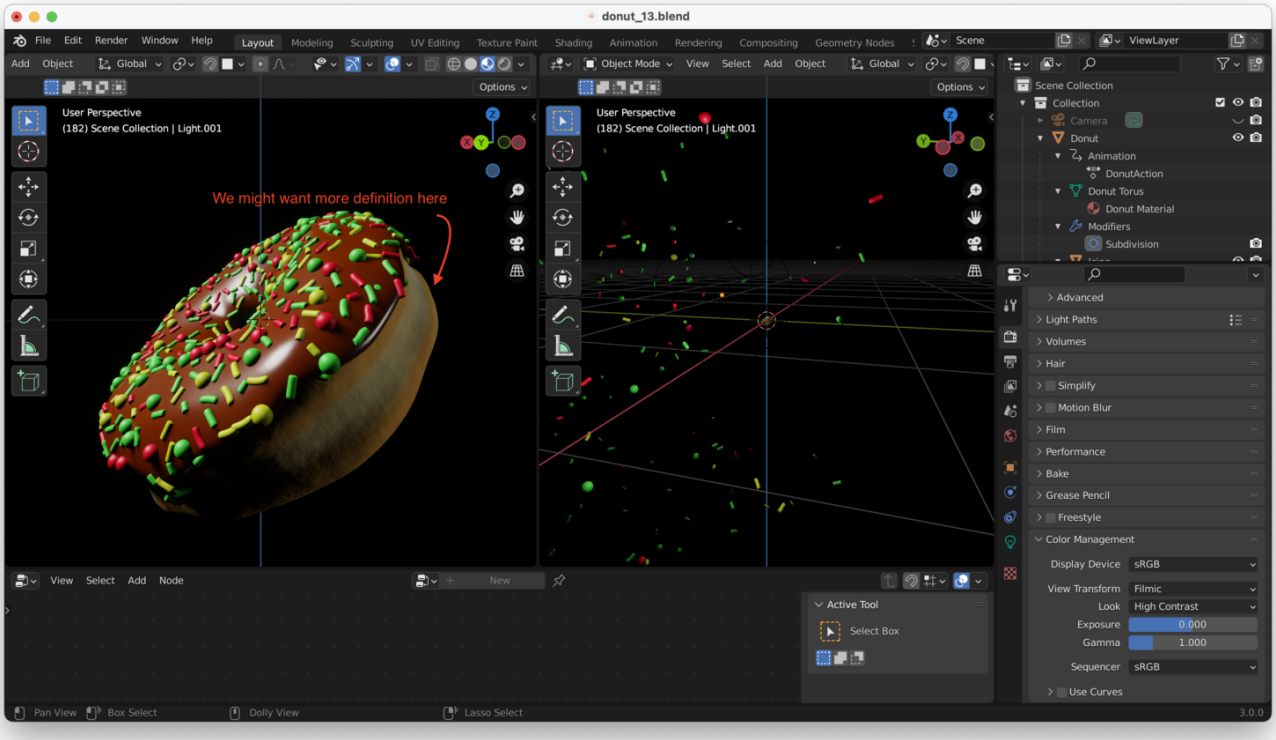
Blender can help with this (a bit) via the "False Color" view transform. This will give you an idea of how "exposed" everything in your render is going to be:



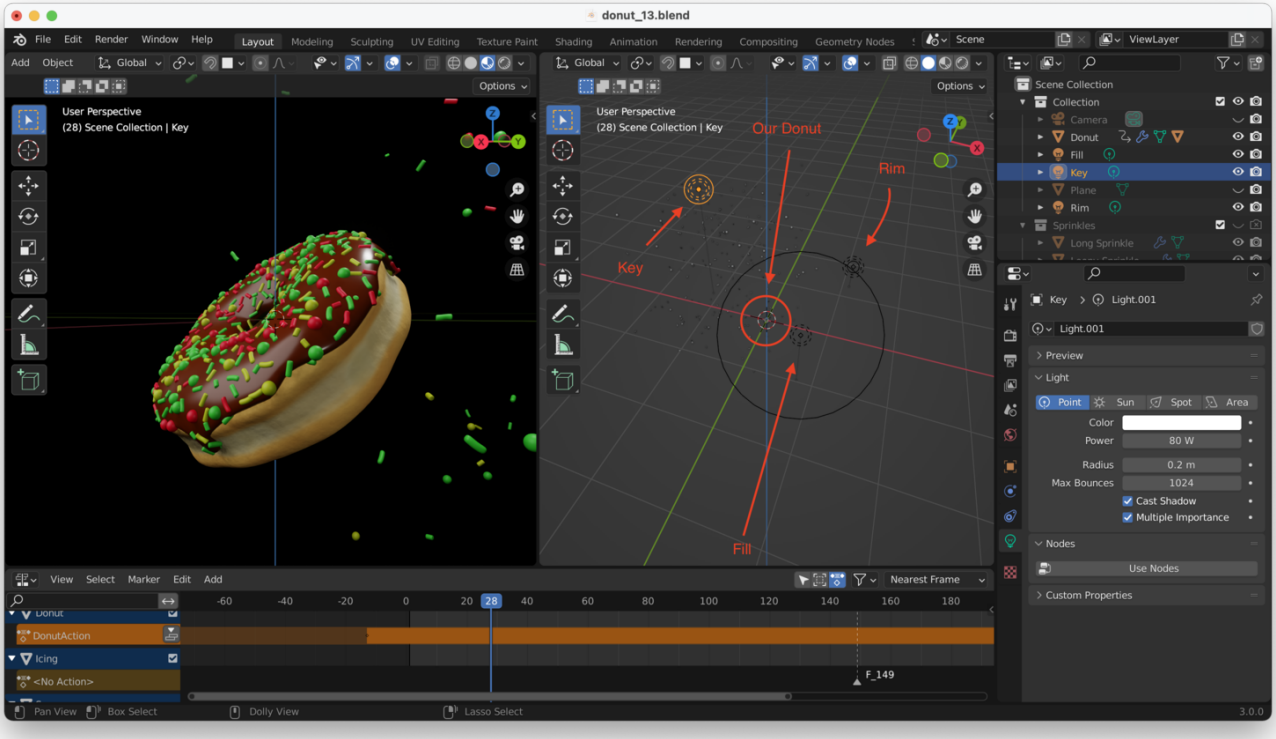
Essentially, it acts as a heat map: yellow and red indicate "hot" (highly exposed) areas. If you see any white, this is a sign that something is overexposed and you might want to lower your exposure settings a little bit (you can do this from "Color Management").

Adding A Rim Light

To avoid having the back of our donut appear to be "blending in" to the background, we might want to add another light to our scene, behind and slightly off to the side of the donut. This will help define the edge of the donut more sharply. Setting a small radius for this light will also help produce a sharper, more defined "edge". Here's the scene without a rim light:



And here it is again after adding a rim light:



Much more defined, right? We are now using a standard **three-point lighting scheme**, consisting of a "Key" light (primary light source), "Fill" light (environmental lighting), and a "Rim" light (which helps better define objects in the scene).

The lighting placement above is not perfect, but it gets the idea across.

Don't forget to adjust your lights (Fill, Key, and Rim) until you get a good combination of exposure, contrast, and shadow.