

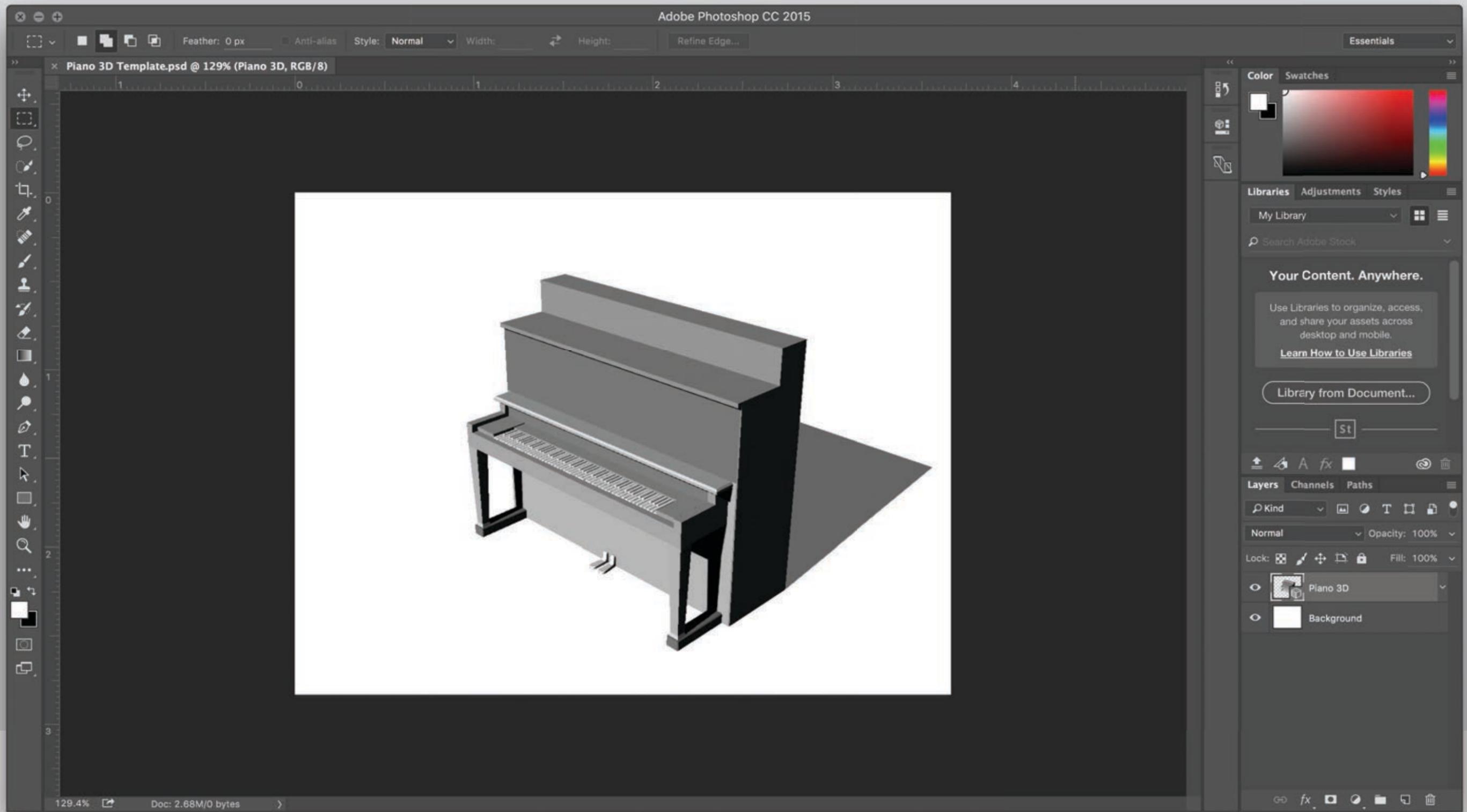
COA 1012

3D Rendering in Adobe Photoshop

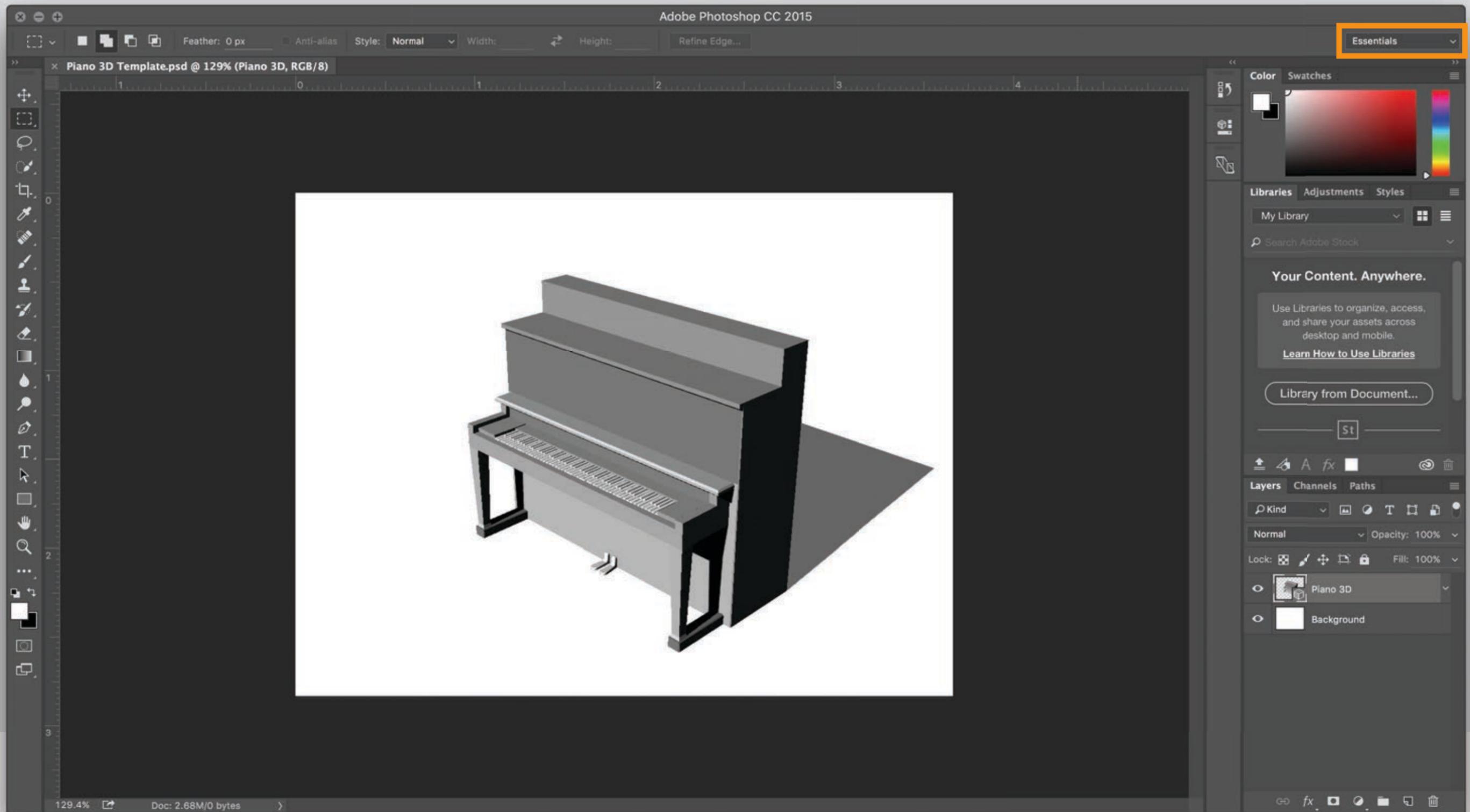
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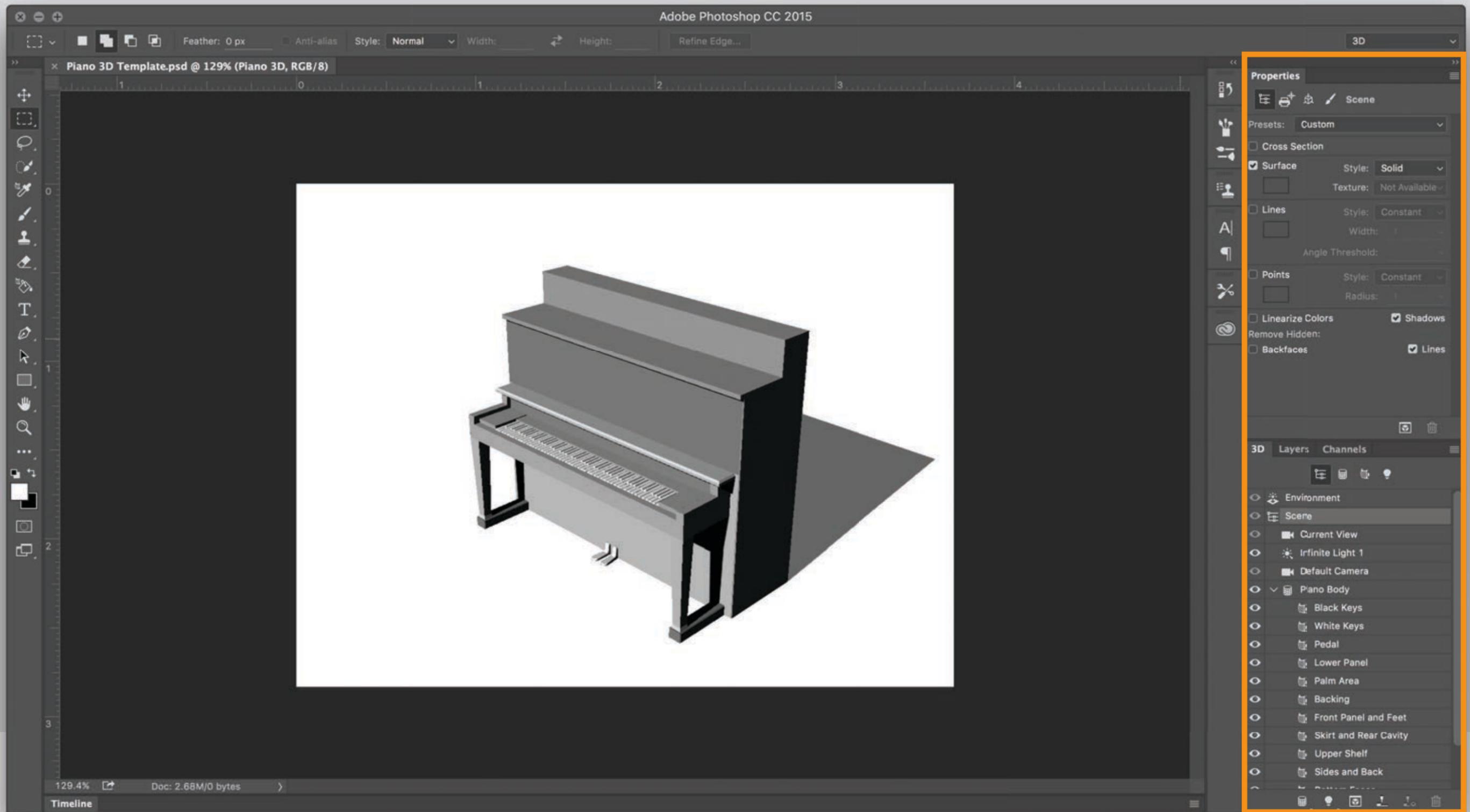




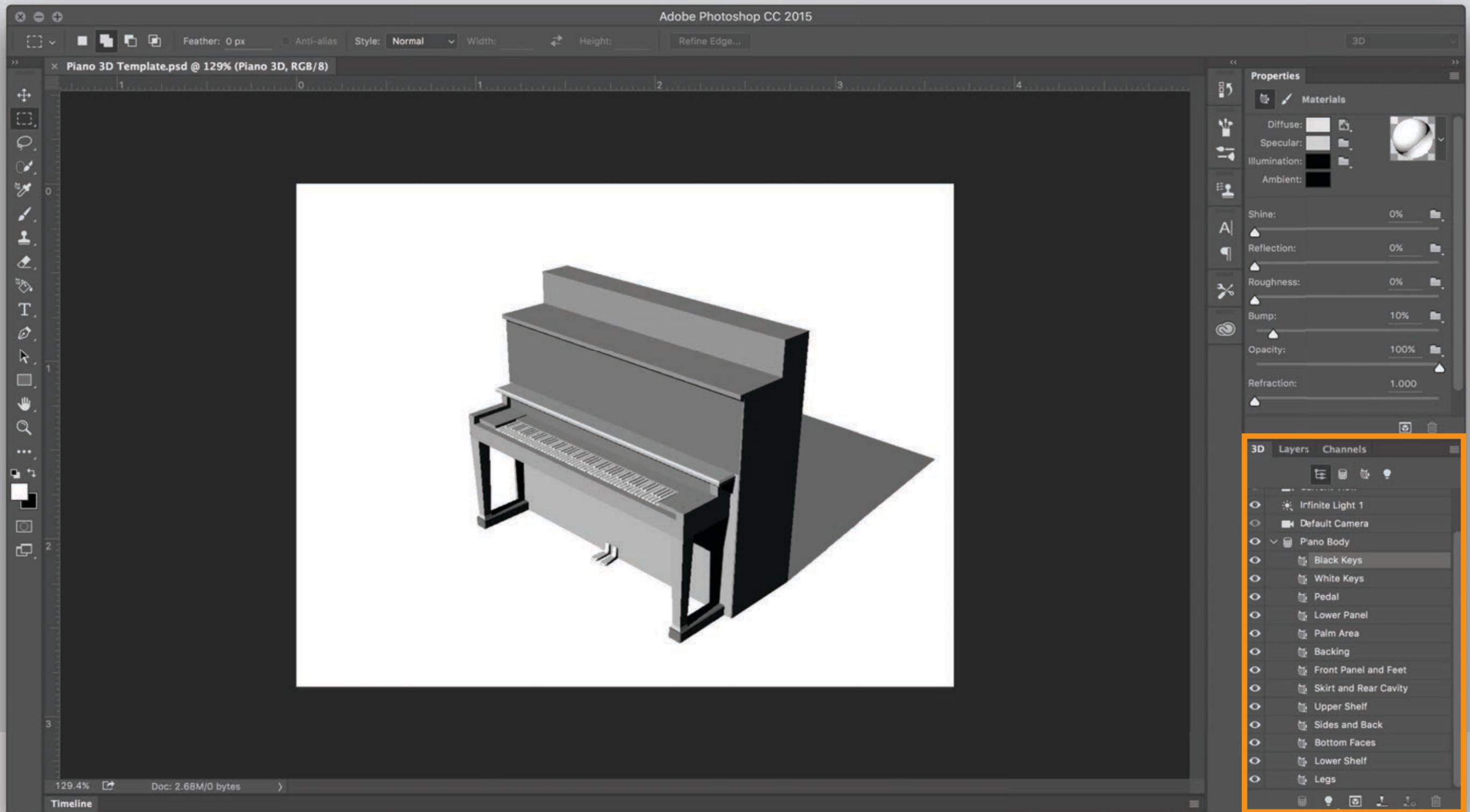
Open 'Piano 3D Template.psd' in Adobe Photoshop.



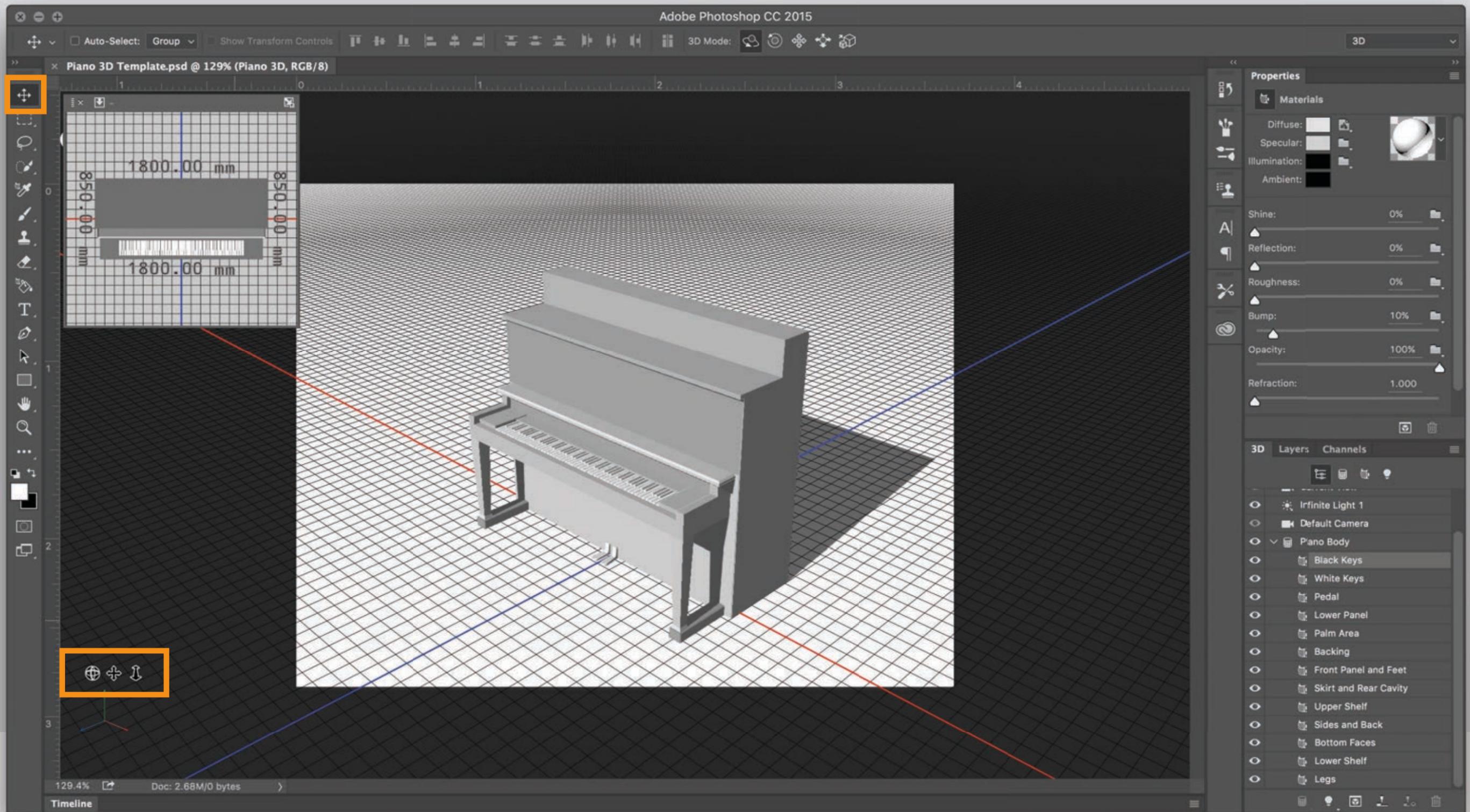
If the current workspace is not '3D', click on the workspace selection menu in the top right and choose '3D' from the list.



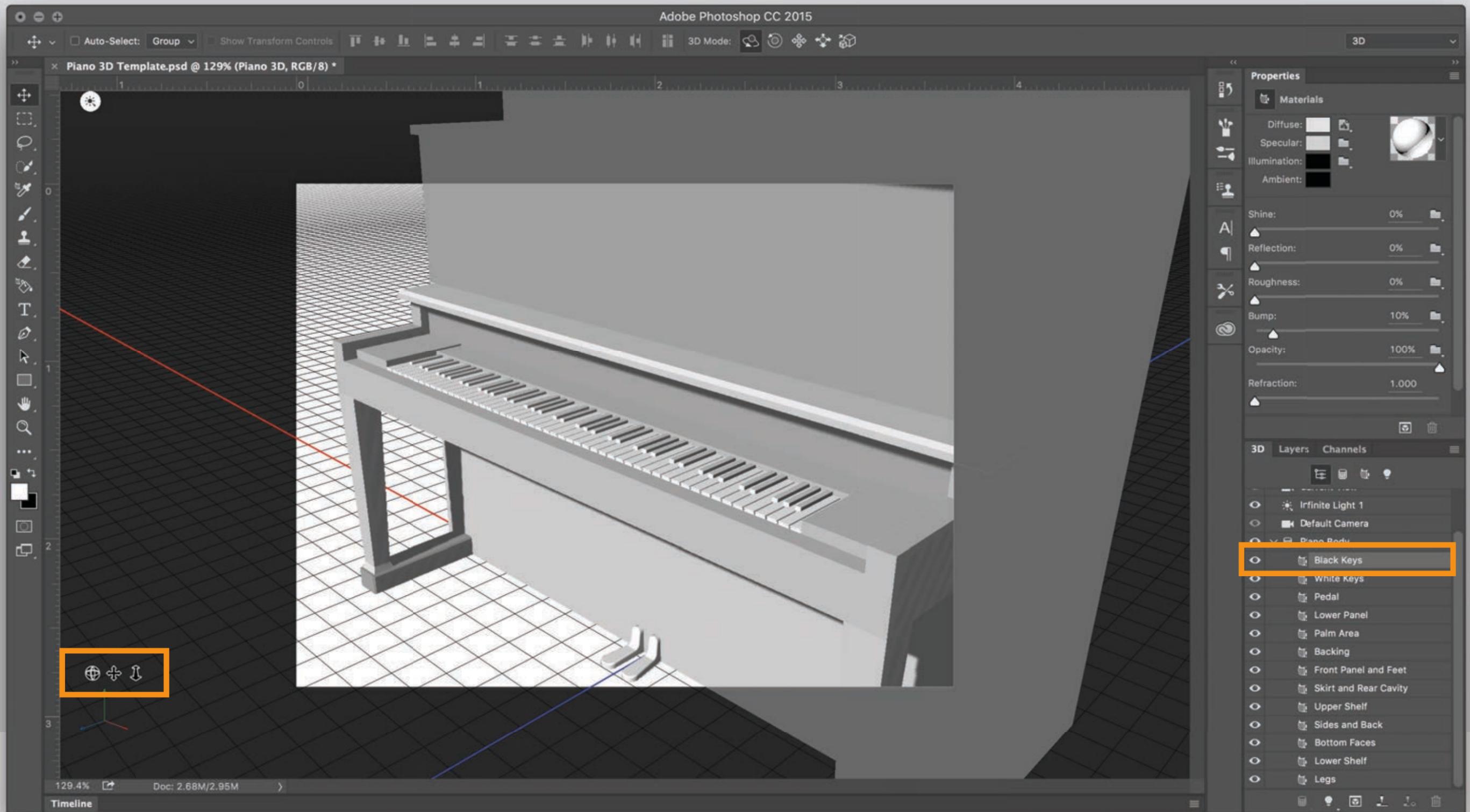
Once in the '3D' workspace, the Properties panel and the 3D panel should be visible in the window.



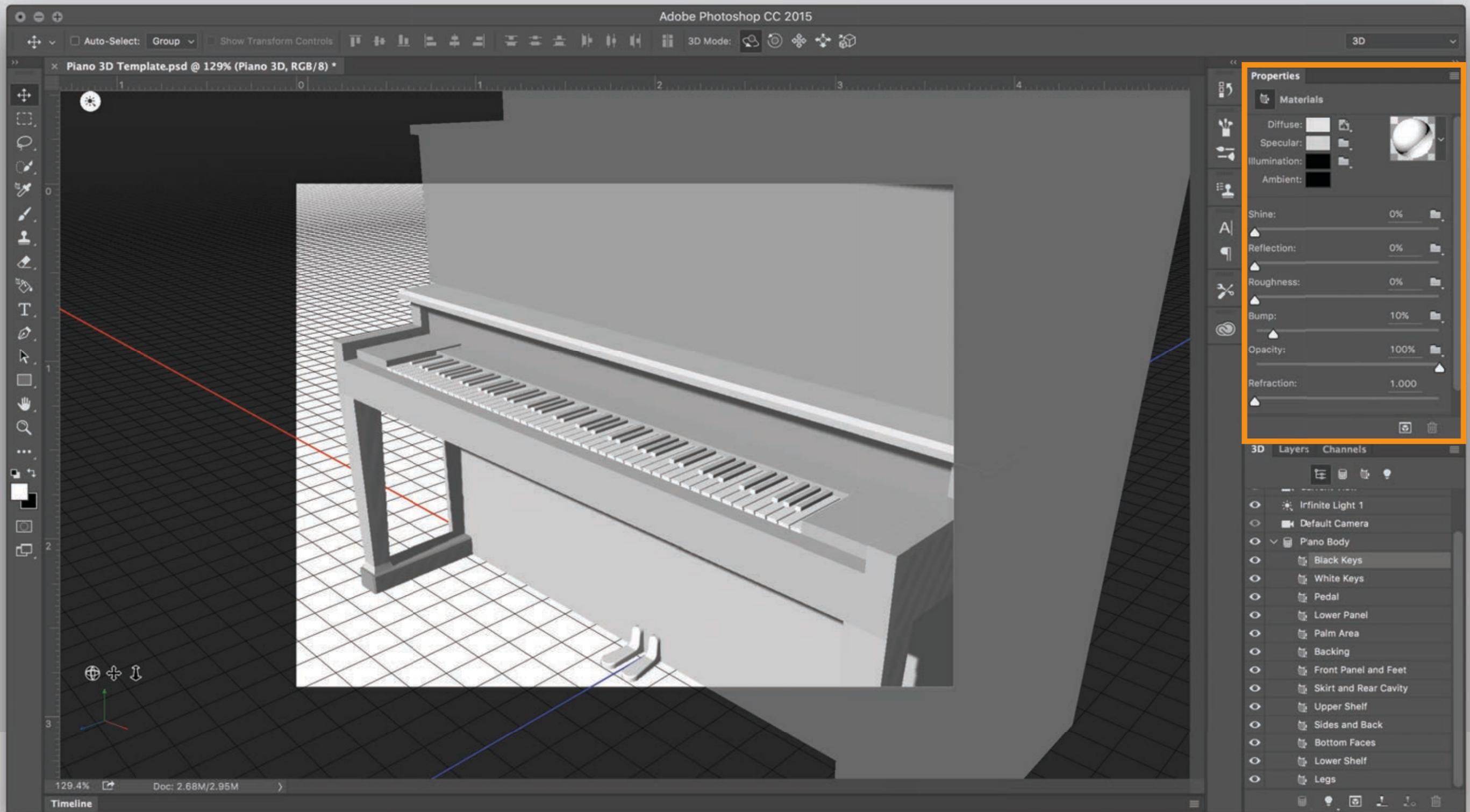
Begin by assigning materials to various parts of the piano. The 3D panel in lists the active object in the scene 'Piano Body' and the various materials that are a part of the active object are listed below: Black Keys, White Keys, Pedal, Lower Panel, etc.



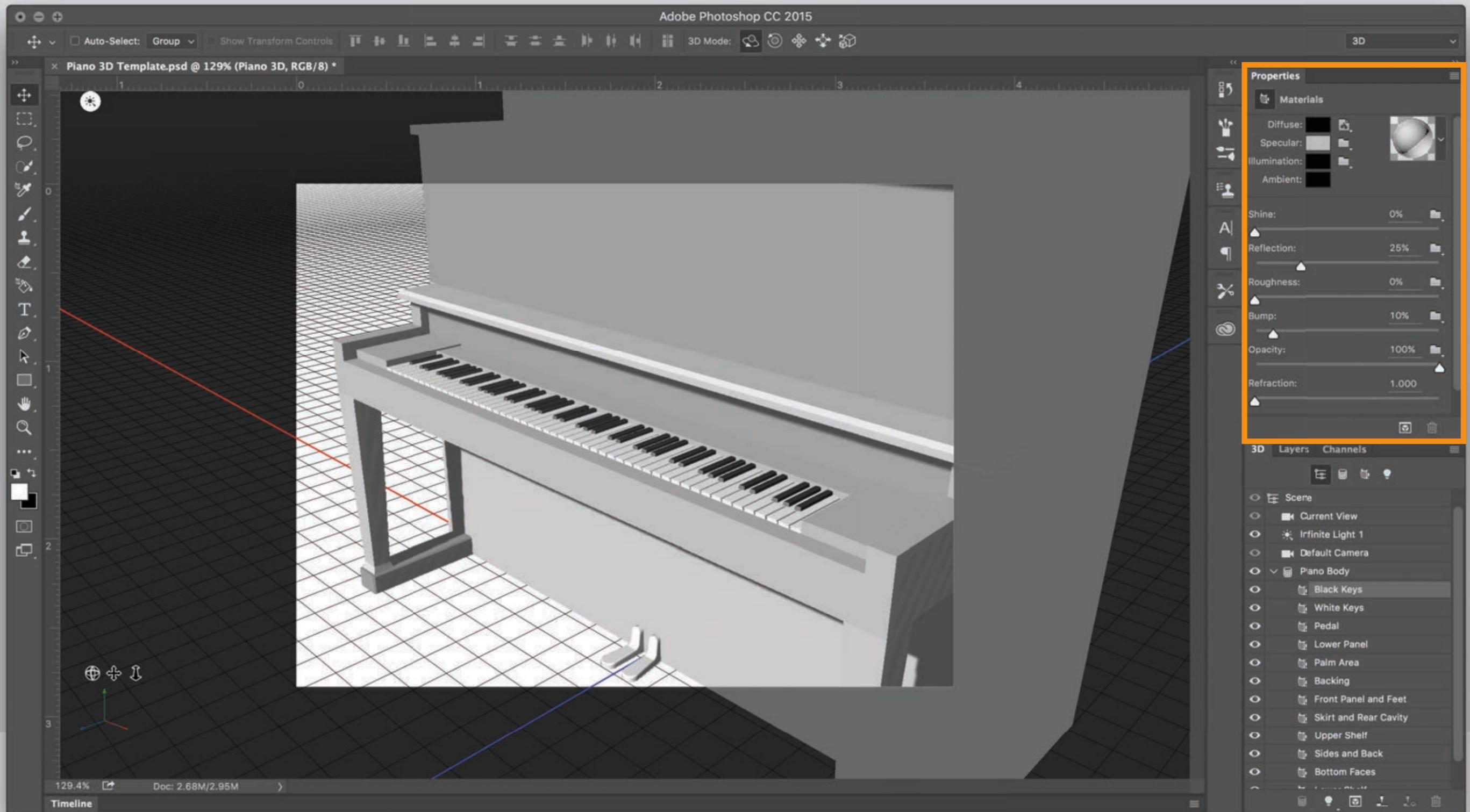
Choose the Move Tool (V) from the Toolbox and use the view controls in the bottom left to navigate the scene. Click and drag on the view control icons to orbit, pan or zoom in and out.



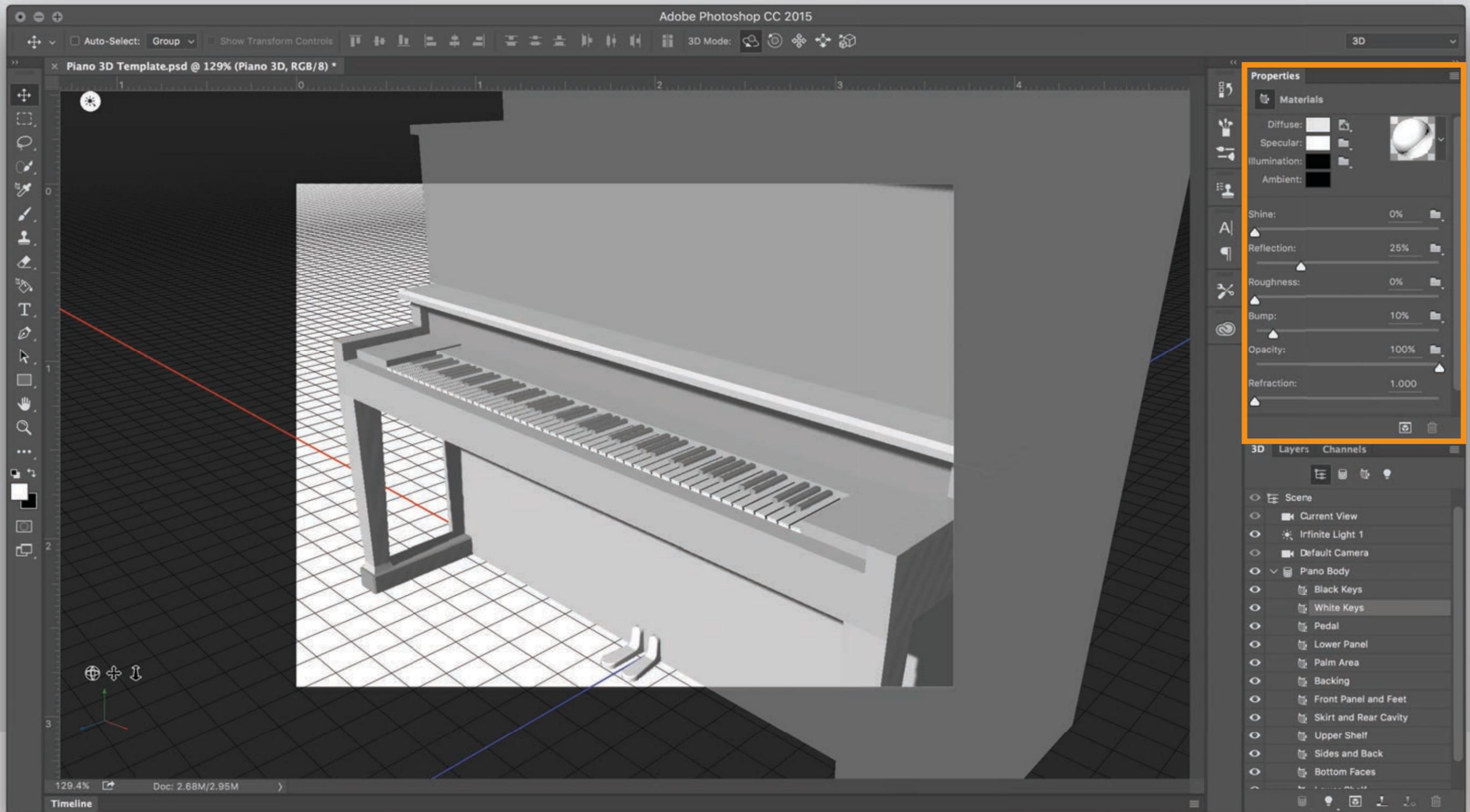
Zoom and bring the keys closer in view. Close the secondary view window to clean up the workspace. Select the Black Keys from the materials list under the Piano Body in the 3D panel. The material properties for Black Keys are displayed in the Properties panel at the top.



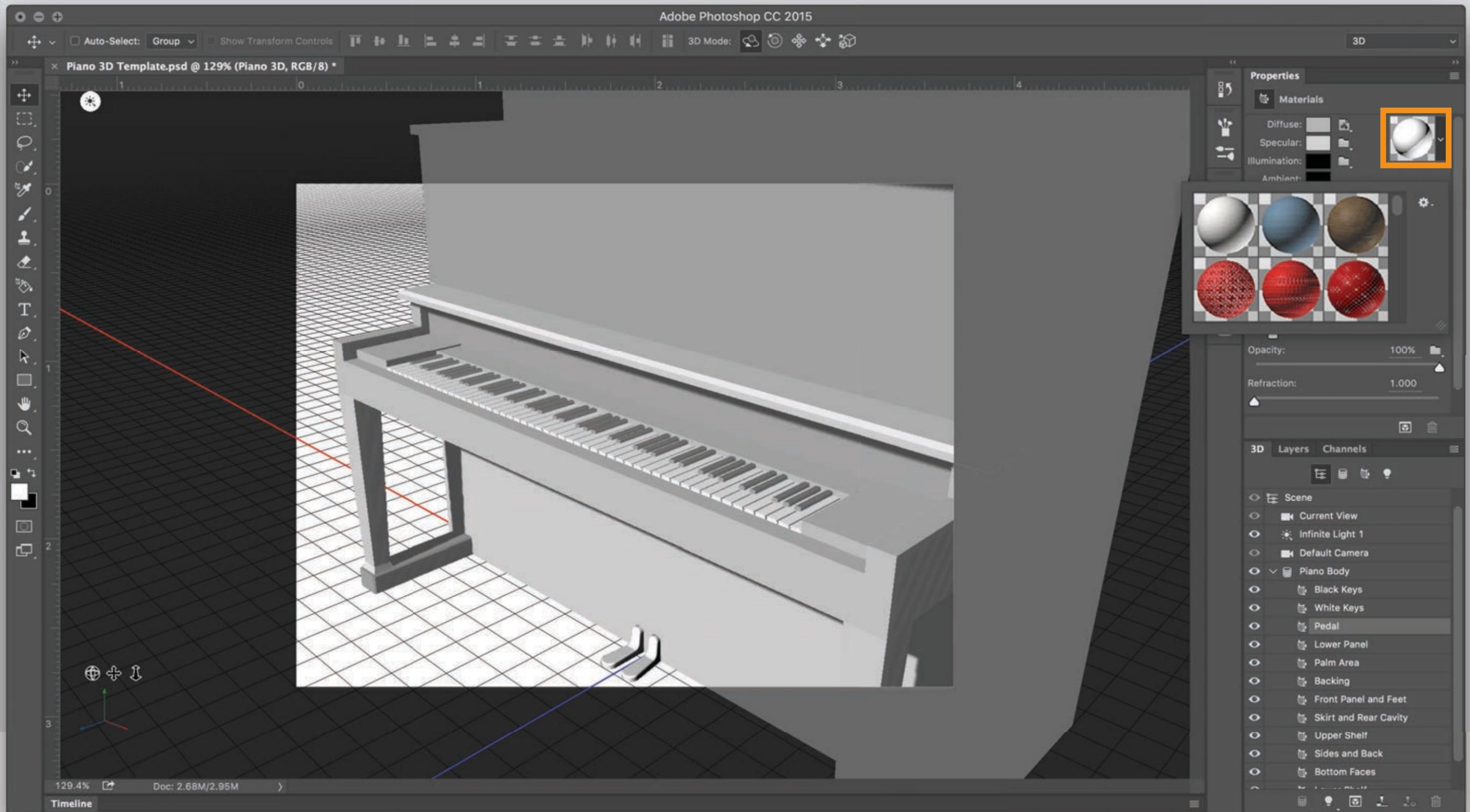
The Diffuse property changes the base color of the material. Specular defines the color of the highlights when light shines on the material.



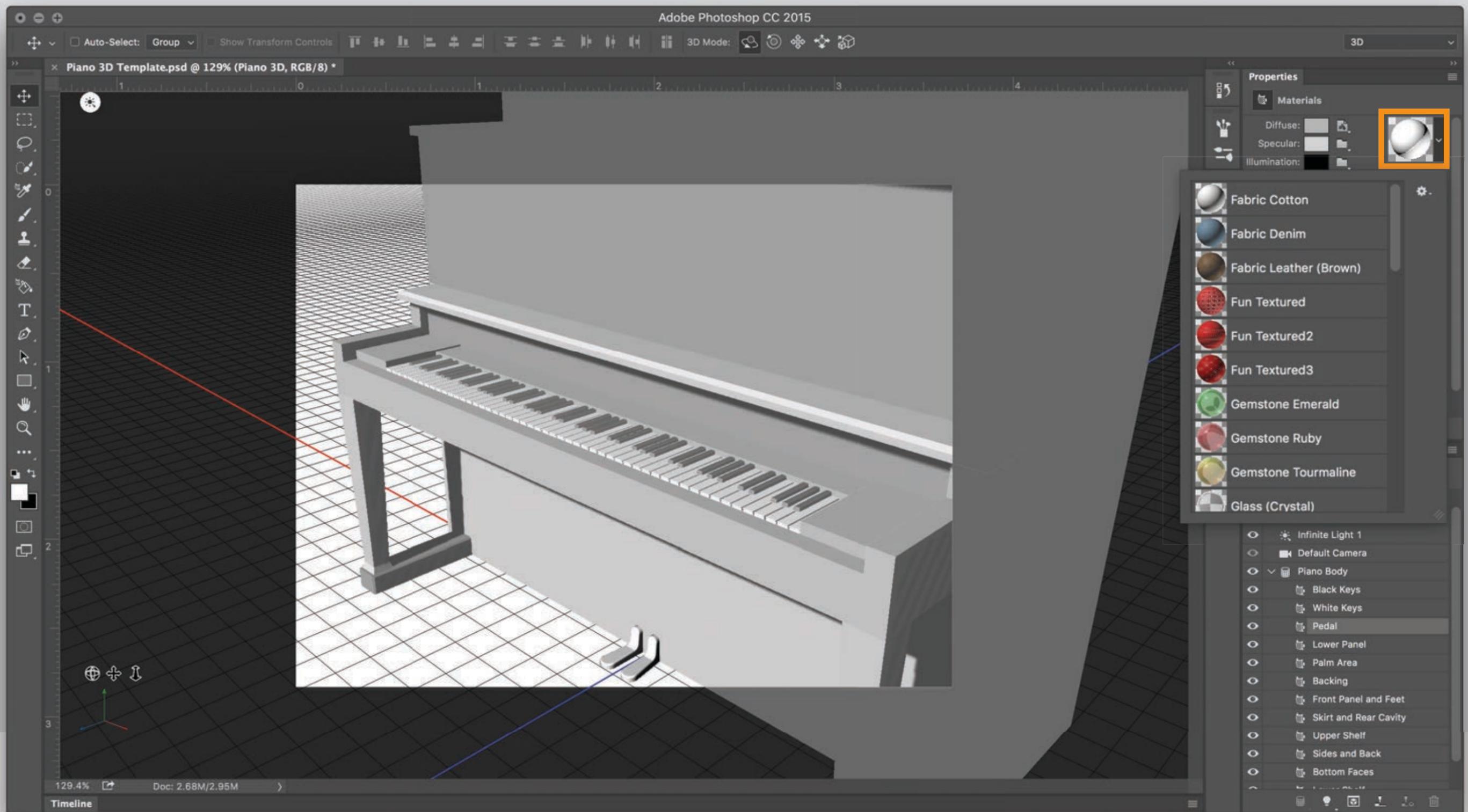
Double-click on the swatch next to Diffuse and set the color to black. Change the Specular color to light grey. Since piano keys are glossy and reflective, set the reflection value to 25%. Leave the remaining values at their defaults.



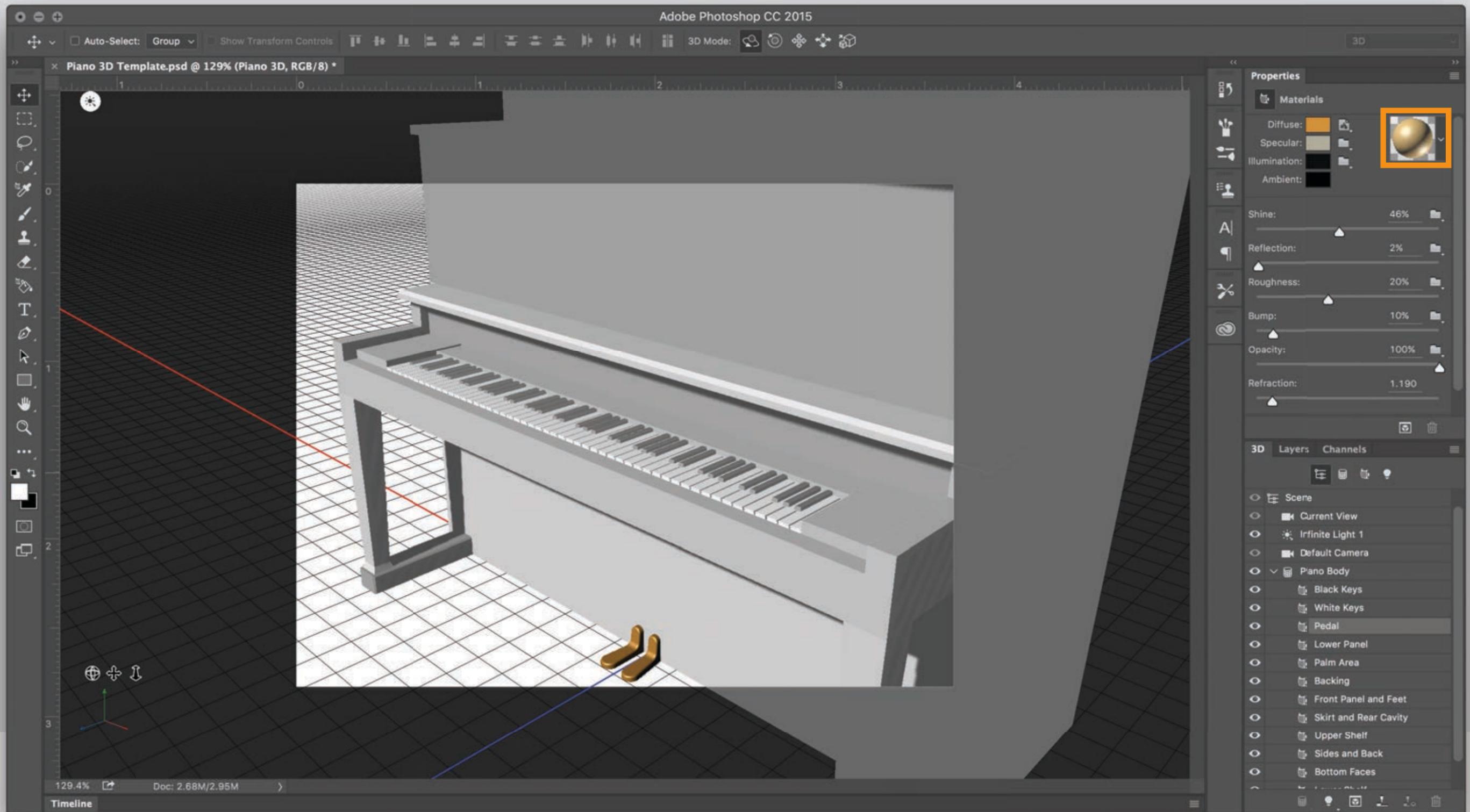
Repeat the steps for the White Keys material by selecting it from the 3D panel below and changing the properties in the Properties panel. Use a light shade of grey for Diffuse and pure white for Specular to create a glossy white plastic effect. Use the same reflection value of 25% as the Black Keys.



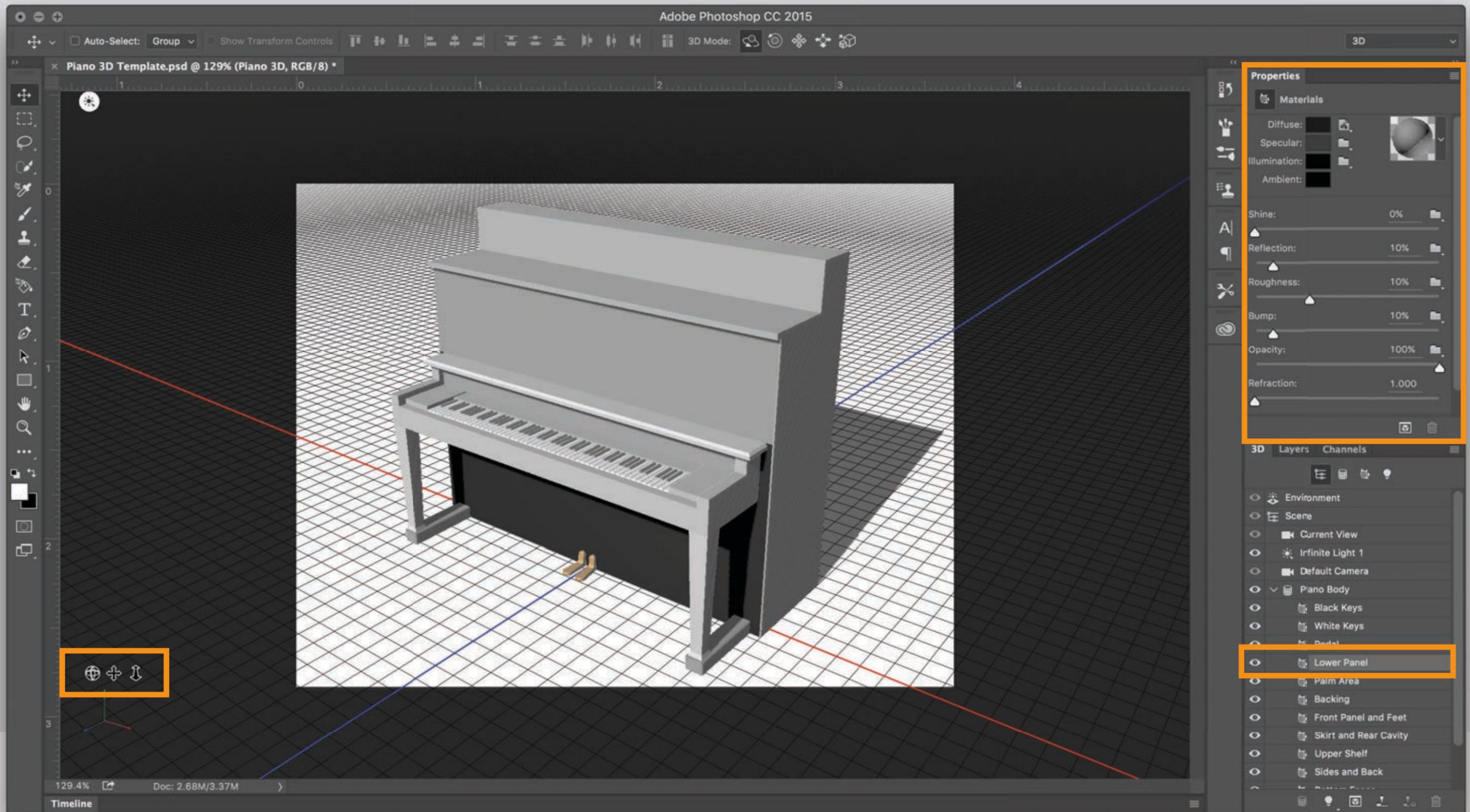
Next, pick the Pedal material from the 3D panel to open its properties. Click on the arrow next to the material thumbnail to open the preset materials list.



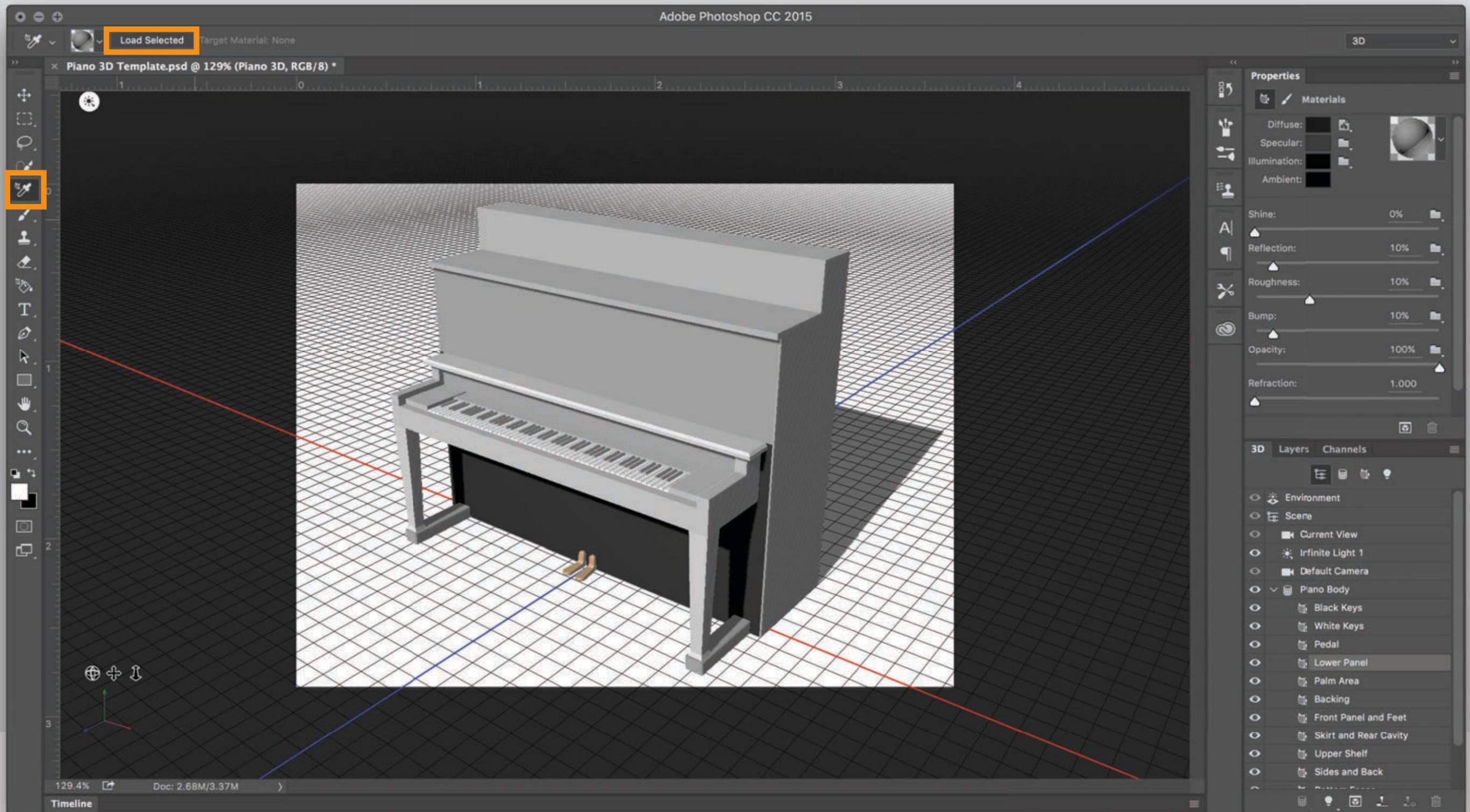
Click on the little gear icon in the top right of the materials pop-up and choose Large List. Resize the window to fit more materials in view.



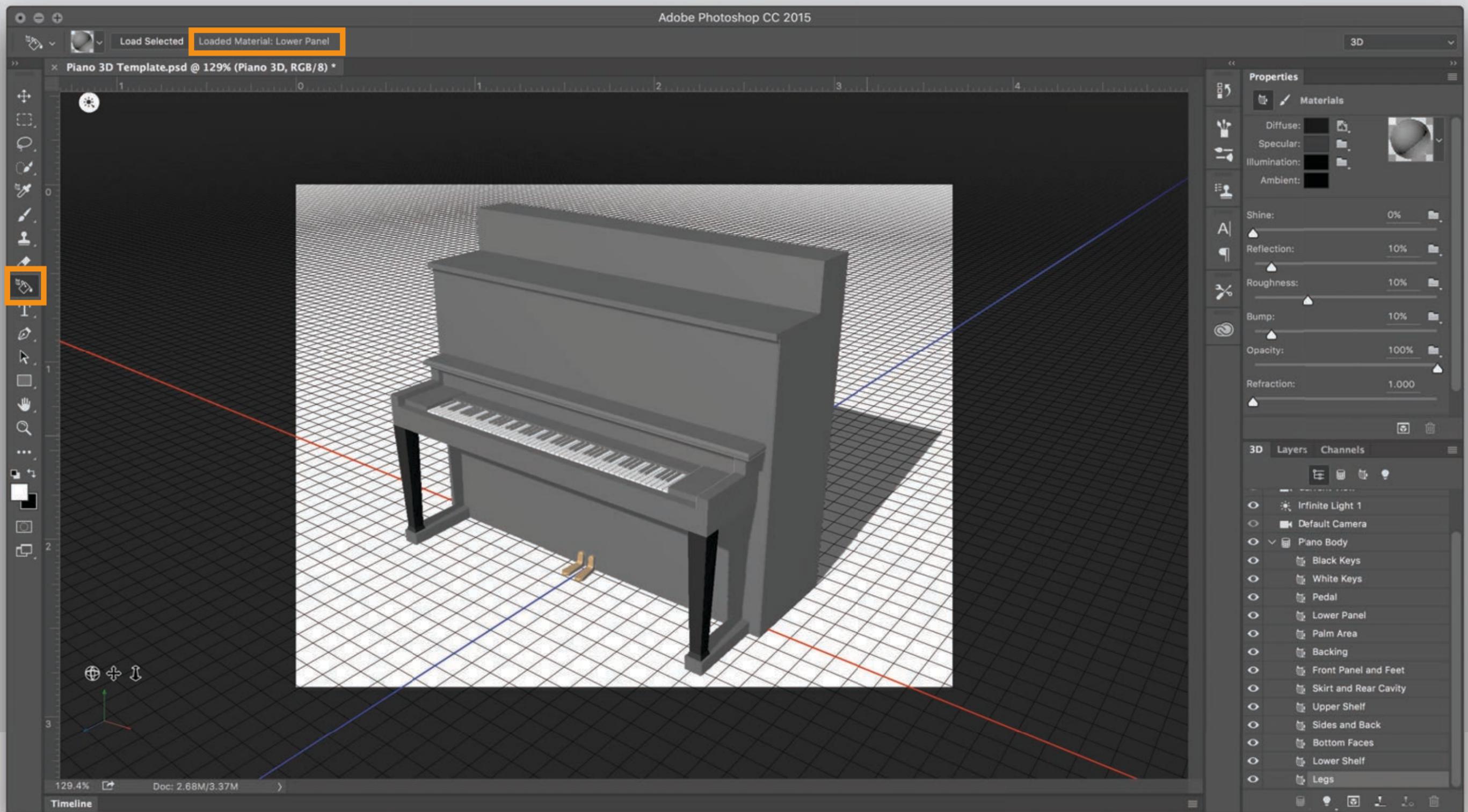
Scroll down the list and select 'Metal Brass (Solid)' to assign it to the pedals. Increase its roughness value to 20% to recreate a brushed metal look.



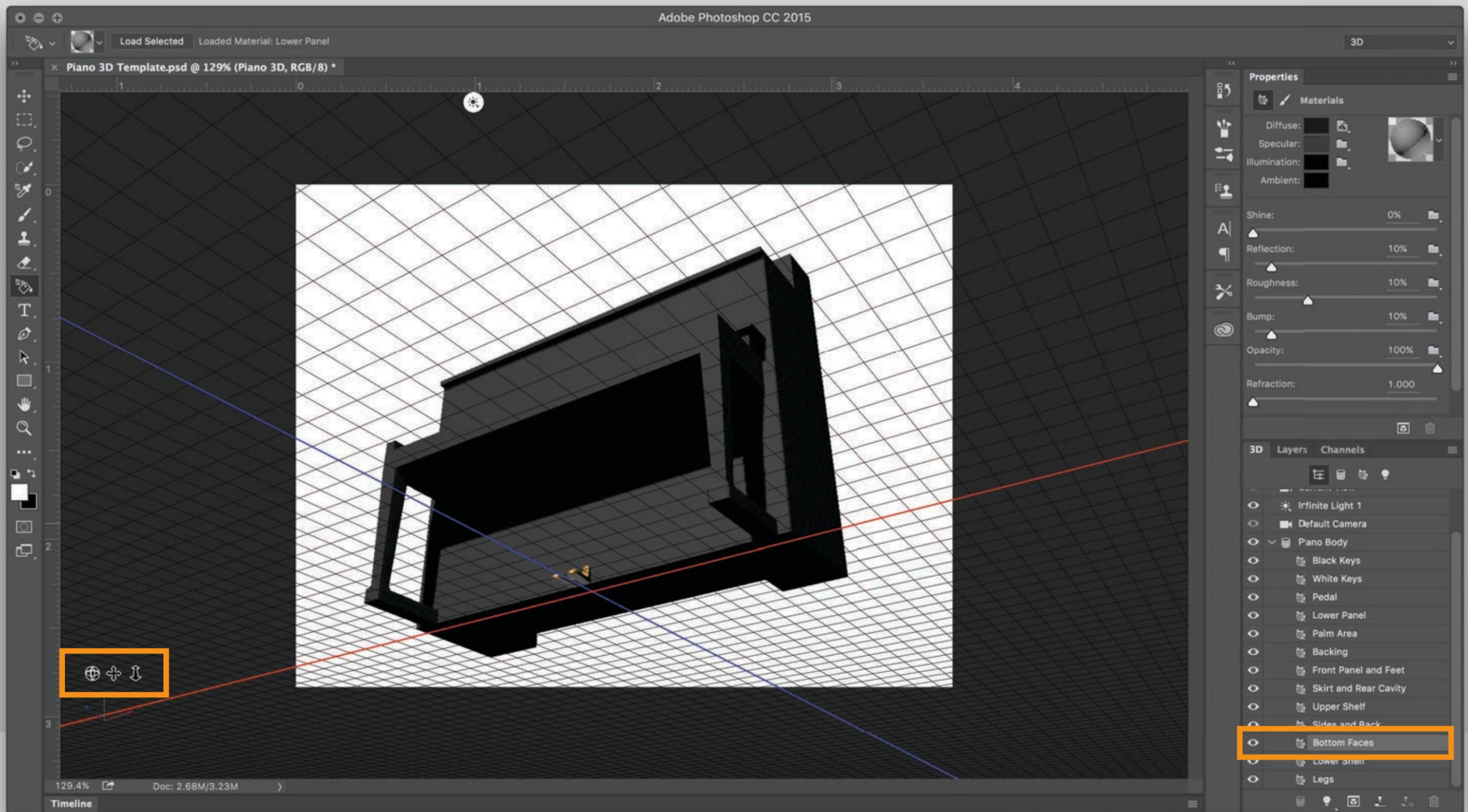
Re-adjust the view to fit the piano using the view controls in the bottom left. Pick the Lower Panel material to modify its properties as needed. For this setup, we'll go with a smooth black body for the piano. Set the Diffuse and Specular colors and assign 10% for the Roughness and Reflection.



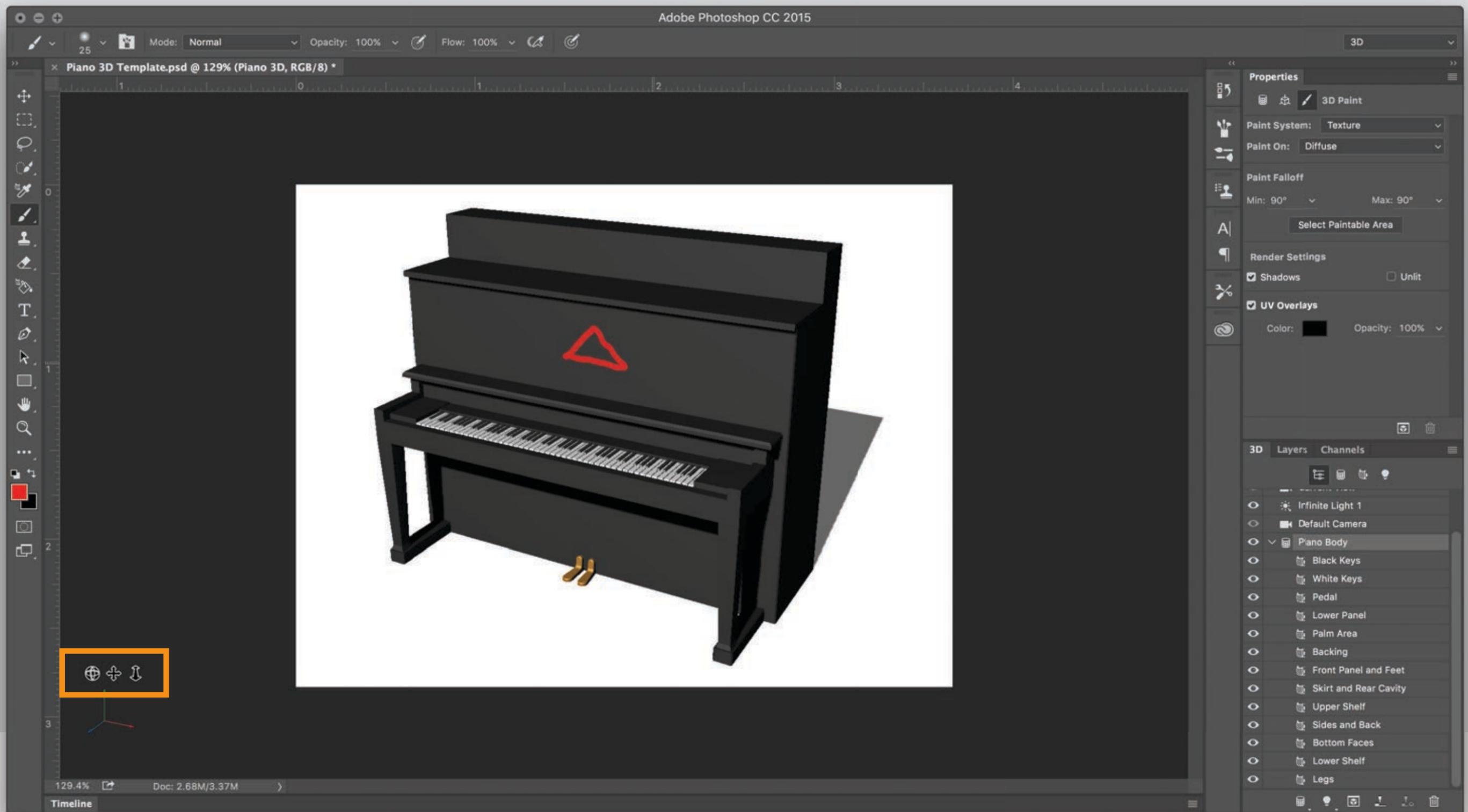
Select the Eyedropper tool from the Toolbox and with the Lower Panel material still active in the 3D panel, click on 'Load Selected' in the Property Bar at the top. This loads the properties of the Lower Panel material which can be now applied to other parts of the piano using the Paint Bucket tool.



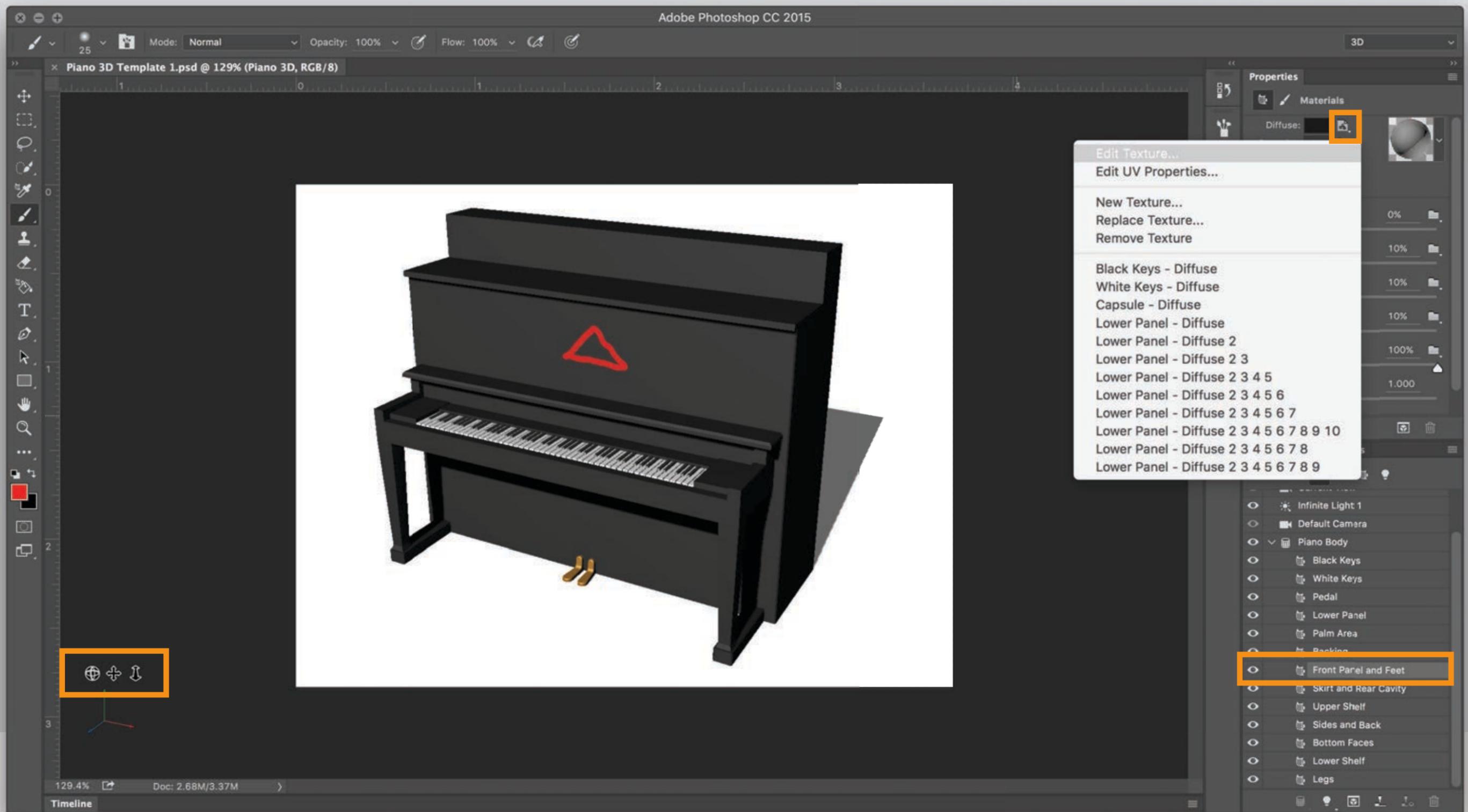
Using the Paint Bucket tool (loaded with the Lower Panel material) click on different parts of the body of the piano to assign the new material.



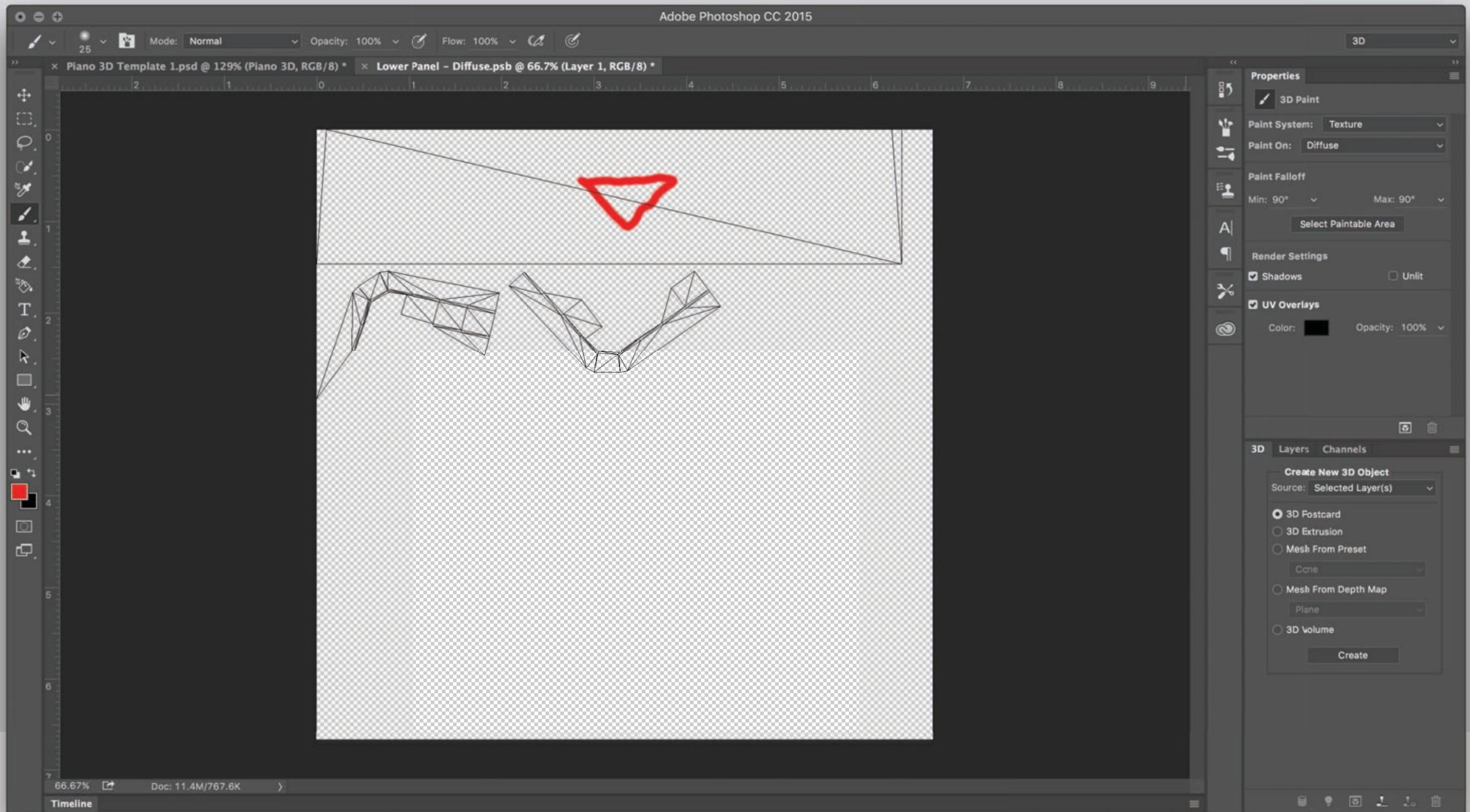
Also assign the material to the bottom sides of the piano by re-orienting the view. Note that all the bottom facing sides are grouped under one material called 'Bottom Faces' in this model. So, clicking on one of the bottom faces will apply the material to all the faces.



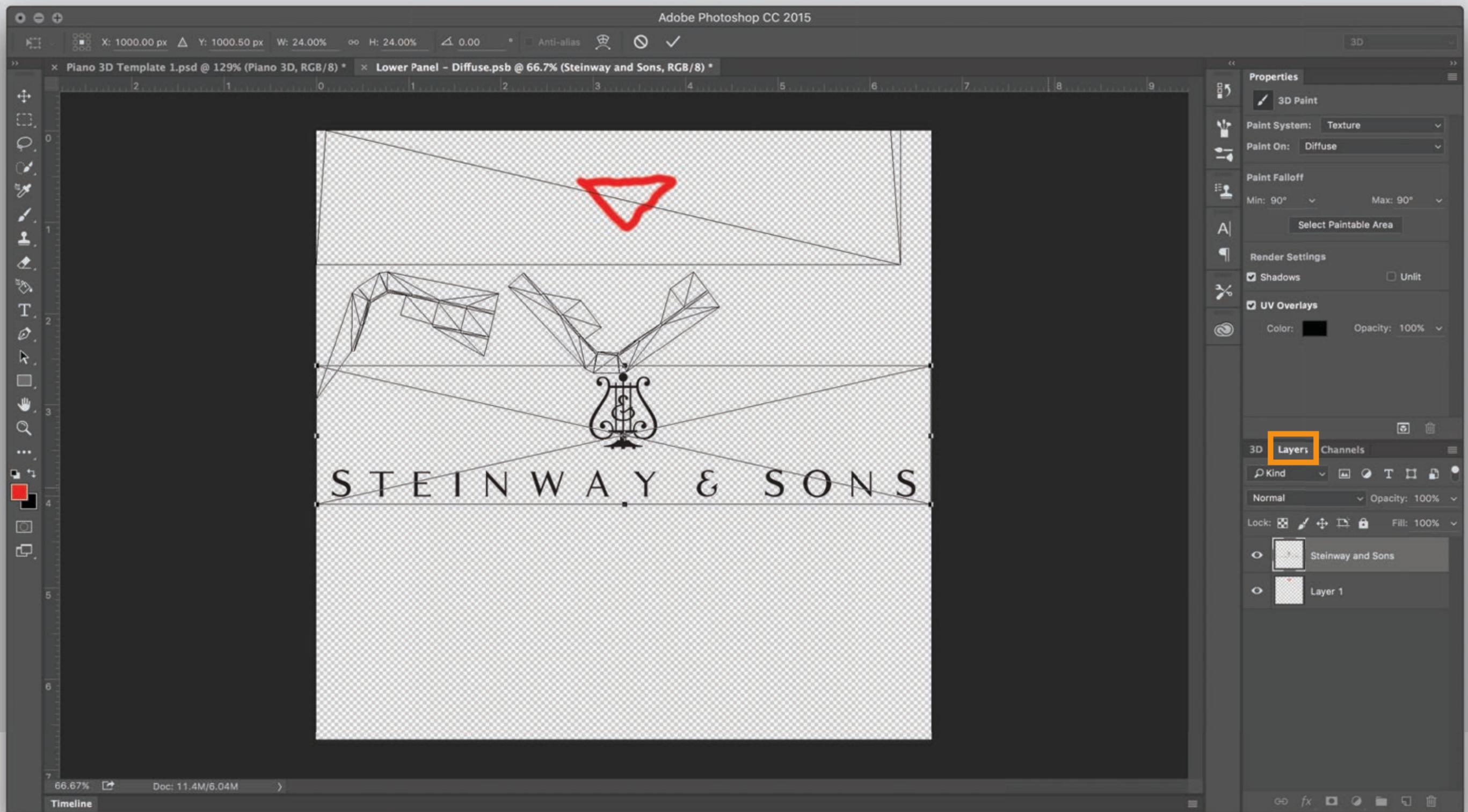
Re-orient the view to face the front of the piano. Select the brush tool from the Toolbox and set the foreground color to a bright shade (red). Ensure that the Paint System under the Properties panel is set to Texture. Roughly draw a triangle shape on the front panel where the logo needs to be placed. This will act as a reference to position the logo.



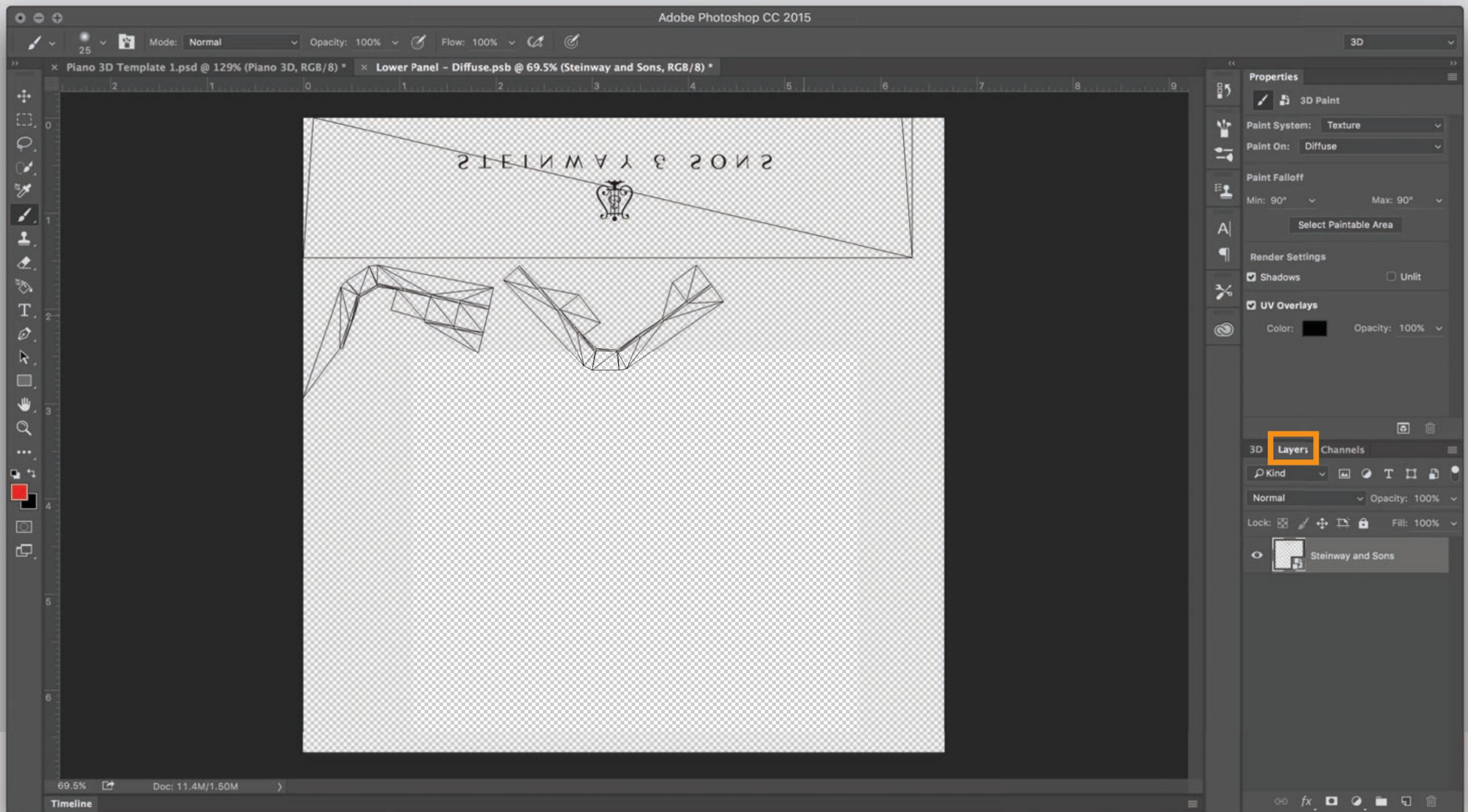
Select the Front Panel material from the 3D panel. Click on the page icon next to the Diffuse swatch and choose 'Edit Texture..'



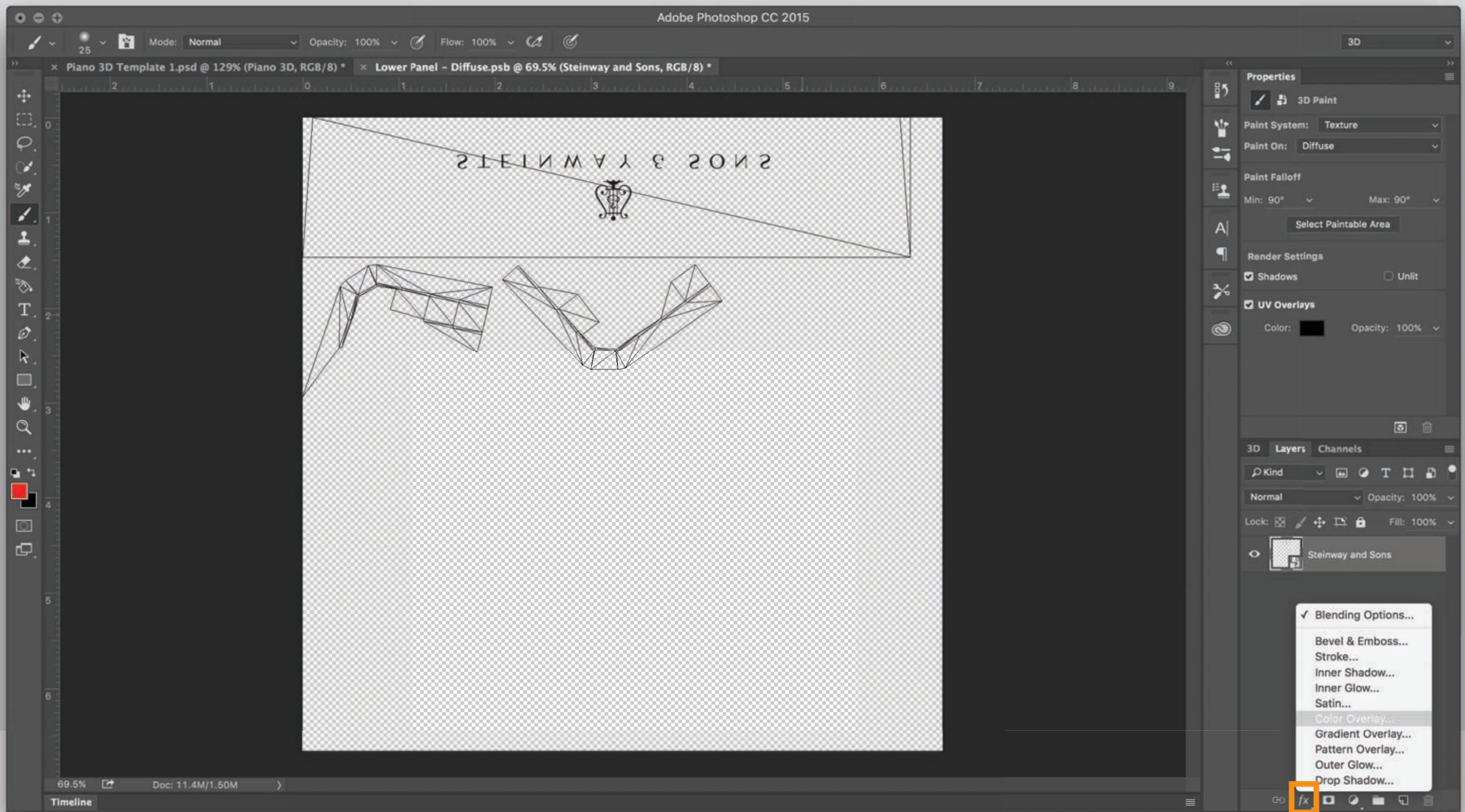
The UV Texture file that is mapped onto the piano Front Panel body is opened in a separate window. The triangle that we drew in the previous step helps in identifying the right orientation for the logo.



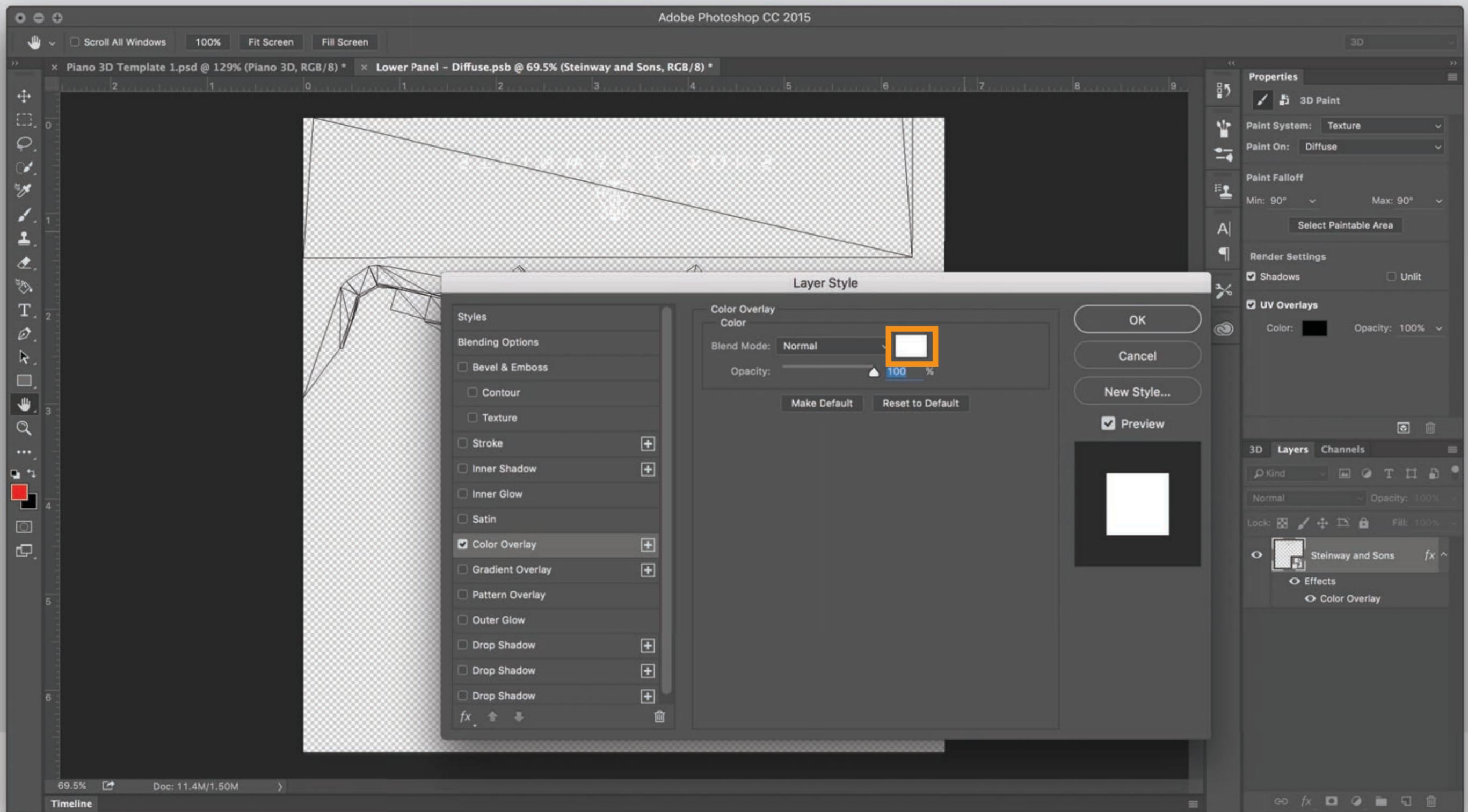
Activate the Layers panel in the bottom right. Drag and drop the logo or artwork onto this window.



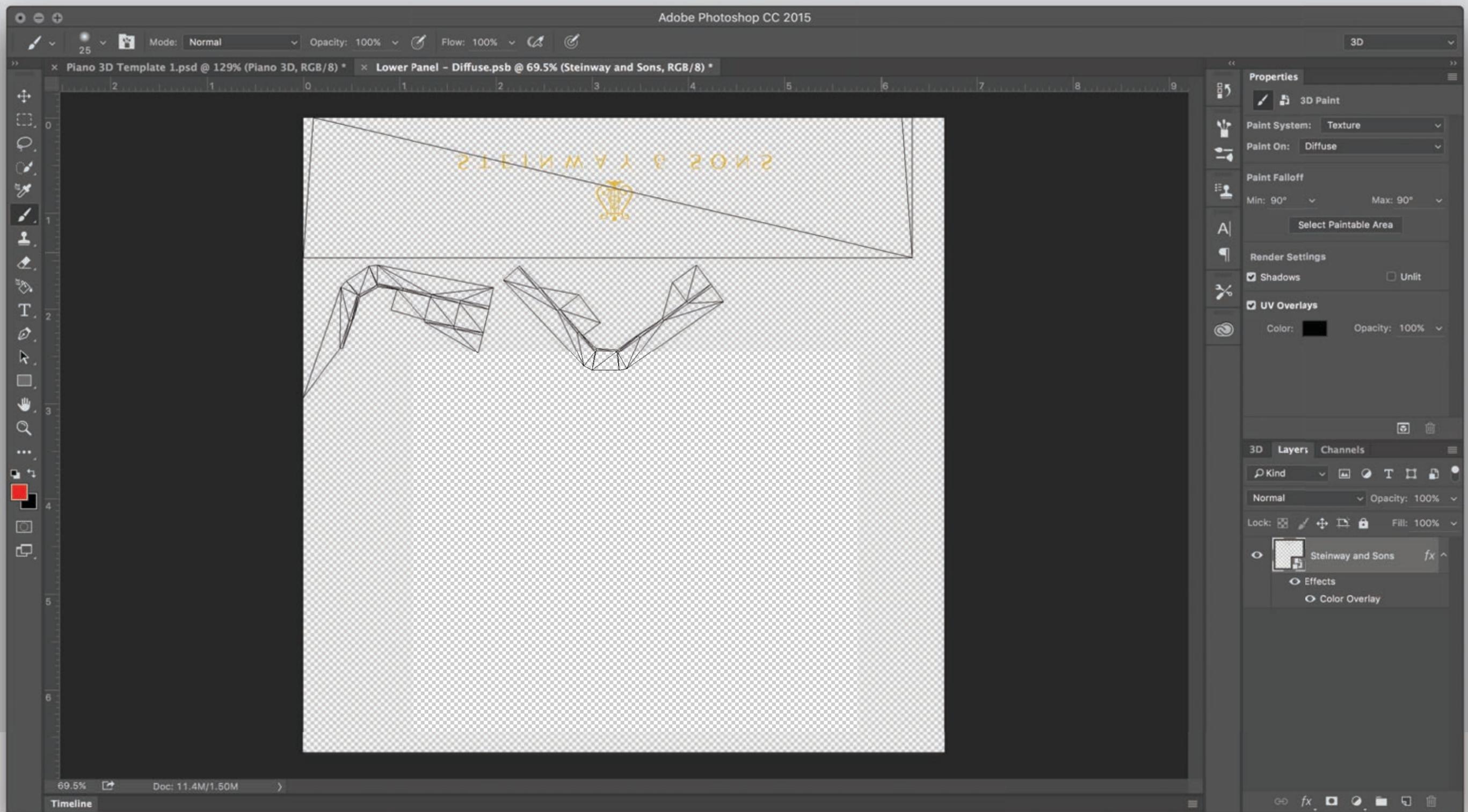
Using the transformation handles, scale and position the logo with reference to the red triangle. The logo is placed on its own layer. Delete the layer containing the red triangle.



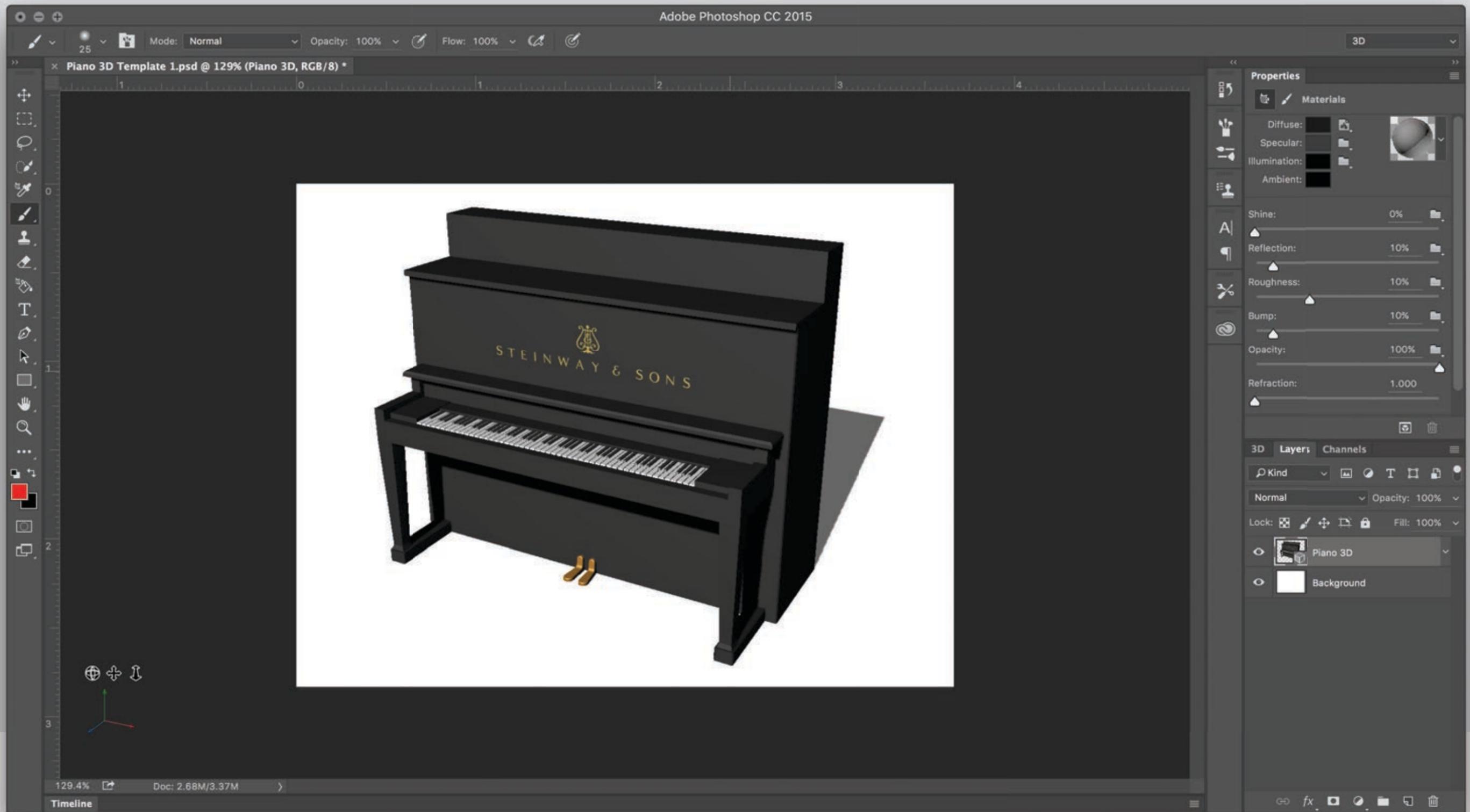
With the logo layer active, click on 'fx' in the bottom of the Layers panel and choose Color Overlay.



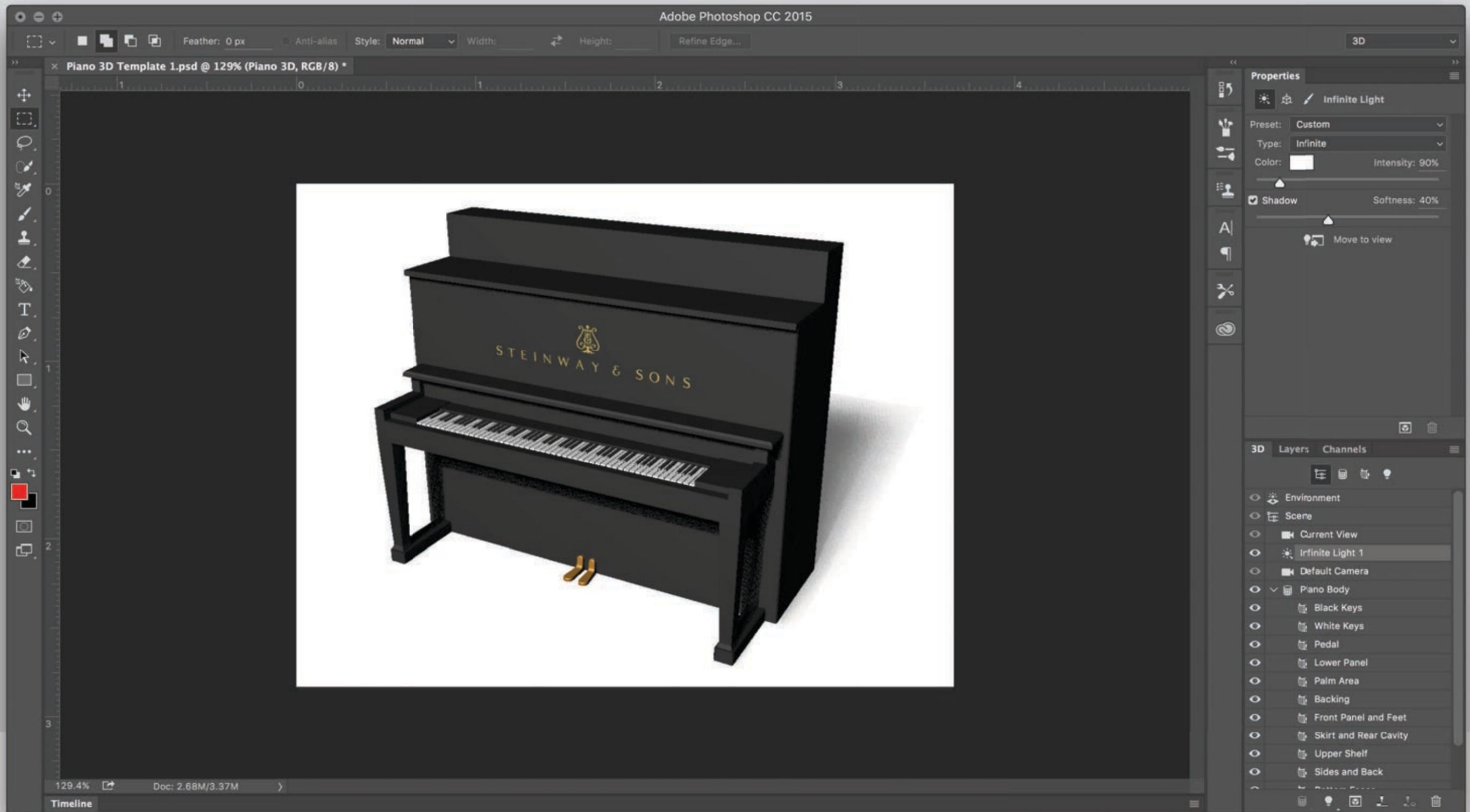
Click on the color swatch to bring up the color picker. Choose a gold/dark yellow color and click OK.



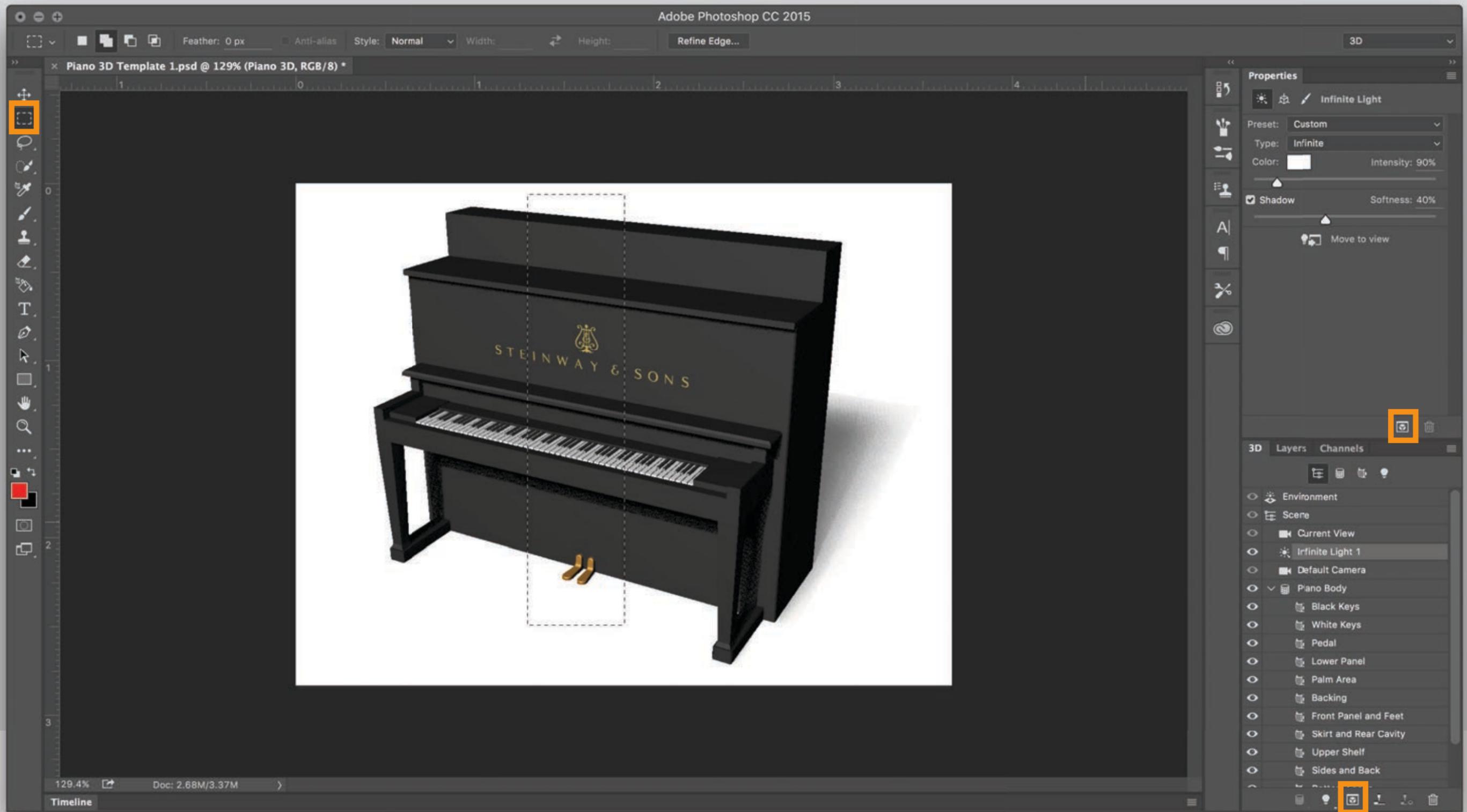
Close this file and save it.



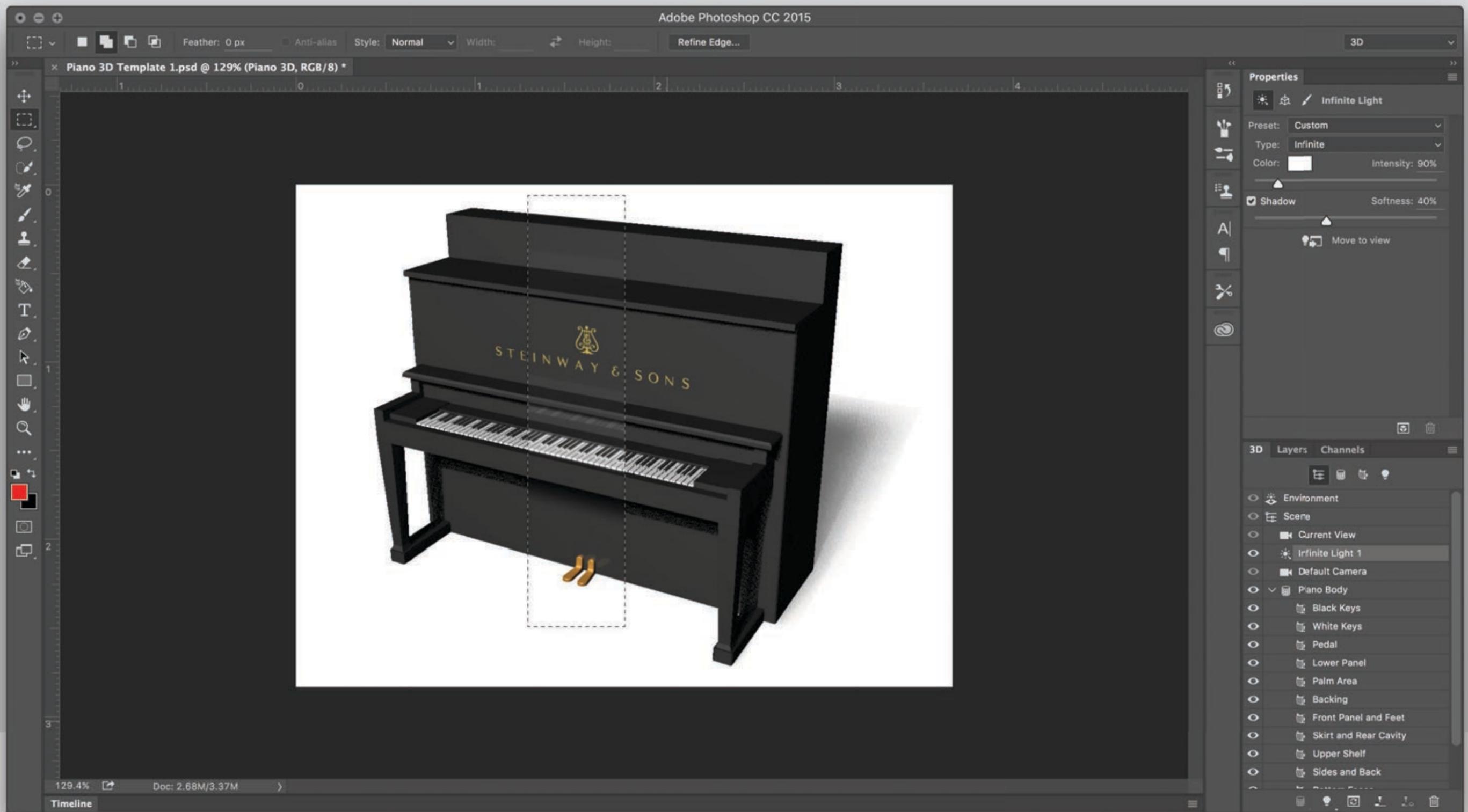
The changes are reflected on the 3D model in the original file.



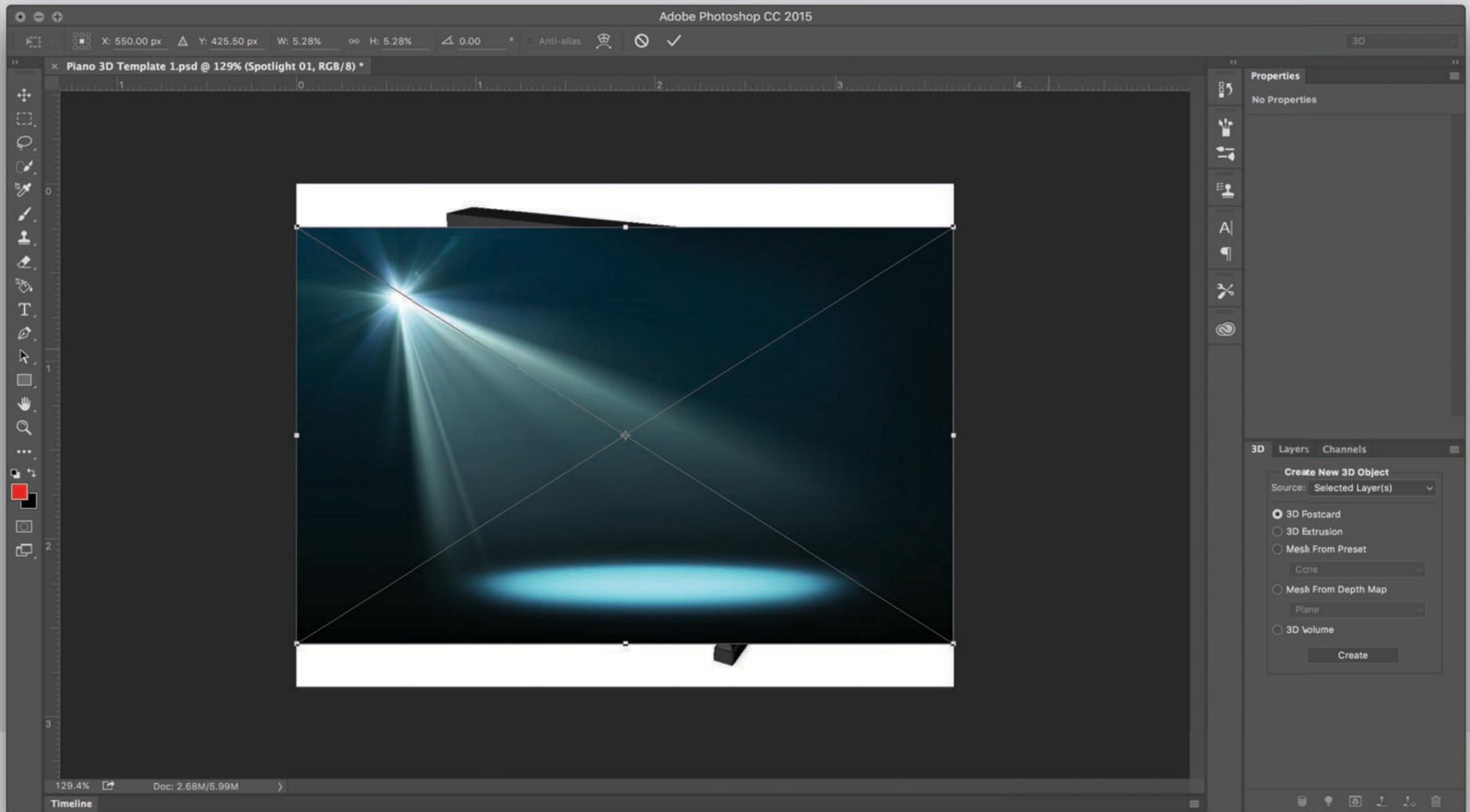
In the 3D panel, select the Infinite Light 1. Under the Properties panel, increase the shadow softness to 40% to produce a more natural looking shadow.



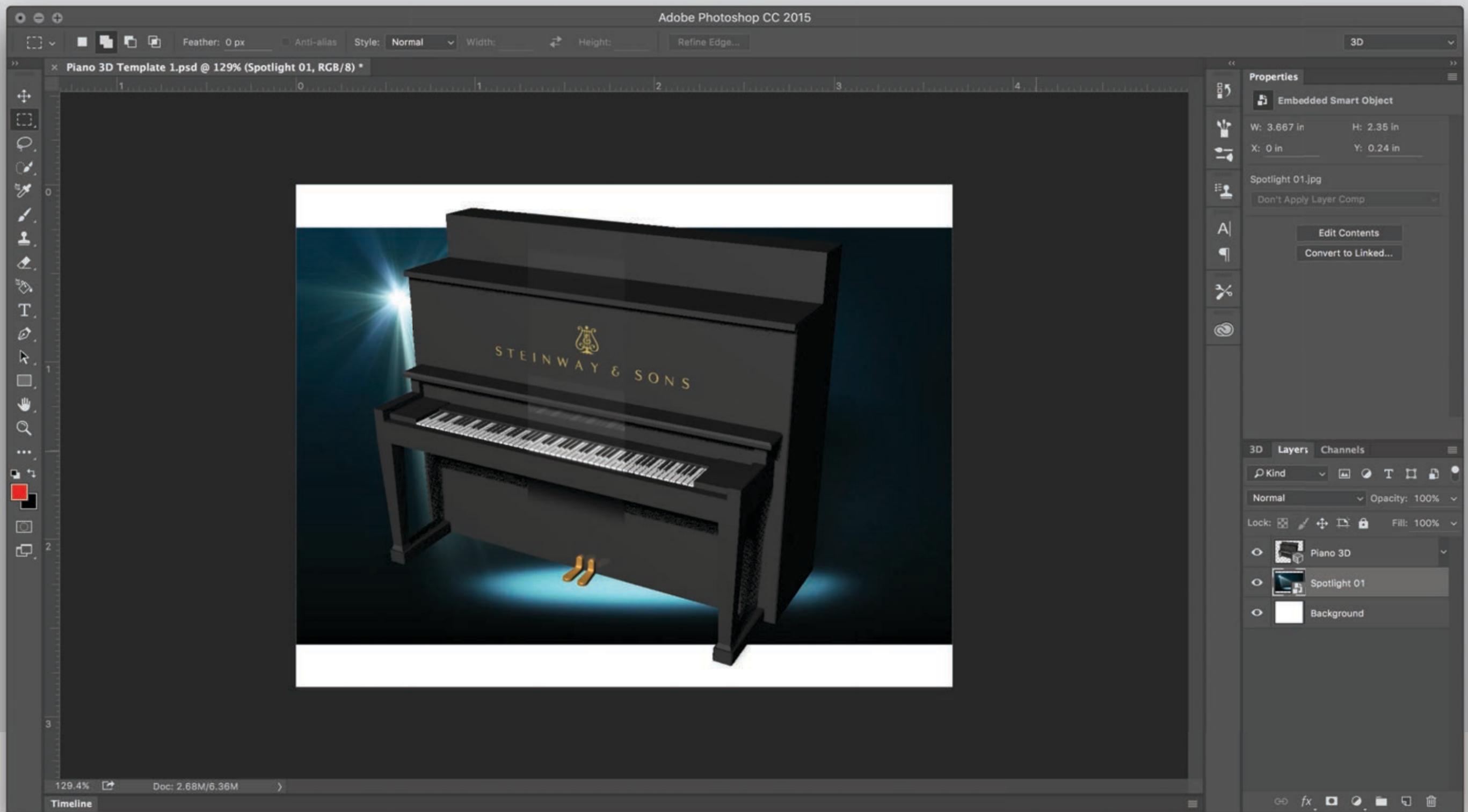
To test the material and light settings, select a portion of the image using the Rectangular Marquee tool from the Toolbox. Then click on Render in the bottom of the Properties or 3D panel.



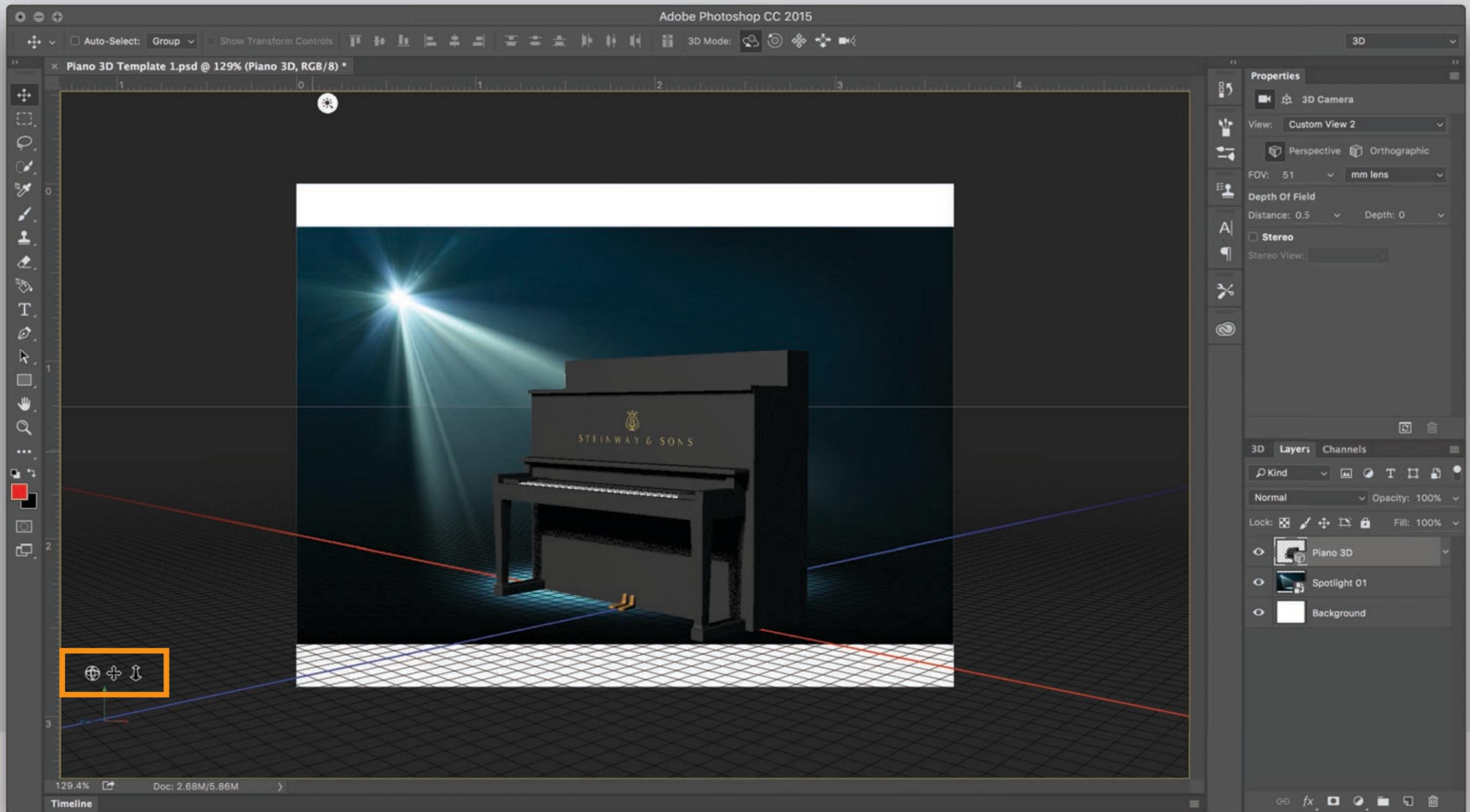
Wait for the program to finish the render. The rendered portion shows the reflections and soft shadows. Make changes to the material/light properties if necessary.



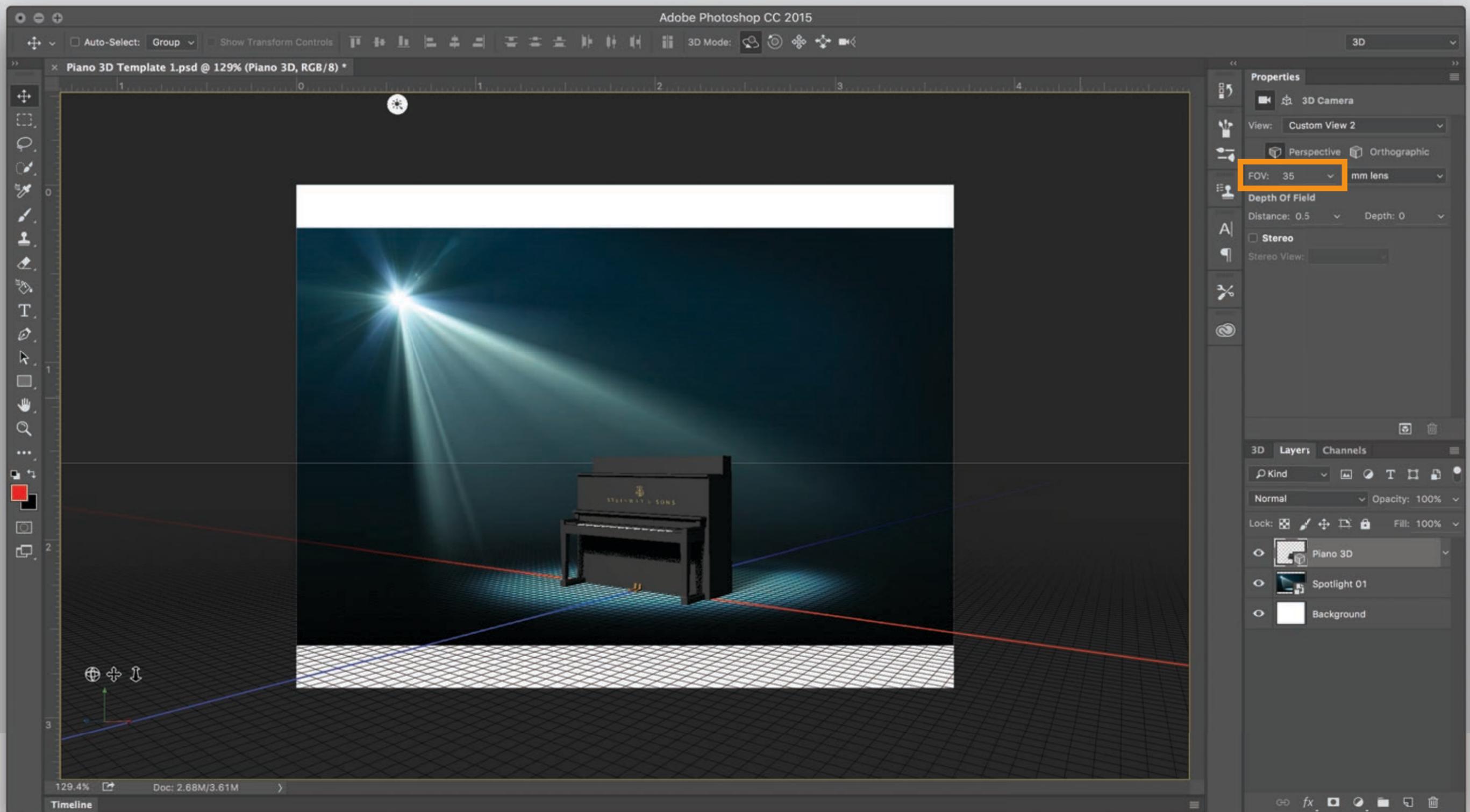
Drag and drop the background scene image into the file. For this example, we'll be using a stage setup with a spotlight.



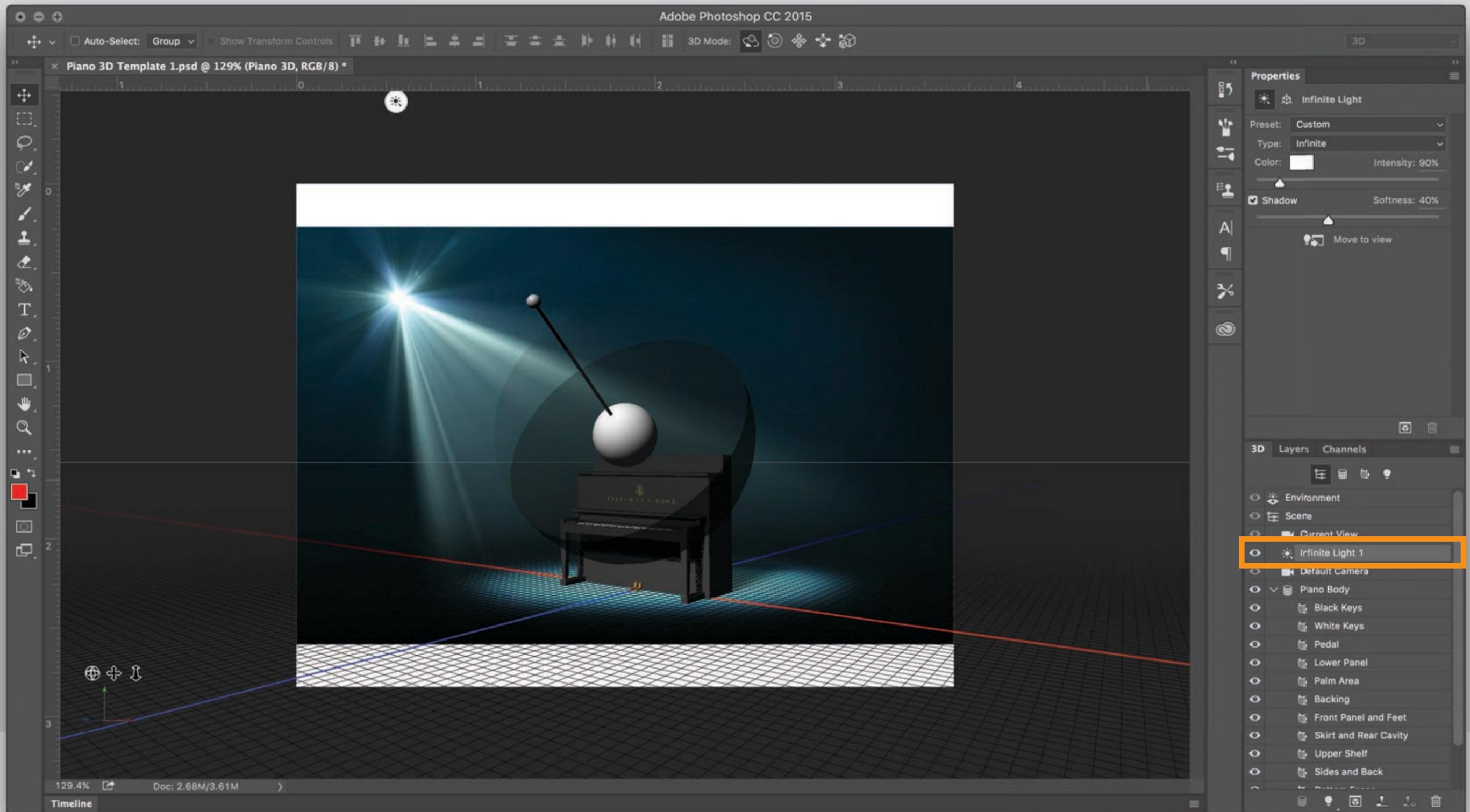
Press Enter/Return to place the image. It will be placed on its own layer above the 3D scene. In the Layers panel, drag this layer below the 3D scene to make the piano visible.



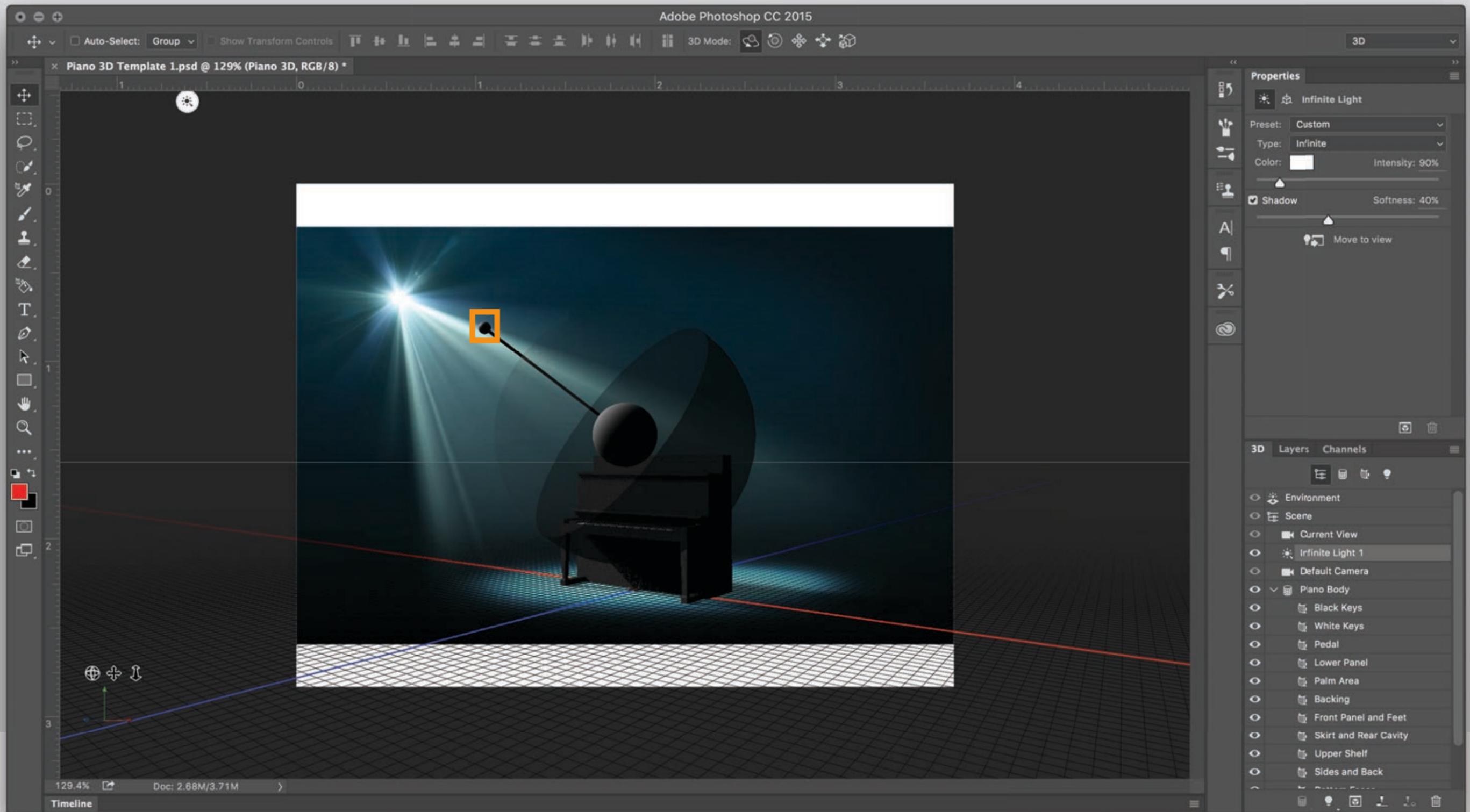
Select the Piano 3D layer and using the view controls on the bottom left, move and position the model to match the perspective of the background scene.



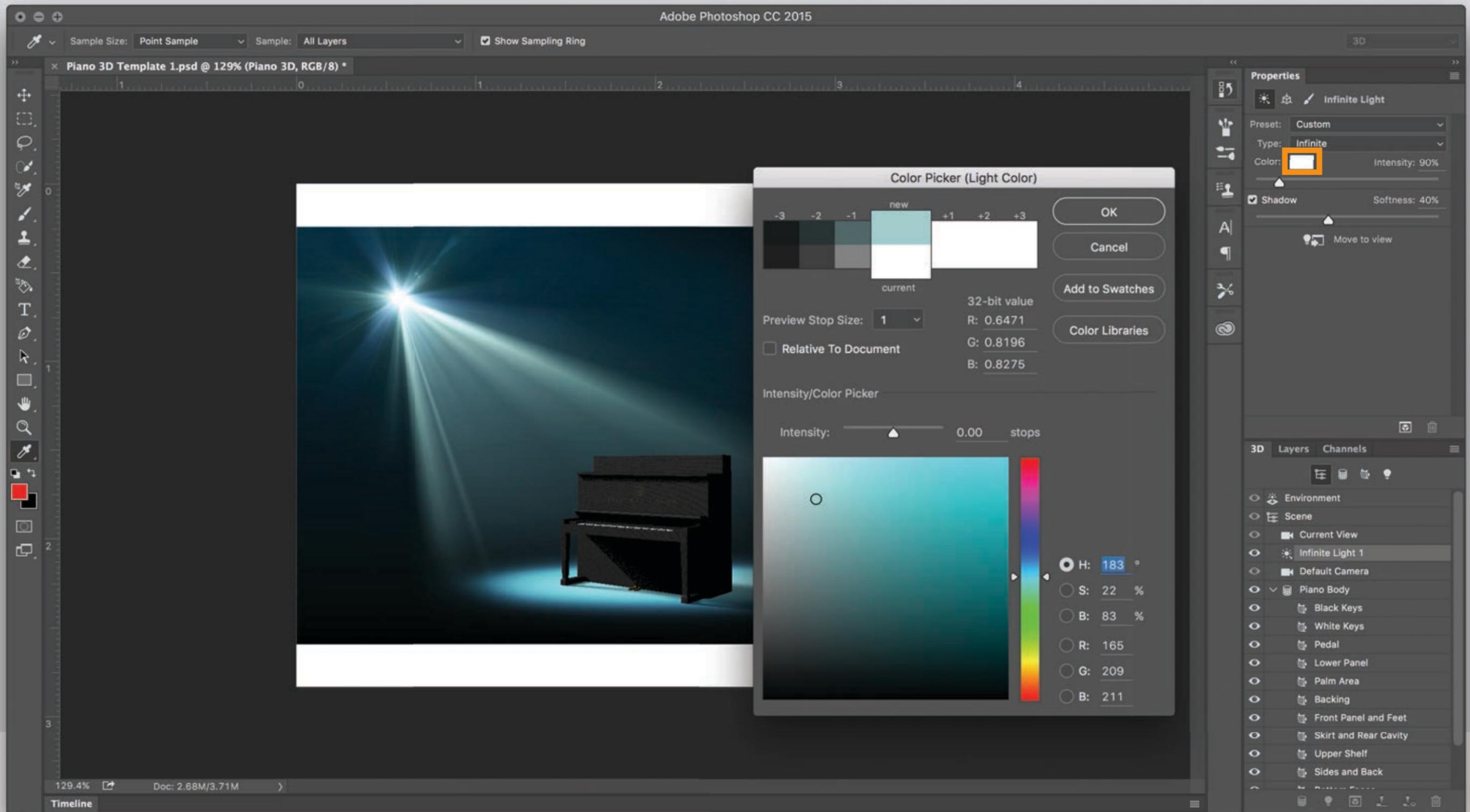
Once the piano is roughly in position, use the perspective FOV control in the Properties panel of the camera to increase or decrease the perspective to better align the model with the background image. A lower FOV (mm) value increases the amount of perspective (high distortion - makes the object look humongous) and a higher FOV (mm) value decreases the perspective (low distortion - makes the object almost orthographic). Usually a value between 30 - 55 mm works for most setups.



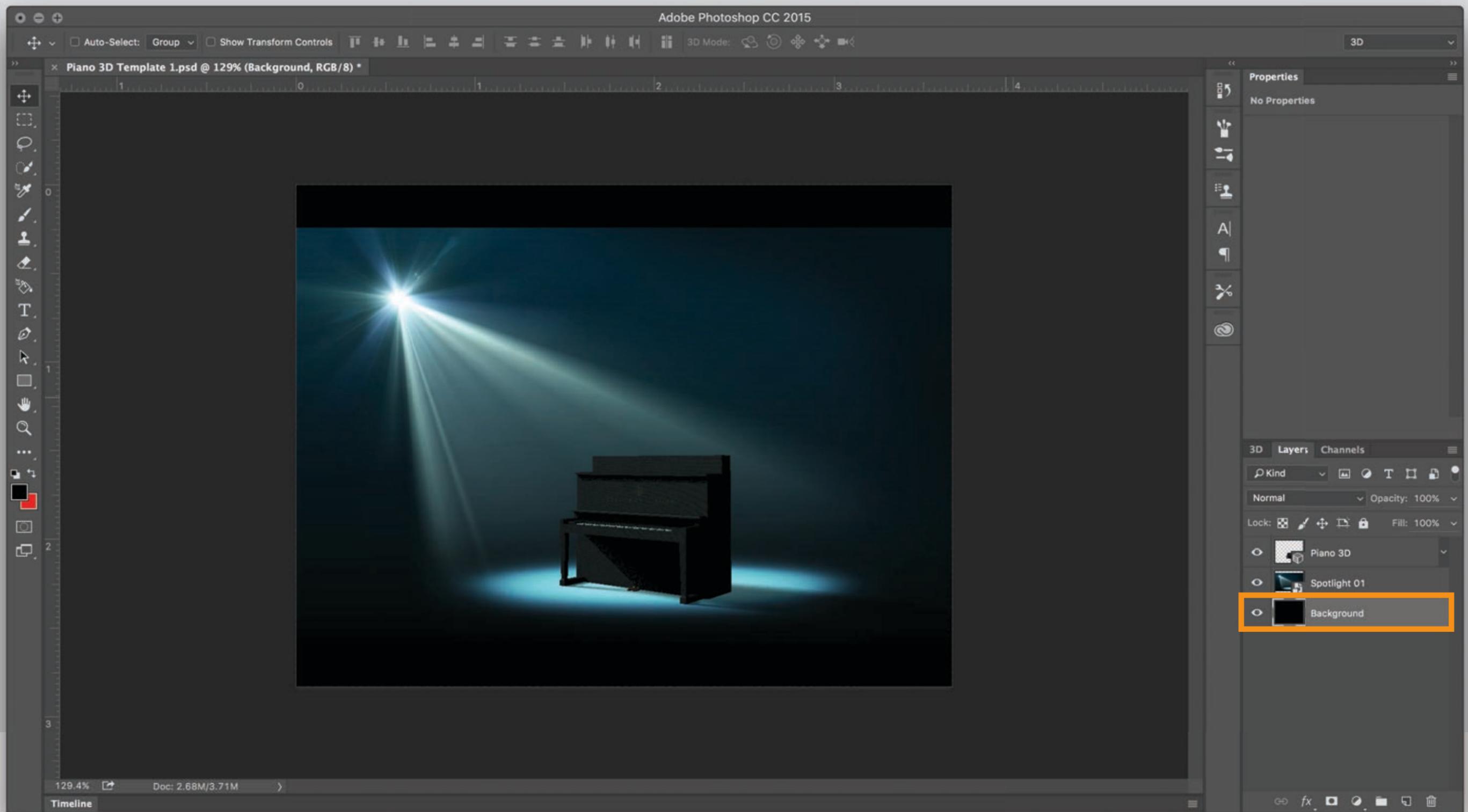
In the 3D panel, click on Infinite Light 1 to show the infinite light controls and properties.



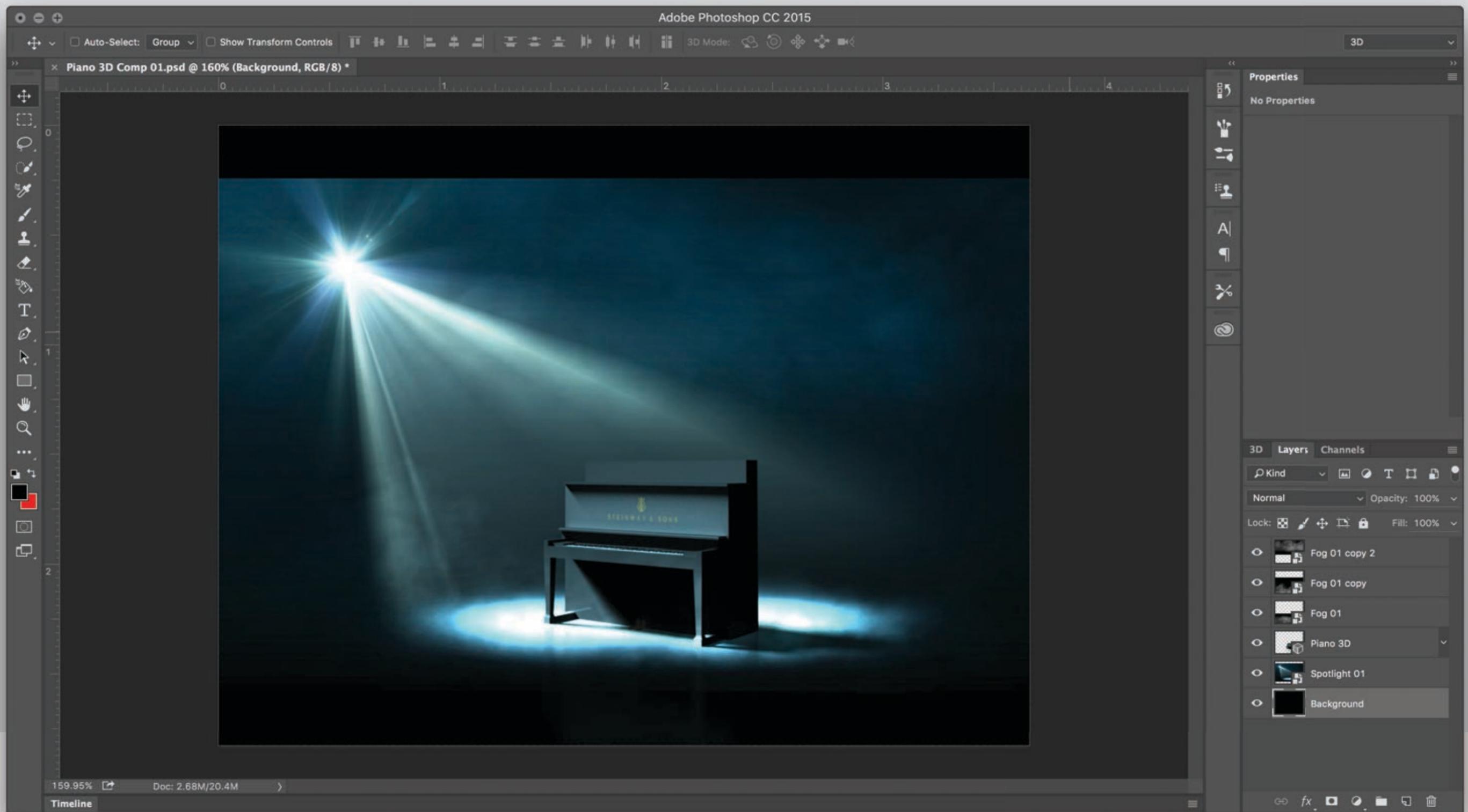
Use the widget to position the light along the line of the spot light in the scene.



To better integrate the piano with the scene, change the color of the light to a shade of blue in the Properties panel.



Crop the canvas to the size of the image or change the background color to better match the scene.



Render the final output to get a high quality image. Optionally, you can overlay images of cloud/fog on separate layers for effects.



Additional resources:



Lynda

<https://lynda.gatech.edu>



Adobe

<https://helpx.adobe.com/photoshop/how-to/create-3d-models.html>