

10.1 Render - Introduction

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Introduction

Rendering is the process of creating a 2D image (or video) from your 3D scene. What that image looks like is based on four factors which the user can control:

- A *Camera*
- The *Lighting* in your scene
- The *Material* of each object
- Various render settings (quality, image size, layers etc)

Your computer will perform various complex calculations based on those factors in order to give you your rendered image. This process may take some time depending on the complexity of the scene and your hardware.

Once the render is complete, it is possible to do additional manipulation of the image, called *Post Processing*.

Finally, the output can be saved to an image or video file using one of the *Output Formats*.

Workflow

In general, the process for rendering is:

1. Position the camera
2. Light the scene
3. Setup materials
4. Render a test image using lower quality settings
5. Change or fix anything you noticed in the render
6. Repeat the above two steps until you are satisfied
7. Render a high quality image, change or fix any issues and repeat until satisfied
8. Save your image to a file, or render the animation to a video or image sequence.

Render Engines

The Render Engine is the set of code which controls how your materials and lighting are used, and ultimately what the rendered image looks like.

Some engines may be better at certain things than others due to the math they use or core principles around which they were written.

Blender includes two render engines by default:

- *Blender Render*
- *Cycles*

More render engines from third-party developers can also be added using *Add-ons*