

3D RENDER

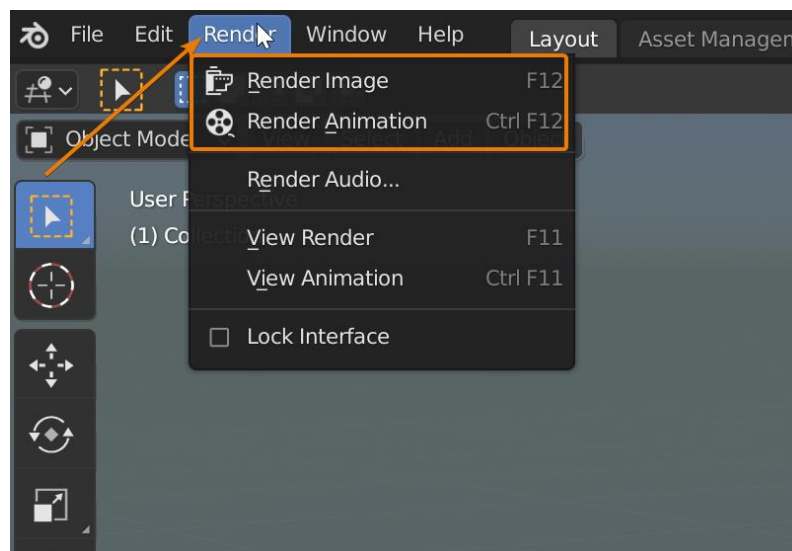
TUTORIAL

PAFSE: Partnerships for Science Education

Project approved under Horizon 2020: Science with
and for Society
Call: H2020-SwafS-2018-2020
Topic: Open schooling and collaboration on science
education

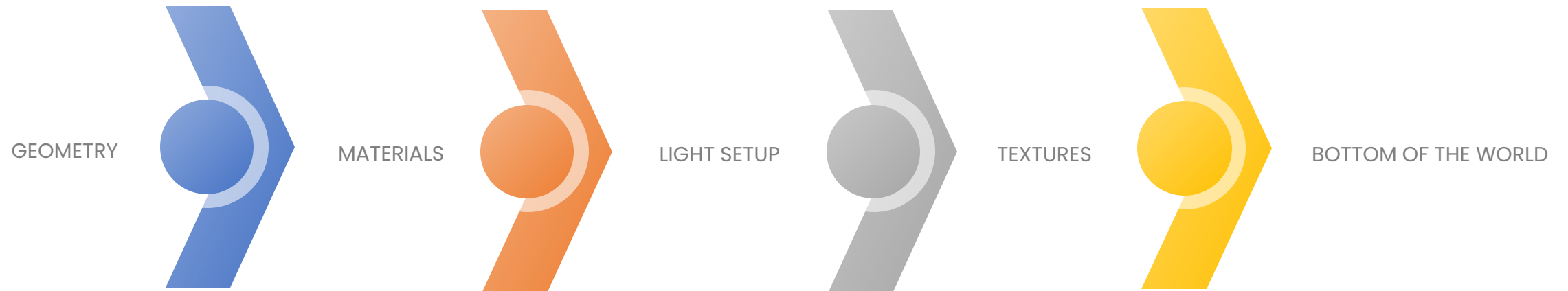
HOW TO RENDER IN BLENDER

- Rendering is at the heart of what we do in Blender. When you're starting out, it's good to understand how it works so that you can actually get some output to show and use.
- To render in Blender, press F12 to render a static image or Ctrl+F12 to render an animation. You can also go to the rendering menu and choose to render the image or render the animation from there.
- Of course, there's more to the story. In this lesson, we explore the fundamentals of rendering and what it involves. I'll also direct you to additional resources that are good to follow as you learn more about rendering.



WHAT IS RENDERING?

- Rendering is when the computer calculates the light in our scene to create the final image or animation. To calculate the lighting, the rendering engine needs information from our scene. This includes things like:

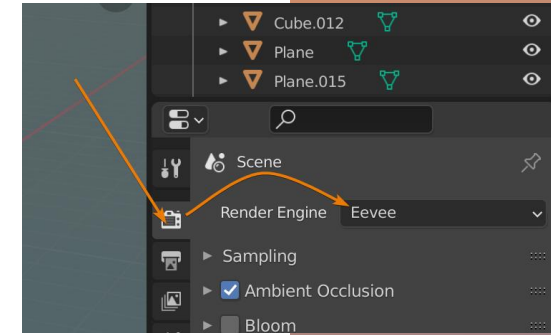


RENDERING ENGINES

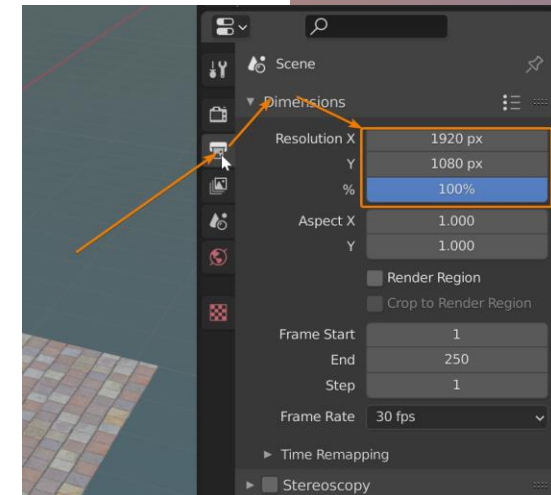
- Blender has two built-in rendering engines: Eevee and Cycles. These two rendering engines are meant to be similar in appearance, but they work completely differently.
- Eevee is a raster rendering engine, which means that its main goal is to be fast. This type of rendering engine is suitable for real-time or near real-time performance.
- Cycles, on the other hand, is a ray tracing rendering engine. This is a much slower type of rendering engine. The benefit is that it is much more accurate and produces an image based on how light is reflected in the real world.
- It is possible to produce a good-looking image with both mechanisms, but they follow very different paths to the resulting image.

HOW TO RENDER AN IMAGE IN BLENDER

- Pressing F12 is the fastest way to start a render in Blender. The rendering engine we use can be set in the render settings tab found in the properties panel.
- Go to the camera icon in the properties panel, find the rendering engine drop-down menu and select Cycles or Eevee.



- Next, we should also check the output properties tab just below the render settings tab to choose where on the computer we want to save the rendering. Here we find the dimensions section where we can set the resolution of our rendering.



HOW TO RENDER AN IMAGE IN BLENDER

- When rendering begins, an image editor will appear showing the progress of the rendering. Once finished, we can save the rendered image by pressing Alt+S or accessing the image menu where we find "Save" or "Save as".
- By default, the PNG file format is selected, but if you want to save an image equivalent to a photographer's raw files, use OpenEXR. This file format supports high dynamic range and can support multiple layers.

