Lesson 2: Designing a Journal Cover

**Day:** Jan 23, 2023

**Time:** 10:30 – 11:30AM

**Room:** 56-154

**Lesson Summary**

Congratulations on finishing the first lesson! I hope it wasn’t too overwhelming. In this next lesson, we will be using our render from the previous lesson to design a journal cover. This lesson we pull from what we learned in the previous lesson but will also introduce almost all the topics you will need to consider yourself a Blender expert. You should feel a little overwhelmed after this lecture but trust me that is the only way to learn 3D modeling!

**Downloads**

Environmental Textures: <https://polyhaven.com/hdris>

BlenderKit: <https://www.blenderkit.com/>

**Class Schedule**

1. **Viewing your molecular scene from the lens of a journal cover** 15 min
2. **Using environmental textures to improve molecular scenes** 10 min
3. **Adding realistic material to molecules** 10 min

**Total Time** 35 min

# Viewing your molecular scene through the lens of a journal cover (15 min)

Before we start building a front-cover worthy render, it is helpful to add a journal cover to your scene so you can see what it will look like when published.

* **Shift+A** 🡪 **Image** 🡪 **Reference** 🡪 Select a cover template image
  + Rename the reference image to **Cover**
* Click on the image and move it in front of the camera
  + You will need to use **Move**, **Scale**, and **Rotate**
* Let’s next update the camera dimensions to match the cover dimensions
  + Click on **Output Properties** in the **Properties Window**
    - **Resolution X** = 3840
    - **Y** = 2912
* Go into **Camera View** by selecting the camera image in the **Orbit Gizmo** and resize the Cover image
  + It doesn’t have to be exact. It is only for reference.
* Play around with the object we already have to get something you like
* This is already looking really good and would have a good shot at the front cover. But it is always a good idea to create multiple very different versions for vetting.

# Using environmental textures to improve molecular scenes (10 min)

The first version turned out really nice, but what if the journal you are submitting to prefers realistic less-stylized covers? Think Nature and Science. Let’s start with adding more realistic lighting. We can do this with an Environmental Texture which is a 360° image that captures the light from a real scene, which we can easily import into our scene.

* Go to: <https://polyhaven.com/hdris>
* Download an HDRI such as: <https://dl.polyhaven.org/file/ph-assets/HDRIs/hdr/4k/canary_wharf_4k.hdr>
* Go to the **Timeline Window**, click on the clock in the left-hand corner. This dropdown is called the **Editor Type**
* Select **Shader Editor**, which is an image of a sphere
* Change from **Object** to **World**
* Congrats! You just leveled up to working with **Nodes**, one of the most powerful aspects of Blender
* Let’s add an environmental texture
  + **Shift+A** 🡪 **Search** 🡪 **Environmental Texture**
  + Connect **Color** to **Color**
  + Click **Open** and find your HDRI file
  + In the **Background** node change **Strength** to 0.2
* Visualize the results by selecting the **Rendered** view in **Viewport Shading**

# Adding procedural textures to molecules (10 min)

The scene has a different feel now, but the molecule feels out of place, like a cartoon in the real world. Let’s add some realistic textures to our molecule. We will use BlenderKit to get our textures in this lesson.

* Download the BlenderKit zip file: <https://www.blenderkit.com/get-blenderkit/>
* Go back to Blender and open Edit 🡪 Preferences 🡪 Add-ons 🡪 Install
  + Click on the blenderkit zip. DO NOT UNZIP IT or it will not work.
  + Click the drop-down on the BlenderKit Add-on and select Login
* Go to the BlenderKit website and find a realistic texture that you like
  + For example: <https://www.blenderkit.com/get-blenderkit/54ed14c0-3c65-4586-a567-b3f080e7de77/>
  + The texture will appear in the top left-hand corner of the 3D Window
  + Drag and drop the texture to the protein
  + Go to the Node Editor for the Object and inspect the Node layout
  + Change Subsurface to 0.2
* Lastly, to get some realistic shadows, let’s add a ground
  + Shift+A 🡪 Mesh 🡪 Plane
  + Scale the plane so that it sits right under the protein
  + Let’s apply a realistic texture to the ground
  + See if you can remember how to apply this new texture:
    - BlenderKit: <https://www.blenderkit.com/get-blenderkit/b98e95bb-603b-4b6a-b4dd-6425f8765d7f/>
* Lastly, play with the lighting to get some interesting shadows

# Enhance your backdrop with realistic PBR materials (10 min)

* Install Node Wrangler
* AmbientCG: <https://ambientcg.com/view?id=SurfaceImperfections015>