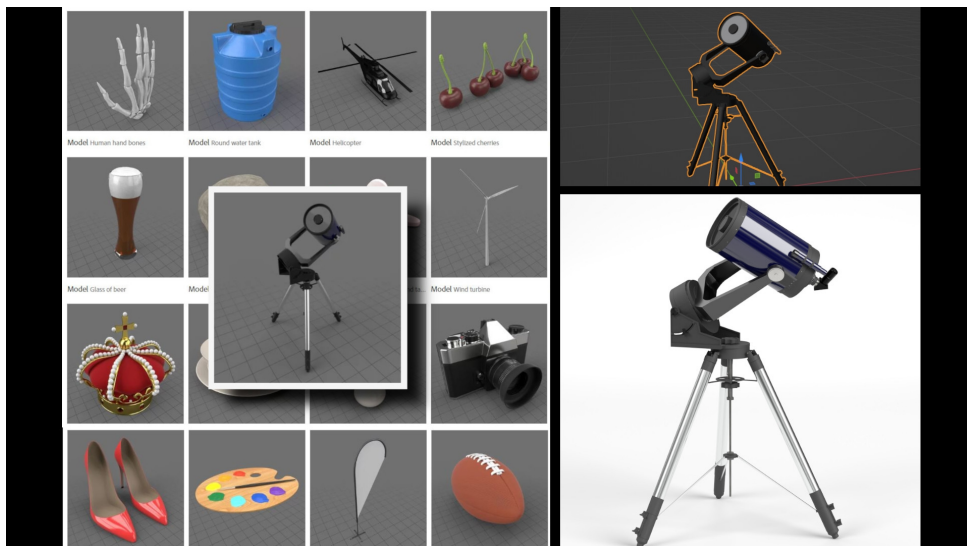




Hello everyone! In this tutorial, we'll see how to import and set up a 3D model downloaded from Adobe Stock into Blender.

On the Adobe Stock website, in fact, thousands of 3D models are available. Each 3D model is provided in OBJ format with accompanying PBR Textures, so it can be used in practically all 3D graphic software and game engines, such as Unity, Unreal, Blender, 3D Studio MAX, and many more.

Depending on your needs, you can purchase the 3D models individually or with credit packages, at really advantageous prices.

The 3D model I'll be using for this tutorial is available for free download, with an Educational license, together with the videotutorial and PDF transcription! In this way, you can try out for yourselves what is discussed in the tutorial! Feel free to share it!

I chose this 3D model because it will allow us to examine not only how to import an OBJ file into the scene and quickly associate the PBR Textures with its sub-materials, but also how to separate the various parts, set their Origins, and parent them, so they can be modified later, if necessary!

This is a basic tutorial and was made with version 3.3 of Blender, but OBJ files

can be imported into a Blender scene in any version of the software. The material used is Principled BSDF, particularly for the Cycles rendering engine.

In fact, the operations I will show here are not only for 3D models imported from Adobe Stock, but can be useful with any 3D model, whatever its origin.

Specifically, in this tutorial, we will cover 10 operations:

- how to import the OBJ file downloaded from Adobe Stock into a Blender scene;
- how to apply rotation and scale transformations of the imported model;
- how to quickly set up PBR Textures using the Node Wrangler add-on;
- how to set up the transparent material for the telescope lenses;
- how to verify that Normals are set up correctly;
- how to remove the Sharp markings from the imported model, if we prefer not to have them;
- how to restore the original UV seams;
- how to separate the various parts of the geometry based on the sub-materials used;
- how to set up the correct Origin and rotations for all the separated parts;
- how to set up parent-child relationships among the various objects.

THE CONTENT OF THE ZIP FILE

Before we begin importing the OBJ file into Blender, let's examine the ZIP file downloaded from Adobe Stock. We extract the files contained in the ZIP package into a new folder.

We'll find three files with extensions OBJ, MTL, and MDL. The OBJ file is the one containing the geometry, while the MTL and MDL files are used to define the materials and their mapping on the geometry.

We'll also find a folder containing the Texture images to be used for the model.

For each sub-material in the model, we'll find at least 6 Texture images in PNG format with transparency. For sub-materials with transparency, Adobe will also provide an additional texture, for the Translucency channel.

However, in this specific case, we do not need Textures for the Glow, Opacity, and Translucency channels. In fact, we have neither light-emitting materials nor semi-transparent materials, so we will manage transparency without Textures in the Principled BSDF material of Cycles, as we will see later.

We can then delete the unnecessary files from the folder.

In the end, we will therefore have four Textures for each sub-material. Later on, we will see how to associate the four Textures of each sub-material to the four main channels of the corresponding Principled BSDF sub-materials, namely Base Color, Metallic, Normal, and Roughness.

Great, now we can truly begin!

IMPORTING THE OBJ FILE

Importing the OBJ file into the Blender scene is simply done by clicking on File Import OBJ and selecting the file from the disk.

Blender will automatically use the MTL file, which indicates the sub-materials and how they are associated with the various parts of the object, which at this moment is a single mesh object.

The various parts of the model may have different colors, but we will replace all these colors with the appropriate Textures.

Let's rename the 3D model, for example, to Telescope.

APPLYING ROTATION AND SCALE TRANSFORMATIONS TO THE MODEL

Before doing anything else, let's verify the dimensions of the model in the scene, making sure they are consistent with the rest of the scene. If they do not fit well, we resize the model.

Having done that, we check the Rotation and Scale properties of the freshly imported 3D model, that is, we make sure that the Rotation values are set to 0 and the Scale values are set to 1.

If the values are not uniform, we apply the rotation and scale transformations by pressing the CTRL A key combination and selecting the Rotation & Scale option in the Apply menu that will appear on screen.

You will need to carry out this operation to reset at least the initial rotation with almost all models downloaded from Adobe Stock.

SETTING UP TEXTURES QUICKLY WITH THE NODE WRANGLER ADD-ON

We switch to a Shading display layout to have a list of the sub-materials in the model and to view, at the same time, the node scheme of each sub-material.

Initially, for each sub-material, we should only have a Principled BSDF node connected to Material Output. If there are any other nodes, delete them.

To quickly import and associate the 4 Texture images with each sub-material, we'll use the Node Wrangler add-on, provided as standard with Blender.

So you won't need to search for and download this add-on, but just activate it in the Preferences window.

The add-on works as follows:

- for each sub-material, you need to select the Principled BSDF node;
- then you need to press the CTRL SHIFT T key combination;
- a window will appear on screen where you can select the four images related to the selected sub-material.

In the Texture selection window, you can also write part of the name of the Texture you are looking for, in order to filter the results and select the desired Textures more quickly. Since, by default, in objects downloaded from Adobe, the names of the Textures should have the same prefix as the name of their respective material, except for the mat suffix, then a good idea might be to copy the name of the material before pressing the CTRL SHIFT T key combination, so you can use that name as a filter.

This operation must therefore be carried out for all the sub-materials present in the model. Don't forget to select the Principled BSDF node of the sub-material each time, otherwise the add-on won't work.

SETTING UP TRANSPARENT MATERIAL FOR THE TELESCOPE LENSES

The telescope has three sub-materials for which it is necessary to set up a completely transparent material. These are: Optics Lenses, Finder Lenses, and Telescope Main Lenses.

For these three materials, we need to make sure that the Alpha value is set to 1, as it should be by default.

We will then need to set the Transmission value of these sub-materials to 1.

The result should be evident in the Rendered preview mode, in a 3D Viewport window.

VERIFY THAT THE NORMALS ARE SET CORRECTLY

Another operation that we can do at this time is to verify that the face Normals are oriented correctly, that is, towards the outside.

3D models downloaded from Adobe should all be provided with thickness and the Adobe team should have checked the correct orientation of the Normals for all parts of the object, so this step should be superfluous.

However, you can check the Normals by switching to Edit Mode, then open the Viewport Overlays menu in the 3D Viewport and activate the display of Normals for faces.

In case of problems, you can select the part of the object or even the entire 3D model in Edit Mode, then open the Blender Toolbox and apply the Recalculate Outside operator.

REMOVE SHARP MARKINGS FROM THE IMPORTED MODEL

By switching to Edit Mode, you might notice some edges highlighted as Sharp. The Mark Sharp tool modifies the attributes of Normals and, therefore, it modifies

the behavior of the tools that work on Normals, such as Edge Split or Autosmooth. In addition, the presence of edges marked as Sharp will also affect the final shading of faces that use it.

Their presence should not be a problem, but if you want to remove them, you will just need to select all the geometries with the A shortcut, then press the key combination CTRL E to open the Edges menu and choose the Clear Sharp option.

RESTORE ORIGINAL UV UNWRAPS

In Edit Mode, we also notice that the UV unwraps of the geometries are not present. Edges marked as Seams indeed appear red, but they are missing here. However, by selecting the geometries belonging to a sub-material and looking at them in a UV Editing window, we notice that indeed, the UV islands are present. After all, the UV mapping of the Textures was performed correctly, so the UV unwrap is the original one, but OBJ format models do not store information such as Seams, so in Blender we won't see edges marked in that way.

To recover the unwraps, in order to modify them or perform other operations on the UV islands, it is enough to:

- select all geometries in Edit Mode,
- switch to a UV Editor window,
- also select all the geometries present there,
- open the UV menu and choose the Seams from Island option.

Now the borders of the UV islands will appear correctly marked as Seams.

SEPARATE THE VARIOUS PARTS OF THE GEOMETRY BASED ON THE SUB-MATERIALS USED

The model, as set up, is already ready for rendering. In fact, I created the cover image in a Blender scene with the model obtained up to this point, adding only a Plane that serves as floor and rear wall, light sources, and an HDR image for the background.

However, at this moment the telescope is a single object. For this particular model

and many others, it could be useful to separate the various parts and parent them to each other.

In the case of the telescope, we can obviously identify the tripod, the fork, and the body of the telescope itself, because the telescope must be able to rotate both around the axis of the fork and around its horizontal axis.

To separate some geometries from the original object, you can use the Separate tool, which can be used in Edit Mode by pressing the P key after selecting the geometries you want to separate.

For objects composed of few parts, or at least easily identifiable parts, you can proceed in this way:

- switch to Edit Mode;
- deselect all geometries;
- select the slot of a sub-material;
- click on the Select button;
- press the P key and choose the Separate option.

At this point, you will need to return to Object Mode, re-select the original object, and repeat the operation for the other sub-materials.

The Separate menu also provides the By Loose Parts function, with which we can select many geometries and obtain a new separate object from each geometry, if it is separated from the others. However, in this case the By Loose Parts function would end up creating unnecessarily hundreds of new objects, because there are many details of the telescope that are not connected with the others!

We are interested in separating the telescope into three parts, so we might be tempted to proceed manually with the Separate function, but even this method has many disadvantages, in this particular case.

There are indeed several methods to select parts of an object, but the telescope is composed of many details, so there is the risk that by proceeding with individual selections we might forget some.

On the other hand, proceeding with larger selections, for example with Border or Circle Select, we might risk selecting parts that we are not interested in.

However, the fact that the telescope has nine sub-materials suggests an idea. We can indeed individually select the geometries associated with each sub-material and perform the separation using the Separate By Materials function.

This method will end up creating nine objects, which are more than we need, but at that point we will be able to merge the objects with Join.

So let's proceed in this way:

- after selecting the telescope, we switch to Edit mode;
- we select all the present geometries by pressing the A key;
- we press the P key and choose the By Material option.

At the end, we can merge some objects together, such as the lenses of the Finder object to the body of the Finder and, subsequently, the body of the Finder to the main body of the telescope.

We can also merge the lenses of the telescope, the optics, and the main body of the telescope together.

The base resting on the tripod is generally rotated once, based on the latitude of the place, but it should not be rotated during an observation, so we can merge it with the tripod.

We have therefore obtained three main objects, as desired. It is a good idea to rename them with meaningful names before proceeding further.

SET THE ORIGIN AND CORRECT ROTATIONS FOR ALL SEPARATED PARTS

The objects have been separated, but their Origins and their initial orientations are not correct. This is particularly evident if you try to rotate the central body of the telescope or the fork.

Let's start with the tripod, as it is the simplest, as its Origin can coincide with the center of the virtual universe and its orientation can be reset to zero.

We select all objects present and move them on the XY plane so that the central axis of the tripod coincides with the global Z axis.

Once this is done, we only select the tripod, press CTRL A, and select the Location Rotation Scale option from the menu that appears on the screen, to position the Origin of the tripod in the center of the virtual universe and reset the Rotation and Scale information.

To be able to fix the fork and the telescope, we must first correctly set the Origin of the fork. In this way, we can perform the rotations correctly.

We temporarily hide the tripod with the H key.

We select the fork, switch to Edit Mode, and select an edge at the base of this object.

We press the key combination SHIFT S, then we choose the Cursor to Selected option.

Go back to Object Mode, right-click on the fork and select Set Origin to 3D Cursor.

To correctly set the fork's axis of rotation, we need to straighten the fork first and then reset its Rotation values.

From an orthogonal side view, we rotate the fork to straighten it.

In the Rotation Y field, we notice that we needed a 60-degree rotation to straighten the fork.

With the fork straight, press CTRL A and select the Rotation & Scale option. Be careful, because this time we don't also choose Location, because otherwise, we would move the fork's Origin to the center of the virtual universe!

Anyway, to restore the fork to its original position, in this case, it will be enough to rotate it around the Y axis by 60 degrees.

Now, however, the local Z axis of the fork is set correctly, so we can rotate it correctly around that axis.

The telescope's rotation must take place around the axis that passes through the two pins of the fork, so we will have to put the telescope's Origin in the middle

there and, above all, make sure that at least one of the three global axes crosses it, so that we can apply the rotation transformations and have at least one Local axis set correctly, as we did in the case of the fork.

Setting the Origin is simple, as we can select two rings of the fork pins, which are perfectly symmetrical, and move the 3D Cursor in between them.

Once this is done, we can select the telescope and use the Set Origin to 3D Cursor operator, which we already used in the case of the fork.

Straightening the telescope so that a global axis, for example, the Y axis, correctly crosses it, is not a simple operation, because we should perform a rotation on the three axes.

However, there is a solution: we can temporarily parent the telescope to the fork, thus easily straightening the telescope at least in one view. Therefore, we select the telescope, then select the fork, in this order.

We then press the CTRL P key combination and choose the Set Parent to Object option.

We rotate the fork to straighten both this object and the telescope in the orthogonal front view.

At this point, we rotate only the telescope and try to straighten it with a rotation around the global Y axis.

Before applying the rotation transformations to the telescope, however, we must first remove the hierarchical relationship with the fork.

With only the selected and straightened telescope, press the ALT P key combination and choose the Clear Parent and Keep Transform option in the menu that will appear on the screen.

Once this is done, press the CTRL A key combination, then select the Rotation & Scale option for the telescope only.

SETTING THE PARENTAL RELATIONSHIP BETWEEN THE VARIOUS OBJECTS

As you can verify by switching to the Local transformations selector in a 3D Viewport, the telescope can now rotate around its local Y axis, while the fork can rotate around its local Z axis.

All that remains is to correctly parent the three elements so that they can be easily moved or rotated.

First, let's parent the fork to the tripod. The procedure is always the same: with a multiple selection, you must first select the child object, then the parent object and finally press the CTRL P key combination to establish the parental relationship.

Therefore, let's parent the telescope and the fork, selecting the fork last in this case. The hierarchical chain is clearly visible in the Outliner window.

Now we can easily move, rotate, and resize the tripod in the scene, finding the operations correctly applied to the other objects as well.

Furthermore, we can correctly rotate the fork and the telescope around their local axes, achieving correct results, useful both for giving the telescope a different configuration and for carrying out animations.

Well, that's all for this tutorial! I hope you found it useful! See you soon!