Tutorial – Texturing

Introduction:

In this tutorial we will learn how to import models into the 3D modelling program *Microsoft's Paint 3D*, and paint our model to create a texture map.

We'll then export both the model and texture map from *Paint 3D*, import the model into our Unity game, and apply our custom texture map.

Installing Paint 3D:

Paint 3D comes pre-installed on Windows 10. You should already have it installed on your machine.

If you do need to obtain a copy, you can download *Paint 3D* for free from the *Microsoft Store*.

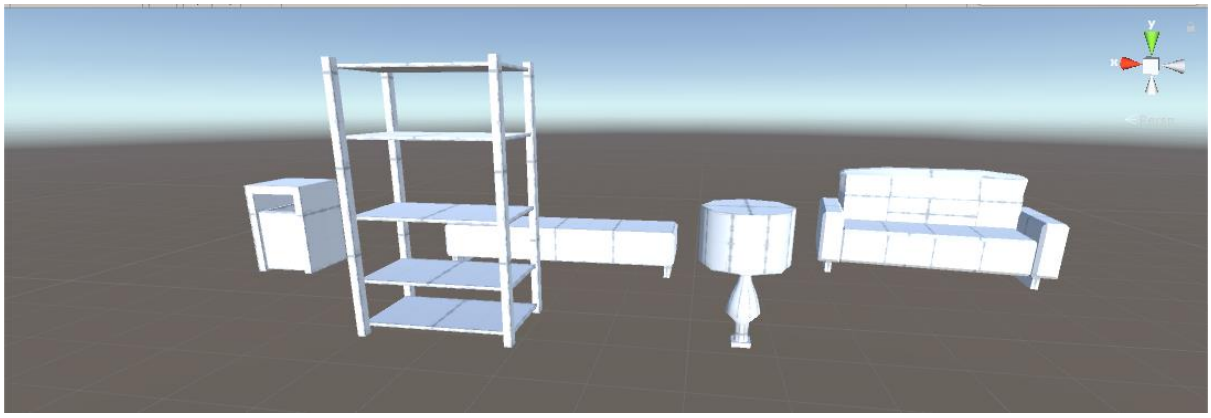
While there are other (perhaps more professional) programs around, many only have limited free trial periods or require a lot of training to use well. This tutorial discusses *Paint 3D*, both because of it's ease of use and for its affordability.

Loading and Painting a Model:

Download the *Greyboxing Assets* from Canvas.

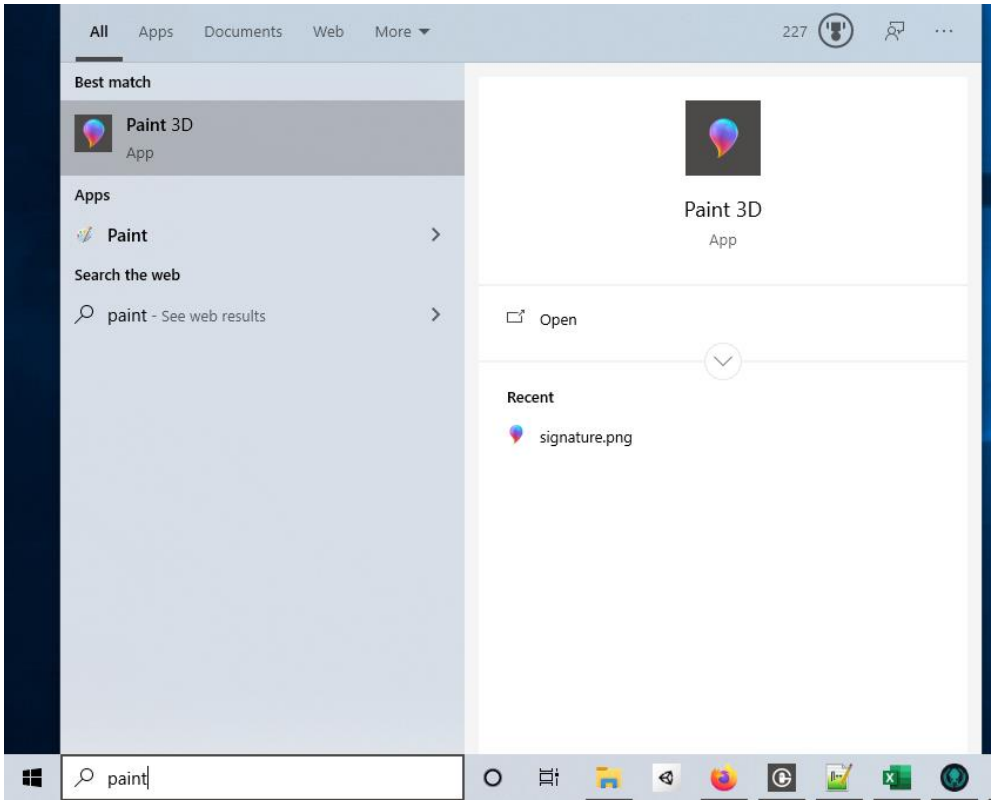
This .zip archive contains a number of 3D models that may be useful to you when making the levels in your game.

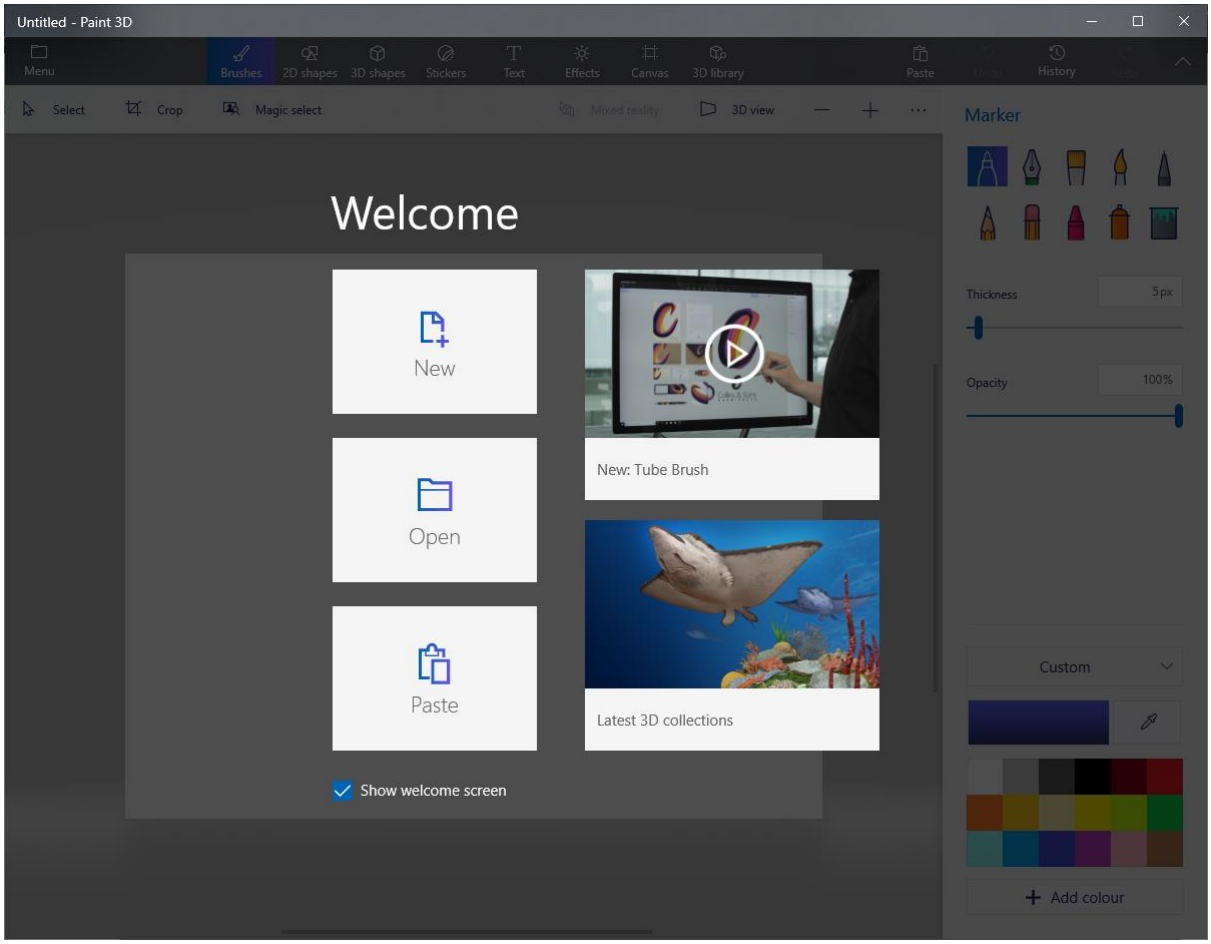
Extract the .zip file on your computer using a program like 7zip (https://www.7-zip.org/)



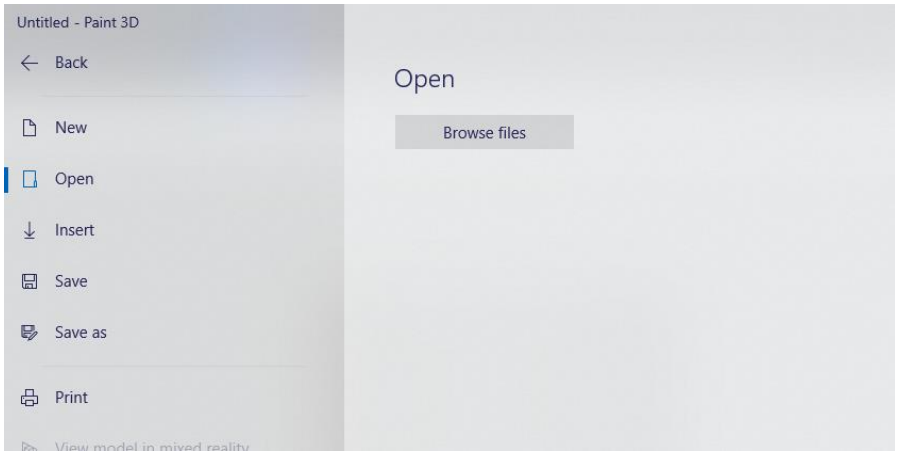
All of these models can be imported directly into your Unity games, however they have no texturing applied to them.

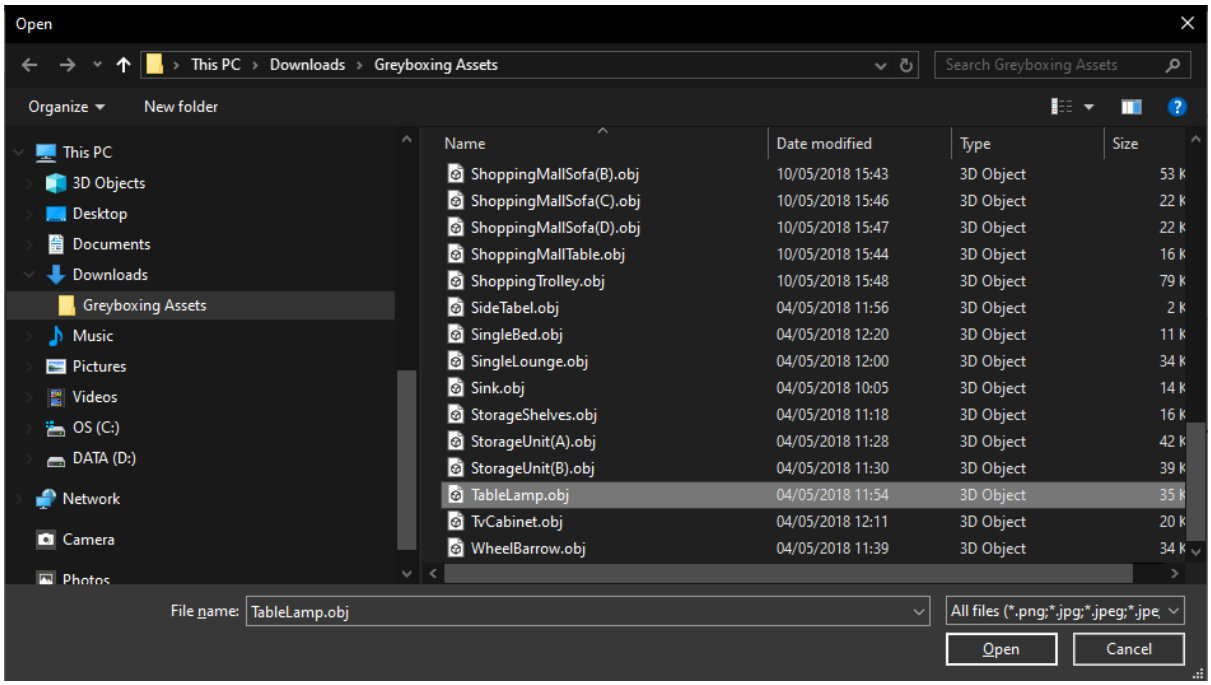
Open *Pain 3D* by searching for it in the *Start* menu





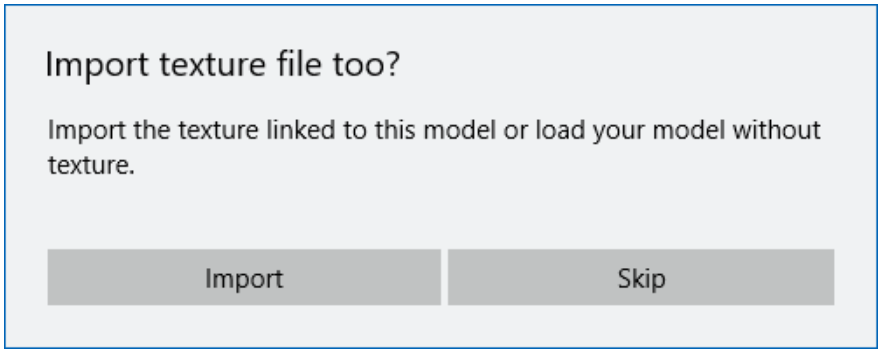
Select *Open*, and select one of the .obj files in the *Grayboxing Assets* you downloaded



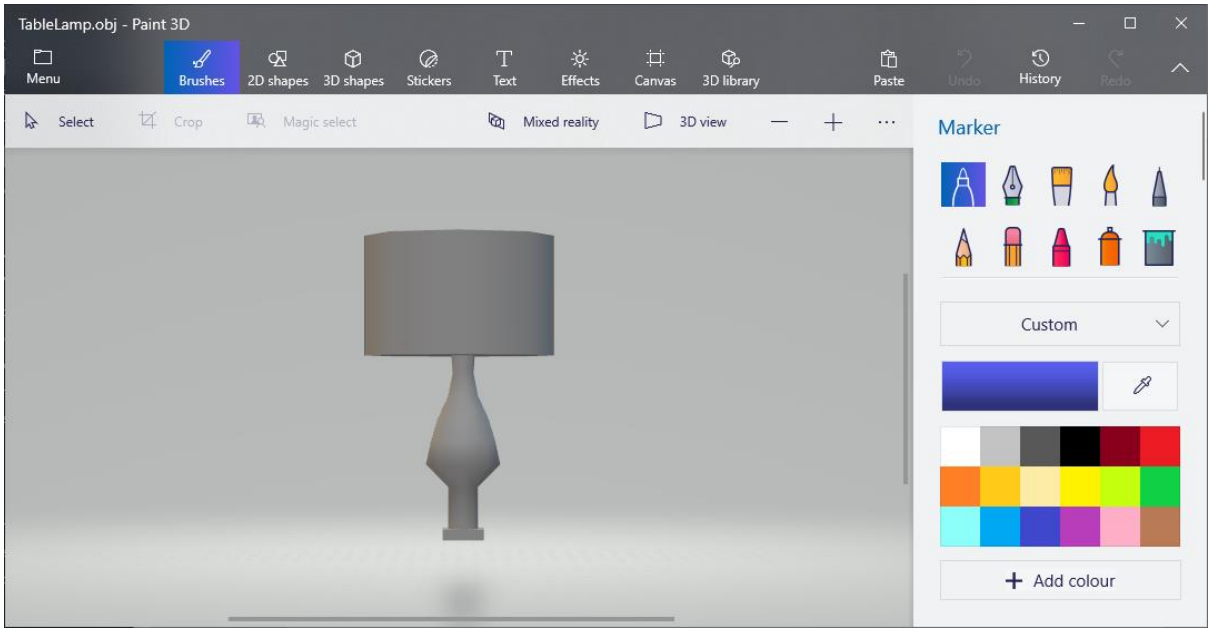


Paint 3D will ask if you want to import the texture associated with this model. The texture contains the information about how this model should look (i.e., it is the image that stores information about what parts of the model are which colour.) Since our models in the grayboxing assets don't have materials (they're just plain gray) you can select *Skip*.

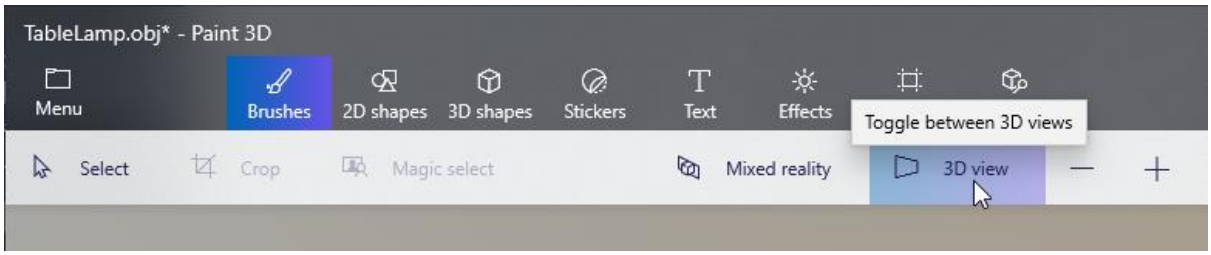
Select *Skip* when asked to import the texture



You should see the model appear inside *Paint 3D*



Place the view into 3D View by pressing the *3D Veiw* button



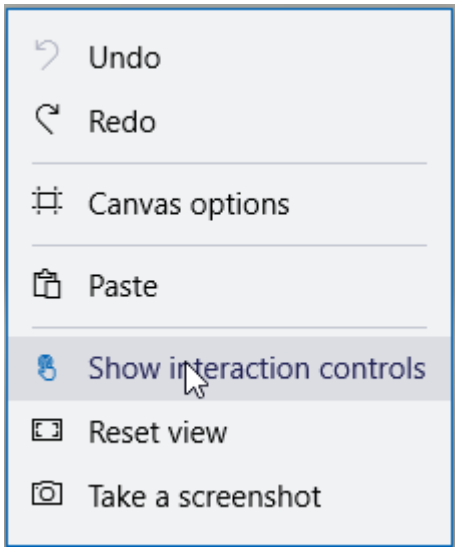
You can now navigate in 3D space using your mouse.

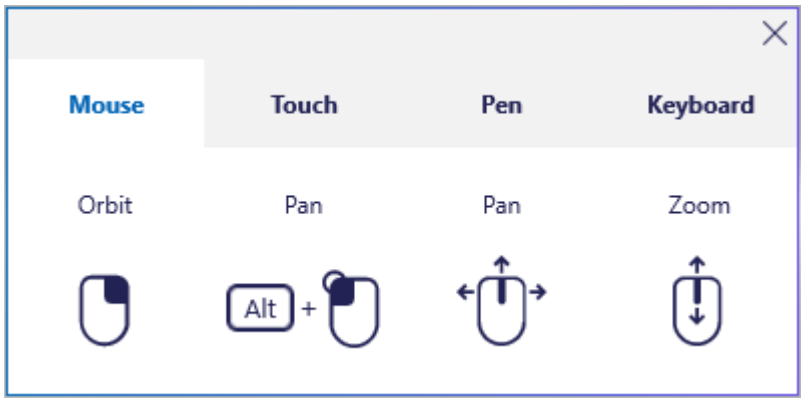
To **orbit**, hold down the *right mouse button* and move the mouse. You will see your view rotate around the model.

To **pan**, hold down *Alt + left mouse button* and move the mouse. Your scene will move up and down or left and right depending on the direction of mouse movement.

To **zoom**, use the mouse *scroll wheel*.

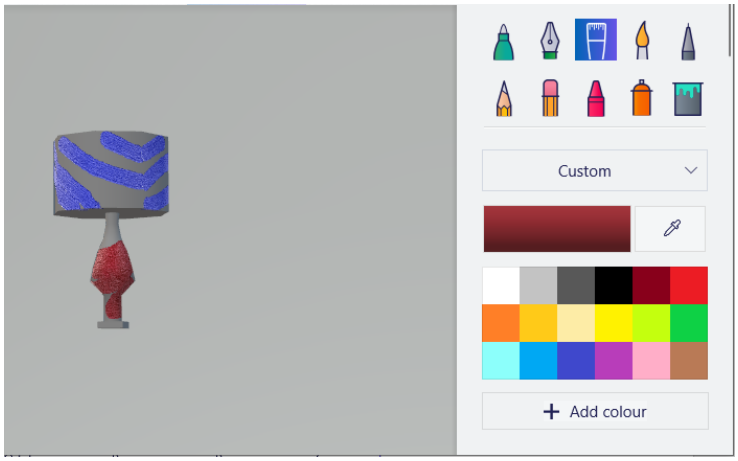
If you ever forget these controls, you can display the *Interaction Controls* by selecting *Show interaction controls* in the context menu that appears when you press the *right mouse button*.





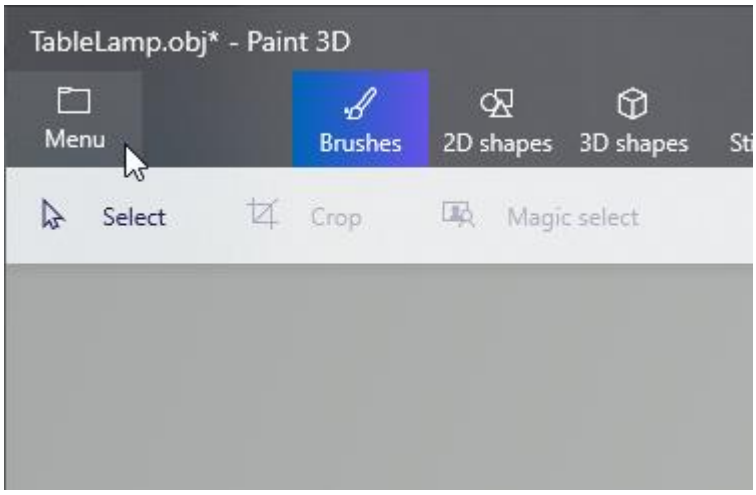
Experiment navigating around your object.

To paint, you simply select the brush and colour from the options on the right of the view, then press the *left mouse button* anywhere on the model to apply the selected colour.

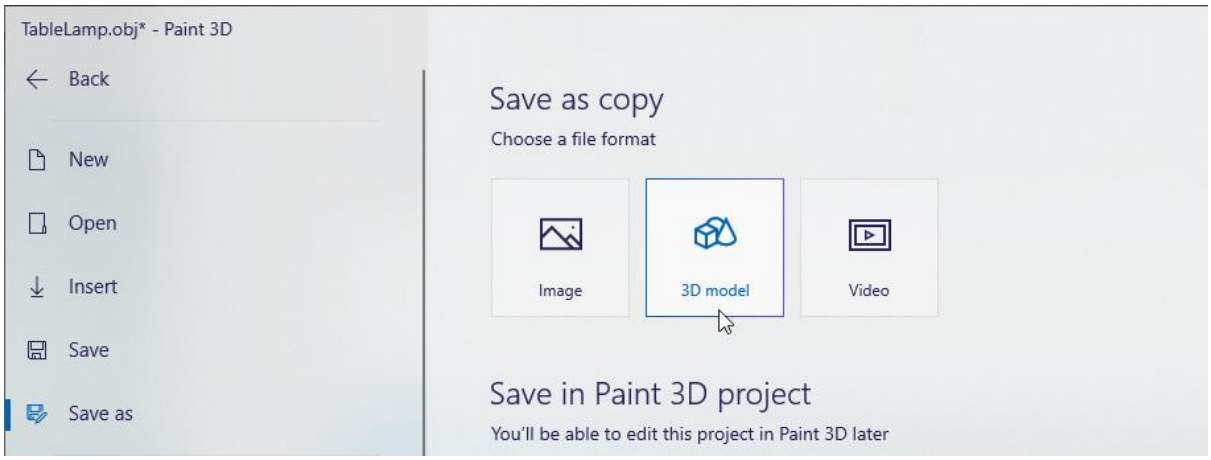


Saving Your Model:

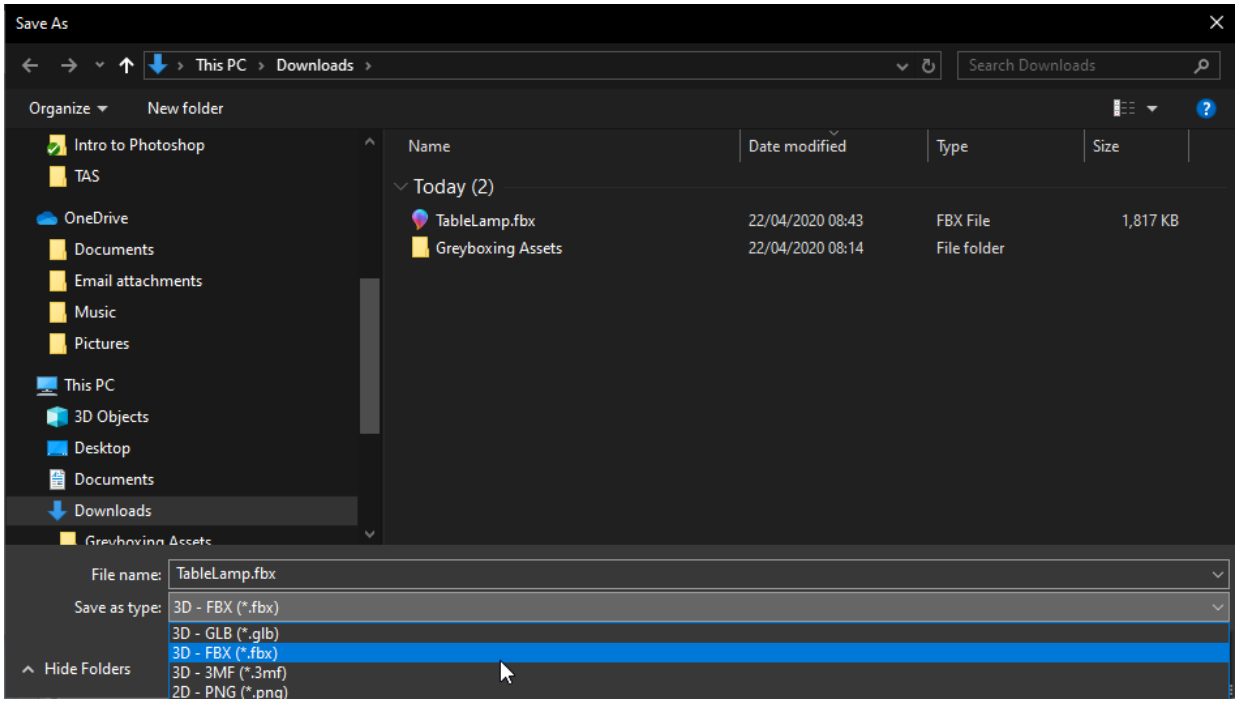
Select the *Menu* icon in the top left



Select *Save* > *3D Model*



Save your model as an .fbx file



This completes the steps required to create and save a textured model. Now we can open Unity and import the model into our level.

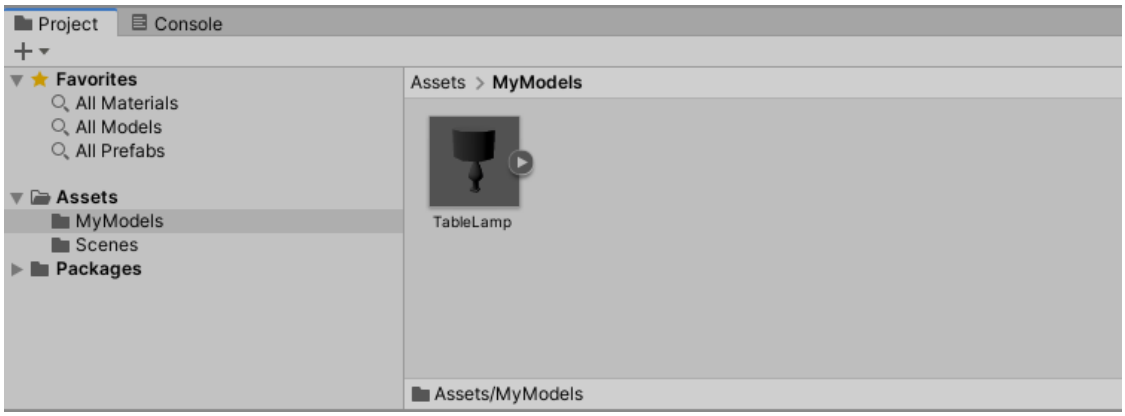
Importing Into Unity:

Open your Unity game.

You might like to create a new folder for your textured models.

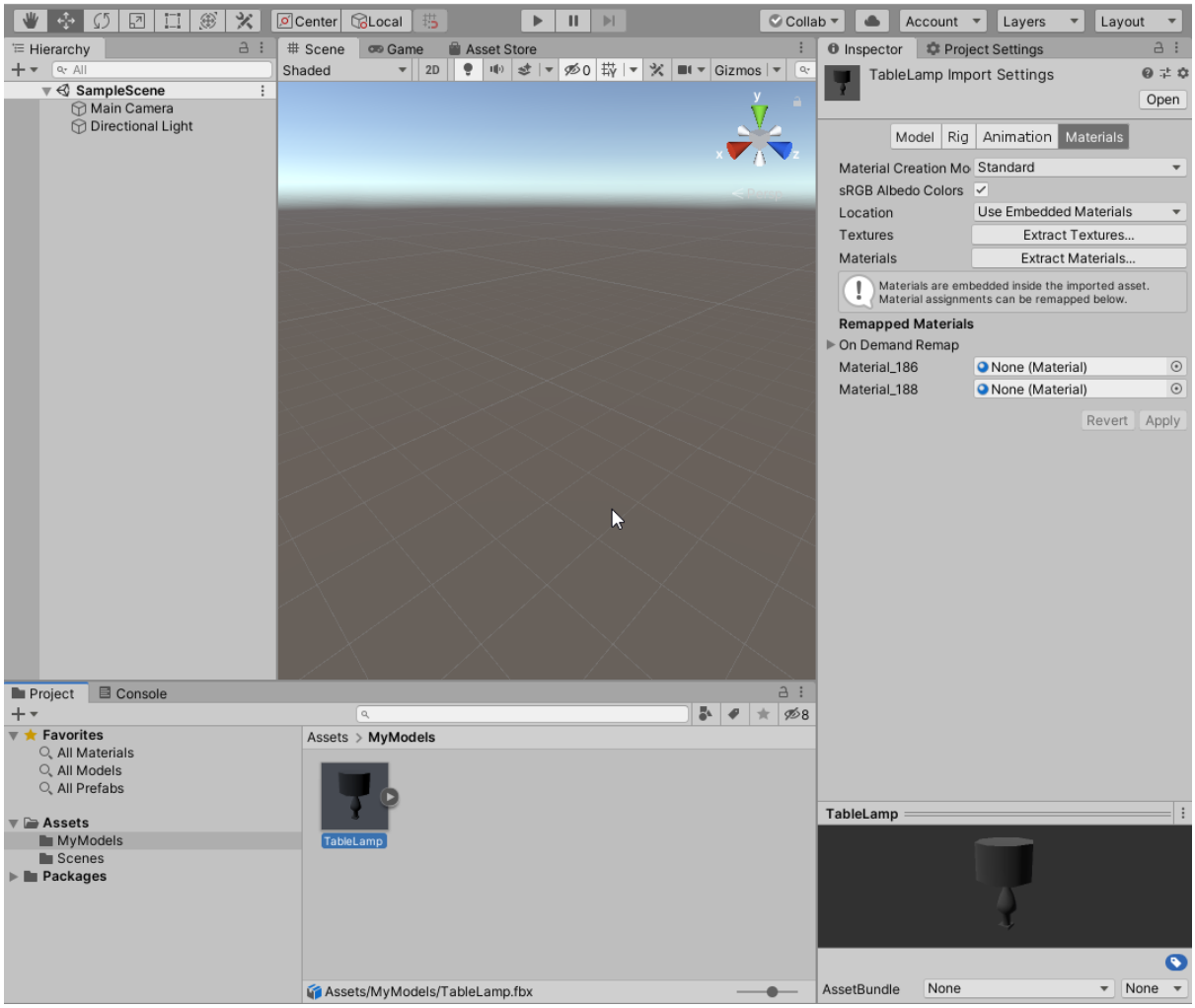
Copy both .fbx model file into your desired folder in Unity. You could either copy this via Windows Explorer, or drag the files from a Windows Explorer window into the *Project* window in Unity.

You should end up with the untextured 3D model appearing in Unity's *Project* window.



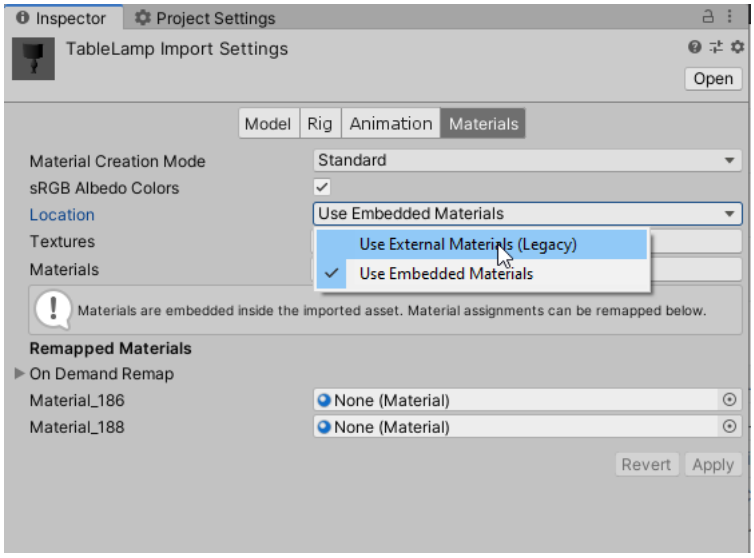
We now need to set up the model so that the texture information is applied.

Select the model in the *Project* window. This will display some setting options for the model in the *Inspector* window.



In the *Inspector* window, select the *Materials* tab.

For the *Location* field, select *Use External Materials (Legacy)*

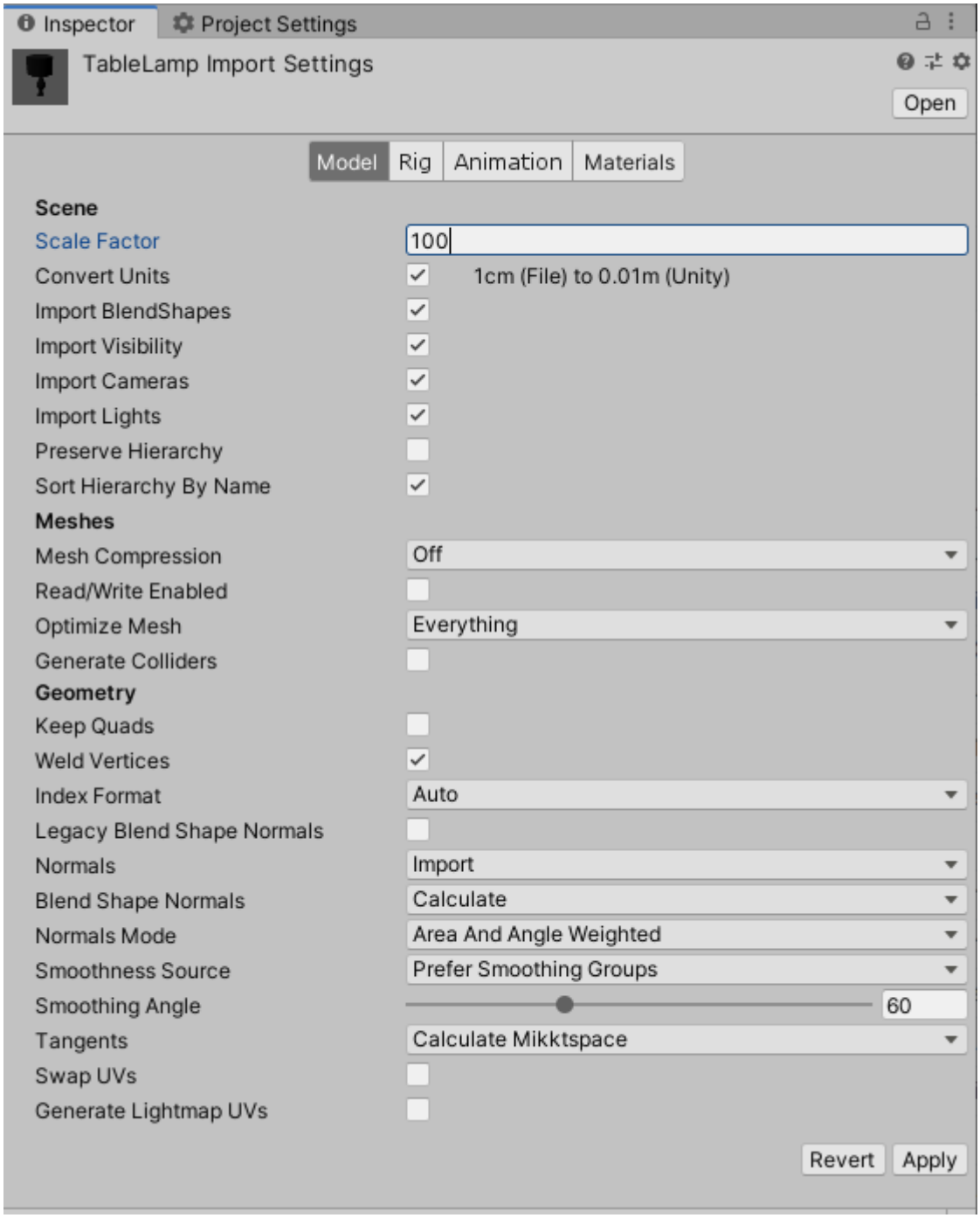


Press *Apply*

You'll see 2 new folders created in the *Project* window. These contain the textures and materials that Unity extracted from the .fbx file.

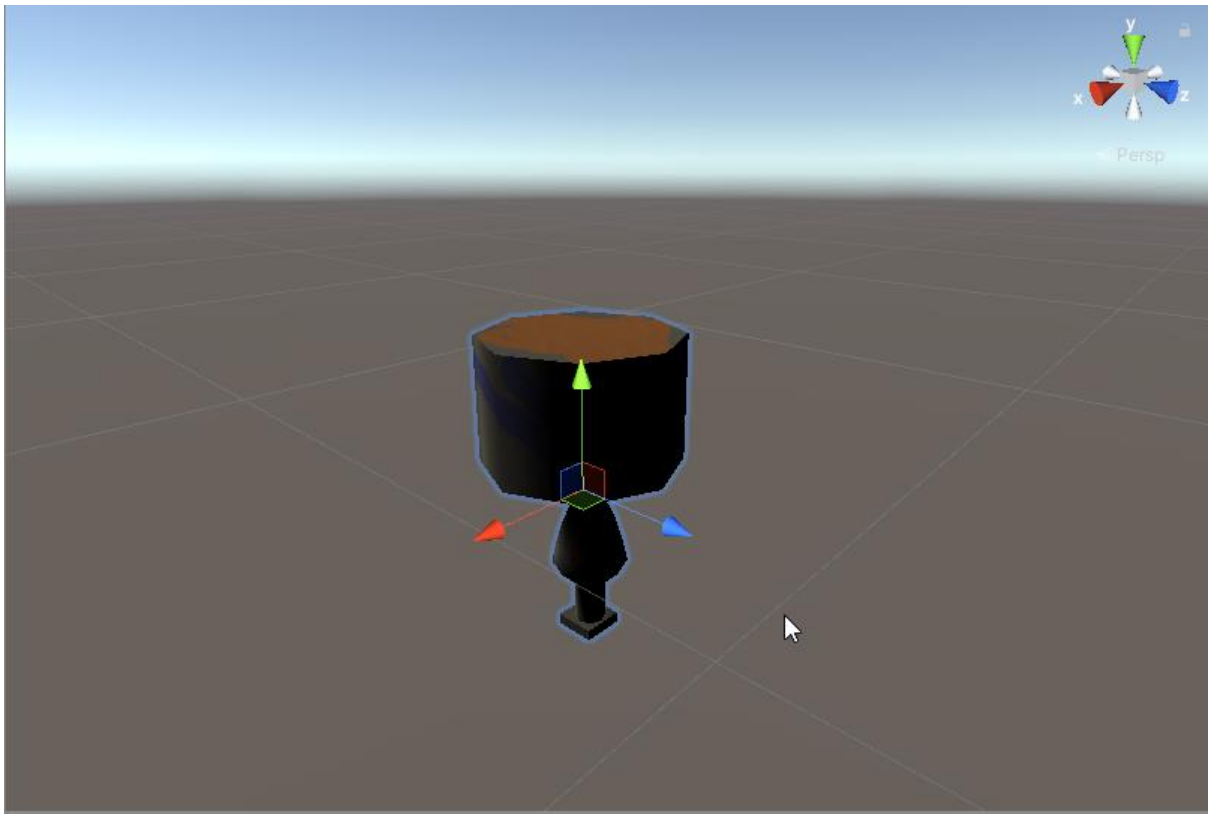
We will also need to scale our model up a bit, otherwise it will appear too small within Unity.

Open the *Model* tab and set the value of the *Scale Factor* field to 100



Click *Apply*

You can now add the model to your scene. It will appear with the texturing we applied using *Paint 3D*.

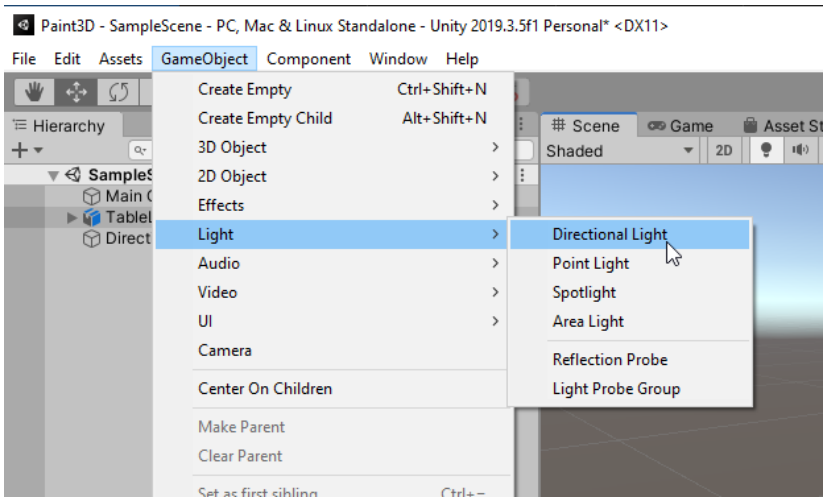


You may notice that the model appears to be a little dark.

There's nothing wrong with the texturing. Our scene doesn't have any lights, so it is just too dark to see the colours correctly.

If this is the case for you, add a light to your scene.

A directional light can be used to simulate the light from the sun (which shines in a single direction), and is generally a useful light to have in your scene. Add a directional light by selecting *GameObject > Light > Directional Light*



Rotate the light to get it shining in the right direction, and admire your freshly-imported custom-textured model.