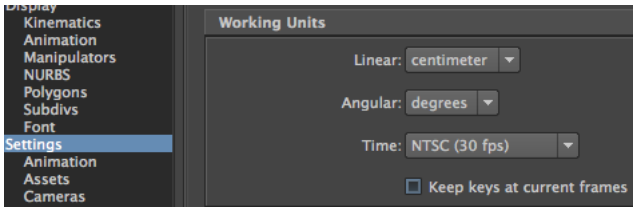
Adding an Animated Object to Unity (5.0) from Maya

Maya Version: 2015
Maya FBX Exporter Version: 2015.0
Unity Version: 5.0

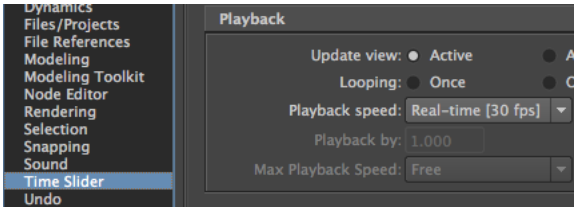
Creating the Animation

It is generally best to include only one object per scene as you import the objects into Unity.

Open the Maya preferences and make the following changes (Maya > Preferences):
Settings section > Working Units section > Time: NTSC (30 fps)
Time Slider section > Playback section > Real-Time (30 fps)



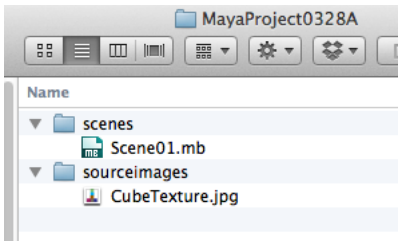
Set frame rate to 30 fps



Set preview playback speed to Real-time

Create your polygon object in Maya and add an animation. If you created your object using Nurbs objects, they must be first converted to polygon objects with Modify > Convert > Nurbs to Polygons. Note the start and end time of your animation. Select your animated object and choose Edit > Delete by Type > History. This simplifies the model for Unity.

Save your Maya scene. Quit Maya and find your entire Maya project complete with all the folders. The next step is to create a simplified version of your model. Duplicate the entire project folder by Option-dragging it next to the original. Open the duplicate and remove all folders except the scenes and sourceimages folders.



Simplify project by eliminating everything except scene and textures

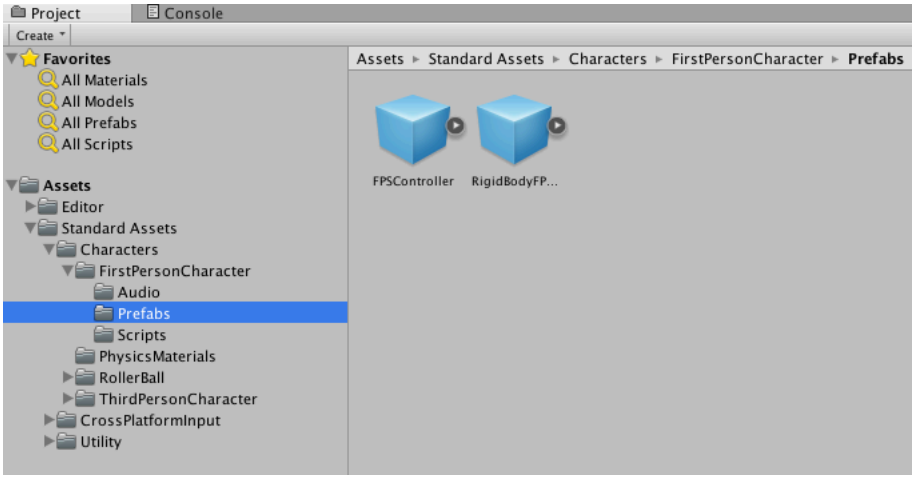
Once you have finished you should have a project with two folders. Your scene is in one and your textures in the other. If you have multiple versions of the texture, only include the one that was connected to the object, preferably a jpg. Remember not to use spaces or symbols for your project or file names.

Unity Scene Setup

Launch Unity and start a new project, File > New Project. Save your scene by choosing File > Save Scene.

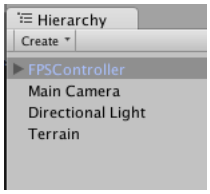
Add a Terrain object to the scene by choosing GameObject > 3d Object > Terrain. This will give you a ground plane in the scene.

To run around and look at our animation, we need to add a First Person Controller. Choose Assets > Import Package > Characters. Click Import once the Importing Package dialog box appears. Open the folder labeled Standard Assets in the Project panel. Now open the sub-folder labeled Characters. Inside the Characters folder you will find a folder called FirstPersonCharacter. Open the FirstPersonCharacter folder, then click the Prefabs folder. The contents displays in the panel to the right. Drag the FPSController from the panel to the Scene window.



Drag the FPSController to the Scene window

With the FPSController selected in the Hierarchy panel, hover the mouse over the Scene window and press the f key.

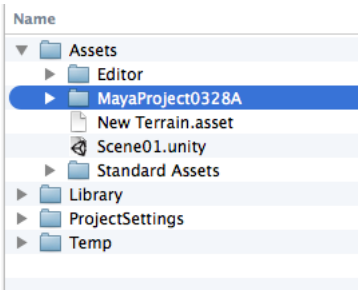


Select the FPSController in the Hierarchy panel to select it in the workspace

This dollys in so you can see the controller. Use the move tool if necessary to move the controller slightly above the terrain. If you forget this step, the controller will just free fall in the scene.

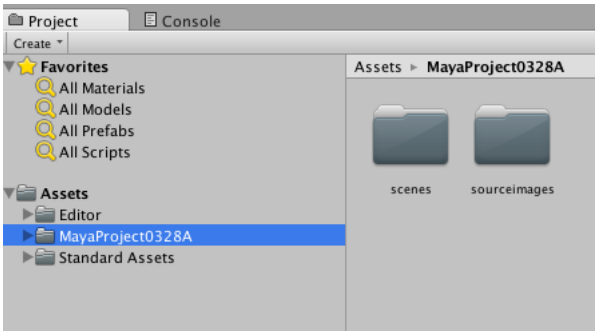
Importing the Animation into Unity

Save your scene, then minimize Unity and find your simplified Maya project folder that you created earlier. Drag the folder into the Unity project Assets folder.



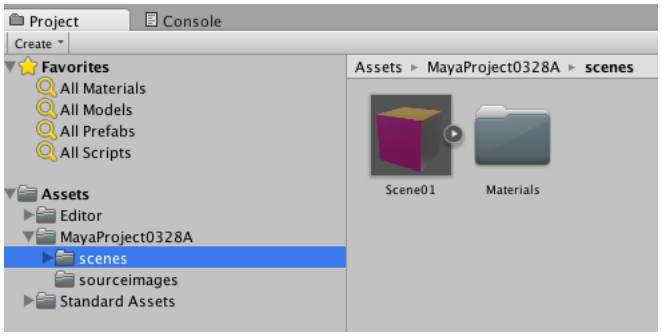
Your simplified Maya project goes in the Unity Assets folder

Return to Unity and notice that Unity is doing some work in the background. It launches Maya and converts the scene so it can be used in Unity. After waiting several seconds, the Maya project appears in the Project panel.



The Maya project is now inside the Unity project's Assets folder

Open the Maya project by clicking the triangle next to it's name, then click the scenes folder. In the panel to the right, click the scene name.

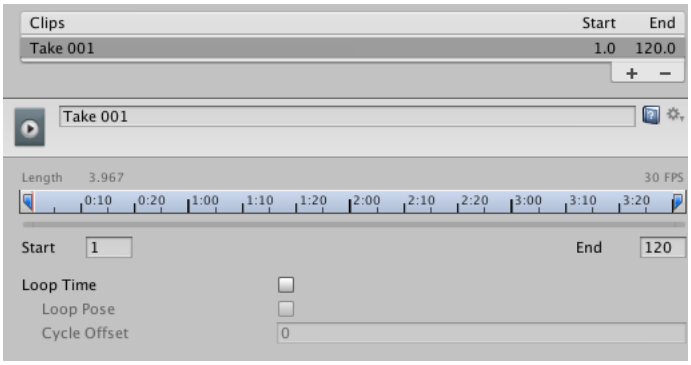


Click the Maya scene icon

With the scene selected, take a look at the Inspector panel. There are three buttons across the top, they are Model, Rig and Animations. Click the Animations button.

Click the Animations button

With the default clip selected (ours was Take 001), set the animation start and end time. You can also change the clip name by entering a name in the box above the timeline. Make sure to avoid spaces and symbols in the name. If you want your animation to loop, click the Loop Time checkbox.



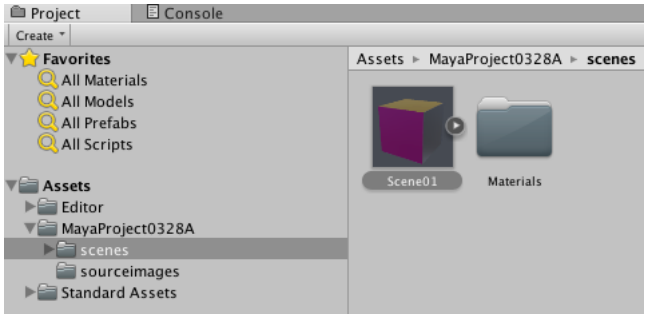
You can change your clip name, set the start and end times and activate looping

Click Apply to save your settings.

Once you are satisfied, click Apply

Adding Your Object to the Scene

With the scenes folder selected in the Project panel, drag your scene into the Unity scene window.

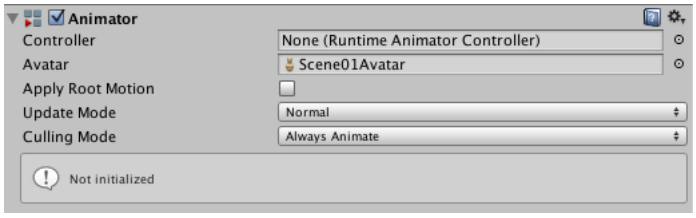


Select the scene and drag it to the Unity Scene window

If your object needs scaling, select the object and change the Scale values in the Inspector panel. Using this method, one Maya unit (centimeter) equals one Unity unit (meter). In other words, the Maya object is 100 times larger once it is imported into Unity. You can position your object in the scene with the move tool.

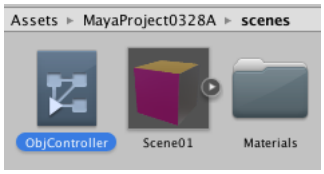
Adding an Animator Controller

The final step involves connecting the animation to the object. Notice that when you added the object to the scene, there were several components added to the object. The Animator component currently has None listed as the Controller. We need to tell Unity that the Maya animation needs to drive the object.



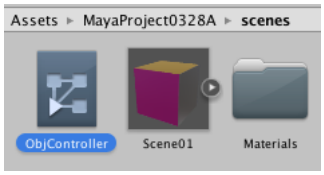
The Animator component has no Controller

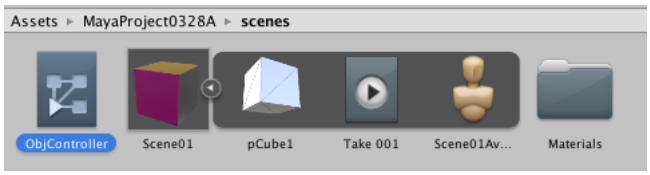
With the scenes folder still selected, right-click the panel that displays the scenes folder contents and choose Create > Animator Controller. Name your controller, ObjController.



Add an Animator Controller by right clicking the panel and choosing Create > Animator Controller, then rename the controller

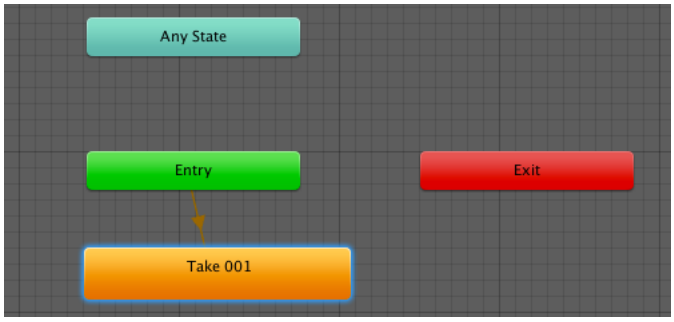
With the new Animator Controller selected, choose Window > Animator. Click the right-facing arrow for the scene in the scene folder contents panel to expose the animation clip name.





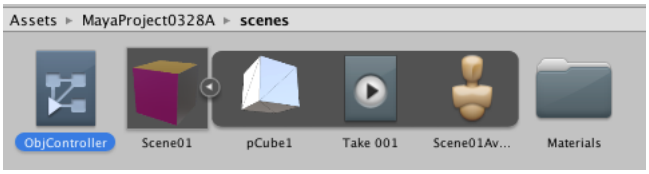
Click the right facing arrow on the scene icon to view it's contents

Drag the animation clip (Take 001) to the Animator window. It automatically connects to the Entry node.



By dragging the Take 001 icon to the Animator window, the connections are automatically made

Return to the Scene window and drag the Animator Controller (ObjController) to the object name in the Hierarchy panel.



Drag the ObjController to the object in the scene

Press Play and navigate in your scene. The object should animate just like it did in Maya. Don't be surprised if your object appears at another part of the terrain. To fix this problem, create an empty game object (GameObject > Create Empty). Parent your animated object to the empty object by dragging the animated object to the empty object in the Hierarchy panel. Now you can move the empty game object to reposition the animated object.