

1. Open Maya
2. File > project > New
You should probably have a separate project that you work in and one for exporting deliverables to the programmers. That way you don't mess up your work by making it just right for export. So just create a new project as explained here, then copy the scenes from the project you did your work in and paste them to the "scenes" sub folder of the project for exporting and make all your final tweaks for export there.
3. (In Dialogue Box) Name your project and choose a location to save
4. **(In Dialogue Box) Click "use defaults" > then "accept"**
Very Important step because it determines the paths that the programmers will need to properly bring the objects and their texture files into XNA.
5. Create and Object. (Make the geometry as simple as possible without sacrificing too much aesthetic and still able to function properly) (You may need to add a few edge loops or split polygon when opening the UV map to make it lay properly, but that is ok) EFFICIENCY is the key!
6. It's best to center the object(s) on the origin because the object will import into XNA relative to the origin. (so if the object is way out in space in Maya, it will also be way out there in XNA and could seem as if the object isn't even there or make it really hard to place. BUT it can be useful at times because it is much harder for the programmer to place things than it is for the 3D artist using Maya. Just be careful)
7. Open the UV map, and create a texture in Photoshop and save it to the "textures" subfolder in your Maya project folder.
The source path for the texture should be
(root folder name)/ texture/(file name).jpg (.png, etc)
8. **This Image MUST have a pixel size of a power of 2!**
2, 4, 8, 16, 32, 64,128, 256, 512, 1024, 2048, etc
EX: and image of 512 x 512 or 1024 x 1024 is fine (I think square is the best cause you have to fit it into the top right quadrant of the UV editor and a square will utilize that space best.
EX 2: 260 x 260 is NO GOOD
9. Check for any unnecessary stuff before exporting as these could slow down the game or just cause some inexplicable bug that will drive you and the programmers insane.
 - a. Delete unused materials in the Hypershade window except for the 3 defaults you can keep those.
 - b. Check your layers list to see if you had any stuff hidden in a layer, like an alternate version of a part of your object or just something you don't need for this export. Delete the layer and the unneeded objects.

- c. Make sure to name all your objects so that when viewed in the outliner list you can easily know what they are (and add an _## to things that might be duplicated through the environment like chairs in a class room, chair_01, chair_02, etc.) You should have already done this in the project you work in and just double check it for the export.
 - d. If you're exporting something that the programmer will need in two parts for animating purposes, etc. then you'll have to export them separately. For example the calipers I would export the long piece and the short piece separately. So I might first delete the short piece in order to export the long piece then undo after the export then delete the long piece to export the short piece. OR you can use "export selected" instead of "export all" it's up to you.
 - e. You might want to Mesh > Combine some objects so they act as one, but I don't know for sure so try it either way and see what works.
 - f. Lastly check the outliner and delete whatever you don't need, just be careful and make sure if you delete something that has a hierarchy to open it's folders to see what exactly you're deleting
 - g. **Edit > Delete all by type > History**
do this then check your outliner again and you'll see it got rid of a lot of unnecessary stuff. This is important as I experienced many bugs bringing stuff into XNA without doing this.
10. You'll want to be sure you're Maya preferences are set up to export using FBX.
Window > Settings/Preferences > Plug-in Manager
Find the plug-in that applies to FBX (probably called fbxmaya.mll) and make sure to check the boxes for "Loaded" and "Auto load" > then "Refresh" and "Close"
 11. Ready for export!
File > Export All []
(or if you selected objects to export separately File > Export Selection [])
 12. (In Dialogue Box) File Type = Fbx
Check "Default file extensions"
Check "Preserve references"
(not sure if these two check boxes are necessary, but I left them that way and had no problems)
"Apply"
 13. A window to name and save your file will pop up.
The save location should be " (Project Name)\Fbx -VERY IMPORTANT!!!
If it's not saved here then XNA won't be able to find the textures and chaos will take over the universe and ruin your whole semester!
 14. Now the seemingly extremely export dialogue box should pop up. Let's go through the various drop down menus.
 - a. Presets - should be fine at default "user defined"
 - b. Statistics - just shows you the current stats for your file, don't need to mess with it.
 - c. Include -
 - Geometry - the defaults should be fine
smoothing groups = checked
Split per-vertex normals = unchecked

convert to null objects = unchecked

Convert Nurbs surfaces to Nurbs

- Animation - we haven't successfully exported any animation that would play in XNA yet but we only tried a couple times. May need a bone structure for XNA to read it, might have something to do with baking or not baking the animation, or might just have to be done by the programmer so you'll have to save the separate moving parts and possibly just create an animated video they can use for reference. Needs some more looking into.

Lights don't really matter cause they will be generated in XNA but I just left the box checked anyway.

- **Embed Media Group**
Embed Media = Checked!
Convert images to portable format (tiff) = Unchecked!

d. Advanced Options

- Units - default should be fine
- Axis Conversion - default should be fine
- UI - default should be fine
- **Fbx file format -**
type = Ascii (this is so the programmer can open the text version of the file and edit it as needed) (also it's best to name your exported file name_ascii.fbx to let the programmer know that it's that type of file since Fbx ascii and binary both have the same extension .fbx which makes it difficult to tell)
Fbx Version = FBX200900

15. "Export"

you can compress the project to a zipped folder and e-mail to the programmers and make sure you back up on your harddrive, the server, and portable drive. Keep multiple versions of your files Impact_Machine_01, Impact_Machine_02, Impact_Machine_03 Save them at different stages, just in case a file gets corrupted (I have experienced this) you can go back to an earlier version and only lose an hour or two of work instead of days of work.

Also I suggest adding the date to folders so you can keep up with what's from when especially when saving in multiple places it's easy to get confused. Ex: Game_Project_05-17 is on your PC desktop and Game_Project_05-19 is on your flash drive. Well you can easily see which one was the one you worked on most recently

This should be it. I hope it works well and saves you the stress of figuring out the pipeline for yourself. Good luck!

If you have any questions let me know. My name is Christina and my e-mail is Kawarimi_no_jutsu@yahoo.com