SSB Level Tutorial

1. Install the GoldenEye Setup Editor (<http://goldeneyevault.com/viewfile.php?id=37>)
	1. Run the Beta Grabber Tool from the Start Menu to download the latest beta
2. First, the best thing to do is export Hyrule Castle, the level, collision, and presets. This is the best way to understood the import format.
	1. Currently only Hyrule Castle can be imported to. The rest of the levels are going to crash on import (due to hardcodings related to movement data and color changes).
	2. Open up the Beta version of the editor, Tools->Switch Editor Game->Super Smash Bros
	3. File->Open Setup Uncompressed
		1. Choose Hyrule Castle level
		2. Open up a US SSB ROM
	4. Export Presets to .obj
		1. The mode is in the bottom left, and starts with Edit Objects
		2. Right click on level geometry, and Export Presets to .obj
	5. Export Collision to .obj
		1. Click Edit Objects to change it to Edit Clipping
		2. Right click on level geometry, and Export Clipping to .obj
	6. Export Geometry to .obj
		1. Click Edit Clipping twice to change it to Edit Room Positions
		2. Right click on level geometry, and Export Full Level to .obj
	7. These can be used as guidance for where to place and how to create your new level, though more details will be included in the Tutorial, this is a good place to look for help.
3. Create the Geometry
	1. Z=0 is the plane where collision is placed (and your level should have the geometry centered at this spot)
	2. The level can be split up into rooms, by naming the geometry Room00, Room01…Room09, Room0A, Room0B, etc. The names are in hexadecimal, and can be up to 0x40 rooms. The split up is required if there are too many vertices total after conversion (more than 0xFFF, which is max per room).
	3. Textures must be bitmaps of 32 x 32, 32 x 64, or 64 x 32 and should be 32-bit or 24-bit in source.
	4. All bitmaps need to be in the same folder as the .obj/.fbx (FBX is supported with vertice shading, but obj2an8 must be configured and setup first, see Appendix A for setup).
	5. ClampS, ClampT, MirrorS, MirrorT, TopFlag, and Transparent can be added to the material names or bitmap name to turn on those features for triangles. This can also be done manually after conversion.
4. Create the textures.txt file containing all the bmps used
	1. This should be a file of all the bitmaps in the material file, and is used during import to import the images to level, in that order
	2. There should be only one bitmap per line, and it is the name and extension only (not the full path)
	3. This must be the in the same folder as the .obj/.fbx and bitmaps
5. Create the Clipping
	1. Create clipping in 4 groups, with the tags Collision\_Floor, Collision\_Left, Collision\_Right, and Collision\_Ceiling, with Z always 0 (any other values are ignored, always imported to Z=0)
		1. If the modeling tool support lines (such as Blender), create lines (2-sided polygons).
		2. If the modeling tool does not support lines (such as XSI), use 3-sided, but try and keep linear and the middle in the center.
			1. This can be cleaned up after import
		3. Collision\_Floor is all walkable surfaces
		4. Collision\_Left is wall that the player would bump into from the right side
			1. If there is any confusion, after import, compare the color imported to the color on the same side in Hyrule Castle – they should match
		5. Collision\_Right is wall that the player would bump into from the left side
			1. If there is any confusion, after import, compare the color imported to the color on the same side in Hyrule Castle – they should match
		6. Collision\_Ceiling is the ceilings where the player would bump head
			1. Note that this currently seems to not always work properly
6. Create the Presets Obj
	1. This can optionally be done in the editor, perhaps easier
	2. Taking the exported presets file, and drag around the presets to be in their new spots
	3. All presets MUST be above clipping or level will crash on load
7. Import Geometry
	1. Open up a clean SSB ROM using the Hyrule Castle Level
	2. In the Visual Editor File Menu, choose Convert->Convert Model File To…Convert Model File to Level and Export
		1. Pick the textures.txt that has the textures
		2. Choose the level .obj/.fbx
		3. Choose the output ROM to save
			1. After saving, it will also import the new geometry to visual window
8. Import Collision
	1. In Edit Clipping Mode, right click on any geometry and choose Import Clipping from .obj -> Import Clipping from .obj.
	2. Choose the collision obj
9. Import Presets
	1. In Edit Objects Mode, right click and choose Import Presets from .obj
	2. Choose the presets obj
	3. This can also instead be done fully manually in the editor
10. Manual Geometry Tweaks
	1. In Edit Room Positions Mode, right clicking and Open Vertice Coloring Tool provides a brush tool to shade (the Lighting Tool, covered later in the tutorial, can be done first, and then manual tweaks done later)
	2. To change parameters about a triangle or texture, right click on it and choose Replace Triangle/Group Texture/Details
		1. Can manually add Clamp, Mirror, etc, change texture, as well as more advanced features to manually edit displaylists
		2. By unchecking Current Triangles Only can make the change to all triangles of same texture when hit OK.
	3. Right Click and Open UV Editor can manually edit UVs of triangles.
11. Manual Collision Tweaks
	1. Click Clipping Off so it shows Clipping On to view clipping data
	2. Right clicking on a point, can allow for making that point have Grab or Fall-Through set.
	3. If any triangles are present, right click and choose Convert All to 2-points.
		1. If this is done, the game could crash with AI opponents, as 3-point clipping usually has more issues
	4. To move any clipping points, Control-H must be pressed once, so that moving points is not disabled
	5. Points can also be deleted or inserted manually here and type of Ceiling, Floor, Left, Right, although it is easier to reimport from .obj in those cases
12. Manual Preset Tweaks
	1. In Edit Objects mode, dragging around presets can position them
	2. All presets must be above clipping or level will not load
	3. They can also be manually inserted by right clicking
	4. Hyrule Castle level must contain player start points (Objects 0000-0003), Item Spots (0004), Tornados (000D), Respawn Points (0018-0020), and then the 1P spots of (0021 for Human, 0025 for Computer).
13. Light the map
	1. In Visual Editor menu, Mode->Switch Mode To->Edit Light Sources
		1. The prompt will ask about lighting parameters
			1. In general, use an angle of 60 degrees and Area/Angle, although user can experiment
		2. Insert a Sun light
		3. Right click and Edit Light Source Properties
			1. Click Select All for Rooms and Click Apply Changes
				1. All Rooms should now be affected, but probably won’t look right
			2. Change the vertical rotation to lower right angle, such as 45 degrees, and the horizontal rotation to something like 210 degrees and Click Apply Changes
				1. Level should light a bit better
			3. The Algorithm:SunLight can be changed to Hemisphere then click Apply Changes to not have as dark backs
			4. Blocking can be used to block, but it has to be used carefully or may get odd effects
			5. Experiment as needed
			6. An ambient occlusion light also may help with some subtle improvements, and it must also be applied to all rooms
		4. When done, close the Edit Light Source Properties, and right click on geometry and choose Bake Bgfile All Rooms and confirm
		5. Go back to Edit Room Positions, now lighting is setup.
			1. Make any manual tweaks using the Open Vertex Color Tool, as necessary
		6. Changes are not applied to the ROM until it is saved!
14. To save the final ROM
	1. File->Save Setup Uncompressed
	2. If any Geometry has been modified (any manual tweaks or lighting), when prompted “Do you want to re-export the background?”, the answer must be yes, or else those changes will be lost.
		1. It is generally save to always answer Yes to this question, unless is an original level.
15. Test your ROM on console to confirm console compatibility
	1. Emulator usually works even if console fails
	2. As needed, redo any of the previous steps, and can Open the edited ROM for editing, then resave it
16. Create an XDelta Patch for release, and submit
	1. Tools -> XDelta Patching -> Generate Super Smash Bros XDelta Patch
		1. Choose Clean unchanged SSB ROM
		2. Choose the edited SSB ROM
		3. Create the patch name
17. Submit to subdrag@goldeneyevault.com
	1. In a zip file
		1. Include a Readme File
			1. Include the nickname desired as the creator
		2. Include a Picture
		3. Include the Patch

Appendix A Setting up Obj2An8 (By Pavarini)

1. Download <http://goldeneyevault.com/viewfile.php?id=255>
2. Download obj2an8 and extract objtoan8.zip\bin\(x86 or x64)\ObjToAn8.exe. Copy ObjToAn8.exe to the editor directory. It is important that you select the correct bit version that matches your operating system.
3. Download the FBX SDK and install. Open the folder C:\Program Files\Autodesk\FBX\FBX SDK\2014.1\lib\vs2008\(x86 or x64)\ and copy libfbxsdk.dll to the editor directory. It is important that you select the correct bit version that matches your operating system.
4. Run the editor and open the Tools>Preferences window. Set the location for ObjToAn8.exe (which should be C:\Program Files (x86)\GEEdit3\ObjToAn8.exe) and click OK.