

GIANA SISTERS – MORPHING ASSETS CREATION



1. Modeling

Please check the 2 samples we provide (castle and bench) to help you to understand how we do the morphing between two 3d assets.

The goal is to morph from the left character to the right one. The morphing is done in 3dsmax with the Morpher modifier. This means that the amount and the order of the vertices between the two meshes must be exactly the same.

Some parts of the mesh are too hard to morph (the lamp the character hold in his hand for example). When we have that kind of case, it means that the lamp should be in both characters, but in the second one the lamp is just scaled down and hidden inside the body of the gargoyle. We will always point with the concept what should be morphed, and what should be hidden inside the mesh and simply goes out during the morphing (please check the 2 samples we provided, because there's also some part of the mesh which doesn't morph). For this case for example everything is morphing except the lamp and the two horns (lamp should scale down and be hidden inside the body of the gargoyle, and the horn must be hidden inside the head of the dwarf and goes out during the morphing).

To verify that everything is working correctly, the best way is to set a morpher modifier, animate it, so it morphs the mesh from the left object to the right one. This way you can see the transition in the viewport.

2. Mapping

For Mapping you can use two different mappings (one for each object). For the mapping, we do with our game engine a transition between two different mapping channels. It means that you create the mapping for the left character in the channel 1, and the mapping of the second character in channel3.

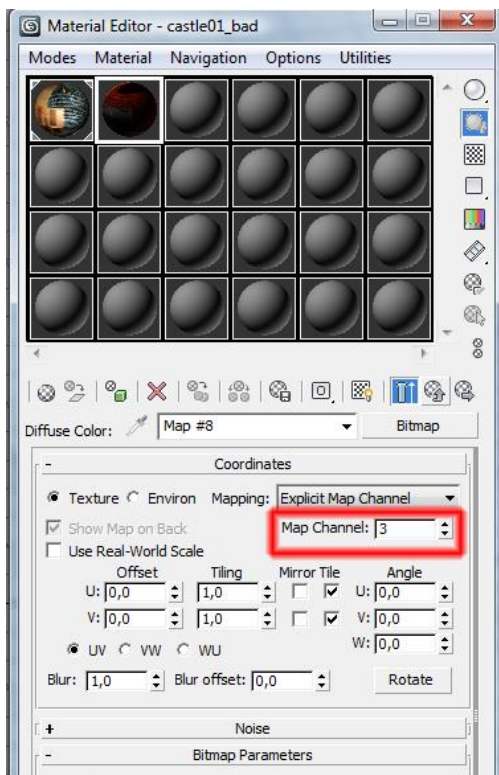
We export only the left object with its morphing; it means that both mapping channel 1 and channel 3 must be present in the left object.

This is the only restriction for the mapping, the two mappings can be completely different, there's no restriction for the morphing of the mapping, and the only thing is that the two mapping must be present in the left character (channel 1 for the dwarf, channel 3 for the gargoyle).

When you have an element that is just hidden in one of the morphs and not morphing into something else, you have to reserve the texture space in both textures. It means that in the dwarf texture, there should be some texture space reserved for the lamp. The lamp texture must be there in both dwarf and gargoyle texture, same for the horns.

3. Texturing

To see the result in the viewport you can assign one material that has textures assigned to it all using the channel 1 for the original state and one material that has textures assigned to it, all using the mapping channel 3. You can switch between the materials depending on which morph state you are working.



4. Animation

Each morphing object has to have two animations: The first one is the morphing from left state to the right state from frame 0 -15. The second one is the morphing from the right state to the left state from frame 50 to 65.

To achieve a more interesting morphing effect, apply two flex modifiers (one for each animation). Set the first flex modifier to use only the range of 0 - 50 and the second one to 50 - 100 (you can find these parameters under the Advanced Parameters rollout). Now tweak the Flex and Strength values to get the desired effect. In some cases you will also have to adjust the flex behavior of parts of the object, you can do that by ether:

- Uncheck the Use Weights checkbox (every vertex will have the same flex and strength).
- Move the Center (the flex and strength increase the further the vertex is from the center).
- Paint in the desired weights for the vertices by using the paint tool found in the Weights and Painting rollout (the flex and strength intensity will be based on the painted values, unpainted will use the ones based on the distance to the flex center).

You can also create a material to visualize the texture morphing in the viewport (although it is not necessary) by creating a standard material that has a composite map assigned to the used maps. Create two layers and assign the textures to it (the texture for the left state should be assigned to the top layer), again you have to set the map channel to use the correct UVs (so either Channel 1 or Channel 3). Now you can animate the Opacity of the top layer to match the mesh morphing.