PROP STANDARDS

Introduction
If you’re working on a collaborative project, either as a contract modeler or as part of a permanent team, you’ll have to comply with team or studio standards. The ones below are from Nimble Collective, a mid size studio of experienced animators in Mountain View who formerly worked at Pixar, Dreamworks, PDI, and Weta. Their startup is centered on Blender, which I taught to a group of San Jose State interns at Nimble in summer 2016. The project they were trained for was a three minute narrative animation which would be UV unwrapped and animated by others, but the requirements work for any digital modeling project where the result will be handed over to others.

Nimble Collective’s digital modeling requirements for “Roadside Assistance”

Overall Goal
Our goal is to provide props that are well designed, have clean and even topology, can be efficiently surfaced, and may be rigged. Each prop should be designed to the highest of standards and hold up as we move forward with our pipeline.

General
- Real World Scale: this is in meters. In specific instances, we will request a model to be created at 1/10 scale
- Clean scene file (no extra nodes)
- Props should sit at the origin (0, 0, 0) unless provided as part of an environment
- Pivots should be at the origin for static props (trees, rocks, furniture). Pivots should be at the center (or an agreed alternative location) for props that will be moved (the geometric center for a ball, the center of the handle for a mug or a sword)
- Props should render without errors
- Top node of the scene should contain the entire prop and be named <asset>_all (see below for more information on naming)
- A proper hierarchy should be created for each prop with appropriate grouping
- All transformations should be applied [note: use Control-A for this]

Topology
- Prefer quad faces.
- If Nurbs are the best type for the prop - please provide a poly option.
- Clean Topology: Evenly spaced - as square as possible
- No extreme stretching or shearing of geometry faces or UV map faces
Minimal to no triangular faces; absolutely no 5-sided polys or above
Minimal poles [note: poles are vertices with more than four edges flowing into them]
No non-manifold geometry or overlapping meshes inside an object
    [note: a manifold mesh has no holes in the surface and divides the model space into two unconnected parts - inside and outside]
No Lamina faces or extra vertices
    [note: Lamina face is a Maya term - a Lamina face has zero area and is an easy error made during extrusion operations. The answer in Blender is to use Remove Doubles in editmode]
No flipped normals; all normals should be outward-facing
No locked normals
    [note: locked normals do not change orientation during transform operations and may produce rendering artefacts]

Modifiers
The application of modifiers is to be discussed with texture artists, riggers, and animators.

Resolution
High and Low Resolution meshes are required. [note: no specification as to high and low resolution was provided; these are project specific; mesh resolution is defined in terms of the number of pixels in the final highest resolution image]
Each resolution should be saved as a separate file.

Shading
Default basic shader color should be set in a way that “makes sense” for the type of surface:
   A diffuse shader for Cycles should be applied to each object
   Shaders should be named appropriately

UV Layout
The texture artist should be consulted about their preference for UV unwrapping; the texture artist may prefer to UV unwrap the mesh themselves
   If the modeler unwraps, UV Mapping should be applied to every surface
   UV Maps should be oriented appropriately - i.e. if there is a logo to be mapped, y-up on the file texture should be y-up (Z-up if using BLENDER) on the model
Items should have a consistent UV size if they are of the same material
Maximize UV space for hero objects as much as possible
Straighten out curved items in their UV space (pipes, etc)
Detach cylinder caps from cylindrical objects
Leave space between UV islands and leave a border within tile edges (~ 6 pixels)
No overlapping UVs
No UVs outside of tile bounds

Texturing
Texturing will be done by a texture artist but modelers should be aware that the use of alpha channels is allowed, so the use of simple planes for leaves, for example, is acceptable.

Naming
A consistent naming scheme is critical. Every item in a scene should have the appropriate name and description, and everything should follow the same format. This is true of geometry, shaders, groups,
and files. [note: this rest of this final section on naming has been deleted as every studio situation will be different. It’s enough to be aware that naming of files, objects, meshes, materials, textures, particle systems - everything - is critical to avoid confusion and delay.

Chris Yonge  20170621