Unity Humanoid Rigging and Animation Pipeline Guide

This guide outlines a practical workflow for creating and sharing humanoid rigs between multiple character models in Unity using Maya. It demonstrates how to minimise duplicate rigging effort when introducing new characters that share animations and skeletons.

1. Character Artist — Create the Mesh

Goal: Produce a clean humanoid mesh that can share a standard skeleton.

1. Block out the model with simple geometry and human proportions.
2. Ensure clean topology: even quads and good edge flow around joints.
3. Freeze transforms and delete history (Modify → Freeze Transforms, Edit → Delete by Type → History).
4. Set the model's root pivot at (0,0,0) between the feet.
5. Export as CharacterA_Mesh.fbx and hand off to the rigger.

2. Rigger — Create the Shared Skeleton

Goal: Build one clean, reusable humanoid rig for all characters.

1. Import CharacterA_Mesh.fbx into Maya.
2. Create joints manually or use HumanIK with standard humanoid hierarchy (hips, spine, arms, legs).
3. Name joints consistently (e.g., upperArm_L, lowerLeg_R).
4. Bind the mesh to the skeleton (Skin → Bind Skin → Smooth Bind).
5. Weight paint problem joints such as shoulders and elbows.
6. Optionally create FK/IK controls or HumanIK rig for animation.
7. Save rig as BaseSkeleton_Rig.fbx.

3. Animator — Animate Using Shared Rig

1. Animate directly on the shared skeleton (Run, Idle, Jump, etc.).
2. Export animation-only FBXs containing skeleton and keyframes.
3. In Unity, set Rig type: Humanoid, Avatar Definition: Copy From Other Avatar → BaseSkeleton.

4. Character Artist — Add a Second Character

Goal: Create a new mesh that shares the existing skeleton and animations.

1. Model CharacterB_Mesh.fbx using similar proportions and pose.
2. Import BaseSkeleton_Rig.fbx into Maya.

3. Align the new mesh to the skeleton, avoiding joint movement.
4. Bind skin to the same skeleton.
5. Export as CharacterB_Rigged.fbx.
6. In Unity, set Rig: Humanoid, Avatar Definition: Copy From Other Avatar → BaseSkeleton.

5. Workflow Summary and Best Practices

- Skeleton hierarchy must remain identical across models.
- Keep naming consistent for automatic Unity mapping.
- Use the same base pose (T-pose or A-pose).
- Use one base Avatar for all humanoid characters in Unity.
- Creating new characters using the same rig requires only new skin weighting, not a new skeleton.

Following this workflow allows a team to share one humanoid skeleton and animation library across multiple characters. This dramatically reduces rigging time—new characters only require mesh adjustments and skin weighting while all animations remain reusable.