**Object Rigging**

# **Terms to Know**

* **Rigging –** taking an object and specifying the ways in which it can be used by animators, by giving and taking away specific controls
* **“Anim” –** This is our term for animation controls. It’s a way for an animator to control the object without having to access the mesh directly.
* **Parenting** – Allows for one object, the parent, to control another object.
* **Pivot** – the point of rotation for an object
* **Hierarchy** – a system of objects, parented and grouped with one another, which can behave as one object even though they are composed as several, different objects. Hierarchies are primarily created via Parenting and Grouping objects together.
* **Channel** – these are the points of information shown in the channel box, which can be thought of as “attributes” of a specific selected object. These often include (but are not restricted to) translation, rotation, scale, and visibility.

# **Hotkeys**

## **General**

* **Select ‘child’ then ‘parent’ + ‘p’ –** parents the first object to the second
* **‘shift’ + ‘p’** – un-parents the objects
* **‘ctrl’ + ‘g’** – to group objects
* **‘insert’** – enters pivot mode
* **Hold ‘d’** – move pivot
* **Snap controls *(can be used to snap the pivot*):**
  + **Hold ‘x’** – snap to grid
  + **Hold ‘c’** – snap to curve (& edge)
  + **Hold ‘v’** – snap to vertex

# **Tips**

## **Rigging**

* Particularly with Rigging, you will want to follow the directions exactly. The order that things are selected in also matters. You might want to consider checking off the steps as you go.
* The biggest thing about rigging, though this is more applicable to more complicated rigs, is testing. **Test, test, test, test, test.** You will want to constantly test as you work to make sure that it has the behavior that you want.

## **Freeze Transforms**

* Technically, this option resets all of the channels in the channels to 0, without moving the actual mesh.
* Functionally, this option allows you to set a new “base point” for your mesh, so that by zeroing out all of the values in the channel box, you end up at a good start or base position.

## **Top Con**

* The Top Con stands for “Top Control”, and **should not** be animated! It allows for a “clean” version of your rig to be imported from scene to scene.
* If your top con is not keyed, this lets you take an animated character from one and then put that character in another scene, without needing to copy specific keys on the top con. If you animated the top con, then the character would be keyed in a specific position, and could not be moved to another position on the new scene!
* The important takeaway is: **Don’t key the top con!** As you begin to have multiple characters in a scene, and more complicated scenes with uneven ground, and multiple sets, this becomes even more important, which you’ll find out in the coming quarters.

## **Hierarchy**

* There are two ways to put objects in a hierarchy:
* Grouping is when you group two or more objects together, underneath a parent “group” node.
  + When you scale, translate and rotate the group, you also do it to all of the individual members.
  + Grouping also can be a nice way of changing the pivot point of an object without actually changing the pivot, because the group node has its own pivot point, which can be different than those of its members.
* The other way is by Parenting, which looks kind of like grouping, but has some important differences.
  + The order in which you select parents is important: the last object you pick, when parenting using **CTRL-P**, becomes the parent. There is no new node created in parenting, unlike grouping.
  + Also, you can parent objects that are parented to one another. This can create parented trees, which is how you will use rigging to create skeletons out of characters. But more on that in the next assignment!