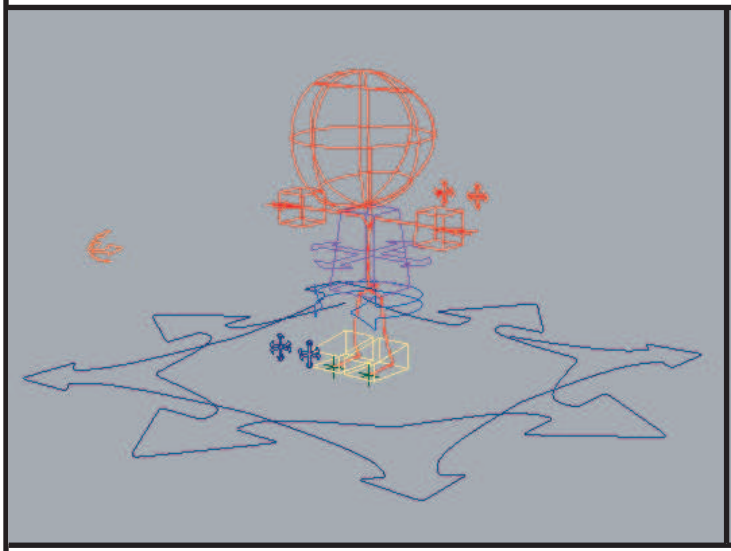
Backyard FOOTBALL

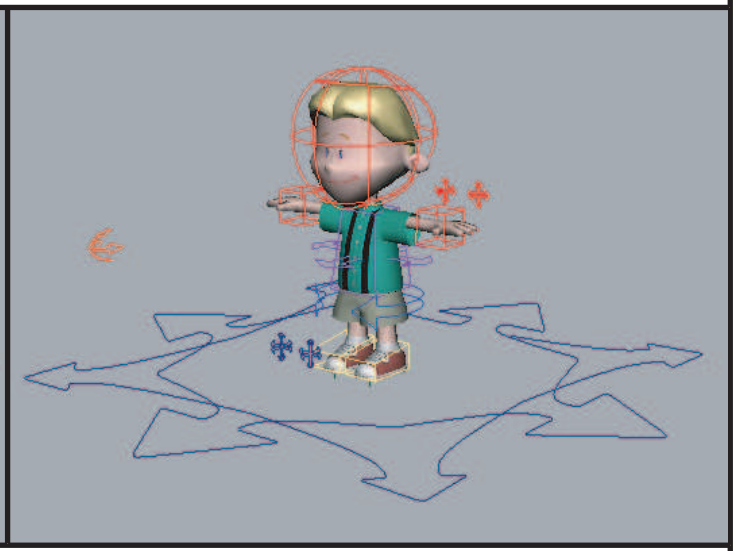
This is a full description of my role on Back Yard Football as the Lead Character Technical Director and Animator.

By Tyrone Woodland 2003
tyrone@tyronewoodland.com

Backyard Football Pipeline

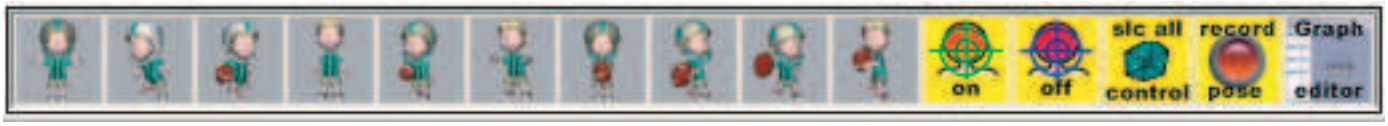
The challenge on backyard football was making a rig that would give the animator's the freedom to animate with a smooth work flow and stay in the limitations of the games engine. First I built and tested the rig and made a few improvements. Next I helped with making the automated skeleton system and pose shelves. Let me give you a quick walk through on how the automated skeleton system works on the next page titled rigging controls.





I made several shelves to help on the work flow. The animation shelf has all of the controls the animators need. On the animation shelf below the buttons consist of rig skeleton, lock feet, hide controllers, hide joints, turn IK on and off, head aim, export animations and record pose. The record pose was a great script to record key poses.

The pose shelf is to pose the characters in key start and finish poses so that animations would blend seamlessly from one animation to another. Since there were so many characters with different body sizes there were three pose shelves small, medium and large. These shelves really helped to speed up the work flow.



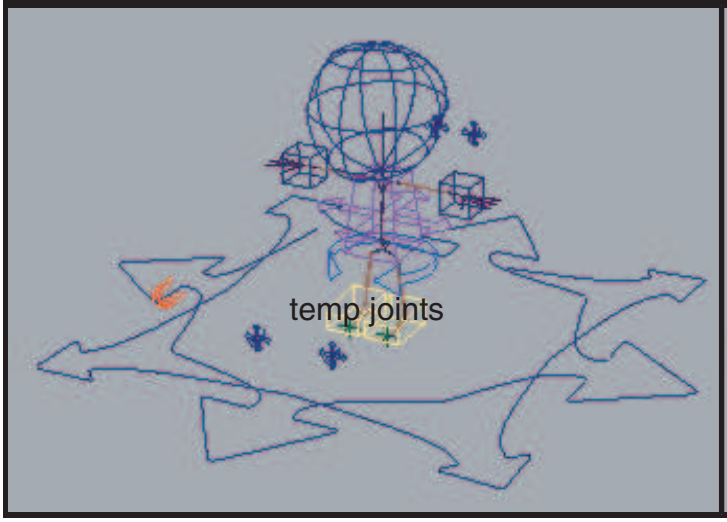
Rigging the Character

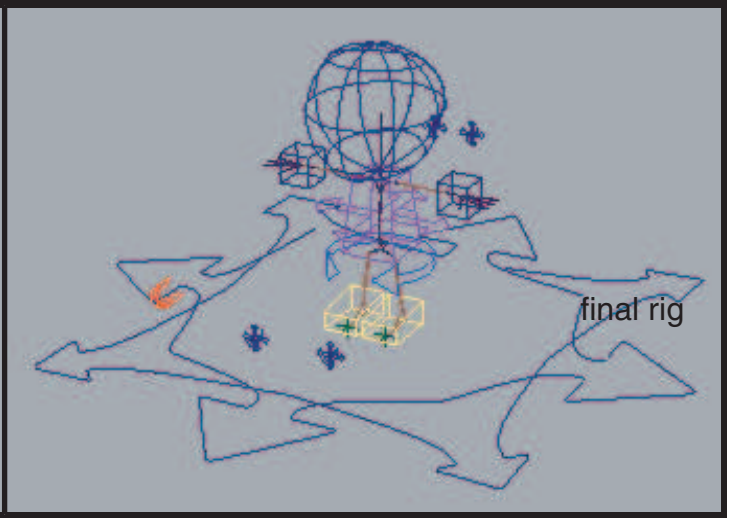
The automated skeleton system is a mel base script. First you click on the shelf button rig. Next a dialogue box will appear.

Make temp joints
Temp joints are locators that can be moved any where you want to place a joint.
Create Rig
Makes the joints, adds all the controllers and set driven keys
Delete Temp joints
Deletes the locators
Hide Unused Channels
This removes all the channel controls that are not needed
Define Character
Adds characters from the trax editor
Add Face Controls
Adds Facial animation to the characters
Add Interactive Objects
Imports the ball to the scene

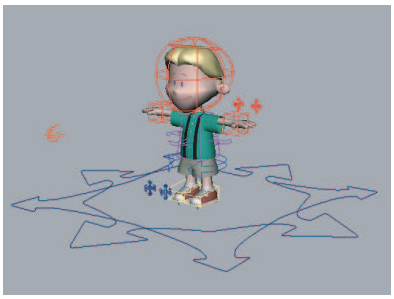
After a few easy pushes of a button the rig is built. Having the automated skeleton system was a huge time saver because we had over 40 different characters to rig and animate.

Automated Skeleton System





Character Controls



Main Control

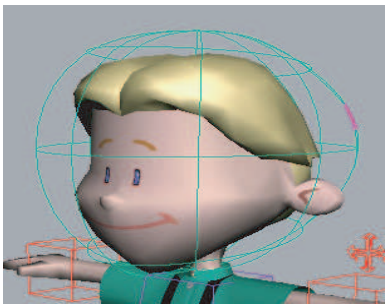
This controls the entire character so the character can be moved, rotated or scaled. The primary reason for this control is to reposition the character in the scene.

Root Control

The root controls the Center of Gravity. You can also control the translation, rotation, upper and lower back, side, and twist on set driven keys.

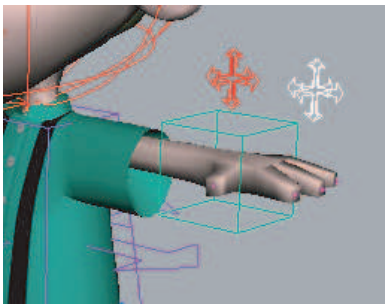
Hip Control

For hip movement.



Head Control

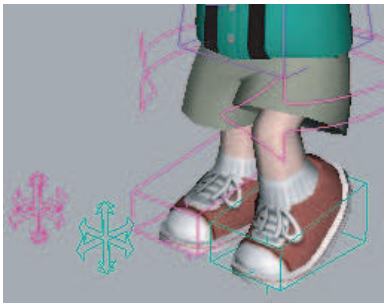
Controls the neck rotations, also a head constraint was added to help limit the head movement with an on and off switch.



Arm & Hand Control

The arm is IK& FK switching with a pole vector on the elbow.
The hand controls are for fingers curling, speading and making a fist.
Also all of the fingers have individual controls of rotation.

Character Controls

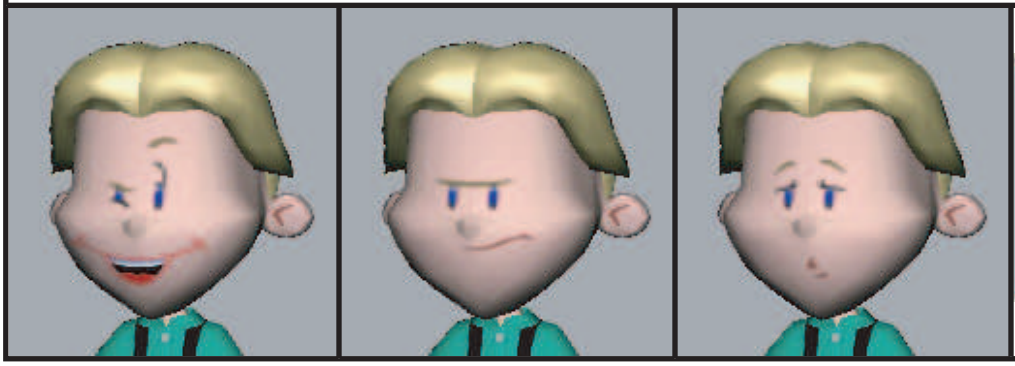


Foot Control

The foot is controlled by IK and a pole vector on the knee to orient the knee. For foot control there are toe roll, toe flop, toe pivot x,y and heel pivot x,y.

Facial Controls

Facial expressions and 2D textures are controlled by set driven keys.



Visibility	on
Right_footstep	off
Left_footstep	off
Eye_control	1
Mouth_control	1

Channel Controls

Here are the channel boxes for the controls of the root, feet and arms.

Channels Object

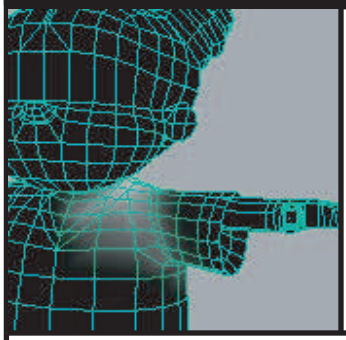
ref_root_control	
Translate X	0
Translate Y	0
Translate Z	0
Rotate X	0
Rotate Y	0
Rotate Z	0
Balance	0
Back Fwd Upper	0
Back Fwd Lowe	0
Back Fwd Side	0
Back Side	0
Back Twist	0
Back Root Bend	0
Foot_ Constrain	-1

ref_L_foot_control	
Translate X	0
Translate Y	0
Translate Z	0
Rotate X	0
Rotate Y	0
Rotate Z	0
Roll	0
Toe Flop	0
Toe Pivot X	0
Toe Pivot Y	0
Heel Pivot X	0
Heel Pivot Y	0

Channels Object

ref_L_hand_control . . .	
Translate X	0
Translate Y	0
Translate Z	0
Thumb_curl	0
Thumb_close	0
Index_curl	0
Second_curl	0
Pinky_curl	0
Spread	0
Wrist_ Side	0
Wrist_ Up Down	0
Wrist_ Rotate	0
Fist	0
Object_interactio	0

Skinning Characters



Skinning the character was the most time consuming because there were so many characters to be skinned. Since they were all different in size and poly count they could not be streamlined. The background crowd was streamlined using the same number of vertexes and were tweaked to get different looking characters without having them reskinned.

Thank you for taking the time to view my Backyard Football work flow chart.

Tyrone Woodland Lead Character Technical Director and Animator.
tyrone@tyronewoodland.com