Assignment 5: Adding the ball bouncer

Your goal in this assignment is to add a two-node articulated hierarchical model to your bouncing ball scene and animate it to look like it's bouncing the ball. Once again you will be rendering a cycle of the motion and handing in a movie.

NOTE: if you didn't create a simple, single-bounce cycle of a ball in a room for the last assignment you should have. And now you will have to do so for this assignment.

Keep in mind the principles of timing and slow in/slow out when animating the bouncer of the ball, but also consider **follow-through** and **overlap**: If one node of the hierarchy changes direction, what do the other nodes do? How quickly do they respond to the change?

To complete this project, you will need to build some two-node articulated object, such as a forearm and a paddle-shaped hand. You shouldn't spend much time on the models. Use the techniques covered in class to create the hierarchy while in modeler: split each node into a different layer, use the **pivot** tool (under the detail tab) to set the pivot for each layer, and use the **layer settings** window (under the detail tab as well) to name and arrange the layers in a hierarchy. The root of your hierarchy should have a parent of "none." Make sure to look through multiple orthographic views when setting your pivot points so they're in the right place in 3d!

Add your hierarchical object to your bouncing ball scene just like you would any other model. Check and make sure your pivots are right and that the hierarchy transferred properly into Lightwave before you get started animating. You can do this by twiddling the rotation channels.

DUE Monday, November 5th at the beginning of class

Hand in (to the standard place) a **motion blurred***, lit, rendered Quicktime movie, 320x240 pixels per frame, 30 frames per second, compressed with the **animation** compressor. Your movie should consist of exactly the number of frames required so that it will loop properly in the QuickTime player application. As before, MAKE SURE YOUR MOVIE WORKS ON THE CLASSROOM MACS before handing it in.

* To turn on motion blur, select the camera and go to the camera properties panel. Enable antialiasing (medium should be fine), then enable motion blur. Your render will take a lot longer than it did without blur, so do this after you're done animating!

Keep in mind the following:

1. You should only have to animate the rotation channels of your articulated hierarchy, though you will have to position the root in an appropriate place so that your hierarchy can reach the ball.
2. To bounce the ball your hierarchy will have to touch the ball for some amount of time. Figure out when that is and keyframe it in, just like you did when animating the impact of the bouncing ball itself.
3. It won't necessarily be simple to make the motion of your hierarchy cycle properly. You may have to set keyframes beyond the frame range of your scene to make sure the motion continues in the proper way, even though those frames won't be rendered.
4. Don't forget to stage the action so it's easy to see. Tip: if it's clear in silhouette, it is probably staged pretty well.
5. Extra credit (ok, not really, but you get the point): would the motion curve for the ball itself have to change if it's under the influence of a force? If so, how? Make those changes!