

The goal of this assignment is to have you articulate your head model for facial animation.

You are to take your head model from the second assignment, address any geometry issues that arose during Monday's model review, then add the appropriate controls so that you can animate the neck, eyes, and mouth.

You are free to use whatever articulation technique(s) you like, but I encourage the following:

- Make the eyes spheres. Put the pivot right in the center, and teach both eyes to point at a target null object (motion options, **m**, in Lightwave, and see recommended reading below). Animate the target null to get the eyes to track and to dart.
- Make phoneme-based mouth morphs (for details see the recommended reading). Add the displacement deformation plugin "morph mixer" to your object in Lightwave (object property panel) and mix between the morph poses to animate mouth positions.
- Get the eyes to open and close using morphs as well. I haven't found an easy way in Modeler to articulate them independently, so for now go ahead and create morphs for one eye then mirror to create the other eye (the morphs get copied when this happens). Then each morph control will effect both eyes at the same time.
- Make two bones for the head and the neck. Create bones using skelegons in Modeler (the last part of the recommended reading), then turn them into bones in Lightwave.

**Due Monday February 18 at the beginning of class**

Your articulated head model and a short (1-3 second) rendered movie showcasing your head's range of possible motions. Your movie should contain head/neck movement (just rock them back and forth to show they work), eye movement and each of the different mouth poses you've created. Don't stage this in any special way, just stick the face right in front of the camera large enough to see what's going on. Make the movie 320x240, use Sorensen compression, and make your own decision about motion blur.

You should hand in a cleaned content folder containing the movie, the Modeler object file (.lwo), and the Lightwave scene file that has the fully-articulated head (.lws). I recommend that you copy the setup file to another name before animating the test so that you have a clean backup of the setup for later.

Name the folder appropriately and put it in the hand-ins folder on Course Storage.

**Recommended Reading:**

Kerlow section 12.5 (pp. 354-358) on eyes and mouth morphs.

Lightwave pdf manual

page 11.7 (pdf page 307) on setting object targets (for eyes).

page 28.40 (pdf page 804) and beyond on Endomorphs.

chapter 10 (starts on pdf page 275) on bones and skelegons.

The following two web pages have great mouth phoneme example images:

[http://www.geocities.com/~gcmartin/phoneme\\_examples.html](http://www.geocities.com/~gcmartin/phoneme_examples.html)

[http://www.geocities.com/~gcmartin/mouth\\_shapes.html](http://www.geocities.com/~gcmartin/mouth_shapes.html)

<http://www.flay.com> - check out the tutorial links on character animation. There are some good ones.

We only have one full class (Wednesday the 13<sup>th</sup>) to discuss the specifics of bones and morphs. I therefore highly recommend that you do Lightwave manual reading listed above to supplement what you learn in class.