**Head modeling demo notes**

Reference use provided

Setting up reference planes

Face loops

Do head outline:

Tools used

Create polygon tool

Notes: not too many points, but enough for face details (nose, lips)

Don’t worry too much, you can erase and add edge loops later if needed

Loops around the eye

Modeling toolkit

Create quads

If you use this, have to go to persp and pull it forwards, and also (if you made a new mesh, mesh -> combine

Extrude

Target weld

Loops around the mouth, joining with the nose

Here you may need to adjust edge loop numbers to match

` Tool: Modeling toolkit

Create quads

Extrude

Target weld

The nose, a bit complicated, the picture helps… sort of

Extruding

Using interactive split tool to make quads

Fill in the space in between and skull

Tool: Modeling toolkit

Extrude

Target weld

Shaping using soft select

Get an area in, shape it as best you can, move on to the next area, do the same, tweak, repeat

Go over connecting the side of the neck to the back and the chin to the neck

Making your lumpy head less lumpy

Soft select

Sculpting tools

Switching between wireframe and solid

Switch often between the three views, front, side and persp

Eyelids and lips

Tool:

Extrude

Shape using scale (edges)

Mirror head

Aligning your seam to the center of the grid (grid snap)

Sewing seams

**Other Notes:**

In the previous two polygonal modeling assignments, we started with polygon primitives—the default spheres, cubes, cylinders, etc.—and added edge loops, extruded faces, and moved vertices as necessary to shape the desired model. In this assignment, we will move away from primitives toward a different subdivision modeling technique that focuses almost exclusively on extruding edges, rather than faces, and moving and merging vertices.

**Tips**

* ***SAVE ITERATIONS***. Do it repeatedly, do it often. This is applicable to anything and everything you work on.
* When working on a particular part of the head, let one of the orthographic cameras be the “dominant” camera. If, for example, you’re working on the face, then the front orthographic camera should be used for X and Y axis positioning of facial vertices; use the side orthographic camera to determine the correct Z translation.
* Pay particular attention to defining the nasolabial fold; good definition here is fairly crucial when rigging the model for facial expressions.

**Additional Resources**

* [Head topology guide](http://www.subdivisionmodeling.com/forums/showthread.php?t=8911/)
* [Modeling the Human Ear Tutorial](http://www.erraticimagery.com/extras/earmodeling.mov)

**Tools**

* **NEW TO MAYA 2014 - > Modeling Toolkit** 
  + Under Mesh editing tools, we used Target weld, Quad Draw and Extrude
  + For quad draw, go to front or side orthographic view (in the demo, we used front) place your dots and then hold shift to place quads
  + Target Weld, be careful, this tool is very touch sensitive, it wants to weld, so it will weld, sometimes whether you want it to or not.
* **Create Polygon Tool**
  + Create a single polygon by manually placing vertices. Left-mouse to add vertices. Press Backspace to undo the most recent vertex. Press Enter to finish.
  + *Where to find*: Mesh -> Create Polygon Tool
* **Extrude (Edge)**
  + Duplicates the selected edge and connects it to the original. For translating or rotating the extrusion, the individual Translate and Rotate tools usually behave more consistently than the manipulator that appears immediately after extruding.
  + *Where to find*: Edit Mesh -> Extrude, or in the marking menu, Extrude Edge accessed by holding shift and right-mouse while at least one edge is selected. **OR in the modeling toolkit (upper right corner highlighted in green)**
* **Append to Polygon Tool**
  + Creates a new polygon that spans the gap between two or more existing polygons. Left-mouse once on the starting edge, and then again on the edge to span to. Press Enter to finish.
  + *Where to find*: Edit Mesh -> Append to Polygon Tool, or in the marking menu, Append to Polygon Tool accessed by holding shift and right-mouse while an object is selected.
* **Merge Vertices**
  + When three or more vertices are selected, merges any vertices within the distance threshold designated in the options. If only two vertices are selected, merges them regardless of distance.
  + *Where to find*: Edit Mesh -> Merge, or in the marking menu, Merge Vertices -> Merge Vertices accessed by holding shift and right-mouse while at least one vertex is selected.
* **Merge Vertices To Center**
  + Merges any number of vertices to the center point in space between them all.
  + *Where to find*: Edit Mesh -> Merge To Center, or in the marking menu, Merge Vertices -> Merge Vertices To Center accessed by holding shift and right-mouse while at least one vertex is selected.
* **Combine**
  + Combines two separate polygonal objects into a single object.
  + *Where to find*: Mesh -> Combine.
* **Sculpt Polygon Tool**
  + Manipulate topology with a brush interface
  + *Where to find*: Mesh -> Sculpt Polygon Tool.
* **Soft Selection**
  + Create a tapered area of influence
  + *Where to find*: Press the b key with the move, rotate, or scale tool selected. Change soft selection behavior in the Tool Settings for move, rotate, or scale.