

POLYGON MODELING

Primitives

modeling in Maya usually begins with simple “primitive” shapes used to create complex ones
create>polygon primitives>...
attribute changes can be made in channel box (best to change these right away)

Components

vertices, edges, faces
component mode: rightclick and hold on object to select which component type you want
vertex: point
edge: same as selecting all vertices touching edge
face: same as selecting all vertices touching face
UV: control texture placement
components can be manipulated normally (except for UVs) after selected

Booleans

polygon>booleans>...
union: join two polygons into one
difference: second object selected will be subtracted from first
intersection: where objects intersected will become new object

Starting from scratch

polygons>create polygon tool
creates polygon surface from scratch
click vertex points and press enter to close surface
ensure planarity: keep surface's points all in one plane

Extruding

select any amount of faces
edit polygons>extrude face
gives you a universal manipulator (based on normals of object, not world coordinates)
can translate, scale, rotate new faces
to extrude again, press 'g' (repeat last command)
channel box: divisions attribute allows you to change subdivisions on one extruded face at a time
if you lose manipulator, press 't' to show it
to switch manipulator from local to world
 click little blue circle on manipulator
 allows you to rotate multiple surfaces on world axis rather than all their own individual normals
random: if on, extrusions will randomize intensity of manipulations
keep faces together: if off, adjoining faces will extrude apart from each other

Smoothing

really just increasing subdivisions

polygons>smooth

attribute editor: polySmoothFace node

subdivisions levels: how many times model is subdivided

continuity: how much smoothed model approaches original

exponential or linear smoothing have different sets of options

don't need to smooth whole object, can select certain faces and then smooth

Smooth Proxy

polygons>smooth proxy

creates stand-in object to control smoother object (low-res and high-res)

smoothed object is on new (reference) layer by default

easier to manipulate low-res version, which effects high-res

if you can't move object: turn 'allow topology modification' on in attribute editor (shape node)

move smoothed version away from original if it makes it easier to see

Creating your own Divisions

edit polygons>subdivide (turns 1 face into 4)

edit polygons>spilt polygon tool

click first edge, click second edge

snap magnet

how many places tool will snap to along edges

1 = halfway, 2 = thirds, 3 = fourths

can draw freely between edges, but must end on an edge

try not to delete edges with the backspace key (leaves extraneous vertices), use: *edit polygons>delete edge*

Modeling from Image Planes

select viewing panel (top, side, etc.) you want your background image to be perpendicular to

view>select camera (view menu is located in viewing panel, not menu bar)

open attribute editor

environment section, click "create" button

under image name attribute, click the folder icon

browse for the image you want and select open

image planes can be added to their own layer to be easily hidden and unhidden

Duplicate with Transform

duplicate an object

before unselecting object, move it

press shift+d as many times as you need

Mirroring

duplicate (ctrl+d) with a -1 as scale in x or y or z

pivot point must be set at mirroring axis