

ΓΡΑΦΙΚΑ & ΕΙΚΟΙΝΙΚΗ ΠΡΑΓΜΑΤΙΚΟΤΗΤΑ

Διάλεξη #4

3ds MAX – Polygon Modeling – Advanced

3ds MAX

Polygon Modeling --- Graphite_Ribbon (1/4)

2

- Do it from Modify Panel or by the Ribbon

Some preparation steps

- Move the Image Plane Object down to separate it from the 3D model
 - ▣ Open the Scene Explorer (Main Menu – Tools – Scene Explorer)
 - ▣ Un-Freeze the Plane Object and Select it
 - ▣ Use the Move tool to move it down (z axis)
 - ▣ We can still see from Top Viewport the outline of the image (F3)
 - ▣ Re-Freeze the Plane Object and close the Scene Explorer

3ds MAX

Polygon Modeling --- Graphite_Ribbon (2/4)

3

- Set a base level of details (on the sword blade)
 - ▣ Select the Object “Blade” and maximize (alt + w) the Perspective View
 - ▣ Go to Modify Panel and set some values to Segs
 - Length Segs = 4 ✓
 - Width Segs = 3 ✓
 - ▣ Convert the Object to Editable Poly from Quad Menu (right click on the Object)
 - ▣ Now in Modify Panel there is a new Object named “Editable Poly” and a list of tools below of it
 - ▣ All these tools are also available from the Ribbon and more...
 - ▣ So its better to work from the Ribbon – Open it (Press Toggle Ribbon button from the Main Toolbar)

3ds MAX

Polygon Modeling --- Graphite_Ribbon (3/4)

4

- Ribbon toolbar or Graphite
 - ▣ The Ribbon tools are available because the Modify Panel is Active

 - ▣ A Paradox just happened
 - We don't need the Modify Panel
 - but
 - modeling in 3ds MAX requires the Modify Panel to be ACTIVE.

- ▣ There are two ways to activate the Modify Panel
 - From **Control Panel** (Modify Panel button)
 - OR BETTER**
 - From **Ribbon** (Modify Mode button or (better) Toggle Command Panel button which **activate and hide** the Modify Panel from the right)

3ds MAX

Polygon Modeling --- Graphite_Ribbon (4/4)

5

- **Two Important things** to Remember for Polygon Modeling
 - ▣ The Object must be in Editable Poly and
 - ▣ The Modify Panel must be active even if it is hidden

- How we know that the **Modify Panel is active**
 - ▣ The tools – buttons in Ribbon Toolbar are active (not grey)
 - ▣ The Modify button in Ribbon “says” Editable Poly

3ds MAX

Polygon Modeling --- Sub – Objects (1/5)

6

- **Two ways to manipulating an Object**
 - ▣ The entire Object (Object modeling)
 - ▣ Part of an Object (sub-Object modeling)

- How we can **enter/exit** in sub-Object modeling mode
 - ▣ **Press:** Vertex, Edge, Border, Polygon and Element buttons from Ribbon (Modeling Panel).
 - ▣ Or from Modify Panel **click** on yellow highlighted “Editable Poly”.
 - ▣ Most important sub-Object modes are:
 - The Vertex (button) (zero dimension point)
 - Edge (button) (one dimension – a line)
 - Polygon (button) (two dimension plane) or Surface

3ds MAX

Polygon Modeling --- Sub – Objects (2/5)

7

- **Shortcuts keys for these buttons**
 - ▣ The first six numeric buttons on the alfa keyboard
 - “1” = Vertex mode
 - “2” = Edge mode
 - “3” = Border mode
 - “4” = Polygon mode (or face)
 - “5” = Element mode
 - “6” = Back to Object mode

3ds MAX

Polygon Modeling --- Sub – Objects (3/5)

8

- **Modeling with sub-objects** [Perspective View]
 - ▣ Press the “4” button on the alpha keyboard or the Polygon button in Ribbon
 - Drag a selection to sub-object with the Selection tool (Select Object tool from Main toolbar)
(this tool selects objects but also allow us to select sub-objects)
 - Orbit around to see that all the polygons are selected
(that happened because the button Ignore Backfacing is disable)

To Orbit around:

Press Alt + Push down mouse wheel and **move the mouse** to any direction

3ds MAX

Polygon Modeling --- Sub – Objects (4/5)

9

- **Modeling with sub-objects ...**
 - **Enable** the button Ignore Backfacing
 - Drag a selection to sub-object with the Selection tool
 - Orbit around to see that the back faces - polygons are **NOT selected**

- **Select all the polygons** (disable Ignore Backfacing)
 - ▣ So, now I can move and scale these polygons
 - ▣ Select the Scale tool from Main toolbar
(this tool is problematic at object level but **not** at sub-object level)
(it change the shape of the Object **not** the size of it)

3ds MAX

Polygon Modeling --- Sub – Objects (5/5)

10

- **Modeling with sub-objects ...**
 - **An other way to perform the same selection**
 - Select **edges** from Ribbon
 - Select an edge by click once ...
 - Select all the connected edges by double click
 - Now I can move and scale this loop of edges

Note:

If you are in sub-object mode

you can NOT select

anything from an other object

- It need to exit from sub-object mode

3ds MAX

Polygon Modeling --- Welding (1/2)

11

□ **Welding or Merging**

□ **Combine particular sub-objects**

[Perspective View]

- Select the “Blade” Object
- Go to Ribbon and press **Toggle Command Panel** button
- Enter to (click on) **Vertex** mode and select all the connected edges by double click
- Select two vertices (use **Ctrl** to add to a selection)
- Press **Select Object** button from Main Toolbar
- Use the **Vertices Menu** of the Ribbon Toolbar

NOTE:

- ✓ We can hide any of these Menu by right click to empty space – Show Panels – Uncheck any Menu we don't need
- ✓ Click on the arrow at the bottom of these menus and the menu will expand more
- ✓ Click at the icon at left corner to stick the menu to the screen

3ds MAX

Polygon Modeling --- Welding (2/2)

12

□ **Welding or Merging ...**

- Select two vertices (use drag to select)
- Go to Vertices Menu
 - A window with some information will appear
 - To disable this help right click to empty space – Ribbon Configuration – Uncheck Enable Tooltips
- To have full access to a command press **shift + click to “Weld” button**
- An interface call **“CADDY”** will appear
 - CADDY show to us a preview of the effect before applied it
 - There is a threshold value which permit the effect to be applied
 - Set up the right value to threshold for applying the effect or not
 - If the preview is that we want then press the check “v” of CAADY interface
 - Press the plus “+” sign to execute the command and leave the CAADY open
- Go Back by using Undo (Ctrl + z) command – There is to history
- Do the same to the other side of blade
- Do the same to the beginning of the blade
- Do the same to the end of the blade

3ds MAX

Polygon Modeling --- Transform-Center (1/4)

13

□ Transform - Center

▣ Move – Rotate – Scale an Object or Sub-Objects

■ Result depend on:

- What reference **Coordination system** we are in
- What **Transform Center** mode we refer to

▣ Top View – Maximize (alt + w)

- Select Blade Object
- Open the **Quad** menu (right click on object)
- Choose Object properties – check “See-Through”

3ds MAX

Polygon Modeling --- Transform-Center (2/4)

14

□ Transform - Center ...

- Select “middle” edges loop (double click on edge)
- Select & Move button (Main Toolbar)
 - Move it back a little bit
- Do the same for the “front” edges
- **Perspective View** – maximize – orbit around
- Select the “center” (horizontally) edges (up&down)
- Scale using the Scale tool from Main Toolbar
 - Nothing happened because of the “wrong” transform center mode

3ds MAX

Polygon Modeling --- Transform-Center (3/4)

15

□ Transform - Center ...

- Default transform center mode is the object's center
- When we try to transform two or more objects or sub-objects the transform performed to its object center
- ▣ Change the Transform Center mode using the “Use **Pivot Point Center**” from Main Toolbar
 - Click and hold to appear some options
 1. Scale everything around its own center
 2. Use the Average position of the selected object **V**
 3. Use a defined reference coordination center

3ds MAX

Polygon Modeling --- Transform-Center (4/4)

16

□ Transform - Center ...

- Use the Average position of the selected object
(the middle button) --- Orbit around
 - Observe the position of the scale Gismo triangle
(is at the center of the two objects) --- Orbit around
 - Scale by “z” axis - -- Orbit around
-
- Turn “See-Through” of – Quad menu – Object Properties and observe the “Blade” Object

3ds MAX

Polygon Modeling --- Cut-Remove (1/2)

17

- **Tools for Add and Remove details** - Object mode
 - The '**Cut**' tool create new edges & vertices in polygons
 - Select the "Blade" Object [Perspective View]
(there is a scalp at the image which don't exists in the "Blade" Object)
 - We need to cut two new edges (diagonally) to create the scalp at the blade Object (just like the image)
- **Create new vertex or edge**
 - Ribbon - Modeling - Edit Panel – Cut (Click)
 - Observe the cursor shape when you move on the Object
 - Cursor shape indicate what will happen at the particular point (where to creates new vertices or edge(interception of edges))
--- exit by right click

3ds MAX

Polygon Modeling --- Cut-Remove (2/2)

18

- Remove vertices
 - Select the edge
 - Ribbon - edge mode
 - Main Toolbar - Select Object tool -- Click to Select
 - Ribbon - Edges Panel – **Remove** button or **Backspace**
 - **USE Backspace** --- **Not Delete** (this action will create a hole)
 - Undo command– Ctrl + “z”
 - Backspace remove the edge but not the associated vertex
 - Select vertex mode and investigate the area to find the vertex left...
 - Undo command– Ctrl + “z”
 - **Ctrl + Backspace** removes the edge and the associated vertices

3ds MAX

Polygon Modeling --- Quick-Slice (1/2)

19

□ Tool to create edge loops

- Object mode

- Edges connected end to end
 - Top View – Select “Blade” object
 - Ribbon – Edit Panel - QSlice tool -- Click to Select
 - Click of the Object and drag to other side – Click again --- You create a edge loop
 - **This loop is not straight** --- Use the Grid to do that
----- Undo command– Ctrl + “z”

- Open the “Grip and Snap Setting” window --- right click on any “magnetic” button
 - Home Grid panel – Grid spacing: 0,01m
 - Close the window
 - Activate “3d snaps” --- Main Toolbar
 - Observe the cursor movement – its snaps to grid lines

Note that in 3ds Max all the tools works with the snaps (e.g. in Maya don't)

3ds MAX

Polygon Modeling --- Quick-Slice (2/2)

20

- Create some loop Edges
 - Ribbon – Edit Panel - QSlice tool --- Click to Select
 - Click of the Object and drag to other side – Click again --- You create a edge loop
 - **This loop is straight**
- Enable “See-Through” --- Quad Menu-Object Properties
- Enter Vertex mode and maximize [Top View]
 - Click to a vertex to select just this one
 - Drag a selection to a vertex – You just select two vertices – One on the Top and one on the Bottom of the object
 - Hold “Ctrl” to add to a selection
 - Select the Scale Tool --- Main Toolbar
 - Select Center Mode for Transform (middle button)
 - Scale “y” axis the right edges
 - Observe the blade Object ...

Ερωτήσεις

21

