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Box Modeling a Character Model Maya 2013



Concept

- When modeling a polygon character model,
 - it can be faster to create a symmetrical model at first
 - by working on only one half of the model
 - and then joining the other, symmetrical, half to it later
 - You can add asymmetrical features after this
- You can do this
 - either for the whole character, or
 - for just a portion of it
 - - for example, a head
- You can also see a smoothed version of your model
 - as you work
- You begin with a very simple polygon cube
 - and build the figure from there
- NOTE: The details of this approach
 - would vary depending on your specific model
 - Including:

- the shape and proportions of the figure
- whether it has clothing
- how much detail you want
- etc.
- The general approach, however, can be applied to any model for example:
 - A full figure
 - A head
 - A jacket
 - Trousers
 - Etc.
- WARNING: The technique presented here
 - is deliberately abbreviated
 - It is intended only as a very rough template
- Refer to more elaborate tutorials
 - in other books and DVDs
 - for details of this approach

Create a Half Cube

(See Illustrations 1 & 2, above)

>Create >Polygon Primitives >Cube []

- >Edit Reset Settings
- With divisions = 2
- >Create
- This creates a cube centered at 0,0,0
 - as in the illustration, above left
- Go into Face mode
- Drag to select all the faces on the right side of the cube
 - -- that is, all the faces to the right of X=0
 - Hit Delete to delete all these faces
 - This leaves the right side of your half-cube open
 - IMPORTANT:

- Your model must be open on the right side
 - so it can merge with the right half (see below)

Create a Mirrored Smooth Proxy model

(See Illustration 3, above)

- Go to the Polygons module
- Select the half-cube
- >Proxy >Subdiv Proxy []
 - In the settings window,
 - >Edit >Reset
 - to get the defaults
 - In the Setup tab,
 - Mirror Behavior = Full
 - Note that the axis of mirroring is +X
 - This is what we need for our model
 - >Smooth
- Maya creates a mirrored and smoothed version
 - of your half cube
- We will be working on the lores cube model
 - and not (yet) on the subdiv proxy model
 - So...
- In the Channel Box
 - Create a Layer
- Select the subdiv proxy model
 - Assign it to that layer
- Click in the Layer box to get an R
 - This makes the subdiv proxy model renderable
 - but not selectable

Model the Torso

(See Illustration 4, above)

- Since the right half of our model is a mirrored copy of the left half,
 - making changes to the left half

- changes both sides
- On the left half of the cube
 - Go into Vertex mode
 - And start reshaping the left half of the lores cube
 - Do NOT operate on the subdiv proxy model
 - (You will do that only when your model is almost finished)
 - Do NOT operate on the right half of the lores cube
 - Since the left half is the original
- As you move vertices of the left-half cube,
 - the right half also changes
 - and the subdiv proxy model updates
- Use any of the polygon modeling techniques to edit the lores cube
 - nto the shape of the torso of your character
 - Techniques might include:
 - Translating vertices
 - Scaling selections of vertices
 - (Don't forget to take advantage of the pivot point)
 - Inserting Edge Loops
 - then translating or scaling them
 - Splitting polygons with >Edit Mesh >Interactive Split Tool
 - Etc.
- TIP #1:
 - Do not operate on the cube **object**
 - -- that is, in Object Selection mode
 - Operate only on the **components** of the cube
 - -- that is, the vertices, edges, or faces
- TIP #2:
 - If you move any of the vertices that lie at X = 0
 - pull them only along the Z axis
 - -- that is, straight in or out
 - Otherwise, you will create a gap

• between the left and right halves of your model

Model Legs and Feet

(See Illustration 5, above)

- On the underside of the torso,
 - Select a face
 - Extrude it downward
 - to create the the thigh area
 - Repeat several times
 - to create geometry for the legs
- Fine tune the shape of the legs
- At the front of the foot
 - extrude a face out to create foot geometry

Model Arms and Hands

(See Illustration 6, above)

- On the upper side of the torso,
 - Select a face
 - Extrude outward to start the arm geometry
- Continue extruding and refining
 - to model arms
 - hands
 - fingers

Model a Head

(See Illustration 7, above)

- NOTE: When modeling a detailed head
 - the head is frequently modeled separately
 - and attached to the torso later
 - The approach described below
 - is deliberately simplified
 - and builds the head geometry directly from the torso geometry

- At the top of the torso
 - Select a face in the neck area
 - >Edit Mesh >Extrude
 - When the extrude icon appears
 - click the little blue circle
 - to go into World Coordinates mode
 - Now pull the face straight up in Y
 - This avoids the left and right halves from overlapping
- When you finish the extrude,
 - delete the face that is between the two halves
 - in the center of the neck
- Continue extruding to create head geometry
- Add detail as desired

Delete the Lores Box Model

- When your model looks good,
- Open the outliner window
 - Find the *pCube1SmoothProxyGroup* node
 - Inside this, select the *polySurface1* node
 - This is the subdiv proxy model
- With the subdiv proxy model selected,
- >Edit >Delete by Type >History
- This disconnects the subdiv proxy model
 - from the lores box model
- Delete the two halves of the lores box model
- You can now continue modeling directly on the smoothed model
 - to add and refine detail