

"Cartoon" 3D - Flintstone style

Mastering 3D Graphics ~ issue #2

in 3D Studio MAX - part 1 Dzenis Softic

Fantasy images are a great challenge for every 3D Artist. They have features of organic modeling (as there are no straight edges) wild natural environments, strange creatures and all of that in some funny cartoony style. That makes these images always very interesting to view and demands a lot of creativity from the 3D Artist.



In this tutorial, we are going to create a house in the Flintstone style. I guess all of you have watched "The Flintstones" on TV, if not, go and watch it. Characteristics of this style tell us that everything is made from stone and wood. It's like a scene from 1 million years ago, but still with some hi-tech items such as cars, airplanes and even computers; but created from stone and wood.

This tutorial is split into 2 parts. In the first one (this one) we are going to model the whole house and do some material and lighting. In the second part, we are going to add some details to our house, model the ground and create textures for it in PhotoShop, adding grass and go further with surfacing the house.

In **Figure 1** we see the pencil sketch I made. It's just a rough sketch that will remind us what we have to do.

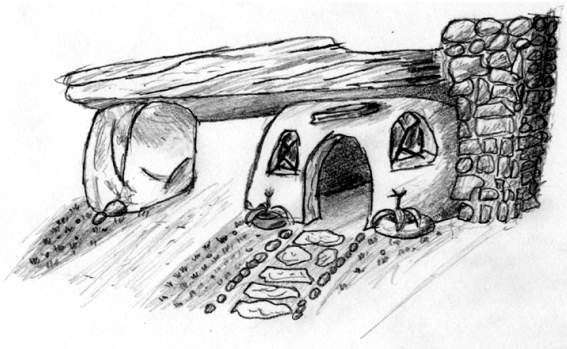


Figure 1: Sketch.

Let's start. Enter 3D Studio MAX, or if you are already in it, choose File - Reset to reset your scene to the default one.

Modeling

The House

The first thing we will model is actually the house. We'll add details as we go. We'll start with a Box. Go to the Create Panel, click on Box, and draw it in the Top viewport with the following parameters:

Length: 90
Width: 85
Height: 55
Length Segs: 7
Width Segs: 8
Height Segs: 6

Now, we will move some vertices so that it starts looking like a nice little house. So, go to the Modify panel and apply the Edit Mesh modifier. If you can't find it, click on More... and you'll find it there.

If you are not in Sub-Object level already, please click on Sub-Object button, and be sure that you are working with Vertices (text 'Vertex' at right side of button). You should now have something that looks like **Figure 2**.

Now, select the Move tool from the top bar and start moving vertices in the Top viewport so that the Box looks rounder. However, don't make a perfect circle and don't forget to leave some space for a chimney at the bottom right of the object. The result should look like something in [Figure 3](#).

Now do the same in the Left and Front viewports so that it looks round from all sides. I recommend selecting all vertices in one row from the Left or Front viewport and then using the Scale tool to scale it up or down. You should now have something that looks like [Figure 4](#).

Now is the time to add the MeshSmooth modifier so that you can see where you are. Exit from the Sub-Object level in Edit Mesh, and apply the MeshSmooth modifier to the object. If you can't find MeshSmooth in the Modify panel, click on More... you'll find it there. When you do

that, turn on the Quad output and Smooth Result options. OK, now go back into Edit Mesh and correct every flaw you saw in MeshSmooth as you will not be able to edit your mesh so easily after Boolean operations. This mesh should represent the shape of the house.

When you are satisfied with your mesh, delete the MeshSmooth modifier. Now, we'll use Boolean operations to make a hole in the house.

Select the Scale tool, press shift on your keyboard, and scale the object down about 20%. The more you scale it, the wider the walls. When the window appears with Clone Options, select Copy and click OK. Now move that house (the smaller one) just down a bit so that it crosses the bottom line of the bigger object. You should have something that looks like [Figure 5](#).

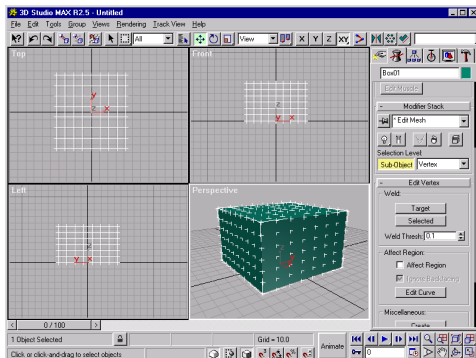


Figure 2: The Box.

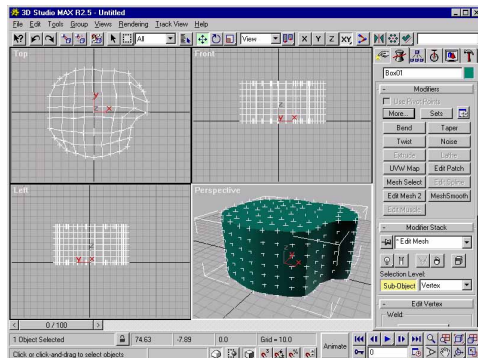


Figure 3: Deform Box from Top viewport.

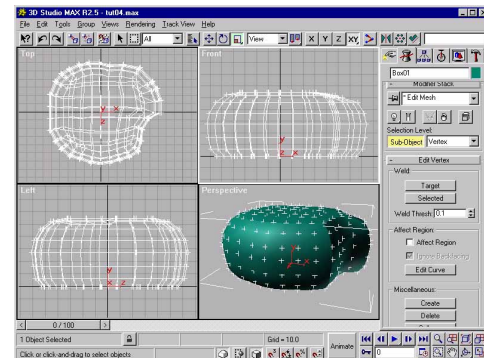


Figure 4: The finished shape of the house.

It is a good idea to save the scene before doing any Boolean operation.

Now select the bigger object, go to Create Panel and choose Compound Objects from the pop-up list (Figure 6).

Next, make sure that the bigger object is selected and then click on the Boolean button. Now click on the "Pick Operand B" and then click on the smaller house object. Done!

To check the result click somewhere in the Perspective viewport, choose Arc Rotate option from the options at the bottom right (Figure 7). Then click and move in the Perspective viewport so that you see the bottom of your house. You should see the hole inside of it like in Figure 8.

The door and Windows

OK, so we have made the walls of the house. What we now have to do is create holes for the windows and door. We'll do that by creating meshes for the door/windows and then cut the holes in the house by using the Boolean operation.

The Door

Create a box somewhere near the house in the Front viewport. The size of it should be something like this:

Length: 37

Width: 25

Height: 24

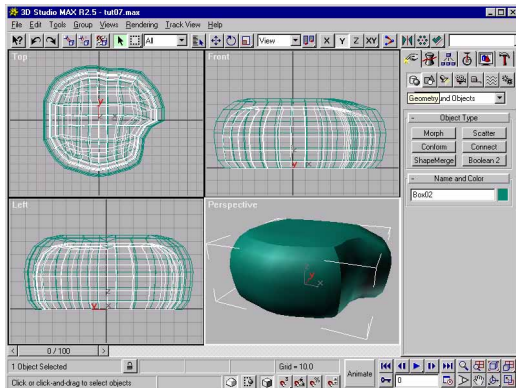


Figure 5: House scaled down 20%.

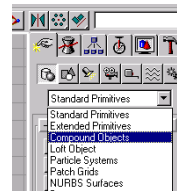


Figure 6: Compound Objects.



Figure 7: The Arc Rotate icon at the bottom of the screen.

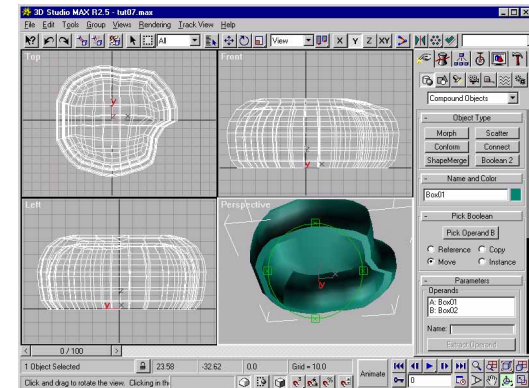


Figure 8: The hole in the house that we made with the Boolean operation.

Length Segs: 4
Width Segs: 2
Height Segs: 1

Now move that box somewhere towards the center of the house – where the door should be – and move it in the Top viewport too, so that it crosses the front wall.

Tip:

When using Boolean operations it is a good idea to have both objects with the same mesh density, like the ones in [Figure 9](#) (the Front viewport).

Be sure that the box is wider than the walls of the house. Therefore, you should see the whole box from both the front side and the inner side of the house. I used a Height value of 24, but you could make it bigger or smaller.

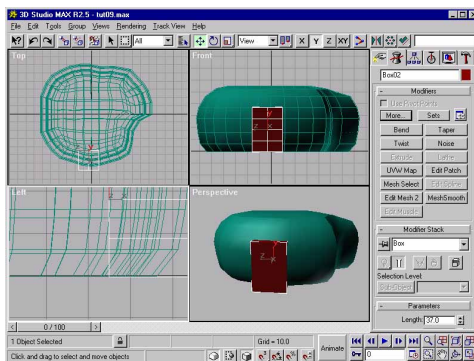


Figure 9: The Box (the future door) in the house.

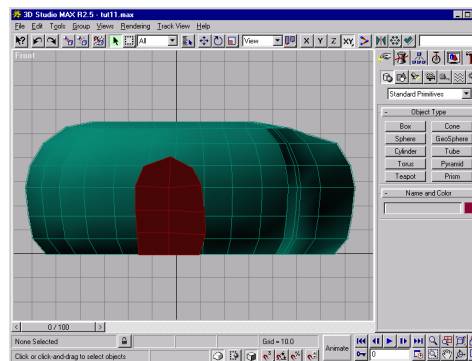


Figure 10: Front view of the door.

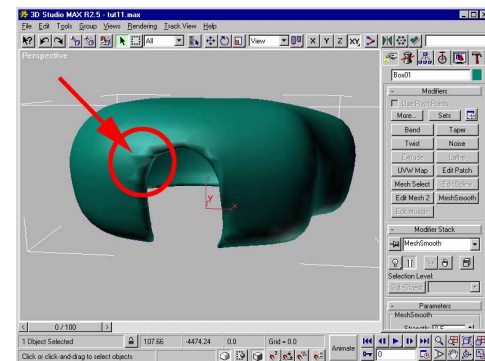


Figure 11: The MeshSmoothed house with door-hole

Now, select that box (door) and apply the Edit Mesh modifier to it. Click on the Front viewport and then on the icon called Min/Max Toggle (at the bottom right of the screen) so that you can see it better. Now deform the vertices so that you kill those straight lines, something like that shown in [Figure 10](#).

Tip:

Before doing anything with boolean operations it is a good idea to save your scene so that you can easily go back.

Select the house, go to the Create Panel and under Compound Objects select Boolean. Click on "Pick Operand B" and then select doors. You should now have a hole in your object. If there isn't, then Undo (Ctrl+Z) a few times and make your box wider and try again.

When you've made it, apply the MeshSmooth modifier to see results. Don't forget to turn on the Quad Output and Smooth Result options. At this point, you could have some problems with your mesh. Take a look at [Figure 11](#).

As you can see in [Figure 11](#), there are a lot of flaws. Firstly, try increasing the number of iterations in the MeshSmooth modifier. If that doesn't help then we will have to do some mesh editing. If you are satisfied with the look of your mesh, you can skip this process.

Select your house, go to the Modify panel, remove the MeshSmooth modifier and apply the Edit Mesh modifier. In the Perspective viewport you should have something like that shown in [Figure 12](#). I have circled some of the problematic vertices. As you can see we have about 3 or more vertices at the location where there should be only 1. Therefore, we will have to weld them together.

Now go to the Front viewport, select the vertices you want to weld together and click on the Selected button in the Weld part of the Modify panel. You will have to play with the Weld Thresh. settings. The default is 0.1, which will probably be too small for you, i.e. the vertices will not weld. For me, the Threshold is 5. An example of welding a few vertices correctly is shown in [Figure 13](#).

In [Figure 13](#), you can clearly see the extra vertices that we had before the welding. Repeat this in all the other places where you see similar flaws.

Tip:

Work in the Shaded viewport with the Edged Faces option turned on ([Figure 14](#)). You will clearly see which vertices are not wanted (no visible edges coming from them).

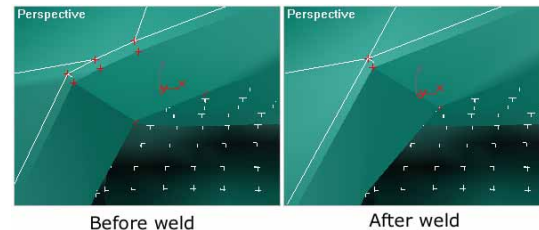


Figure 13: Example of welding vertices.

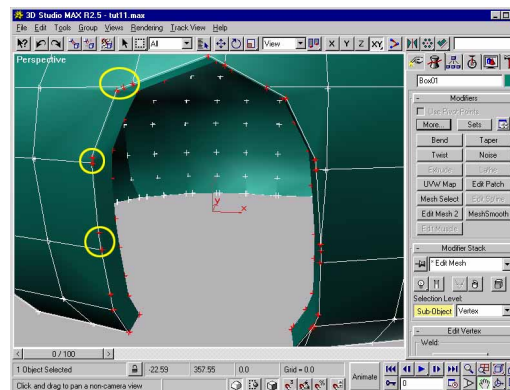


Figure 12: Vertices we need to weld.

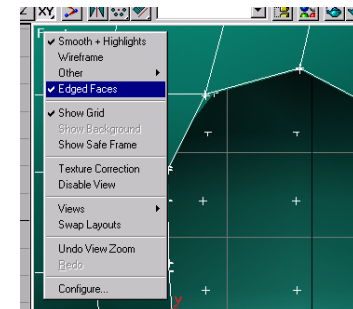


Figure 14: The Menu for choosing Shaded viewports with visible edges.

When you clear your mesh nicely, you will have something like that shown in [Figure 15](#).

Now apply the MeshSmooth modifier on the house so we can see what we have done. The result is shown in [Figure 16](#).

In [Figure 16](#) you can see how much better it now looks. If you are still not satisfied, go back to the Edit Mesh modifier and play with the vertices. Alternatively, if that doesn't help, reload the scene you had before the Boolean operation, make the door mesh a little different and try again.

The Windows

Using the same technique as for the door, we can create the windows.

Delete the MeshSmooth modifier from the Modifier Stack. We should delete MeshSmooth because when using Boolean operations, we want to work with a low-res object and not a hi-res one, which MeshSmooth will give us.

Create a Box about half the size of the door and place it in the right side of the house. It will be a window so position it where the future window will be. The parameters I have used are as follows:

Length: 17
Width: 14
Height: 25
Length Segs: 3
Width Segs: 2
Height Segs: 1

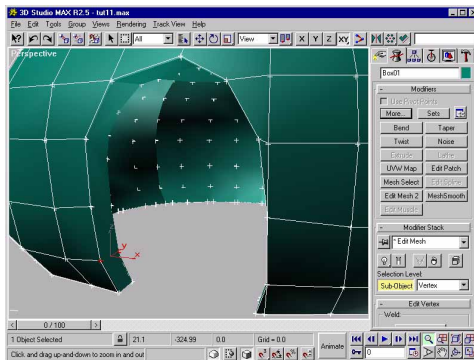


Figure 15: The refined mesh.

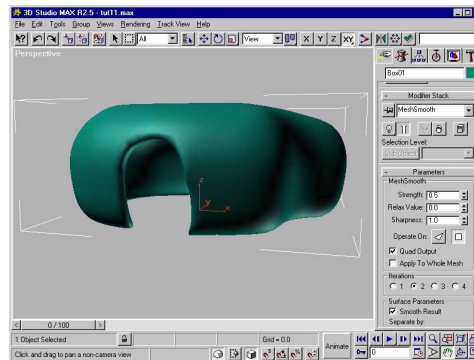


Figure 16: House with MeshSmooth.

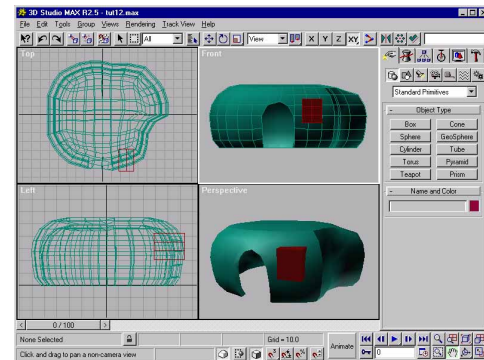


Figure 17: The Box that will become a window.

Make sure that in the Top viewport, the window is somewhere on the front wall, as shown in [Figure 17](#).

Now select the box, apply the Edit Mesh modifier to it and then move vertices so that it looks more like a window ([Figure 18](#)).

Select the Move tool from the top bar, and Shift+Move it (Clone, press and hold Shift while moving) to place it where the left window should be. When a window appears, choose Copy and click OK.

Now go to Sub-Object and move the vertex on the left window so that it looks a little different to the one on the right. When you finish that, you should have two windows as shown in [Figure 19](#).

In the Top viewport, rotate the windows so that they are at right angles to the front wall of the house (90 degrees) see [Figure 20](#). You can move them too if you think it is needed.

It is always a good idea to save your scene before doing any Boolean operation.

Select the house, from the Create panel under Compound Objects, choose Boolean, click on "Pick Operand B" and click on one of the windows. Now repeat this for the second window.

If all has gone well you will have holes for windows. If not, go back (open the scene you saved before Boolean operations or click Undo (Ctrl+Z) a few times) and make

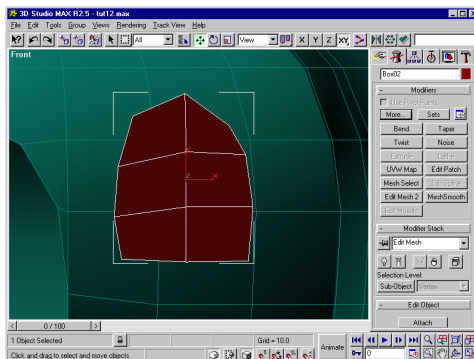


Figure 18: The deformed window.

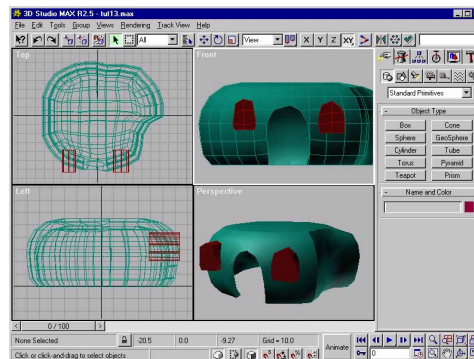


Figure 19: The properly deformed windows.

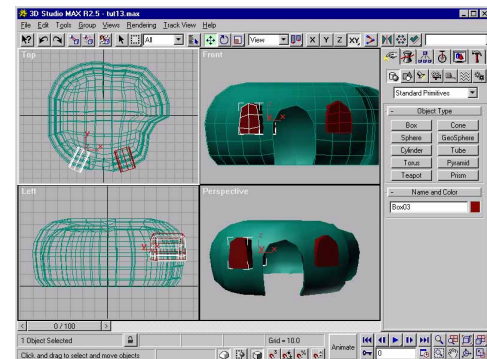


Figure 20: The properly positioned and rotated windows ready for Boolean operations.

sure that window meshes are projecting through the wall. Be sure that the house is selected, go to the Modify panel and apply the MeshSmooth modifier. Be sure that Quad Output and Smooth Result is checked and set Iterations to 2.

If there are any flaws like we had with the door after the Boolean, then you will have to do the same thing we did with the door (see above). That means removing the MeshSmooth, applying Edit Mesh, welding unwanted vertices and reapplying MeshSmooth again. Once you are satisfied with your mesh, you can go on.

The house is almost done; now we will add some Noise to it. In the Modify panel and while the house is still selected, apply the Noise modifier, with the following parameters:

Noise Seed: 123
Scale: 20.0
Fractal is checked
Roughness: 0.0
Iterations: 6.0
Strength: X=1.0 Y=1.0 Z=1.0

Now apply one more Noise modifier with the following parameters:

Noise Seed: 4412
Scale: 10.0
Fractal is checked
Roughness: 0.1
Iterations: 6.0
Strength: X=1.0 Y=1.0 Z=1.0

What have we done here? Well, with the first Noise application, we have added some bigger and smoother noise to the house. With the second Noise application, we have added some nice little rough details to the house.

We've now finished modeling the house. You should have something like that shown in [Figure 21](#).

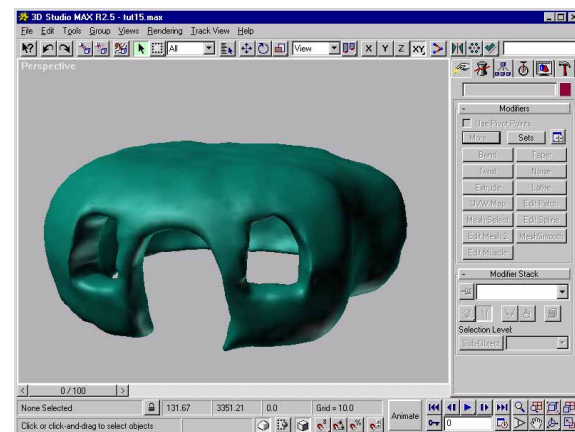


Figure 21: The finished model of the house.

The Garage Wall

Now we need to create that big rock on the left side of the house that represents the Garage Wall. If your computer is slow, you can disable MeshSmooth on the house so that the work will be much more enjoyable.

Create a Box in the Front viewport with these Parameters:

Length: 46.0
Width: 36.0
Height: 53.0
Length Segs: 5
Width Segs: 4
Height Segs: 6

Position it somewhere on the left side (refer to the sketch in [Figure 1](#)) but leave some room for the Flintstone car between the house and the rock. It should be little lower than the house.

Make sure that the rock is selected and then apply the Edit Mesh modifier to it. Move the vertices in all viewports so that it looks rounder ([Figure 22](#)).

Now apply the MeshSmooth modifier to it with the following Parameters:

Quad Output: checked
Iterations: 2
Smooth Result: checked

If you are not satisfied with the results, go back to Edit Mesh and move the vertices until you are.

Now, we will add 2 Noise modifiers as we did on the house. The parameters are almost the same as those used for the house, with just the Seed parameter different, making it unique.

1st Noise Modifier ~
Noise Seed: 445
Scale: 20.0

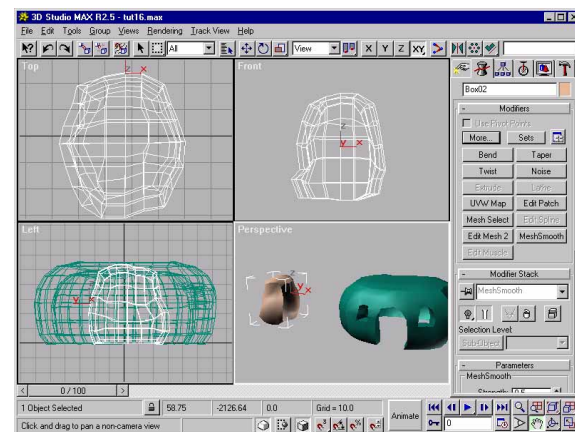


Figure 22: The deformed Box used for the big Rock.

Fractal is checked
Roughness: 0.0
Iterations: 6.0
Strength: X=1.0 Y=1.0 Z=1.0

2nd Noise Modifier~

Noise Seed: 3321
Scale: 10.0
Fractal is checked
Roughness: 0.1
Iterations: 6.0
Strength: X=1.0 Y=1.0 Z=1.0

You should have something like that shown in [Figure 23](#).

The Chimney

OK, now it's the Chimney's turn.

Maximize the Front viewport (Min/Max Toggle) to allow us to create some details.

Choose Shapes (the 2nd icon in the row) under the Create Panel and then choose Rectangle. Draw a rectangle that rep-

resents the front view of the chimney. This is just for reference so that we know where to put the rocks. The parameters I used were:

Length: 73.0
Width: 23.0

Now select the Line tool and draw some rocks. Draw one closed n-gon that will represent the first rock, using just corner-vertices. Don't bother rounding them off; we'll do that later. When you make your first n-gon, go to the Modify panel and click on Create Line. Now continue drawing n-gons that will form the future rocks. Don't forget that these n-gons **MUST** be closed, as shown in [Figure 24](#). Be sure to leave enough space between the splines for a bevel.

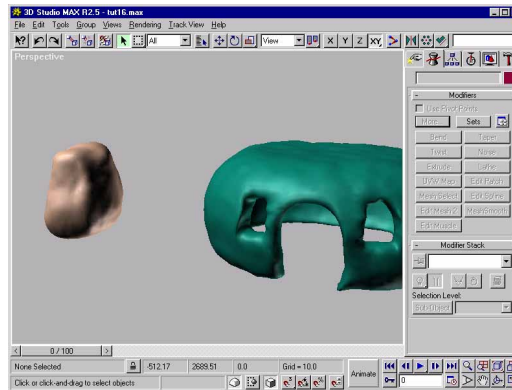


Figure 23: The finished model of the house and the rock.

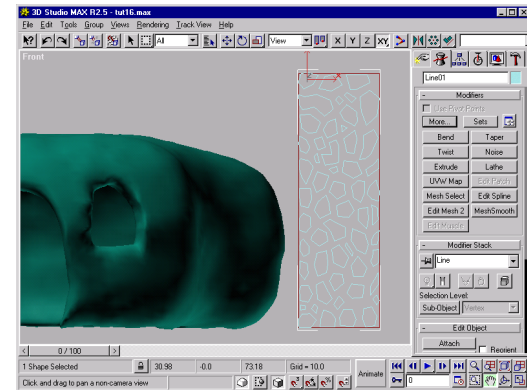


Figure 24: The Splines that will become rocks.

Now enter the Sub-Object of the Line, select all the vertices, click with the right mouse button on one of the vertices and choose Smooth from the menu that will appear. Now it looks more like rock.

Next, go to the Top viewport and make a spline, something like the one shown in [Figure 25](#). This will be the spline that is going to be used as a Bevel for the rocks. In my spline there are 3 vertices, 2 of them are Beziers (top ones) and the 3rd one is a corner vertex. Once you've made it, exit from the Sub-Object level and change Steps to 2 so that less faces are created.

Return to the Front viewport and select the rocks. In order to conserve memory and save on time, decrease Steps to about 2. The number will depend on how many vertices you used for one rock, but you need to reduce this number as small as possible whilst maintaining the rounded appearance of the rocks.

Now we will apply the Bevel Profile modifier. Make sure the rocks are selected. Choose More... under the Modify panel and then click on Bevel Profile. Click on Pick Profile

and then click on the spline we have just created for the bevel ([Figure 25](#)).

If you have arranged your rocks properly and the size of your bevel spline is appropriate, then you should see something like that shown in [Figure 26](#).

If your rocks are not as good, for example if there is too much space between them or the rocks are overlapping, then you will have to go back to the Modifier Stack and adjust those vertices. If the rocks are overlapping, maybe your bevel spline is too big. So don't forget to check that too.

We will have to apply the Noise modifier to this, but there are insufficient faces at present. So, click on the object

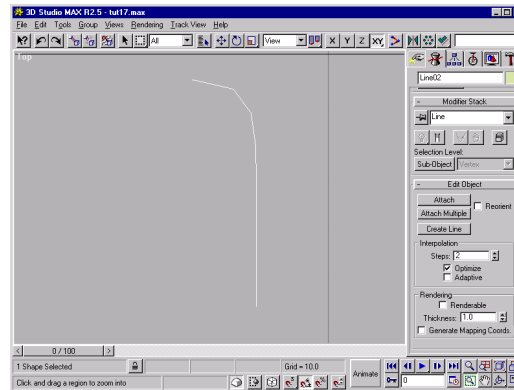


Figure 25: The Bevel spline for rocks.

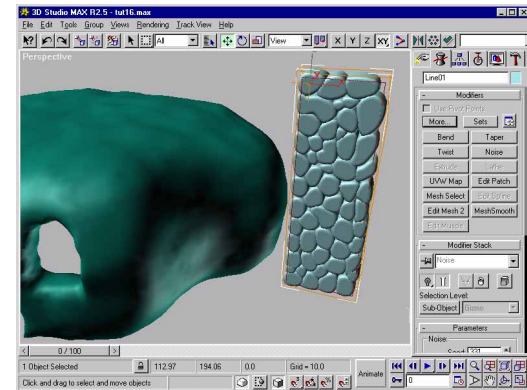


Figure 26: Rocks with the Bevel Profile applied.

and in the Bevel Profile under Cap Type, select Grid – not Morph. This will create many faces (you will not really see them now) and it will slow your computer.

Now, we'll add 2 Noise modifiers to it with the following parameters:

1st Noise Modifier ~

Noise Seed: 331

Scale: 20.0

Strength: X=2.0 Y=2.0

Z=2.0

2nd Noise Modifier ~

Noise Seed: 555

Scale: 10.0

Fractal turned On

Strength: X=2.0 Y=2.0

Z=0.3

just clone+rotate the existing wall to form all four sides of the chimney.

When you've finished, you should have something like that shown in [Figure 28](#).

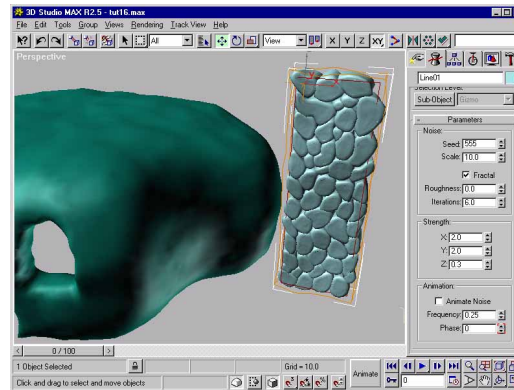


Figure 27: The finished Rocks for the Chimney.

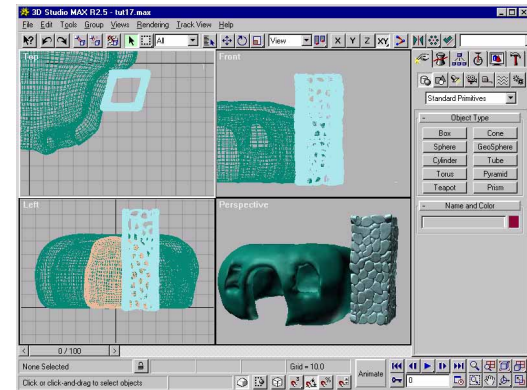


Figure 28: The finished Chimney.

The Roof

It's finished! You should now have something like that shown in [Figure 27](#).

Now we have finished the front wall of the Chimney, position it near the house and delete the rectangle we created at the beginning to assist us. Now, you can make another wall using the same technique but position it on the other side of the chimney. Alternatively, you could

In the Top viewport create a Box with the following parameters:

Length: 132.0

Width: 233.0

Height: 13.0

Length Segs: 7

Width Segs: 10

Height Segs: 4

Position it on top of the house. Go to the Modify panel and apply the Edit Mesh modifier.

Move the vertices in the Top viewport, so that the roof follows the shape of the house. Be sure to leave 'a hole' for the chimney. In the Front viewport, move the vertices up or down so that they fit on top of the house and, on top of the garage wall. You should have something like that shown in [Figure 29](#).

Exit from the Sub-Object level and apply the MeshSmooth modifier so that you can see what your mesh will look like. Don't forget to turn on Quad Output and Smooth Result. As you can see, the mesh is too smooth; we'll have to add some details to it.

Re-enter Edit Mesh under the Sub-Object Vertex. In the Top viewport move the top vertices so that the edge of the roof is not sharp. Apply this to some of the edges only, as shown in [Figure 30](#).

Make sure that you can see all the viewports on the screen (Min/Max Toggle icon). Now we are going to Select vertices in the Perspective viewport and move them in the Top viewport.

Take a look at [Figure 1](#) and pay attention to the bumps on the front side of the roof.

We are going to try to make those bumps. So, select the vertices that make one curved line and move them a little

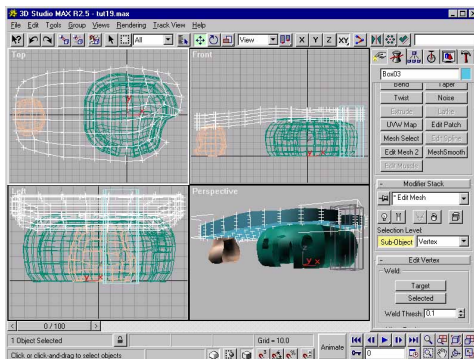


Figure 29: The beginning of the Roof.

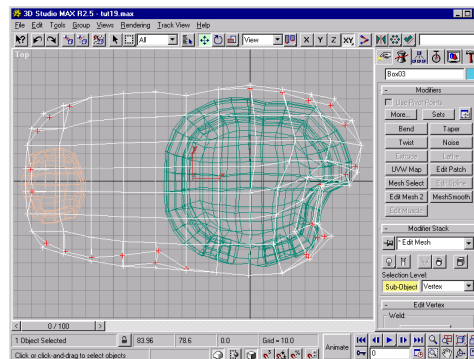


Figure 30: We have moved the red vertices.

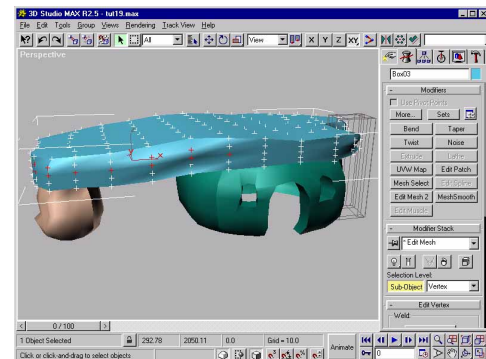


Figure 31: Example of the vertices that should be selected, so that the bumps are created on the front side of the roof.

inside (or outside) of the rock. An example of vertices that should be selected in the Perspective viewport is shown in [Figure 31](#).

Now, look at our sketch ([Figure 1](#)) and try to track all the lines on front side of the roof.

Whenever you move some vertices, go to MeshSmooth to check the results and then re-enter Edit Mesh to continue working.

When you finish, you should have something like that shown in [Figure 32](#).

You may notice that the top and bottom of the roof is very smooth, which is not ideal since the roof is made of rock. Therefore, enter Edit Mesh for the Sub-Object and then in the Top view select some vertices and move them in the Front or Left viewport up or down slightly. It's not really important which vertices you move or how much you move them.

When you finish, you should have something like that shown in [Figure 33](#).

Now we'll add 2 Noise modifiers on the roof so that it looks more rocky. The parameters used for the Noise are:

1st Noise ~
Seed: 123
Scale: 20.0
Strength: X=3.0 Y=3.0 Z=3.0

2nd Noise ~
Seed: 555
Scale: 10.0
Fractal is on
Roughness: 0.1
Iterations: 6.0
Strength: X=2.0 Y=2.0 Z=2.0

It's finished;
see [Figure 34](#).

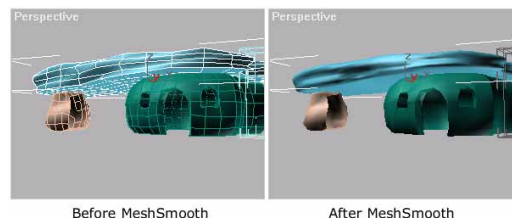


Figure 32: The front side of the roof is finished.

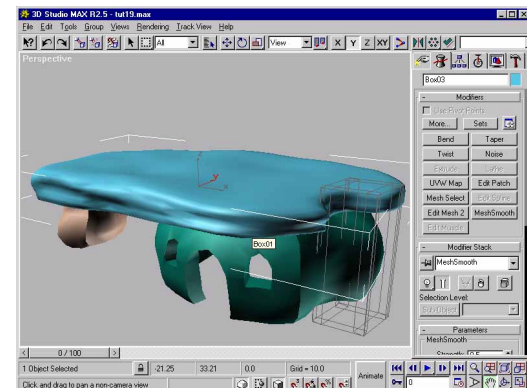


Figure 33: The top and bottom vertices of the roof moved slightly up or down so that it's not as smooth.

The Rock above the door

In the Front viewport, create a Box above the door with the following parameters:

Length: 5.5
Width: 27.0
Height: 16.0
Length Segs: 3
Width Segs: 5
Height Segs: 3

Now apply the Edit Mesh modifier to it from the Modify Panel. Use the same techniques that we used to deform the roof.

Scale: 10.0
Fractal is on
Roughness: 0.1
Iterations: 6.0
Strength: X=1.0 Y=0.5 Z=1.0

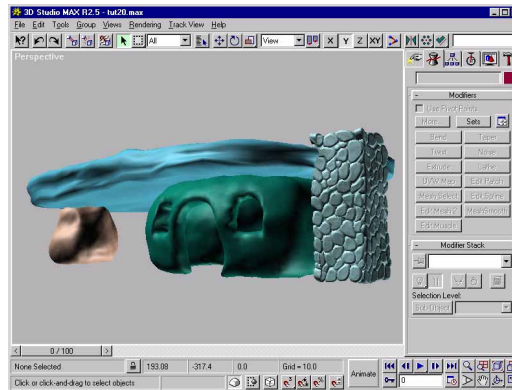


Figure 34: The finished roof.

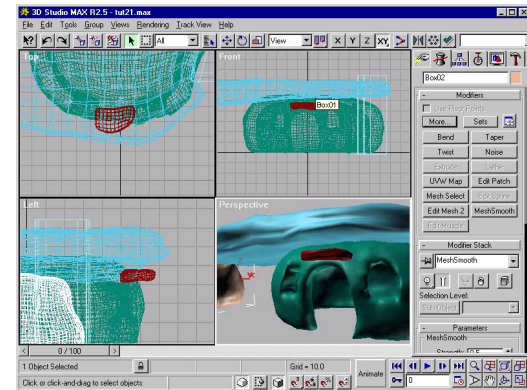


Figure 35: The finished rock above the doors.

When you finish, add 2 Noise modifiers to the object with the following parameters:

1st Noise ~
Seed: 456
Scale: 20.0
Strength: X=3.0 Y=3.0 Z=3.0

2nd Noise ~
Seed: 789

Materials for the house

We will create completely procedural materials for this house, mainly using Noise maps.

Open the Material Editor.

We are going to create a new material from scratch, so be sure that you have selected an empty material slot.

Here are the parameters (colors are written in their RGB values):

Ambient: 54, 47, 16
Diffuse: 214, 210, 193
Shininess: 10
Shin. Strength: 15

1. Click on the Diffuse slot and add Mix Map.
2. Change Mix Amount to 0.4
3. Click on slot for Color #1, and add Noise Map.
4. In Noise Map click on Color #1, and add another Noise Map. Parameters are: Noise Type: Fractal Size: 10.0 Color #1: 144, 133, 139 Color #2: 174, 164, 165
5. Now go back to the parent map (3rd icon from right in horizontal toolbar). You should now be in the first Noise that we added. Click on the Color #2 slot and add a new Noise Map. The parameters are as follows: Noise Type: Fractal Size: 10.0 Color #1: 86, 82, 82 Color #2: 110, 105, 104
6. Click twice on that icon to go to the parent map. You should be back in Mix Map. Click on the Color #2 slot and choose Bitmap. If you have downloaded

the support files for this tutorial, then you will have the file called *wall.jpg*, if not, then download it from <http://www.mastering3dgraphics.com/public/freestuff/textures/wall.jpg>.

7. Go to the parent map. You should be back in Mix Map. Click on the Color #1 slot (Noise map) and drag it to a free material slot. When the window appears, choose Instance and click OK. You should have something like that shown in Figure 36.
8. Go to the parent map. You should be in Material. Click on the noise map in the Diffuse slot and drag it to the Bump slot. Then change the Amount of Bump map to 13.

The finished material should look like the one in Figure 37.

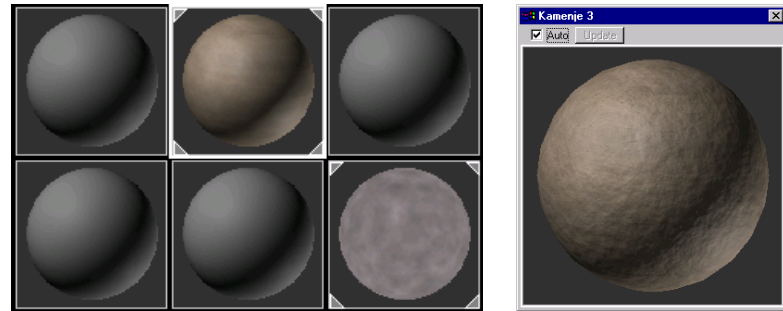


Figure 36 (left): The Material editor.

Figure 37 (right): The finished material.

The finished hierarchy of materials should look like the one in [Figure 38](#).

Now we need to create a UVW Map for the objects. So, select all the objects in your scene and apply the UVW Map modifier to them. If you have instanced some objects (like the walls of the chimney) then you shouldn't select those instances, just the originals.

Anyway, when you apply the UVW Mapping modifier, use the following Parameters:

Mapping: Box
Length: 30.0
Width: 30.0
Height: 30.0

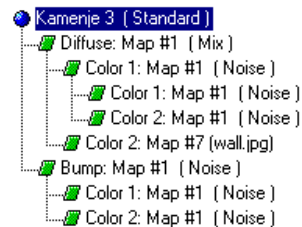


Figure 38: The material hierarchy.

Now we are ready for the first rendering. Go to Rendering->Render. You should have something like that shown in [Figure 39](#). It looks nice, but the lighting is awful. Of course it is, when we have no lights in the scene and MAX is using the default ones. Therefore, we'll create some lights now.



Figure 39: The first render.

Lighting

At this point, we are going to use only 2 lights. One main light with shadows and the other one just to remove some of the unwanted dark areas.

Under the Create Panel choose Lights, then click on Omni. Position the lights as shown in [Figure 40](#).

Click on the light that is selected in [Figure 40](#), go to the Modify panel and change its color to: R: 230, G: 225, B: 220. Towards the end of that panel, turn on the Cast Shadows option. Select the other light and change its color to R: 100, G: 100, B: 100.

Now you can render again. You should see something like that shown in [Figure 41](#).

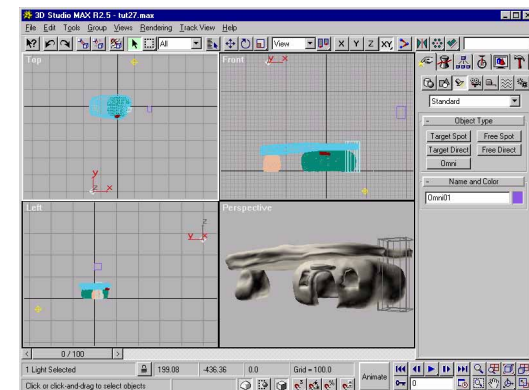


Figure 40: Scene with lights.

Wrap Up

We have looked at some box modeling techniques, created rocks from splines and covered a little about materials. In the next interim issue of Mastering 3D Graphics we are going to create more of the details shown in our first sketch (Figure 1) and learn how to make the ground look more realistic with grass.

Using the techniques I have explained in this tutorial, and the ones I am going to explain in next part of this tutorial, I have created the image in Figure 42.

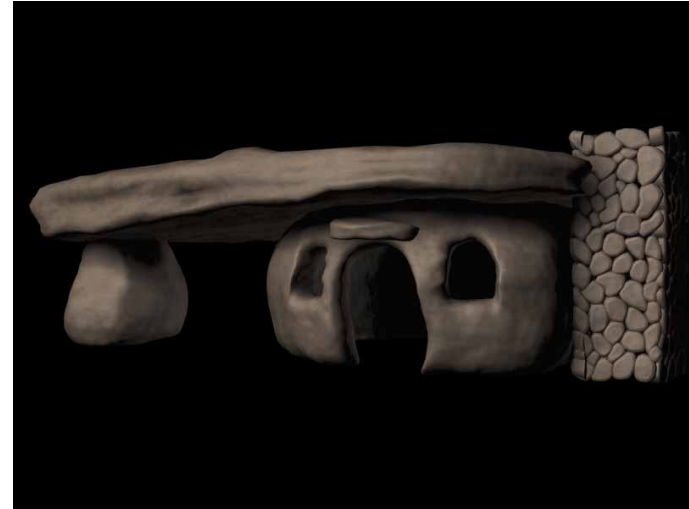


Figure 41: The Final Render.

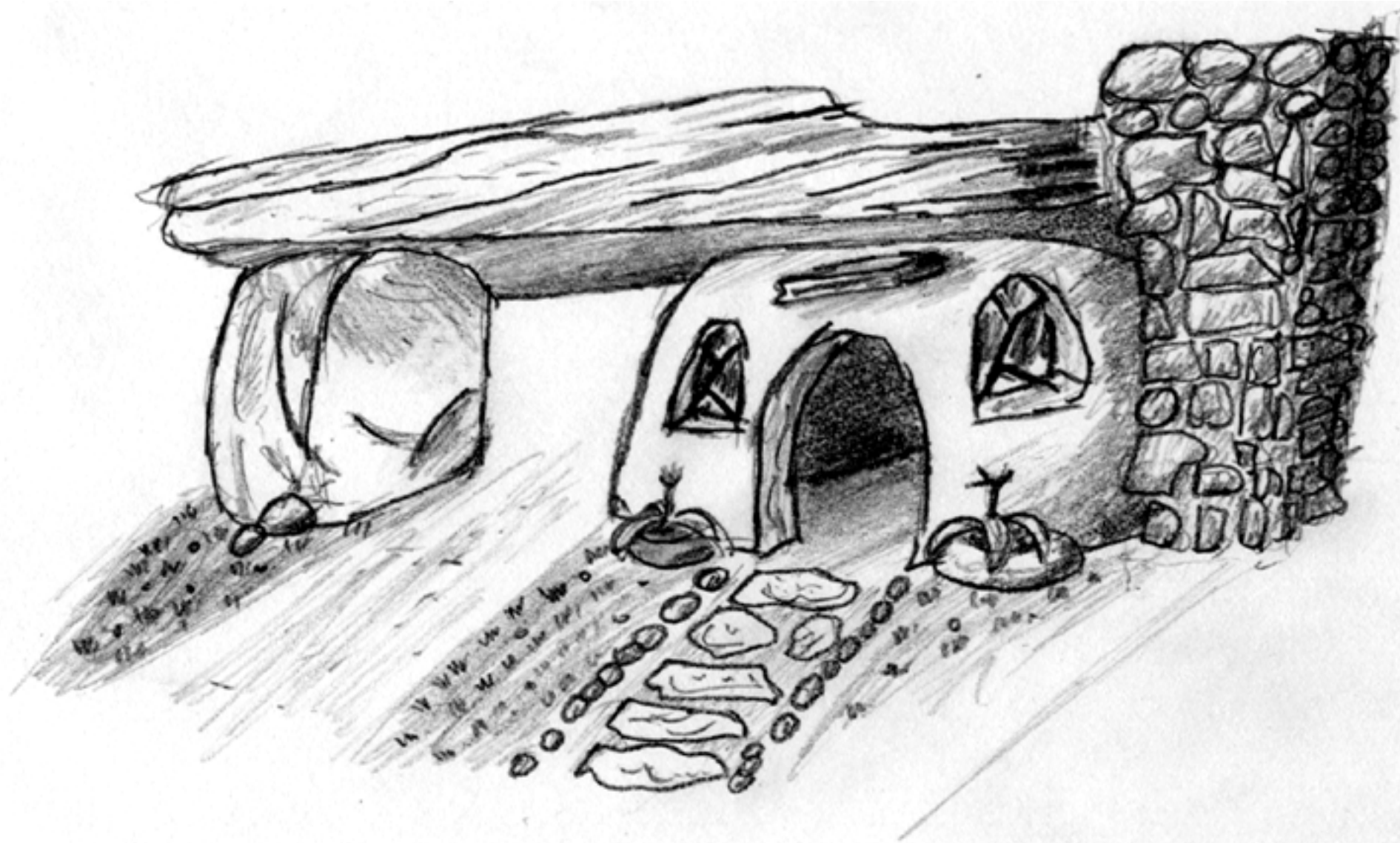


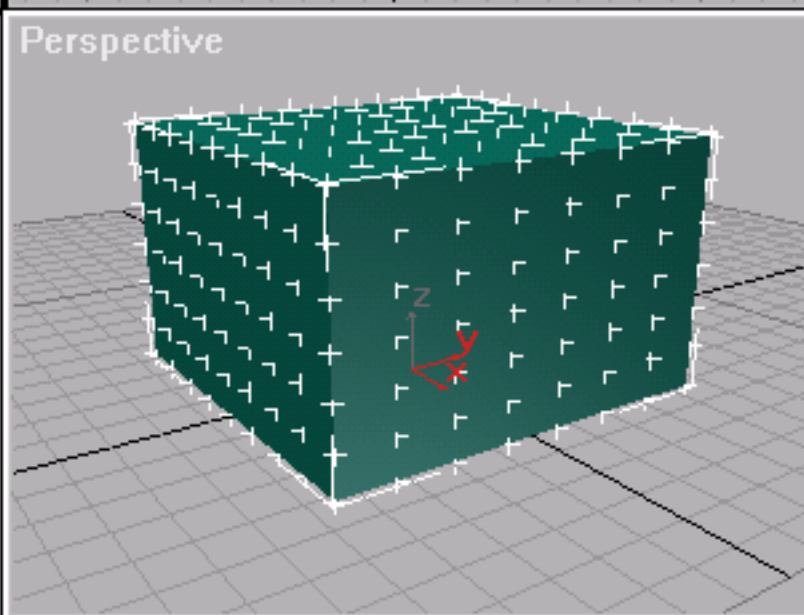
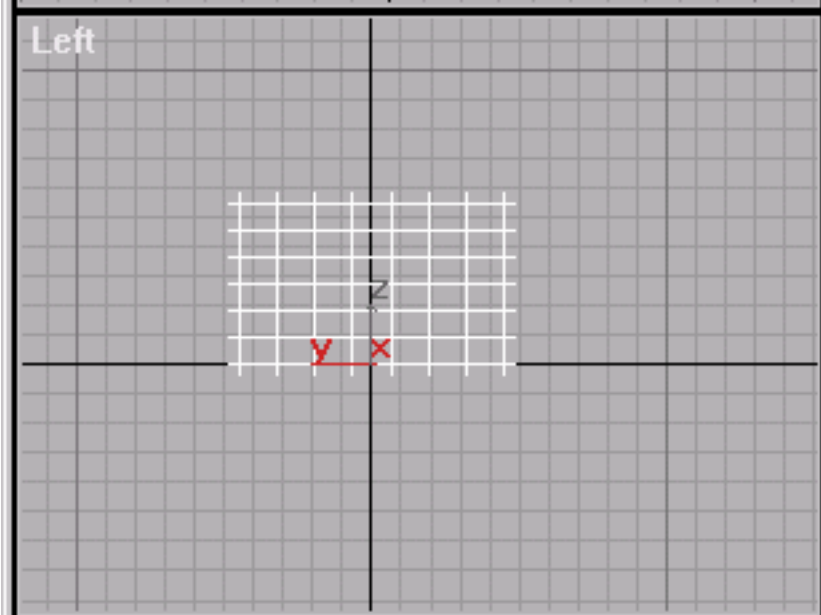
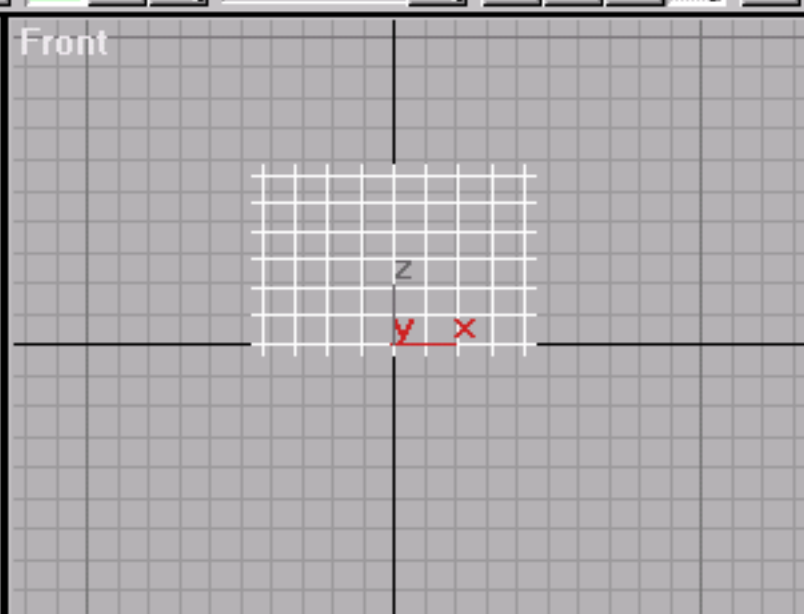
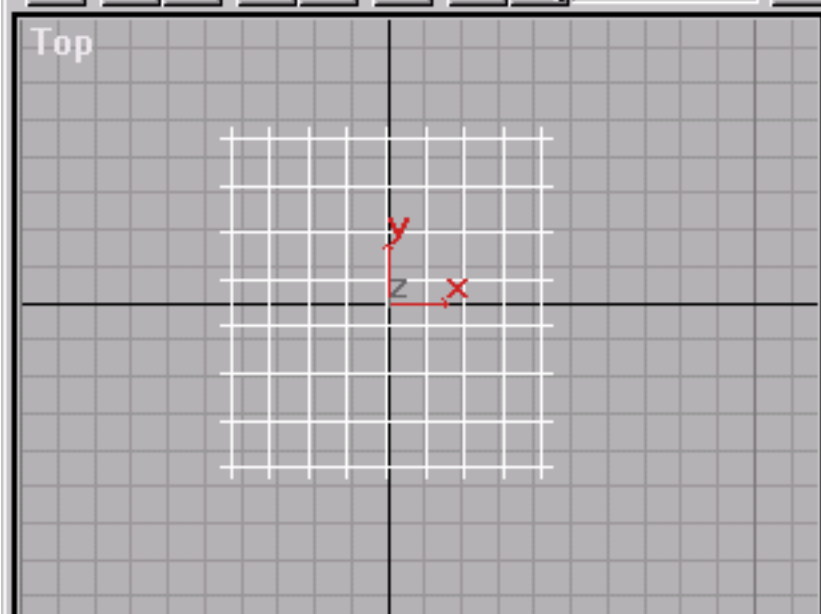
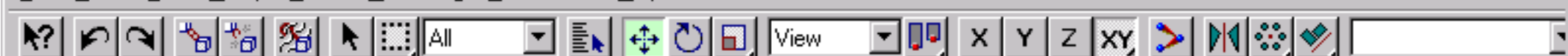
Figure 42: The Flintstone House.

© 1999

Created by Dženis Softić
dzeni@inecco.net, <http://www.inecco.net/~dzeni/>







Box01

Edit Muscle

Modifier Stack

* Edit Mesh

Selection Level:

Sub-Object Vertex

Edit Vertex

Weld:

Target

Selected

Weld Thresh: 0.1

Affect Region:

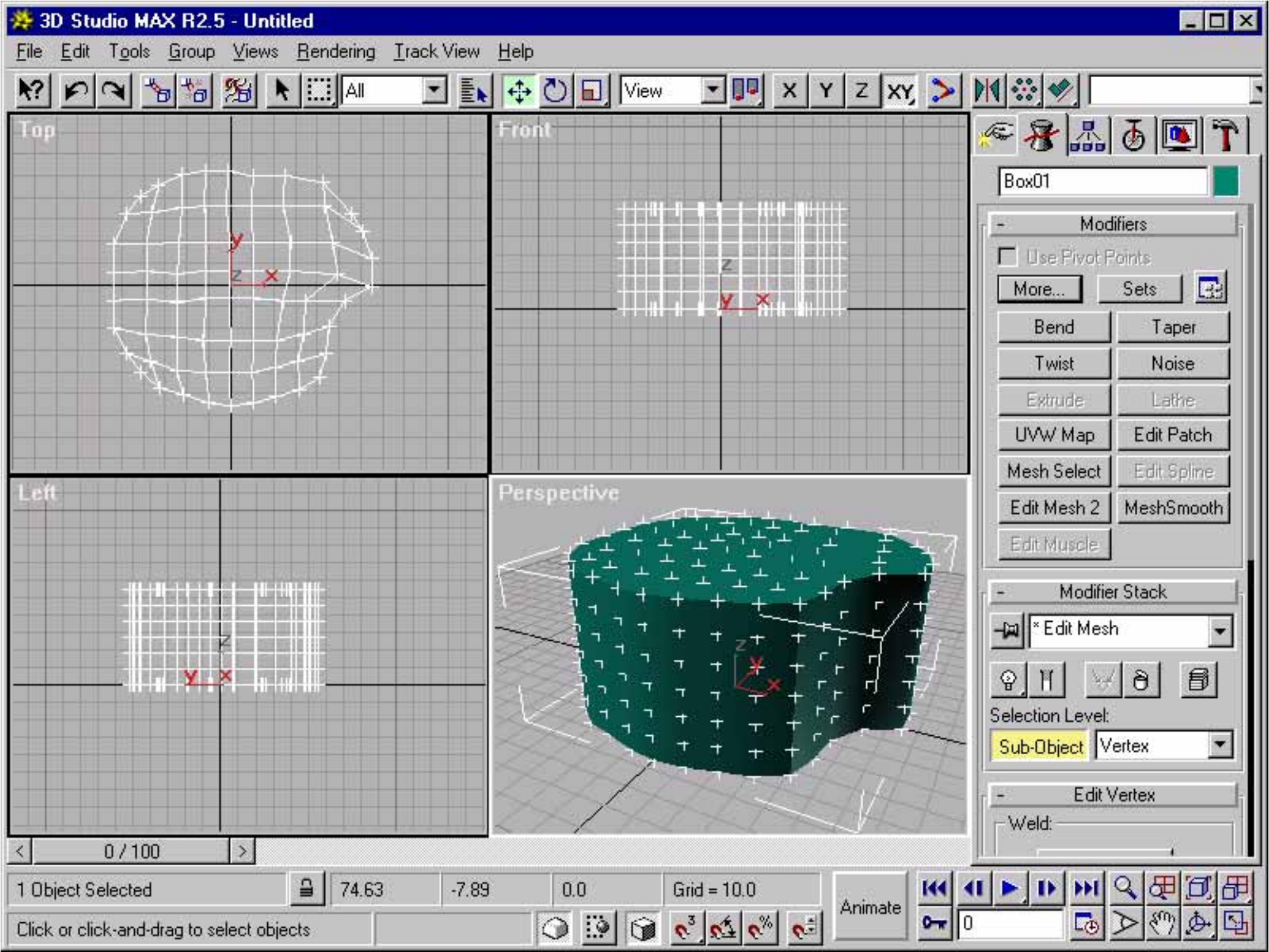
☐ Affect Region

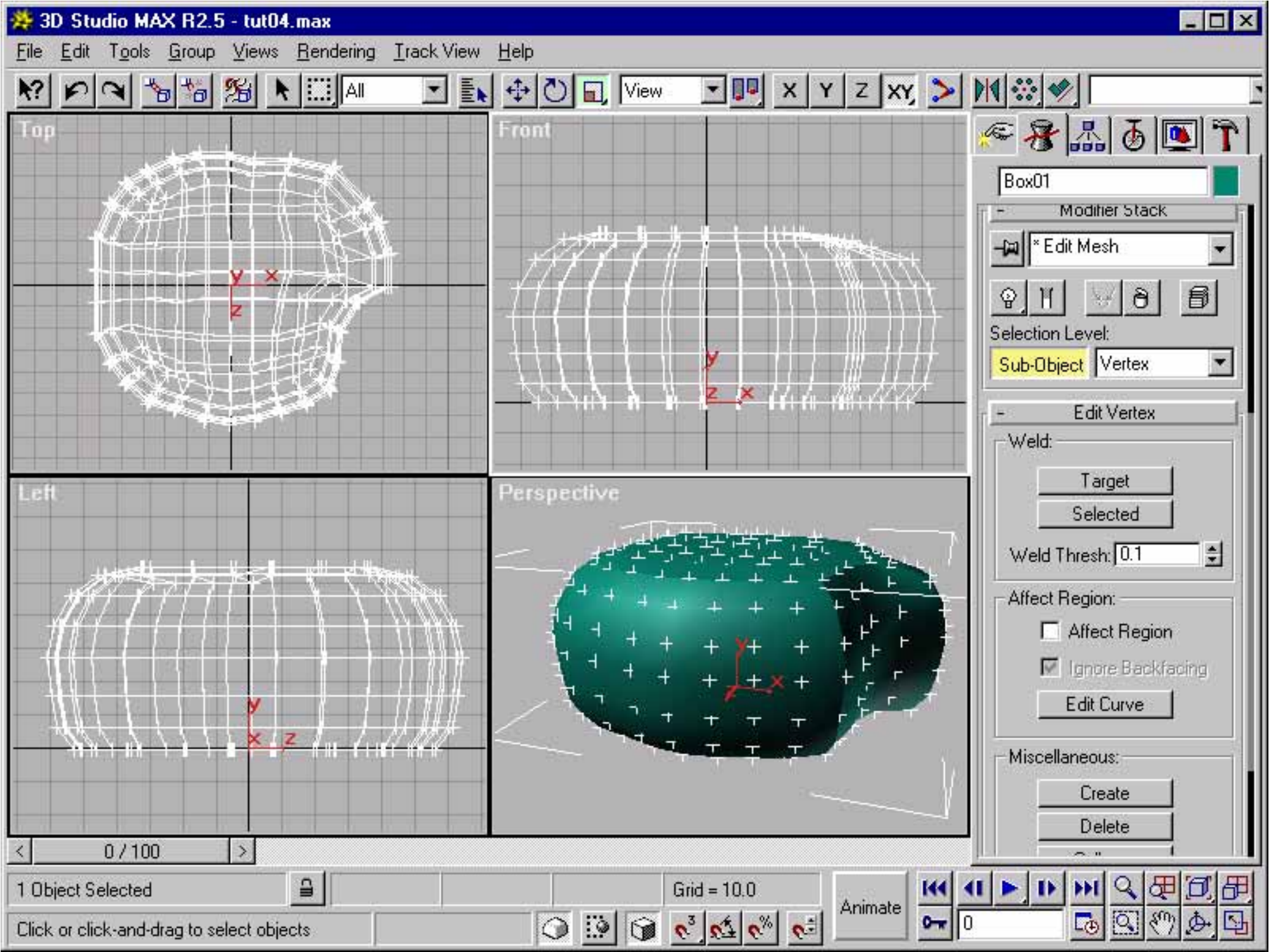
☒ Ignore Backfacing

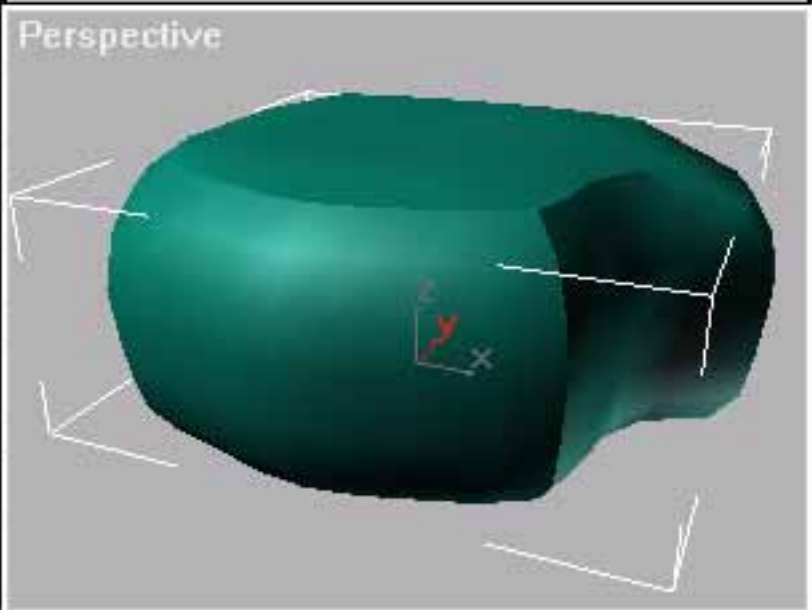
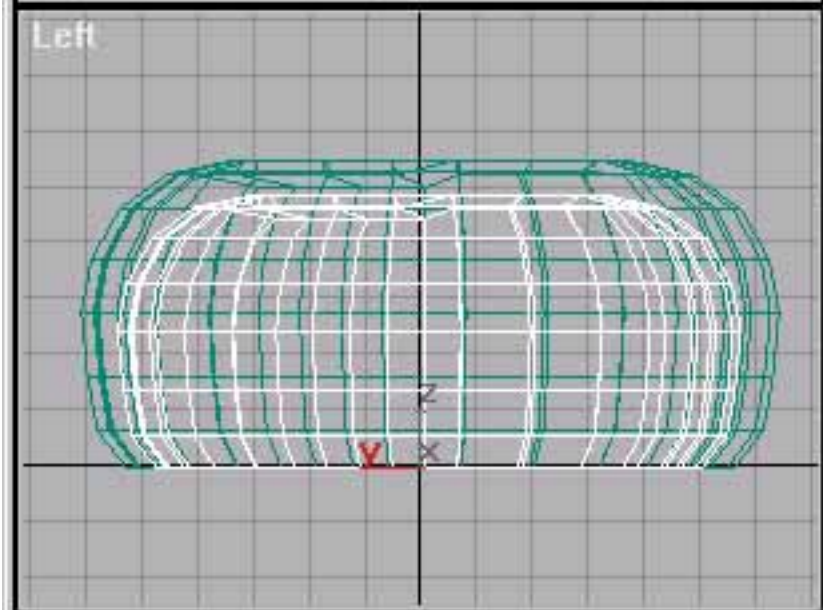
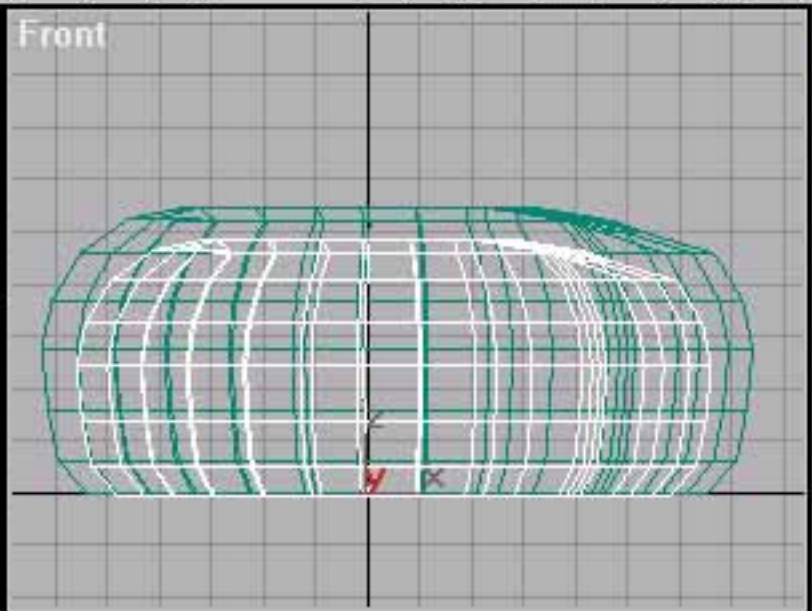
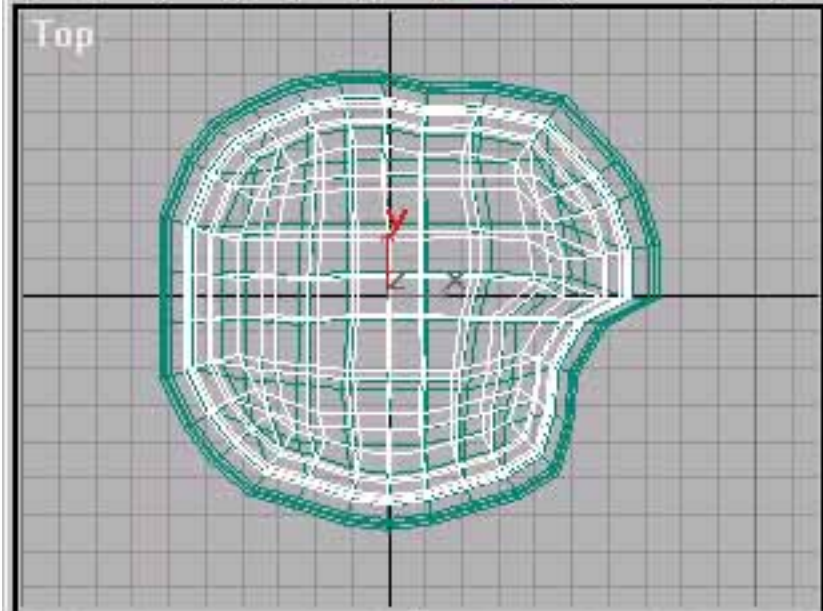
Edit Curve

Miscellaneous:

Create







Geometry and Objects

Object Type

Morph Scatter

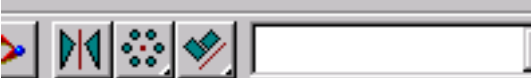
Conform Connect

ShapeMerge Boolean 2

Name and Color

Box02

< 0 / 100 >



Standard Primitives

Standard Primitives

Extended Primitives

Compound Objects

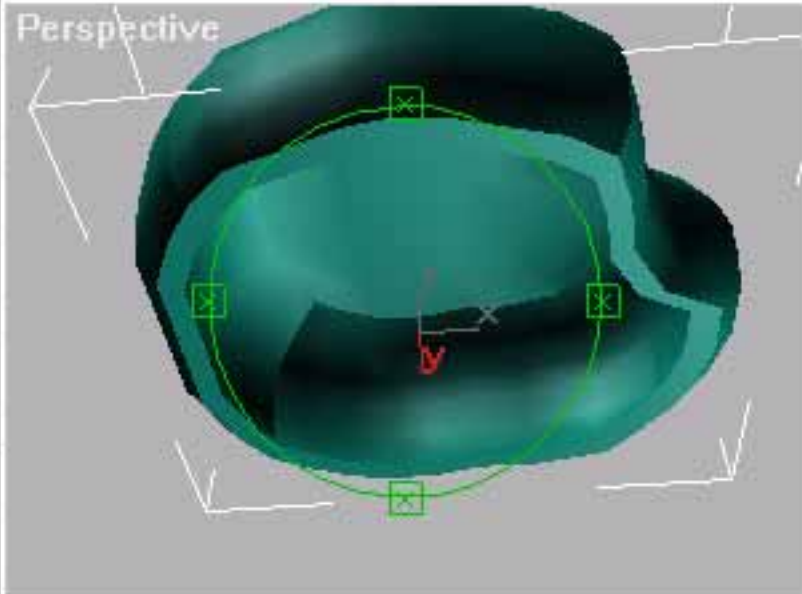
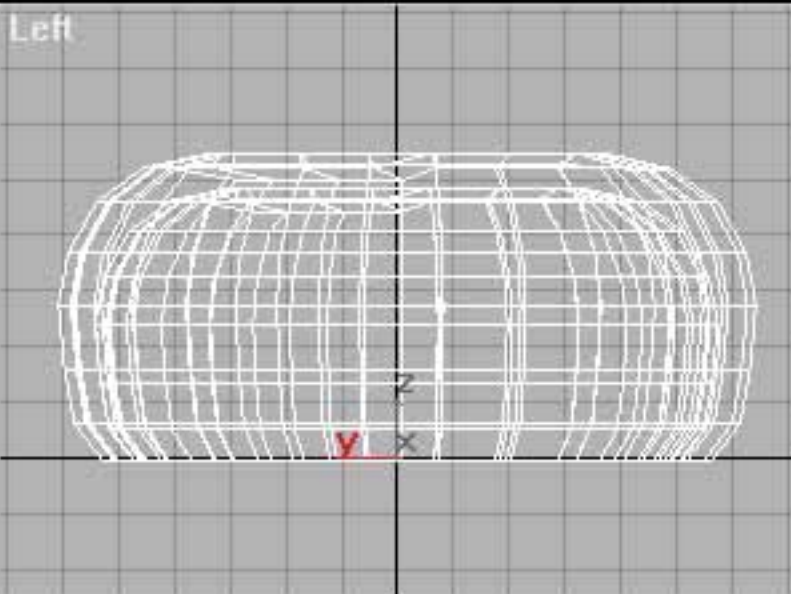
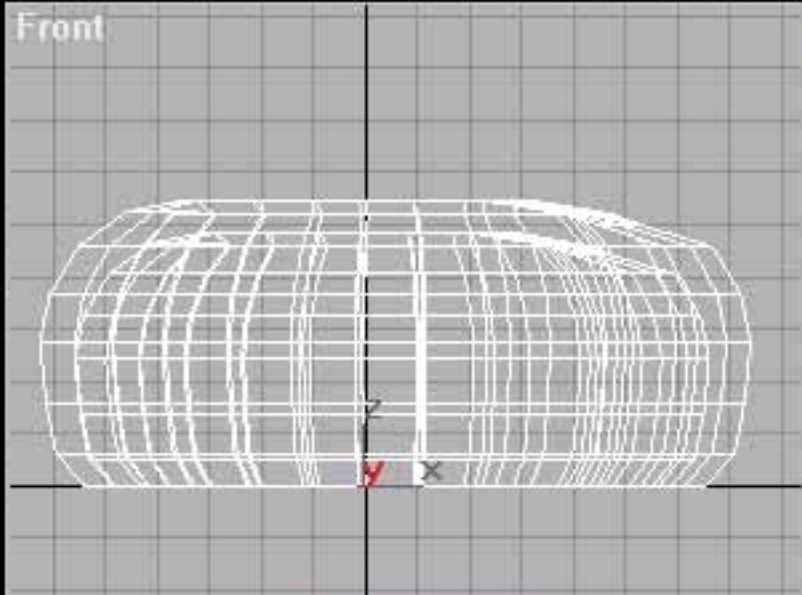
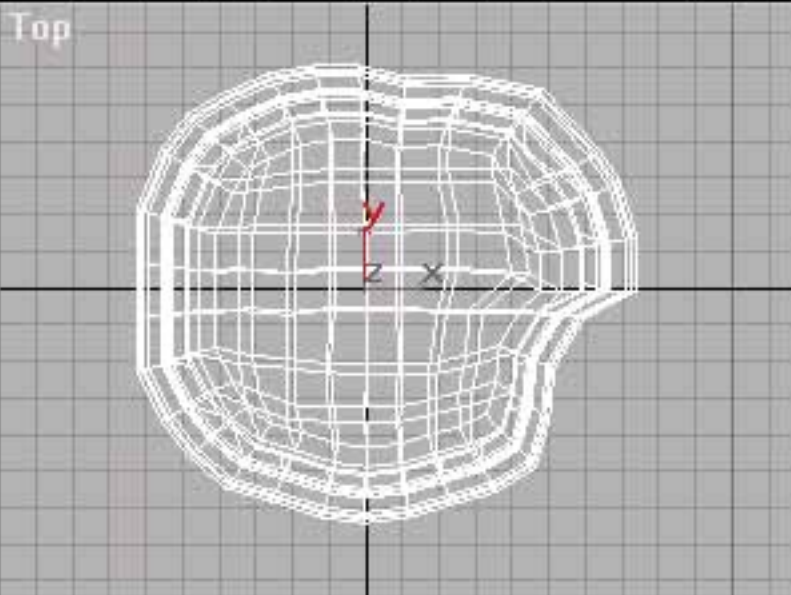
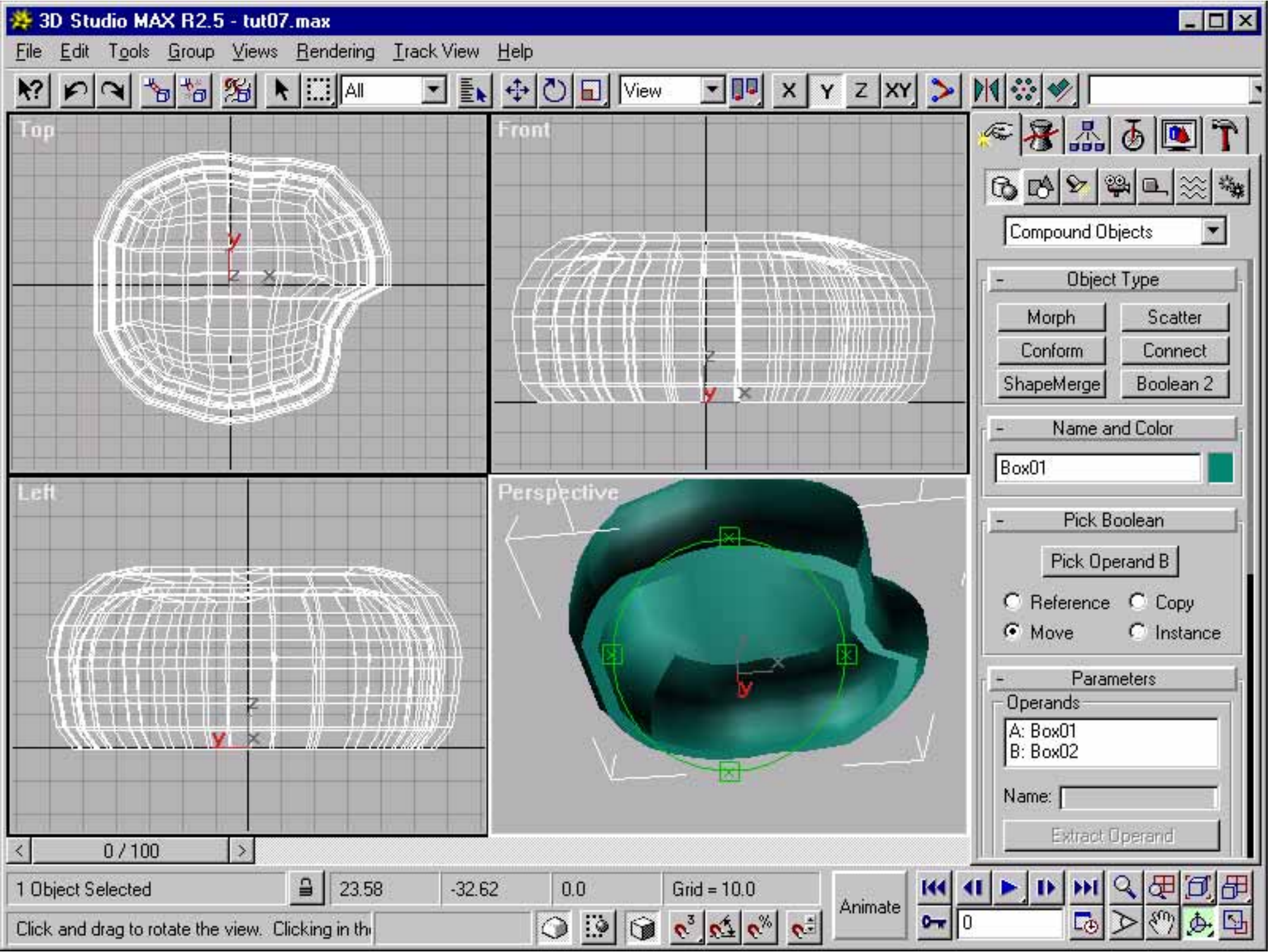
Loft Object

Particle Systems

Patch Grids

NURBS Surfaces





Command Panel

Compound Objects

Object Type

- Morph
- Scatter
- Conform
- Connect
- ShapeMerge
- Boolean 2

Name and Color

Box01

Pick Boolean

Pick Operand B

☐ Reference ☐ Copy

☒ Move ☐ Instance

Parameters

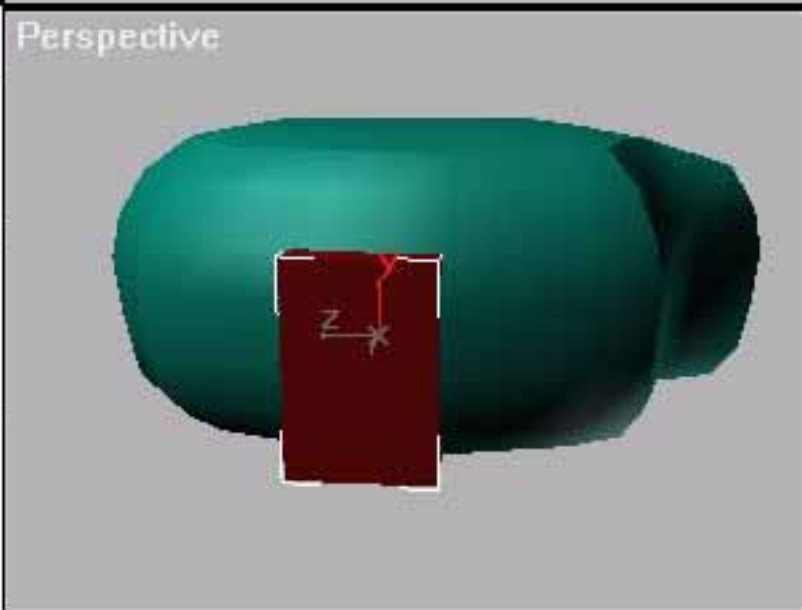
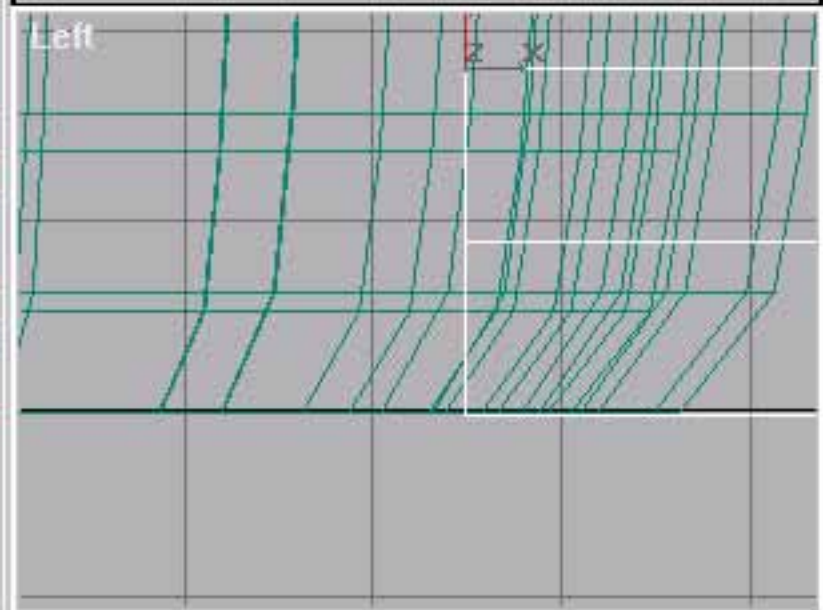
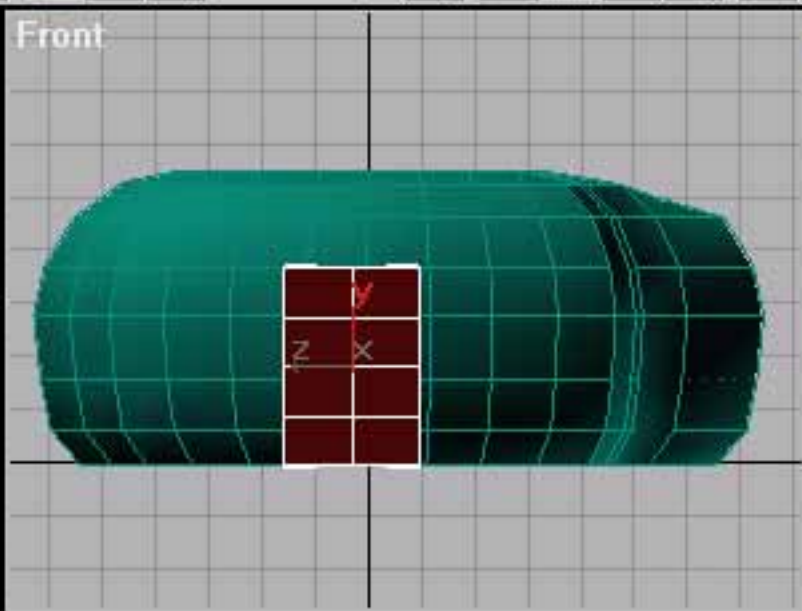
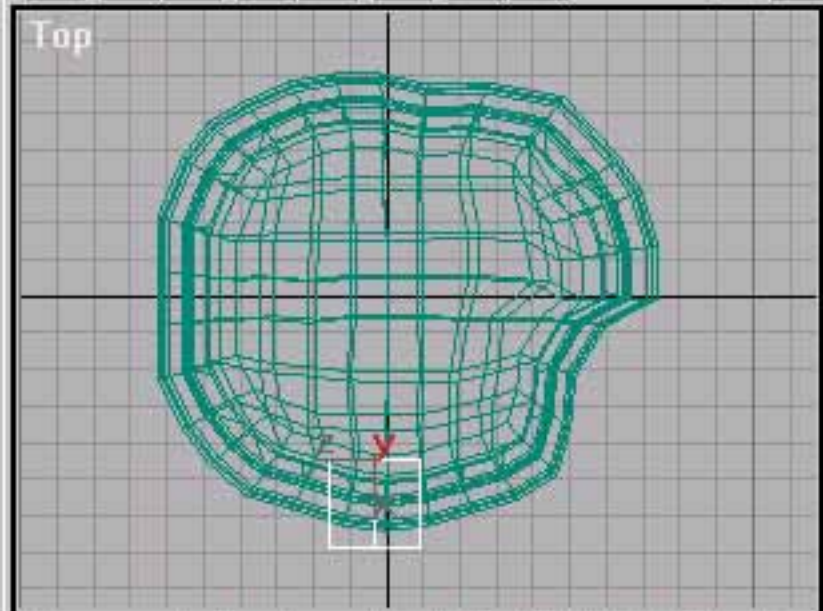
Operands

A: Box01

B: Box02

Name:

Extract Operand



Box02

Modifiers

☐ Use Pivot Points

More... Sets

Bend Taper

Twist Noise

Extrude Lathe

UVW Map Edit Patch

Mesh Select Edit Spline

Edit Mesh 2 MeshSmooth

Edit Muscle

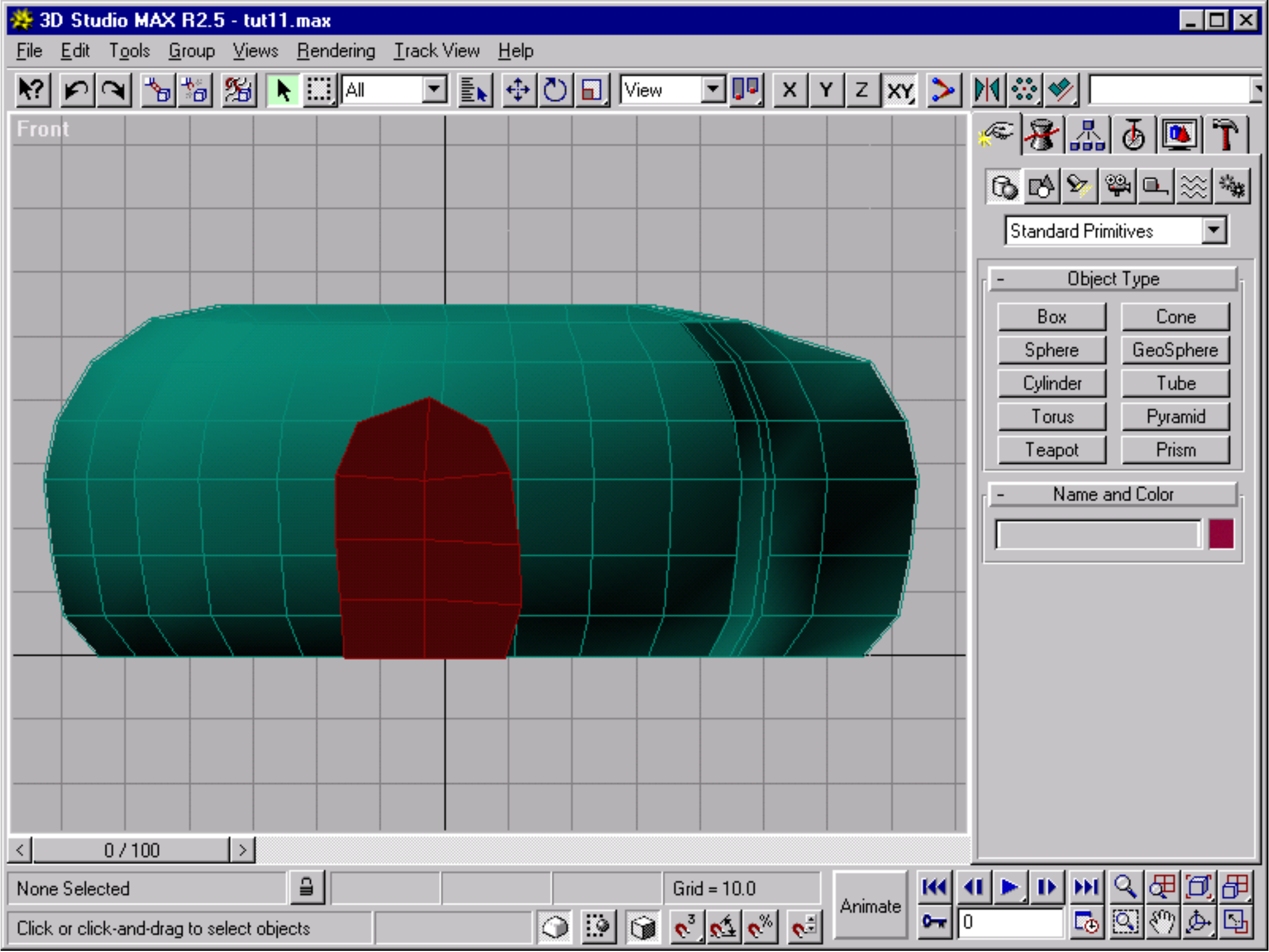
Modifier Stack

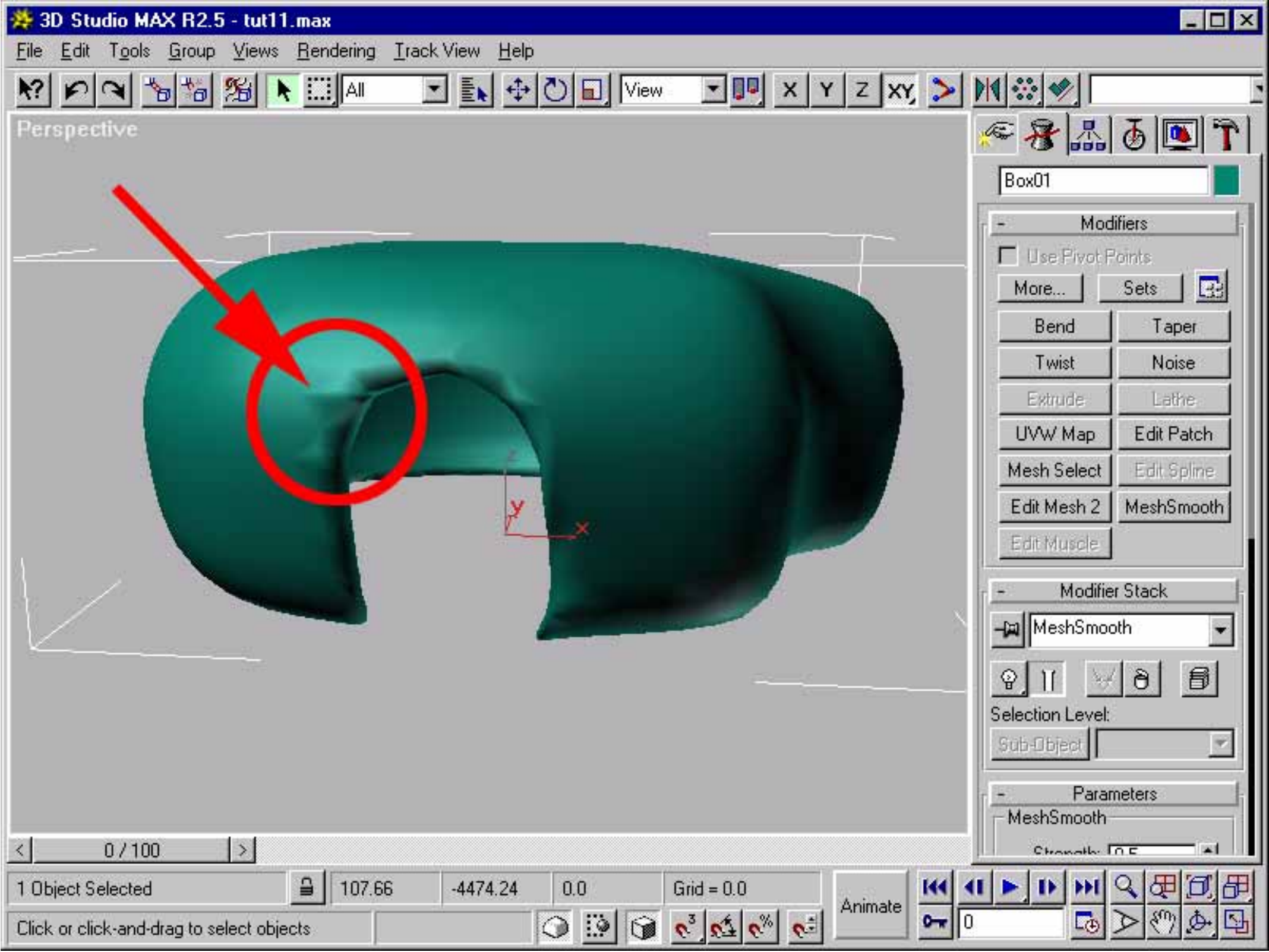
Box

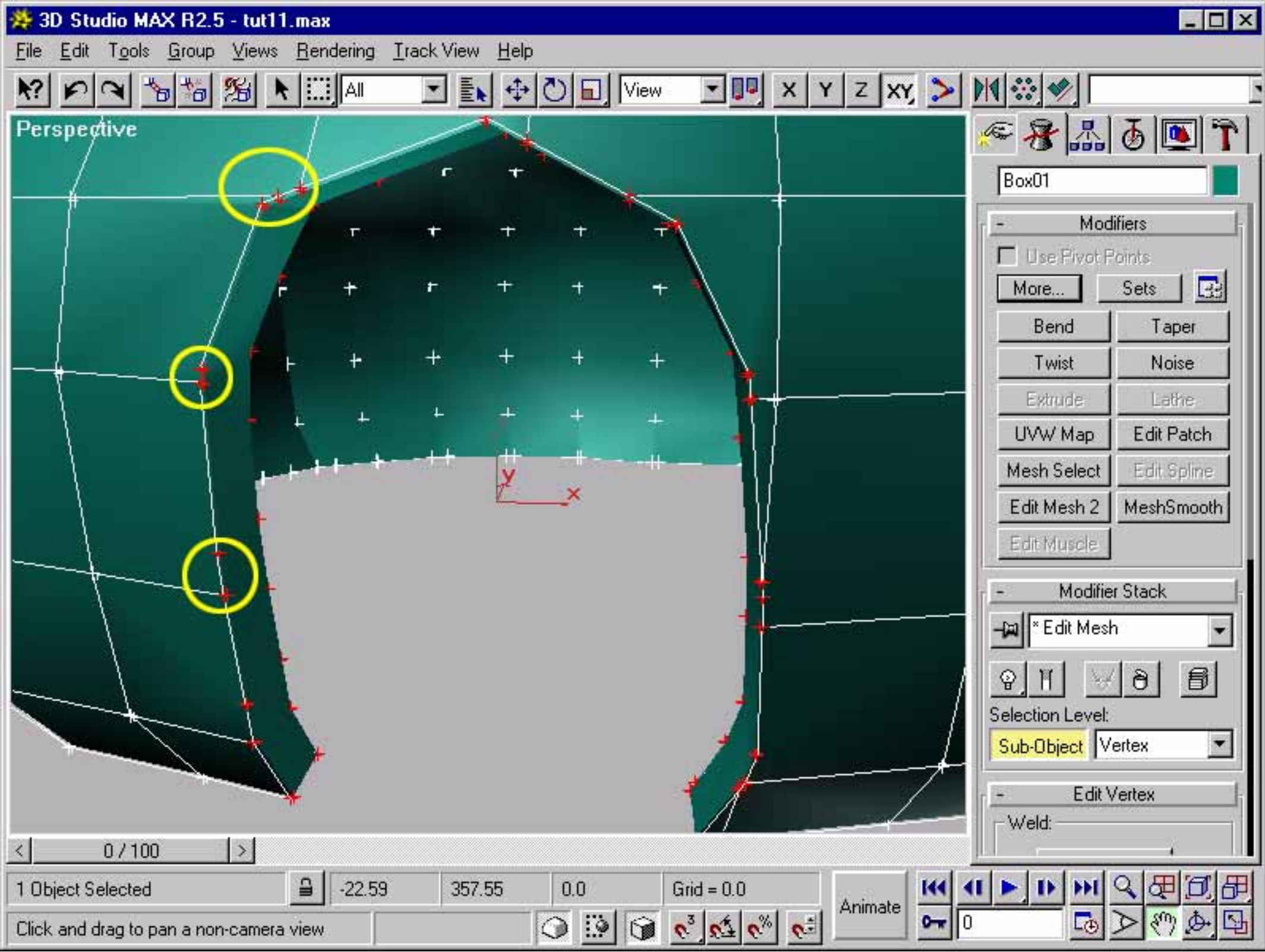
Selection Level: Sub-Object

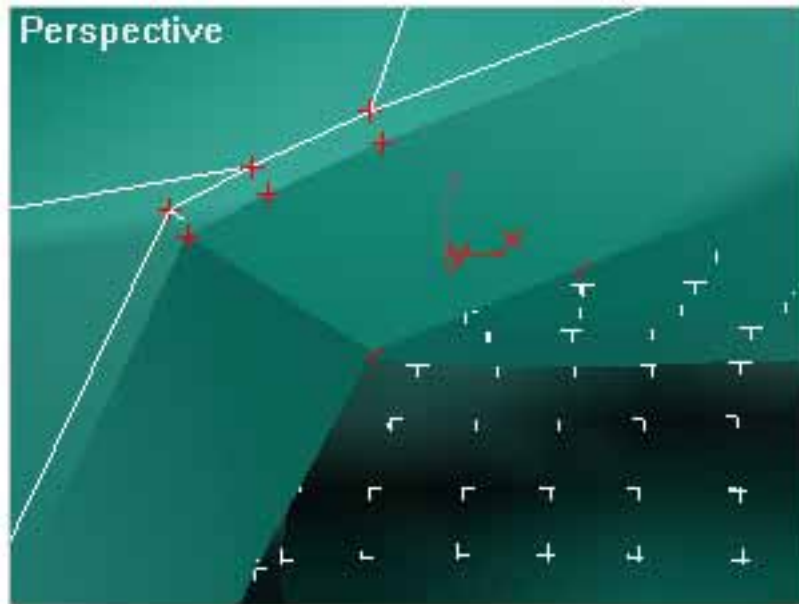
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Length: 37.0

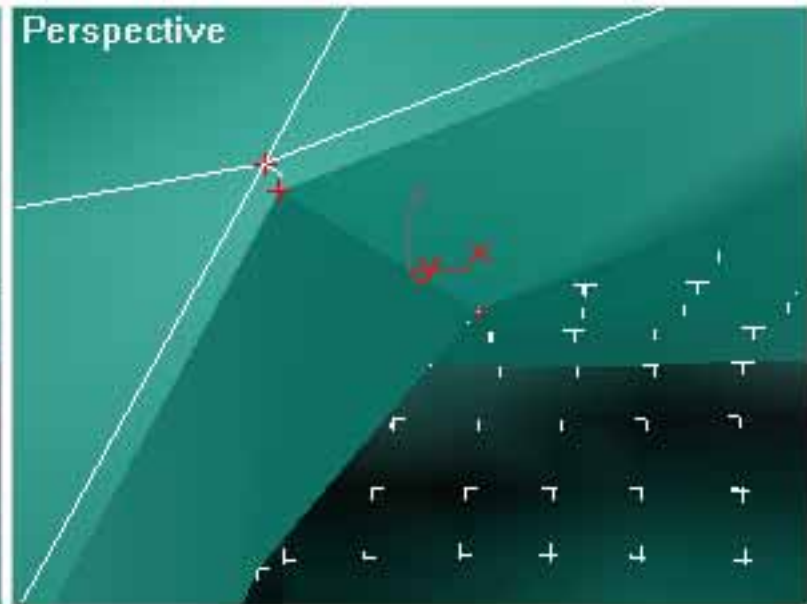








Before weld



After weld



✓ Smooth + Highlights

Wireframe

Other ▶

✓ Edged Faces

✓ Show Grid

Show Background

Show Safe Frame

Texture Correction

Disable View

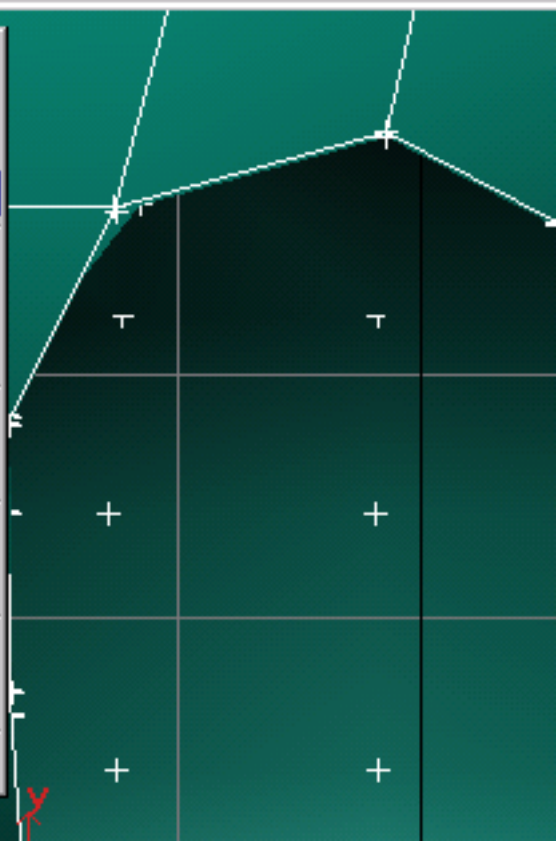
Views ▶

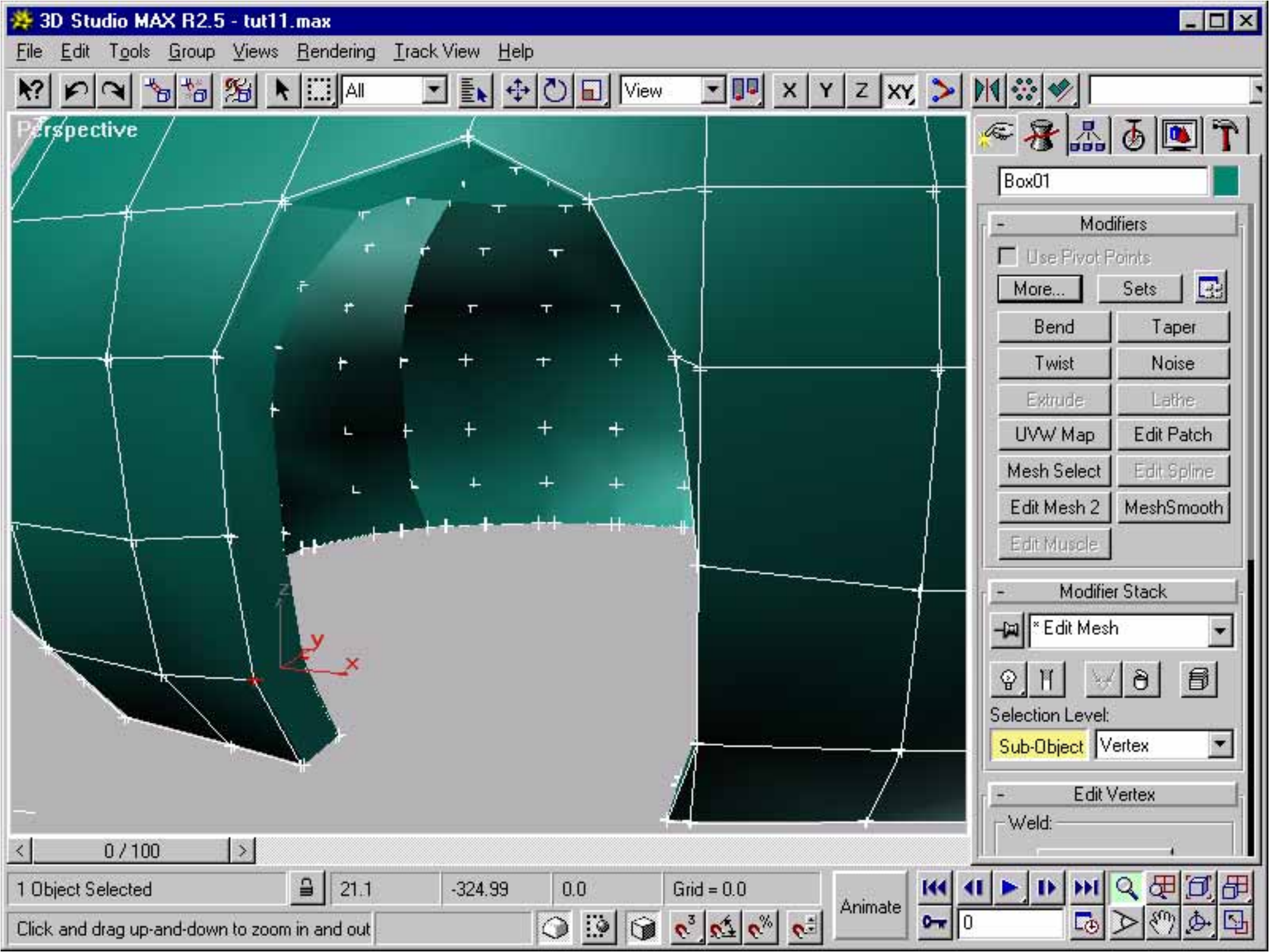
Swap Layouts

Undo View Zoom

Redo

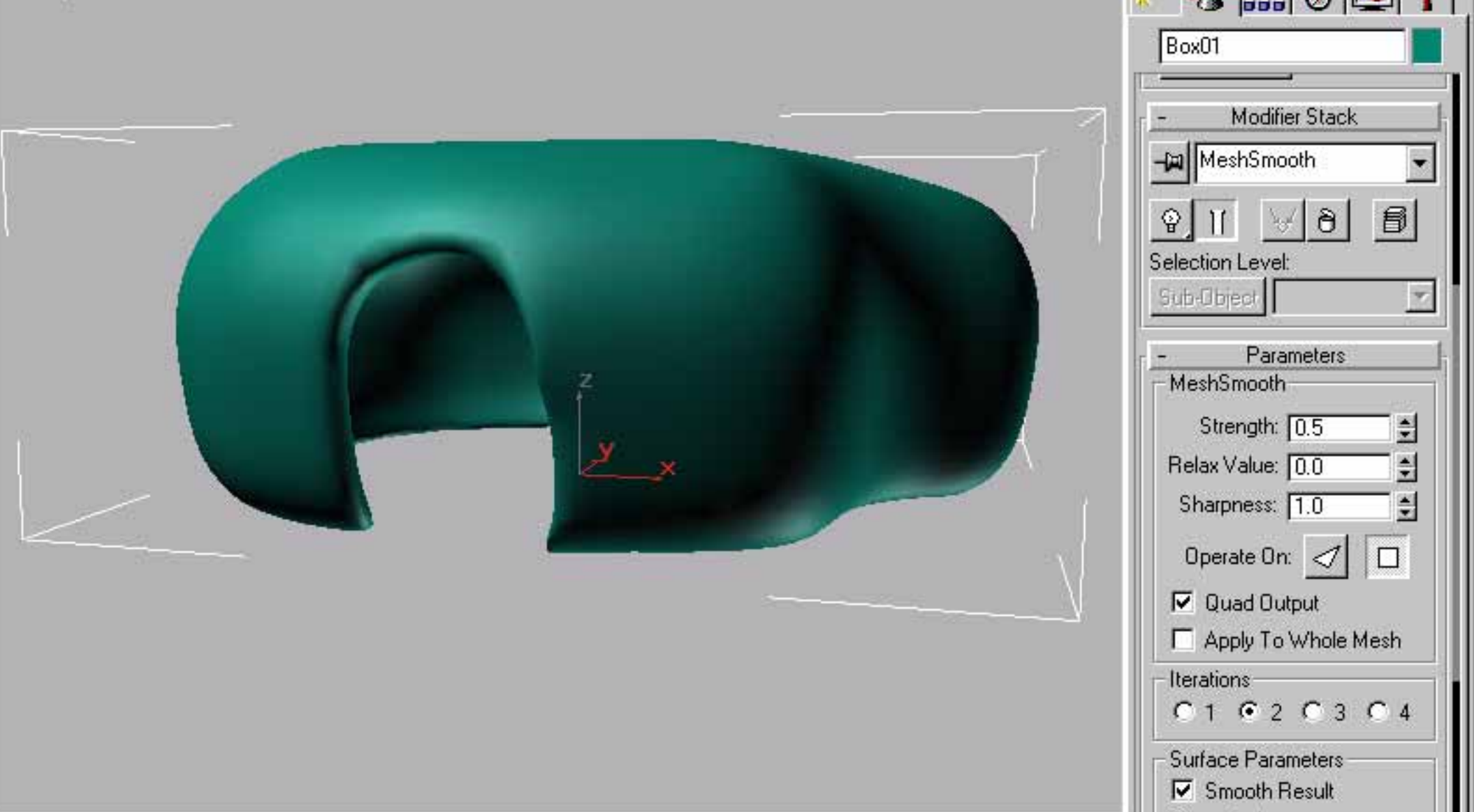
Configure...







Perspective



< 0 / 100 >

1 Object Selected

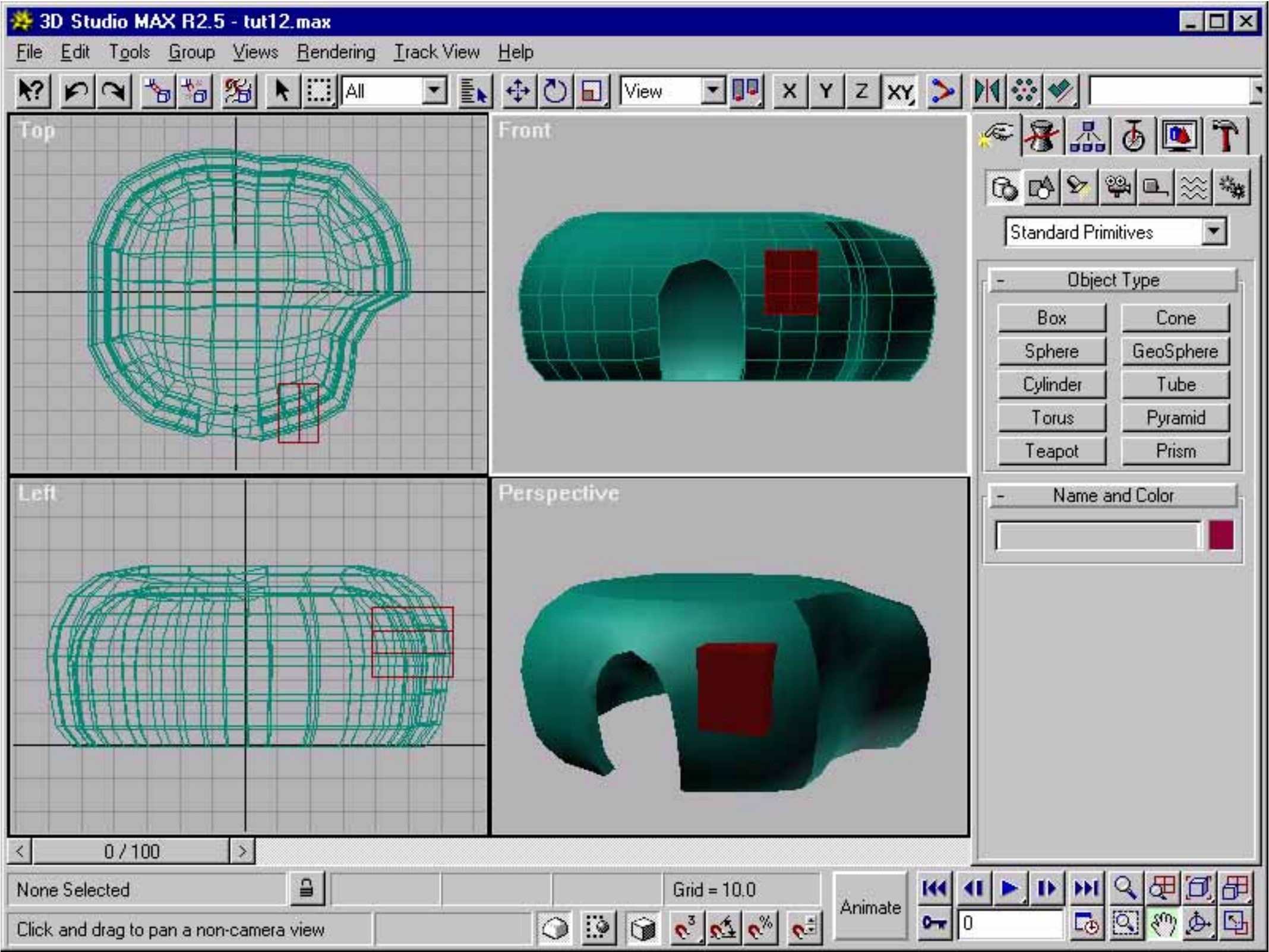


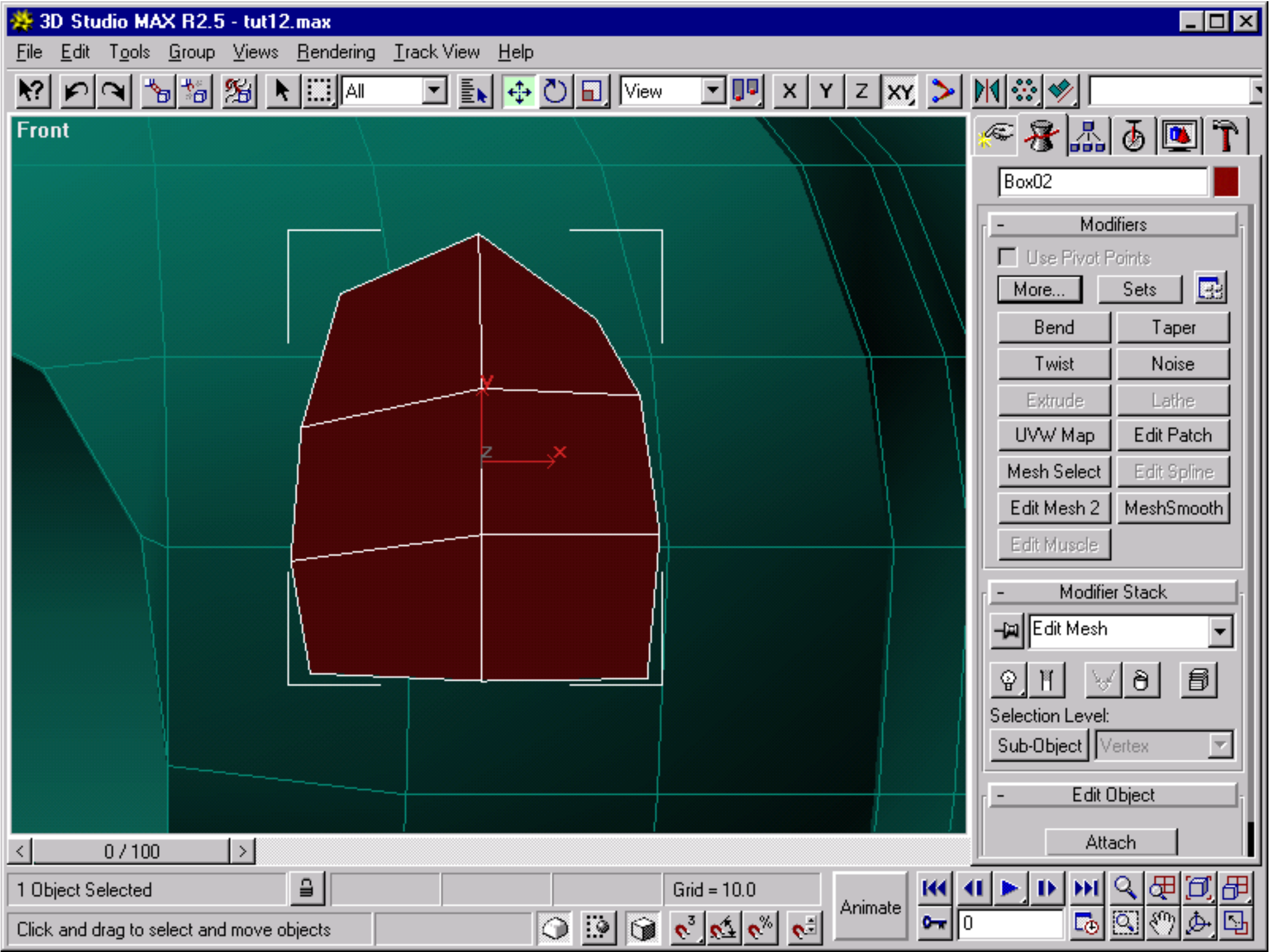
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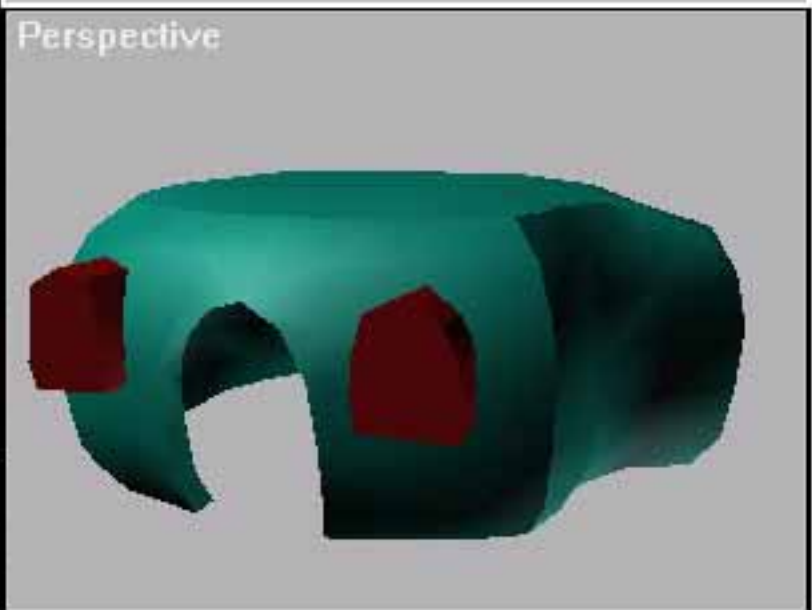
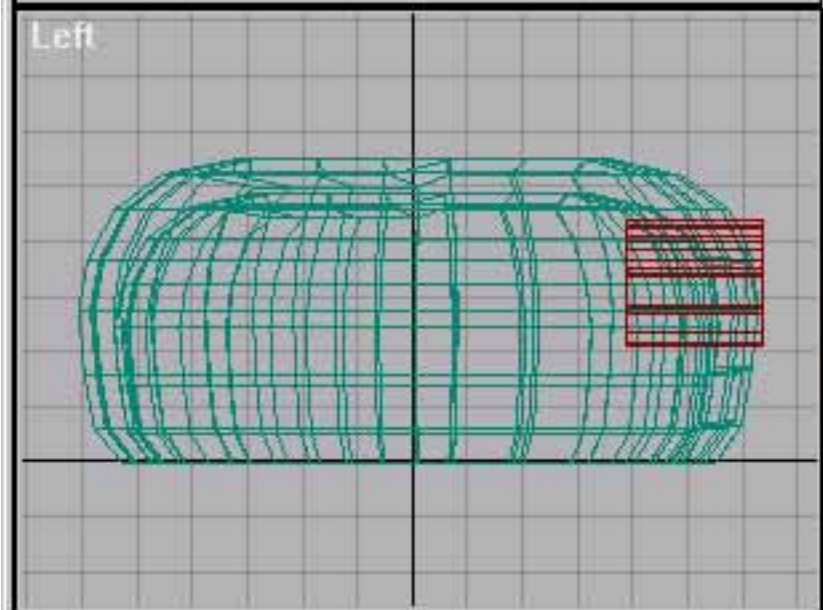
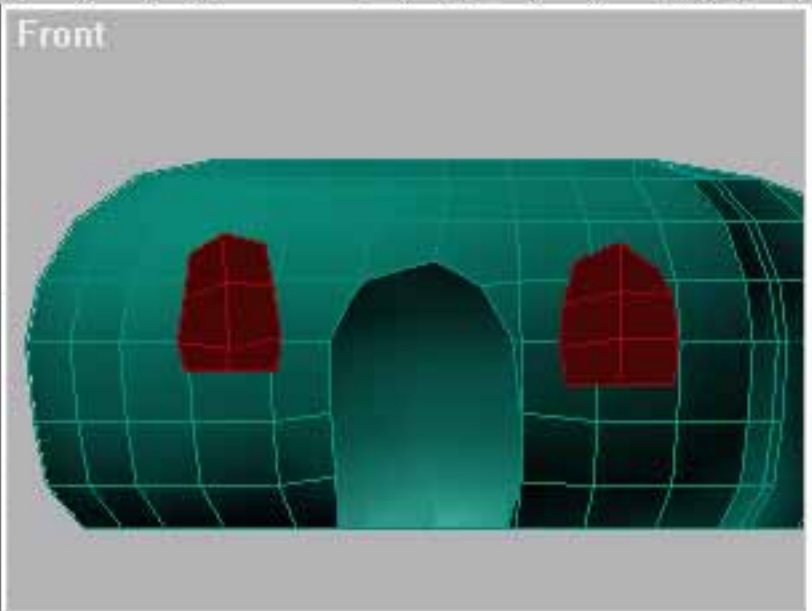
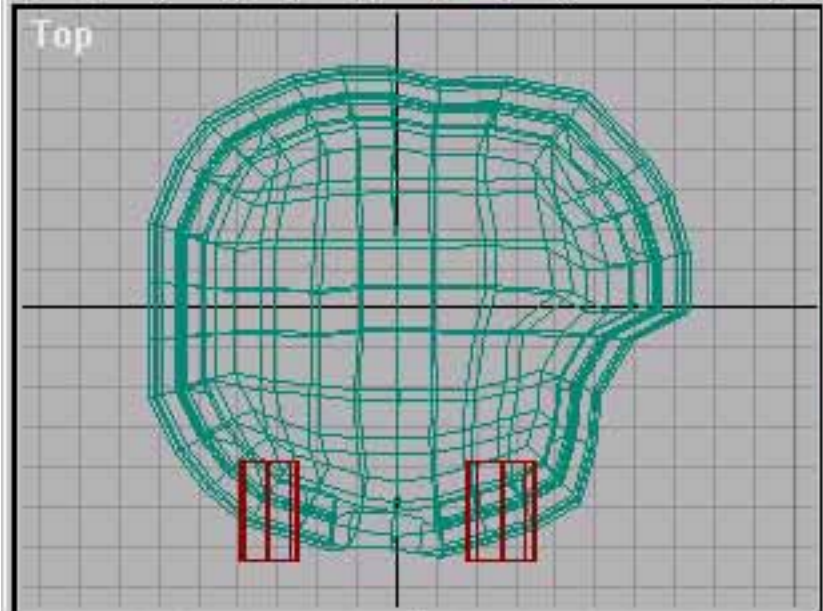
Animate

Click and drag to pan a non-camera view







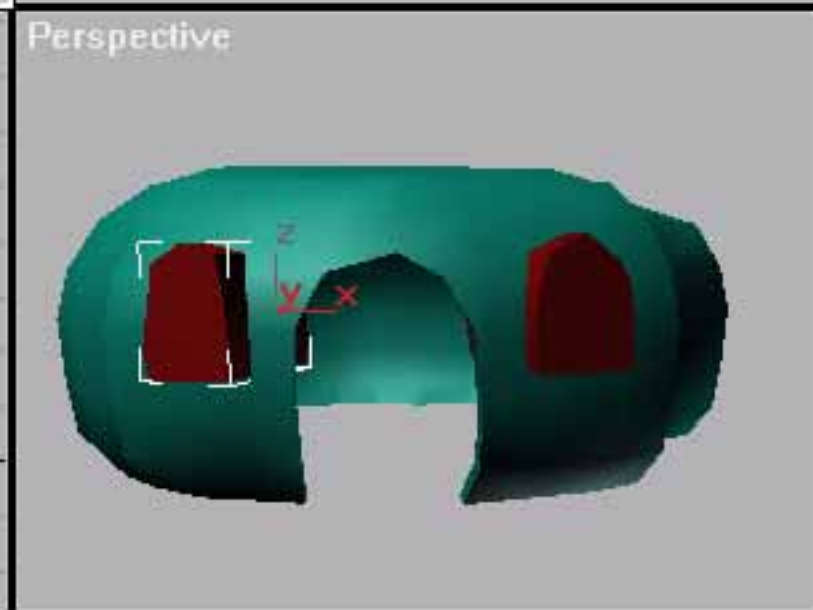
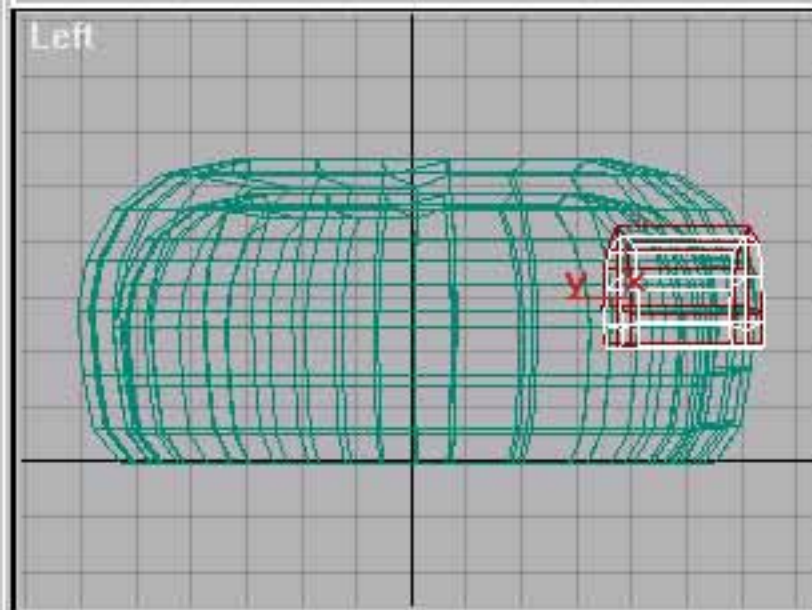
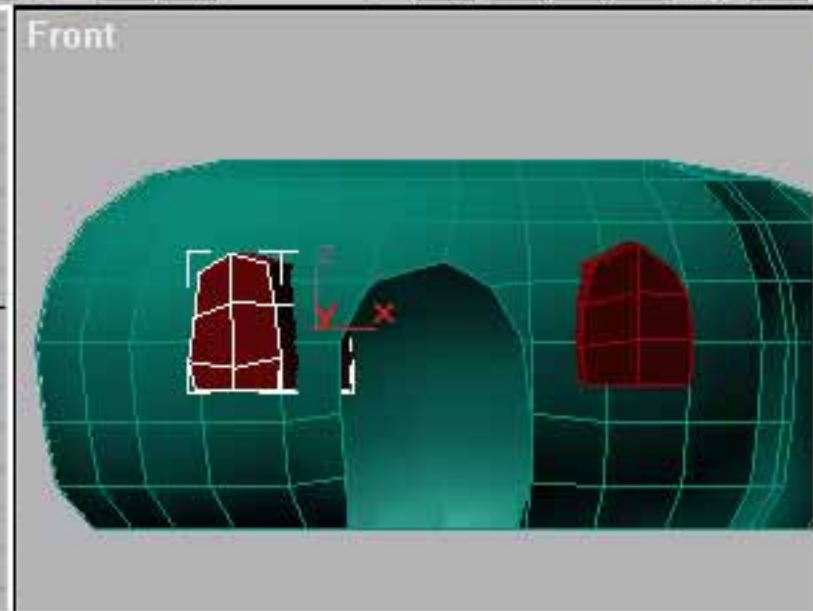
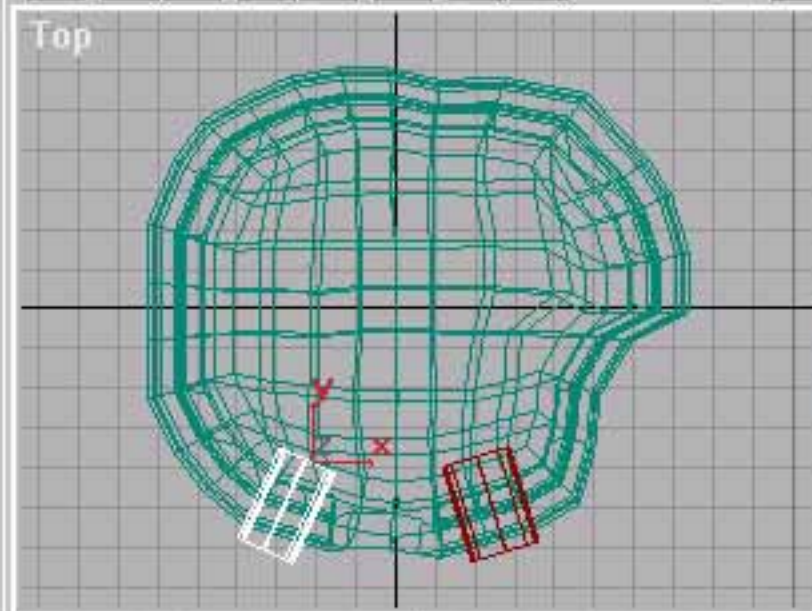


Standard Primitives

Object Type

Box	Cone
Sphere	GeoSphere
Cylinder	Tube
Torus	Pyramid
Teapot	Prism

Name and Color



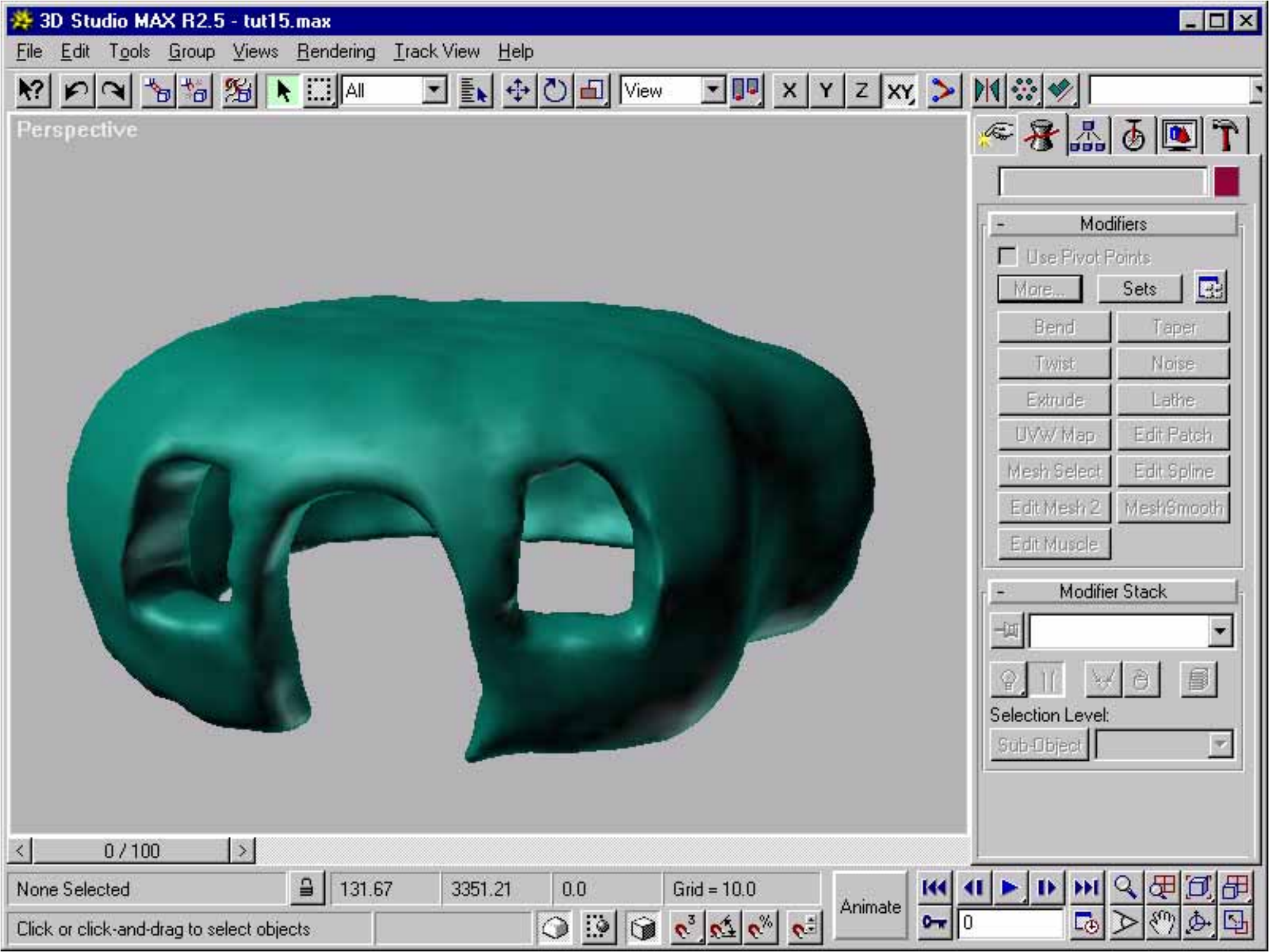
Standard Primitives

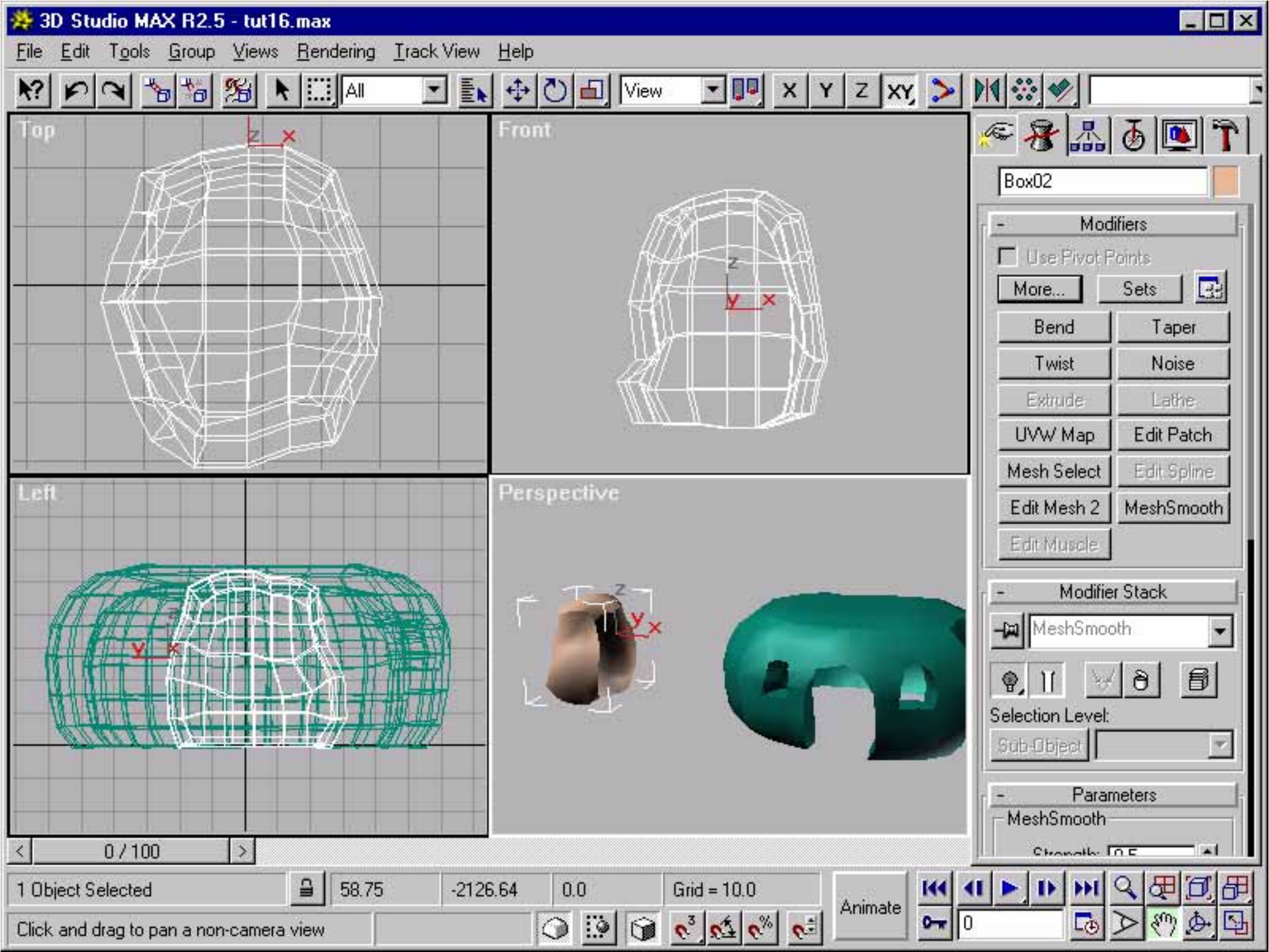
Object Type

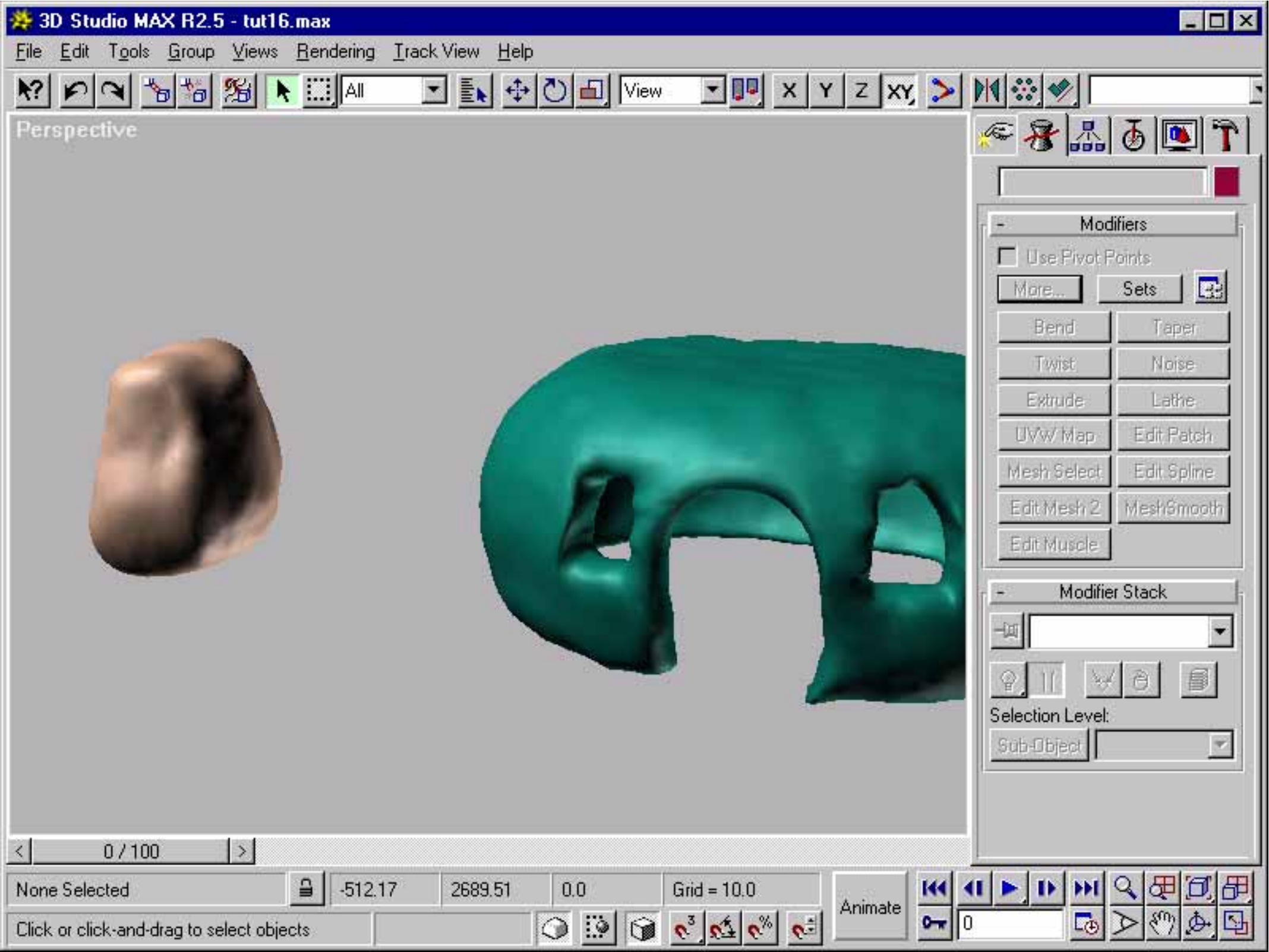
Box	Cone
Sphere	GeoSphere
Cylinder	Tube
Torus	Pyramid
Teapot	Prism

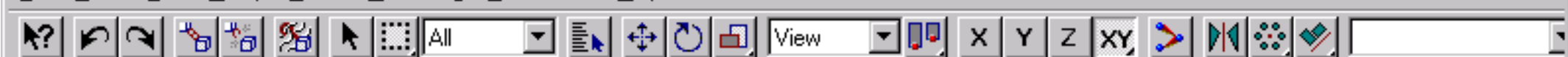
Name and Color

Box03

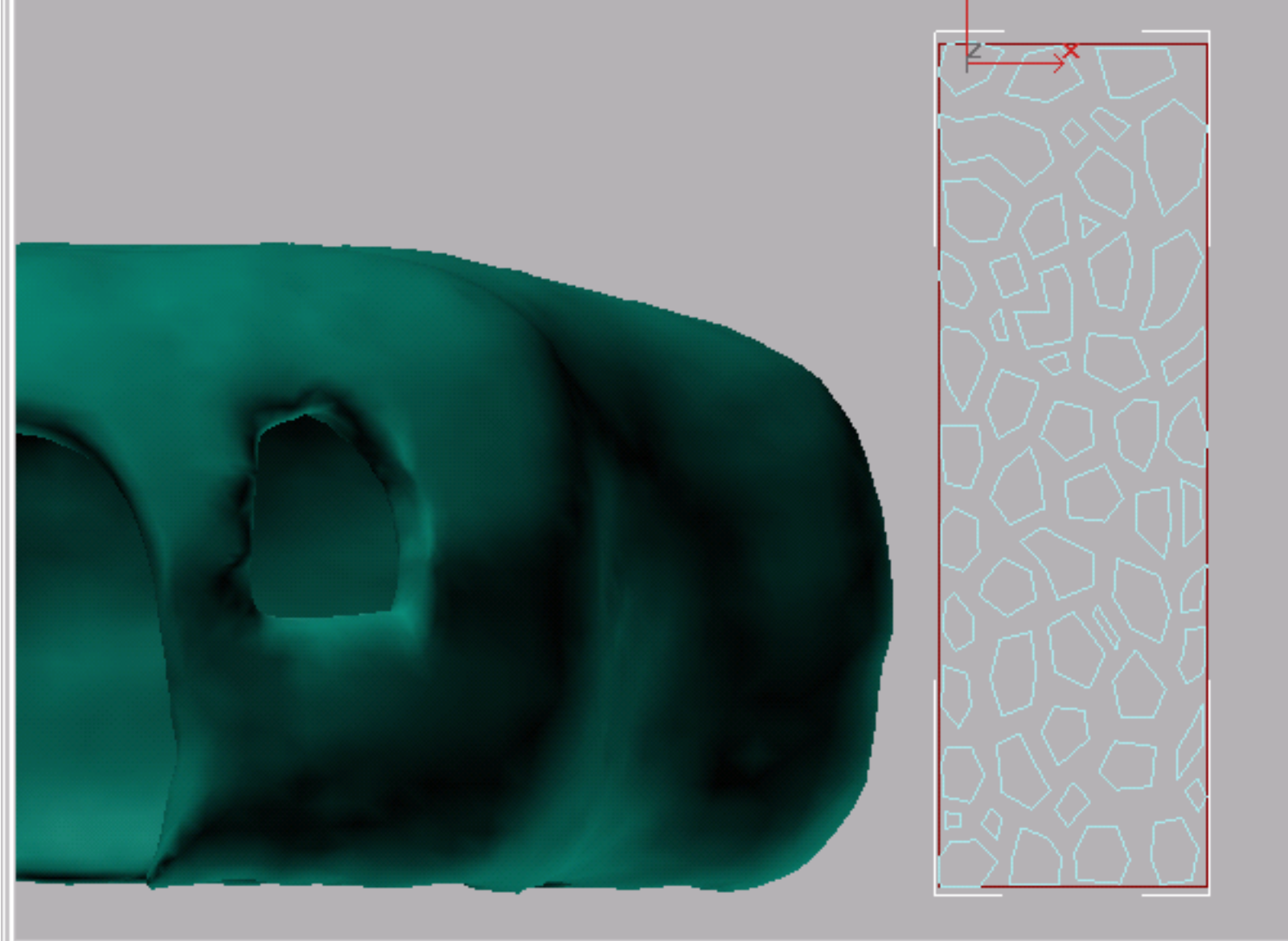








Front



Line01

Modifiers

☐ Use Pivot Points

More... Sets

Bend Taper

Twist Noise

Extrude Lathe

UVW Map Edit Patch

Mesh Select Edit Spline

Edit Mesh 2 MeshSmooth

Edit Muscle

Modifier Stack

Line

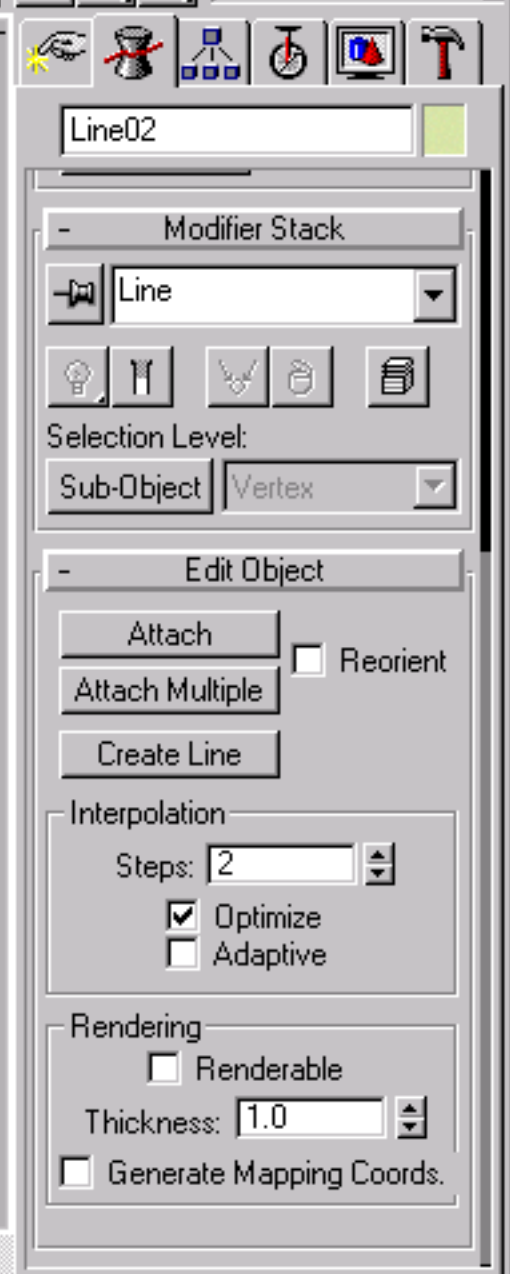
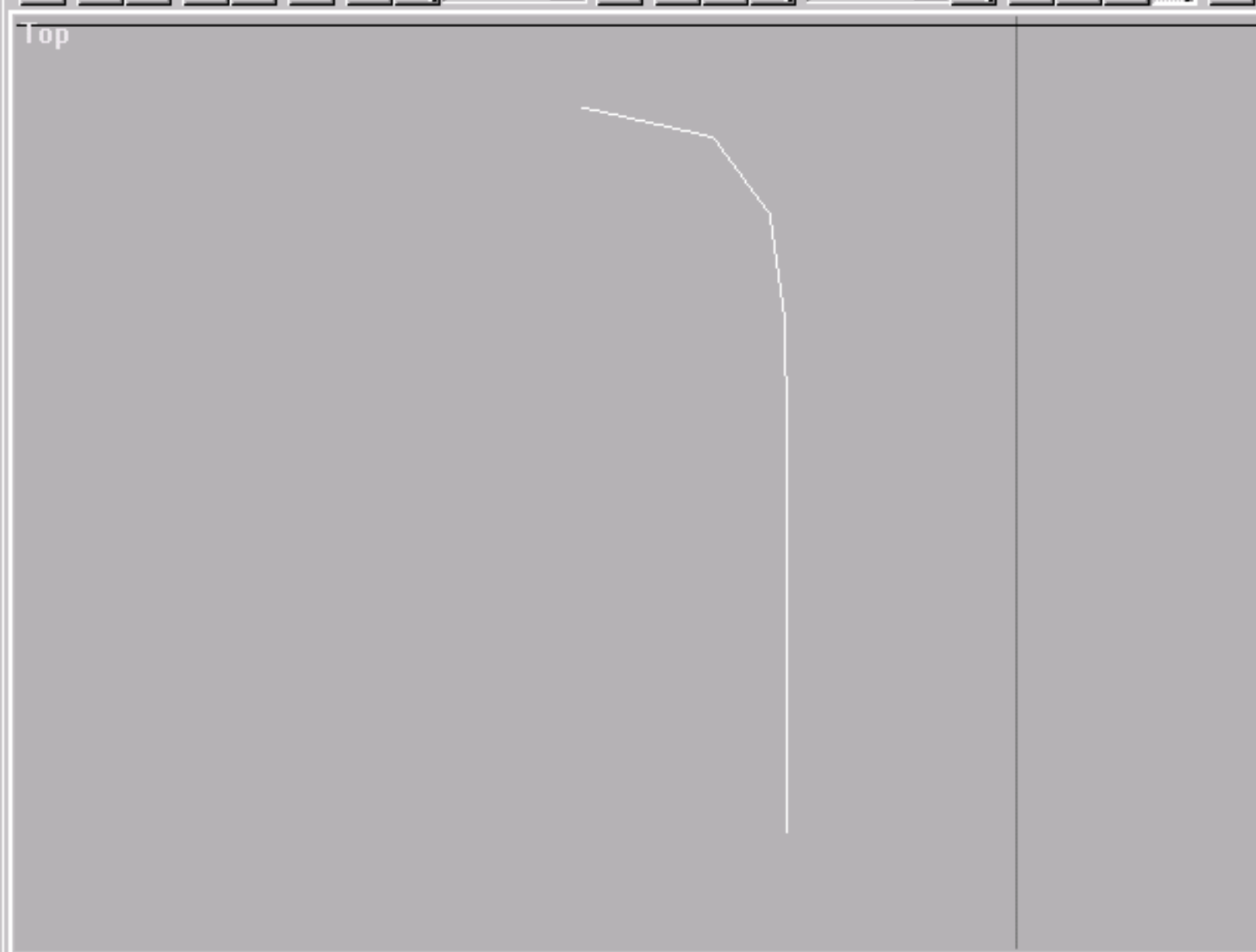
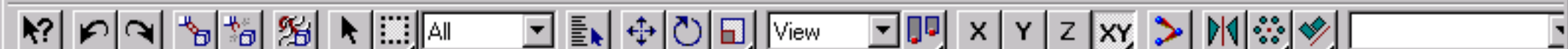
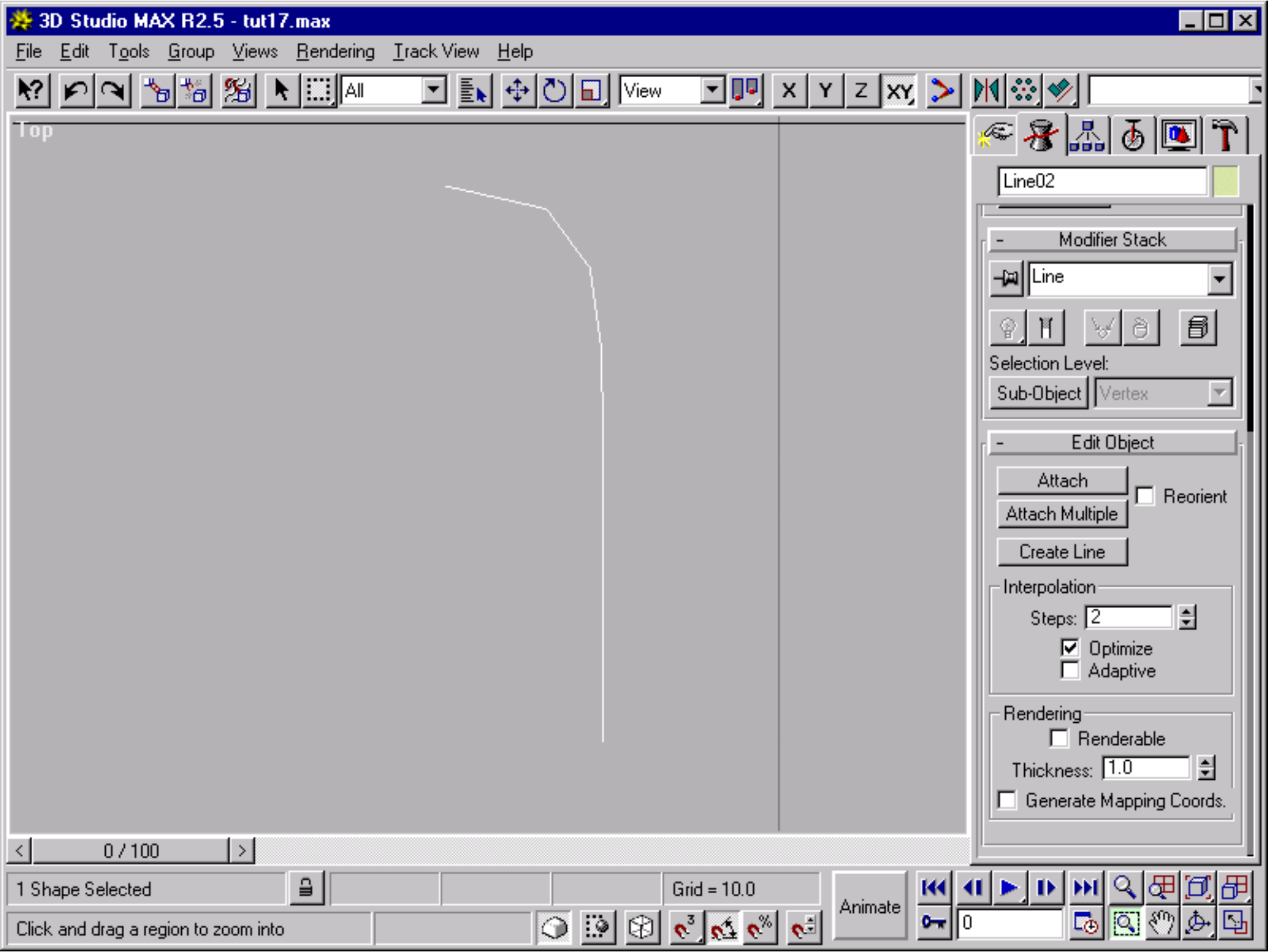
Selection Level:

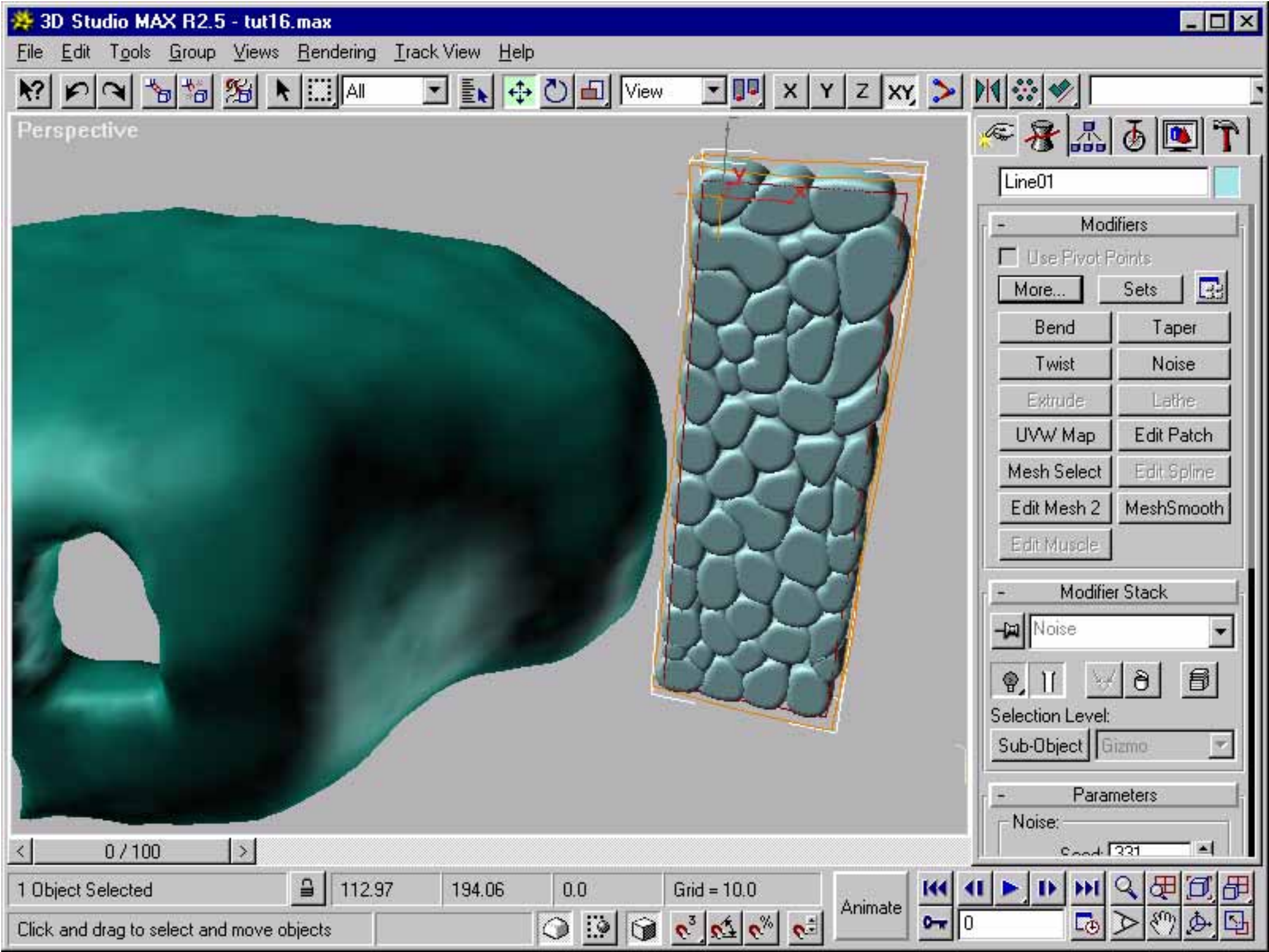
Sub-Object Vertex

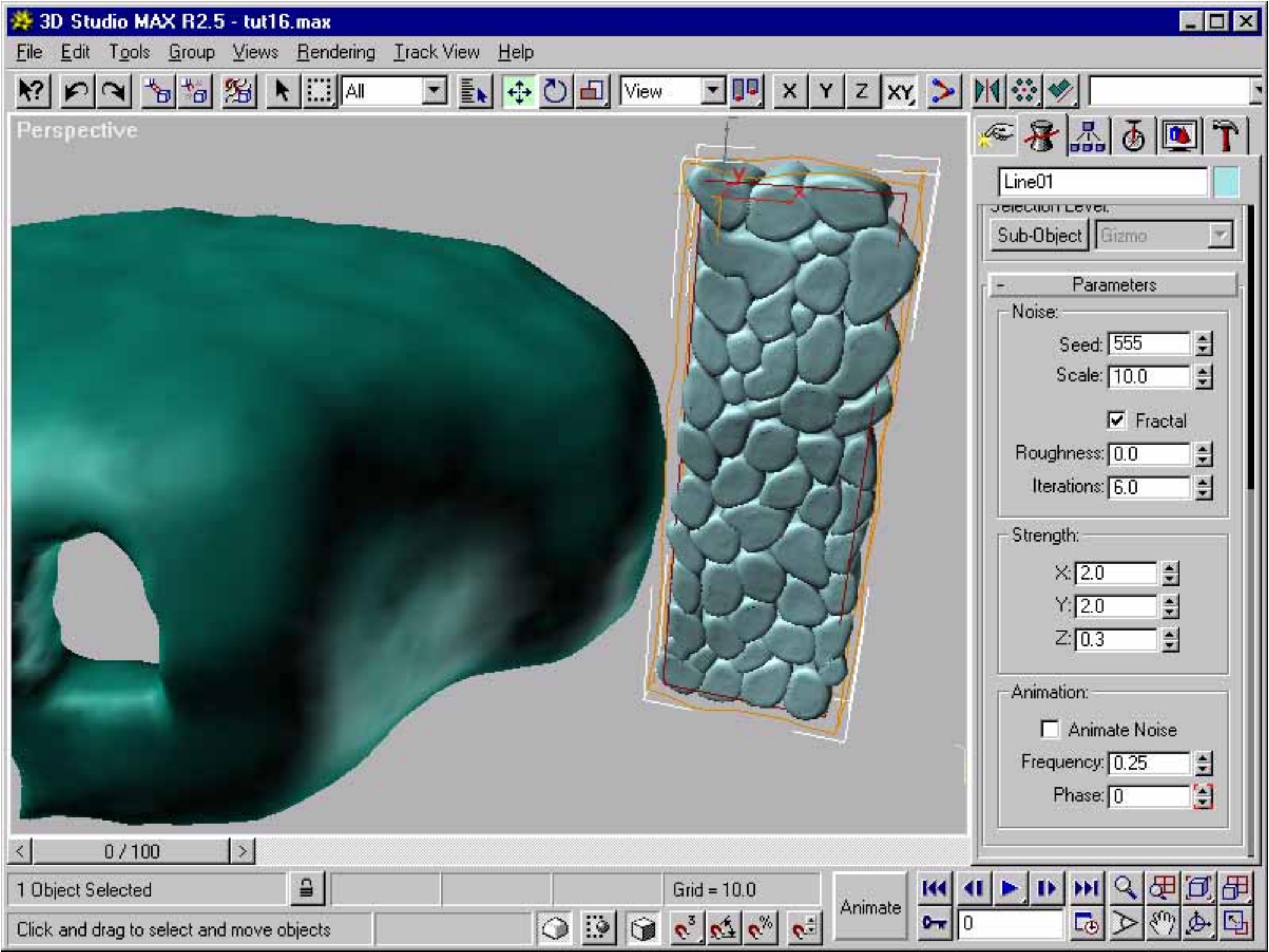
Edit Object

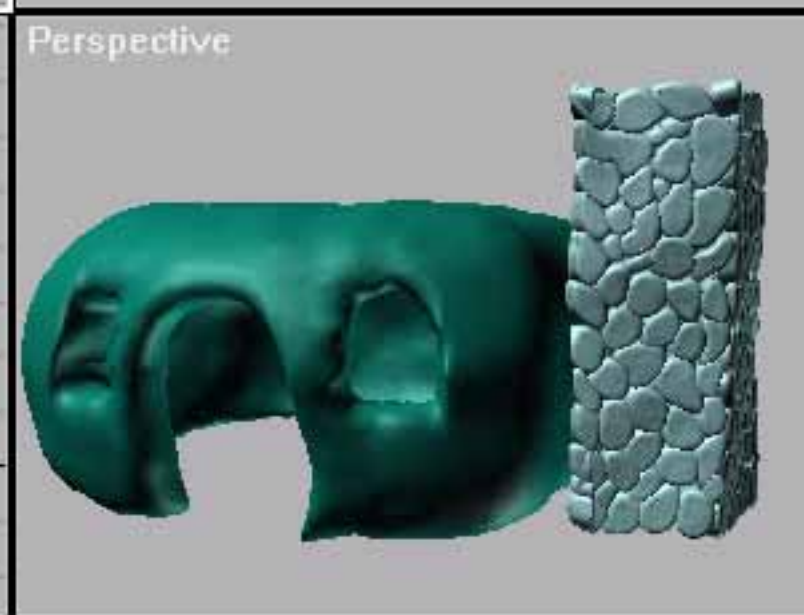
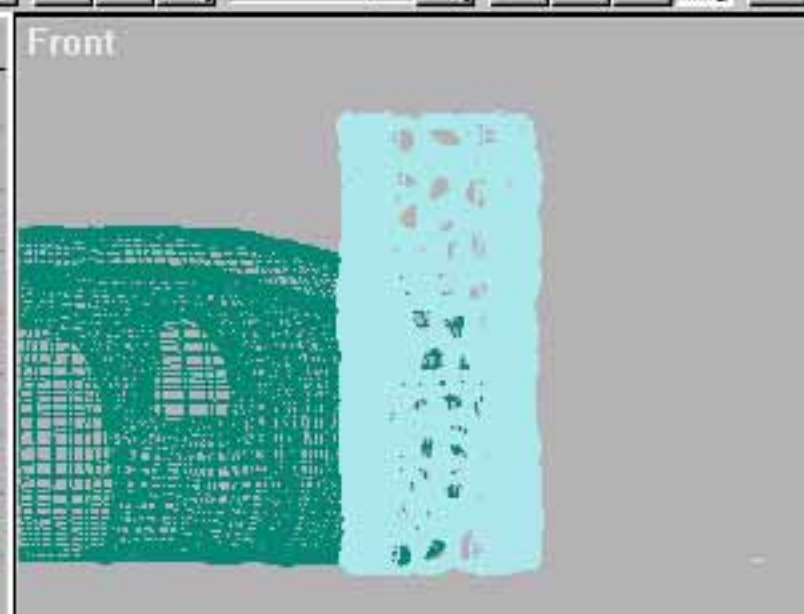
Attach ☐ Reorient

< 0 / 100 >







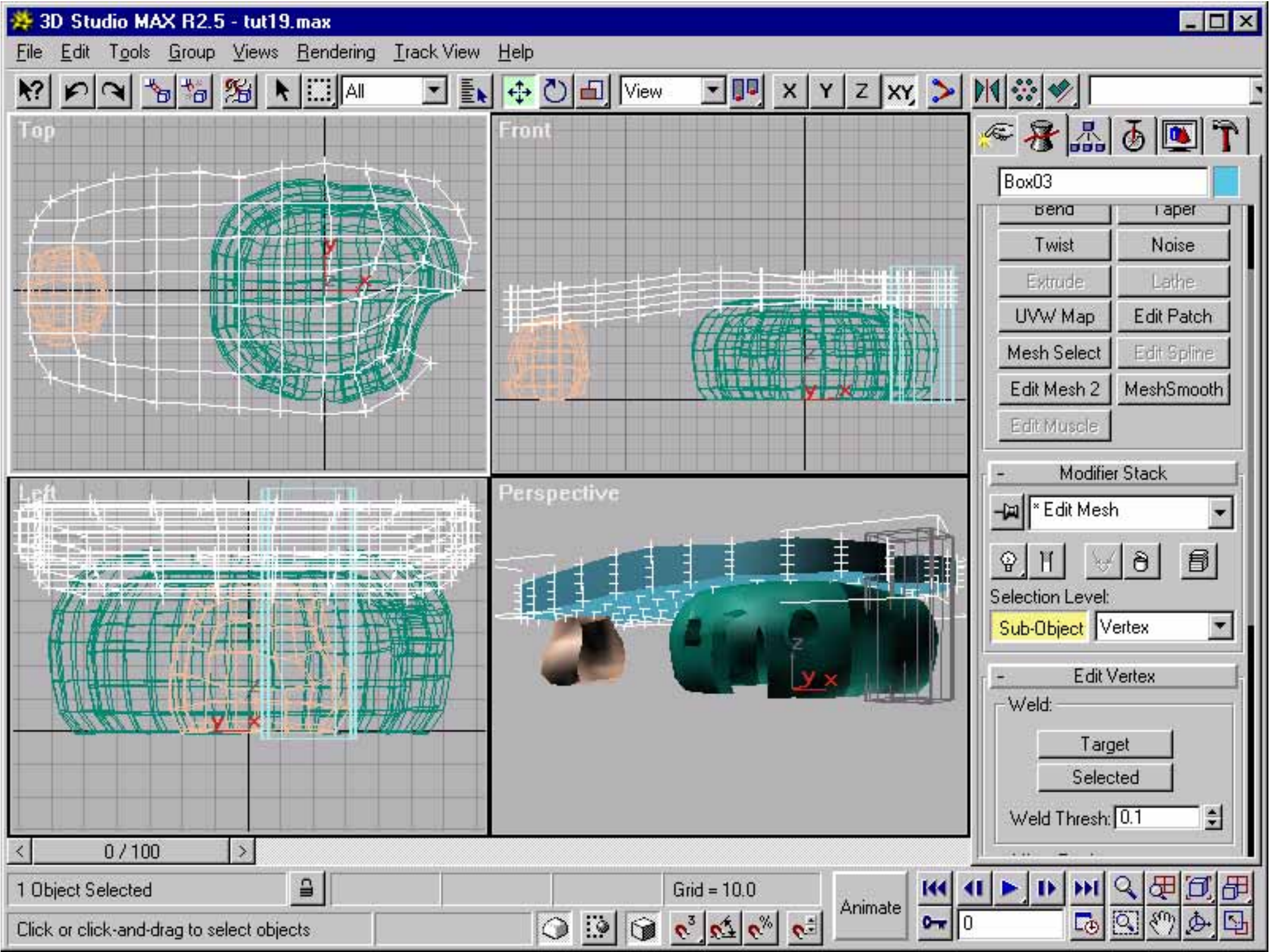


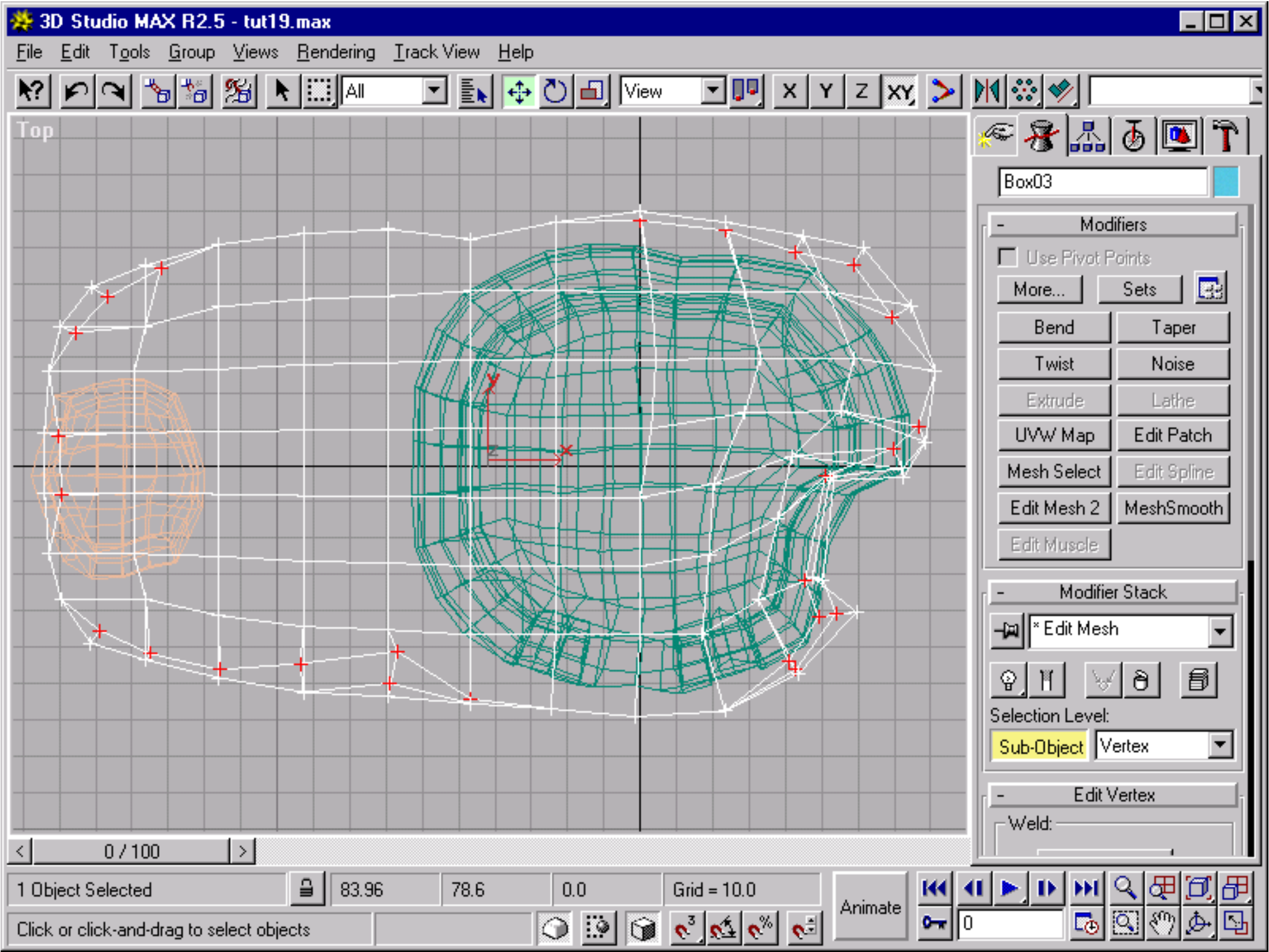
<	0/100	>
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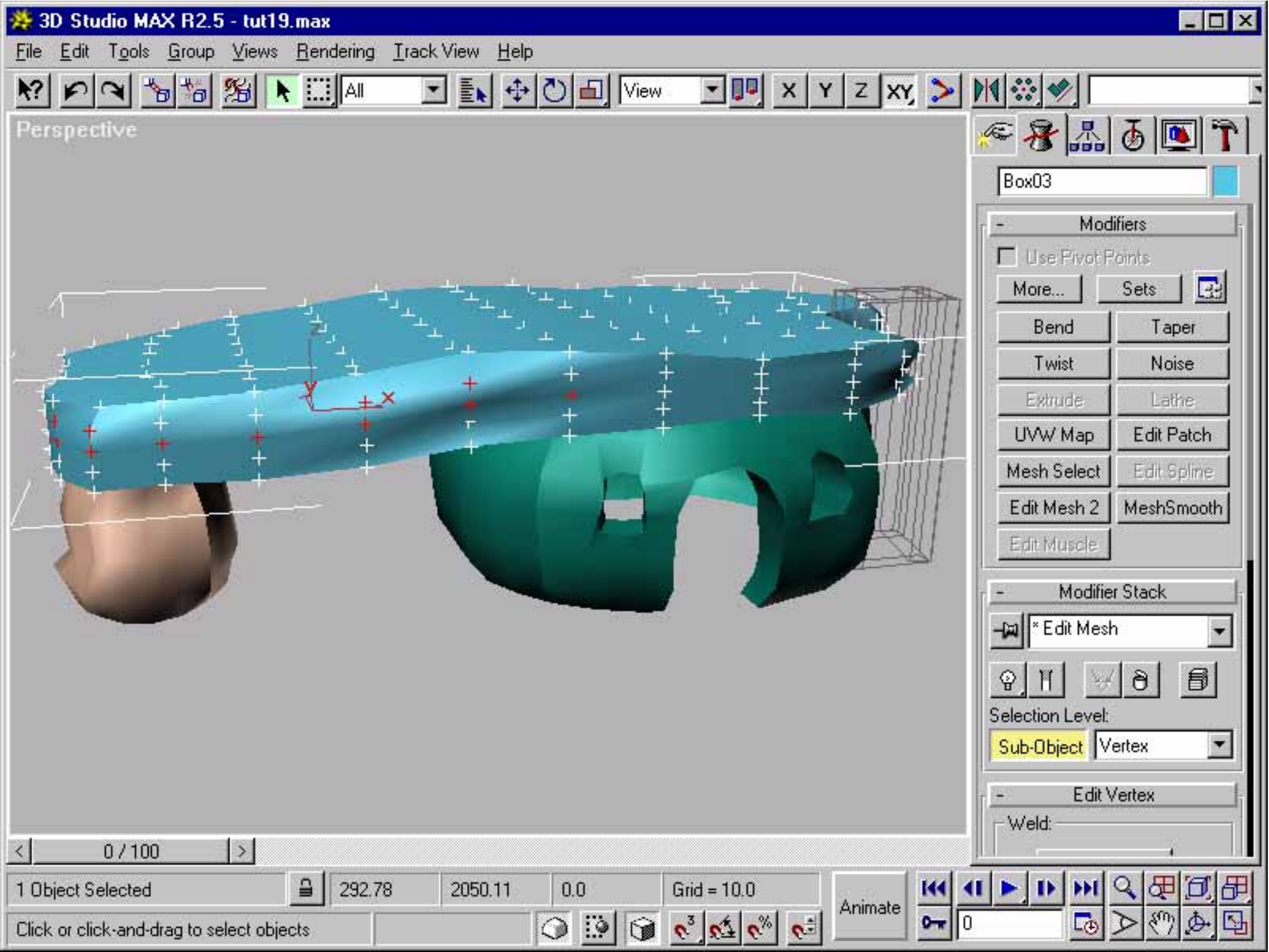
CM

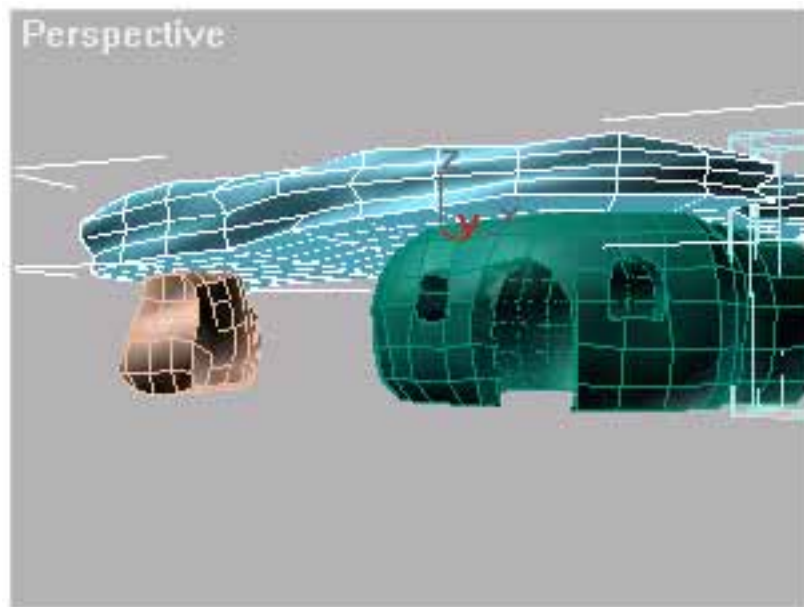
Animate



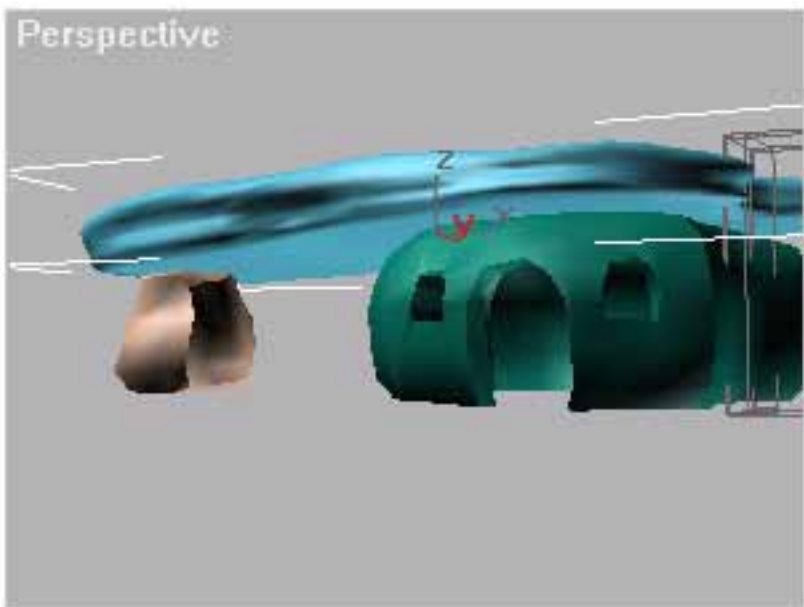




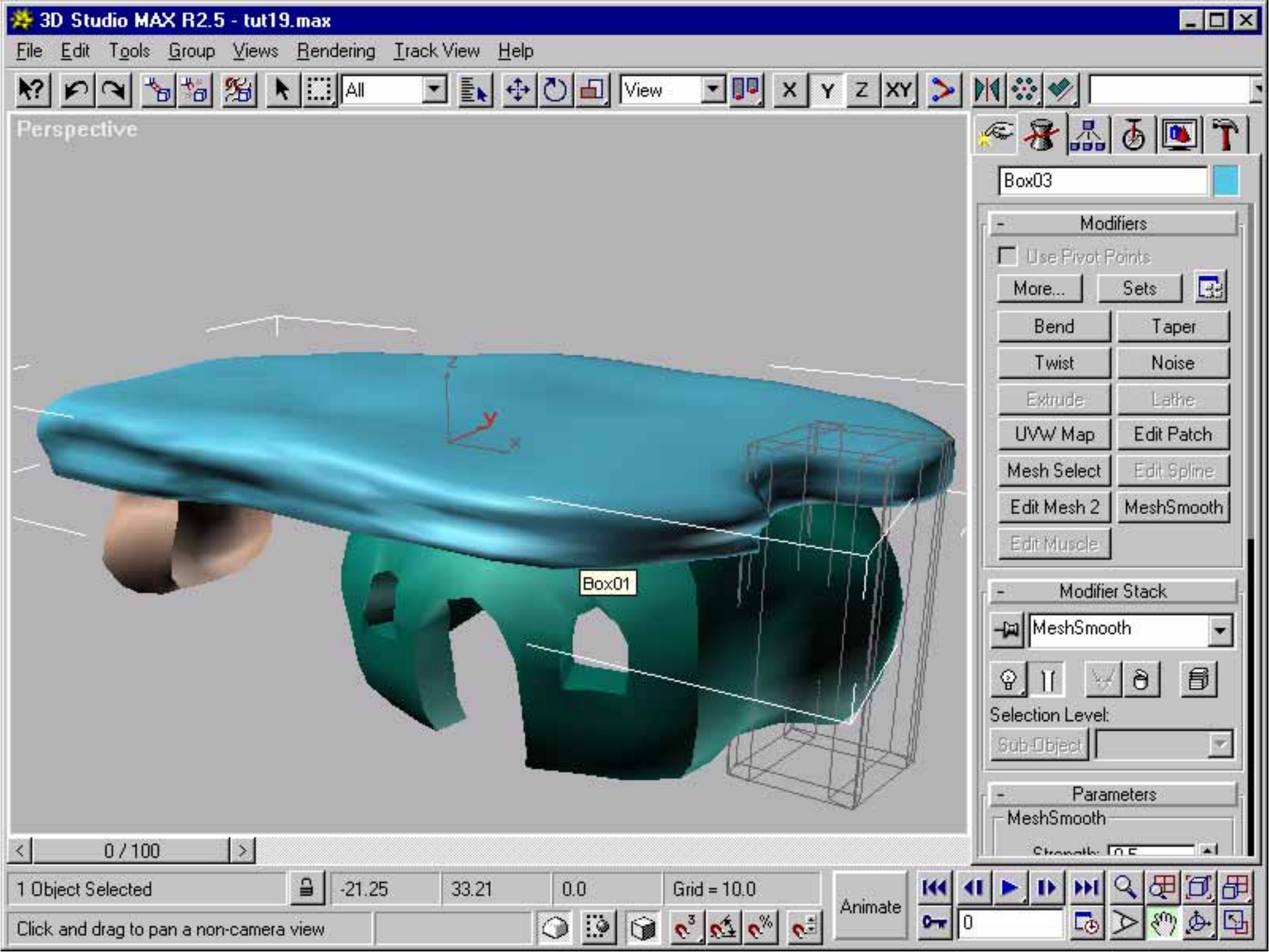




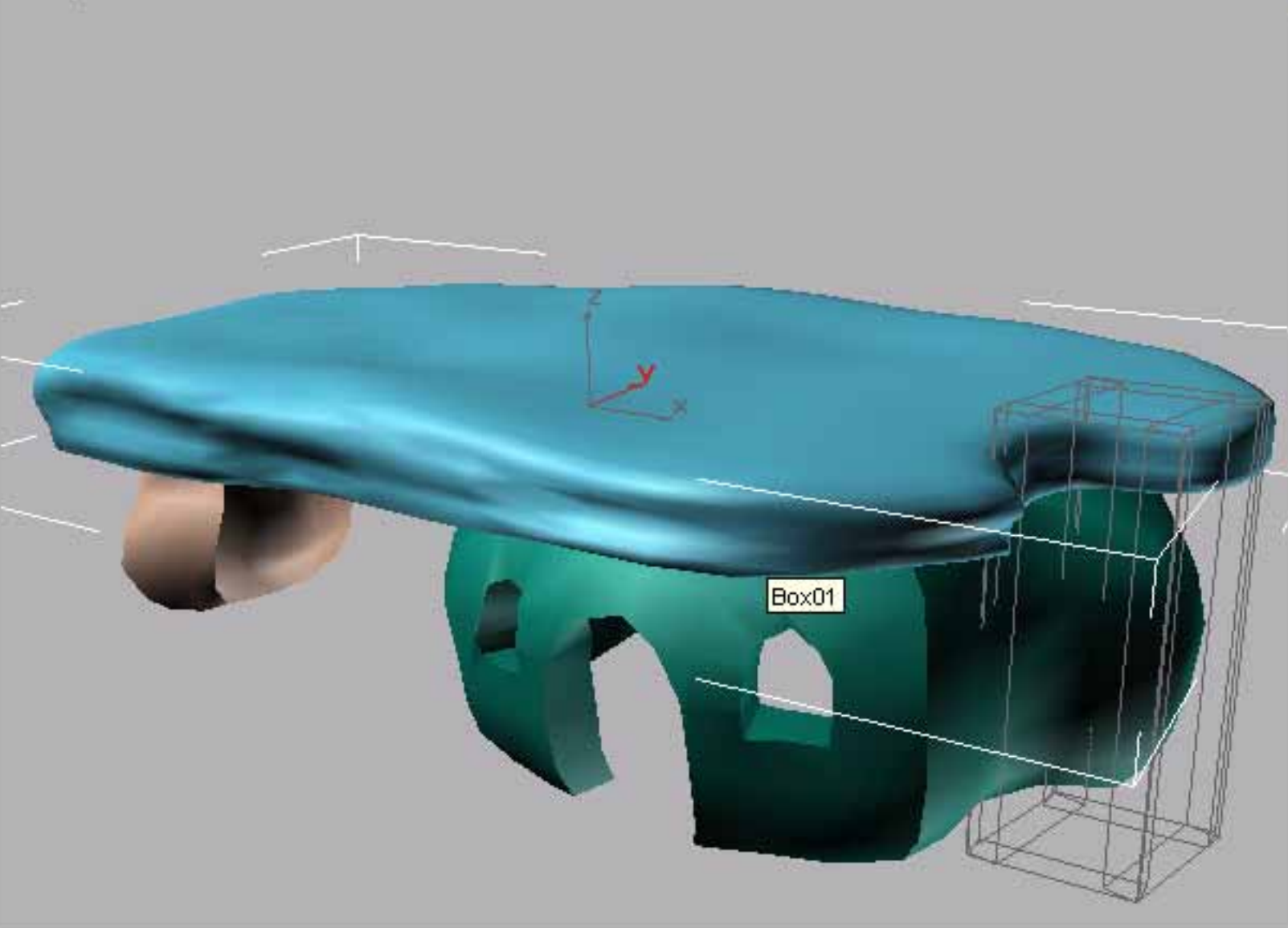
Before MeshSmooth



After MeshSmooth



Perspective



Box03

Modifiers

☐ Use Pivot Points

More... Sets

Bend Taper

Twist Noise

Extrude Lathe

UVW Map Edit Patch

Mesh Select Edit Spline

Edit Mesh 2 MeshSmooth

Edit Muscle

Modifier Stack

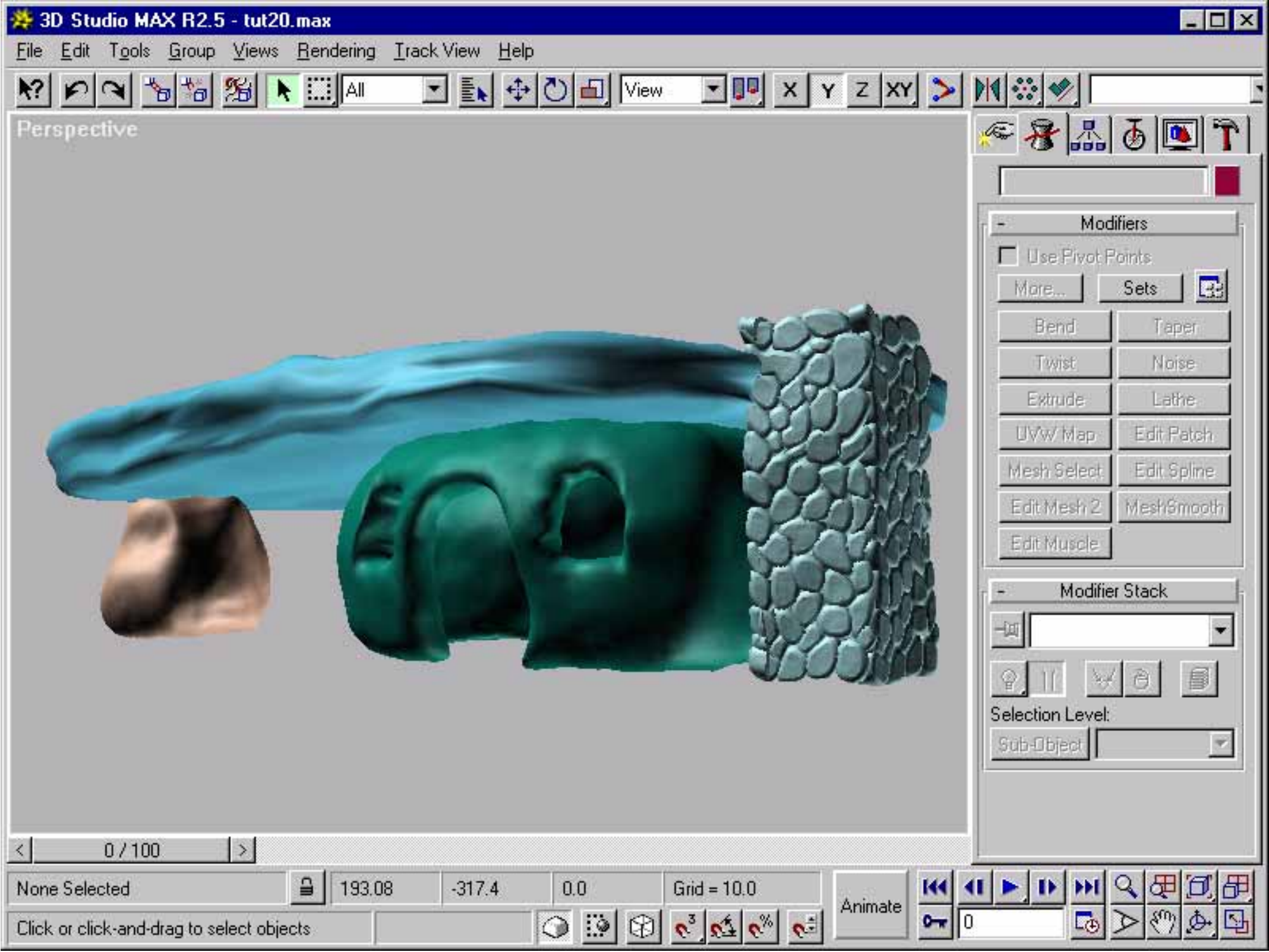
MeshSmooth

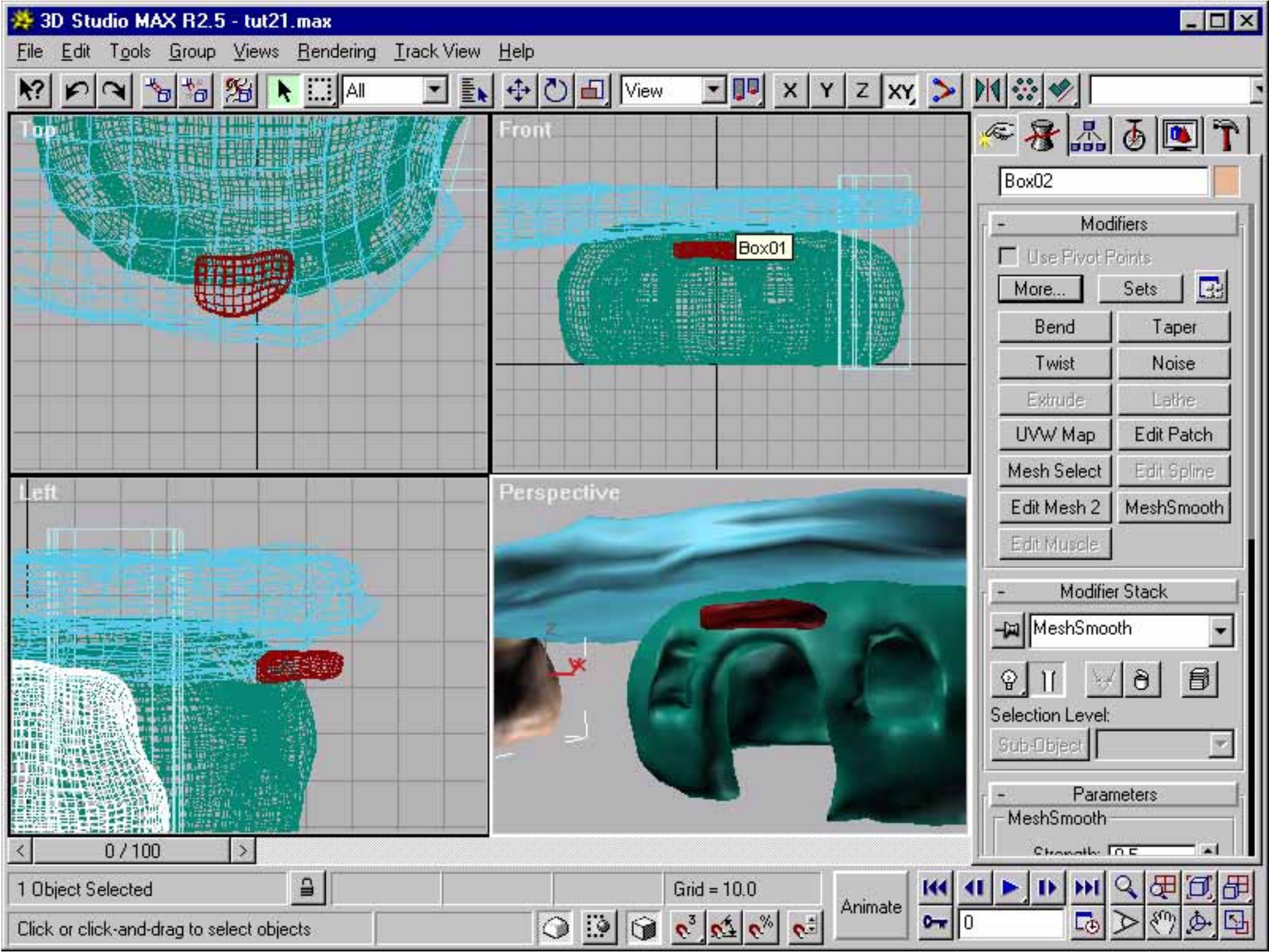
Selection Level: Sub-Object

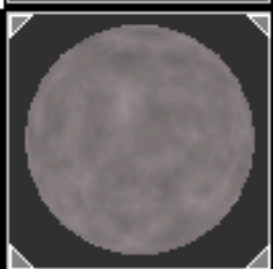
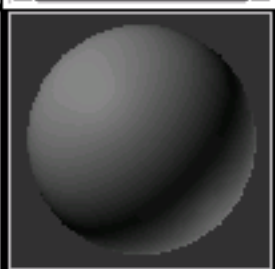
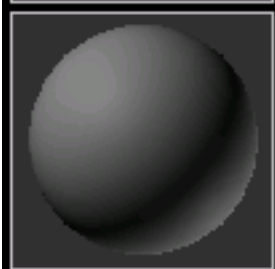
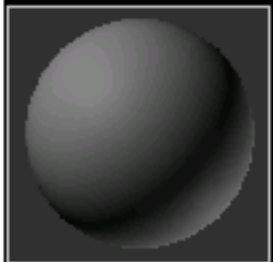
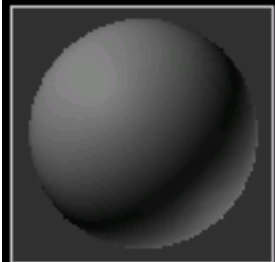
Parameters

MeshSmooth

Strength: 0.5







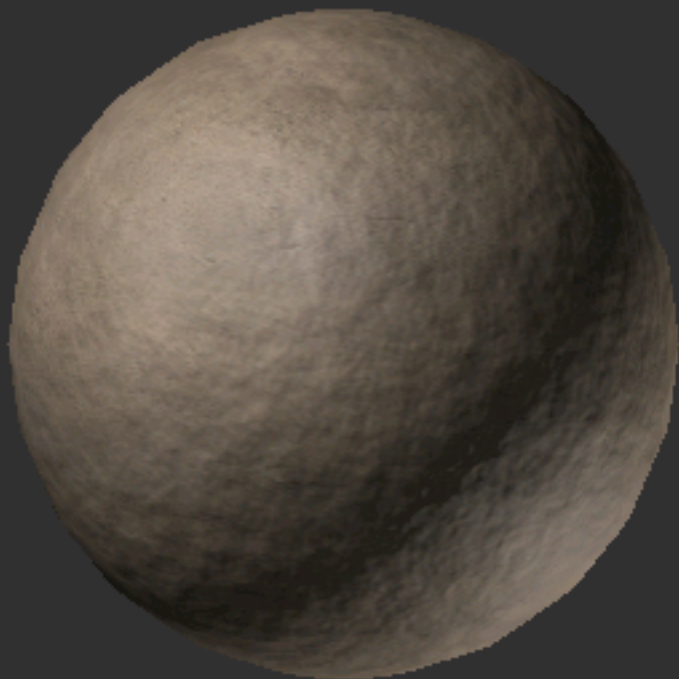


Kamenje 3



Auto

Update



Kamenje 3 (Standard)

 Diffuse: Map #1 (Mix)

 Color 1: Map #1 (Noise)

 Color 1: Map #1 (Noise)

 Color 2: Map #1 (Noise)

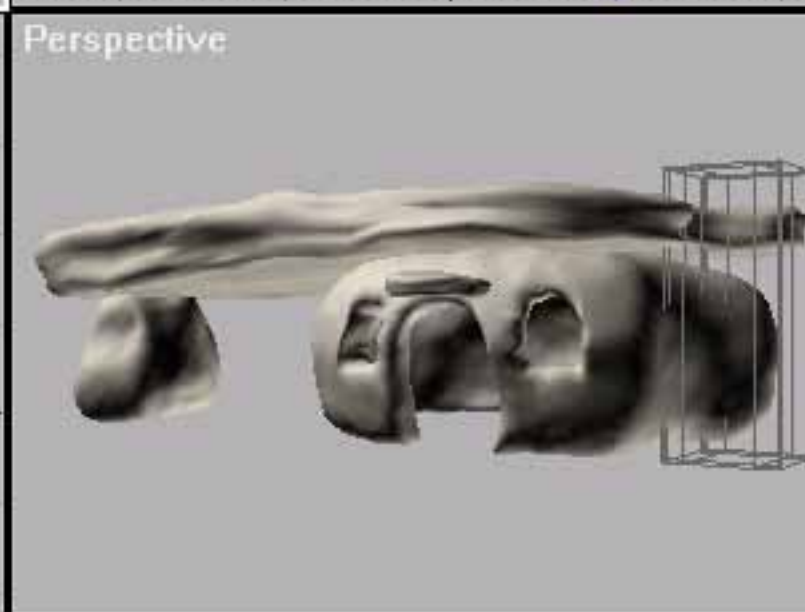
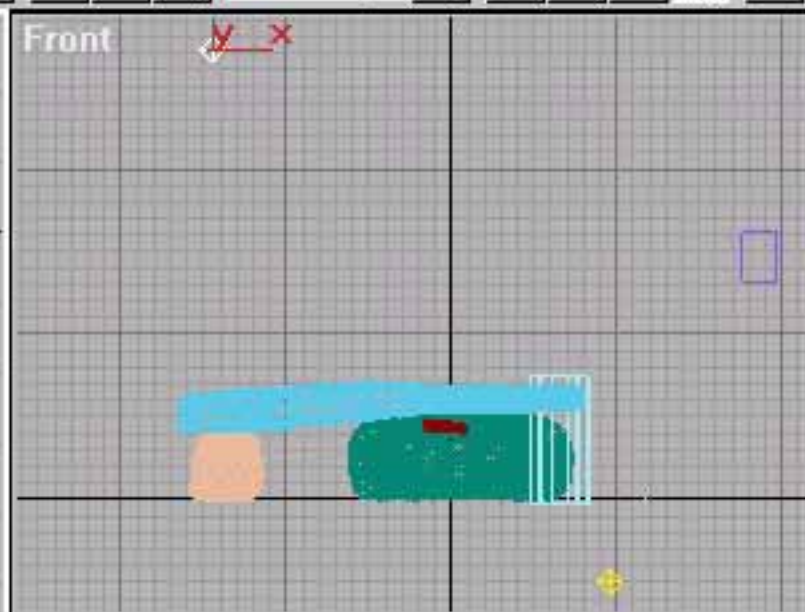
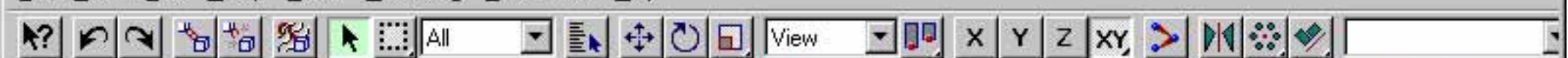
 Color 2: Map #7 (wall.jpg)

 Bump: Map #1 (Noise)

 Color 1: Map #1 (Noise)

 Color 2: Map #1 (Noise)





Standard

Object Type

Target Spot Free Spot

Target Direct Free Direct

Omni

Name and Color

Omni01



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