

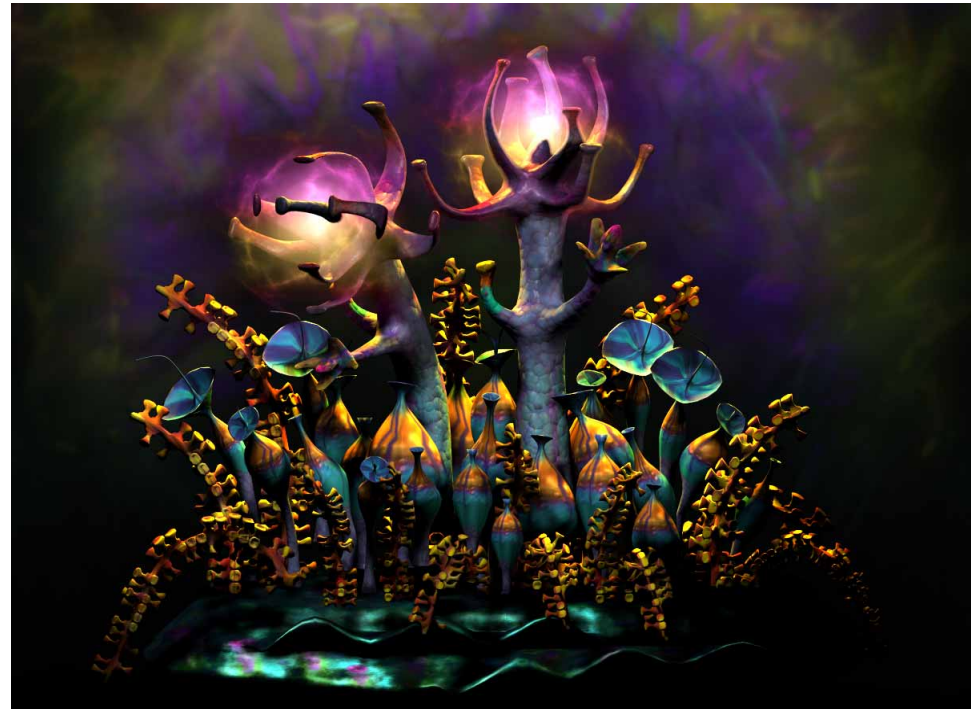
A bouquet from an alien friend

Mastering 3D Graphics ~ issue #1

3D Studio MAX Eni Oken

Creating organic live objects using 3D computer graphics has always been a challenge for even the most talented artist. Plants and trees represent a particularly difficult task simply due to the sheer amount of leaves and other little living details usually present in plants. Because I have already been face to face with such challenge before, I know that it sometimes can be a tough ride.

So when I decided to create some alien plants, it was mostly because I was interested in taking an alternative route from the traditional greenery. Besides, alien plants offer so many opportunities of fun design and concept!



Reference material: homework first

The first thing I usually do when approaching a new project, before even touching any modeling, is doing my homework with a lot of research. Most of my research is done in the library or in a bookstore. (Owning your own reference books is always fun, although not really practical). For this task, I wondered at first where could I possibly find reference material to serve as inspiration for alien plants. I found three interesting sources: the first one, more obvious, were in books about exotic plants from the Amazon rain forest. A second source of inspiration was found in books that show microscopic photography, and a third source, usually forgotten by most people, was found in children's picture books. Microscopic photography usually shows bacteria and microorganisms that have the weirdest shapes and children's books are full of rich, colored, wacky out of this world scenarios.

I usually stack a pile of books, all marked with post-its on the pages of the most interesting objects and things. At this stage, I don't really worry about choosing the appropriate ones yet, it's just food for the imagination. The books that I choose as reference for this project were the following:

- ♦ Structure in Nature as a Strategy for Design. Pearce, Peter. MIT press, 1990.
- ♦ Design Lessons from Nature. Taylor, Benjamin Debie. Watson Guptill Publications, 1974.
- ♦ Art Forms in Nature. Haeckel, Ernst. Dover Publications, 1974. (No decent creator of alien landscapes should start without it - just amazing.)
- ♦ Art Forms in the Plant world. Blossfeldt, Karl. Dover Publications, 1985. (Perfect example of microcosm photography, where minuscule grass looks like giant threatening trees.)
- ♦ Chiaroscuro. White, Tim. Paper Tiger, 1994. (A traditional fantasy artist whom I admire enormously.)
- ♦ The Secret Art of Dr. Seuss. Random House, Inc., 1995. (Who can ever paint wackier landscapes than Dr. Seuss?)
- ♦ Here Come the Aliens. McNaughton, Colin. Candlewick Press, 1995.

Choosing the color palette

Another task that I assigned to myself before starting the dirty work on the computer was choosing the palette of colors. A color palette, or even better, a color scheme, is composed by the main hues to be used throughout the project. I make it a point to never go beyond my original palette: besides giving it a more finished look, it also shows control and makes it easier to create textures.

I had been working on a project that would fit perfectly as a scenario for the alien plants: a realtime virtual world. The palette used for the project was: orange, purple, yellow and some red and teal, a blue-green color (Figure 1). I usually don't use so many colors, but in this case, I felt it necessary to have a range that would allow me to experiment on different plants.



Figure 1: The color scheme: orange, purple, yellow and some red and teal.

The Concept

Although many artists sketch their projects before starting to work, I usually feel more comfortable just letting my imagination run wild while modeling. However, peculiarities and technical limitations of each project, in this

case, a realtime 3D world, still impose and determine to a large extent the direction the project will take. For realtime projects, each engine has its own limitations and allowances. For this virtual web world, the specific engine allowed for very little amount of polygons, but at the same time, the texture restraints were generous compared with other realtime projects that I have encountered. I could use almost any amount of textures, as long as they were all 128×128. They could be tiled, or stitched together on panels to use larger images. This made the modeling decisions pretty obvious: the plants would be created in small clusters, such as flower pots, that would then be used as textures for flat polygonal panels. The panels would act like billboards, holding the detailed pictures of the alien plants (Figure 2).

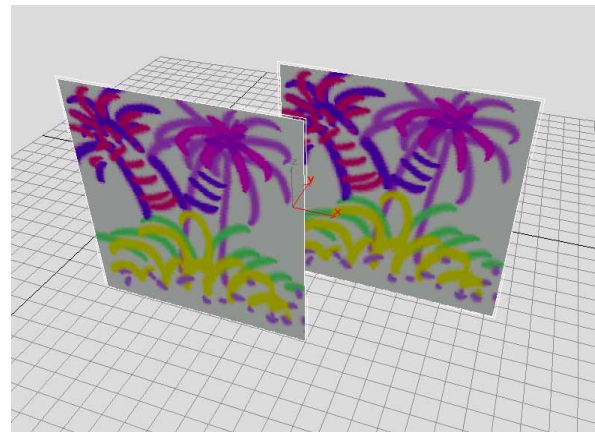


Figure 2: Billboard holding a panel of plants.

Analysis of a plant arrangement

When the main concept was broken down, I needed to go further and investigate how one single cluster of plants would be structured. While analyzing traditional gardening and flower arrangement books, I noticed that the size and color of plants usually was of great importance for the results (and in the process I acquired a newfound respect for people with such skills).

The arrangement structure that was most suitable for the purposes and limitations of this project usually had the following elements (Figure 3): One or two large/tall plants in the background. The placement could be central or lateral. Several medium sized plants in the middle ground, about one third of the height of the larger plants, surrounding the larger plants. Several smaller plants in the foreground, usually new plants, grass, fillers, sometimes draped down. These were usually very small, or with tiny leaves and flowers. A base made of rocks, sand, a vase or container.

As far as colors were concerned, generally speaking, flowers are usually presented in monochromatic schemes, with subtle variations, or even two colors, sometimes contrasting strongly. Green and brown tones are always present

in a neutral way. Shapes and texture usually contrast sharply or are extremely similar in type. Plants always come in a variety of ages, meaning that even grown adult plants usually have smaller newer buds nearby.

Because I chose to create alien, weird plants, my first decision regarded the neutral colors, which are usually green and brown. I decided to choose something else, a color that would be totally unusual, perhaps purple-blue. This would automatically make the garden look weird and foreign. I also decided to make the texture bulbous and thick, similar to cactus, but not single colored, instead, with cellular texture to it.

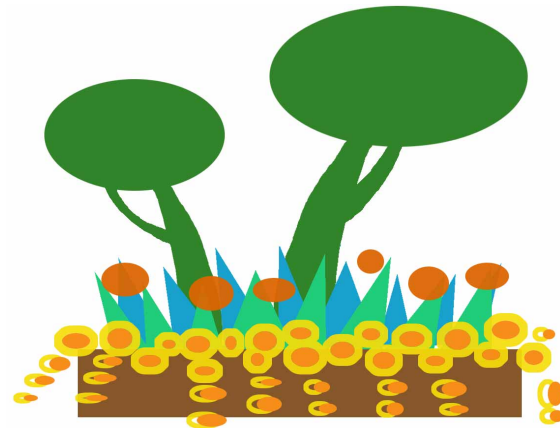


Figure 3: Structure of a typical plant arrangement.

Modeling the first plant

The first plant to be modeled was one of the large plants in the background, mostly because all the other plants would gravitate around it. I will go into quite a lot of detail to show how this plant was modeled and textured, since all the other plants were made using similar techniques. To model organic shapes using 3D Studio Max, there are several alternatives, including NURBS and patches, however, I usually use what is called, by some artists, the 'box method.' This method consists of starting with a plain box or other simple geometric shape and then extruding faces and manipulating vertices to form other elements and details. After creating a simple structure, the entire object is smoothed out using the MeshSmooth command. This is how it works:

Inside 3D Studio Max, I created a simple long box. Under the Modify Tab, I first converted the box into an Editable Mesh. I then chose the Sub Object 'Face', and then picked the top

face of the box and extruded it. With the Reference Coordinate System set to Local (very important for future steps), I scaled the selected face up a little and then extruded again. This formed the bulge on the top, (Figure 4).

The next step could be done two ways: one option was to select individual faces around the top of the plant and extrude them, scaling and rotating them individually, or yet another option was to use a Maxscript called FaceScope, which performs the task automatically (although in a random way) to most or all of the selected faces, (Figure 5). In case you are trying this without the Maxscript, it is necessary to select and extrude the individual faces one by one on the first time, or else the entire top will be extruded, and that is not the desired effect.

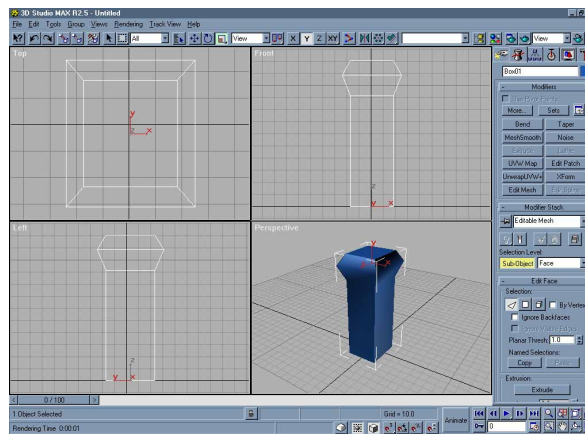


Figure 4: A simple box with the top extruded twice.

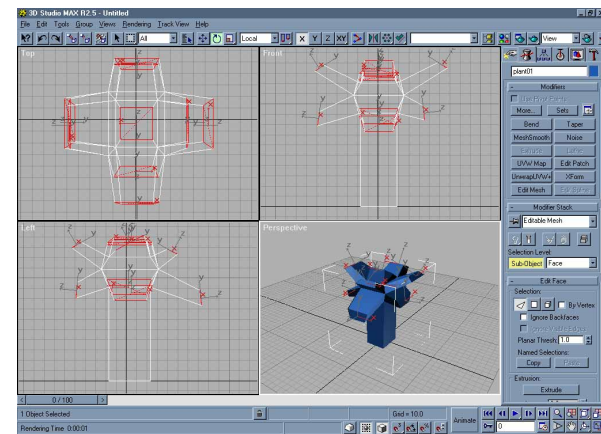


Figure 5: The plants' branches start to protrude.

After the first extrusion, it was not necessary to extrude each branch individually, all I had to do was select the faces that were at the very end of each branch and extrude them all at once. Also, by keeping the Reference Coordinate System to Local, I was able to scale down or rotate all the faces at once. I repeated this a couple of times, until the branches started to acquire a pleasing shape, (Figure 6).

When the branches started to become thin, I extruded another couple of times, forming small buds at the very tip of

each branch. As the plant started taking shape, I realized it is necessary to run a small test, which was only tempo-

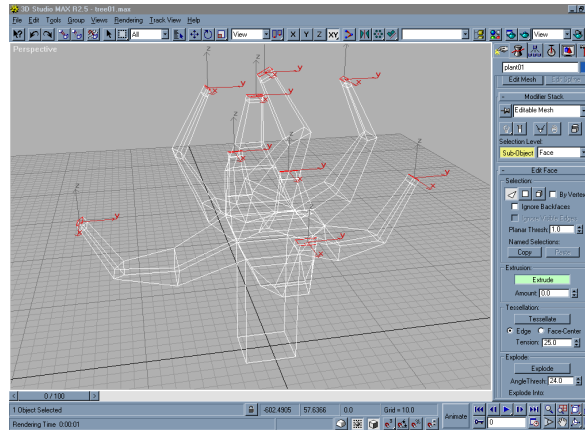


Figure 6: The branches start to take their final shape.

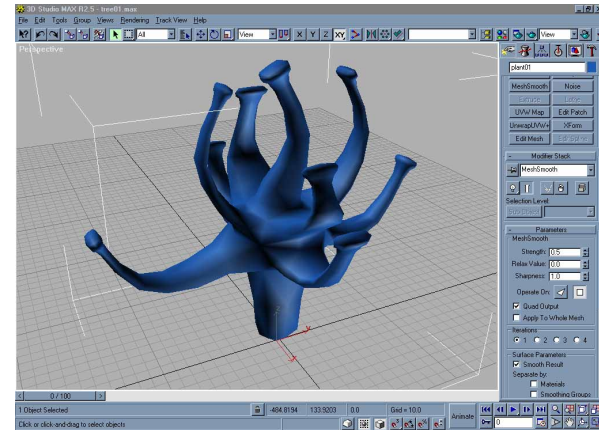


Figure 7: A test with MeshSmooth shows some temporary results.

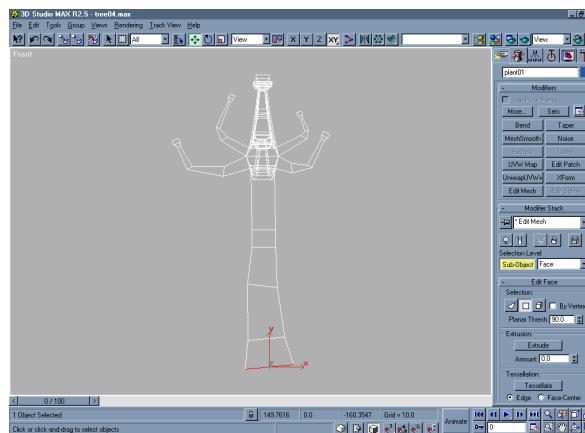


Figure 8: Extruding the trunk and preparing for smaller buds.

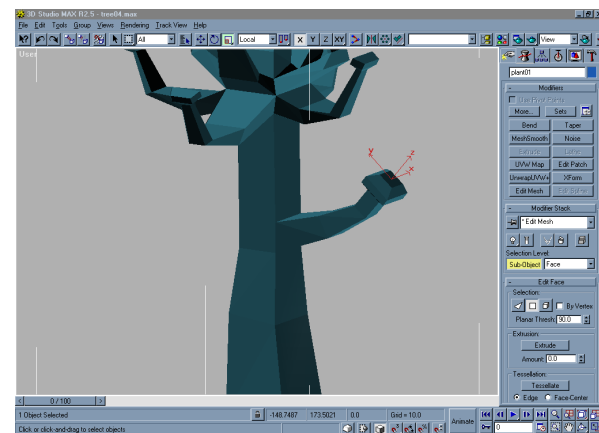


Figure 9: The first bud was created by extruding one of the faces of the trunk.

rary, using the MeshSmooth command. With the Sub Object unclicked, I applied the modifier MeshSmooth once, and viewed the results in the Perspective window with the option to see with Smooth and Highlights. **Figure 7** deleted the MeshSmooth modifier soon after, for there was still a lot of modeling to do.

I continued to manipulate the plant, this time going down, to form a sort of trunk. I continued in this manner, selecting faces, extruding and manipulating them (scale, move, rotate), to extend the main trunk. A smaller patch in the middle section of the plant was left intentionally, as a starting point to extrude some smaller buds, (**Figure 8**).

The first smaller bud was created the same way as the main plant: a single face was extruded, scaled and rotated, always using the Local Coordinate System, until the necessary shape was formed (**Figure 9**).

At the very end of the first bud, I selected faces individually and extruded them again, in the same manner as the top of the plant, forming a sort of young flower. I also created a second bud, even smaller than the first one. This concluded the rough modeling of the plant, so I applied a final MeshSmooth to create the final results, (**Figure 10**). This command usually works with best results when used with Quad Output and Smooth Results checked.

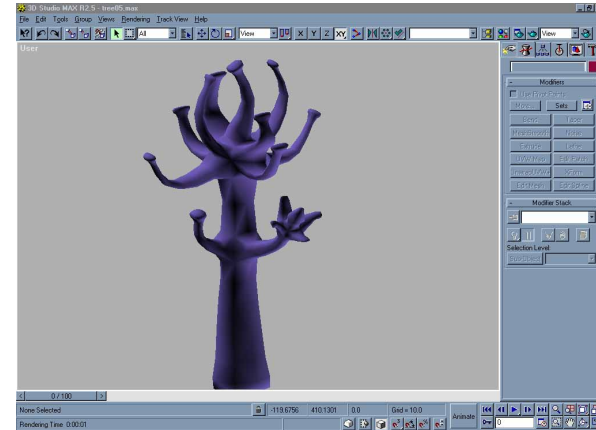


Figure 10: Final plant geometry with MeshSmooth applied.

Applying UVW mapping

I consider modeling to be only the very first part of a successful 3D project. In fact, I do tend to focus much more on the texture work than on modeling. Good texture work gives the object a more finished look, besides being the main cause for realism (or lack of it, when poorly done).

Before creating any materials, it is necessary to apply the UV mapping coordinates, and with such an irregular shape as this plant, one would imagine that it would be quite a task. Well, it was, but it was made much easier by breaking the geometry into main groups. This approach makes it possible to texture any kind of irregular object.

The easiest way to assign mapping coordinates is to select logical groups of faces that fit into a certain type of mapping (spherical, cylindrical or planar) and to assign them different material Id's. By assigning different material Id's, it also becomes easier to select the same faces later on for manipulation and to update Multi/Sub-Object materials.

I decided to divide the plant into the following groups: Top, Bud1, Bud2 and Trunk (Figure 11). The Top would be mapped spherically, while all the other groups would be mapped cylindrically, following the most natural shape line. This is how I selected the objects and assigned different ID's:

Under the Modify Tab, I clicked on the Sub Object and activated the Face selection mode. I selected the upper part of the plant, and immediately assigned the material ID 1 to that group of faces. Then I assigned a

spherical UV Mapping, controlling the Gizmo to position it in the center of the selected Faces, (Figure 12).

I repeated the same procedure with the faces of Bud1, Bud2 and the Trunk, (Figure 13). It is important to remember to assign the UV mapping a little looser than necessary, meaning, make it larger than the faces selected. This way, there is always room in the texture to move around, and there is little risk of creating undesirable seams.

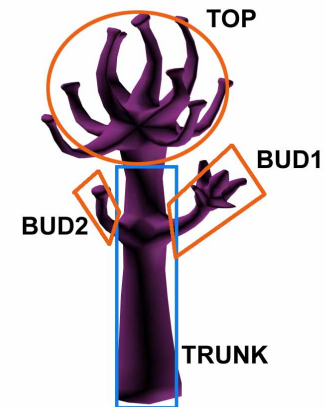


Figure 11: The plant divided into logical groups.

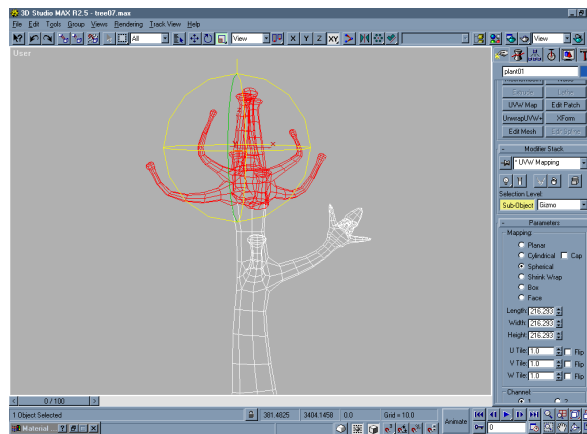


Figure 12: Assigning spherical UV Mapping to the Top faces.

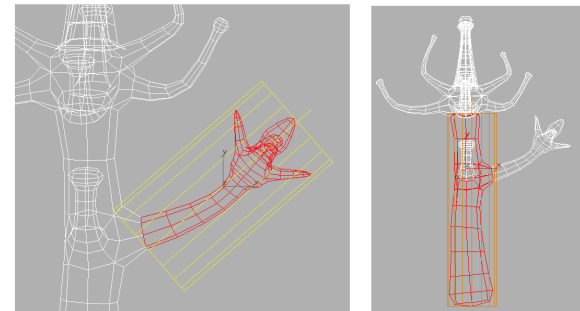


Figure 13: The Trunk and Bud1 being mapping with cylindrical UV mapping.

Creating a template for texture painting

Before creating textures for the plant, it is necessary to create a template, that is, to make markings of where specific features should be painted. For this example, it had been established that the overall color would be a bluish purple, but I wanted the tips of the buds to be bright and colorful, resembling somewhat colorful fruit or flowers. Therefore, the tips of the buds need to be located on the texture map. I also needed to know where the seams and connections would be placed, so I would not make the mistake of creating something that would obviously show a seam.

A template can be created using several methods. A well-known method is to use a 3D painting program. There are a few plug-in packages compatible with 3D Studio Max, and occasionally I use 4D

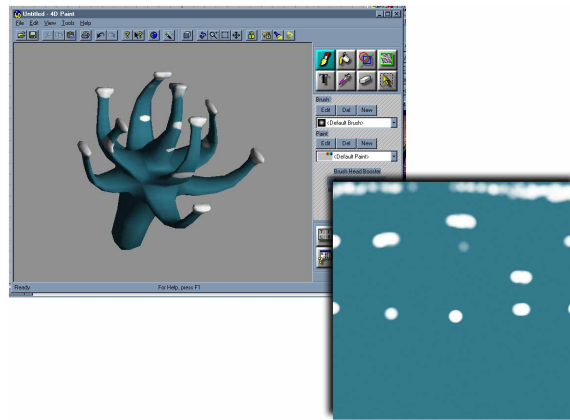


Figure 14: Template for materials created using a 3D painting package.

Paint, by 4D Vision. This can easily be done by assigning mapping coordinates to the object (which I had done already), and then assigning a temporary material of any kind and painting in 3D a few markings on the features that are worth distinction. After that, it becomes pretty easy to take this template of marking and manipulate it in any other painting package (Figure 14).

In case you do not have a 3D painting program, a template can also be created by using a simple MaxScript that comes with 3D Studio Max 2.5, called UV Unwrap (this is not the modifier of the same name that comes with the program). In order to create a template using the MaxScript, this is how I proceeded:

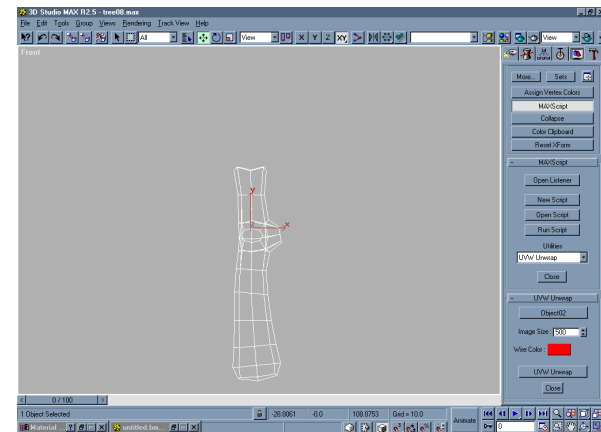


Figure 15: Maxscript UVW Unwrap was applied to a clone of the Trunk faces.

The example used here was the group of faces named Trunk: first I selected the faces of the Trunk (easily done by using the command Select by ID under Edit Mesh). Using the command Shift+Click, I created a clone of those faces into a new object. That made it easier to use the MaxScript UV Unwrap, (Figure 15).

I hid the original plant, so I could easily work with the clone. Under the Tools tab, I loaded the UVW Unwrap Maxscript and assigned the clone Trunk to be the selected object. The default size of the map is 256, but I prefer to work with 500, for the markings and wireframe can be seen more clearly. This particular Maxscript then generated an image that showed the markings of the Trunk as if they were spread out on a flat panel, literally

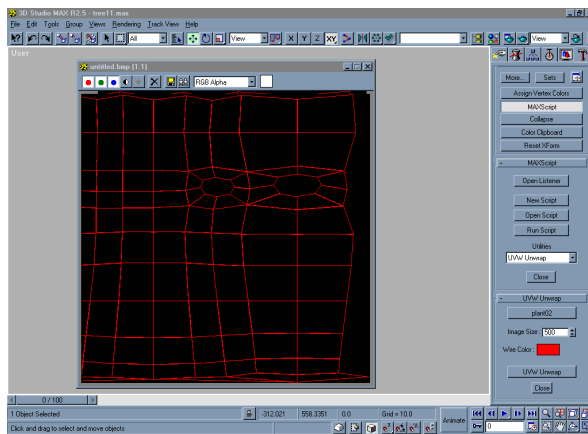


Figure 16: The unwrapped UVW mapping coordinates from the Trunk clone.

unwrapping the cylindrical mapping on to a plane, (Figure 16).

I then repeated this process with the other groups of faces, this way creating 4 templates, one for each group. These helped me tremendously when creating the colored textures for the plant.

Creating the materials

All my texture work is usually based on a combination of several textures and materials. It is naïve to think that one can achieve good quality texture work with only one single texture pass. Even in real-time games and interactive projects, good textures are usually made of several layers of ‘paint’ on to the original, that is, texture over texture, resulting in a rich and deep color effect on the final map.

The first base material

The first material to be created was a basic material called Cellular, conveniently named since it was created based on the 3D map Cellular. 3D maps are independent of mapping coordinates and spread out through odd shaped objects in a uniform manner, making them the most appropriate choice for the base color of the plant.

The same Cellular material was used as material color and as bump map, and the result was an organic, but odd colored texture, (Figure 17). In order to achieve the bluish purple tone that I was looking for, I combined three colors into the cellular procedural settings: a light blue, medium gray and purple. I used the same material for the bump map, and assigned very little shininess to the material.

The structure of the final material

On top of the base material, I planned to add another coat of 'paint'; this time adding some unique features to each one of the face groups created before. The logical choice to do this would be to use Blend materials, which combine two materials mixing them through use of a black and white mask. (Of course, other options exist, but they do not offer the masking abilities needed for the final effect). Since there were

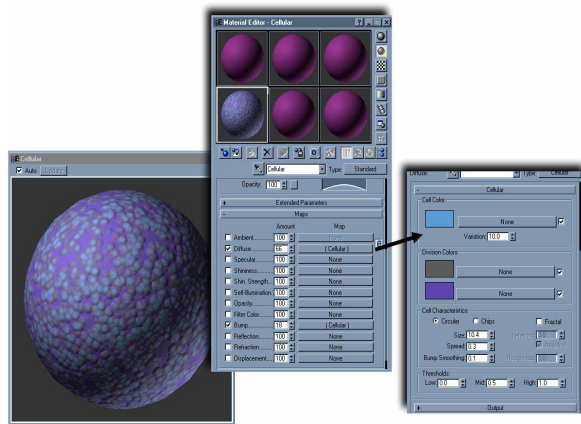


Figure 17: The base material used a 3D procedural map.

4 distinct groups that needed special features (Top, Bud1, Bud2 and Trunk), I would also have to create a Multi/Sub Object material, where each ID would correspond to the respective groups.

The final structure of the material turned out to be quite complex, but is easily understood if we break it into a tree diagram, (Figure 18). The example shown on Figure 18 uses the Blend material for the Bud2 group: it was made out of two materials, blended with a black and white mask, and assigned the material ID 3.

For now, I won't enter into the specifics of how to create the Blend and the Multi/Sub-Object material. Because the structure is quite complex to understand, we will take

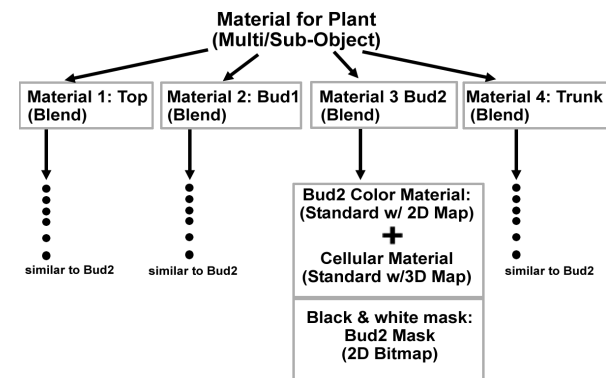


Figure 18: The structure of the material created for the plant, using example of Bud2.

it one step at a time, starting with the special texture and mask created for each part of the plant, and then following with the actual Materials Editor settings for the Blend material.

Creating the texture and mask for Bud2

Since the texture for Bud2 is the easiest example to understand and to verify final results, I started with that one. These are the steps I took to create the final texture and mask for the Blend:

Using Photoshop, I opened the template created earlier with the UVW Unwrap MaxScript, and created some transparent layers. I then painted some colors, following the lines of the wireframe, (Figure 19). To make it easier to see the guidelines, some layers were made slightly transparent, only temporarily.

After the first rough texture was

created, I duplicated the image to create the black and white mask. This was easily done by using the Desaturate command and adjusting the darker areas with Levels. The bottom part of the image was left white (where I wanted the cellular material to show through) and the top part was left black, or dark gray, where I wanted the painted texture to show, (Figure 20).

The colored texture was then taken to Fractal Painter 5, where I added some nice little features. I usually go back and forth from Painter and Photoshop, mainly because none of them has all the features that I really need. This went on for a while, until the final results were achieved. It definitely helps to have a tablet, especially with the painterly brushes that Painter offers, (Figure 21).

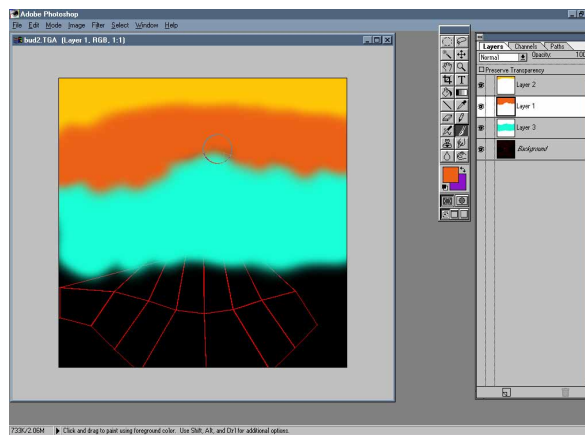


Figure 19: The first pass of colors using the template as a guide.

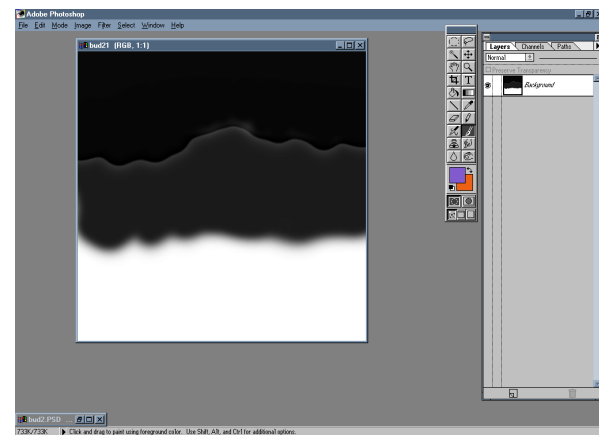


Figure 20: The mask was a desaturated duplicate of the colored texture.

In summary: on the first pass, I created the main colors using Photoshop to create new layers, (Figure 21.1). Then in Painter, I added some distress and initial blending to each layer. I also created a new transparent floater (equivalent to layers in Photoshop) and added some red pimples (Figure 21.2). Still in Painter, surface texture was added to give the texture a rough look. Back into Photoshop, I used Alien Skin's Eye Candy to add some HSB Noise (hue, saturation, brightness). I also blurred out some of the more obvious strikes of brush.

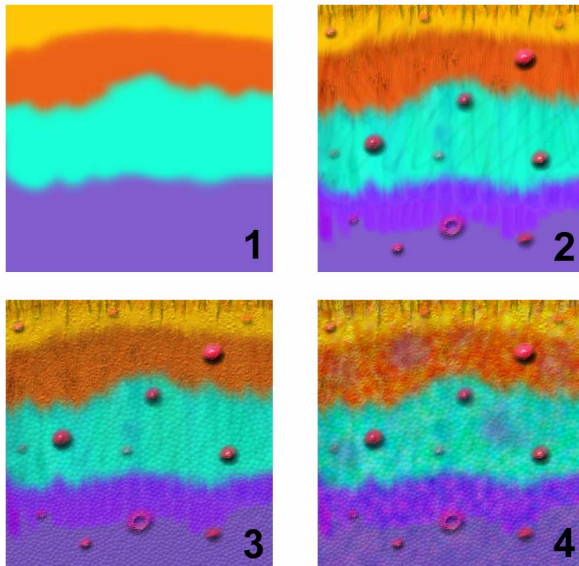


Figure 21: The evolution of the texture.

Settings for the Blend material

After creating the colored texture and mask for the Blend, I had to go into the Material's Editor and create the Blend material. Figure 22 shows the settings for the Blend: the top material was made using the painted texture, while the bottom one was simply the base color I had created before. Figure 22 also shows detail of the results on the actual plant: the top of the bud shows the texture where it should be, while the texture blends seamlessly with the trunk.

The mask is what makes one material show through, while the other one does not; the white parts of the mask make

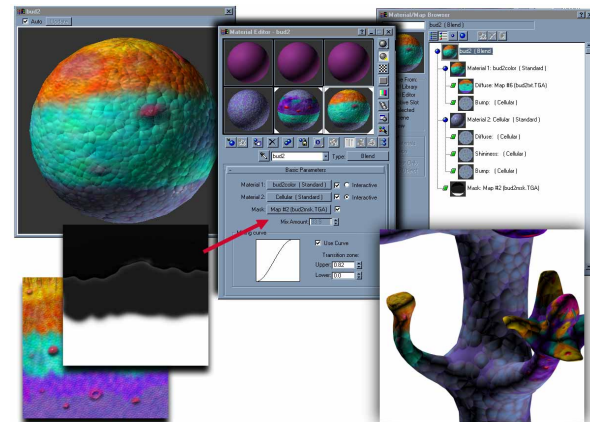


Figure 22: The settings for the Blend material.

the bottom material (which is the Cellular), show through. If no mask were determined, a mix could also be obtained by using the Mix Amount, but that results in a blurrier effect. The Curve settings can be used to make the transition between the two materials smoother. The straighter and the more vertical the curve, the harsher the transition between each material. The Material/Map Browser shows the structure of each individual material. Notice how the Bump map for both materials was the same, which helped to make for a more unified look and smoother transition.

Creating the final Multi/Sub-Object material

The next step was to repeat the procedure above for each one of the four groups: I created a painted texture based on the template extracted from the geometry along with its respective black and white mask. After that, four Blend materials were created, one for each group, and after that a final Multi/Sub-Object material assembled and assigned to the geometry. [Figure 23](#) shows the Multi/Sub-Object in the Material's Editor, along with the structure of all the Blend materials in the

Material/Map Browser. [Figure 24](#) shows the final plant, with all the materials in place.

While the resulting object looks a little whimsical, it certainly has all the qualities of a plant, and can be recognized as such. That is one of the characteristics of the work I've been doing lately: to make objects that can be recognized, but would never belong to our common world, ([Figure 24](#)).

Secondary plants

With the first and principal plant in place, I then proceeded to repeat the process, creating other plants. First,

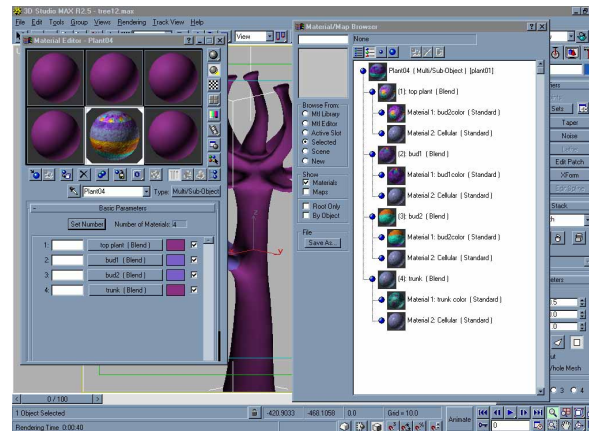


Figure 23: The final Multi/Sub-Object for the plant, with all 4 Blends (left).



Figure 24: The first plant, with all materials in place (right).

I duplicated the first plant, making it a little smaller, bent over, and rotated in relation to the first one. This way, the second plant looked like the first one, but is not exactly identical, (Figure 25).

Now that the tall plants were set in place, it was time to create the medium plants. I chose to make them like balloons, so they would fill most of the emptiness at the trunk of the larger plants. These plants were created similarly to the first plant, using the 'box' method, but instead of starting with a box, I started with a low-poly lathe (Figure 26).

Also, instead of applying the MeshSmooth right away on to the geometry, I first applied the UV Mapping coordinates and then duplicated the basic rough shape, creating copies. This allowed me to create different versions of the same plant, some fatter than others, some with longer stems and others bent over. I kept the original plant model without any MeshSmooth, just as a source for future versions. The final touch for these plants was

made by creating an interesting texture, always following the color scheme.

The last type of plant necessary for this bouquet were the smaller plants, that would give a fuller appearance and more richness. I used the same approach as the other plants, but this time, I created a long 6-sided cylinder as basic geometry. The buds were extruded from randomly picked faces, and I proceeded in the exact same manner as the other plants: extruding, scaling and rotating them using Local Coordinate System. Figure 27 shows the evolution of the cylinder into the final plant, along with a detail and the texture map used. The last touch was to bend the plant slightly, and then to duplicate it forming interesting variations.

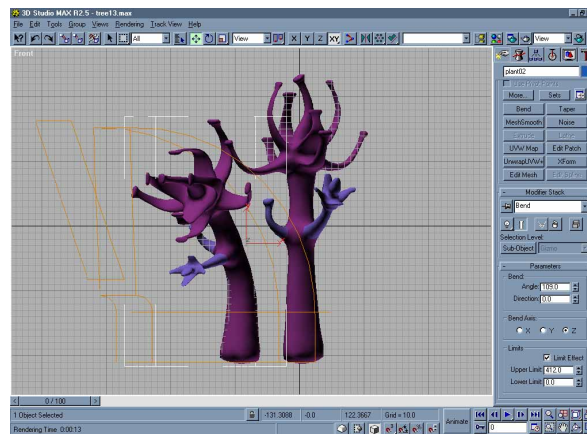


Figure 25: The second plant is smaller and bent over.

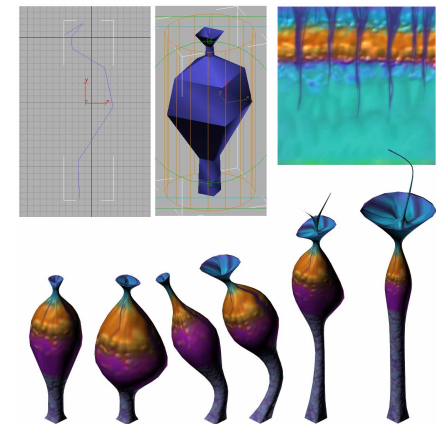


Figure 26: The medium plants made out of a simple lathe, with variations.

At this point, with all the plants modeled and textured, it was time to start arranging them, in the same way a florist would position them in a bouquet. I followed exactly

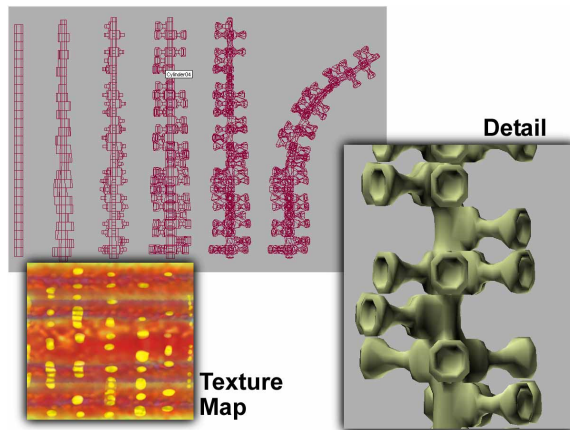


Figure 27: The small plant construction and texture.

the formula determined in the structure presented earlier: the larger plants were placed in the back and towards the middle, the bent plant slightly towards the side. The medium plants were placed in a 'random-looking' way surrounding the larger plants, and the smaller plants were placed in front, and towards the side. Some of the smaller plants were heavily bent and rotated, as to drape in front of the entire arrangement. Figure 28 shows the two stages of arranging the plants in place.

Lighting and final touch

No project is ever complete without good lighting. I consider lighting to be one of the most important components for the success of a scene, whatever the theme.

Not only does good lighting bring out the colors of textures, but it also plays a game of contrasts with the viewer, hiding or showing parts of the geometry.

Two back lights were installed above the larger plants, with a strong yellow color, as to bring out some odd coloration from the plants' surfaces. The

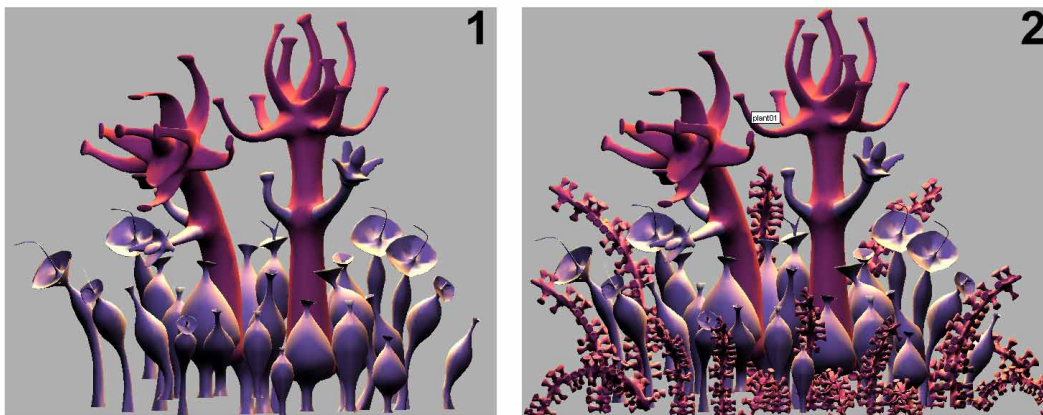


Figure 28: Medium plants were arranged first, followed by the smaller filler plants.

main light was positioned slightly to the left and in front, while a filler light, with one third of the value of the main light, was positioned at the right side in front. This is a variation of the classical “three-point light” scheme, which is used with most subjects successfully (the only difference here is the addition of an extra back light) **Figure 29**. The ‘three-point light’ usually has three lights in a triangle fashion: two in front and one in the back.

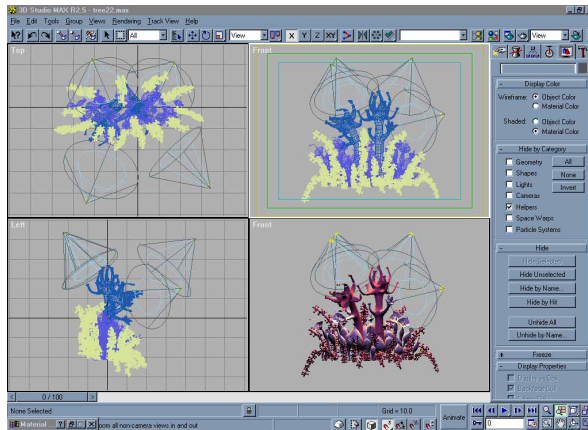


Figure 29: Two frontal lights and two strong back lights.

One important note is that I always use lights with shadows, and set the ambient light set to zero. The default environment lighting settings of 3D Studio Max are not zero, and that is an important cause for flatness and lack of realism.

To complete the arrangement, all I needed was a base and some background. The base was created using the same box method described before. I couldn't resist making it look like a seashell, it just seemed to be the right shape to complete the project. I applied a green metallic material, with some noise on it to simulate iridescence. I made the base fairly dark, for I did not want to pull the attention away from the main plants. The metallic look gives it just the right amount of attention, with some interest but without detracting from the main subject.

Also, to further enhance the main plants a little, I let my creativity soar by adding two purplish lens flares. I use the plug-in Pro Optic Suite, from Cebas, which allows me to create lens flares with a softer look. They almost feel like cotton clouds coming out of the plant's top. The flares have a gradient color that goes from yellow to purple, as to match the strong yellow backlights.

The background was painted in Painter 5, and I took care to maintain the bottom part of it dark, so it would blend in nicely with the base. Because I had no real 3D background set up in this project, this was a particularly important note. Otherwise, the object would appear to be floating in mid air.

This completed the final panel. As I mentioned before, plants can be pretty complex to create, but they can also be a source of inspiration for unusual and unexpected projects. I thoroughly enjoyed creating this project. I hope you enjoyed it too!

Eni Oken is a freelance 3D artist based in Los Angeles. As an architect with 11 years of experience in computer graphics, she has participated in the creation of 3D art (both realtime and pre-rendered) for numerous interactive projects, such as games, web sites, virtual worlds and multimedia. Well known companies include Activision, Sierra On-line, L-Squared and others. She has received several awards for her work, including the 1997 and 1998 3D Design Big Kahuna. She is also the author of 3 books and several magazine articles, covering topics related to computer graphics. To see more of Eni's work, please go to www.oken3d.com.

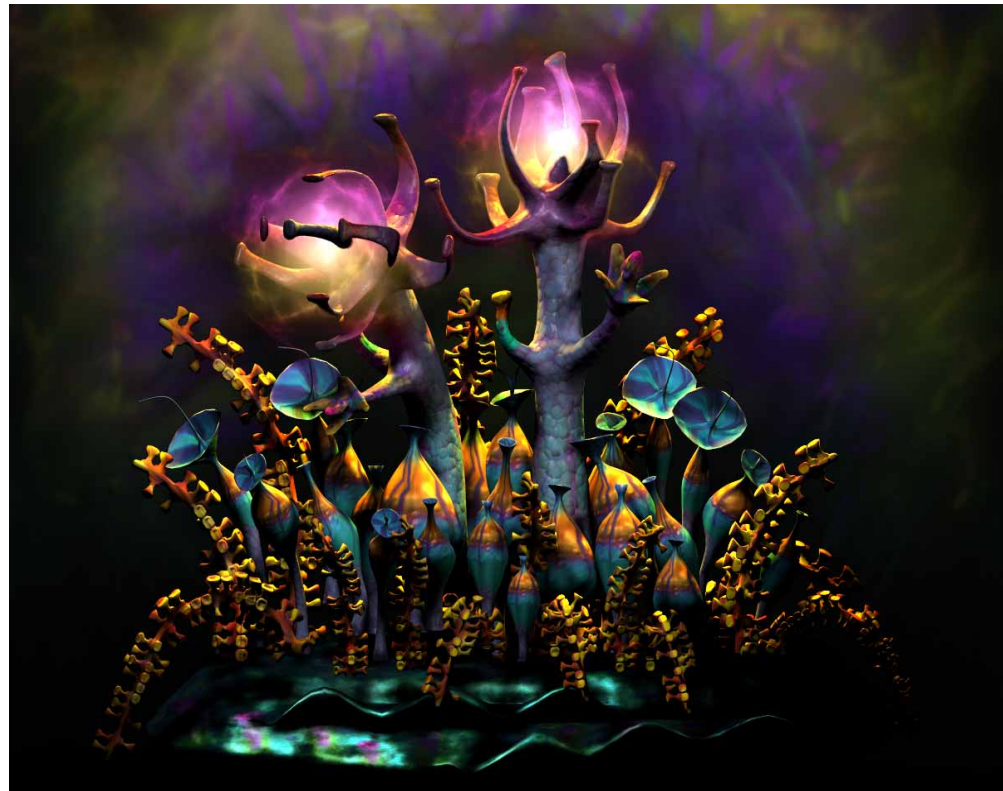
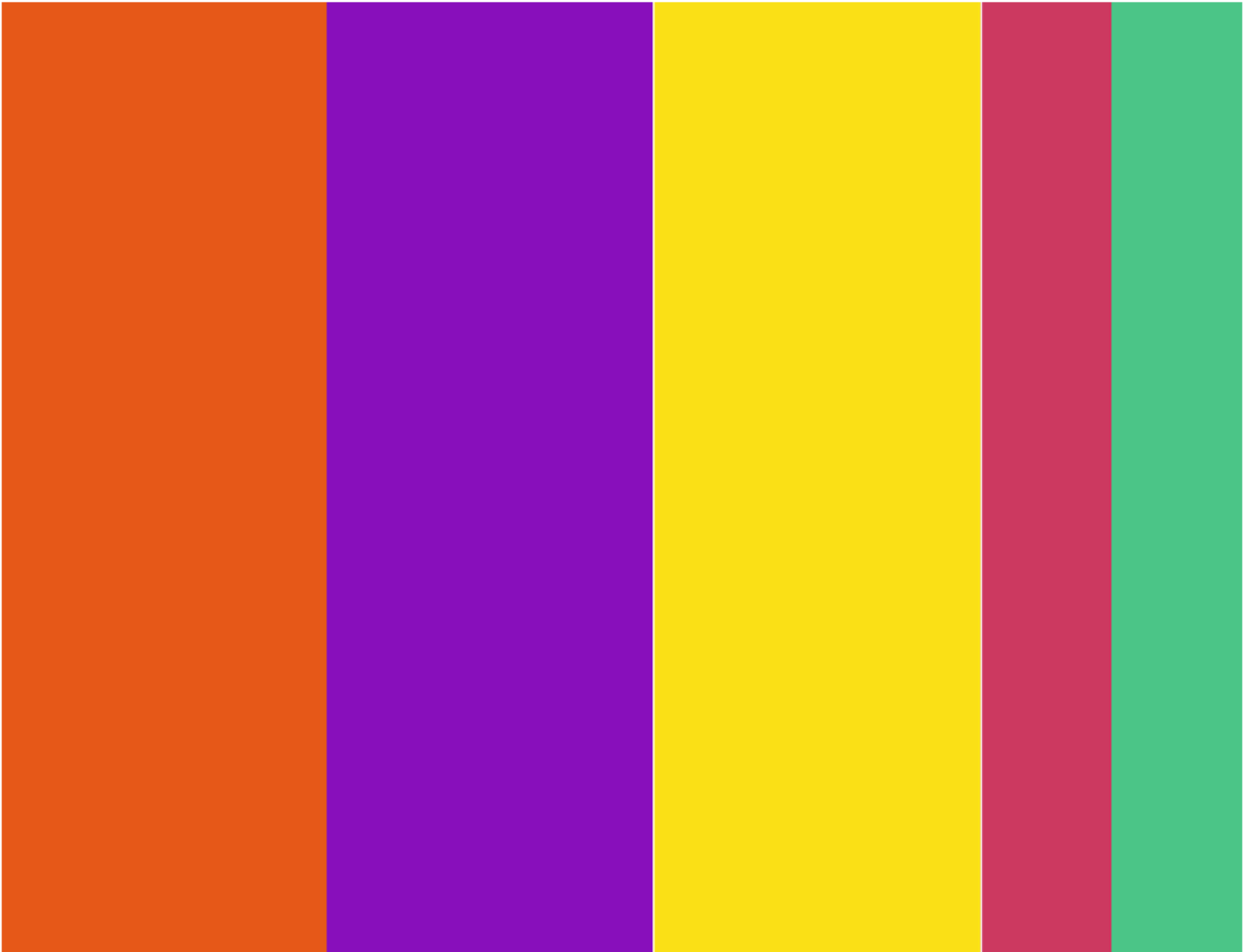
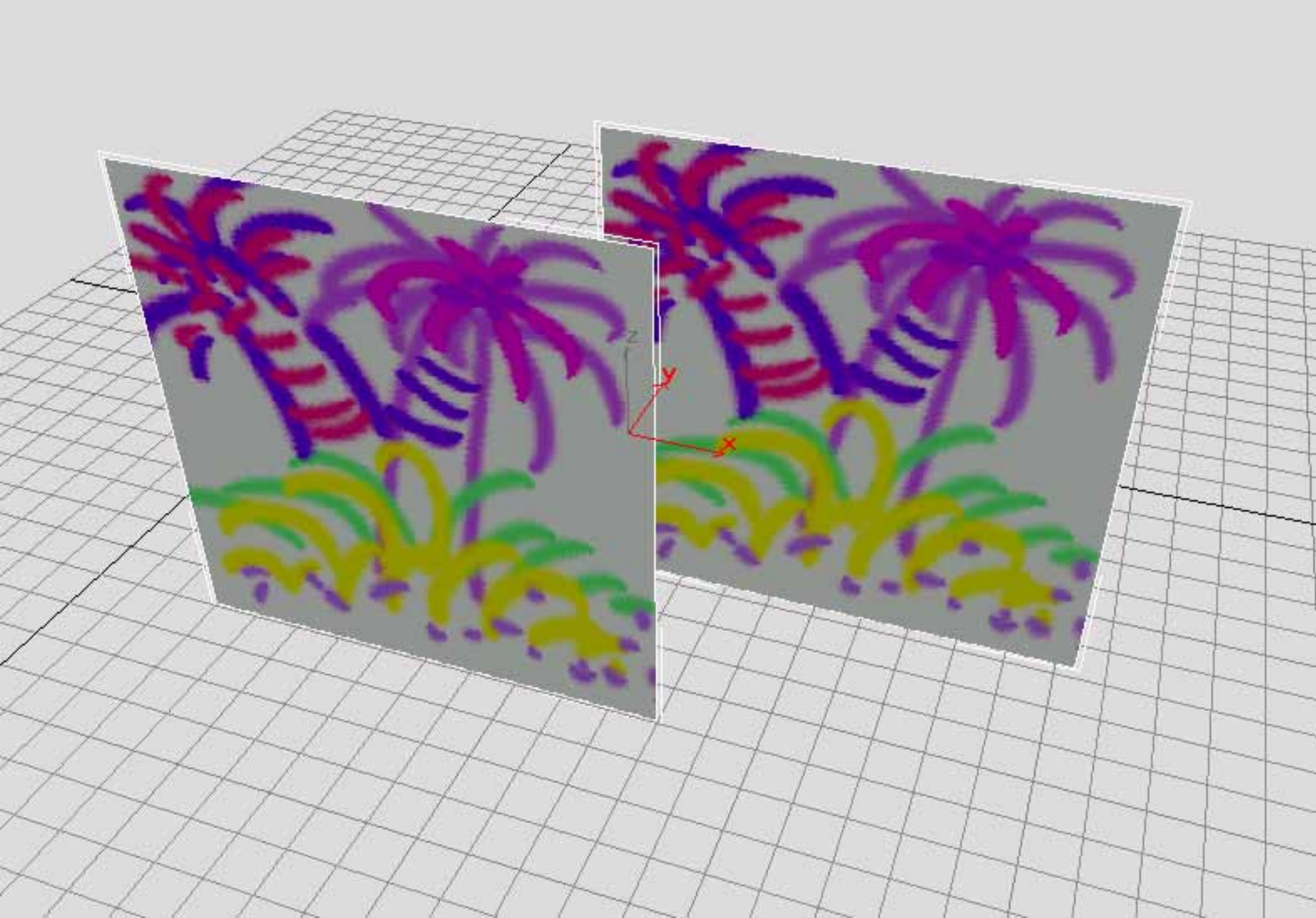
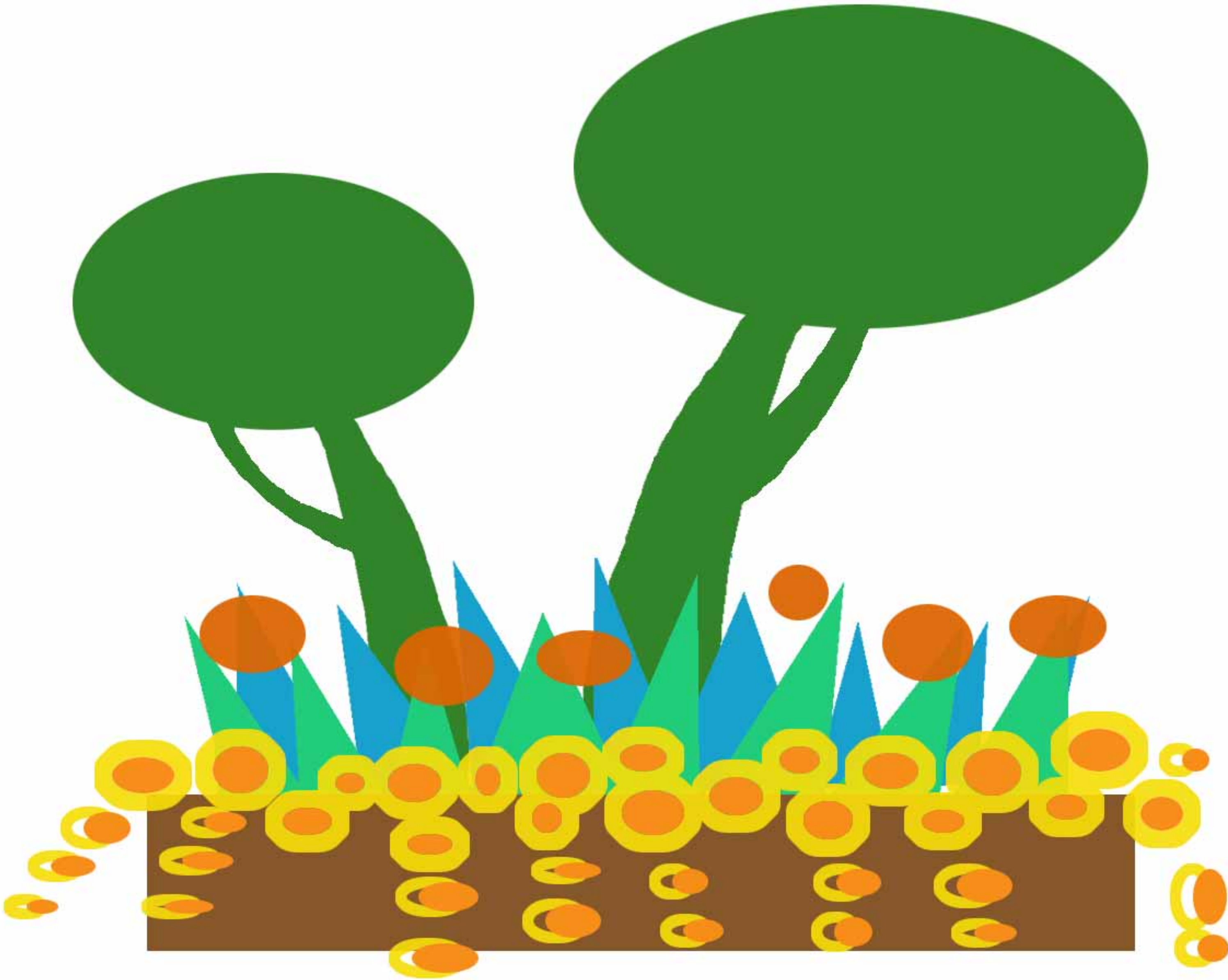
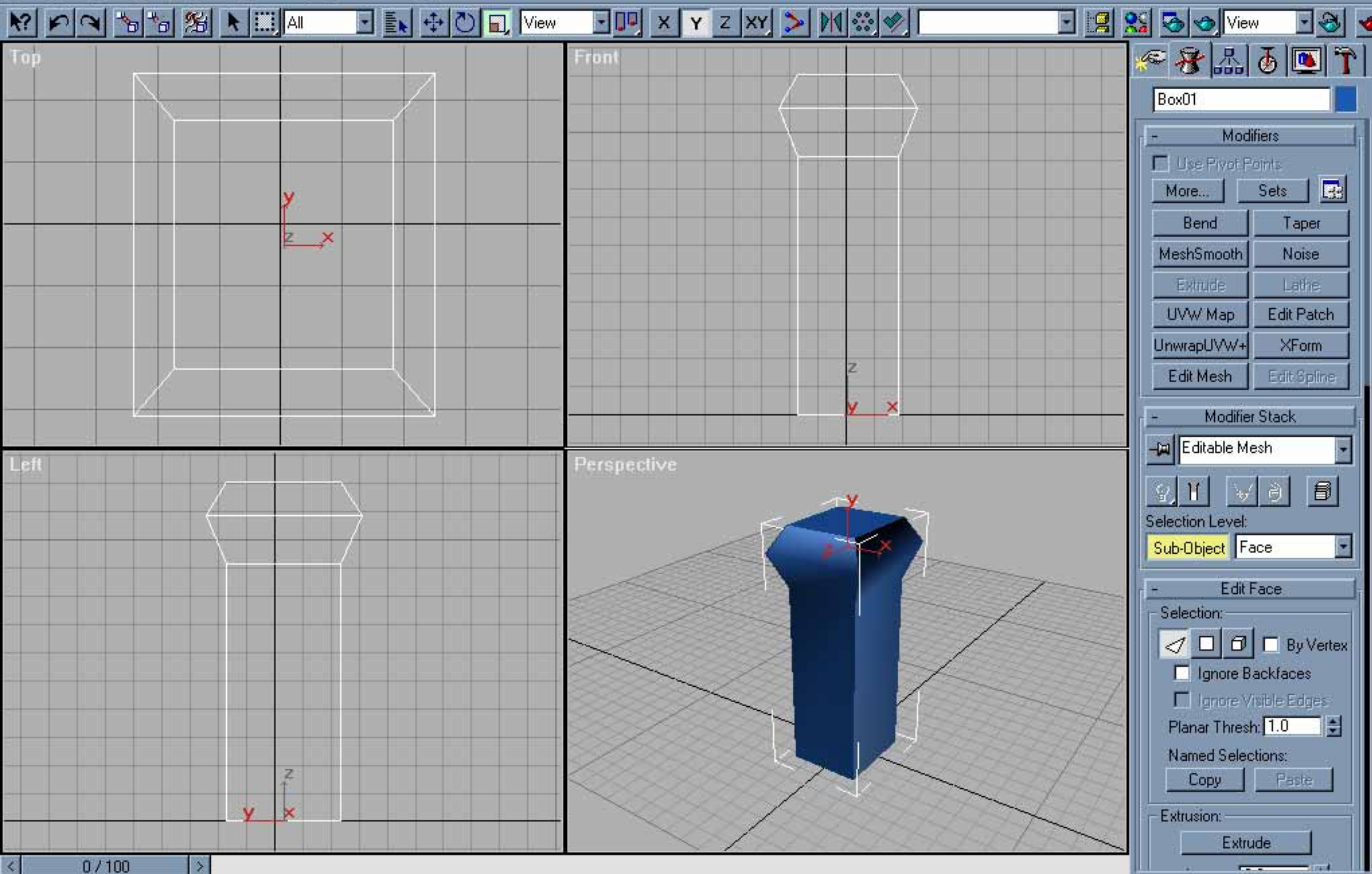


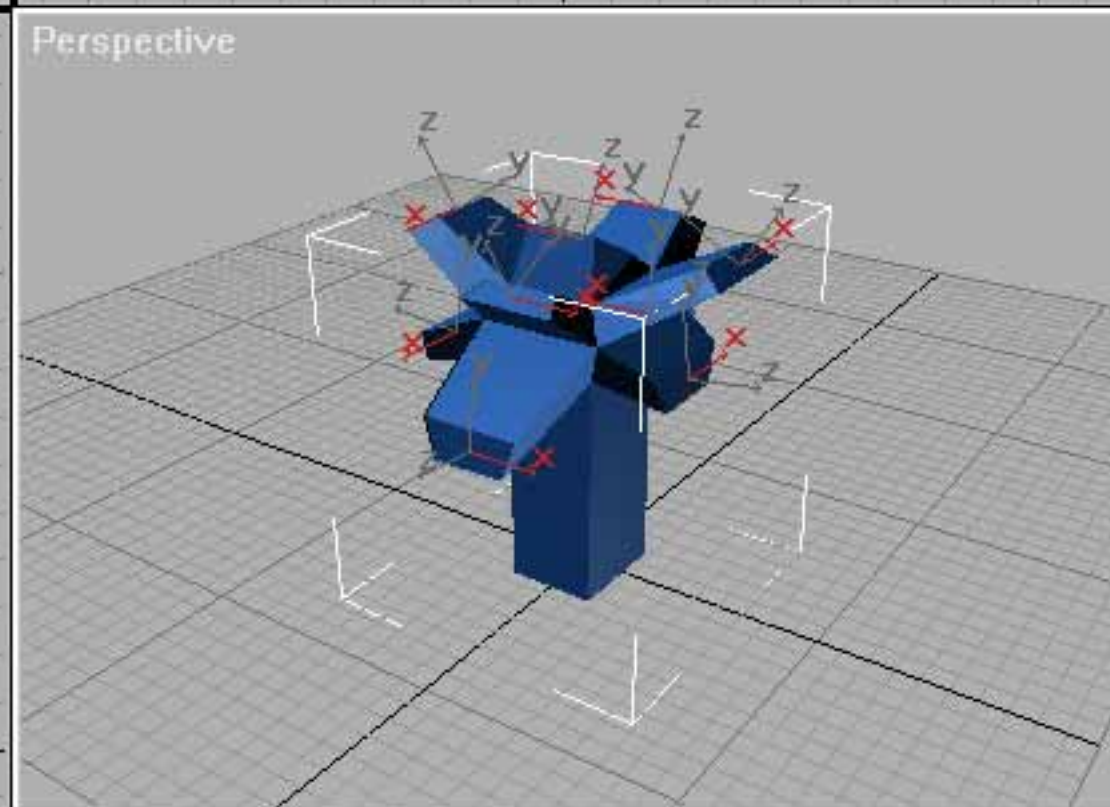
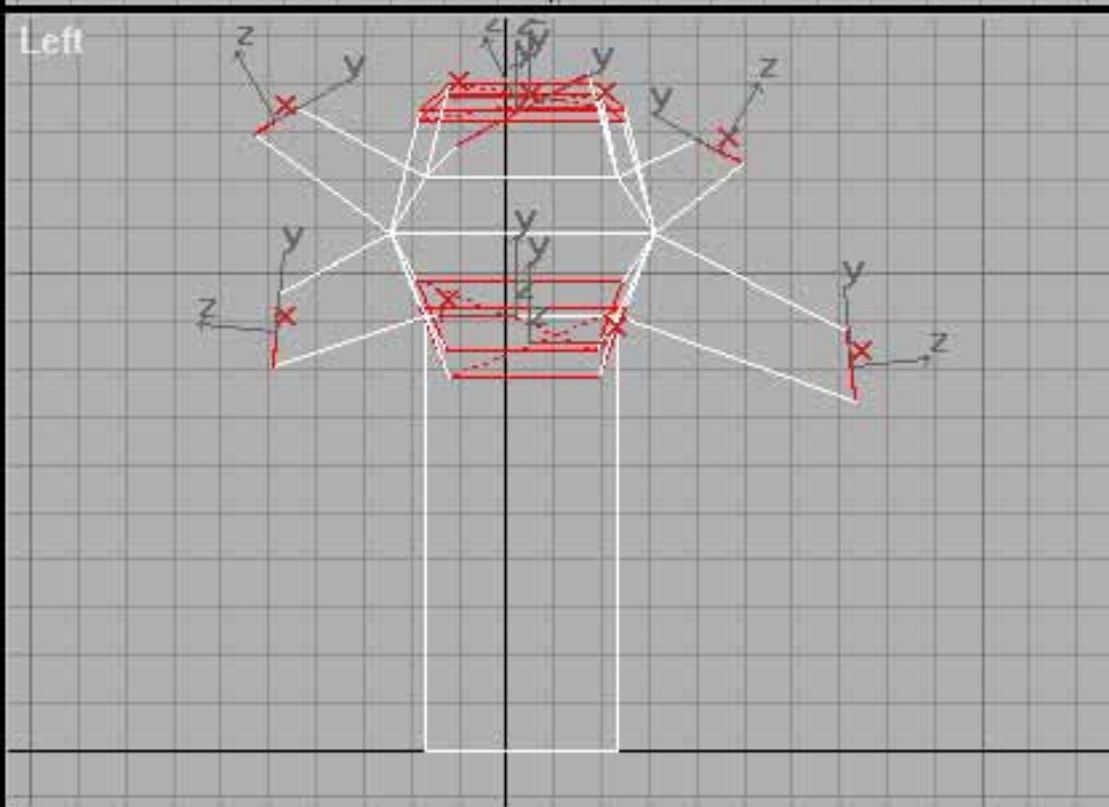
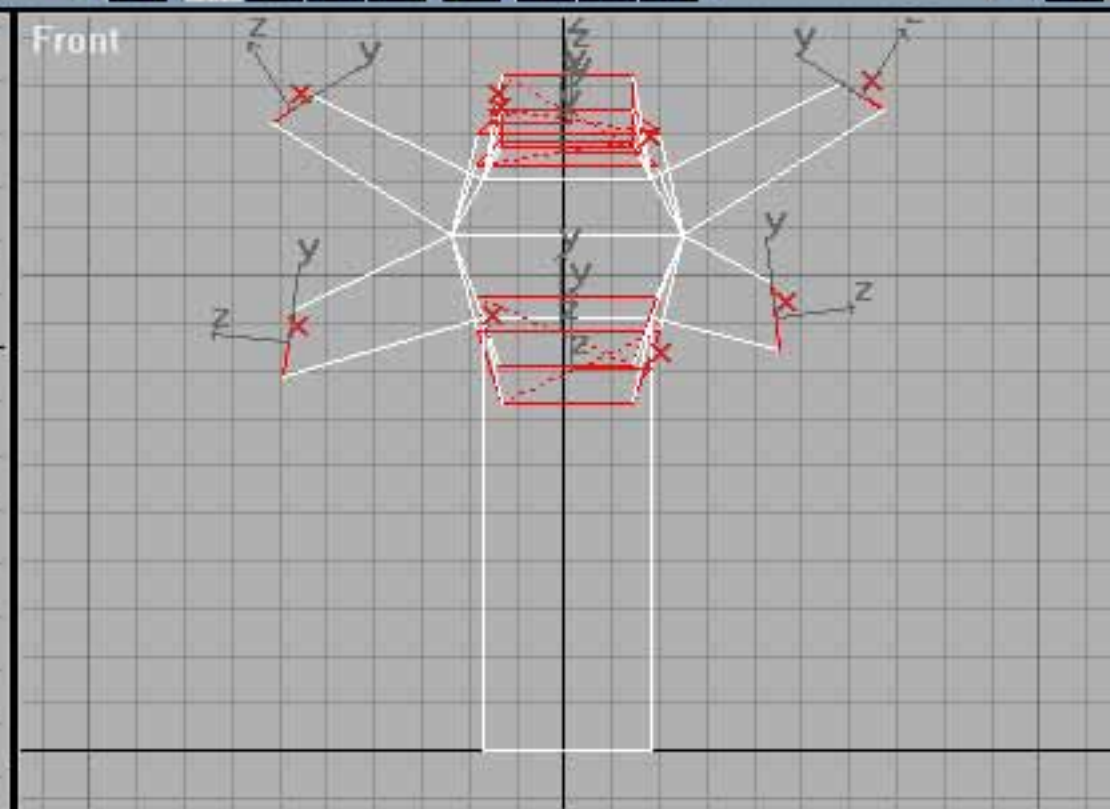
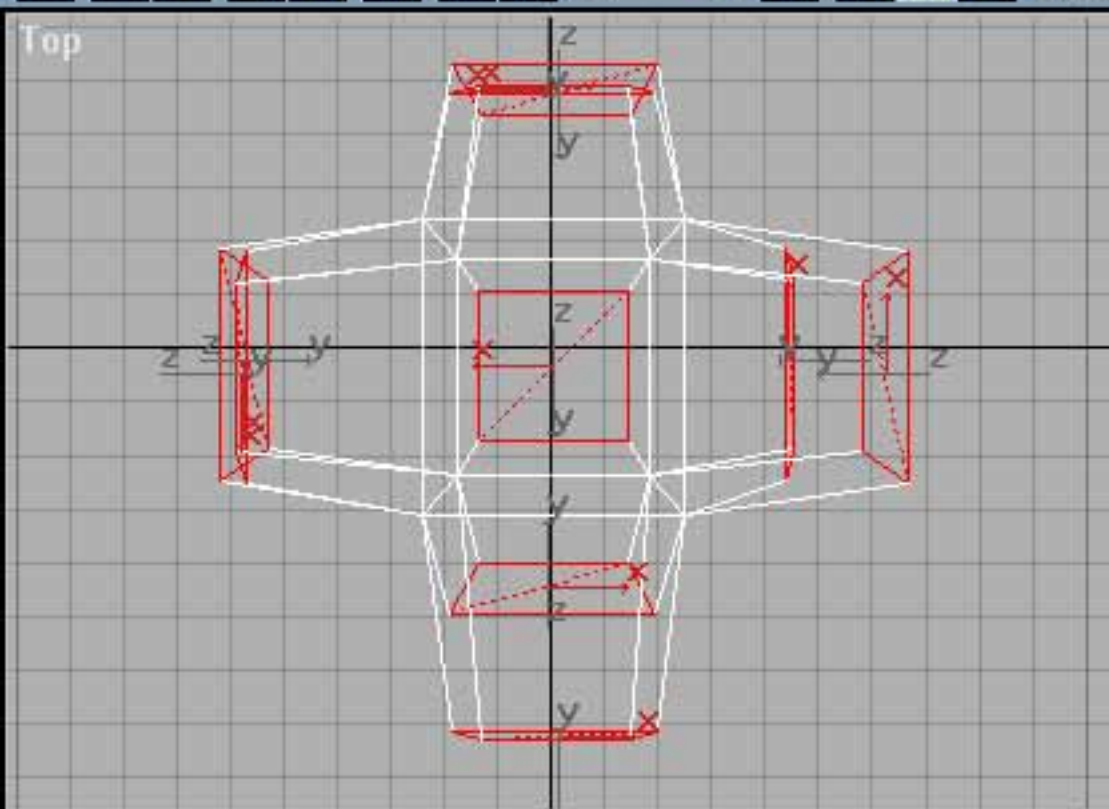
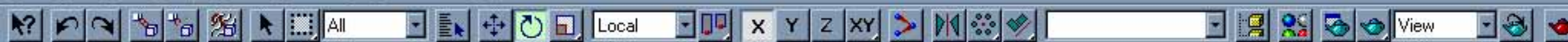
Figure 30: The final arrangement complete with base, lens flare and lighting.











plant01

Modifiers

☐ Use Pivot Points

More... Sets

Bend Taper

MeshSmooth Noise

Extrude Lathe

UVW Map Edit Patch

UnwrapUVW+ XForm

Edit Mesh Edit Spline

Modifier Stack

Editable Mesh

Selection Level:

Sub-Object Face

Edit Face

Selection:

☒ By Vertex

☐ Ignore Backfaces

☐ Ignore Visible Edges

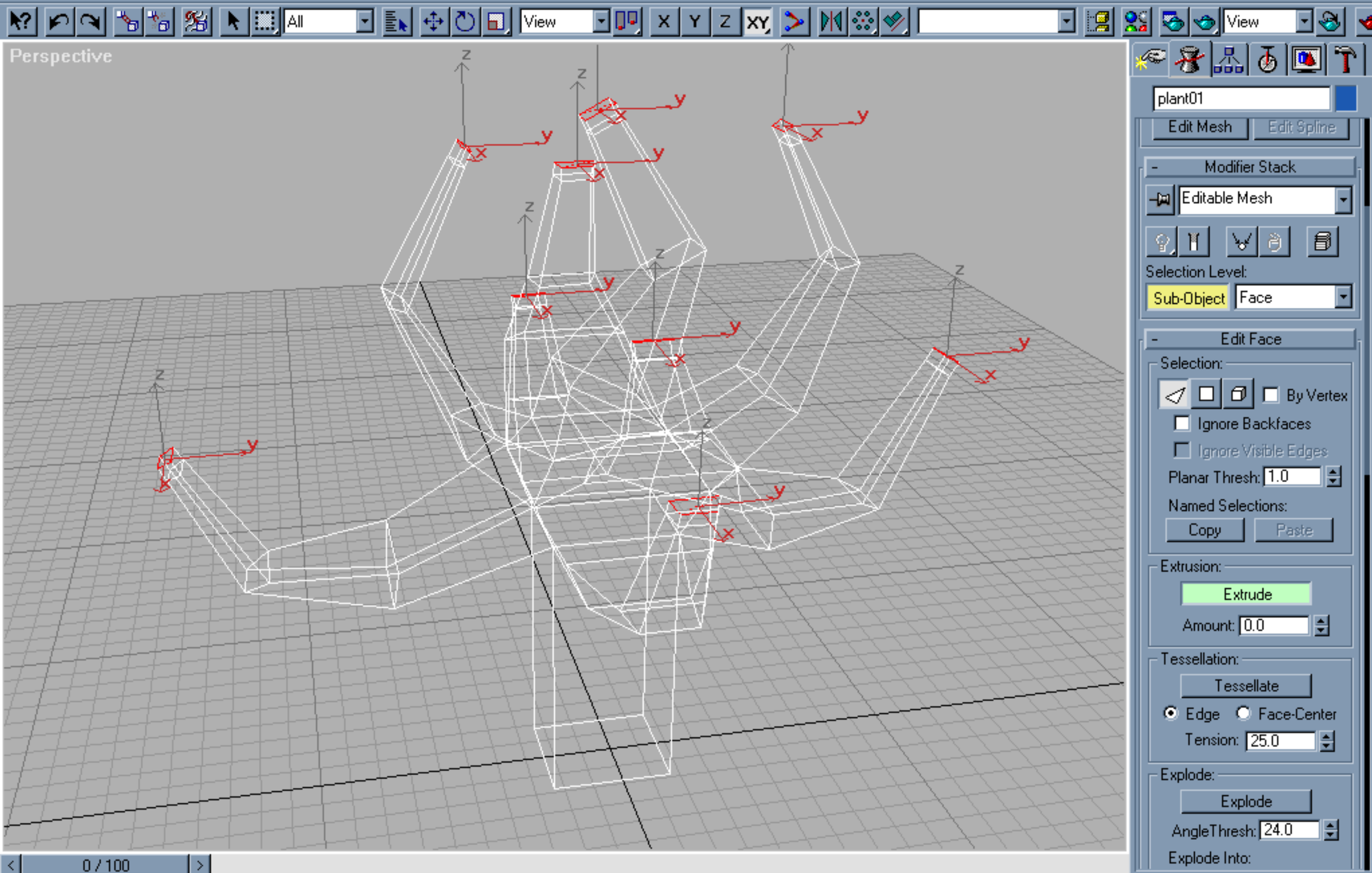
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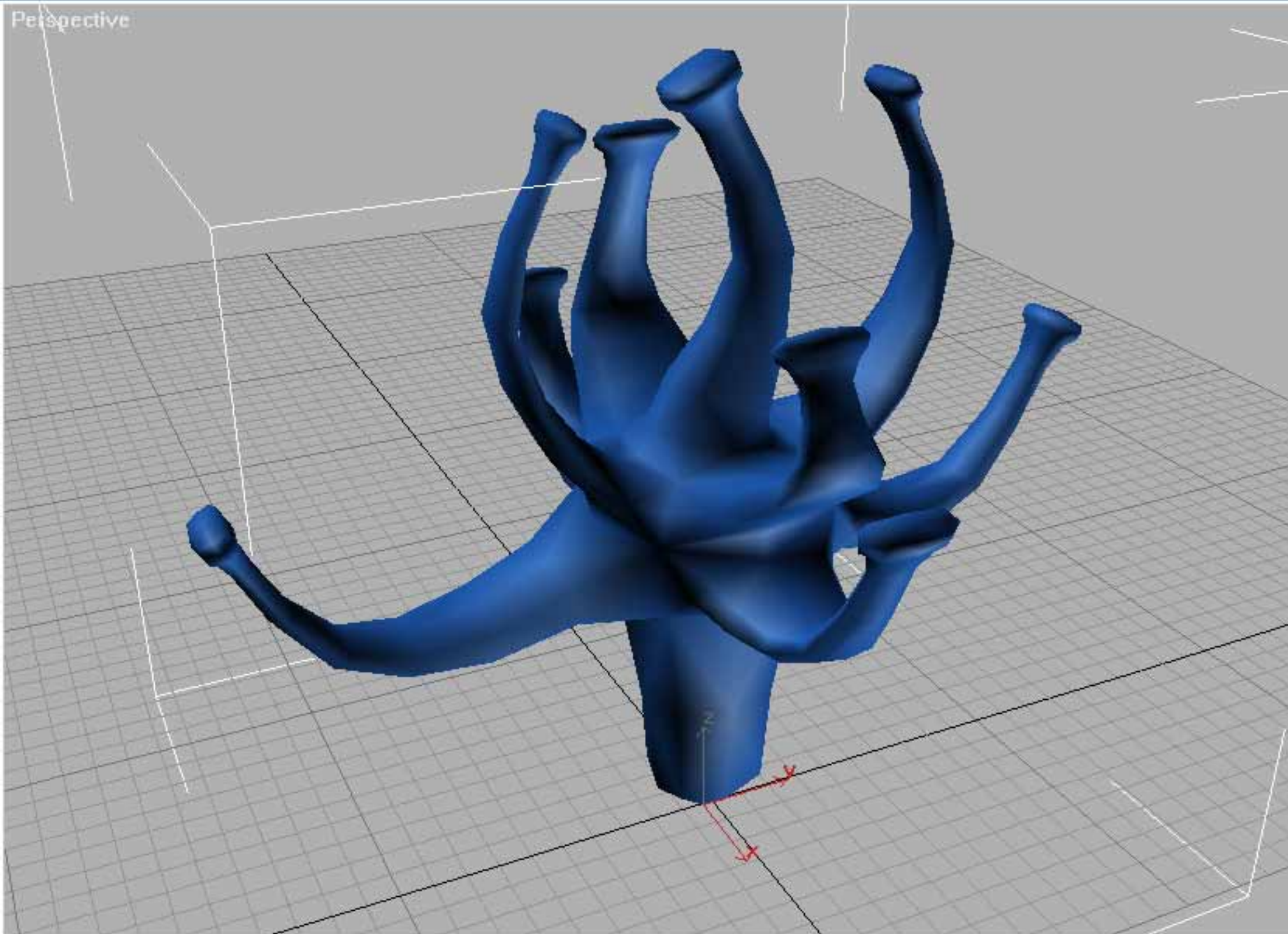
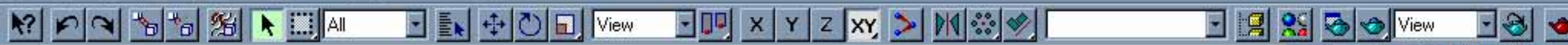
Named Selections:

Copy Paste

Extrusion:

Extrude





plant01

MeshSmooth Noise

Extrude Lathe

UVW Map Edit Patch

UnwrapUVW+ XForm

Edit Mesh Edit Spline

Modifier Stack

MeshSmooth

Selection Level: Sub-Object

Parameters

MeshSmooth

Strength: 0.5

Relax Value: 0.0

Sharpness: 1.0

Operate On: ☒ ☐

☒ Quad Output

☐ Apply To Whole Mesh

Iterations: ☒ 1 ☐ 2 ☐ 3 ☐ 4

Surface Parameters

☒ Smooth Result

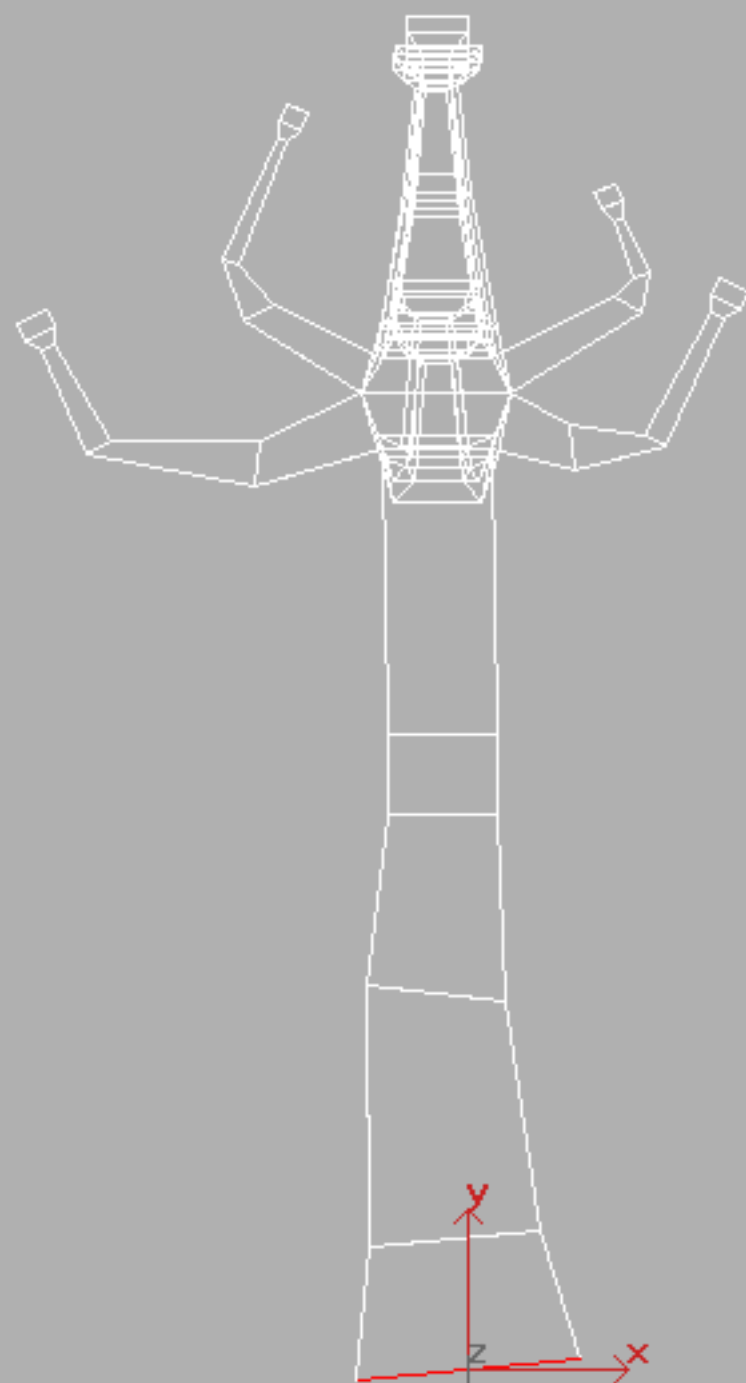
Separate by:

☐ Materials

☐ Smoothing Groups



Front



plant01

Modifiers

☐ Use Pivot Points

More...

Sets

Bend

Taper

MeshSmooth

Noise

Extrude

Lathe

UVW Map

Edit Patch

UnwrapUVW+

XForm

Edit Mesh

Edit Spline

Modifier Stack

* Edit Mesh

Selection Level:

Sub-Object

Face

Edit Face

Selection:



By Vertex

Planar Thresh: 90.0

Extrusion:

Extrude

Amount: 0.0

Tessellation:

Tessellate

☒ Edge☐ Face-Center

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Click or click-and-drag to select objects

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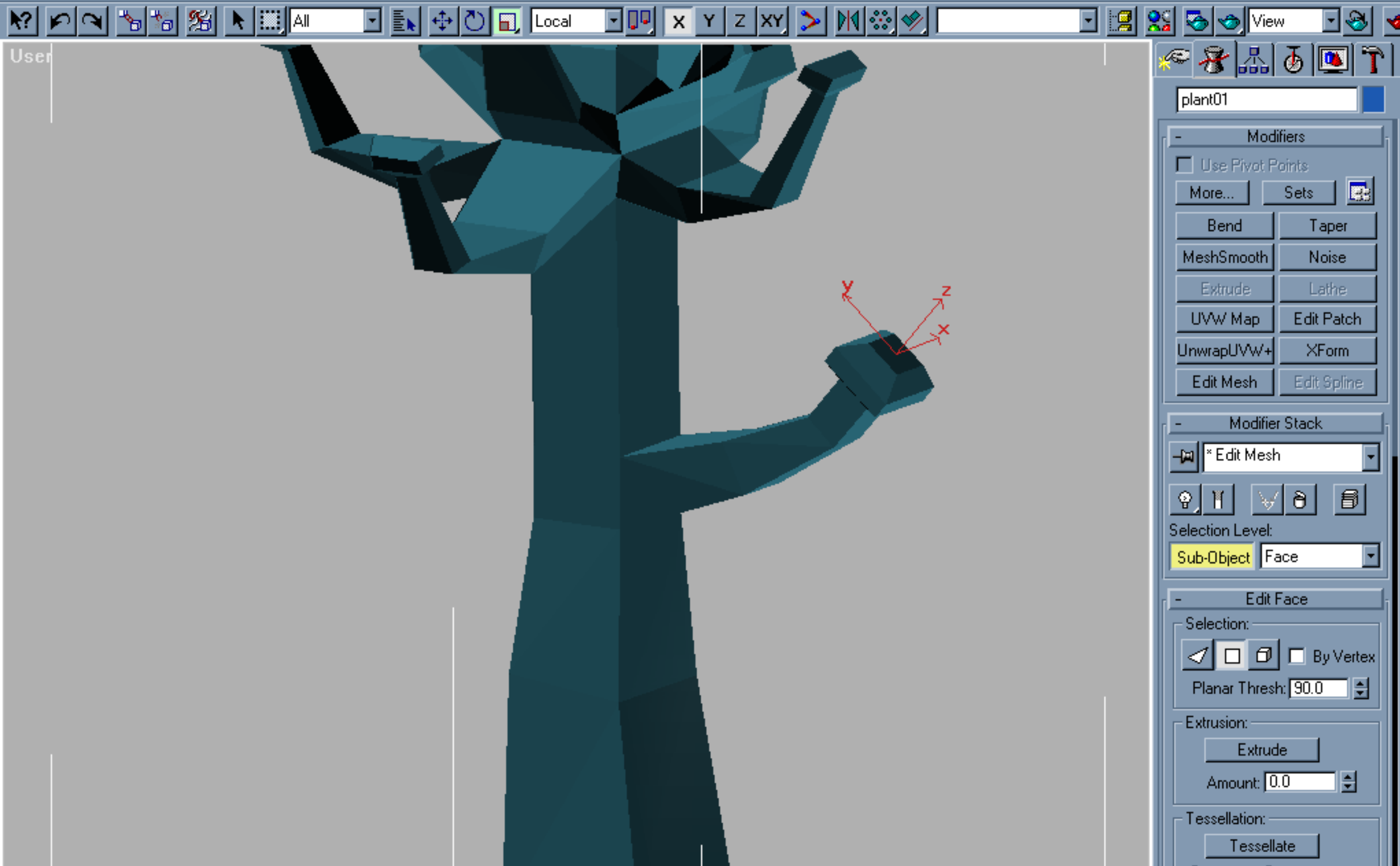
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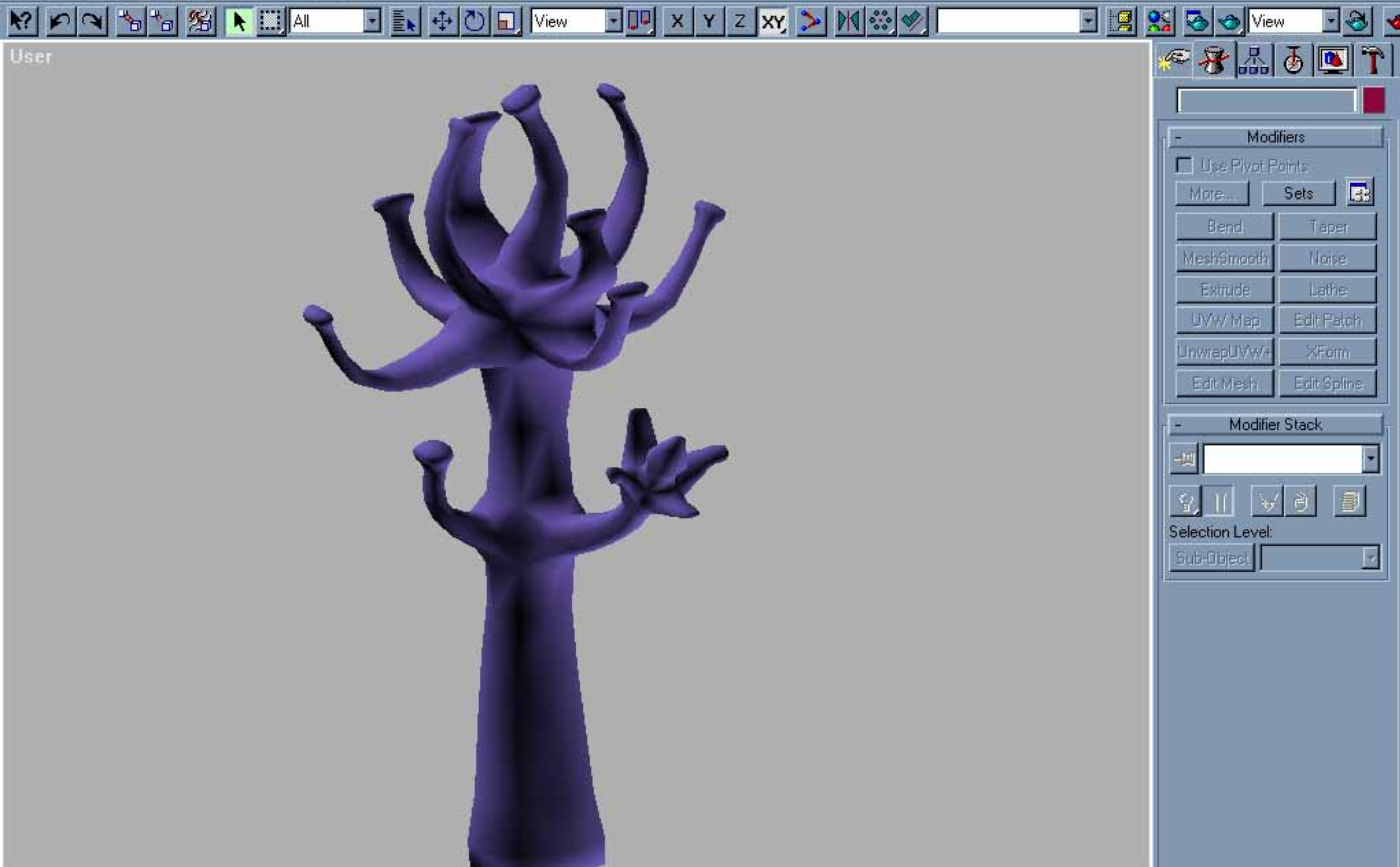
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Animate

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Rendering Time 0:00:01

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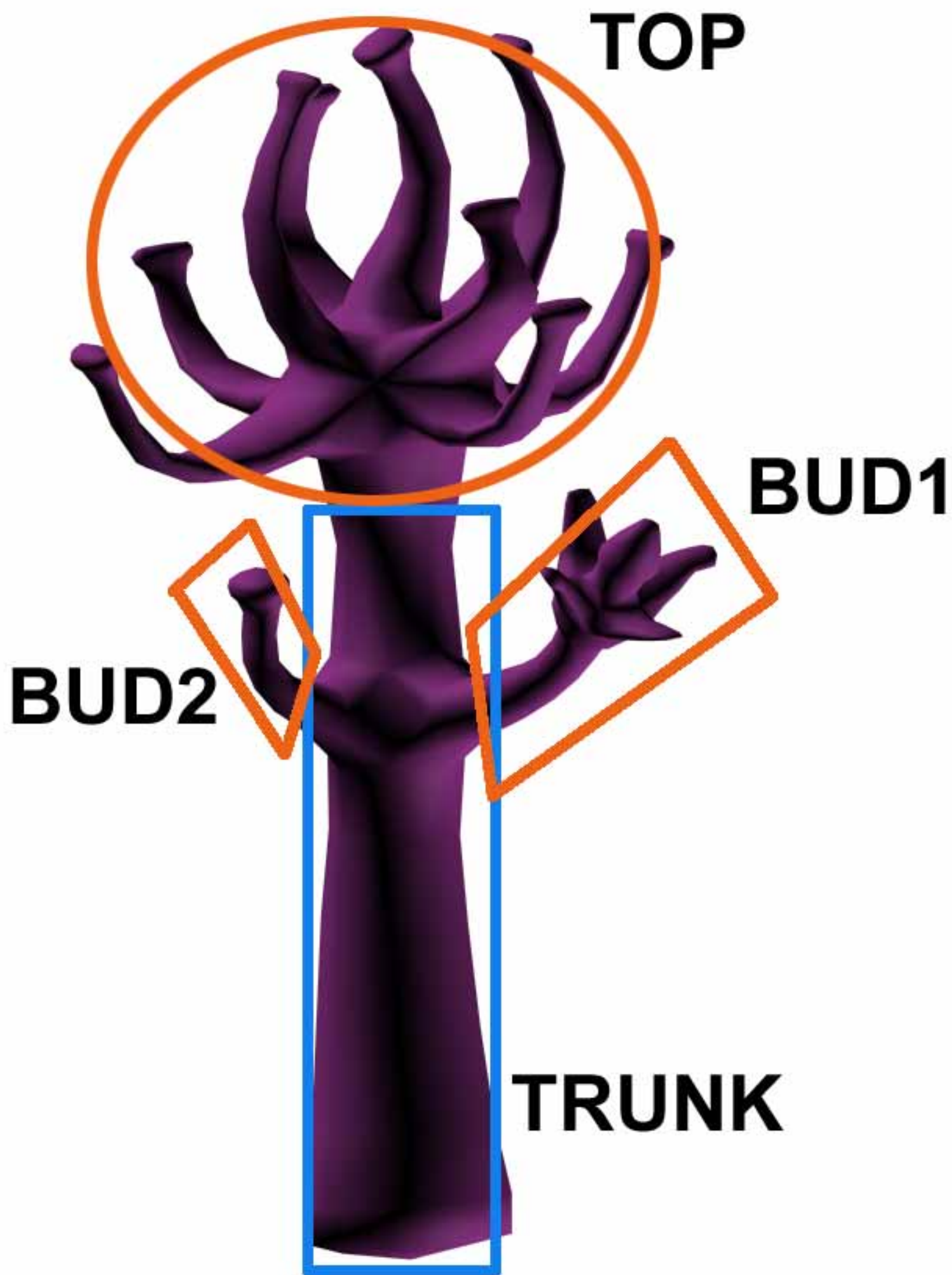
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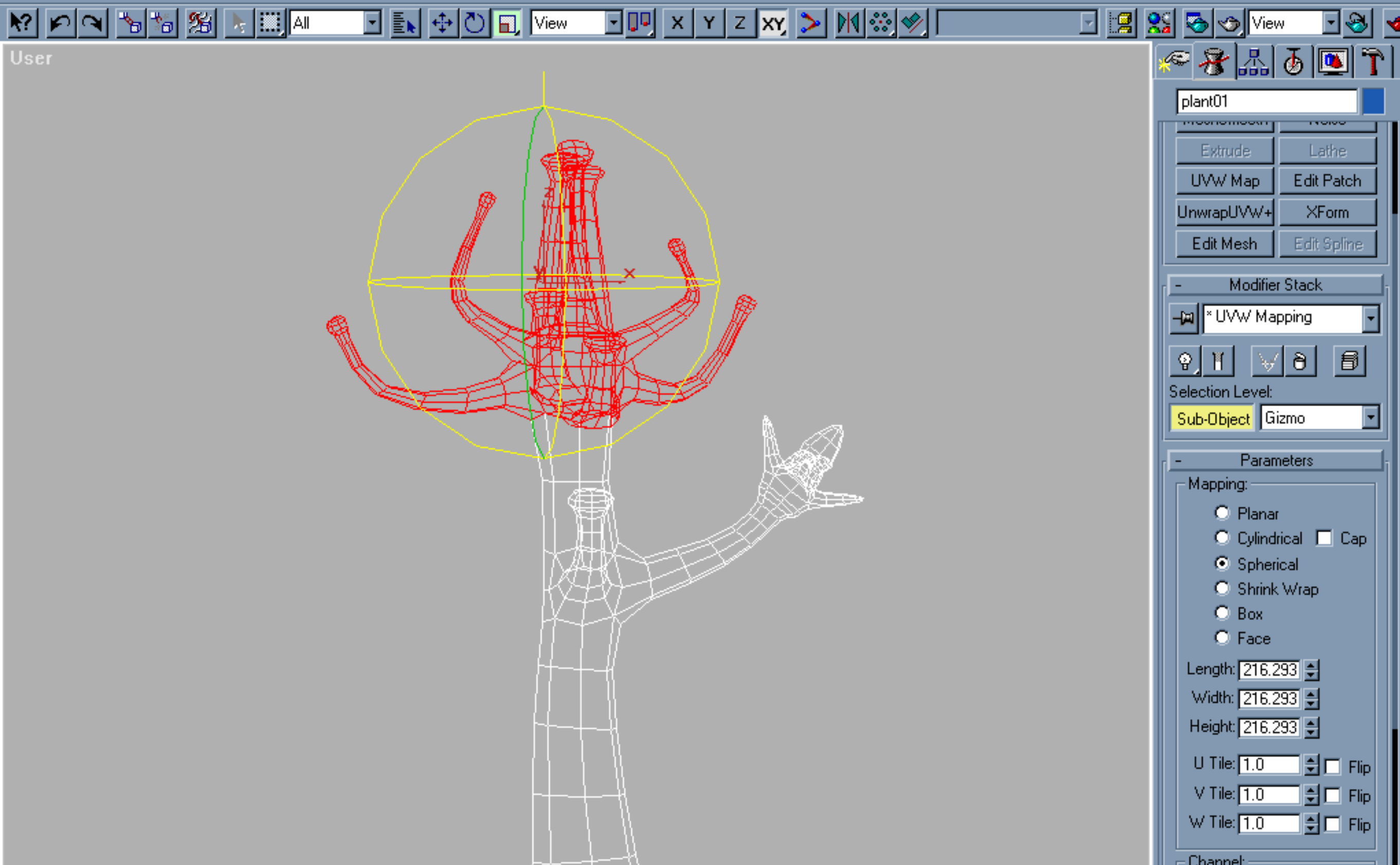
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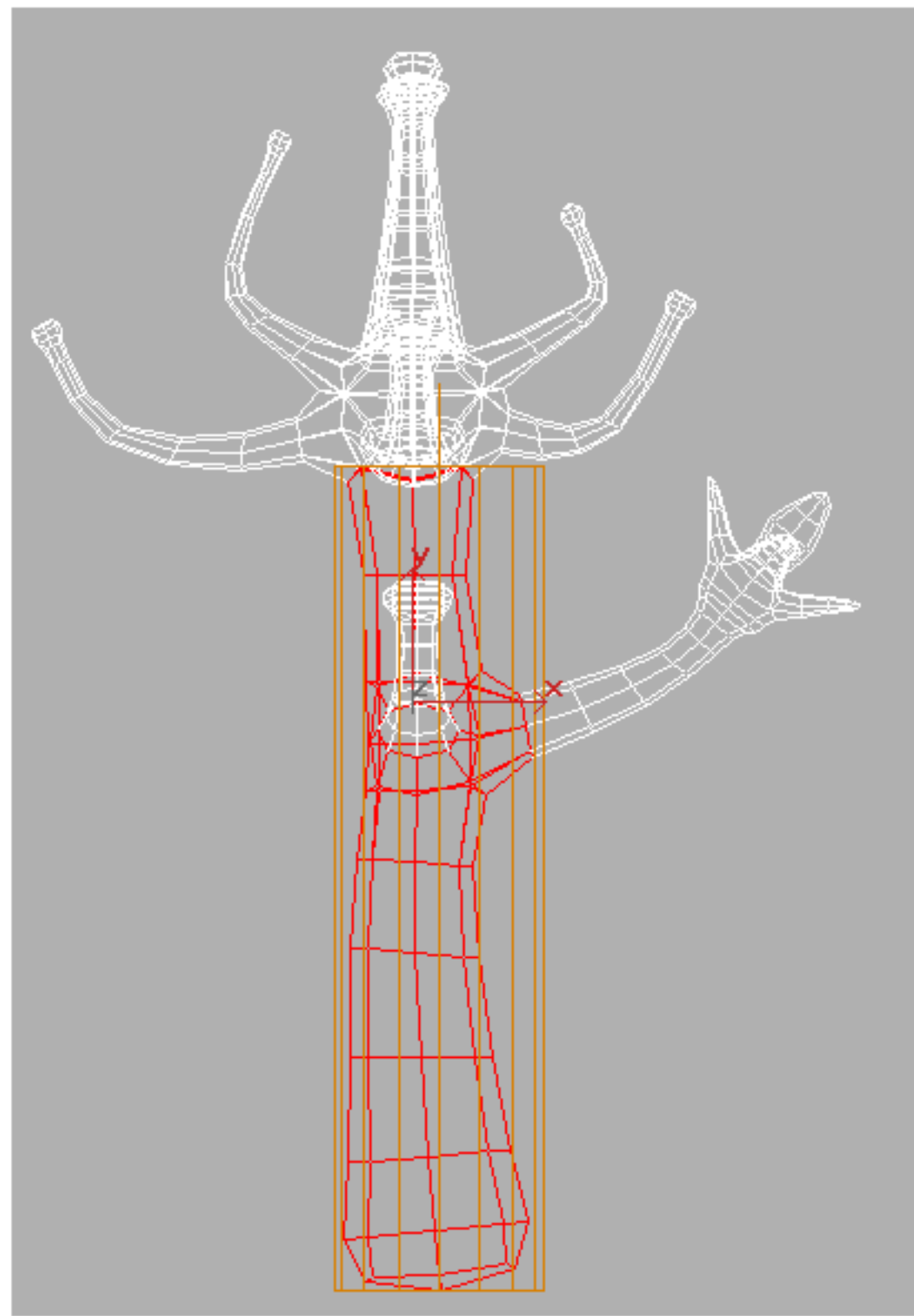
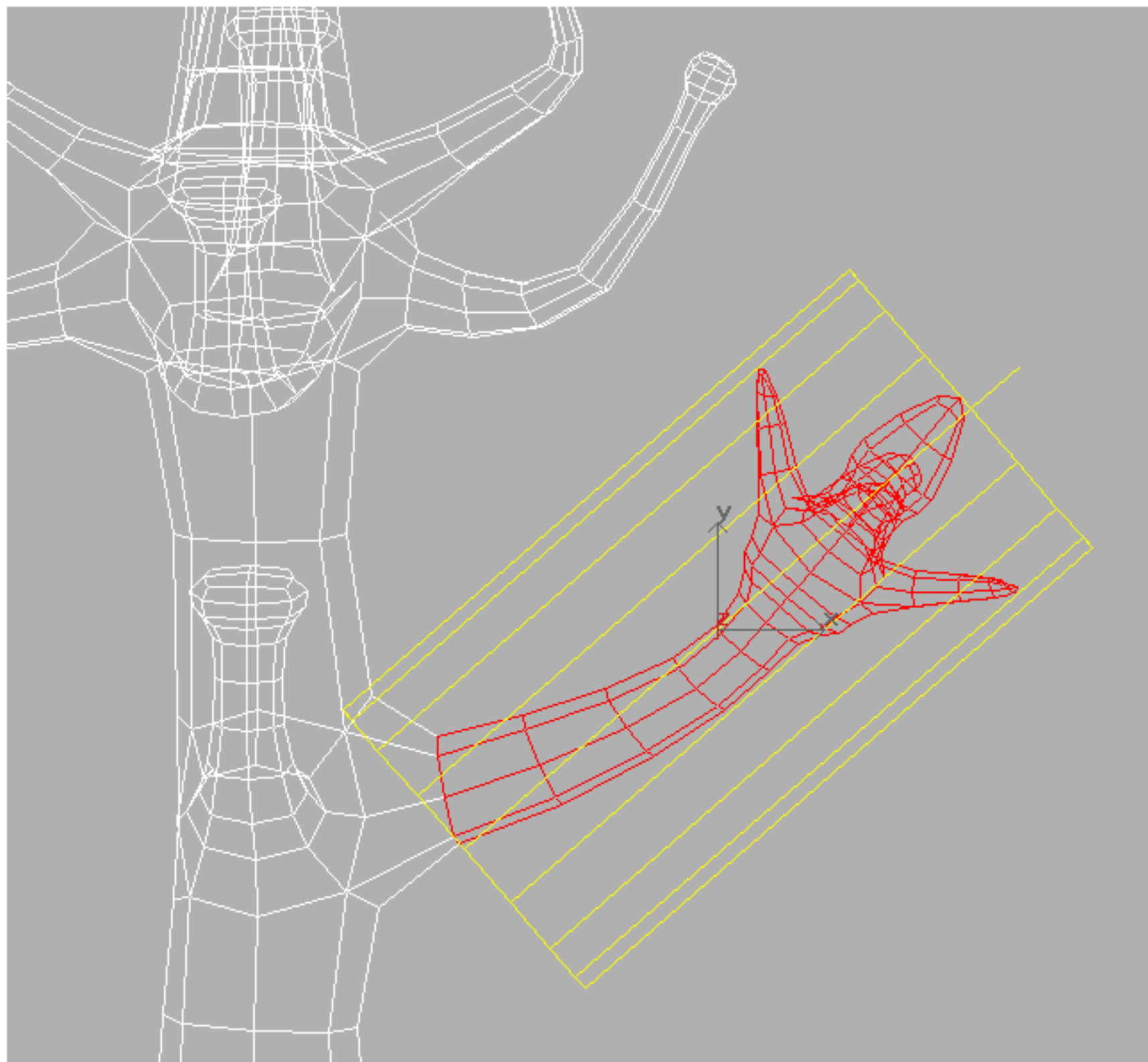
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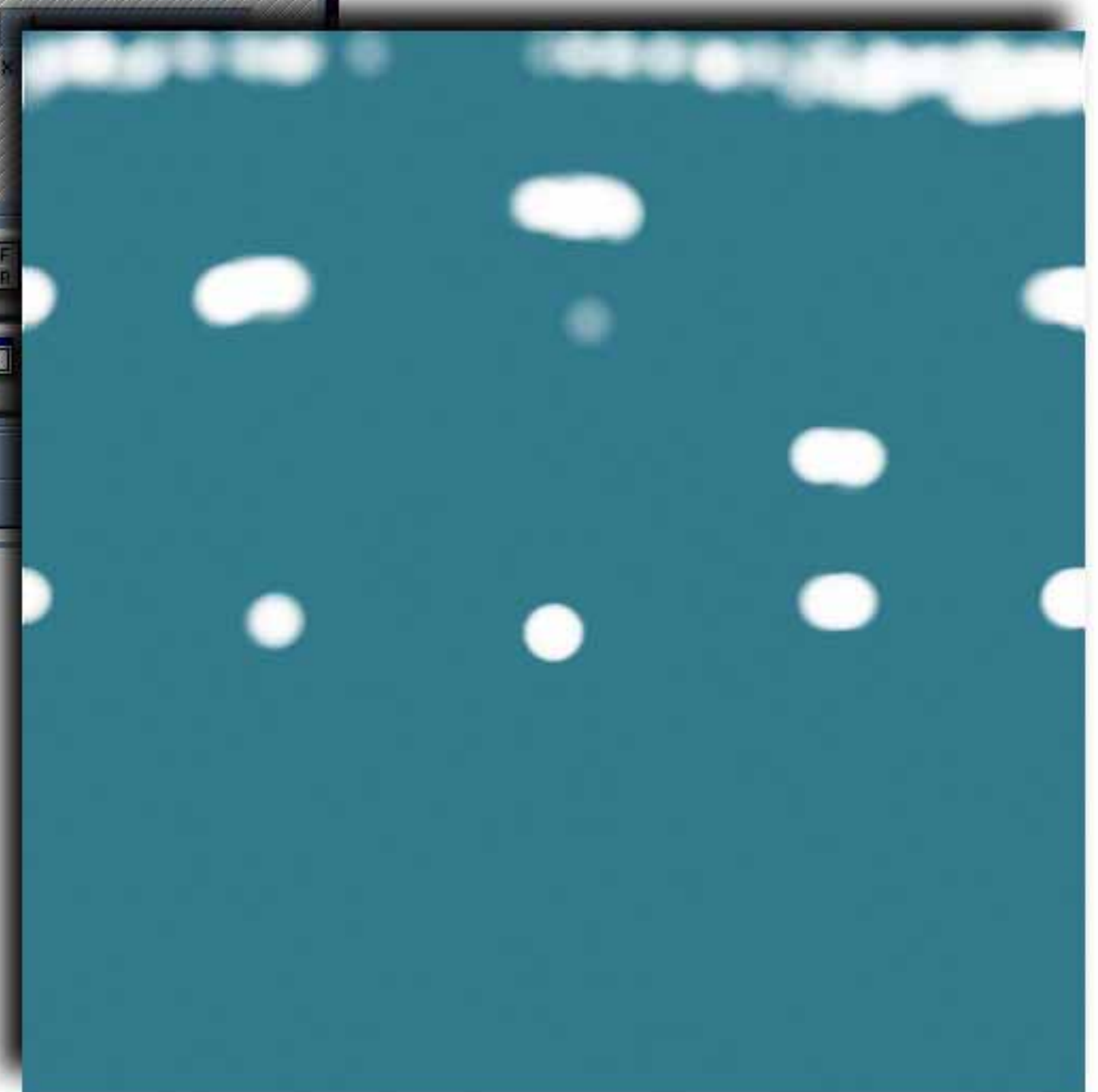
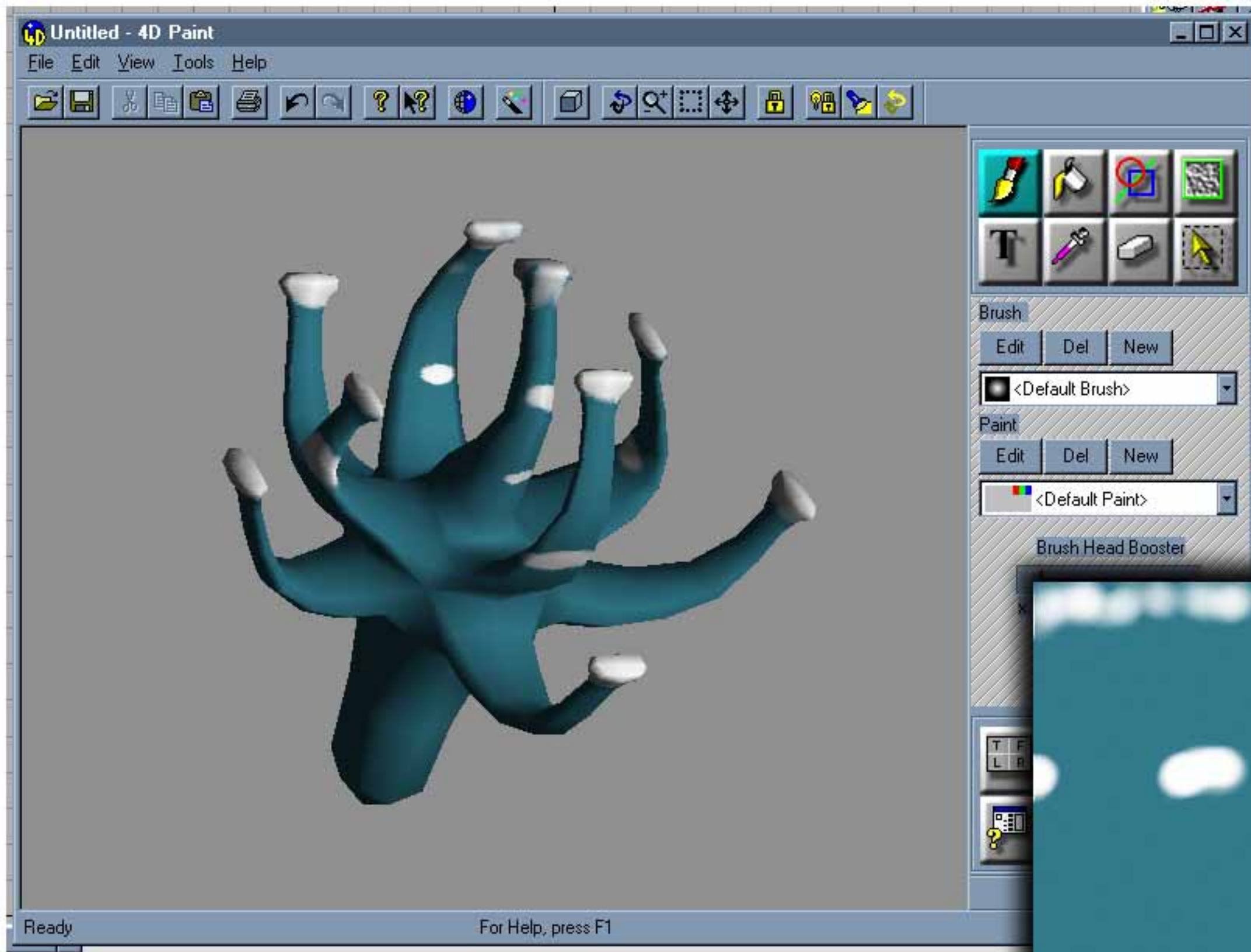
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Front



More...

Sets

Assign Vertex Colors

MAXScript

Collapse

Color Clipboard

Reset XForm

MAXScript

Open Listener

New Script

Open Script

Run Script

Utilities

UVW Unwrap

Close

UVW Unwrap

Object02

Image Size : 500

Wire Color :

UVW Unwrap

Close

< 0 / 100 >

1 Object Selected

Material ... ? [Icons] untitled.bm... [Icons]

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-0.0

108.0753

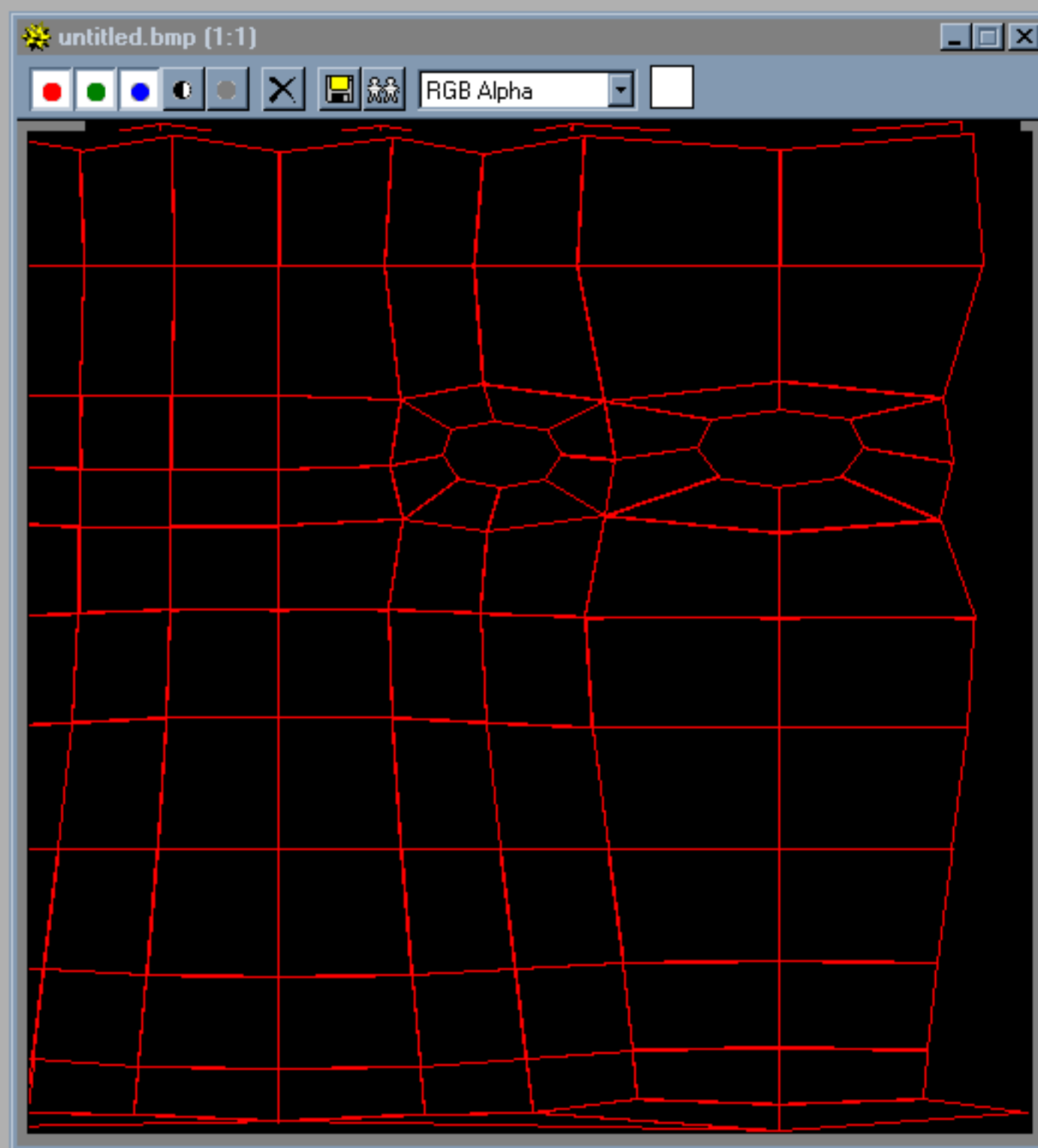
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Animate

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User



More... Sets

Assign Vertex Colors

MAXScript

Collapse

Color Clipboard

Reset XForm

- MAXScript

Open Listener

New Script

Open Script

Run Script

Utilities

UVW Unwrap

Close

- UVW Unwrap

plant02

Image Size : 500

Wire Color : ■

UVW Unwrap

Close

< 0 / 100 >

1 Object Selected

Click and drag to select and move objects



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558.3351

0.0

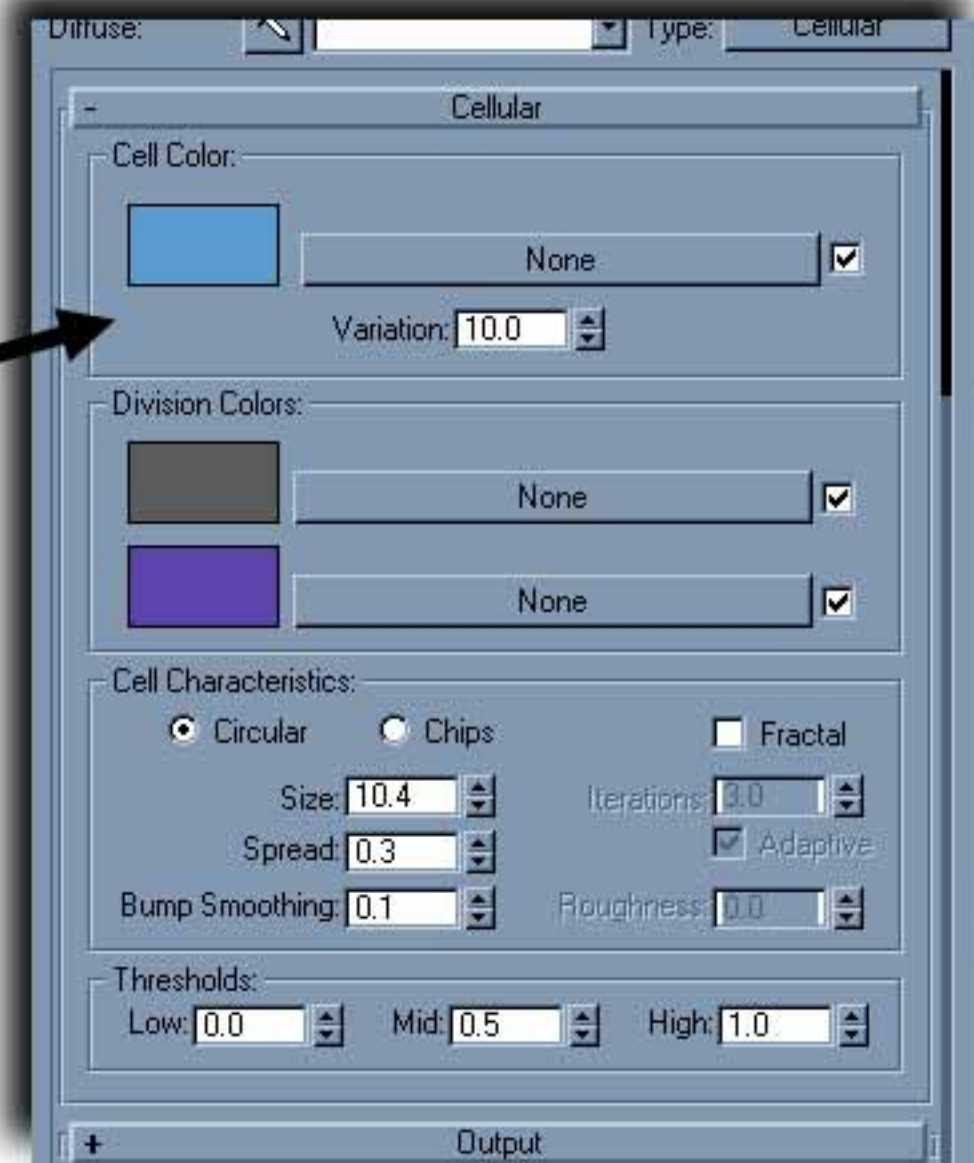
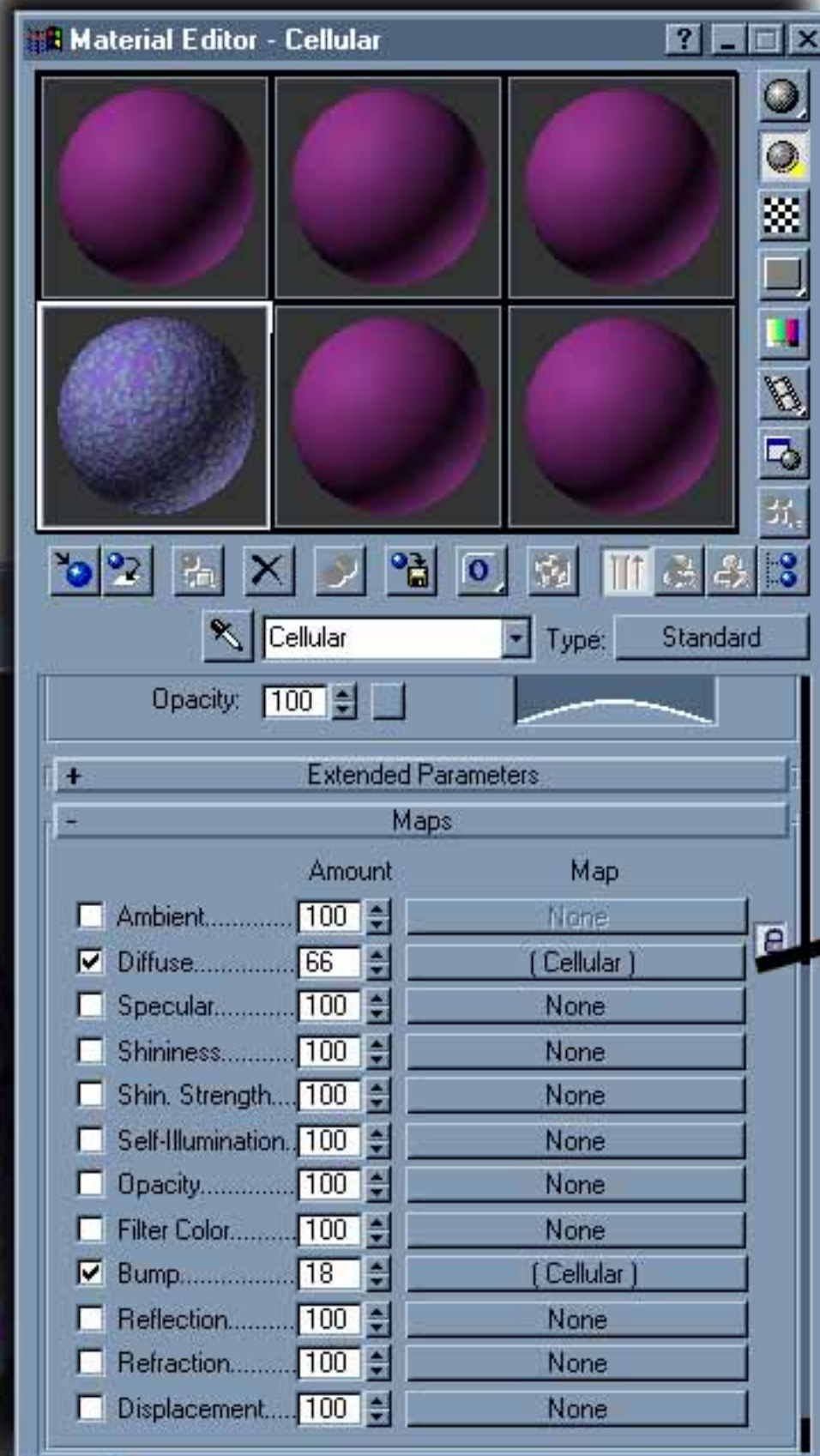
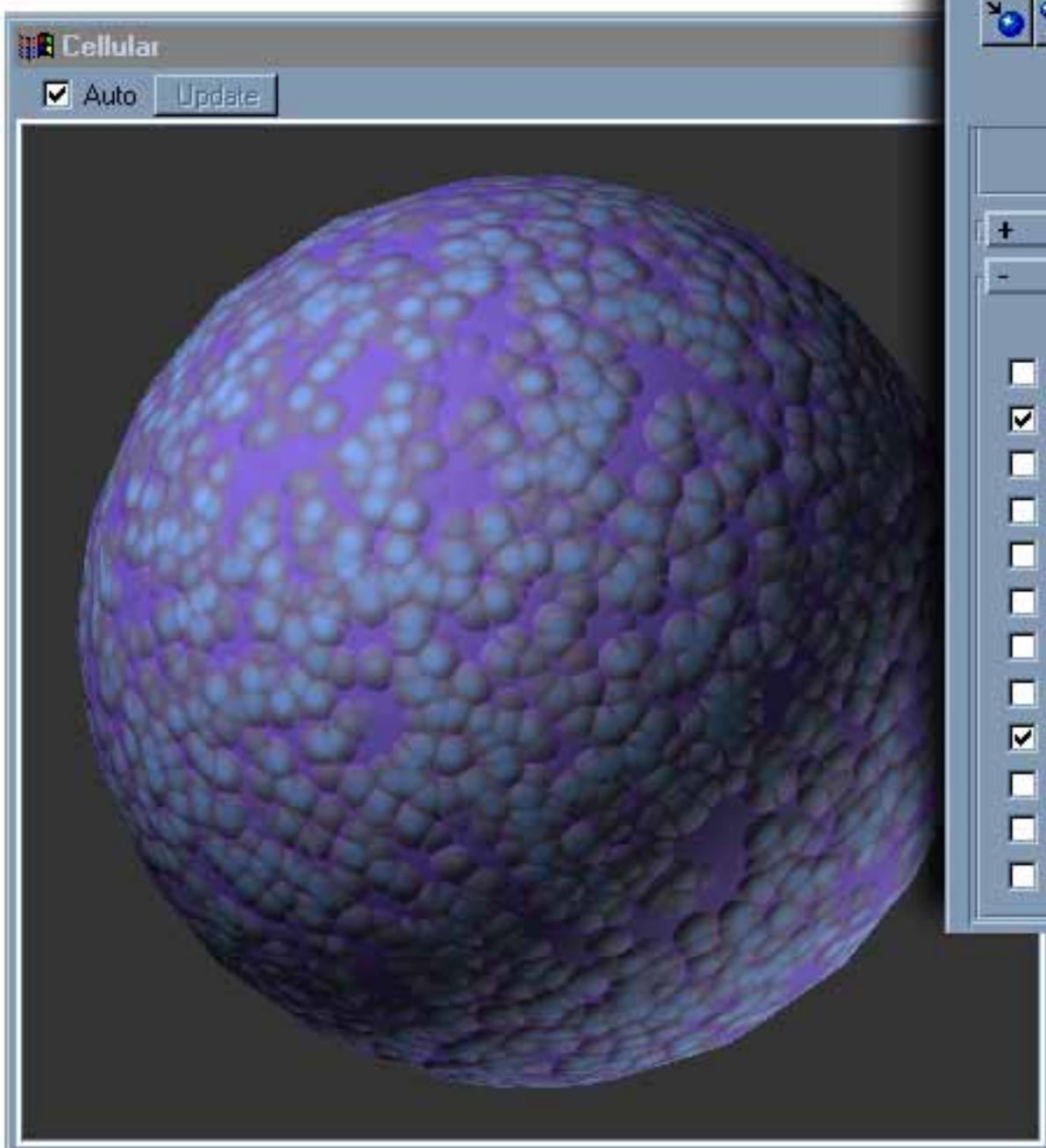
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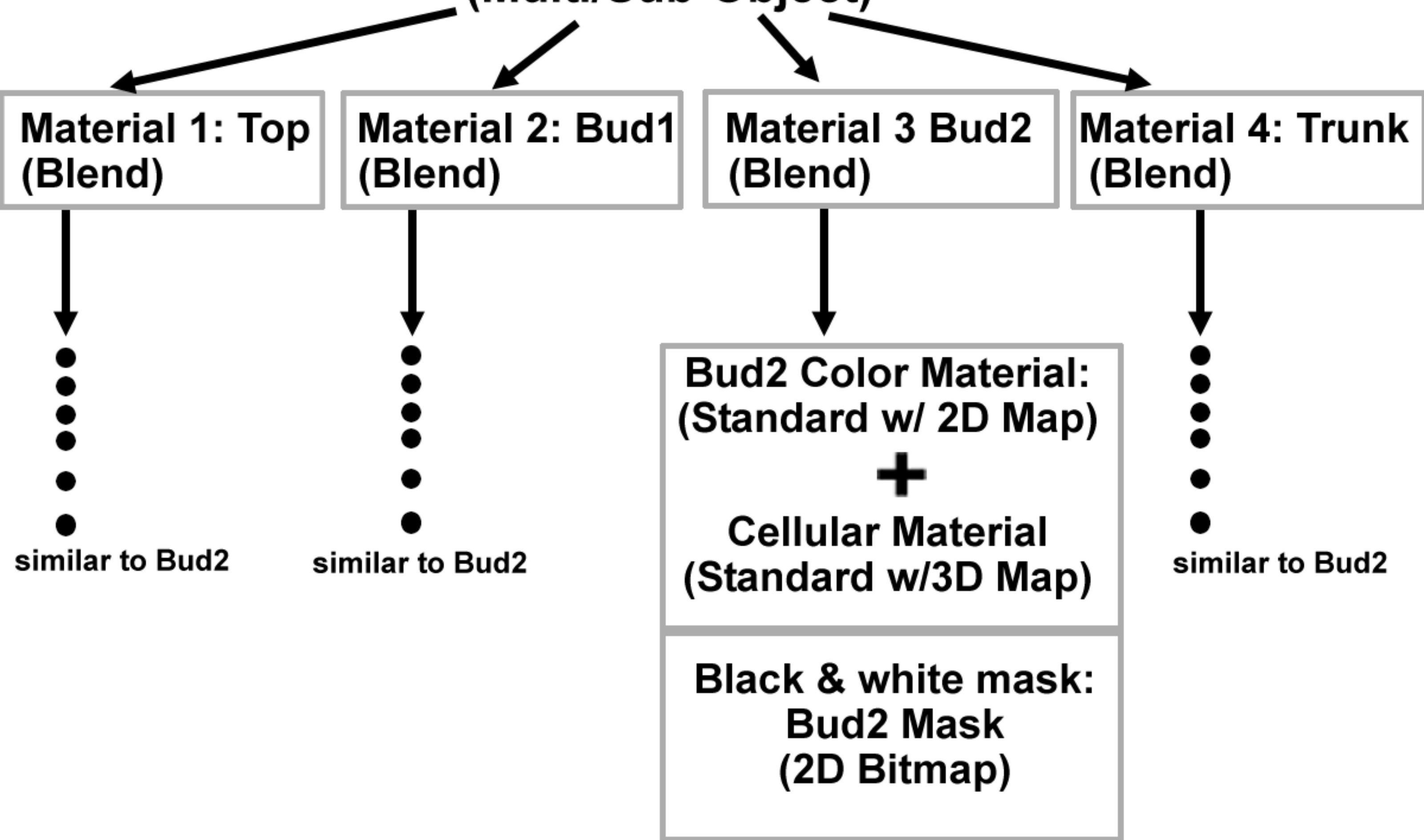


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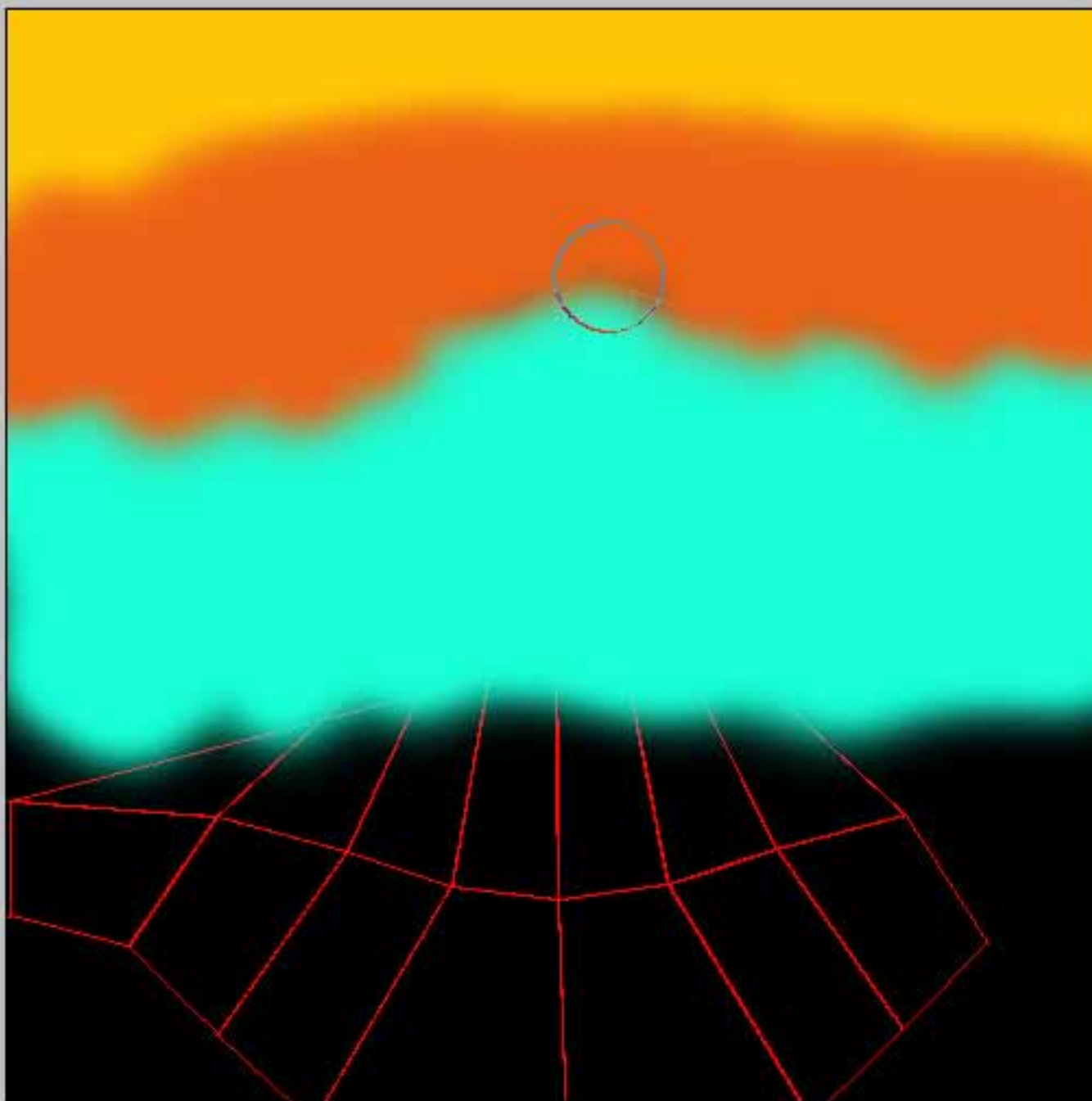




Material for Plant (Multi/Sub-Object)



bud2.TGA (Layer 1, RGB, 1:1)

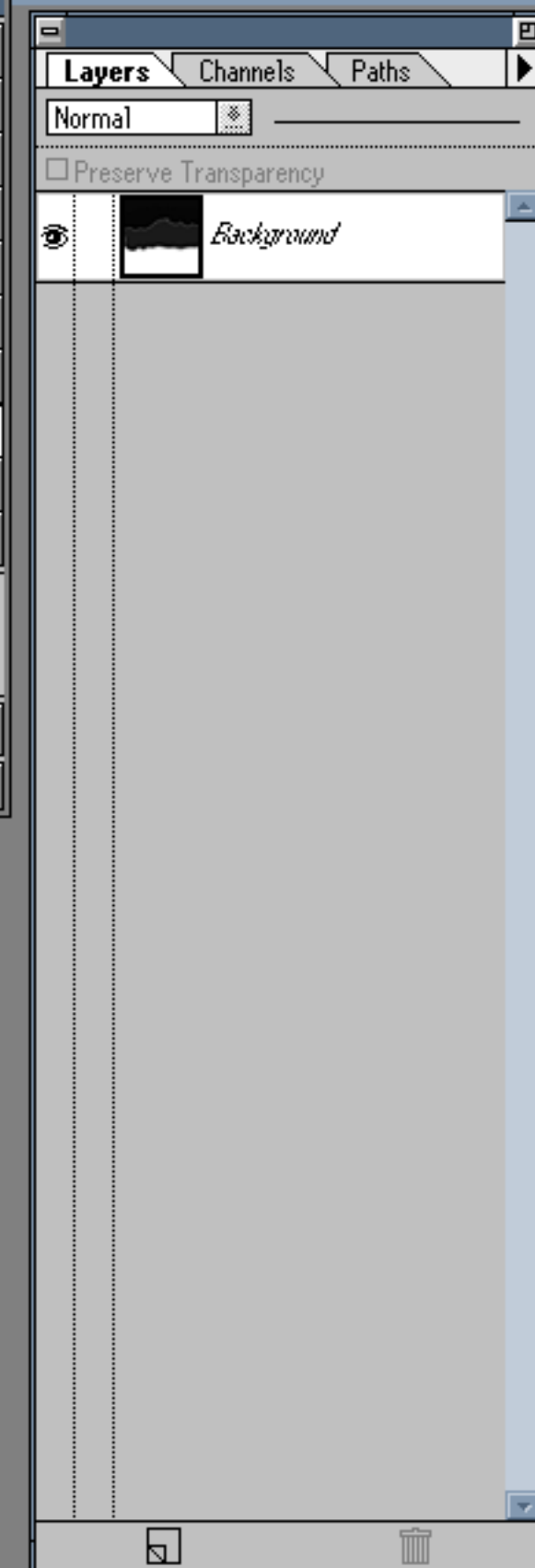
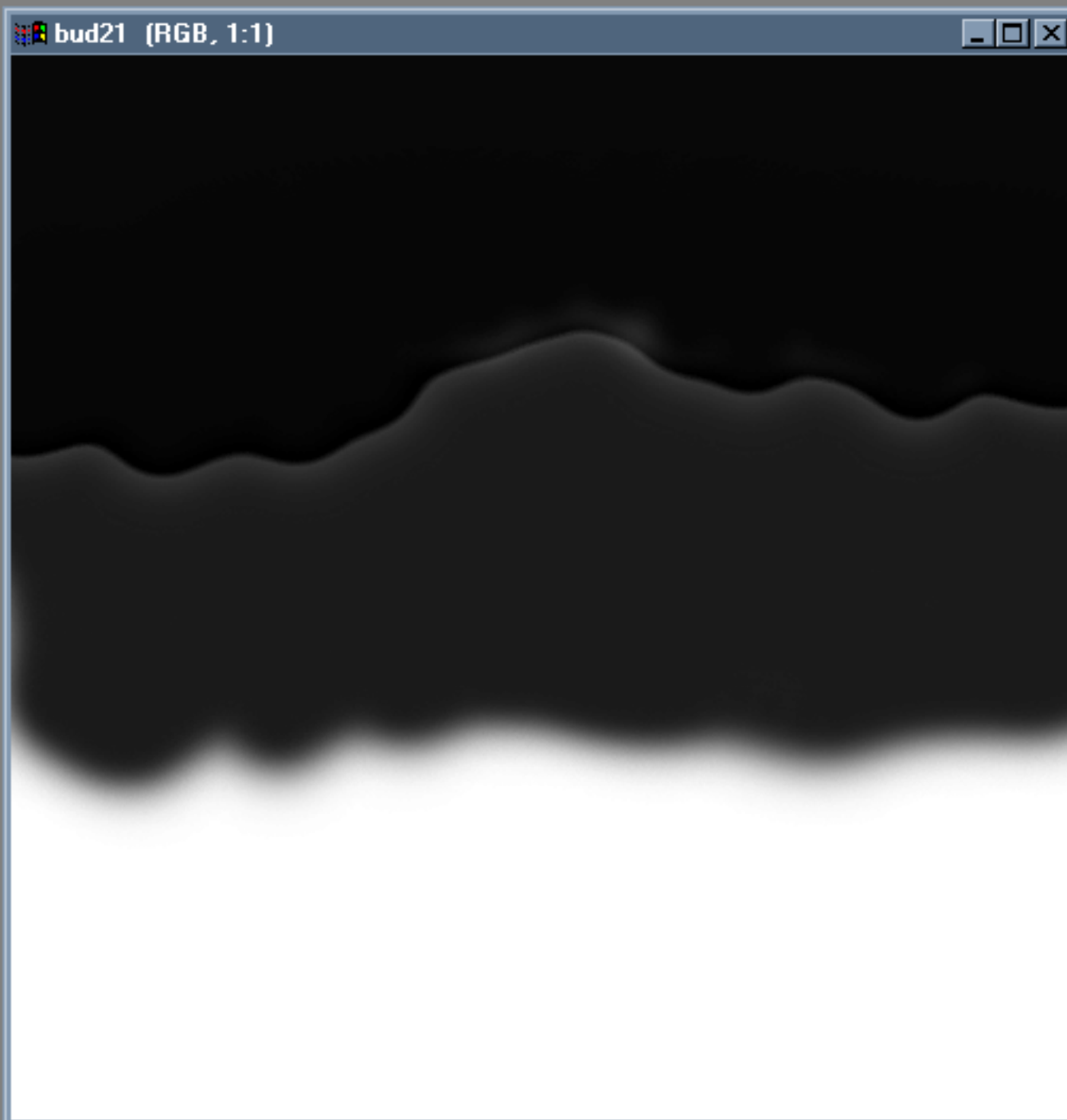


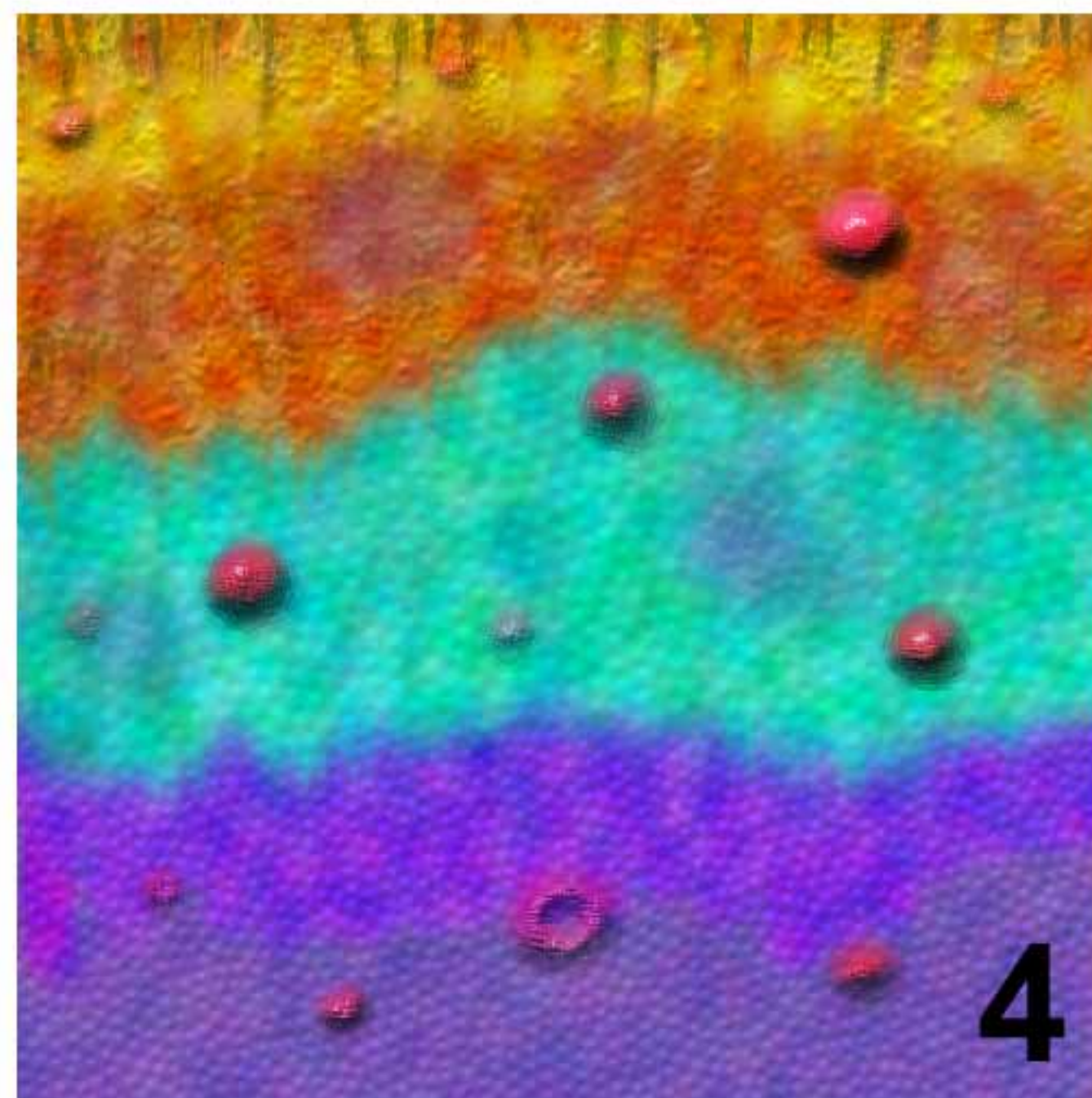
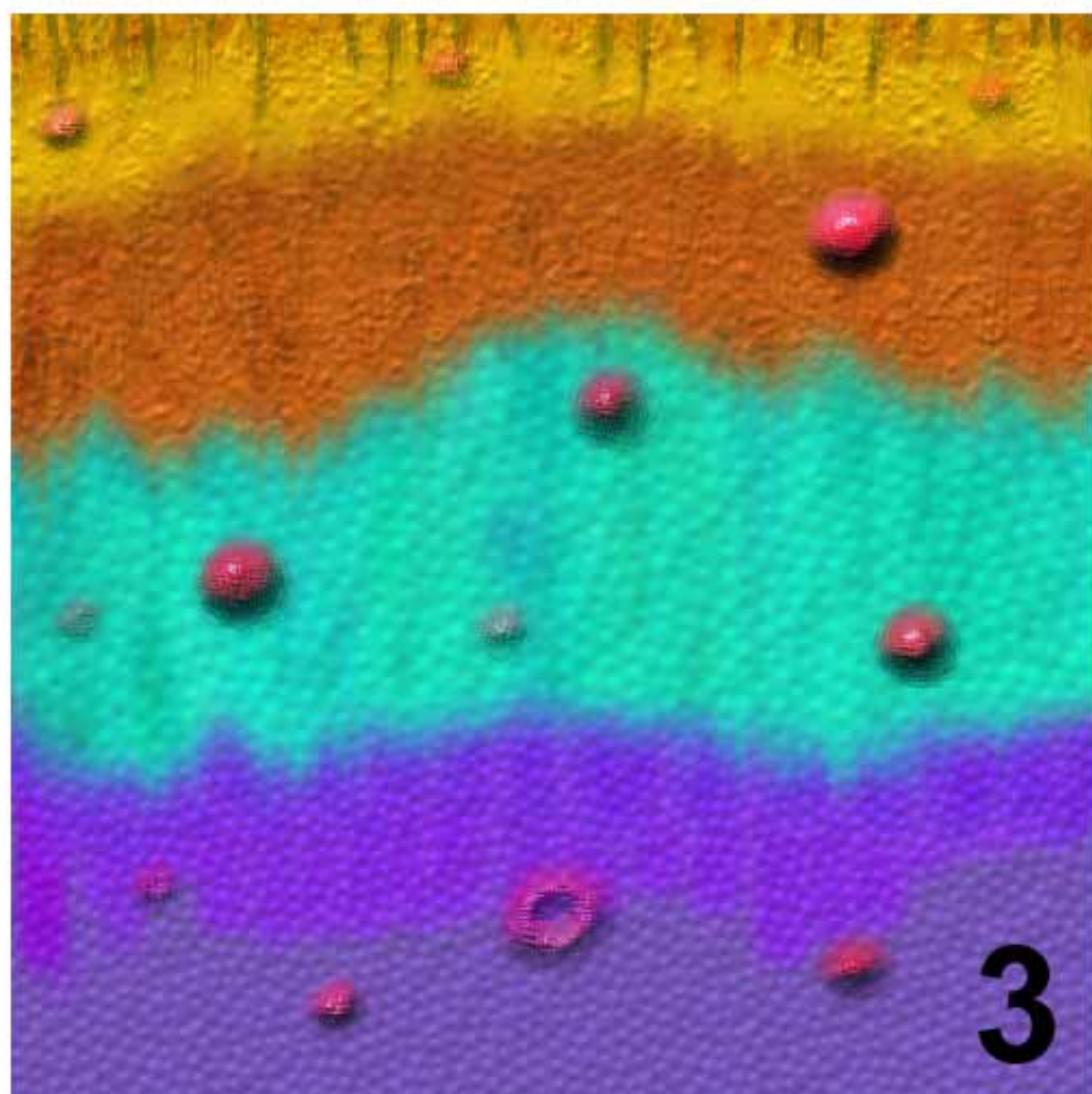
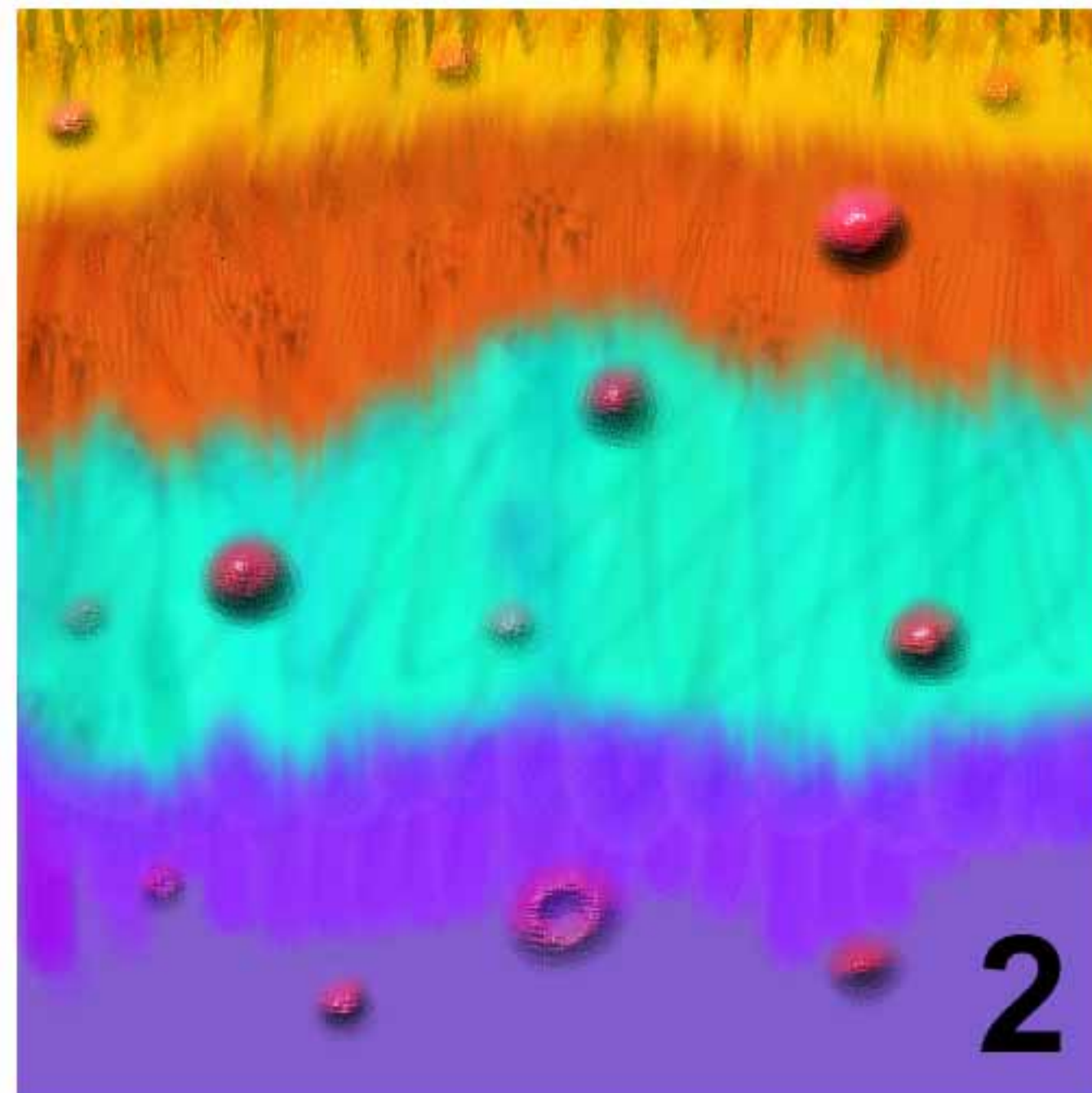
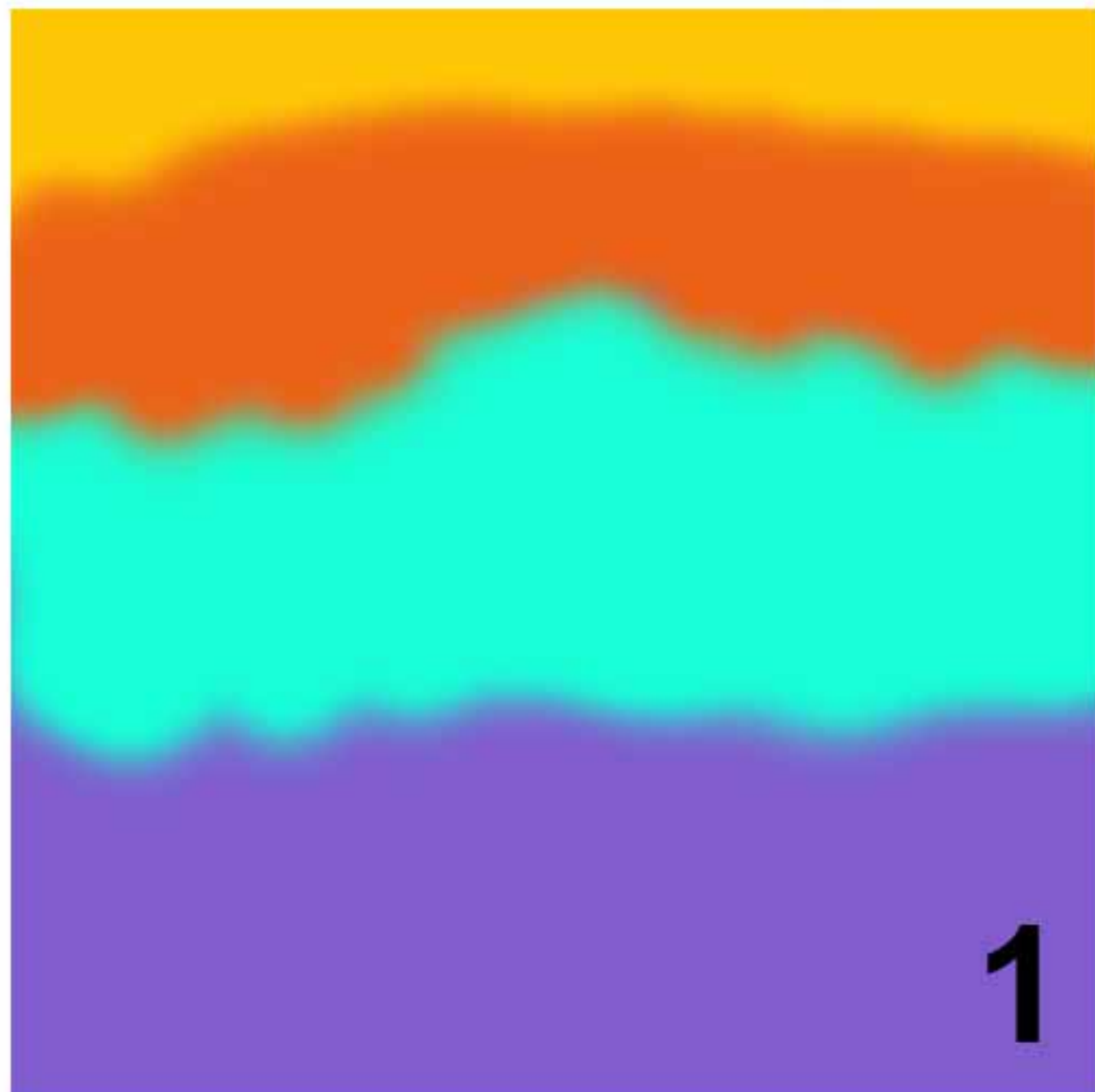
Layers Channels Paths

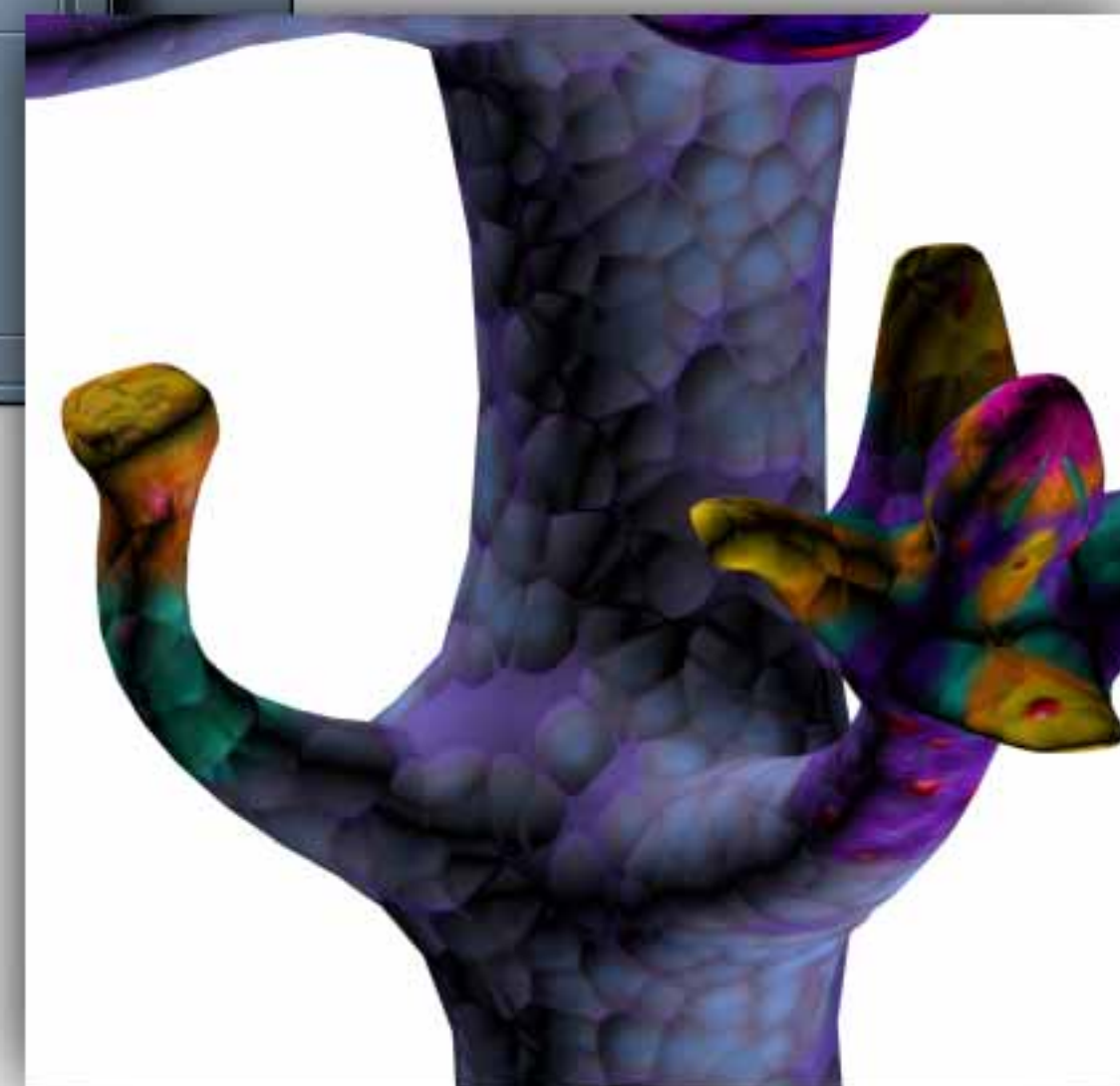
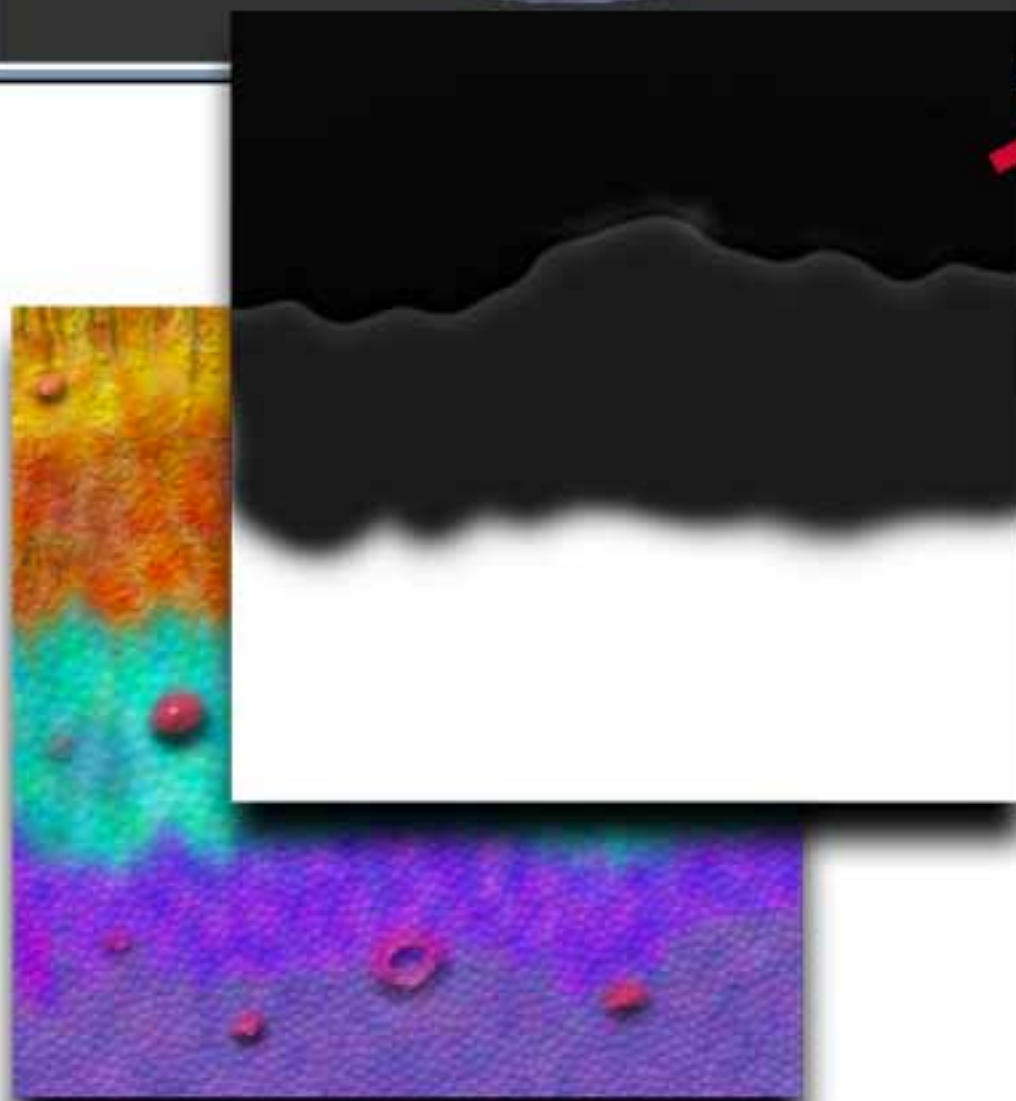
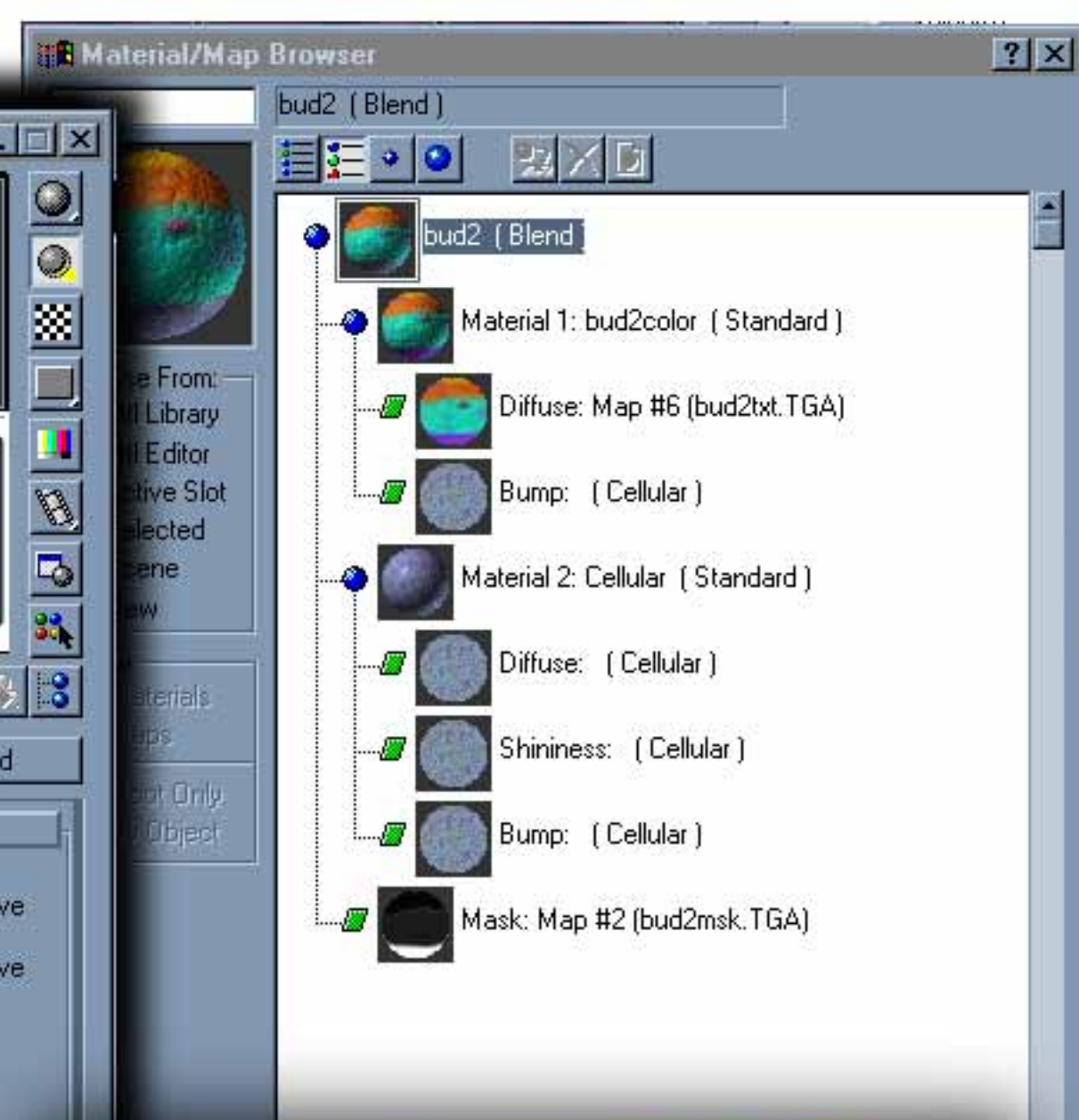
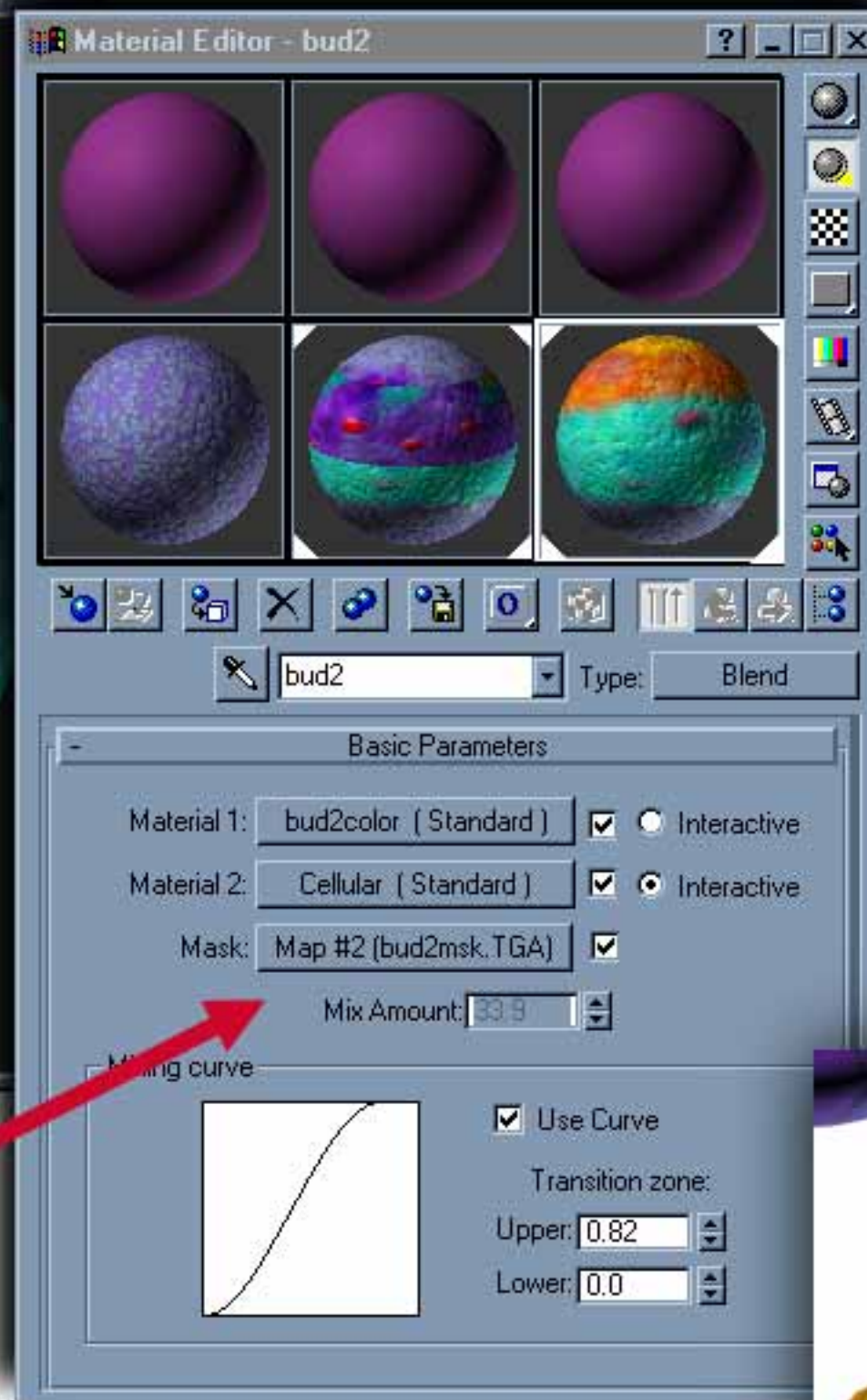
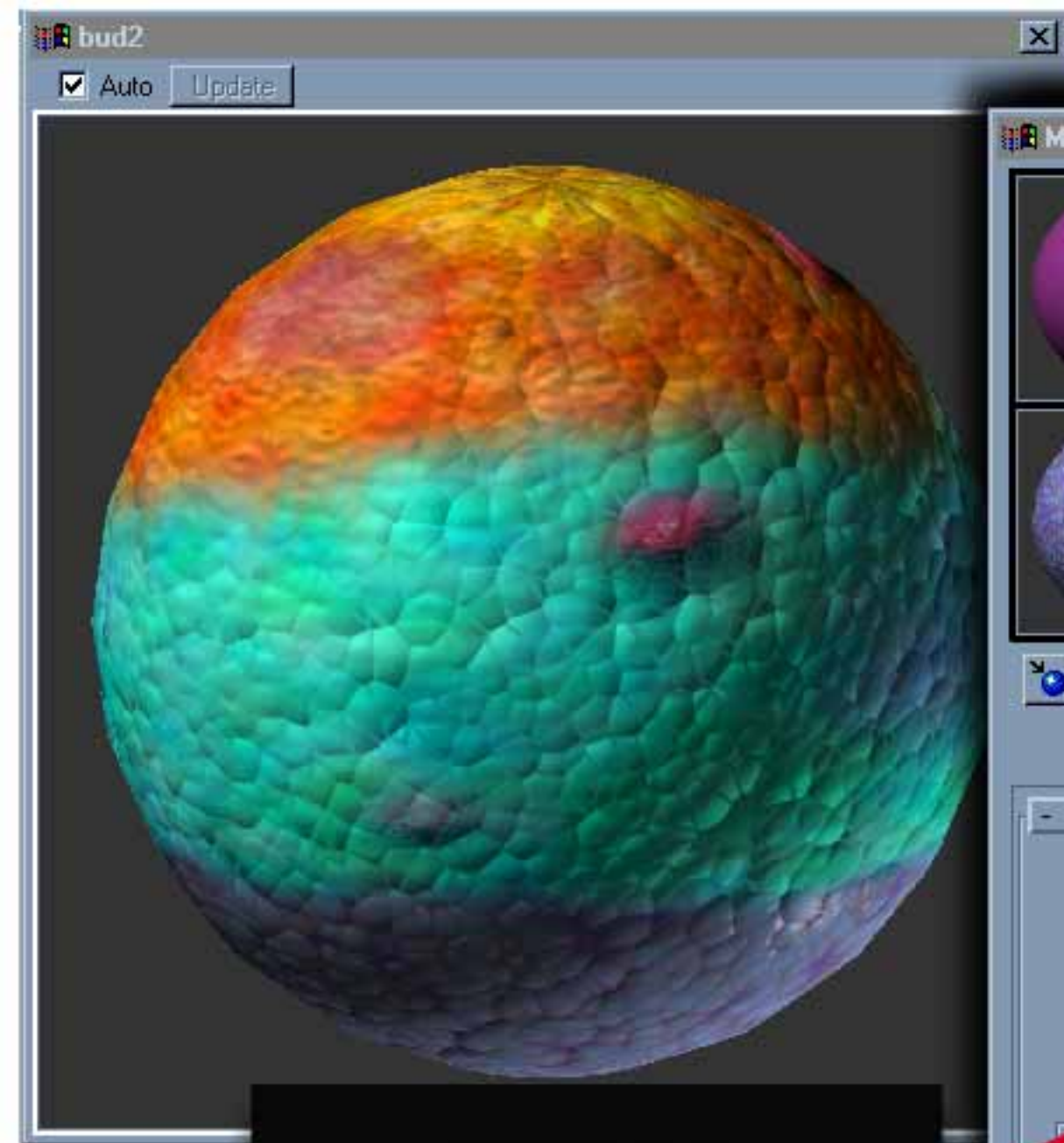
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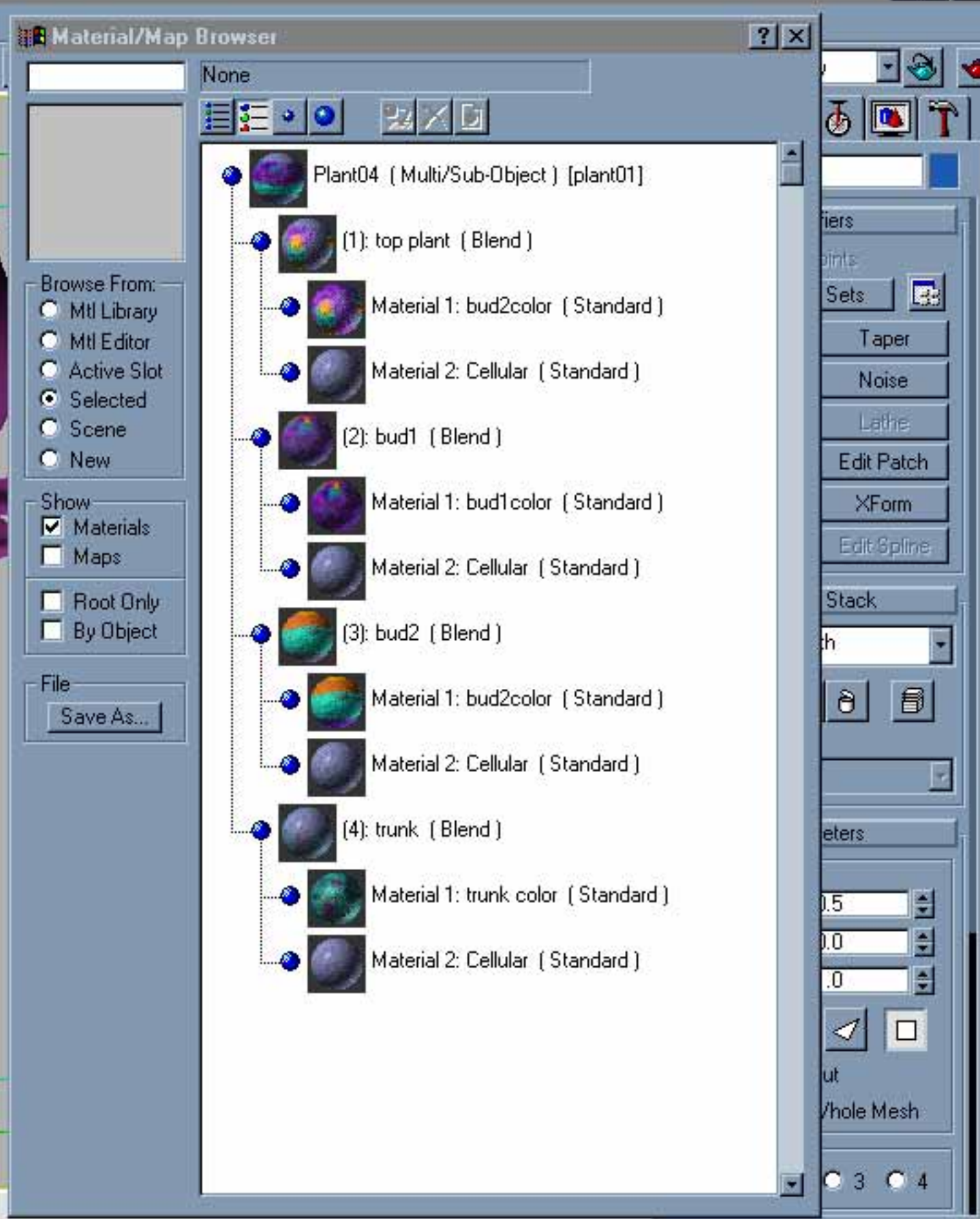
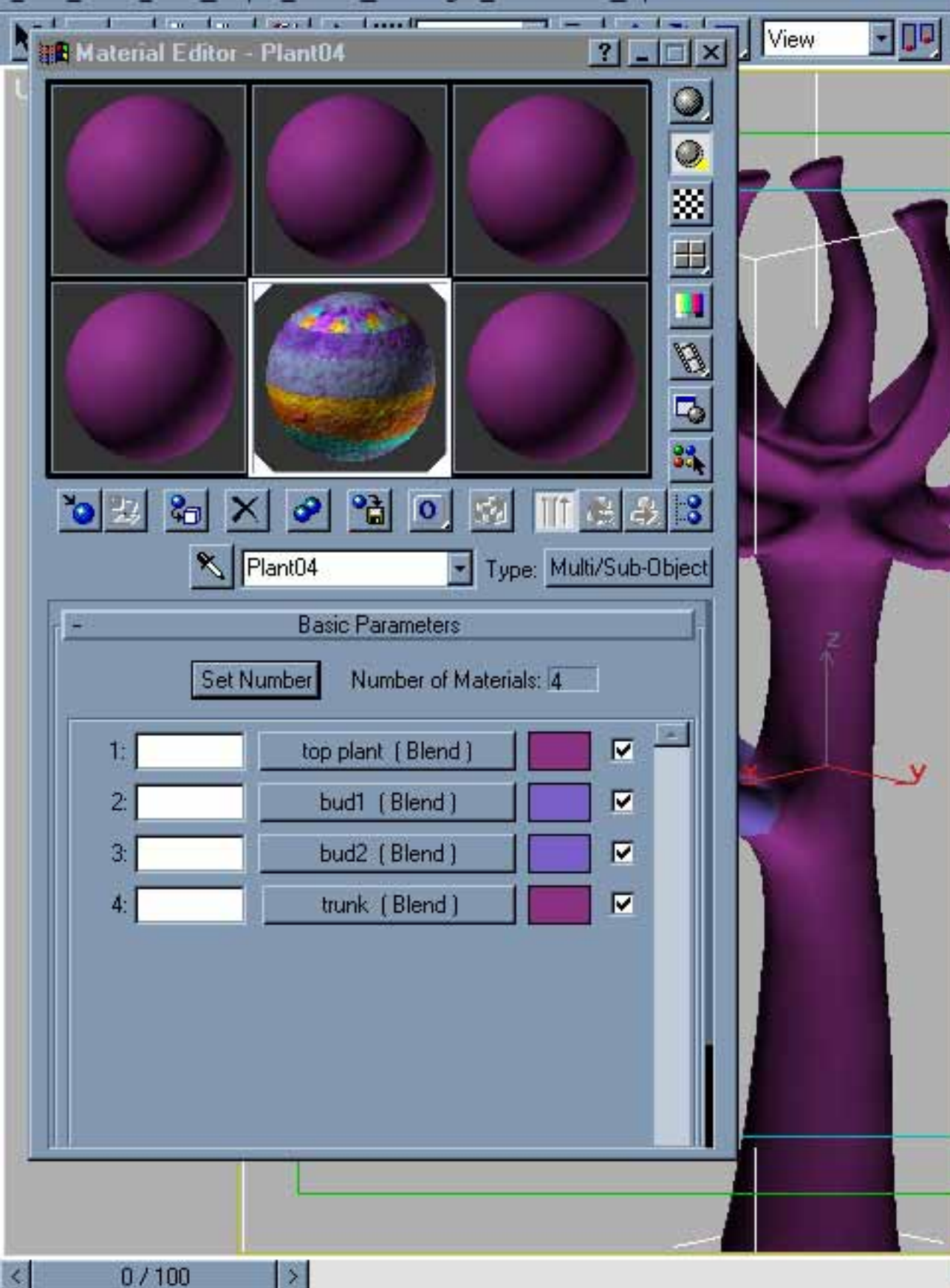
☐ Preserve Transparency

	Layer 2
	Layer 1
	Layer 3
	Background

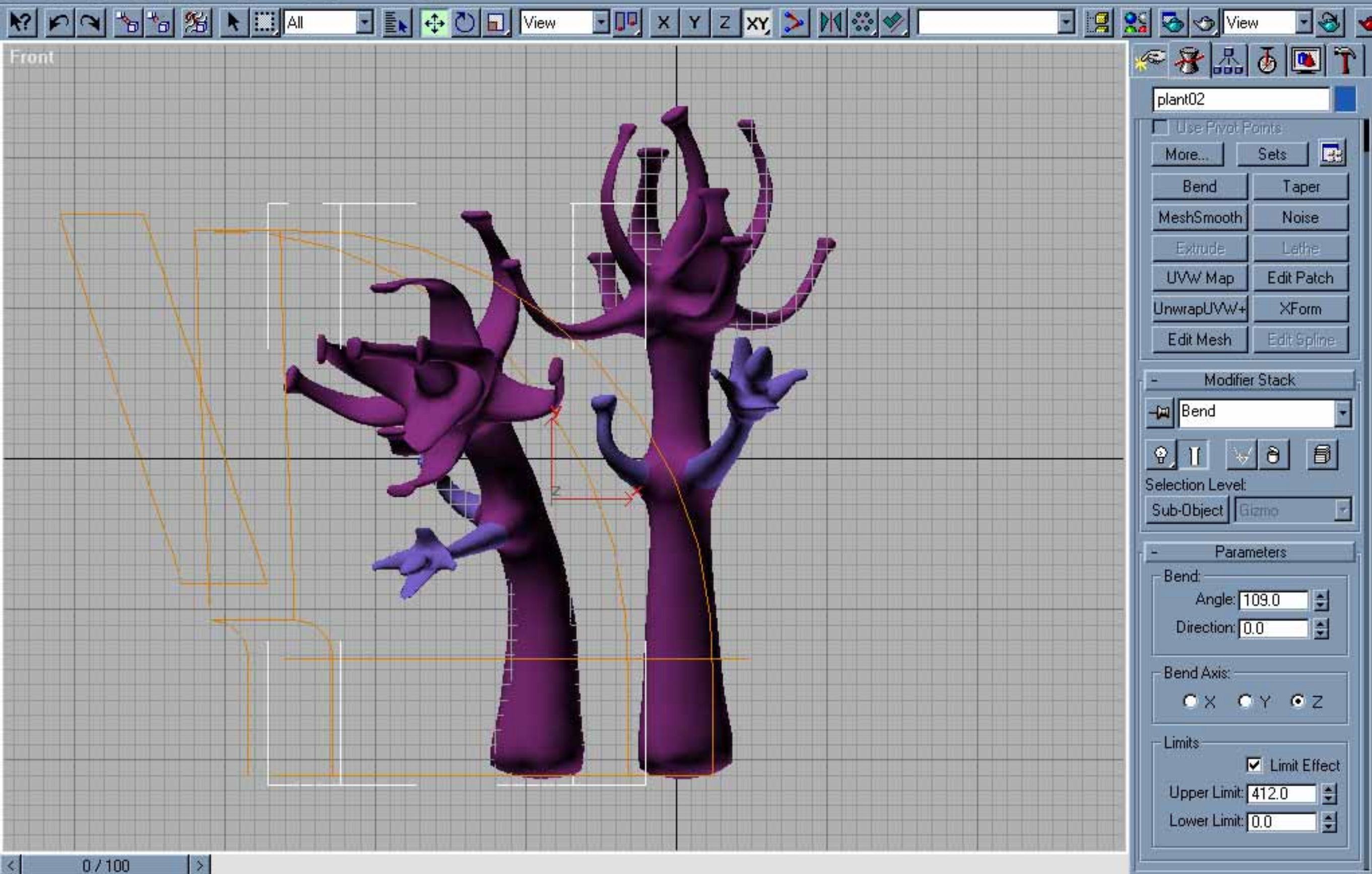


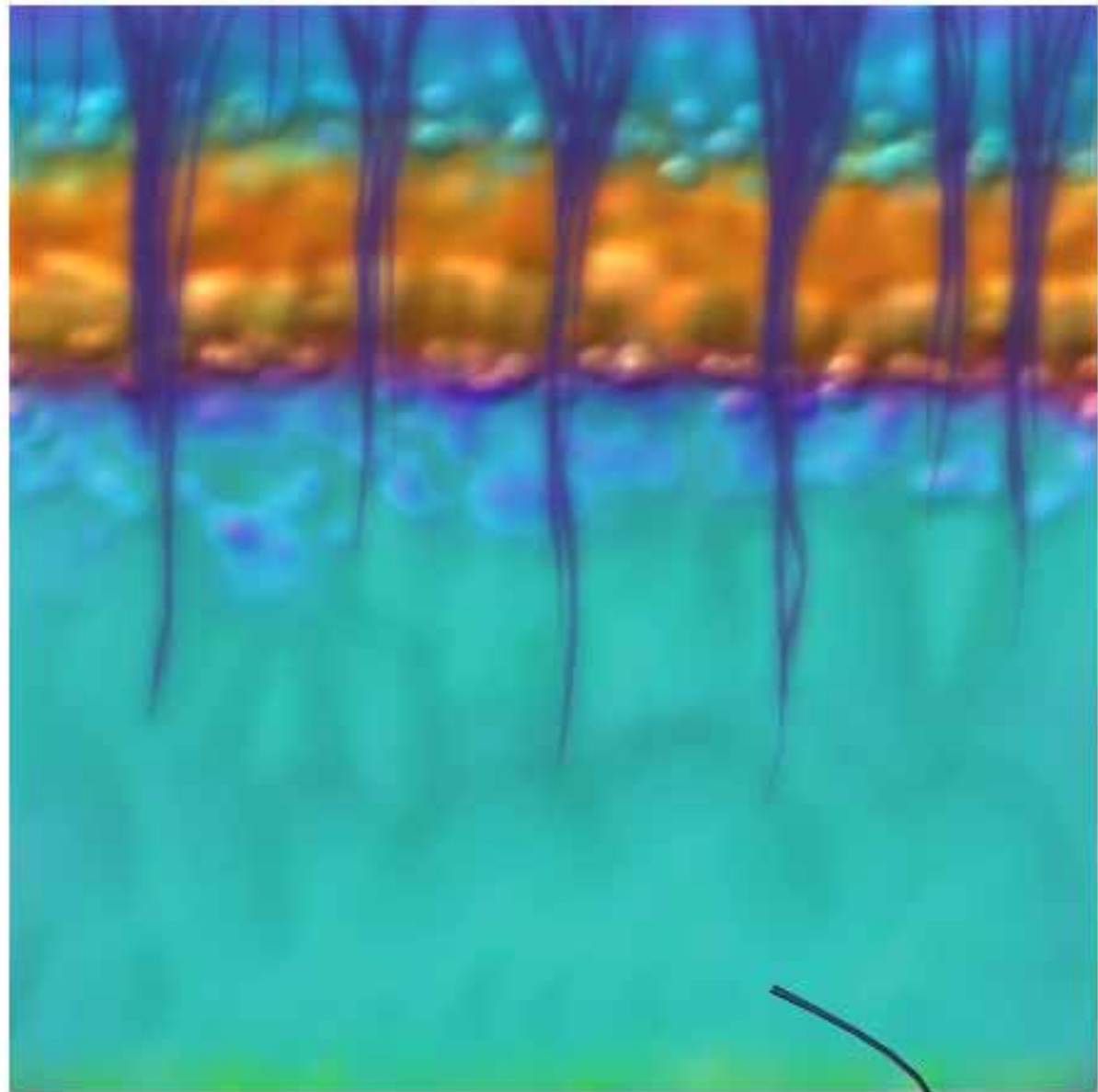
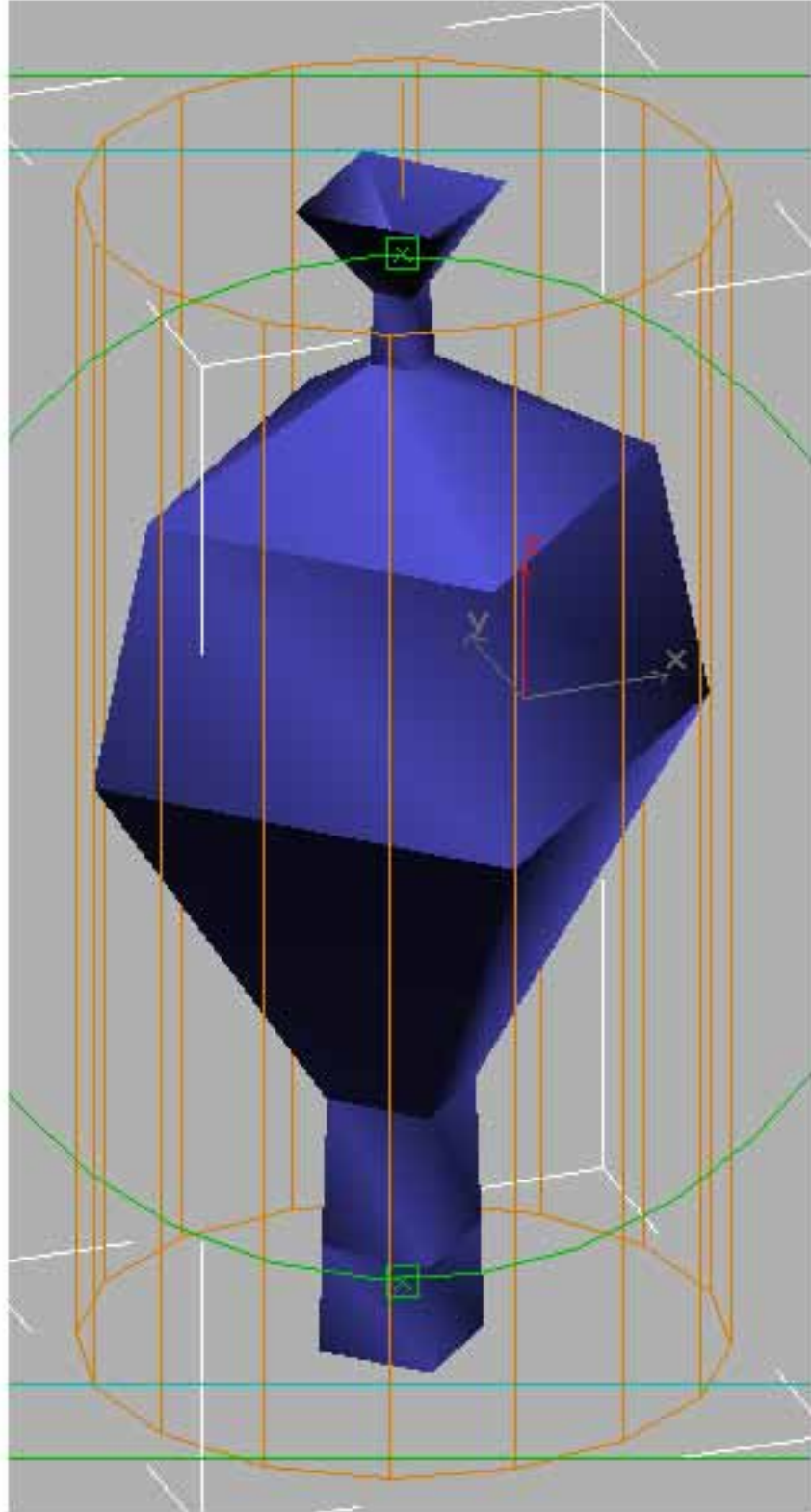
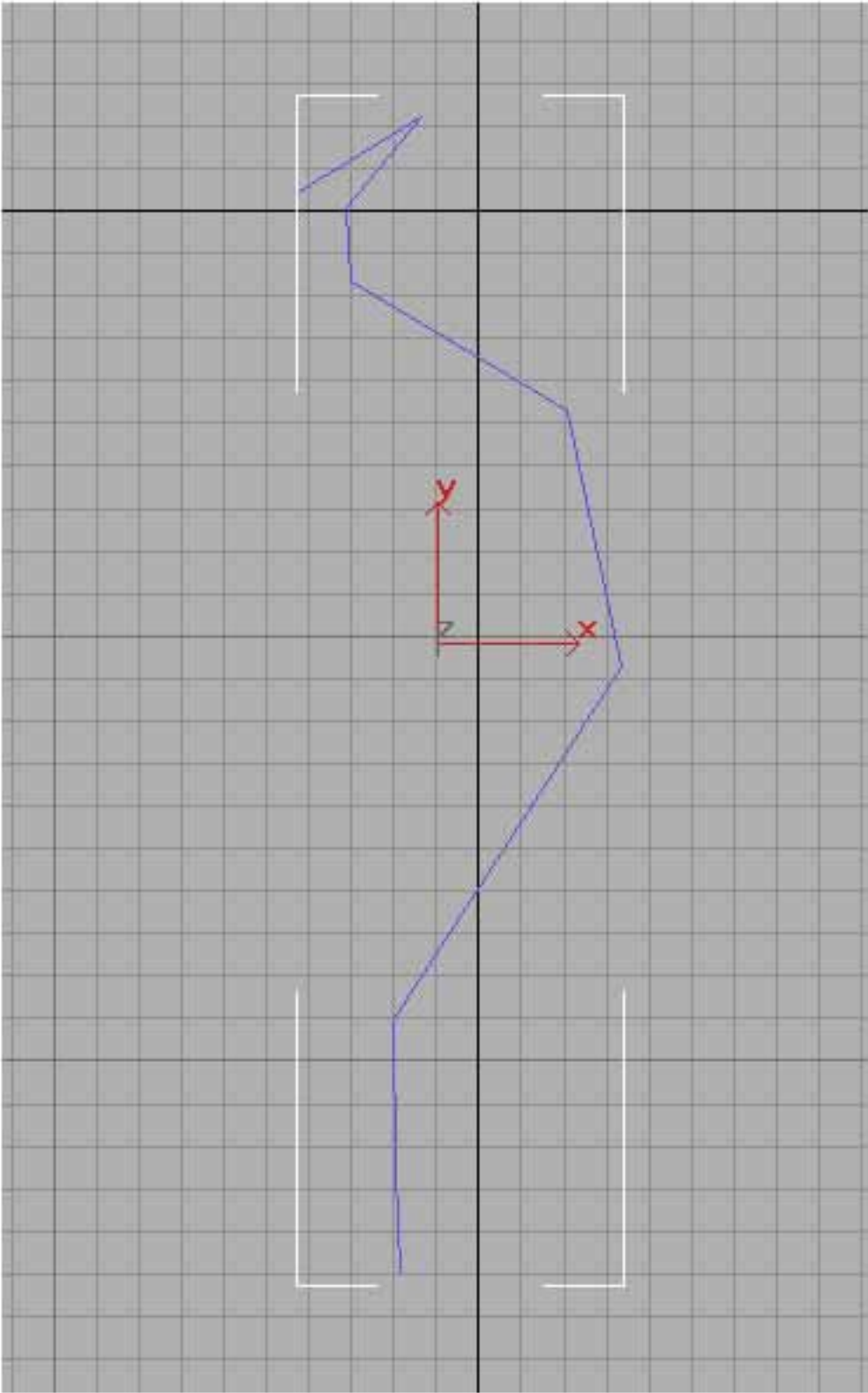


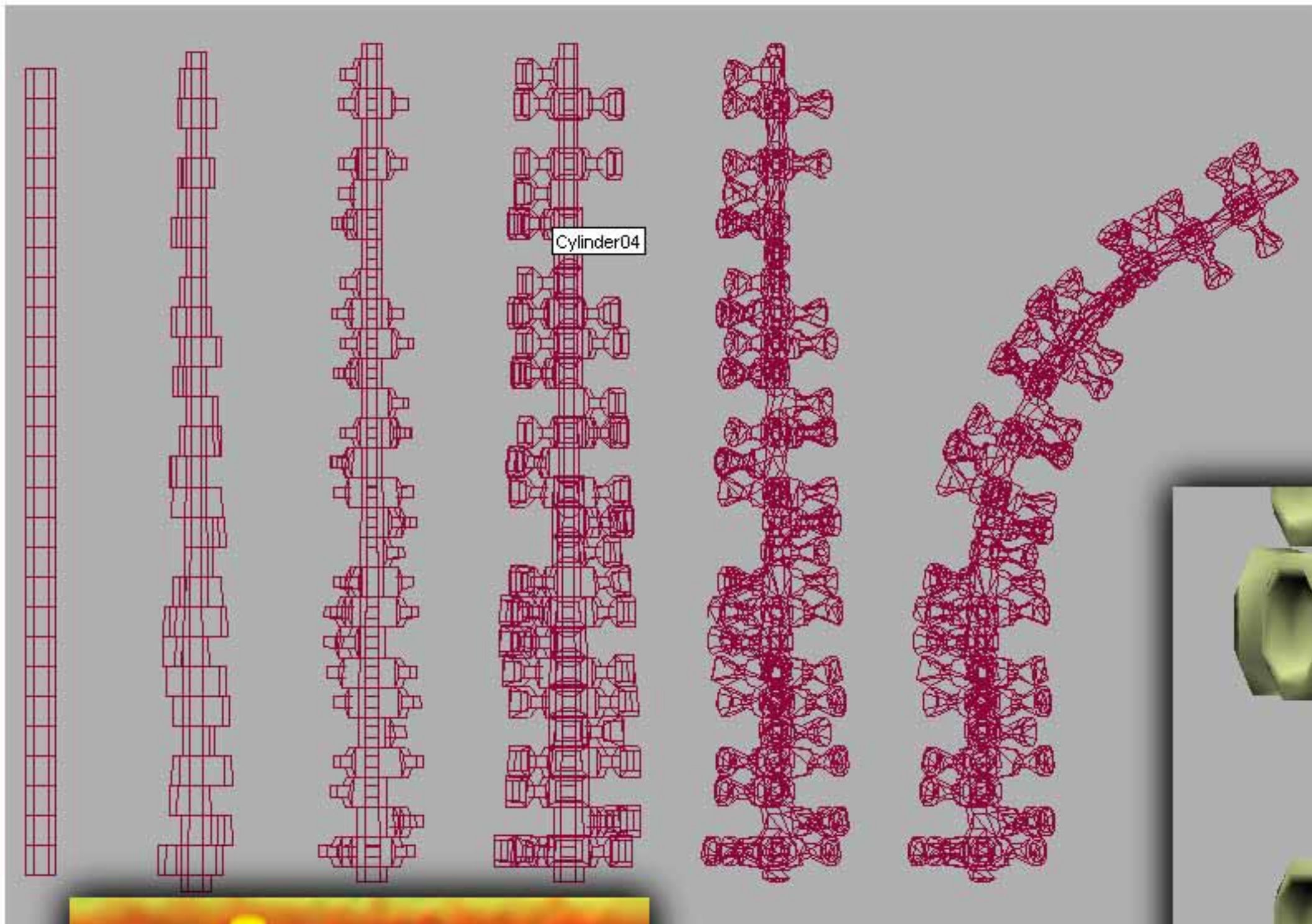




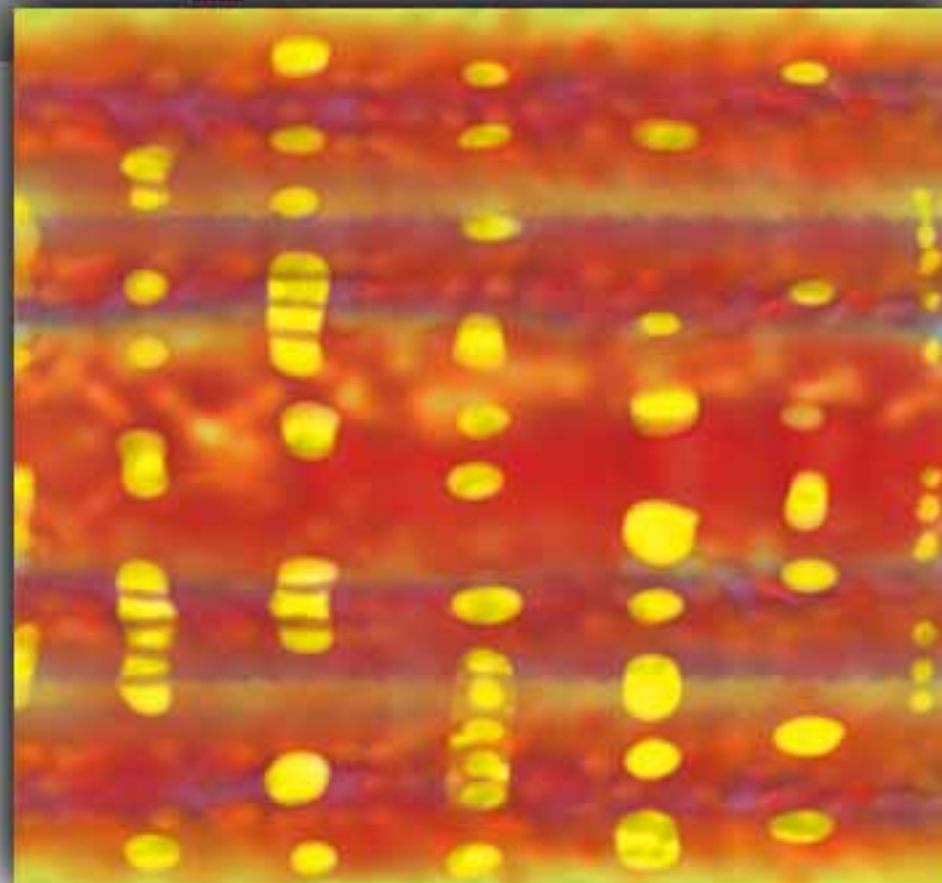




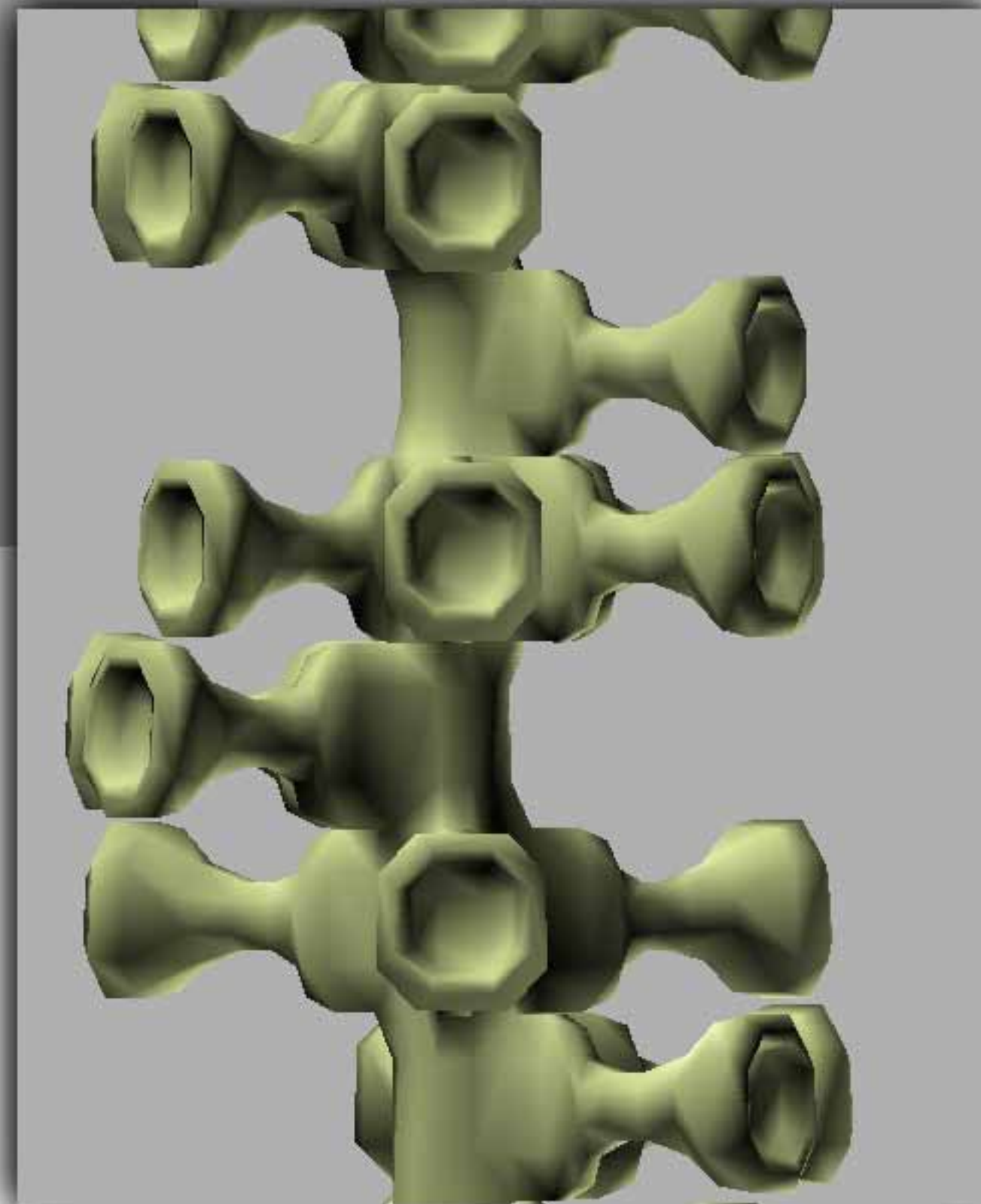




Detail



**Texture
Map**



1



2

