ORGANICA

USERS GUIDE

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Introduction

This introduction is very important to you. Take a few minutes to review this section. WE at Impulse already know that no one who buys software wants to read manuals. So DON'T read this manual. Just install the software as explained in the installation instructions so you can just go play. Organica is all about playing!

We have tried to make things apparent, obvious, intuitive, easy, cool, fun. You name it we tried to put it into Organica so that you would spend your time creating and not reading manuals or mulling over endless 3D concepts.

Organica is not a rendering engine, it does not use Scanline, Raytrace or Solid rendering techniques that you might use in other 3D software. It does render images with a special type of rendering that is based on a form of radiosity. Simply put, the world lights up the object.

Organica is meant primarily for users to create really cool looking Organica objects. Human forms, animals, cars, planes, castles, cartoon characters, in short just about any kind of object you want or need to create. These kinds of claims are made by an endless lineup of 3D software. In most cases our experience shows us that making objects, for most people, is the most difficult task of all. There is a simple reason for this, no matter if you are using nurbs, or splines, or simple polygons to create an object, the screen gets very busy very fast, and its easy to loose your place as well as your concentration.

To create great objects is not just an art form, its also a very exacting and time consuming science. Most of us just don't have the time to create really great looking objects. So we are left to mull over endless control points or buy objects from someone else. If you are lucky you might even find a cool object or two that are free. These objects might be great for the person that made them, but they generally lack the personal touch that separates OK objects from great objects. Organica makes it easy for you to create great personalized objects.

Organica is really very easy to use. In this manual we are going to explain how each, mode, function and tool operates. There are several tutorials that show you how to work some mesh magic with Organica.

HOW TO USE THIS MANUAL

This manual has been produced as a PDF file. When you installed Organica this manual also installed the Adobe PDF reader. Remember that the fun is in the software not this manual.

The first part of this manual explains in rather dry language each function, mode and tool. Many tools and functions however rely on other tools or special HOT KEY sequences. Each HOT KEY sequence is shown and explained in some detail. Once you have made your way through all this important information, you will find your way to the Tutorial section. In this section you will be able to see how various objects and animations were created.

Many people think that Good Tutorials are all you really need to learn a software product like Organica. This may be true. So if you hate detailed explanations of how things work, jump right to the tutorial section and have a great time playing with all the cool tools in Organica.

First things first. If you aren't familiar with Windows 95 or NT then it might be a good idea to give your Windows user guide the once over. For this manual we will assume the following. You know Open, Close, Save, Save as, files and projects. Of course it is also assumed you know how to use the mouse, and its two buttons.

Organica has been engineered to work within the Windows style guide. All tool bars are "Break-away" meaning that you can break them away from where they are docked and either let them "float" over the Organica interface or you can re-dock them in another place. There are 3 Tool bars. The Top tool bar is your set of Magic Blox or Meta Blox. On the left and right are tool bars that house various functions that you will become familiar with as you learn Organica. Each button has a 'TOOL TIP" that appears when you move the mouse over that button and let is sit there for a second or so. This tool tip is also enhanced a bit in the lower left hand part of the Organica interface in what is called the status bar. These tool tips and status alerts are just reminders and most likely won't give you enough information to completely understand what that tool does.

Take a look at the tool bars, each tool bar is shown in the next few pages with a brief description of each button in the tool bar. Along the upper most portion of the Organica interface is the "Menu Bar." The menu bar is accessed by moving the mouse to the upper area and depressing the left mouse button. This menu bar works just like you would expect it to.
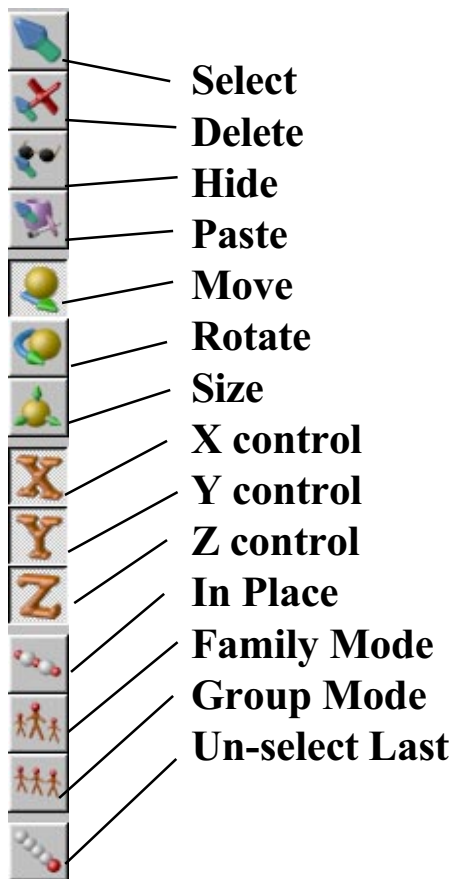
META BLOX TOOL BAR

Each button in the tool bar is a different "Meta Blox" we also call them "Magic Blocks". When you get to the process of making objects we think you will call them Magic as well. From left to right the Blox are.

Sphere, Rod, Disk, Torus, Cone, Cylinder, Rectangle, Box, Pyramid, Wedge, Pie Slice, Cone Slice, Bowl Concave, Convex, Bent Rod, Bent Tube, Bent Bar, Sphere Slice, Barrel, Top, Hour Glass, Football, Tube, Disk Slice.

On the left side you will see this tool bar.

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Select

Delete

Hide

Paste

Move

Rotate

Size

X control

Y control

Z control

In Place

Family Mode

Group Mode

Un-select Last

Each of these buttons perform functions that can be used in some cases with other functions. Each case will be explained as we work our way through the documentation. When a function or mode is not available that button will become deselected and the color picture will not be show. You will see a gray and white button that in most cases you will not recognize. No matter, a button is only valuable when it shows up in full color.
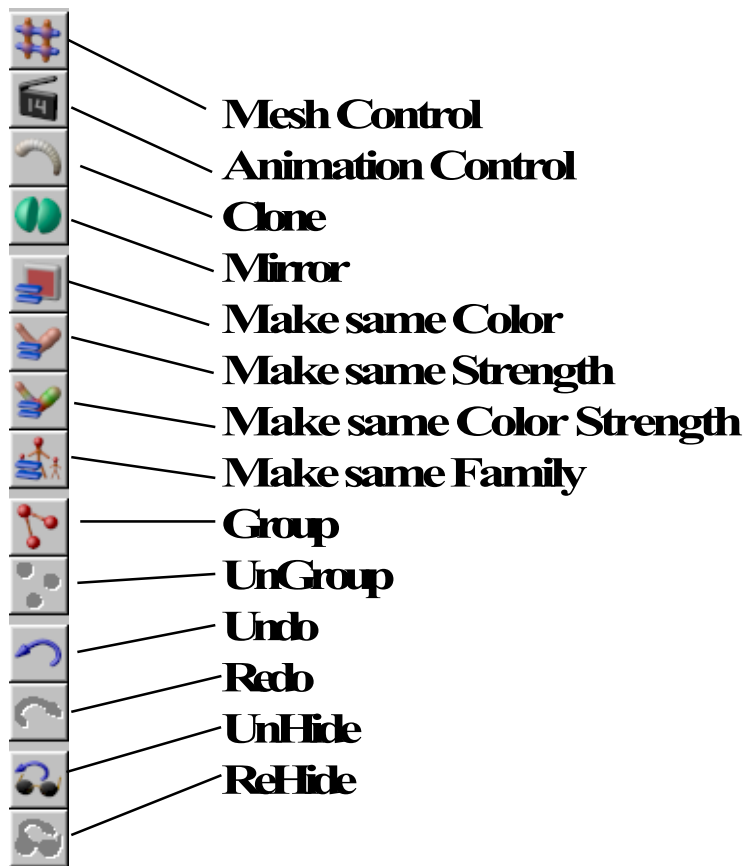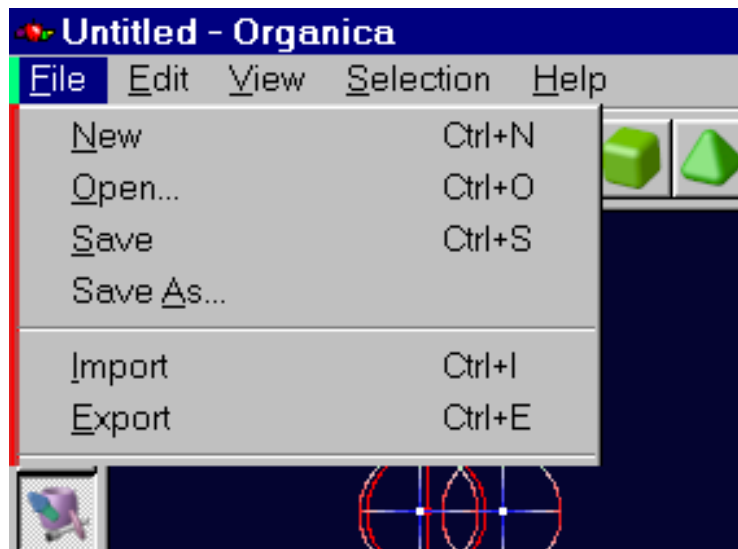
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The right hand tool bar has several functions just like the left hand tool bar. T
hese tend to be one shot, while the functions on the left tend to be modes that you
enter and remain in until you choose to do something else.

From top to bottom the functions in the right hand tool bar are.

Mesh Control
Animation Control
Clone
Mirror
Make same Color
Make same Strength
Make same Color Strength
Make same Family
Group
UnGroup
Undo
Redo
UnHide
ReHide

The Menu bar is show here in this diagram.

There are Five menus. From left to right they are File, Edit, View, Selection and Help.

MENU BAR

At the bottom of the Organica interface is the status bar.

As you can see there is data about what is going on in the left hand portion of the Status bar, on the right side of the Status bar other data is shown. A list of total objects in the project, how many are selected and how many are hidden. As you can see for the most part the Organica interface works like many other Windows programs that follow the Microsoft Style guide.

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Now we come to the best part of Organica, the **Quad View**. Between the tool bars are four windows. Three of them are labeled. In the upper left is the TOP view, in the bottom left is the FRONT view and in the lower right is the RIGHT view. The upper right window is a special window, it is the REAL TIME perspective view. This window is where the rendering takes place. The other 3 windows can only display the object in right angles to the other two windows, which creates an orthogonal view setup.
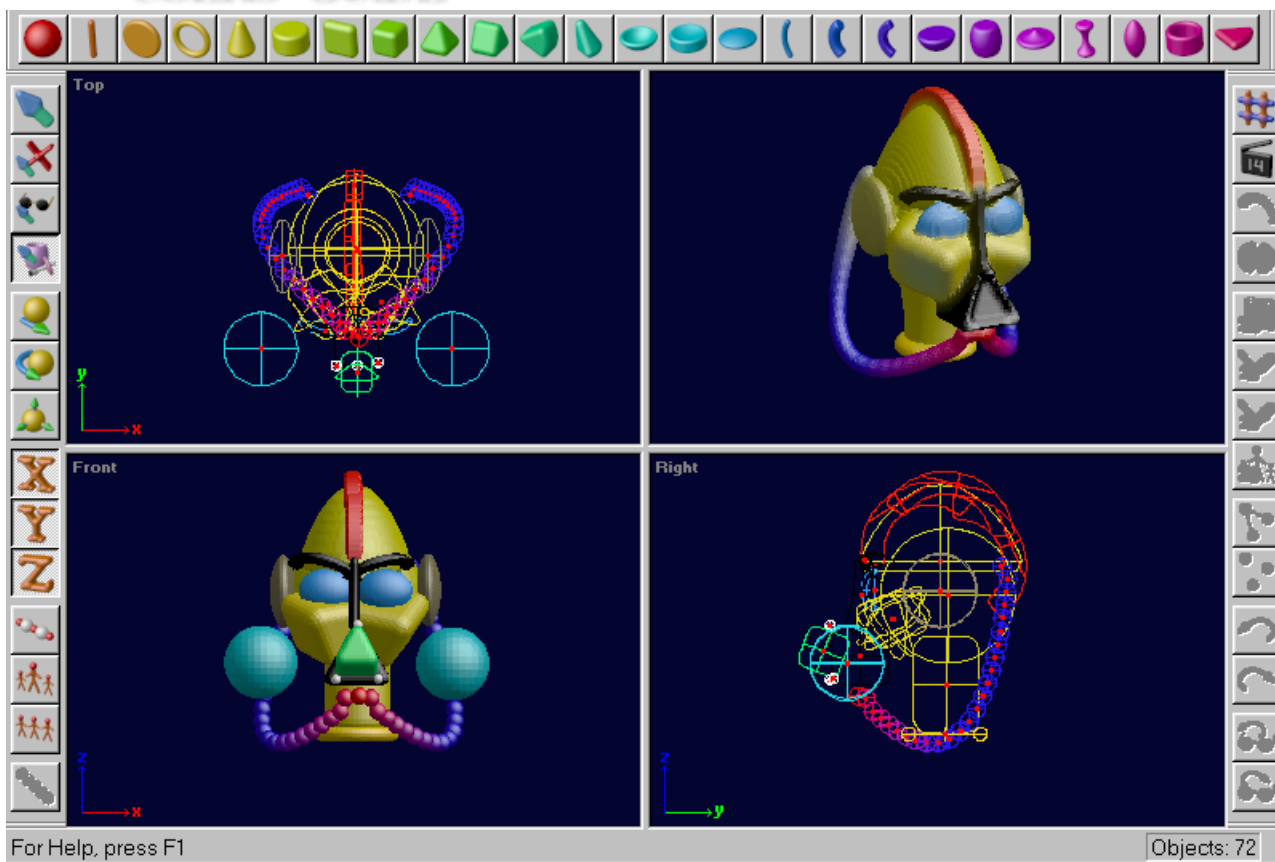
The Perspective view has several other controls that the 3 other views do not have. In the perspective view you can move the camera and light. There is no camera control in the other 3 views. Also you can adjust the Perspective of the Camera.

These four views are arranged in the order that seems to be the most comfortable for most users. However you can adjust the views in a different order, the command to do this is in the View Menu.
Can you guess which one.

For Help, press F1   Objects: 72

As you probably guessed the window control is found under the VIEW menu in the Quad Layout item, there are 3 choices you can make, Rotate left, Rotate right and Rotate 180. Go ahead and try it. Once you find the system you like you can just leave it. When you quit Organica, the information you have set will be saved. This is true of all things that affect the interface in general.
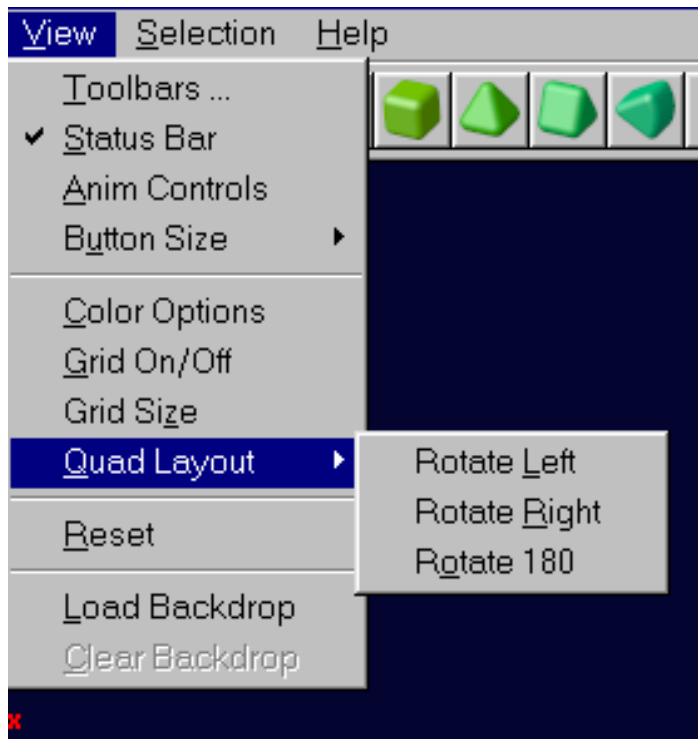
The over all control of the interface has several controls, all of them are accessible from the View Menu. As you have already seen you can change in the order of the views but you can also control several other features of the Organica interface.

Lets take a look at all the things you can do.

From the View Menu you can control the following items.

Toolbars
Status Bar
Anim Controls
Button Size Large or Small
Color Options
Grid On or Off
Grid Size
Quad Layout
Reset
Load Backdrop
Clear Backdrop

Lets look at each item from top to bottom.

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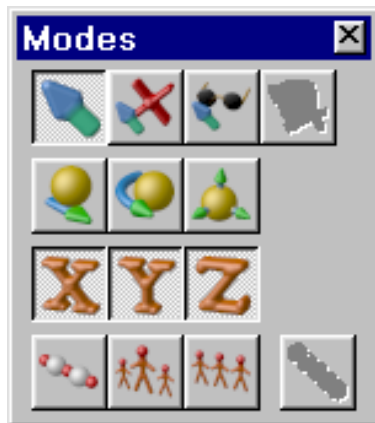
## Tool Bars

The three tool bars we already looked at, can be scaled to different sizes, or the can be moved from their docks to float anywhere on the screen. Form time to time you may want more space for the Organica Interface. As you can see in this picture we have undocked the left hand tool bar. It becomes a floater.

In the upper right hand portion of the floating tool box is a close button. If you click on this the tool box will disappear form the interface. Don't worry you can make it come back, just go to the View Menu, choose the Toolbar menu item and you will see this dialog.

When there is a check mark next to the tool bar name it means that this tool bar is being used. If there is no check mark it means that the tool bar has been closed. To reopen it, just click on the vacant check box. Now that tool bar will reappear in the last place that it was before it was closed. So, if you had it floating on the interface, it will come back as a floater, if it was docked it will come back docked.

Object created by Mauro Marenzi.
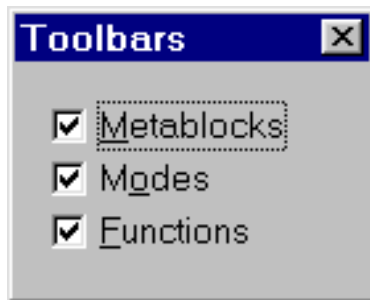
The Status bar is there to give you some information about what is going on. In the left hand side of the Status bar is some more detailed information about what you are doing.

For example, when you move the mouse over the delete button the TOOL TIP shows delete, the Status bar tells you "Deletes objects when clicked on with the mouse." Messages for all items with tool tips will show up in this area. Also all menu items will show up in the status bar with a more detailed explanation.

Status Bar

Think of the Status bar as a mini Help system. It won't give you very much detail but it will give you more detail than the simple tool tip that you get when you pass the mouse over various items.

| For Help, press F1 | Objects: 4 | Selected: 2 | Hidden: 1 |

On the right hand side of the Status bar is a special set of data that tells you how many objects are in your scene. Also you will see how many items are selected and if any of those objects are hidden from view.

IMPORTANT NOTE: The mesh that Organica creates is not dependent on how many objects are in the scene. However each object takes up some memory, so the more you put in the scene to make an object the more memory you use. At Impulse we like to try and make final objects with as few primitives or meta blox as we can. It saves memory to do this, and because the blox are more powerful in Organica than any other modeler, you can create better objects with fewer blox and less effort.

If you have ever used another blob program you probably had to add lots of spheres to make anything that was recognizable. Even with many spheres the object would live up to its name, and look rather blobby. Organica smooths objects out so that they don't look blobby, a unique feature of Organica, one you will come to appreciate.

ANIM CONTROLS
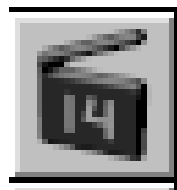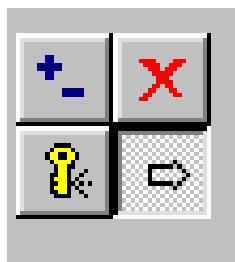
Anim Controller button.

The Animation controller in Organica is very simple to use. It is a WYSIWYG device. We are going to explain the functions here but there is much more discussion of the Anim Controller in the Animation section of this guide.
Lets take a look at the controller.

There are four gadgets in the controller. They are the Expand/Contact button which is the plus and minus button. The Red X is the Delete button. The KEY button creates a KEY FRAME. The arrow pointing to the right is the GOTO button.

To the left of the four gadgets is the Tween counter. This counter lets you establish the amount of frames from one key frame to the next.

At the bottom of the Anim Controller is the Scroll or Scrub bar. This bar lets you travel through all of the key cells that you create.

Finally, there are what appear to be buttons from left to right in the main body of the controller. These are thumbnails of your key cells. As you can see we have created four key cells. When you create a key cell the information in the perspective window is transferred to the key button that you create with the key gadget.

The anim controller can be closed by clicking on the x box in the upper right hand corner. You can bring it back with the view menu or the Second button in the right hand tool box, it looks like a movie clap board.

BUTTON SIZE

Organica was designed to work in a 800 by 600 screen. However it will work at any resolution that you have your computer running in. Larger screen sizes create less problems than does a smaller screen size.

Also Organica is a 24 bit program, if you are using a computer with a video card that does not run in 24 bit color, you will miss some of the nicer looking aspects of the interface, to say nothing of what the final mesh will look like.

We suggest that you have a 24 bit video card with at least 2 megs of memory. If you are using a lap top with a 256 color display, Organica will run but the tool bars might look just a bit strange.

If you are using a 640 by 480 screen size, then you will want to use the Button size, small, option. This will make it so that you can see all of the tool bar buttons and be able to get at each of them. Organica by default starts in BIG buttons mode.

When you quit Organica the button size info will be saved. The next time you launch Organica the button options you have selected will be set as the defaults.

A final note on screen size. The more resolution that you can throw at Organica the better. The mesh looks better and your work area is bigger. As you learn how to make models you will develop your own style, Organica does its best to meet your needs.
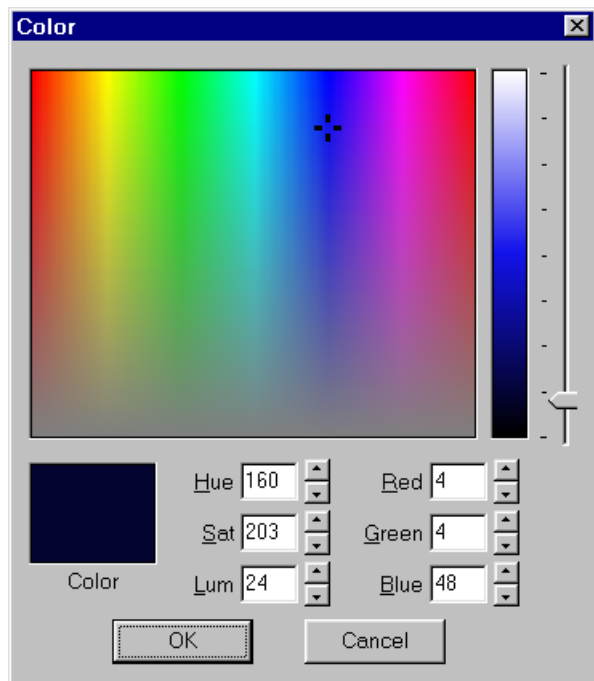
When you first launch Organica the interface colors are set as you see here in the color dialog. The background color is a dark blue, the grid color is a medium gray, the center line color is a dark red.

When you click on these buttons you will see the standard color dialog where you can select the colors that best suit your eyes.
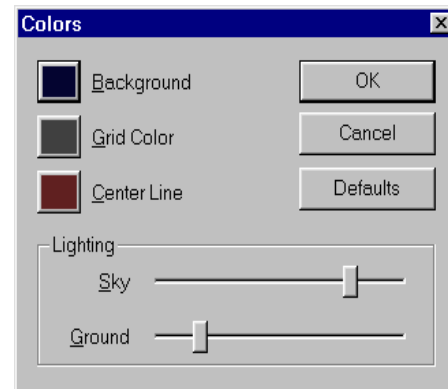
COLOR CONTROLS

As you begin we suggest you let things stay at the default. Notice that if you do play with the colors and find that they are not as good as you thought, click on the DEFAULT button and the colors will be returned to the default that we set.

There are two other controls in this dialog. They set the amount of light that is reflected to the object. The sky is above, and the ground of course is below. As you move the slider to the right in either slider you will increase the amount of light emitted from that area. When you move the slider to the left it effectively decreases the amount of light that is emitted from these areas.

A word about this method or lighting, it is loosely based on Radiosity based lighting, meaning that the light hitting these objects has been radiated from an imaginary sky and ground, neither of these things exists in Organica as you can see. Adjust these sliders to suit your eyes.

Color dialog

GRID ON/ OFF
# GRID SIZE
QUAD
RESET

Front   Side

Grid ON, OFF does as it implies. By default the GRID IS ON, to turn it off release the mouse on this menu item. The check mark will disappear and so will the grid. To turn it on just repeat the process, the check mark will reappear and so will the grid.

The grid size can be changed by using the Grid Size menu option. By default it is set to 20 units. You can set it to any number that you want. However the more you zoom out, the smaller the size of the grid will appear, and as you zoom in, it will get bigger. The grid size works in conjunction with another menu item, the Snap to Grid menu item found in the Edit menu. More on that menu later. Suffice it to say that the grid hatch marks denotes the places where objects will snap to when you turn this function on.

Reset will bring you back to the center of everything, where the center line is in the middle of each view. As you manipulate the windows you will find from time to time that you loose your way, to get back to ground zero, just use the reset command.
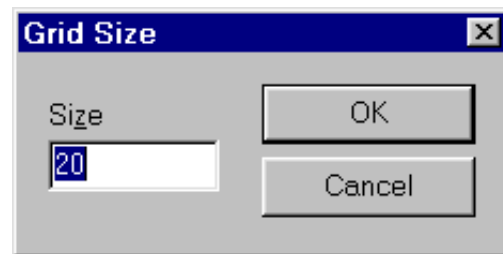
The Quad controls move the two views, Front and Right views so that you can see the Left view and Back view. The top view always stays the same. Think of the front and right view as the views from the side of a box, as you rotate the box you would be looking at the objects inside from a different perspective. The Perspective view will never change when you use the Quad setting. Using these controls sometimes makes it easier to visualize where and how objects are interacting with the model.

In any of the views you can load a bitmap image. If the image has an aspect ration of 4 by 3, as in 640 by 480 it will fit into the window properly. Other sizes and aspect rations can be loaded as backdrops however they will be centered in the view that you have chosen to load the backdrop into.

Consider this, take a picture of yourself, from the front, and from the right side. These images coincide with the Front and Right views. If you load the picture of the front in the front view and do the same with the right view you will have a diagram from which to build.

LOAD BACKDROP
CLEAR BACKDROP

Special Note   There are no indication in the Organica interface as to which portion of the Quad view you are working with. If you click in a window area that window is active. The last time you worked on an object in a particular view will be the last active window.

The exception to this is in the perspective view, where in most cases the mouse icon will change to reflect what mode you are in when you enter the perspective view. Even then you must click in that window to make it active.

This feature is great for making human heads but not so great for building larger more complex objects, like the entire body. Remember this is a reference feature, you will still have to move the primitives around to make the object.

The Perspective view backdrop is for a completely different purpose. In this view, you would use the backdrop to enhance the overall render that happens in the perspective view. Also the backdrop picture becomes part of the AVI animation that you might create with Organica.

Many users are already making some very cool cartoons using this feature of putting a backdrop into the perspective window and then creating an animation with the objects in the project.

If you no longer want the backdrop image to show up simply use the Clear Backdrop menu item and the image will disappear.

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FILE MENU

The file menu is for the most part one of those menus where we have followed the Style guide for Windows. You already know how to use all of these functions. However there are a few things in this menu that are worth talking about.

When ever you are going to start a **New project**, you will be asked if you want to save changes. If you click on yes it will save the object you are working on before clearing the scene. If you click on no Organica will earse everything and clear the screen for a new object.

Import and Export are use to do a few things they are as follows.

When you have an object, or group of objects selected you can export them. Imagine that you have made a very cool cartoon character and you have made a really great hand object. If you select only the hand objects you can export that group of objects and call it Hand or CartoonHand. Organica will add the OGC file extension to the file so all you have to type in is the name that you want to use.

Import works as a loader, you can load any other object into the present scene. Lets say that we made a different character but decided we didn't want to take the time to make a hand, we could simply Import the cartoon hand into the present scene.

Remember in order to export you must have objects or groups selected.

Save Mesh Object Once Organica has created a mesh, you can save this mesh as a meshed object. This is different than the Organica format which does not save any face, or point data.

```
.IOB Format
.DXF Format
.LW Format
.3DS Format
```
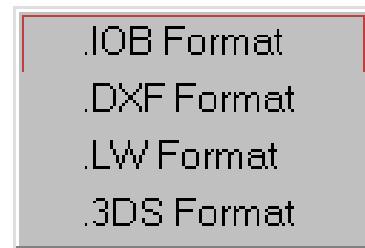
There are 4 different formats that are supported by Organica, they are IOB which stands for the Imagine file format, DXF which is an industry standard used by various 3D programs, LWO which stands for Lightwave and 3DS which stands for 3 D Studio.

The Imagine format saves all of the color data that is created with Organica, the other formats do not retain the color data.
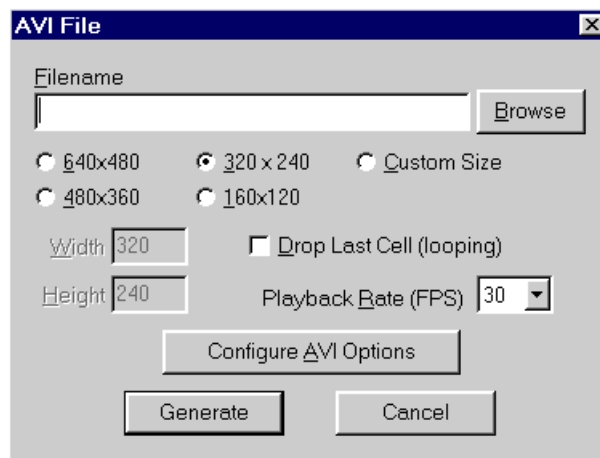
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Play AVI
Make AVI

Organica allows you to create animations in the windows standard AVI format. Once you have created a movie with the Make AVI menu item you can play the AVI directly inside of Organica, for that matter you can play any AVI using the Play AVI command.

To make an AVI you must first have created an animation with the Anim Controller. We will not cover animation creation at this point in the manual this will be covered in the Animation section.

To Make and AVI however is a simple process that we can discuss. You have probably created an AVI with other programs so we will only cover the basics of how to create an AVI inside of Organica.

When you choose the MAKE AVI menu item you will see this dialog.

AVI File

Filename [ ] Browse

- ○ 640x480   ● 320 x 240   ○ Custom Size
- ○ 480x360   ○ 160x120

Width 320   ☐ Drop Last Cell (looping)
Height 240   Playback Rate (FPS) 30 ▾

Configure AVI Options

Generate   Cancel

You must first establish a pat for the AVI, do this by clicking on the Browse button, this will list your various storage devices. Establish a path for your movie and give it a name. Now click on the Configure AVI Options.

Play AVI
Make AVI

Configuring AVI files consist of several items. First you must choose a compression codec. These codecs are installed with the windows install, and you might have installed others. The ones that your computer can use will be listed in the Compressor drop down data box. Find the one you want to use in the list and click on it.

You can control the amount of compression from High quality to low by moving the slider to either value. Higher quality movies are larger files and take up more drive space, but they look much better. If you are just making a test, quality is not all that important so you can lower the value and take up less space. For final rendering you will most likely want to use the highest quality.
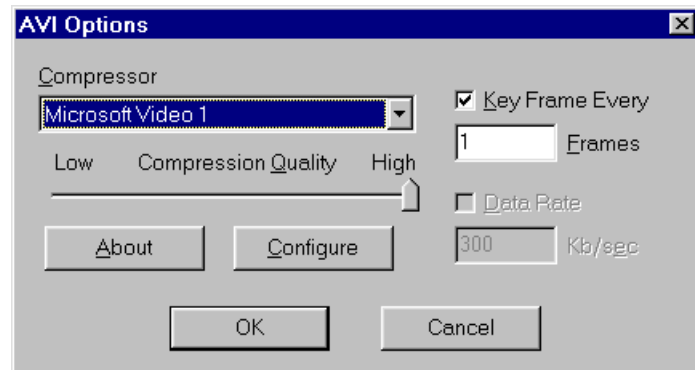
Setting the (Key frame every) on, by clicking the check box, and entering a number in the Frames dialog establishes the amount of read ahead that the playback of the movie looks for. Simply put, a key frame for every frame of the movie will allow you to drag the slider of the playback gadget and you can see each frame of the movie. If you have a 100 frame movie and establish a key frame every 10 frames, you will only be able to stop and view every other 10th frame.

Usually we set the Key Frame Every function to 1 frame. The file size is a bit larger but its worth it when you are working with complicated animations where timing is important.

Some codecs come with a Configure option built in, for things like color and black and white settings. Also you can see which version of the codec you are using by clicking on the about button. Once you have things set the way you want click on the OK button

Play AVI
Make AVI

AVI stands for Audio, Video Interleave, which means that you can combine audio with the video. There are no functions that allow you to add Audio with Organica. If you wish to add audio you will have to purchase a program that reads AVI files and allows you to edit them.

Compression Codecs control the playback and creation of the movie file. There are numerous codecs, due to the diversity of these codecs we suggest that you try several and find the one that you like best.

Playing AVI files back in Organica will bring up the following dialog.

There are a few items that you can control. The slider at the bottom of the movie screen will scrub the movie forward or backward. As the movie plays the scrub gadget will move from left to right.

The Arrow in the lower left corner is the PLAY button and when the movie is playing it changes to a small black square. If you click on the square the movie will stop.

The small button to the right of the arrow button is the speed controller and size controller.

To close and quit playing the movie, click on the X button in the upper right hand portion of the player.

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EDIT

Edit	View	Selection	Help
Undo			Ctrl+Z
Redo			Ctrl+Y
Cut			Ctrl+X
Copy			Ctrl+C
Paste			Ctrl+V
Delete			DEL
Hide			Ctrl+H
Properties			Enter
Grid Snap On/Off			
Snap to Grid			Ctrl+G
Mesh Controls			Ctrl+M

The edit menu has several controls, some of which have button equivalents.

UNDO and REDO

Undo has a button control as well as a hot key. The hot key for UNDO is Control Z. The Undo button looks like this. The UNDO feature has a buffer that accumulates the last 25 things that you do. So you can undo the last 25 things that you have done. This is very handy in Organica, as you will try different things when building objects and some of them might not look so good. With the undo feature and its buffer you can get back to a starting place. Or simply try something and if it looks horrible you can get rid of it.
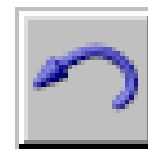
Ok so you did something, then decided that it was not so good, you undo it, then you realize it was better than you thought, so what to do? REDO is a function that will redo any undo that you have done. It also carries a 25 time buffer. Redo also has a button and a hot key. The hot key is Control Y. To the right is the button. Both the UNDO and REDO buttons are in the right hand tool bar.

UNDO

REDO

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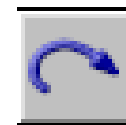
CUT	**Control X**
COPY	**Control C**
PASTE	**Control V**
DELETE	**DEL Key**
HIDE	**Control H**

Most windows applications use most of these commands so you are no doubt familar with them.

Cut removes the selected object from the scene and places it in a temporary memory location until something takes its place.

Copy makes a copy of the selected object and places it in a temporary memory location until something else takes its place.

Paste takes the object in the temporary buffer and copies it in the exact location that it was either copied or cut from.

Important note: There are two forms of paste in Organica. The version found in the edit menu is different from the one found in the tool bar. The edit menu Paste command places the copied or cut object back to the location from which it was copied, or cut. The Paste button will be discussed in the next section of the manual.

Delete removes the selected object from the scene and does not put it into a temporary paste buffer. However if you delete an Object and wish to have it returned to the worksurface you can always use the UNDO function.

Hide is a special function that is unique to Organica, it has a hot key and its own button in the left hand tool bar. No doubt as you use Organica the screen is going to get a bit crowded. The human eye can tolerate only so much "NOISE". When an object is selected you can HIDE it with the button or hot key. It has not been removed to a paste buffer and if you look in the perspective view it still remains.

Hiding objects will help you visualize your object better than trying to keep track of every object in the scene. As you build a human body, once you are finished with the legs you can hide them, they will still be seen in the perspective view but you can now work without all the clutter.

To get the objects back click on the UNHIDE button in the right hand tool bar.
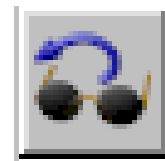
Un-Hide Button

Hide Button

PROPERTIES

The Properties dialog has several tabs. In each tab are various controls that let you do everything from change the color to distoring the objects shape.

You can get to the Properties dialog in several ways. Once you have an object selected you depress the Enter or Return key, double click on the object itself, or depress the F7 key.

The Properties dialog looks like the one shown here.
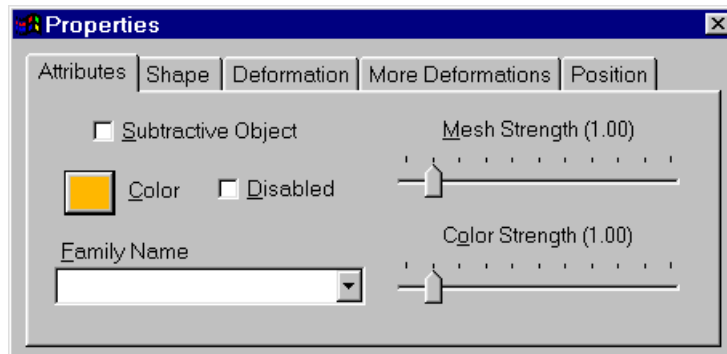
There are 5 tabs in this dialog, they are Attributes, Shape, Deformations, More Deformations and Position.

You get to any tab by clicking on that tab.

Before we get to each tab and its abilities we should talk a bit about the object itself. Each object is a blob. It has a field of effect. This field of effect causes objects that are close to each other or touching to form a mesh.

Organica objects also have the ability to hold color and to morph that color from one object to the other. Objects can also have a greater strength in both mesh and paint.

Lets look at each dialog. First the Attributes.

Attributes

When an object is added to the scene it has its own color. The color corresponds to the color that you see in the primitive object tool bar. The sphere is red, the disk Orange and so on. You can change the color of an object by clicking on the color button. You can make objects one of 16 million colors so your choices are vast.

Objects also have two kinds of strength, Mesh and Color. Why? As you use Organica you will see that you can do some amazing things with these sliders.

By increasing the Mesh Strength of an object you increase its POWER, so that its ability to mesh with other objects increases.
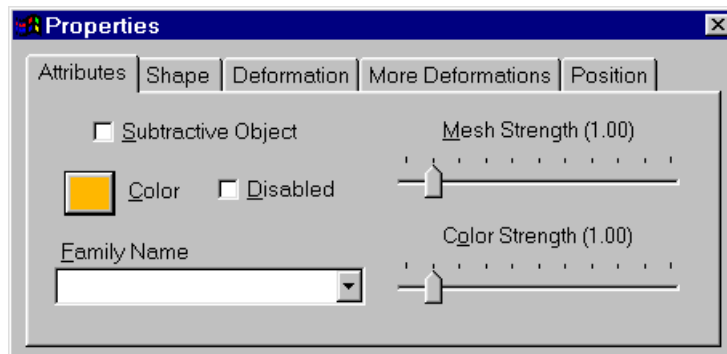
Here is a simple example of two spheres. See that both spheres have equal strength values of 1.
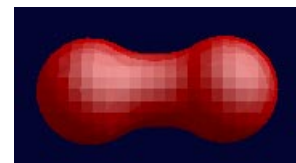
This example shows that the sphere on the right has a mesh strength of 2.
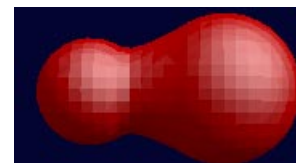
Mesh strength is animatable. You can set objects to have different strengths within an animation. The possibilities are endless. This kind of control makes it easy to create a bulging stomach that jiggles and wiggles and grows... Think about it.

Now lets take a look at the color slider.

Attributes

The color strength slider would not have much affect on two objects of the same color. However when the objects are of different colors you can increase the color strength of one object which will overpower the other objects color strength. But not entirely, as you can see here in this diagram, the sphere on the right is yellow, both have a color strength of 1.

This diagram shows that the yellow sphere has a color strength of 10, which overpowers the red and reduces the blending between the two objects.

As you can see this offers some interesting concepts for you in your object making. Color morphing is also fully animatable. Meaning you can morph colors as well as color strength.
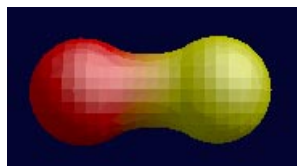
Color strength equal at 1
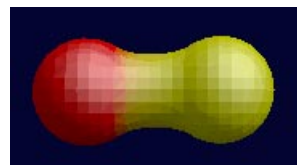
Color strength red = 1 yellow = 10.

Aside from looking nice there are some very cool things you can do with color strength. For instance, look at this sphere. We have added two disks to the sphere.
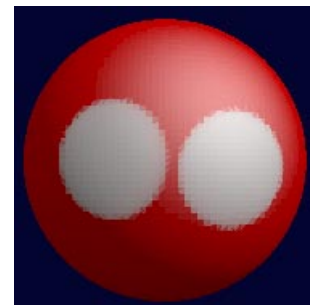
We have increased the color strength to 10 for the white disks, also the MESH STRENGTH was reduced to zero.

What we are doing with this set of functions is to create a new way of painting in 3D.

This is an important aspect of Organica, when you create characters not only can you create the 3D mesh, but you can also paint in the details with other objects. Adding a bathing suit to a human form is easy using these painting tools. No doubt you will find endless uses for this feature.

Attributes

Lets have a bit more fun before we continue. Look at what we have done now with the two white spheres we have added, two black ones to create the pupils of the eyes.


You get the idea right. Mesh and Paint control in one tab. For your information we reduced the white disks color strength to a value of 5 and increase the black disks to a value of 10.

One of the coolest aspects of mesh control is, **Subtractive Object**. Take a look at these two spheres. They are meshing and the one to the right is smaller than the one to the left. They create a kind of acorn or pear shape.

Assuming that you select the right sphere, you could turn on the Subtractive Object check box. Once you do this, you would get something like this. As you can see the smaller object has taken away from the larger one. There are several factors to consider, you could increase the mesh strength of the smaller object and it would affect the larger one even more. You could change the color and it would look even more different. Something like this. Finally you can disable an object, its there but it has no affect on the mesh. As you learn how to animate you will be disabling certain objects in order to create null objects.
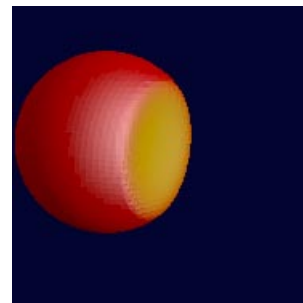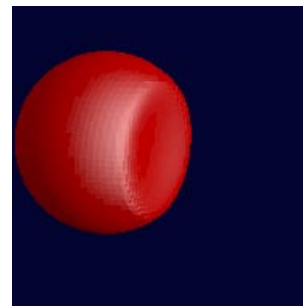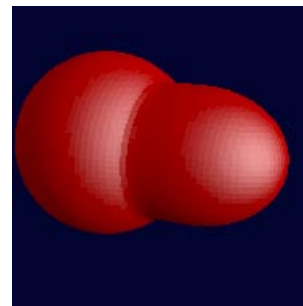
Now is as good a time as any to give you this one simple piece of advice. Play with Organica, there are functions and modes and you should know how to use them properly, but there are an endless number of possibilities when you consider the ways in which you can combine these functions. So PLAY.

Attributes

The last function in the Properties dialog is the Family gadget.

For a moment consider that you have created this really cool ray gun. Some of the objects make up the handle, others make up the sight, still others make up the trigger and finally you have the barrel.

By selecting an object you can type in a name into this gadget. To follow our example, we could pick the handle of the ray gun and name it handle, but maybe there are a few other parts that should be included in that family.

You could choose all of these objects one at a time and add it to the family or you could do something much easier. You can **MULTI SELECT** some objects and use the button on the right side which looks like this.

First we should tell you what MULTI SELECT is. You can pick more than one object by holding down the shift key and clicking on the objects you want to add to the multi selection. The first object you select is the parent, so for this example we would select the part of the handle that we want to give a family name to, then close the dialog and multi select the other parts of the handle that we want to include in the family. At this point you can use the Make Same Family button, shown above or use the Menu item Make Same/Family in the Selection menu.

In the left hand tool bar is a button that looks like this.
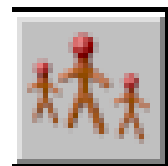
When you are in family PICK mode by clicking on this button you are in this mode until you click once again on the family button.

In this mode if you have established families like our ray gun handle, you can click on any object of the family and the entire family is picked.

Families make it simple to create a right hand, and left hand, left leg or right leg and so on.

Objects can only be members of one family. As you add family names you can assign an object to a family either by typing in the family name or just selecting the family you want it to belong to by clicking on the down arrow in the family gadget, and then scroll the mouse to the family name you desire.

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Shape

The shape tab houses different controls for each Meta Blox. These controls include things like, softer, bulge, angle, thicker.. to name a few. As you add each new object to the scene take a look at its specific shape controls.

Some objects have several controls while others have only one. Instead of trying to explain each control all you have to do is move the slider up or down and the affect of the slider will be shown in "REAL TIME" in the perspective view as well as the other views.
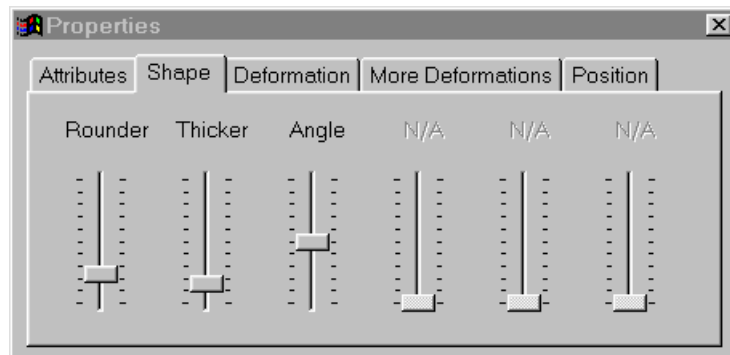
The shape control is only one form of object deformation. There are two other tabs in this dialog that affect the overall shape of the object. The shape control is unique to each object while the other deformation controls are all consistent from object to object.

Here are a few examples of the shape controlling an object. You see a pyramid can be turned into a nose with out too much effort.

Normal   Rounder   Taller

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Deformation

Deforming an object gives you the ultimate power in object creation.

First lets take a look at a selected object, in this case the sphere. If this object were not selected it would be a solid color, when you select an object it is colored like the object you see here. Of course each object will look a bit different due to its shape but this one thing will be the same for all objects, its selected color. This color scheme has a purpose.
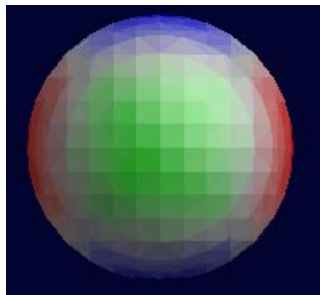
In the world of 3D we establish directions by giving objects in the world X, Y and Z coordinates. This can be real confusing trying to keep track of what is up and out and down and left and so on. Organica eliminates all this 3D business by giving the object a color scheme. Blue represents the Z axis, Red represents the X axis and Green represents the Y axis.

When you deform objects you do so along one or more of these axes. You can goto the trouble of learning all this 3D business or you can just look at the deformation dialog and watch the objects as you deform it in one of its colors. Want to make the sphere taller in Z, grab the Z slider in the STRETCH area and pull it one way or the other. The Blue area will either expand or contract.

As we explain each of the various controls we are not going to refer to X Y and Z we are going to use the color code because it is obvious on each object that you work on.

Organica is meant to make 3D easy to use and fun. Its not fun if you have to keep track of all kinds of things like which way the axis of an object is pointing. It makes no difference if you learn the 3D axis system, just remember that Red, Green and Blue are tied directly to the controls in the deformation tabs.
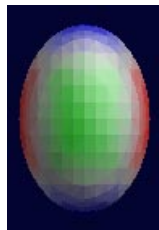
For those of you who must know, we use the following system of axis control Z is up and down, X is left and right and Y is in and out.   But who cares just pay attention to the colors. Remember it all happens in REAL TIME so you can see what you have done instantly.

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Deformations

The first most obvious deformation tool that you will use is the Stretch control. You can stretch an object in Red (x) Green (y) and Blue (z). There are limits to how much you can stretch and object with these sliders. Play with each object and see what the limits are.

If you do something that looks really bad or for some reason you do things and have no idea where you are. Click on the Re-center button at the top of the dialog. This will make all the sliders return to the default value. Moving a slider up will make things get bigger and moving it down will make objects get smaller.

No stretch

Stretched in red (x)

Stretched in blue (z)
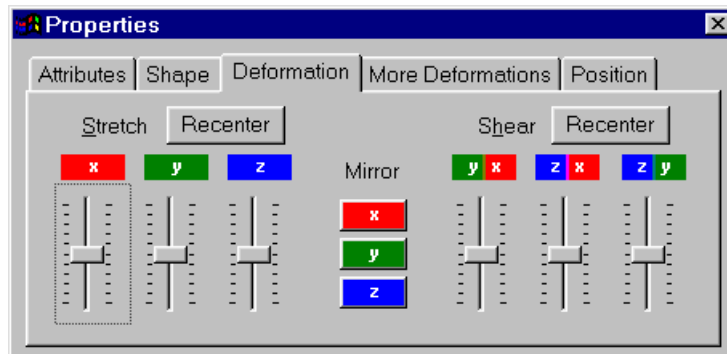
In the middle of the Deformation tab is the Mirror function. To mirror an object in a particular color (axis) just click on the color of the object that you want to mirror. For example look at these two diagrams.
The object on the left was mirrored in RED (x) so that it looks like the object on the right facing the other way.
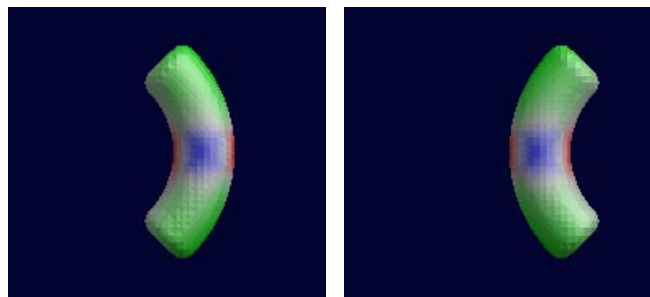
Deformations
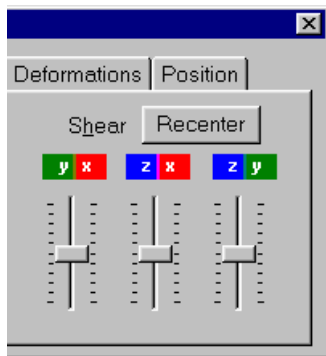
You can **SHEAR** an object in three different way. Green to Red (y to x), Blue to Red (z to x) and Blue to Green (z to y) You can do all of these controls at once or singly. Here are a few examples.

Shear green to red
(y to x)
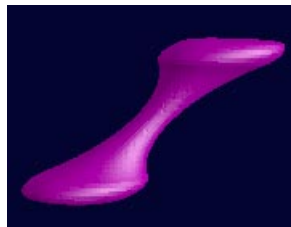
Shear blue to red
(z to x)

Shear blue to green
(z to y)

As you deform any object you will see that the meshing of the objects that it interacts with will obviously change. Remember also that you can paint with these objects and shearing an object can create some very cool paint brushes.

Also remember that the deformation tools are laid out in such a way that the first color is going to move to the second color in the gadget.

You might say in the case of shearing, green shears to red or blue to red or blue to green.

The first color moves to the second in all of the deformation tools.

Lets take a look at the next set of deformations.
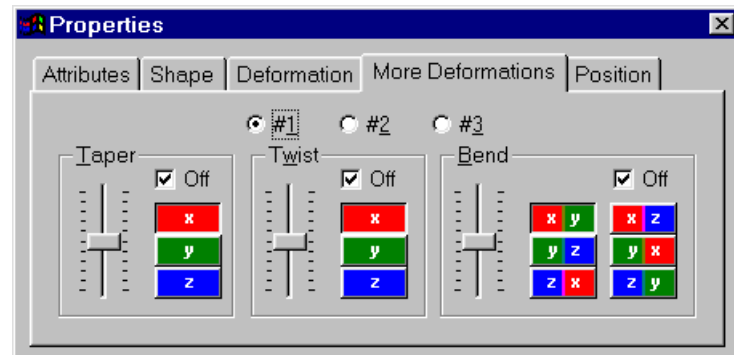
Deformations

Under the More Deformation tab you can Taper, Twist and Bend the selected object. There are 3 sets of these controls. When you click on #1 you get to taper, twist and bend the object as long as you click on the off check box. This turns on the deformation. Move the slider up or down and you will affect the deformation. As we said before, in the case of bend, the first color goes to the second color shown in the tab.
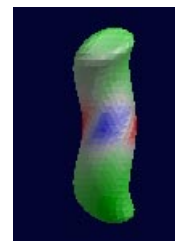
Here are a few example os some objects that have been deformed.
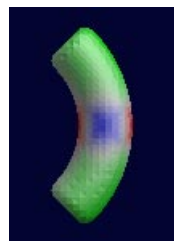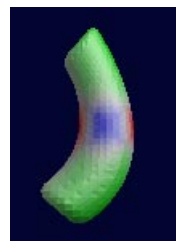
No deformations   Taper in Green (y)   Twist in Green (y)
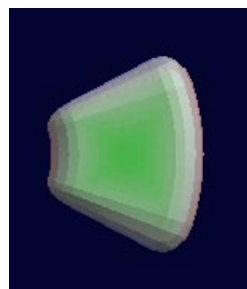
Bend Blue to Red
(z to x)

Deforming objects is a useful tool simply because you can use less objects to do what some metaball editors take hundreds or even thousands of objects to do.

Special note: When animating these defor-mations Deform # 1 to #1, Like numbers morph to like numbers.
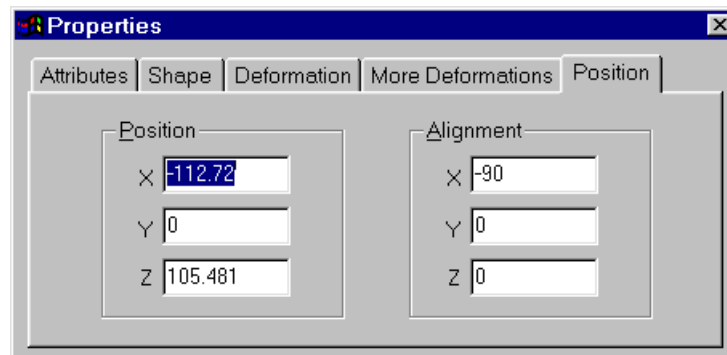
Position

You can place the object anywhere in the Organica 3D world. It is a bit confusing but once you get the hang of it placing and aligning an object is as easy as anything else in Organica.

Just remember that these numbers are related to the world not to the object. The world is fixed and you can not move the world like you can move the object.

When you look at the FRONT view with the GRID turned on, you will see the middle of the world represented by the dull red lines that intersect in the middle of the world. X is left and right, a negative value will be to the left of the red crossed lines, a positive value is to the right of the red cross line. Z is up and down, a positive value is above the red crossed lines, a negative value is below the red cross line.

Y is In and Out. A positive value is in and a negative value is out. You can not see the Y value in the front view, but if you look at the Top or Right view you can see the Y axis.

The alignment of an object in X Y and Z is nothing more than which direction the object is pointing. To get a perfect idea of how an object is aligned simply look at the color code of the object, as the colors rotate away from the normal set up of 0,0,0 you can see the colors of the object pointing in different directions.

Most likely you won't be using this part of the dialog as much as just looking at the object. When precision is important this portion of the dialog will save you time and give you exact information.

Grid Control
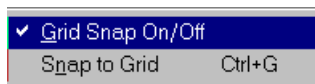
The grid system in Organica can do some things for you to better organize how objects are added or arranged.

By default when you run Organica the grid is shown. The grid consists of a set of lines spaced 20 units from each other, with the middle of the world grid system represented by two unique grid lines that are a dull red color.

At the intersection of each grid line is a HOT SPOT, this hot spot is where an object will either snap to or be added to the work area.

You can turn Snap to Grid on or off, by choosing the Grid Snap ON/OFF menu item. When this menu item is turned on, objects when added will jump to the neartest grid intersection. As you move an object around the screen with this option on, objects will seemingly   jerk around the screen. This is due to the fact that the Grid Snap is turned on, when this option is off the objects will move very smoothly around the screen.

If you have added several objects to the scene and decide that you want them to snap to the nearest grid intersections, use the SNAP TO GRID menu option which has a hot key, Control G. Objects that are selected will snap to the nearest grid intersection.

The grid size can also be adjusted in the View Menu, by default the grid size is set to 20, you can set it to the value that gives you the best set visual set up.
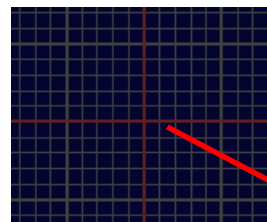
Grid set to 20 units
The center of the world is shown by the dull red lines

World center is 0,0,0

Mesh Control

One of the most important issues is Mesh Density of objects. You can not control the density of objects on an individual basis, you control density globally.

Mesh density also establishes how many triangles are used to create an object. The lower the Cube size the greater the mesh. This might seem backwards, but you are actually setting the size of the cubes that create the mesh, the smaller the cube size the more density that will be created.

You can also increase the density of an object by scaling it larger than its default shape.

Simply put, the best looking objects have a cube size of about 5 when you use the default sizes of added objects. The lower the cube size the longer it will take to create the mesh. Redrawing the objects takes more time with a low Cube size, but if you have one of the higher speed Pentium processors the redraw time is rather speedy.

If you are using Organica by itself with no intention of exporting the objects to other 3D software, then quality is what you want. If exporting objects you will want to consider the abilities of your final 3D program as to the mesh density needs.

Imagine, the Impulse 3D rendering and animation system has a smoothing tool as well as many editing tools that help create a better looking object with a lower triangle count.

The color of the mesh object can come from the object itself or you can use a general color. To set this color you can click on the color button and set the color you wish. To apply the color from the objects click the check box in the lower left next to the, "color mesh using objects" If you remove the check your objects will mesh with the color set in the color button. Note that you can apply this before you close this dialog, this way you can see if you like the results before continuing with your work.
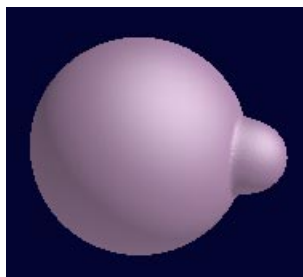
Mesh Control

In this diagram the cube value has been set to 5.

Here are a few examples of mesh density, this should give you some idea of how things react for the cube setting.

In this first example we have a large sphere with a smaller one next to it creating a mesh, the density is set very low with a large cube number. The cube number has been set to a value of 10.
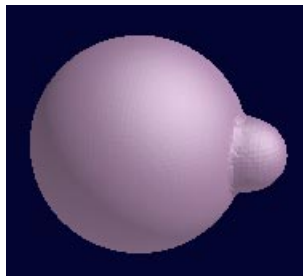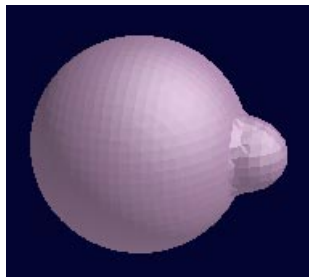
In this diagram the cube value has been set to 2.

As you make more complex objects you will no doubt end up making things like hands, feet with toes or any number of objects that have a larger section with smaller sections attached. You will need to lower the cube size in order to get the best look for these kinds of objects. Set them as low as you wish just remember that the lower the number the more memory and work required of your computer.

When you are just creating objects working with a larger cube number speeds things up, you can always lower the cube number later.

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Selection

This menu has a few housekeeping items and a very neat function for making objects called clone. As you create objects you will un-

doubtedly end up with several differ-ent primitives on the screen. There will come a time when you want to pick all of the objects to scale them all at once or to adjust some other global factor, such as color or strength. Use the **Control A** hot key or **Select All** menu item under the Selection menu and all the objects in the scene will be selected.
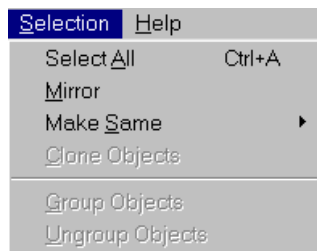
Mirror lets you flip the orientation of an object. As discussed before mirror has a companion tool button in the right hand tool bar. The mirror button looks like this. This function is real handy when you are making an object that is symmetrical, possibly a character

head. You might create the cheeks or an object by making one cheek and then making a copy. The two objects are the same but you can simply mirror one of the objects in possibly X and you now have two objects that mirror each other.
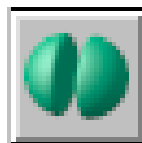
Make Same is used for making objects have the same properties. You can control Family, Color, Color Strength and Mesh Strength. Each of these functions has a companion button. To use this process you must first pick the object that you want to make the others like, and then hold down the shift key while picking the other objects that you want to share the properties of the first picked object.

From top to bottom you can use the Make same color, Mesh Strength, Color Strength and Family buttons to assign the properties of the first selected object.

Remember that these set-tings come from the proper-ties dialog.

Clone Objects

Cloning objects gives you the ability to repeat an object along a path. The path is created by placing objects that you want to clone from and to. Here you see three objects that will be cloned. If we pick the one to the lower left, then the one in the middle and finally the one to the right we establish in this picking order the path for cloning.

An important note: Only same objects can be cloned. You can not add a sphere, cube and disk and then clone between them, only same objects work with clone function.
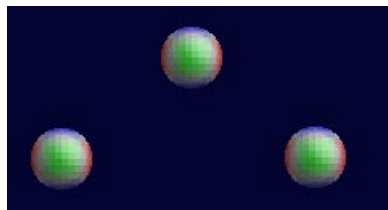
After we select the objects that are going to create the path for cloning either select the Clone menu item or use the clone button, the button looks like this.

When you click on this button or choose the menu item for clone you will see this dialog.
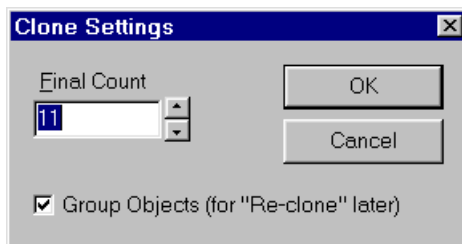
There will be a default number in the final count data box. This number is computed for you but you can enter any number that you want. The higher the number the smoother the object will appear, the lower the more lumpy it will look.

At the bottom of the dialog is an option that you will find very useful for animation. As the objects are clone you have the ability to GROUP these newly cloned objects in series. This creates a hierarchy so that objects can be animated in group mode. We will get to more data about this in the animation section of this manual.

The other reason for letting Organica group your clones for you is that you can RECLONE an object. Essentially this means that after you have made a set of grouped objects and decide that they need a different path you can simply move one of the cloned objects, then select the objects in order and use the clone button again which will ask you the following.
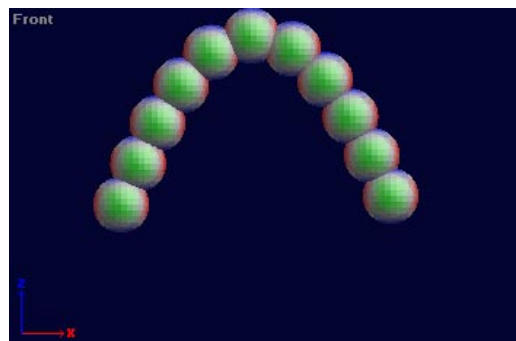
Clone Objects
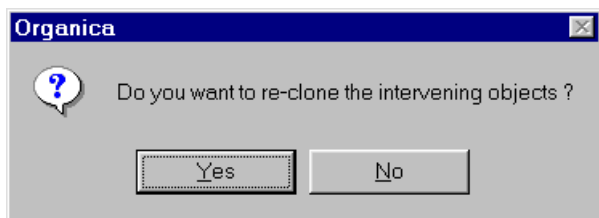
You will only see this dialog if you create a set of cloned objects that have been grouped for you. Then you might in the case of this example move the center most sphere to a new position, then you multi select the first sphere, the newly moved sphere and last sphere in the clone chain. When you click on the clone button you will be asked if you wish to reclone, you have the choice, choose yes or no. Here are a few images to help you better understand.
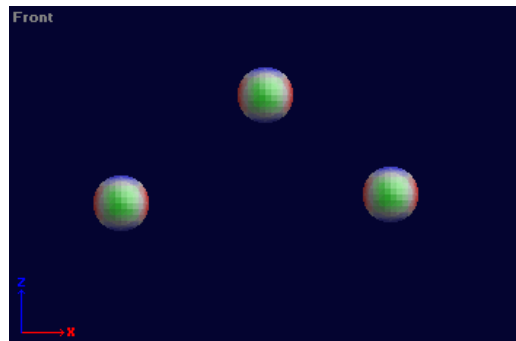
Here three spheres have been added and selected, then the clone function was used to create the 11 new spheres.
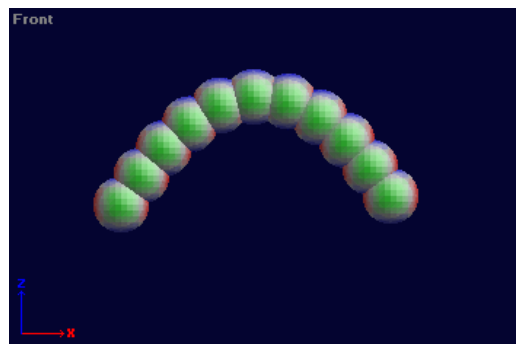
The center sphere was moved up a bit in the Z or blue direction, and the clone button was again depressed. We were asked if we wished to reclone and we chose yes.

In order for the reclone to work properly we chose the first, middle (the one that was moved) and the last sphere. Clone was selected and you see the results.
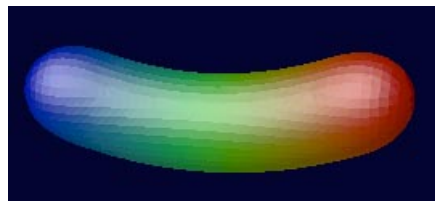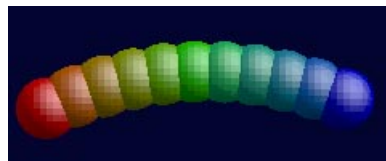
This is a nifty item for animating things like eyebrows.

Clone Objects

When you clone objects there are some other cool tricks that you can use. Each cloned object can be a different color or it can be deformed and the clone function will morph from one deformation to the other.

Take a look at these examples showing both color morphing and deformation morphing.

As you can plainly see in the upper diagram, the ball to the left is red the middle green and the far right blue, when the clone function was used the new cloned objects were added and the color was morphed, the results are also obvious when you view the new meshed object. You can see that the color is smoothly morphed along the path that was created for the cloned objects.

Here you can see that the cube was added, sized and tapered, then the clone was performed on the object. As the clone occurred the added objects were deformed to meet the center object and then the final object in the clone path.

You can see the results of the object in the last image as the mesh was created.
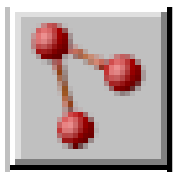
Making objects has never been this easy.

Grouped Objects

There are a number of reasons why you will want to group objects. Grouped objects can be grouped in such a way as to create a hierarchy. Hierarchies are important for creating animatable characters.

Grouping objects is a simple process of multi selecting objects and either using the menu item under the selection menu or clicking on the group button. This button is highlighted only when you can group objects, otherwise it is grayed out showing you that it is not available for use.

When you use the group button you can simply click on the group button and the objects selected will be grouped in a general manner, or you can hold down the shift key when you use the group button and a hierarchy will be created for you.

Each view of the quad view has a special view called Hierarchal, when you choose this view mode all you will see in the view is a small dot representing each object and a red line which shows how the objects were grouped. These two diagrams show how things looked when they are just grouped and when they are grouped for a hierarchy.
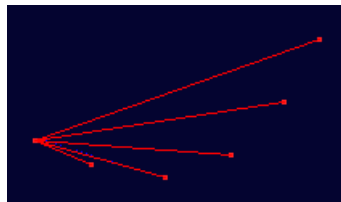

This diagram shows how objects will be grouped without hierarchy. One object will be chosen as the parent, the first object picked, from this object the others will be grouped to it.
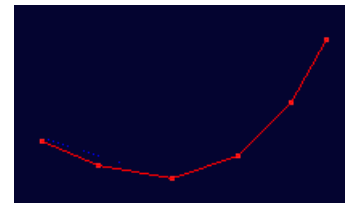
Here the same objects have been grouped but they were picked in the order of the hierarchy and when the group button was used the shift key was held down to create the hierarchy based group.

If you select the parent of a group and click on the UN-Group button the grouping will be nullified. You can also use the Un-group menu item in the selection menu. This is the ungroup button.
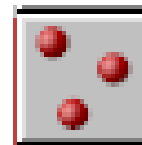
Grouping

In the left hand tool bar is the Group mode button. This button put you into a special mode whereby if you select an object of a group, all the objects of that group will be picked at the same time. If you decide that you want to rotate the group, the object that you picked will be the momentary center of that group. This is the Group Mode button.
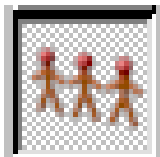
You have probably noticed by now that the buttons on the right hand side are functions and the ones on the left hand side are modes. Being in group mode allows you to select groups, if you are not in group mode and select an object of a group the entire group will not be selected.

The same is true of the Family mode, when you create a family, and are in family mode, selecting an object that is part of a family will select that entire family.

So why have groups and families? You can group families of objects together, things like hands, legs, head families. Then when you want to animate the object you can select families like the hands or legs to rotate, scale or move them, thereby creating a new key cell that can be added to the animation controller.

Objects can be members of only one family.

We have now completed the portion of the users guide devoted primarily to the menu items. We have touched on several buttons and how they function.

The next section of this users guide will deal with the tool bars on the left and right of the Organica interface.

MODES

The left hand tool bar houses the mode functions. The functions will allow you to control the objects that you add to the scene. Each button is shown in this section along with any function keys associated to the mode.

As with any software product our goal has been to make the soft-ware easy to use. Some people find it easy to use buttons, others memorize the key stokes that serve the same function as a button or menu item.

In this matter its important that you work the way that makes you most comfortable.

Several modes in Organica have what we will call affectors. For instance, when you want to move an object you can move it in all directions at once. However it might be better to restrict the movement of the object to one or two of the axes. In this case the affector for move are the X,Y and Z buttons. By default they will all be highlighted when you pick the move button. Once you are in the move mode you can click on one, two or three of the affectors. However if you de-select the X,Y and Z affectors the object would not move no matter what you do.

Finally when you are in a MODE such as move, you are in that mode until you pick another mode. When you ADD an object to the scene by clicking on one of the prmimitives in the top object bar, you are in add mode until you leave this mode. This might take a bit of getting used to. So lets discuss the various modes and their affectors.
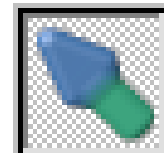
This button puts you into **Select** mode, when you are in select mode you can click on an object to select it. If you hold down the mouse button and drag the mouse away from the click point a dotted box will be drawn. Any objects that are inside this selection box will be selected. A word about this selection method. Objects which are visable in the view will be selected. In wireframe mode all objects are visable, however in solid mode some objects might be behind others and will not be selected.

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MODES

There will be times when you want to select objects that are not visable in one view or the other, by holding down the shift key you will keep any objects already selected, selected as you move the mouse to another view where you can get at the other objects that you want to add to the multi selection.
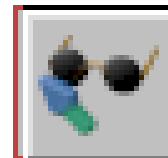
Select can be accessed by clicking on this button or you can just depress the "e" key. This will turn the select button on.
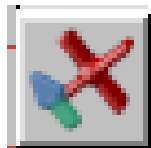
This is the **Delete** button, by clicking on this button or by depressing the "d" key you enter delete mode. Remember that once you enter a mode you are in that mode until you change to another mode. Delete lets you click on an object, when you do this, that object will be deleted. If you are in family mode or group mode, clicking on a member of a family to be deleted will delete the entire family or group. If you are in group mode objects will be deleted based upon the heirarchy. If you have a group of objects that are not grouped in heirarchy, clicking on any object of the group other than the parent will only delete that object. In the case of a heirarchy, if you are in group mode, and click on any object of a group, then all of the objects that fall after that object in the heirarchy will be deleted.

If you are not in group mode but are in delete mode, only objects will be deleted and groups will not be affected.

In this case, Group and Family modes are affectors for the Delete tool.

This button is the **Hide** button. This button can be acessed by clicking on the buttor or depressing the "h" key. Hiding objects is very important as your scene becomes complicated with lots of objects. You will want to build a human but as you build it, hiding various parts that are done will keep your work surface cleaner and easier to work in.

The Group and Family mode affectors have the same affects as in Delete mode.

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MODES

This is the **Paste** button, it does not have any affectors. You can access the Paste button by clicking on it or by depressing the "p" key.

This paste is different than the normal copy/paste function that you use in other software. The difference is that this is a mode you enter, what ever you have in the copy buffer will be pasted into the scene where ever you point and click the mouse. You can copy families, groups or single objects into the copy buffer, whatever is there will be pasted into the scene.

There are no other button affectors to the paste function. There are however other keys that affect the paste function. If you hold down the shift key while pasting objects into the scene, the objects added will remain selected. If you hold down the control key while in paste mode you are for the moment put back into select mode, if you hold down both the control key and select key you will be in multi select mode.

These three modes are grouped together in the tool bar. They are from top to bottom.
MOVE "m"
ROTATE "r"
SIZE "s"
Moving objects is as simple as clicking on the move button the clicking and dragging the object to the place on the screen where you want it. If you hold down the shift key you are in multi pick mode, when you hold down the control key in move mode, you keep all objects selected no matter which quad view you enter, this also keeps all of the selected objects selected.

The X, Y and Z buttons are also affectors of the Move mode. You can move freely in all axes or you can constrain the movements by turning off one or two of the axes. If you want the object to move only right and left in the front view you can turn off the Z and Y keys, now as you move the objects the movement will be constarined to the X axis.
The Family and Group mode affectors will also work with move.

Rotate has all the same control and shift key affectors as well as the X, Y and Z keys, however in the case of the axis controls, only one key is valid at a time. By default the Z key is highlighted when in rotate mode. You can change the affector by depressing x, y or z.

MODES

The last button in this group is the **Size** button. The X, Y and Z buttons have no affect on the size button. The family and group mode buttons work with the size mode. You can not size an object in only one or two directions, size makes the selected, object, group or family to size equally along all axes. The **INPLACE** button does affect the sizing mode.

If you size a group or family of objects without the inplace button highlighted the objects will be sized globably, however with the inplace button highlighted the objects will size from their own axis center.
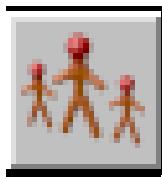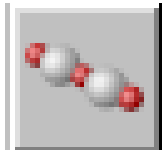
This is the **Family** mode button which puts you into family mode when highligted. There are no keyboard shortcuts to enter Family mode.
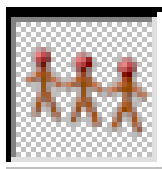
This is the **Group** mode button which puts you into group mode when highlighted. There are no keyboard shortcuts to enter Group mode.
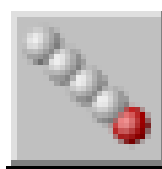
The last button in the mode tool bar is the unpick last button. It has no keyboard shortcut. This is a one shot button, when used you will be returned back to the last mode that you were using. This button is not available if no objects, groups or families have been selected.

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Functions

Most functions have already been discussed in one way or another, however each will be discussed here in this section of the manual.
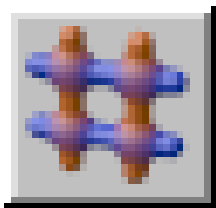
Mesh control lets you control the size of the meshing cube. The smaller the cube the greater the density of the mesh.

The greater the mesh the more system resources are required. First rendering at any new cube size will require a total redraw of the mesh window. There after only immediate changes will require redraw.

Note that the data regarding the object is shown in the lower portion of the dialog, showing points, edge and face count as well as the reduction percentage. Make objects with a dense mesh, then adjust the mesh reduction control. You want to start with lots of faces and reduce them not the other way around, the adpative process is subtractive not additive.


Setting the cube size is done by changing the nubmer in the Cube size data box. Also the default color for the mesh is set in this dialog. The check box chooses either the object color for meshing, if not checked the color shown in the color button will be applied to all objects in the scene.

When you click on the Apply button all changes can be viewed prior to clicking on the OK button. Cancel puts you back to the Organica work space without changes applies.

In order to invoke the Adapative Mesh option you can move the Face Reduction slider to fine for no reduction of course for as much reduction as possible. Lower the cube size for more faces, making the slider course will offer the most adaptive meshing.

The clone button causes multiple selected same objects to be cloned along the selected objects path. Color, and deformation data is morphed as well. Objects cloned can be grouped in heirarchy for later re-cloning. The final count data box allows you a way to establish how many clones will be made during the cloning process.

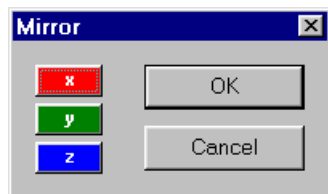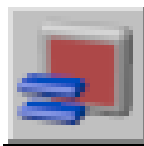The clone function causes the following dialog to appear.
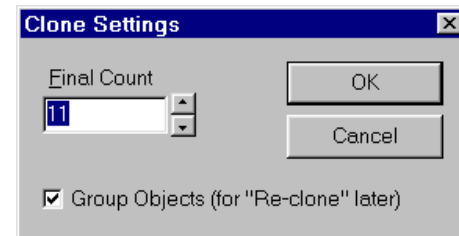
Functions
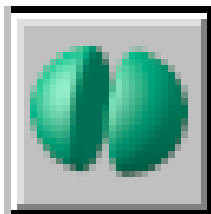
This function is the **Mirror** function. When an object is selected this button can be clicked on which causes the following dialog to appear.

You can mirror any selected object or group in one, two or all three axes.

These functions belong to a the group of **Make Same** operators.

These functions work by first selecting a parent object that holds the values that you wish to pass onto the other selected objects that you multi pick after picking the first object in the chain of picked objects. The four opeartors from top to bottom are.

Make Same Color which causes the color data from the parent object to be passed to other picked objects.

Make same Strength causes the mesh strength of the parent object to be passed onto the other selected objects in the chain of picked objects.

Make same Color Stregth passes the color strength to be passed from the parent object to all other selected objects.

Make same Family passes the established family name from the parent object to all other objects that have been selected.
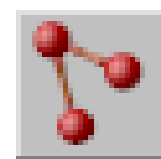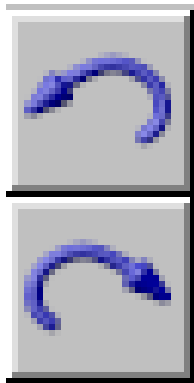

The Group button causes multi selected objects to be grouped together. If the Shift key is held down while the button is clicked the objects will be grouped into a heirarchy.
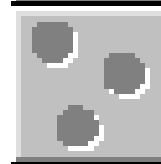
The Ungroup button causes selected groups to be un grouped thereby elininating any grouping relationship between the objects.

Functions

Undo and Redo take the last 25 actions from the undo or redo buffer and replace the last actions. If you delete, or rotate or perform almost any other function on a object or group, the Undo button will reverse the last process.

Undo can be accessed from this button or the Hot Key Control Z can be used for Undo and Control Y for Redo.

Un Hide causes the last hidden object to be revealed.

ReHide causes the last unhid object to be re-hidden.

Both of these functions can be accessed from the buttons that represent them, there are no keyboard equivelents for these buttons.

These buttons are only active when ojbects have been hidden or un-hidden.

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As you move the mouse around Organica there are functions placed into the right mouse button that you can access at anytime by simply depressing the right mouse button. When you depress the right mouse button you will see a "drop down" menu appear. The menu is the same in the right, top and front views but differs slightly in the perspective view.

Lets look at the the two drop down menus, first the one for the three orthoganial views and finally the perspective menu.
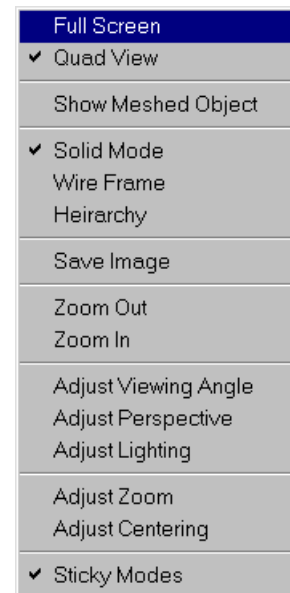
The Right Mouse Button

Wow a whole section of a users guide dedicated to a simple thing like the right mouse button. It must be important. Correct. The right mouse button on your mouse holds power tools that you will constantly use to navigate your way around Organica.

Previously we discussed the fact that Organica has a Quad view system. To review, the upper right hand view is the perspective view where the meshed objects are rendered.

The other three views create the orthoganal views, which by defrault are in the lower right the right view, the lower left the front view and the upper left is the top view.

```
Full Screen
✔ Quad View

  Solid Mode
✔ Wireframe
  Heirarchy

  Save Image

  Zoom Out
  Zoom In

  Adjust Zoom
  Adjust Centering

✔ Sticky Modes
```

This is the drop down menu seen in the front, right and top views.

```
  Full Screen
✔ Quad View

  Show Meshed Object

✔ Solid Mode
  Wire Frame
  Heirarchy

  Save Image

  Zoom Out
  Zoom In

  Adjust Viewing Angle
  Adjust Perspective
  Adjust Lighting

  Adjust Zoom
  Adjust Centering

✔ Sticky Modes
```

This is the menu seen in the perspective view when the right mouse button is depressed.

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The Right Mouse Button

```
Full Screen
✔ Quad View

Solid Mode
✔ Wireframe
Heirarchy

Save Image

Zoom Out
Zoom In

Adjust Zoom
Adjust Centering

✔ Sticky Modes
```

The first two items in this drop down menu allow you to navigate from the Quad view to the **Full Screen** view. Sometimes working in the full screen view is easier simply due to the fact that you get the whole screen to look at.

The Quad view is selected as the default value. When you move to full screen you must first go back to a quad screen view before you can select another full screen view of one of the other windows.

There are three view modes that you can use, they are Solid, Wireframe and Heirarchy. Shown here are a typical example of each view type.

Solid mode draws the slowest but offers more overal object data. Wirefame draws faster than solid but can be more difficult to visualize due to the ability to see objects in the background. Heirarchy view offers the fastest redraw but the least information regarding the objects, however this mode shows how objects have been grouped, esential for animation.
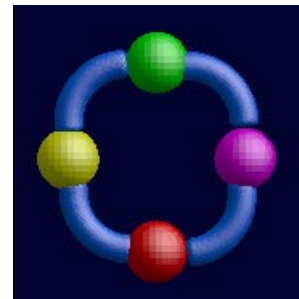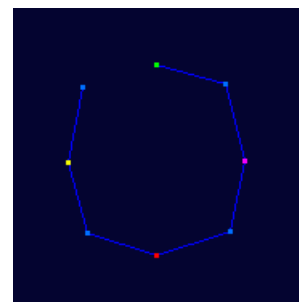
Solid mode view
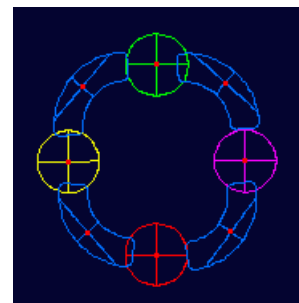
Wire frame view

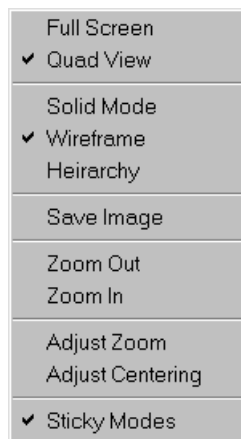Heirarchy view

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The Right Mouse Button

Save Image allows you to save the image data of the active screen. The image will be saved using the standard save requester. All images are saved in BMP format. These images are saved in 24 bits of data, if you wish to convert them to other formats you may do so with any number of paint and image enhancment programs.

Zoom in and Zoom out are two usefull functions that when activated are one shot functions. No matter which view you are in, all windows will zoom an equal amout when the zoom command is used.

Adjust Zoom is an interactive zoom function. When you choose this function you will see a special icon representing a magnifying glass. This icon will only be visable when in this mode, at other times you will see the normal cross hair cursor. To use this fuction simply hold down the left mouse button and move the mouse left or right. As you do this you will see the screen zoom in an out in real time.


Adjust zoom cursor

The Right Mouse Button
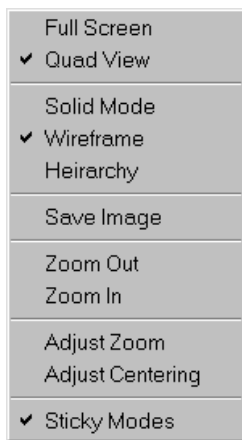
Adjust center allows you to interactivly scroll the screen, up, down, left, right and diagonally, in short as you hold down the mouse button with this mode active the screen will follow the mouse. This function is very handy when you want to work on specific parts of an object and want it to be moved to the center of the screen.

The Adjust center icon looks like this.
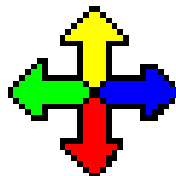
The final item in the three view menu is the **Sticky Modes** item. When this item is checked, meaning it is active, you will remain in the Adjust Zoom or Adjust Center mode until you choose to deselect one mode or choose another mode.
This is usefull when you must scroll a long distance or zoom more than the mouse movement will allow in the present view.
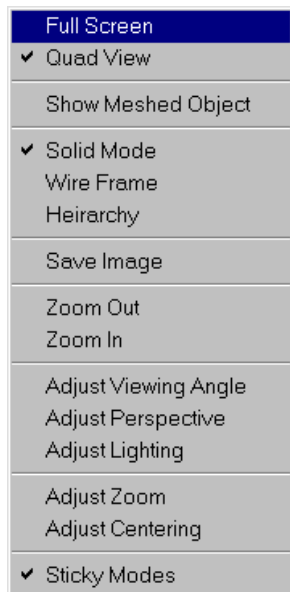
All of these modes are available in the Perspective view and there are a few other modes and functions available as well.
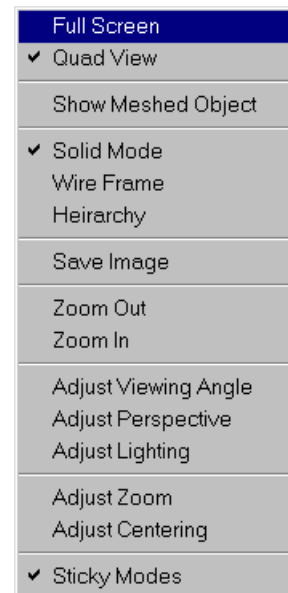
As you can see here there are four extra menu items.

![Organica Users Guide logo]

Show mesh object is the Magic Mesh function. By default Organica is set to show objects in Solid mode. When you choose this option the objects that you have added to your scene will magically mesh.

The other menus items are the same with the exception of the three grouped together at the lower end of the menu. They are.

The Right Mouse Button

Full Screen
✔ Quad View

Show Meshed Object

✔ Solid Mode
Wire Frame
Heirarchy

Save Image

Zoom Out
Zoom In

Adjust Viewing Angle
Adjust Perspective
Adjust Lighting

Adjust Zoom
Adjust Centering

✔ Sticky Modes

Adjust Viewing Angle
Adjust Perspective
Adjust Lighting.
Each of these menu items have a special icon representing each function.
Adjust Viewing Angle. This icon looks like a camera, when in this mode you hold down the left mouse button and move it around. The perspective view the camera angles changes. It looks as thought the object is rotating when infact the camera is orbiting the object while staying tracked to the center of the view

Of special note to this mode is this, you can also hold down the right mouse button with the left mouse button and gain a further pitch control so that the camera can roll over the object. This function is great for looking at all sides of the object interactivly.

One last note on the subject of **REDRAW,** when you first add objects to the scene and are done placing them in a particular position, Organica does what you might call a final render. Unless you move an object or add another object to the scene, objects in the perspective view will redraw very quickly almost instantly.

The Right Mouse Button
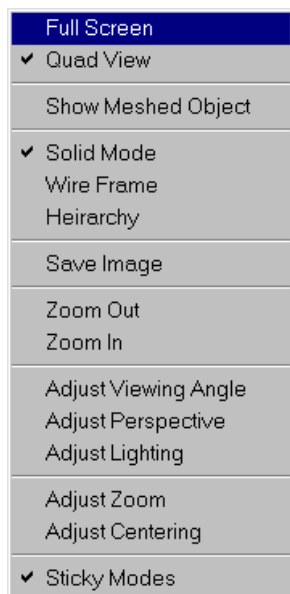
Adjusting the Perspective view is something you will want to do when the objects in the scene just don't look right. They will look elongated or very lopsided. This is due to the wide angle nature of the camera in an attempt to view all of the scene. Simply choose the Adjust Persepective view menu item, hold down the left mouse button and move the mouse left or right until the scene looks proper to you.

The Adjust Perspective view cursor looks like this.

Adjust lighting does just as it suggests, it adjusts the direction that the light is radiated from. Once selected you will see the light bulb icon. When you hold down the left mouse button you can click anywhere in the perspective view and the lighting of the object will be recalculated in realtime.

The light intensity and color are preset by Organica and can not be changed.

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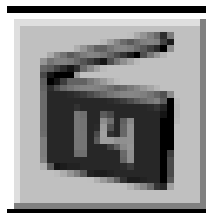
Animation

The Animation controller is accessed by depressing this button. When you click on this button you will see the following anim controller.

The animation controller has a few functions that you must learn in order to create an animation. The large buttons in the middle of the controller are KEY FRAMES of the scene that you are working on. Key frames are established simply by clicking on the key icon in the left side of the controller.

The number to the left of the key in the data box with the up and down spinner establishes how many frames are between key frames. As you can see from key cell 1 to key cell 2 there are 10 frames. The key frames show a number in the lower right hand of the key frame, look at the controller shown below. There are four key frames, and each frame has 10 frames between each as noted in the number in the key frame, they are numbered in this case, 1, 11, 21 and 31. This means that the entire animation is 31 frames long.

The red X when turned on will allow you to delete a key frame when you click on it. Both the Key frame maker and delete button are one shot functions. This is a failsafe so that you don't by mistake delete key frames or create extra key frames that you don't want. You can establish as many key frames as you want but only 8 key frames will be shown at once. To see more key frames you can scroll left and right with the scroll bar at the bottom of the animation controller.

Animation

The final control in the Animation controller is the collapse, expand button. By default the controller is in the collapsed state, showing only keyframes. The image that you see is a representation of where the objects are at that time in space. However there are at different locations or conditions between the key frames. If you click on the expand button the controller will show the rest of the frames between the key frames. However there will be no images in these buttons.

You can click on any button and view what is going on with your animation in the perspective view. This is true also when you click on any key frame button.

As you view the various states of a frame between key frames, you may decide to make a few changes in say frame 6 which is inbetween keyframe 1 and 2. If you decide that you want to make some changes to frame 6, perform those changes, and then click on the key icon, now click on the new frame that you were working on, in this case frame 6, you will see the number in the lower right hand of the empty button. Almost immediately you will see the data in the perspective view transfered to the frame that you click on, again in this case it would transfer the information to frame 6. When you collapse the animation controller where there were 4 key frames there will now be 5 key frames.

You can change at any time the amount of frames from one key frame to another by clicking on a key frame and typing in a new number in the data box. The next action will renumber the key frames to reflect the change.

Creating animations is really very simple but there are lots of things that occur in an animation. Just remember if you make any changes to objects, ie size, color or any other morphable aspect of a object, you MUST re Key frame that frame in order for these changes to take affect. If you go to a frame, make a change and do not remake the key frame, the changes you make will not take affect.
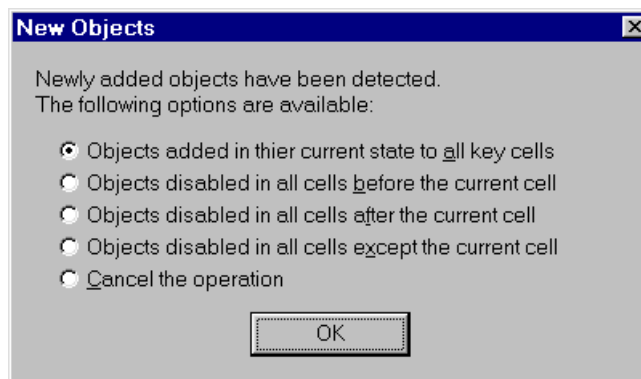
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Animation

The perspective, lighting, and camera angle are relative to each key frame. Changing the camera angle in one key frame will not change it in any other key frame, this is the same for the lighting and perspective controls. The zoom function also is realtive to the key frame where it was set. In fact nothing is updated over the entire animation, all changes for such things as camera, lighting, perspective and zoom should be set the way you want them before you begin to add other key frames unless you intend for there to be a change in the keyframes where these items will change as a part of the animation.

Finally, you are no doubt going to want to introduce a new object into the scene. You can do this at anytime, when you update the keyframe with the new object or objects that were added to the scene, you will see the following dialog.

New Objects ✕

Newly added objects have been detected.
The following options are available:

⦿ Objects added in thier current state to <u>a</u>ll key cells
◯ Objects disabled in all cells <u>b</u>efore the current cell
◯ Objects disabled in all cells <u>a</u>fter the current cell
◯ Objects disabled in all cells e<u>x</u>cept the current cell
◯ <u>C</u>ancel the operation

[OK]

Each option explains itself, read each option carefully, then click on the one that meets the needs of the animation and then click on the OK button.

Now you will have to update all key frames where this new object has been added.

This may sound like lots of work and it is, so plan carefully what you are going to do so that you use this option only when absolutely necessary

Animation Hint. Make sure that the background color does not show up in the object so that keying the background out in your video editing program will be seamless. Or if you are going to make a GIF animation you will be able key out this color to match the background color of your web page.

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Animation

You now have your animation created, all the key frames are correct, and you are ready to make that movie. Under the File menu simply select the Make AVI menu option. Here you establish the path for saving the movie and the particulars of the compression codec. We have also included the ability to LOOP an animation. Simply choose the loop option check box, this will drop the last frame of the animation so that the looping will not jump or stutter from the last to first frame.

The last subject that we will cover in this section has to do with GROUPING. Grouping allows you to create a hierachy which makes things like legs, arms and hands as well as other parts easy to animate.

The process of creating a heirarchy is very simple you just have to make sure that you understand the difference between a normal group and a heirarchy.

A normal group of objects are simply grouped, the structure is not all that important, take a look at this set of spheres, see that they are just grouped, one object in the bunch is the parent and all others are children of that parent. The first diagram shows a general grouping for a set of objects. There is one parent at the bottom of the view.
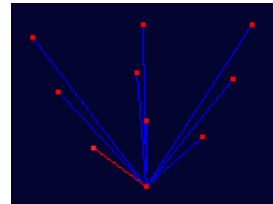
In this diagram below you can see that the grouping is done in heirarchy, meaning that there is one main parent but each object in the chain is the parent of all other objects down the train.
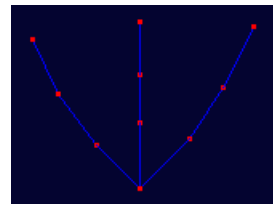
Heirarchy grouping is great for making hands, consider this in the case of these two diagrams, the top one would not make for a good hand object while the lower one would be perfect.

Animation

To create a general group you can simply use the select all function to choose all objects in the scene and then use the menu item for grouping or click on the group button in the right hand tool bar.
Or you can hold down the left shift key while picking objects, this puts you into multi pick mode when you hold down the shift key. The first object that you pick will be the parent object of all other children.
However if you want to create a Heirarchy you have to choose your objects and parents a bit differently. First you choose the parent object, then hold down the shift key and select the objects that form the object train, like possibly a finger where the parent object is the first nuckle.

Then you choose the other parts of that finger in the order that you want them grouped. Now while still holding down the shift key, click on the Group button in the tool bar on the right side of the Organica interface.

As in this example diagram, you see that the object at the bottom center of the screen is the parent of three fingers, however the fingers are grouped from that point to other parts of the same finger.

Once you have a heirarchy created you can enter the GROUP mode with the group mode button found in the left hand tool bar. Now you can rotate the entire hand or parts of the hand, as you can see, creating an animated hand is very simple.

Hand Movie Click Here

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One step at
a time...

Animation

This last bit on animation might be considered more in the line of philosphy rather than a "how to," text. Computer animation has been for the most part some what perfect. Humans, animals, critters and anything else that you might want to animate tend not to be perfect. Take for example the human walk. We seldom take the same steps or casue the same muscles to act the same way with each and every step. We are infininately variable, this is difficult for a computer program to simulate.

This is where you the artist must enter the picture or pictures and make sure that you add enough variance in your animation so that it does not look computer generated. You might say that you need to introduce noise into the entire process. Noise being the difference from one key frame to the next. Many programs allow you to use a cycle. Cycles are for the most part too clean and give away the fact that a computer made the animation.

The masters of animation knew this and they strove to study models of movement so that they could anticipate the viewers feelings. Animation is an art and a science and as such it requires that you study the world around you.

Its always a good idea to take video of movements and use this video as a reference when you are making an animation. Using extreme positins and anticipating the viewer is the difference between a good animation and a great animation.

The final aspect of any animation that is to stand alone is the story. Remember always tell a story. There are is no end quality visual animations that fail to acheive the desired goal because they did not tell a story.

Don't become totally involved in the look of the object, let the object come to life and tell a story. The story does not have to be a vast 3 hour epic, it may only last seconds, but it still needs to tell a story. Stories can be as simple as an animated button that screams to the viewer, "hey click here," or a cute looking character that walks begging you to follow.

You are the creator, let your efforts tell a story. The quality is in the details, and the details are everything. Now go, make a movie, and have fun.

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Tutorial Section

This section of the user guide will show you how to build various objects and in some cases how to animate them.

The objects that you are asked to load are in the Organica directory. If for some reason they do not appear they can also be found on the Organica CD.

Don't be afraid to change the objets that you will work with. The only mistake you can ever make with Organica is to not try.

Have fun and Play!

The Human Head

Organica makes the process of creating a head really very simple. However before we show you how, we are going to try and show you what most people do and why it might be wrong, or more difficult to acheive the kind of success that you want.

When you look at a human head, what do you see? You see, a round cranium, jaw, eys, nose and lips. In some cases you even see an ear or two, and of course you see hair.

But what do you really see? Do you see the cheeks, the area around the lips, the upper lip that protrudes, the bags under the eyes? Most likely you see all of these things but you don't really pay any attention to them because we see faces all day long. We have become adapted to seeing heads, faces, and bodies. The only time we pay extra attention is when the things we see are not normal. Things like bald heads, larger then normal ears, spectacular eyes or in some sad cases a disfigurment.

Now take these observations and apply them to 3D programs that deal with points, edges, faces, splines or nurbs. The process of creating a human head is a daunting process when you have all those contorl points to worry about. Most of the time you end up with something that looks like a human head, but with out the details.

The reason is simple, there are too many controls to deal with. Organica is different. With only a few objects you can create a human head that has a great deal of detail, and is easy to make.

The human head is not a big ball with stuff hanging on it, but in oLur tests it seems that Organica users start this way. To save you some time here is a model that you might want to steer clear of.

Tutorial Section

The following model is not much of a human head, it has most of the parts but you would probably not be satisfied with this kind of model. Lets take a look at what went into the making of this model.
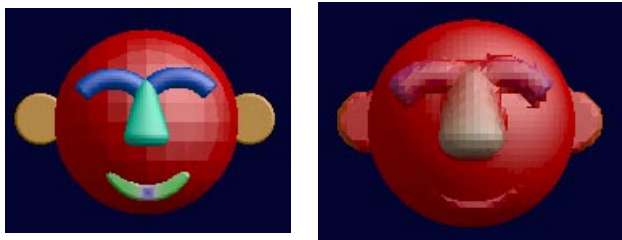
The left view is what the model looks like in the front view. The right view is the mesh that you would see in the perspective view with the Show mesh menu turned on.

Sure, it might pass for a cartoon head, but certainly not for a real human head. There are only 7 objects that you must control to make this cartoon head. But there are some parts missing such as the eyes.

If you think about the human head you can see that the eyes exsist in a depression on the face. The first thing you might do is to add a couple of spheres with a subtractive value to create those eye depressions. Here is what it might look like.

We added two spheres that were subtractive. (remember to do this just click on the subtractive object button in the properties dialog) You can see in the mesh view that we now have two deep depressions where the eyes should go. There are now two sphers in the depressions but the head still looks like a cartoon head. Nothing wrong with this process but it falls short of making a realistic looking human head.

Tutorial Section

The head that we created had only 11 objects. The good thing about this is that we don't have too many things to keep track of in order to get at least a simple cartoon head up and running. So will it take thousands of objects to create a realistic looking head? NO not at all. Here is a human head with 32 objects, still not enough to cause you any real confusion.

There is a sphere to establish the upper cranium, with another sphere in the back of the head to elongate it. The eybrows are curved and much smaller than our cartoon characters. The nose has 3 parts, and the lips are two bent tubes. Note also that there are a few red objects as part of the head.
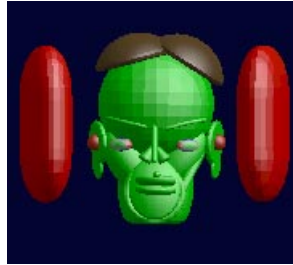
For this example all the red objects represent subtractive objects. Note that there are two eye depressions and two small spheres in the ear. Thay create concave surfaces like in a human ear.

The jaw has been created with a half sphere. A few other small spheres have been added to fill out the head.

On either side of the head are two large red blocks that are subtractive objects. They cause the head to be a bit flatter on each side. Unlike our cartoon head, this head has a detailed chin, nose and side flateners.

Here is a closer look at the objects in this head.

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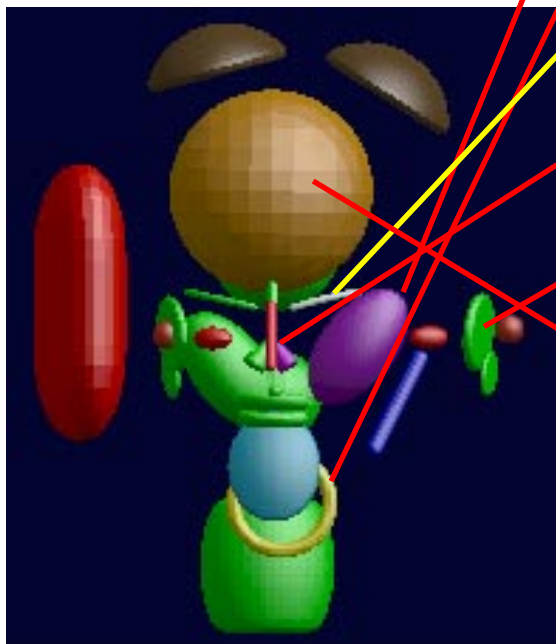
Seen here are the different objects that have gone into making this head. There is a sphere that has been stretched to create a cheek.

A disk creates the chin with a torus surrounding it.

The eye brows were created using a bent tube.

The nose has been created by using a tube and two cones.

The ears were made with two disks per ear and a subtractive sphere set to create the ear depression.

The main cranium was created with a simple sphere.

As you can see, a few objects bent a bit and squeezed a bit here and there and you have the makings of a great looking human head.

Here are few ideas to help you in the process of making a great human head. Take some pictures of someone that you are close to. Take a front view and side view. Use these images as a reference quide to building the head you want to create. We have taken these pictures and copied them with a plain paper copier and have drawn the primitives that create the head on the photograph. If you have a scanner you can scan these pictures and load them into the front and right views. Using these images as the base for building your objects. You will learn the most from playing, so if you make a nose to big, so what, you can change it.

Tutorials

There are several different heads included with Organica, so you can load them and take a look at how they were created. We suggest that you play with these heads before you strike out on your own. Take them apart, and if you re-save them do so under a different name with the **save as** command in the file menu.

Here is another head that were created with Organica.

This object was created by
Mr. Chuck Needham

Front view

Here is the head meshed in the perspective window.

There are a total of 51 objects in this head.
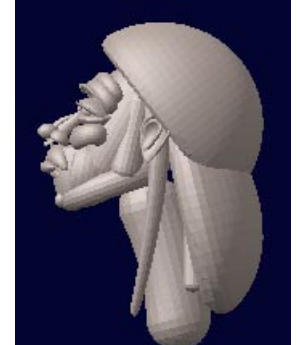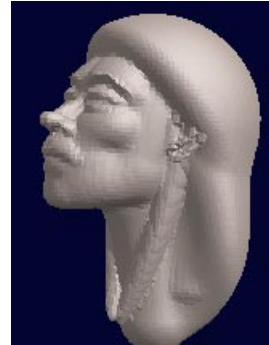
side view

See how the jaw juts out from the cranium, and how the objects are combined to create the cheek bones.

Using a model will help with your creations. As we began making objects with Organica we used dolls, action figures, childrens toys. Almsot anything that we wanted to make was found somewhere as a real object. Being able to hold the object and study it made it very easy to create.

Tutorials

As we have said from the very beginning of this users guide, Organica is easy to use. The best tutorial is an object. Take a look at all of the objects that have been included with Organica. Load them and take them apart. Look at what has been done to them with the bend, taper, twist and shear functions.

The following tutorials are about functions like clone, or how to use objects as paint brushes. There is also a tutorail on creating a hierarchy so that you can create characters that walk, dance, run or just stand around and look cool.

Objects, as you already know are made from a combination of the 25 meta bloxs. Each block can be deformed in any number of ways. Putting them together to make a final object like a human or animal is nothing more than putting them in the right place. Unlike polygon or spline modelers you don't have to keep track of thousands of points, faces or edges.

In the process of making an object there will be times when you want to create an object that moves such as human legs a walrus or a round candy character. If you are going to make an object which is going to be static, you won't have to use the clone function that much.

Here is a picture of a walrus. This Walrus was made by Alan Lorence. Its very simple and elegant. Only a few objects were used to create this object. Also note that it has been 3D painted with other objects.

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1. Add a sphere to the scene. (its a good idea to delete all other objects for this exersize) Increase the size of the sphere in green (y). Make it about twice the size that it was by default.
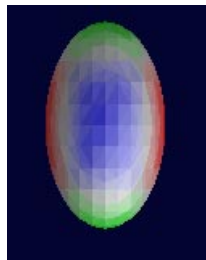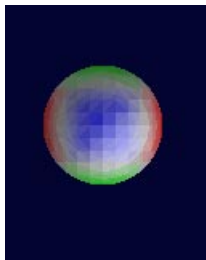
You make the sphere bigger in green (y) by selecting the object and then hitting the enter key, or double clicking on the object to bring up the properties dialog. Go to the deformation tab and increase the green (y) slider. Now this is a WYSIWYG kind of thing. There are small tick marks on the slider to give you some indication of what you are doing. All you have to do is watch the sphere as it increases in size. When you move the slider watch the object grow in either the right or top views.

2. Make a copy of that sphere (control C) and click on the Paste button in the left hand tool bar.

3. Move the cursor over to the right of the sphere in the top window and click or paste down the copy that you made. It should look something like this.
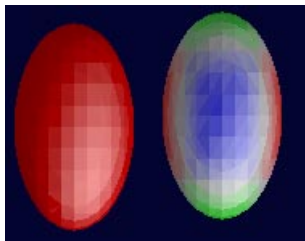
4. Now scale the second sphere or egg that you just pasted into the scene to be three quarters as large as the other one (its the red one.) Do this by clicking on the scale button in the left hand tool bar. Hold down the left mouse button and move the mouse around, you will see a small number appear to the right of the cursor. Watch the number and try to get it to be .75 (thats point 75 or 3/4)

You should have two objects that look similar but the one on the right is 3/4 the size of the one on the left.
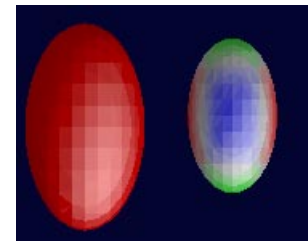
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5.   OK so far? One more thing to do, make a copy of the smaller of the two egg shapes. Use Copy and then use the Paste function to put another sphere to the right of the smaller sphere. Once the sphere is pasted down scale it to be 3/4 or .75 of of the pasted size. Things should look like this once you are done.
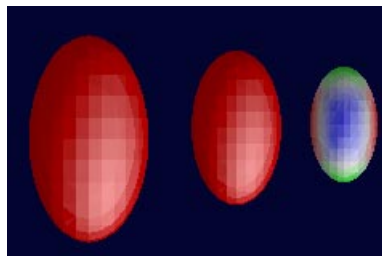
6.   Now for the fun part. Hold down the left shift key, (either would work, if you are left handed use the right shift key.) this puts you into MULTI PICK MODE. Make sure you are in select mode, that is the icon in the upper corner of the left tool bar, its the green arrow. Now starting from the large sphere, (remember to hold the shift key down during this process) select the big sphere, then the middle one and finally the smallest one. You should have a top view that looks like this.
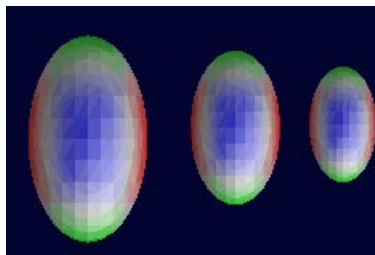
7. Now choose the clone button from the right hand tool bar. Once you have done this you will see the clone requester, in the final count data box, type in the number 7, it will most likely default to 11. Just change the number and click on the OK button. Almost instantly you will see something that should look like this.
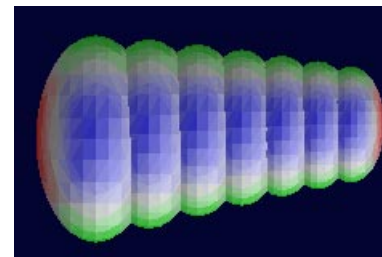
8.   Notice also that when you clicked ok the Group objects check mark has been selected by default.

This is fine for most cloned groups, it makes things re-cloneable in the future. Which we will do next. For now the perspective view should look like this.
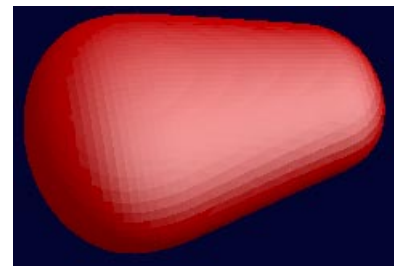
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9. In the top view, depress the right mouse button and change the view to Hirearchy mode. This will remove the objects from view and show you how they have been grouped. The red lines are connected between the white squares. This Hierachy is a cascade grouping. Cascade means that each object up the chain is the parent of the objects lower in the chain.
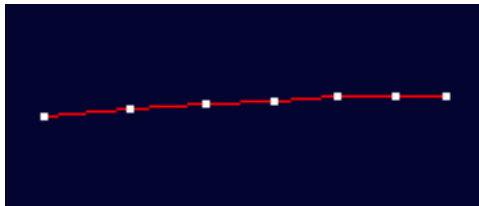
10.   If you started your multi select from left to right, the hierarchy has been created from left to right, with the left most object being the master parent. With the mouse click on the group mode icon, you will find it in the left hand tool bar towards the bottom.

11.   Now you are in gourp mode, so lets go back to solid mode, depress the right mouse button in the top view and choose solid mode from the menu.

12.   Back in solid mode make sure that nothing is selected. Just click on the screen anywhere there are no objects.
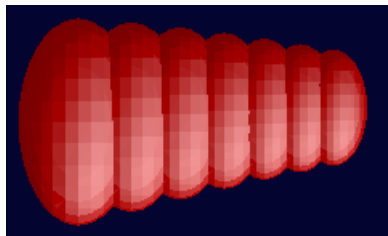
You should see something like this.

13.   Ok you have created a cloned object. Not so hard was it. Remember that only same objects clone. If you had added a cube in the middle and tried to clone them you would see that the clone button on the right would not light up so that you could click on it.

14. Still in group mode choose the rotate tool. From the front view choose the middle egg shape. Note that all of the eggs to the right of that egg are also selected. You should see this.
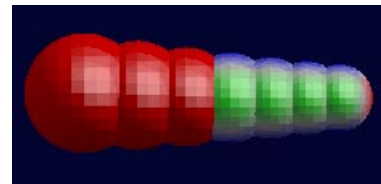

15. Finally we need to restrict our rotation to the Y or green axis. By default the Z is turned on, just click on the Y in the left tool bar.

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16. After you clicked on the middle egg and see that all of the eggs to the right of that egg are selected, keep holding down the mouse button and move it left so that the egss rotate in Y(green) upward. Things should look like this.
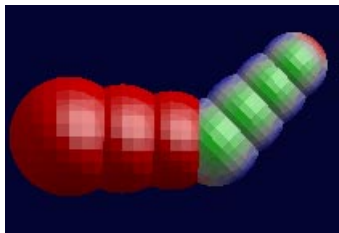
There you have done it, take a look at the perspective view. You made the body part of the walrus, very nice job.

Lets review, we added a sphere, scaled it in one axis, copied and pasted it two times, reducing it by .75 of the original size, and then you clone it 7 times, with the hierarchy turned on so that you created a grouped object which could be recloned at a later date. You rotated part of the group by entering group mode and re-strained that rotation to the Y axis (green).

You did real good. Try some other kinds of objects, remember that color as well as all deformations clone as well. Just think of the cool shapes you can make with very little effort. Here are a few we made.
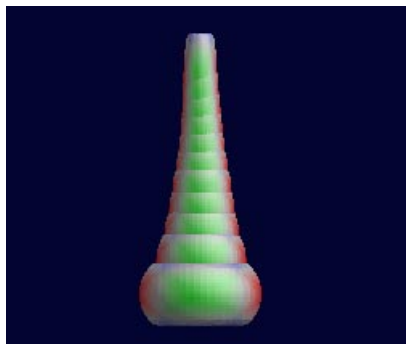
Your turn. Go play before you go on to any further tutorials. Remember to save your objects as you go along, they are very small so don't worry about disk space.
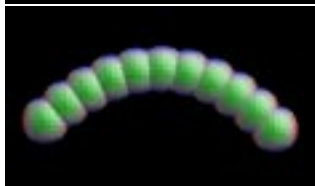
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Step 1) Add three spheres and put them in this order.
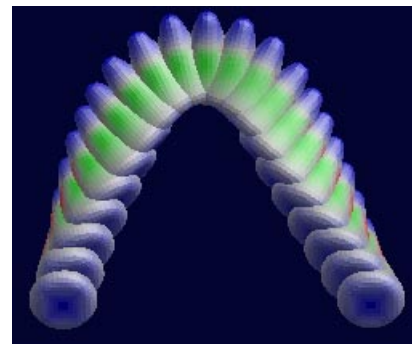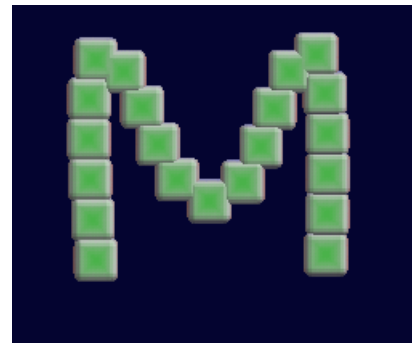
Tutorials

Clone has one other feature that you will find very usefull, Reclone. When you make a clone set, by default you create a hierarchy grouping. Imagine that you were going to create an eyebrow for a character. As you work with the character you decide to animate the character. The animation calls for the character to have some really cool looking facial movements. One of them is the raising of the eyebrow.

Step 2) Use the clone function and accept the default of 11 for the number of new objects.

Step 3) Move the center shpere up a bit as shown here and then select the three spheres as show. You must select them in order from left to right.

If you had to rely on moving around points or some sort of internal bone function you would spend lots of time just pushing faces around. With Reclone you can simply reposistion certain parts of the final clone and then use the clone function again. When you use the clone function this time you will see a different dialog asking if you wish to reclone.
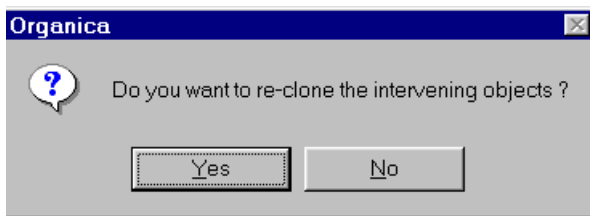

Step 4) When you see this dialog box answer yes.
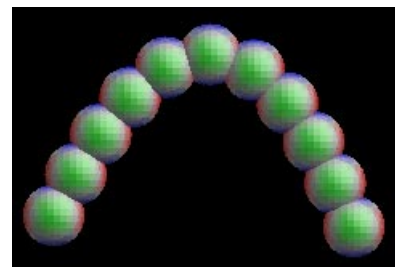
Step 5) As you can see the spheres that were first cloned have been reset along the new path that you crated in step three.

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Tutorials

Painting... While we don't have any cute icons to represent an airbrush, painbrush or pencil. In Organica we have implemented a new feature for 3D. You already know that an object can affect the mesh of an over all object when added to the group. You have do doubt seen that if you add a red ball and a white disk, the disk paints on the red ball as well as adding to the mesh.
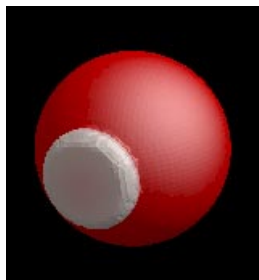
The sphere to the left has the disk added to the mesh, the color strength has been increased to a value of 10. Each object has its own internal strength, so you may have to adjust the color strentgh in order to make it show up.

In the image to the right, the disk has been given a 0 (zero) value for mesh strength, while all of the other values have been left the same as the one on the left. Instead of adding to the mesh the disk now paints the sphere.

This feature is great for creating all kinds of overal paint treatments. Take another look at the walrus by Allen Lorence. We have added the front view so you can see how certain objects were used to paint the pattern on the walrus.
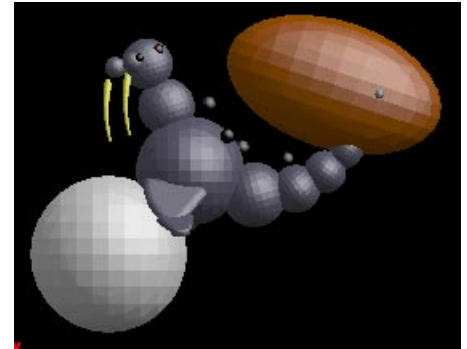
Here you can see a brown and white sphere were added to the object but add nothing to the mesh but do colorize the mesh as shown below. Painting in 3D has never been this easy.

Tutorials

Now we are going to make a hand, group that hand in a hierarchy and then animate it. There will be some verbage to describe what you should do, but pictures tell a better story and are much easier to follow.

The hand is also on the Organica CD. You can simply load it and the animation is already done for you, but that would be cheating, so do the work for yourself.

MAKING THE HAND

We make this hand with a few spheres, a few barells and a cylinder. We are not going for realisim at this point, we will leave that up to you. After you have done this tutorial we suggest you go back and build a cool looking monster hand with use paint objects and make it real scarry.
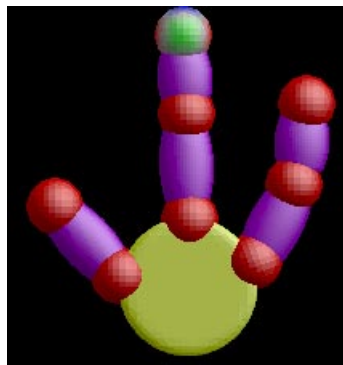
Here you can see the objects, they will have to me rotated to make the setup but thats simple enough to do. So make a hand that looks like the one above.

Don't worry if they look the same, that's not important, just make sure they have the same amount of parts and use the same objects. This is important for the success of the tutorial.
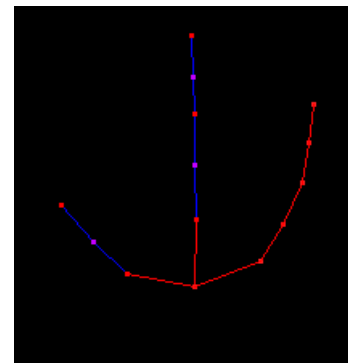
Now you want to create a hierarchy. As you can see the cylinder at the base of the hand is the master parent object.

Hold down the shift key and click on the cylinder, then the first sphere, barrel and two spheres on the thumb side of the hand. Now click on the group button on the right hand tool box, keep the shift key down. This creates a hierachy. Now do the middle finger and finally the finger on the right side. Start with the cylinder and pick the objects in order moving up the hand.

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Once you have the entire hand grouped in hierachy its time to make the animation. Click on the Anim controller button in the right hand tool bar. For the first key frame use the hand in its open set.

Now rotate the fingers by entering group mode, this button is found in the left hand tool bar. Rotate from the base of each finger so that the fingers close in on the palm of the hand.

The wire frame and solid view give you some idea of what this rotation might look like. When the fingers are set at about half closed or something like the pictures, make another key frame in the anim controller.
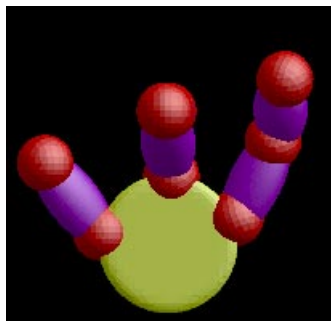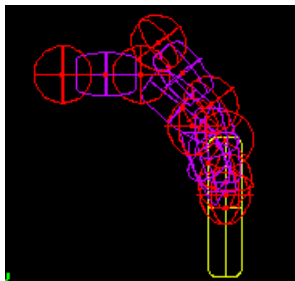
Now lets make the final set for the hand. You might have to rotate the finger groups in both x and z in order to get them to look like this example.

Remember if you get stuck you can always load the hand from the Organica CD.

Click here to see the movie.
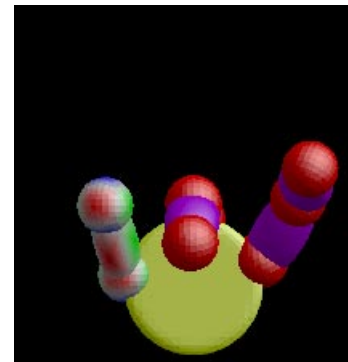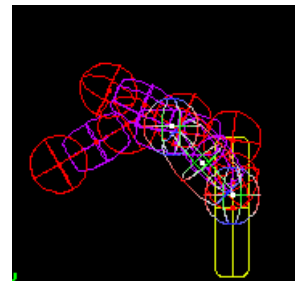
Once you have the third set established, make this the 3rd key frame. Finally make the avi so you can see what it looks like as it moves. See that the objects stay connected to each other as they move along the hierarchy.

Tutorials

Subtractive objects.

This tutorial is meant more as an example base. Using Subtractive objects can be more than a simple gouging tool. You can use the subtractive object option to create holes, and to flatten certain areas of other objects. You can even use subtractive objects to keep certain objects from meshing with other objects.

Here are a few examples. Due to the simplicity of Organica and the obvious nature of these pictures we are going to let the pictures speak for themselves. All you have to do is give each example a try. You will quickly see that this kind of power makes your work even easier.
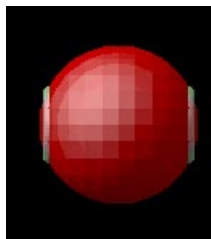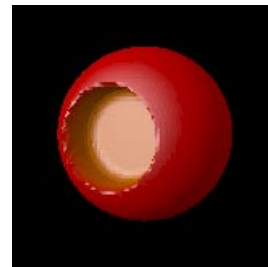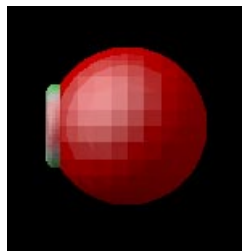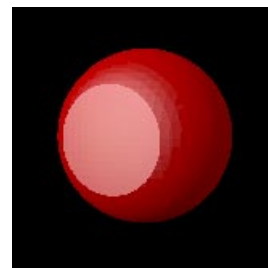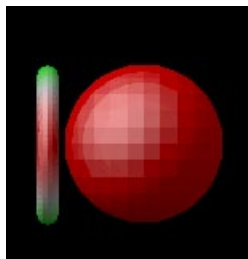
As you can see the disk and the cylinder are subtractive objects, the mesh value of each object has been maintained at 1. In most programs creating boolean operations are at best difficult and in some cases impossible. With Organica these operations are as simple as creating the mesh and adding a subtractive oject to the scene.

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FINAL THOUGHTS

Organica is a powerful program for creating any form of mesh that you can imagine. It begs for you to play like a child. Even though this is a powerfull piece of software, making objects is easy and fun.

Enjoy yourself, have fun and stop by our web site and say, "Hello." There will be an Organica gallery and object exchange area where you can add your own art work or share the works of others. We look forward to your visit.

http://www.coolfun.com   Enjoy!

CREDITS

Our special thanks go out to the following individuals who have helped test Organica and suggested many ways to enhance Organica.

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