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A CreativeCOW Cinema 4D Tutorial



Simulating Fluid Dynamics

using the BhodiNUT Proximal Shader in Cinema 4D XL v.7

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Article Focus:

In this article, Mark Simpson demonstrates how to use the BhodiNUT 'Proximal' shader in the displacement channel of a standard material to simulate the ripples created when an object is dropped into a body of water.

This project requires Cinema 4D XL V7 or later (no external plug-ins are required)..

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Step One:

First of all we will need a body of water and a container. Create a cube with the settings as shown in figure 1.1

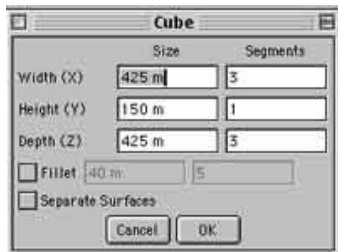


Figure 1.1

Make it editable and switch to point mode. Choose the selection tool and uncheck the "Only Select Visible Elements" switch. In the top view (XZ), select the two rows of points as shown in figure 1.2, then change the size value for X as shown in figure 1.3

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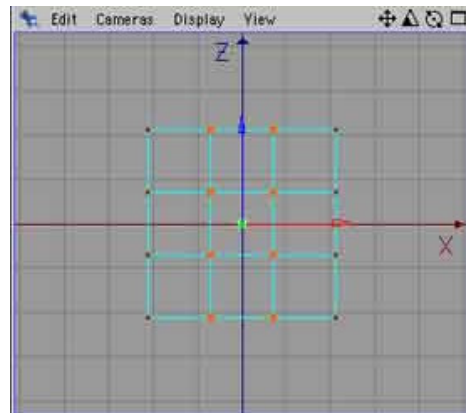


Figure 1.2

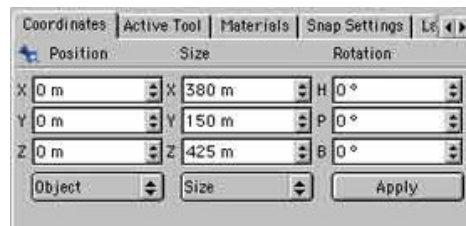


Figure 1.3

In the top view (XZ), select the two rows of points as shown in figure 1.4, then change the size value for Z as shown in figure 1.5

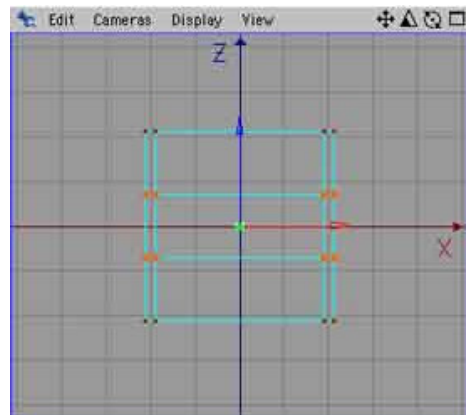


Figure 1.4

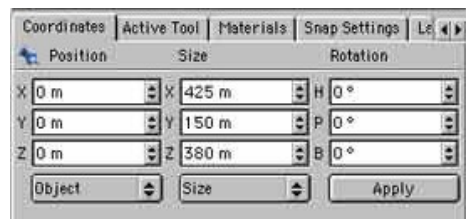


Figure 1.5

Switch to polygon mode and in the top view (XZ) select the middle polygon as shown in figure 1.6. The middle polygon on both the top and bottom surfaces should now be selected. In the perspective view window switch to isoparms or wireframe display, and then use the bridge tool

to cutout the middle of the cube. You do this by clicking and dragging (with the bridge tool active) from any corner of one of the selected polygons, to the 'same' corner of the other selected polygon. When you release the mouse button you should have something that looks like figure 1.7

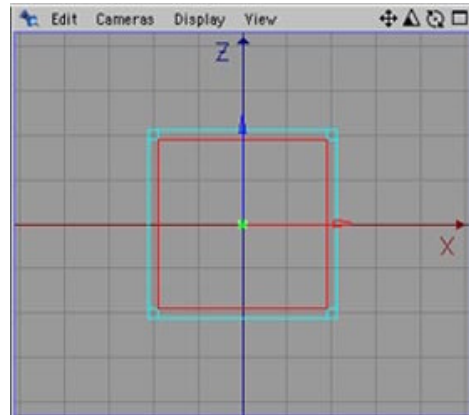


Figure 1.6

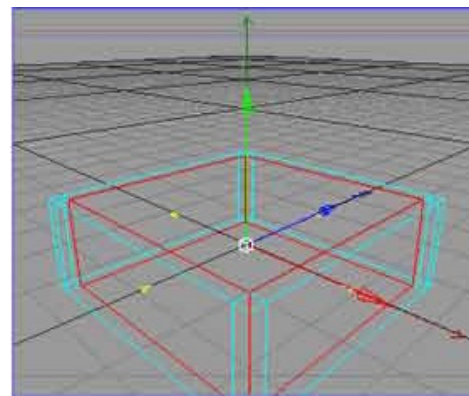


Figure 1.7

Switch to the model tool, and set the y position value as shown if figure 1.8

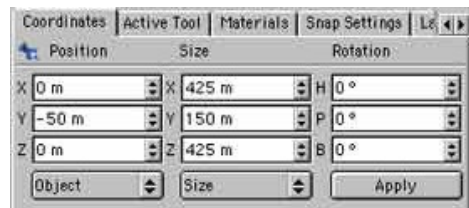


Figure 1.8

Step Two:

Next we need to create a water surface. To do this create a 'plane' object, and adjust it's settings as shown in figure 2.1, then make it editable. You should now have something that looks like figure 2.2. We're cranking the subdivision up some here because we will be using the displacement channel here to distort the geometry of the plane object. The higher the subdivision, then smoother and more realistic the distortions, but also the higher the scene complexity and render times. I chose a value that's high enough to demonstrate the effect, yet still keep the poly count and system requirements relatively low.

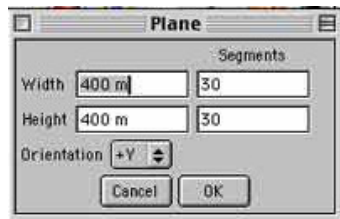


Figure 2.1

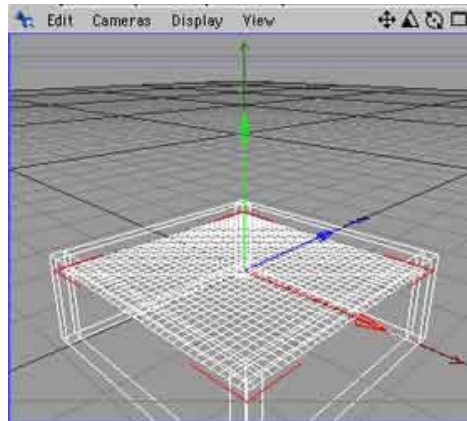


Figure 2.2

Step Three:

Next we will be texturing the surface. Create a new material, and choose a color for your water surface, Then activate the 'bump' channel, and assign Bhodinut 3D noise in the image field using the pull down menu, as shown in figure 3.1. Then click on the 'edit' button and set up the 3D noise shader as shown in figure 3.2. Click 'OK' (don't just close the window or you'll lose your settings). The animated 3D noise in the bump channel, will give us a simulated caustic water surface, by using fractal noise to make the surface 'appear' distorted.

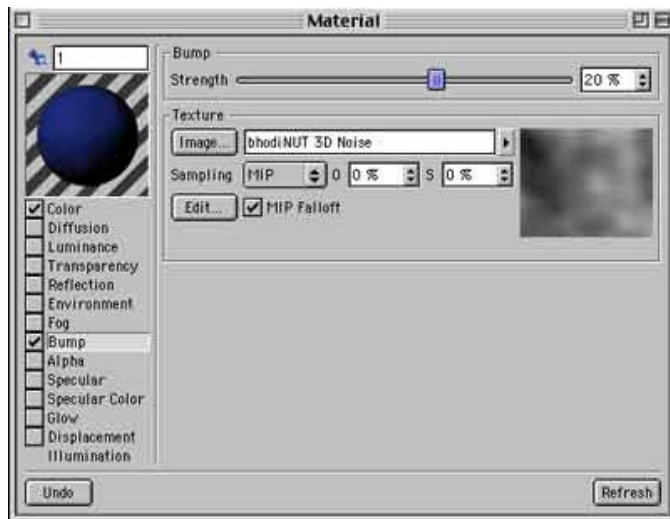


Figure 3.1

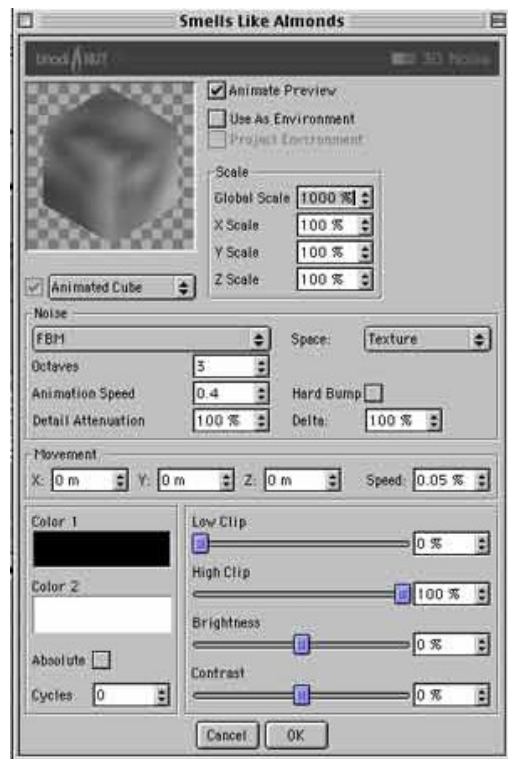


Figure 3.2

Now turn on the reflection channel in your material and choose a reflection color. See figure 3.3. Next, turn on the specular channel, and set it up something like shown in figure 3.4. Close the material dialog and assign it to your 'plane' object.

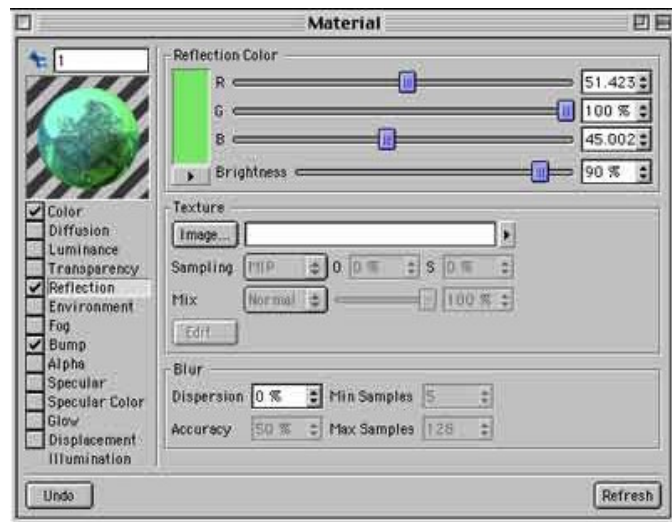


Figure 3.3

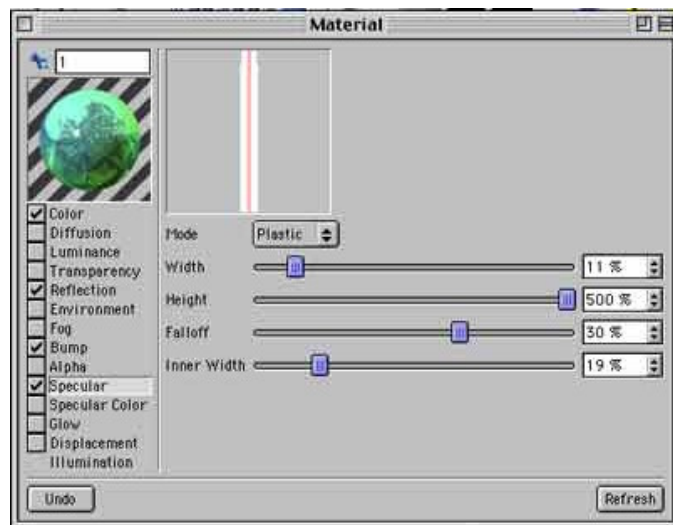


Figure 3.4

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