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0006-Displacement Textures

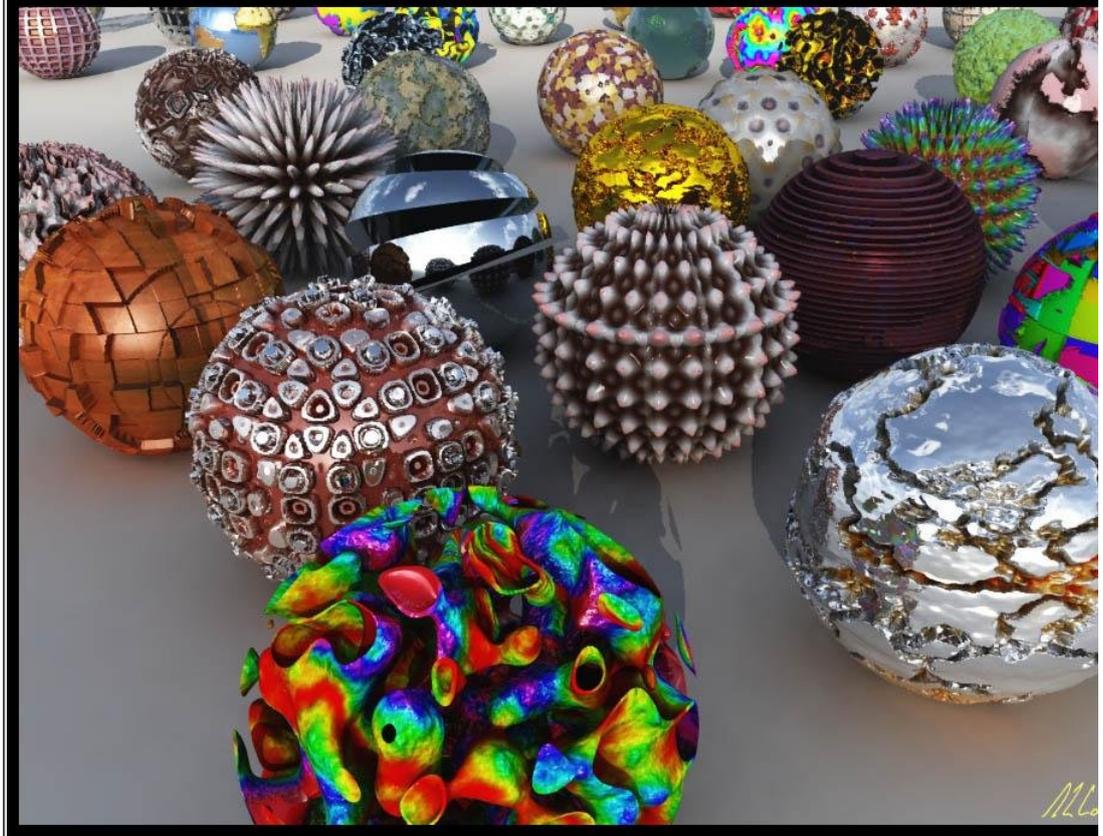
Displacement textures (or displacement mapping) is a new feature in Vue 6.

I started playing around with them the first time I had a chance to play with Vue 6. Awesome!!!

Displacement textures are just like bump maps, except they actually change the shape of the object in 3D. They are not difficult to do, but the imagination possibilities.

Throughout this tutorial I refer to materials and textures. These mean both the same thing in the context of this tute, and if I change term, sorry.

Enjoy the tutorial and hope you learn something.



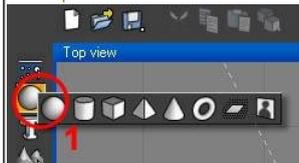
The multi-coloured ball up the front is not a displacement texture. It is a hypertexture which is created differently.

Follow these steps to create a displacement texture:

[Start a new scene.](#)

Load a light atmosphere. see [Loading a Spectral Atmosphere](#)

[Add a sphere to the scene](#)



1. Click the sphere object to add it to your scene. If your icon here is not a sphere as in the image, hold your mouse down for a second and the pop-up can change your default shape.

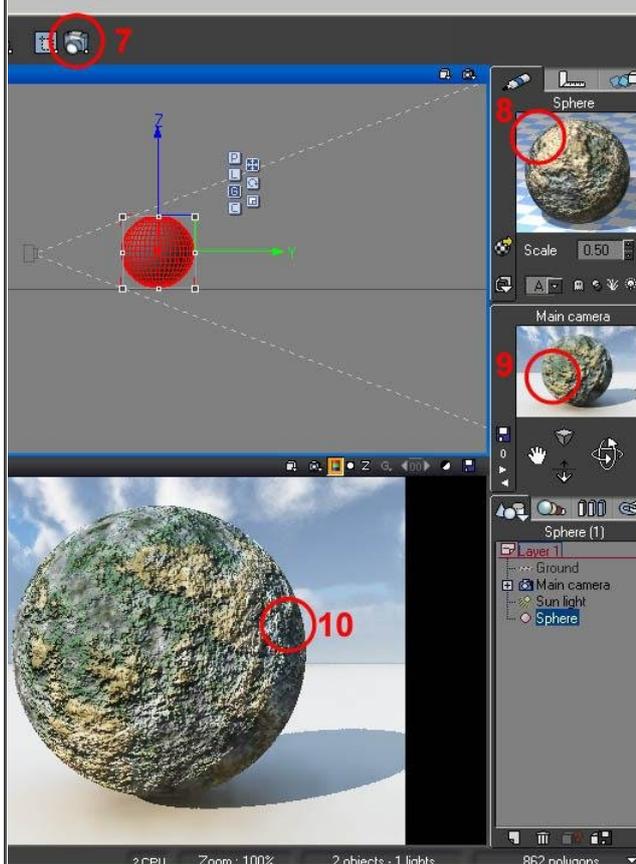
[Apply a texture](#)



2. Move your sphere around the scene until you center it within your camera view
3. Click the "Load Material" button
4. Select the "Rocks" Category
5. Select the "Old Rock" Material
6. Click the "OK" button

Render it

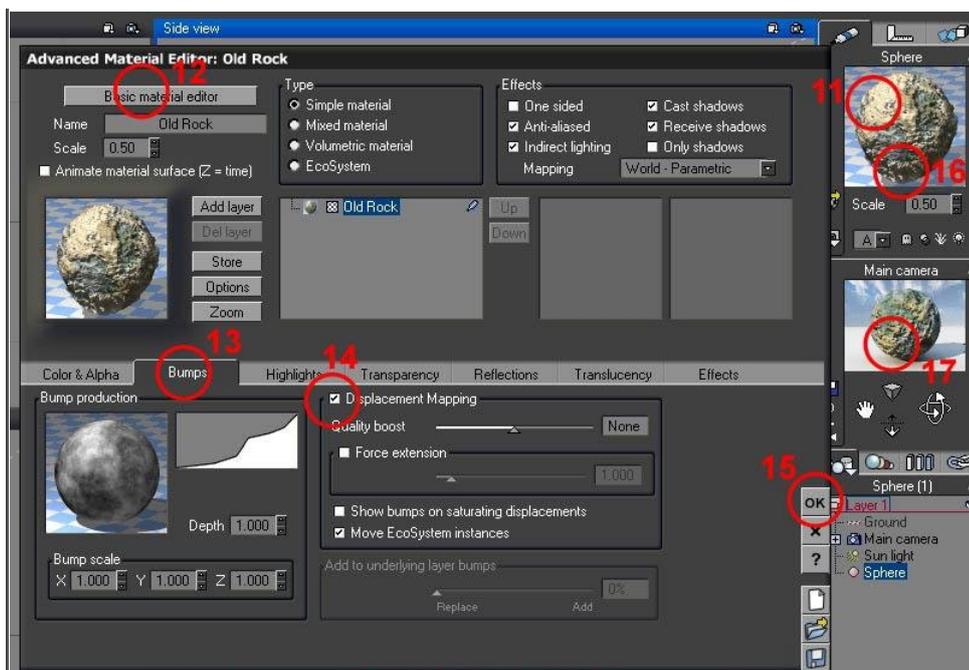
This will render the scene into the "Main Camera View" with "Preview" mode. The current material should only have a "Bump" applied to it.



7. Click the "Render" button
8. Notice the round edges on the "Material" window
9. Also notice that the "Main Camera" preview window has round edges
10. The main render will have a completely round object but with a bump map within the material. You can see the shadows of the bump near the edge

Apply the Displacement

Now we are ready to apply the displacement material



11. Double click the "Material preview" window to open up the "Material Editor"
12. If you are still in "Basic material editor" mode, then click the "Advanced material mode" button
13. Click on the "Bump" tab
14. Check the "Displacement Mapping" checkbox
15. Click the "OK" button. Just 5 buttons below this button you also have the "Save" button, so you can save your material
16. On the "Material Preview" window you can now see that the object is not round anymore. The entire object is displaced by the bump factor.
17. In the "Scene Preview" window you will notice (at the time of writing this tutorial) that the object hasn't been displaced. This is not what the scene

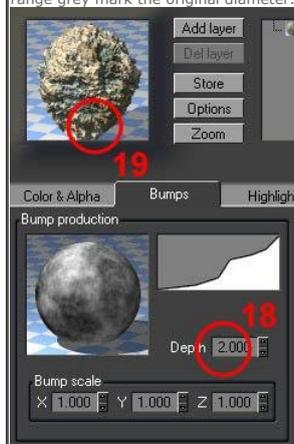
Render the displacement

Take a note of the time that the render takes. It will always be slower than using a bump map. But worth it!!!
 After rendering you will notice that the sphere is no longer a sphere. It now has a true shape of displacement. Much better.



Changing the depth of the Displacement

You can easily make all those indentations deeper. What you are actually doing is pushing some areas in and others out. Black shades go in and white range grey mark the original diameter.



18. Change the bump "Depth" to 2.0
19. You can see the change on the sample image
 The bigger value you make it the bigger the distance between the inner and outer. Try a value of 10.

Some parameters of Displacement Mapping

Here is a quick demonstration of what some of the parameters do within "Displacement Mapping"



- 20. Make sure that the "Bump" is set back at 2 again, if you have been experimenting since the last step
- 21. Click the "Force Extension" checkbox.
- 22. Set the value to 0.5.

What this does is to set a ceiling and floor level for the "Displacement". This will stop the displacements going over that value.

23. You can see where the surface has a ceiling applied to it.

24. Check the "Show bumps on saturating displacements" button and it will apply a bump map to that ceiling area to make it not look so flat.

Have a play with the "Force extension" slider. You may not get the results you are always expecting. Play and you will get used to it.

I won't go into detail here about the other parameters for "Displacement Mapping", as I will deal with them more in other tutorials. Here is a rough...

The "Move EcoSystem instances" will properly apply the ecosystem to the displaced texture. Without this checked, the ecosystem will place the object really be without the displacement texture.

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