Hypervoxel fire

By

Kyle Goodman
Here’s What You’re Looking At
Okay, So Now What?

I. First, How does fire move and what is it made of?
   A. Made of billions of small particles
   B. Particles are “Emitted” from a burning object
   C. Particles travel up due to their low density
   D. Particles bounce off objects in their way
Yeah, and what does this have to do with Lightwave?

II. To create realistic fire one must understand how it moves.

III. In Lightwave there is a particle engine which deals with... you guessed it particles.

IV. Many real-world physical values such as velocity and gravity are present to be manipulated with in Lightwave.
Go on…

V. We can’t render billions of particles, so we use Hypervoxels to give each particle a volume and a texture.

VI. We then use some 2000-5000 particles to estimate fire.

VII. To place the particles properly, we must use the particle engine, which means animation (oh no!)
So That’s the concept, here’s the meat

1. First, we add a “Null,” an object with no dimensions, yet not just a point
   a) In LW [8] under items tab, click Add>Null
   b) Assign it a name
   c) Press ok to create your Null
CREATE THE Emitter

I. Select your null

II. Go to object properties

III. Click on dynamics tab

IV. Click Add Dynamic > Emitter
Specify Values as Below
Specify Values as Below
Now, Add a target

I. Create another null and place it just above your fire
Add Target

1. Return to The Emitter’s properties, and under Motion>target, select the new Null
Move the slider out to see what you’ve done (ooh! Ahh!)

Always, always return slider to frame zero before continuing, or unwanted animations will occur
Hypervoxels

I. Right now, if you were to render what we have done, you would see nothing

II. Hypervoxels will add volume and texture to the fire, ooh, visibility!
Add Hypervoxels

I. Select Window> Volumetrics & Fog Options

II. The effects window will pop up, click add volumetric> Hypervoxels
Do as Follows

I. Double-click on HyperVoxels 3.0

II. Double-click on your particle emitting null to “activate” it
Specify Values as Below
Other Notes

I. My one distant light is set to about 60% intensity

II. Values can be “tweaked” to suit the individual need or for a desired effect

III. Render time is reduced by lowering the render quality under the advanced shading tab in the Hypervoxel settings
More Notes

I. I added a fire pit modeled out of simple boxes to “contain the fire” although it does not effect the movement of the particles

II. Objects can be set to interact with the particles, but this is covered in animation more heavily
And yet more notes…

I. Read up on hypervoxels and particles in the help menu, it... helps...