

Question:

Q How do I replicate dust particles moving in a beam of light to form a word? JODEE, VIA EMAIL

Particles are magnificent – unless, that is, you want to form a word with them.

The fact is, you can't do it.

You can, however, emit particles to replicate a texture map of a word and mess it up with Turbulence. This is fine if you then reverse the order of your images in a compositing package such as *After Effects*, but what about inside *Maya*? Well, thanks to the power of the Particle Cache, it is possible.

Make a square texture map of your word, white on black. Now create a nurbsPlane in *Maya* and click **Particles > Emit from Object**. Set the End Time to 800 and the Emitter's Speed to 0.

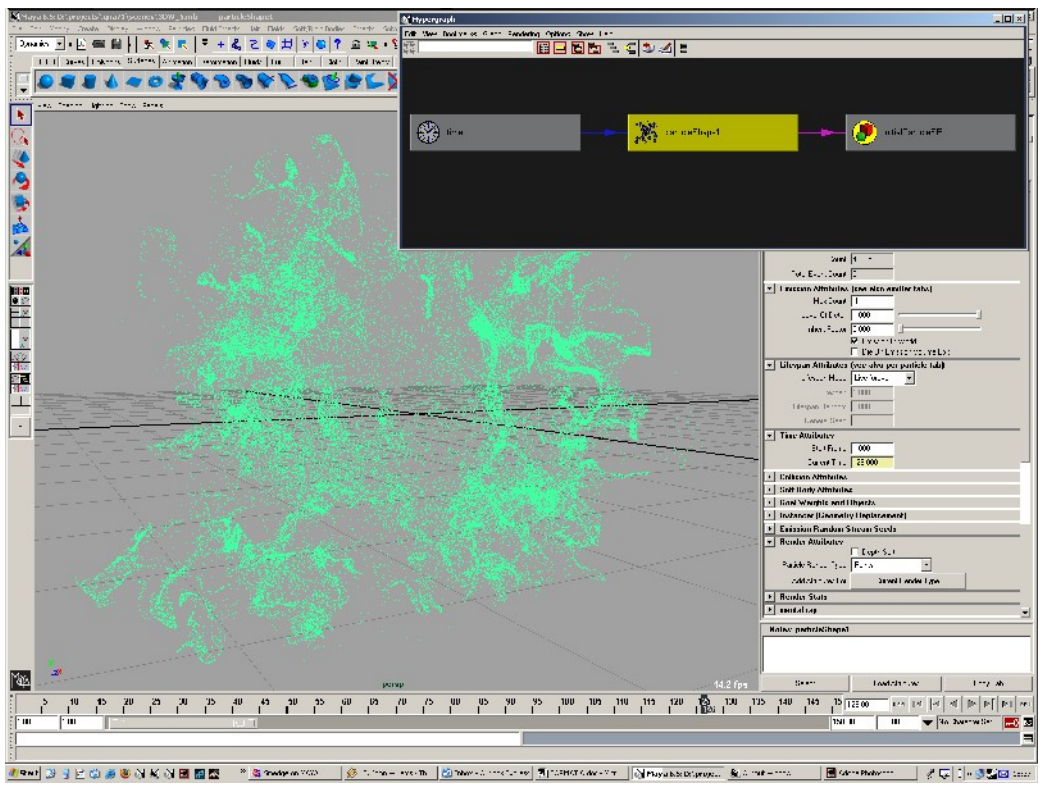
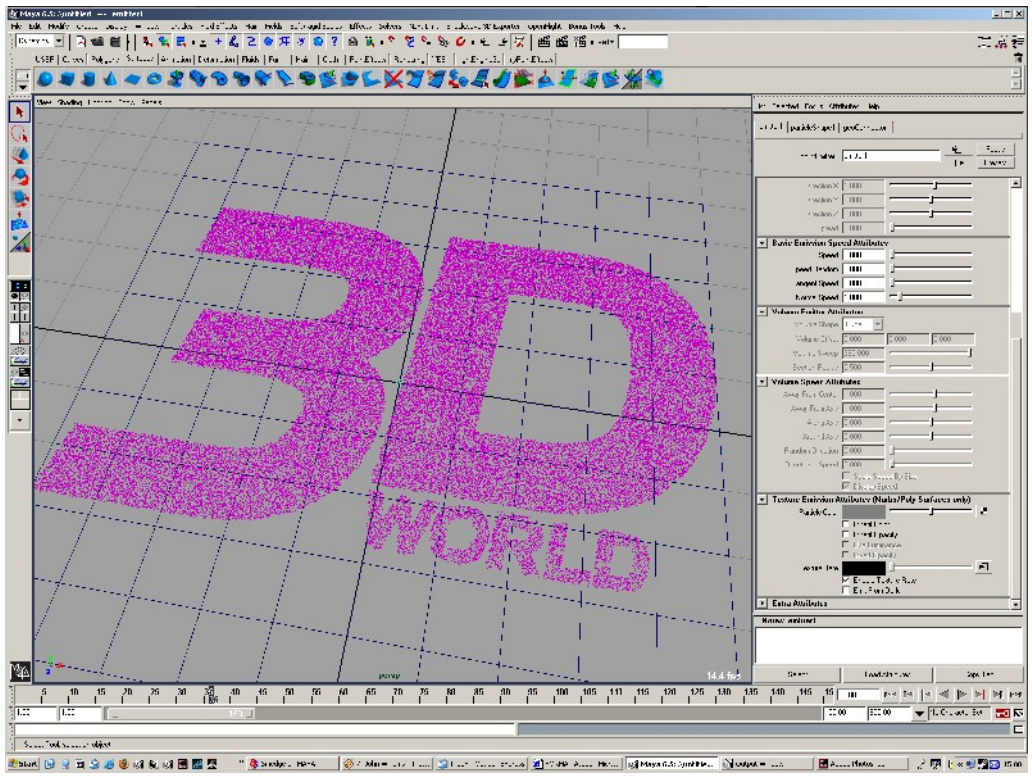
In the Attribute Editor of your emitter, scroll down until you find Texture Rate. Plug in your map here and click **Enable Texture Rate** so it's switched on.

Play it back until you like your particles, then select **Solvers > Initial State > Set for Selected**. Save your scene and delete everything but your particles. Reset your end time to 150.

Now select the particleShape and assign a Turbulence field to blow it about, and a Drag field to minimise the overall movement. Twiddle the values until you achieve results you're pleased with.

Select your particle and click **Solvers > Create Particle Disk Cache**. Save your scene and delete your fields. Now open the Hypergraph. Select your particleShape and, in the Hypergraph, click **Show Input and Output Connections**. You should see a node called *time1* plugged into the particleShape's currentTime attribute.

Your Particle Cache uses this as the frame value for its animation. Disconnect it, but don't delete it. Now reverse time by keying 150 at frame 1 in the particles' CurrentTime and 1 at frame 150.



Quick Tip:

This process can also be used to great effect with fluid dynamics to create words forming from smoke