

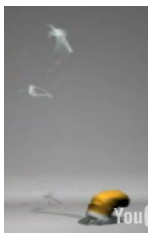
TWIRL OF SMOKE

How to make some smoke with Blender ?
Or how to fake the mixing of two liquids ?

There's an example here :

<http://fr.youtube.com/watch?v=csKRETgZIGI>

This tutorial will teach you the basis in order to do this.

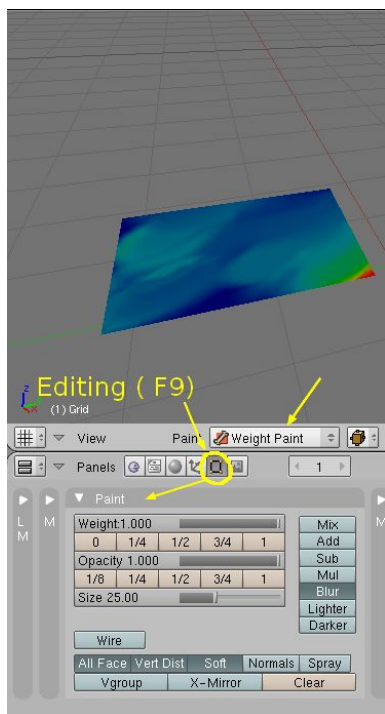
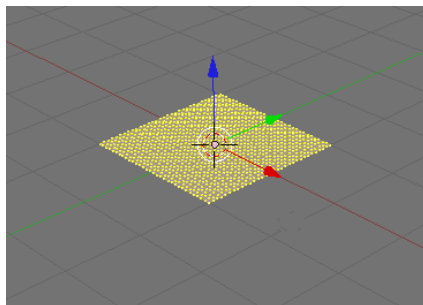


PART I : the actors of the sequence

First, launch Blender, erase the default Cube then add a Grid.

Space Bar > **Add** > **Mesh** > **Grid** (32 x 32).

Go back to the Object Mode : **Tab**.



Next, with the grid selected, switch to the **Weight Paint** mode : **Ctrl + Tab**.

Then paint your grid in order to get only one orangish-red point and the rest from yellow to blue.

Use the **Paint** tab, in the **Edit** panel (**F9**).

Mix, **Add** and **Multi** > used to mix, add or multiply the weight paint,
Sub > allow to subtract some weight,
Blur > very useful, used to smooth the weight paint.

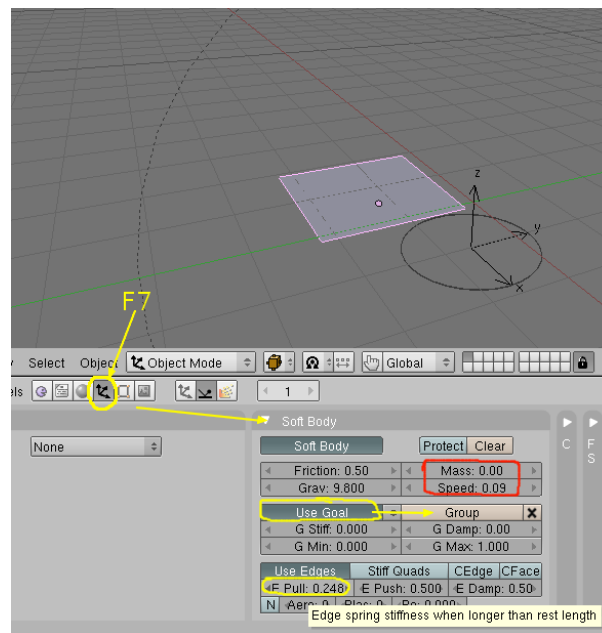
Add the deflector object
(Deflector modify the direction of active objects : particles, soft body etc.)

Place an Empty : **Add** > **Empty**, just below the corner of the Grid where the weight is at its maximum.

Enable the **Deflection, Physics Button (F7)**, then set it up like this :

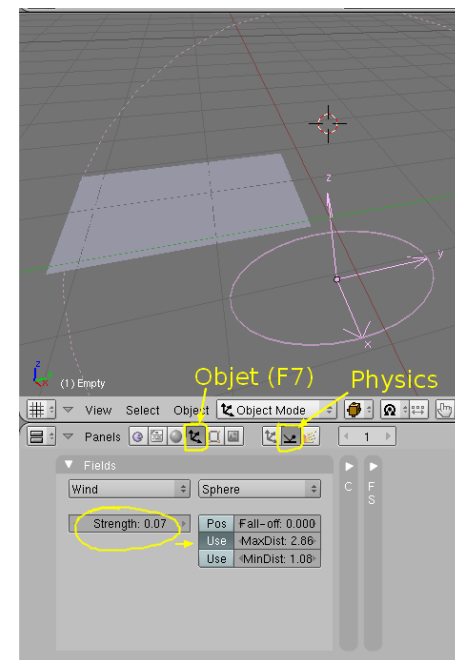
Wind with few **Strength** : between 0,02 and 0,010

Enable **Use Max Dist** then type the maximum distance you need. That will decrease the wind's influence in function to this distance.



That's done ?
So, let's go to the test step.

In order to launch a preview animation in OpenGL (our 3D window), set the camera view (**0** Numpad key), then press **Ctrl + A** onto the 3D window. Change the soft body or deflection settings consequently.



Give some softness to our Grid thanks to specific adjustments on Soft bodies, we will achieve the illusion of a soft and aerial material.

Select the Grid, open the **Object** panel (**F7**), and the **Physics** panel. Next, access to the **Soft Body** tab, and set it up like this :

Mass to 0 (or extremely low) very low **Speed** (tip : you can increase it for the preview then decrease it for the final render.)

Enable **Use Goal** > **Group** (to take account of your Weight paint)
Enable **Use Edge** and decrease it to the half (the edges can now stretch according to the need of our simulation).

PART II : ethereal material

The settings of our smoke will fake a quite realistic smoke, with fast render time :-).

Give a material to our Grid

Shading panel (F5), then Material tab,

Add New, then test the result (F12) while setting up the options.

Mirror Transp tab : activate the Ray Transparency with :

IOR at 1.00 (no deformation due to refraction of the light)

a bit of Fresnel and move the Fac slider to lower his influence

decrease the Gloss to 0 in order to skip some useless computation, and set the Samples to 1. Depth value will be between 5 and 10 (depth of transparency).



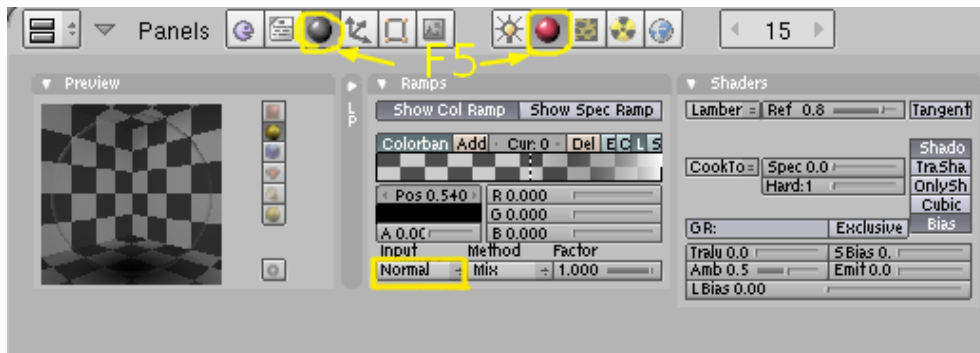
In the Material tab : decrease the Alpha between 0 to 0.25

Open the Ramps tab (usually next to Material tab)

and enable the Show Col Ramp button

Set a blend from white to black, with Normal as input for ramp.

Which would give you a silk aspect.

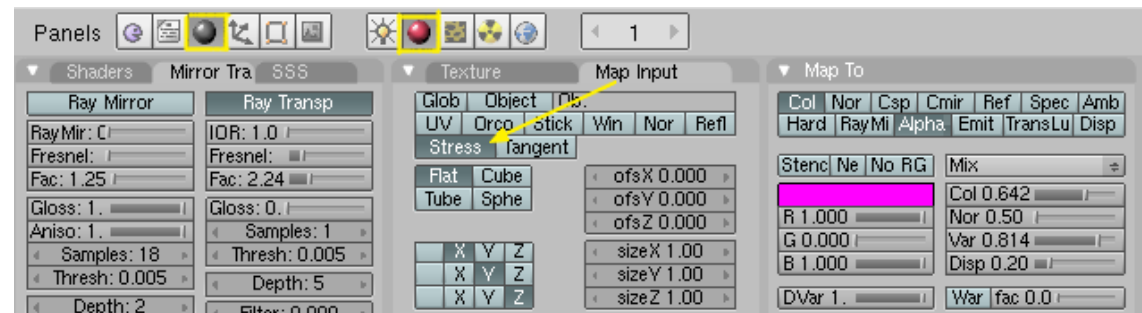
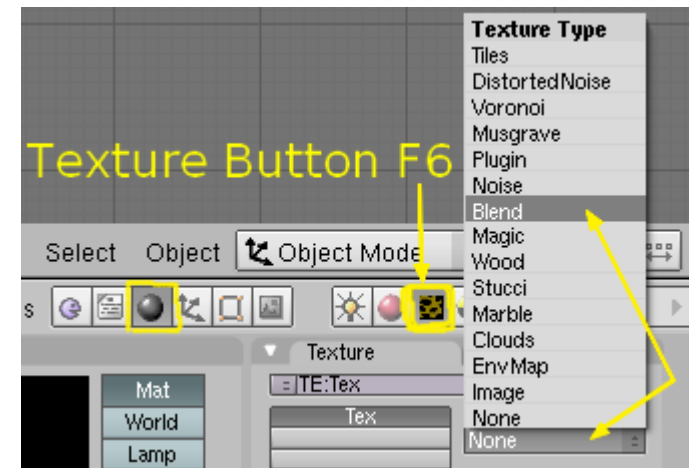


A "new" function can be used here.

The Map input > Stress button vary the blending of a texture according to the deformation of a mesh.

So, add a Blend Texture Texture panel (F6) > Add New > choose Blend in place of None

Go back to the Material panel. Add this texture with Map Input > Stress and Map To > Col and Alpha buttons checked.



Now, you are ready for the final render.

You can start the rendering of the sequence :

Scene panel (F10), choose your file format (Avi or QuickTime for a video), and finally, press the Anim button to start the rendering.

