

3DFOE: 3D For Old IE

Pure JavaScript 3D For Internet Explorer

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The Problem and the Solution

◆ The Problem:

- ◆ You want to have 3D graphics on your website, but don't like requiring a user to install a plugin, or run Java.
- ◆ Also, you need to support the large Internet Explorer browser market share.

◆ The Solution:

- ◆ Use 3DFOE, a 3D library written entirely in JavaScript. *No Flash, no Java, no plugins* – with full support for Internet Explorer 7, 8, and 9.

How it Works (The Basics)

- ◆ 3DFOE combines and enhances multiple JavaScript projects to allow for the rendering of 3D graphics in Internet Explorer, without plugins.
- ◆ Using 3DFOE is just like using Three.js, which is the 3D library 3DFOE uses for rendering. If you know Three.js, you know 3DFOE.

3DFOE's Inner Workings

- ◆ 3DFOE uses the Canvas renderer from Three.js, along with Google's Explorer Canvas, which simulates the 2D Canvas in Internet Explorer 8 and below; together, these libraries provide 3D rendering in IE 8 and below.
- ◆ If a browser natively supports the 2D Canvas, Explorer Canvas is bypassed in favor of the native implementation.
- ◆ Modernizr is used to test for a native 2D Canvas implementation.

Current Limitations

- ◆ Currently, the demo's frame rates are acceptable, but not perfectly smooth. Most of the Canvas-based examples that come with Three.js render nicely.
- ◆ Complicated 3D models render very slowly at this time. One of my first priorities is to speed up Explorer Canvas' rendering to allow for the smooth animation of complex 3D models.

Future Plans for 3DFOE

- ◆ **Modularize** the large 3DFOE.js source code file – *let the developer load only what they need.*
- ◆ **Speed up** Google's Explorer Canvas using a number of potential techniques.
- ◆ **Fix 3D model loaders** so IE can use them – *Web Workers (multithreading) aren't supported in IE, breaks some of the model loaders*
- ◆ **More Concurrency** – try adding more Web Workers (multithreading) to Three.js – could make native 2D Canvas and WebGL rendering faster.

Links to 3DFOE Websites

- ◆ You can view a demo and general information about 3DFOE at <http://3dfoe.com>
- ◆ The source code is available at <http://code.google.com/p/3dfoe/>
- ◆ My blog is located at <http://fonte.me>
- ◆ The Fonte Labs homepage is at <http://fonte.me/labs>