

Title: How to Bake Lighting for 3D Websites (Blender + SimpleBake + Web Export Guide)

Overview

This guide walks you through the process of baking lighting in Blender using the SimpleBake plugin and integrating the result into a performant 3D website using Three.js or React Three Fiber.

Tools Required

Tool	Use	Link
Blender	3D modeling + baking lighting	blender.org
SimpleBake (Add-on)	Bake lighting into textures automatically	simplebake3d.com
Three.js	Display 3D content in browser	threejs.org
React Three Fiber	React renderer for Three.js	docs.pmnd.rs/react-three-fiber

1. Prepare Your Scene in Blender

- 1. Open Blender and import or create your 3D model.
- 2. Add lighting to your scene (e.g., Sun, Area Light).
- 3. Switch to the Cycles render engine.
- 4. Adjust camera angles to match the desired website view.

2. Bake Lighting with SimpleBake

Steps:

- 1. Install SimpleBake via Edit > Preferences > Add-ons > Install.
- 2. Select the object(s) you want to bake.
- 3. Open the SimpleBake tab (N panel).
- 4. Choose Bake Type: Diffuse, Lighting, or Combined.

5. Click "Bake Selected".

Why Bake?

- Bakes lighting & shadow into textures
- Eliminates real-time lighting load in browser
- Looks realistic, loads faster

3. Export to .glb/.gltf

1. Go to File > Export > glTF 2.0
2. Choose .glb (binary) or .gltf (JSON + separate textures)
3. Enable:
 - Include > Selected Objects
 - Include > UVs, Materials, Textures
4. Save the file

4. Import Into a Web Project

Option A: Three.js Vanilla

```
<script src="https://cdn.jsdelivr.net/npm/three@0.152.2/build/three.min.js"></script>
```

```
<script
```

```
src="https://cdn.jsdelivr.net/npm/three@0.152.2/examples/js/loaders/GLTFLoader.js"></script>
```

```
<script>
```

```
const scene = new THREE.Scene();

const camera = new THREE.PerspectiveCamera(75, window.innerWidth/window.innerHeight, 0.1,
1000);

const renderer = new THREE.WebGLRenderer();

document.body.appendChild(renderer.domElement);
```

```

const loader = new THREE.GLTFLoader();

loader.load('model.glb', (gltf) => {

  scene.add(gltf.scene);

});

camera.position.z = 5;

function animate() {

  requestAnimationFrame(animate);

  renderer.render(scene, camera);

}

animate();
</script>

```

Option B: React Three Fiber

```

import { Canvas } from '@react-three/fiber'

import { OrbitControls, useGLTF } from '@react-three/drei'

function Model() {

  const { scene } = useGLTF('/model.glb')

  return <primitive object={scene} />

}

export default function App() {

  return (

    <Canvas>

      <ambientLight />

```

```
<Model />  
  
<OrbitControls />  
  
</Canvas>  
  
)  
  
}
```

Extras

- You can host your .glb file on IPFS or Firebase for CDN delivery
- Combine with Shopify Hydrogen for product showcases
- Use "baked" scenes in 3D portfolios or Crystal Seed modules