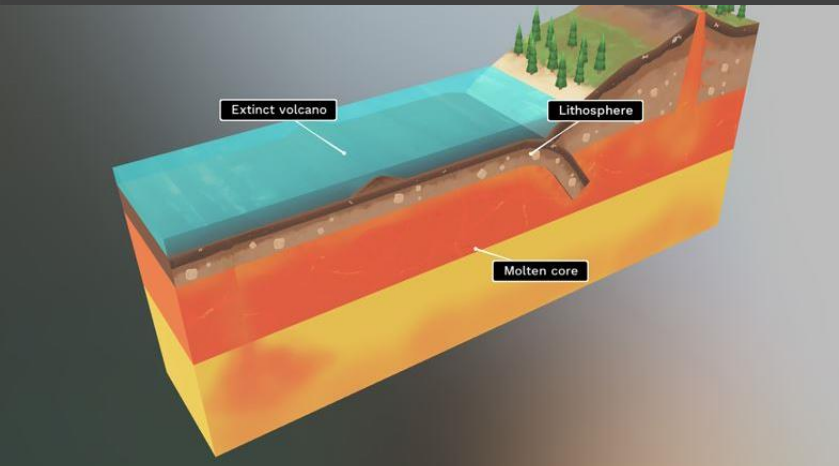


Babylon.js



Trevor Baron
Software Engineer
Microsoft - @trevorjbaron





Babylon.js at a glance

- 3D engine built on top of WebGL (1 and 2)
- Ease of use and performance
- Open source (Apache 2 license)
- Community driven
- Written in TypeScript
- Used across Microsoft and external partners
 - Remix3D, Xbox avatars, Bing, Visio, Dynamics CRM, PowerPoint, ...
 - Toyota, Sony Electronics, US Army, Ubi Soft,...



SharePoint spaces

Particles

Babylon.js Playground v3.3.0-beta.1

Run ▶

New 📄

Clear 🗑️

Save 💾

Zip 📦

Settings ▼

Inspector 🗨️

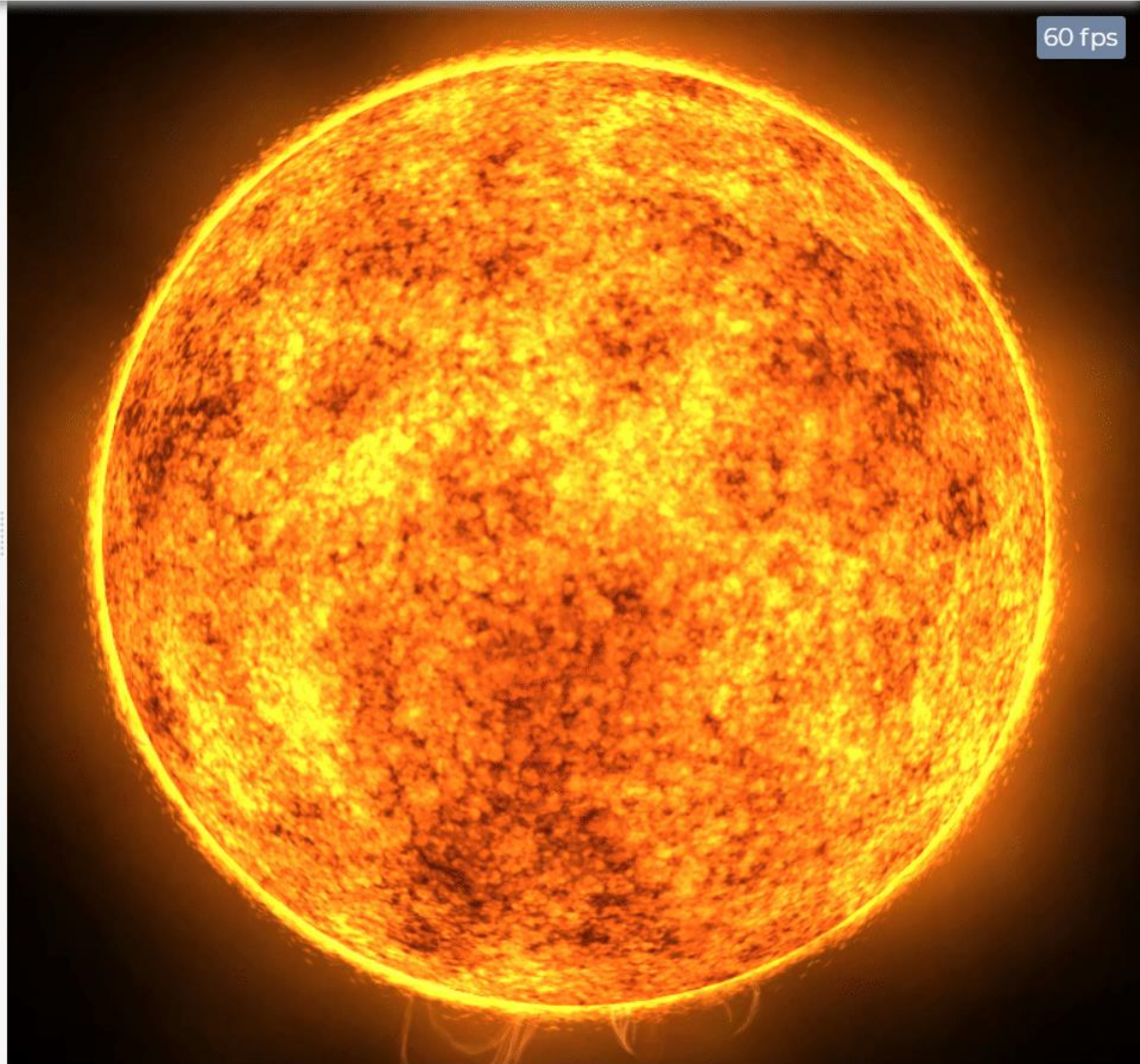
Metadata

Version: Latest ▼

Examples ▼

```
1
2 var createScene = function () {
3   var scene = new BABYLON.Scene(engine);
4   var camera = new BABYLON.ArcRotateCamera("ArcRotateCamera", 1, 0.8, 5, new BABYLON.Vector3(0, 0, 0));
5   camera.wheelPrecision *= 50;
6   camera.attachControl(canvas, true);
7   scene.clearColor = new BABYLON.Color3(0.0, 0.0, 0.0);
8
9   // Lets create a sun effect made of 3 different particle system
10  // Definition: https://assets.babylonjs.com/particles/systems/sun.json
11  BABYLON.ParticleHelper.CreateAsync("sun", scene).then((set) => {
12    set.start();
13  });
14
15  return scene;
16 }
```

60 fps



Soft Shadows

Babylon.js Playground v3.3.0-beta.1

Run ▶

New 📄

Clear 🗑️

Save 💾

Zip 📦

Settings ⌵

Inspector 🗑️

Metadata

Version: Latest ⌵

Examples ⌵

60 fps

```
1  /// <reference path="../../dist/preview release/babylon.d.ts"/>
2
3  function delayCreateScene() {
4      var scene = new BABYLON.Scene(engine);
5
6      // Load the model
7      BABYLON.SceneLoader.Append("https://www.babylonjs.com/Assets/FlightHelmet/gltf/", "FlightHelmet_M
8      // Create a camera pointing at your model.
9      scene.createDefaultCameraOrLight(true, true, true);
10     scene.activeCamera.useAutoRotationBehavior = true;
11     scene.activeCamera.lowerRadiusLimit = 15;
12     scene.activeCamera.upperRadiusLimit = 180;
13
14     scene.activeCamera.alpha = 0.8;
15
16     scene.lights[0].dispose();
17     var light = new BABYLON.DirectionalLight("light1", new BABYLON.Vector3(-2, -6, -2), scene);
18     light.position = new BABYLON.Vector3(20, 60, 20);
19     light.shadowMinZ = 30;
20     light.shadowMaxZ = 180;
21     light.intensity = 5;
22
23     var generator = new BABYLON.ShadowGenerator(512, light);
24     generator.useContactHardeningShadow = true;
25     generator.bias = 0.01;
26     generator.normalBias = 0.05;
27     generator.contactHardeningLightSizeUVRatio = 0.08;
28
29     for (var i = 0; i < scene.meshes.length; i++) {
30         generator.addShadowCaster(scene.meshes[i]);
31         scene.meshes[i].receiveShadows = true;
32         if (scene.meshes[i].material && scene.meshes[i].material.bumpTexture) {
33             scene.meshes[i].material.bumpTexture.level = 2;
34         }
35     }
36
37     var helper = scene.createDefaultEnvironment({
38         skyboxSize: 1500,
39         groundShadowLevel: 0.5,
40     });
41
42     helper.setMainColor(BABYLON.Color3.Gray());
43
44     scene.environmentTexture.lodGenerationScale = 0.6;
45
46     return scene;
47 }
48 }
```



WebVR

Babylon.js Playground v3.3.0-beta.1

Run ▶

New 📄

Clear 🗑️

Save 💾

Zip 📦

Settings ⌵

Inspector 🗑️

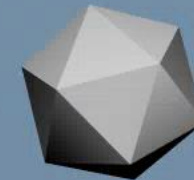
Metadata

Version: Latest ⌵

Examples ⌵

60 fps

Color GUI



```
1 var createScene = function() {
2   // Create scene
3   var scene = new BABYLON.Scene(engine);
4
5   // Create simple sphere
6   var sphere = BABYLON.Mesh.CreateIcoSphere("sphere", {radius:0.2, flat:true, subdivisions: 1}, thi
7   sphere.position.y = 3;
8   sphere.material = new BABYLON.StandardMaterial("sphere material",scene)
9
10  // Lights and camera
11  var light = new BABYLON.DirectionalLight("light", new BABYLON.Vector3(0, -0.5, 1.0), scene);
12  light.position = new BABYLON.Vector3(0, 5, -2);
13  var camera = new BABYLON.ArcRotateCamera("camera", -Math.PI / 2, Math.PI / 4, 3, new BABYLON.Vect
14  camera.attachControl(canvas, true);
15  scene.activeCamera.beta += 0.8;
16
17  // Default Environment
18  var environment = scene.createDefaultEnvironment({ enableGroundShadow: true, groundYBias: 1 });
19  environment.setMainColor(BABYLON.Color3.FromHexString("#74b9ff"))
20
21  // Shadows
22  var shadowGenerator = new BABYLON.ShadowGenerator(1024, light);
23  shadowGenerator.useBlurExponentialShadowMap = true;
24  shadowGenerator.blurKernel = 32;
25  shadowGenerator.addShadowCaster(sphere, true);
26
27  // Enable VR
28  // var vrHelper = scene.createDefaultVRExperience({createDeviceOrientationCamera:false, floorMesh
29
30  // Runs every frame to rotate the sphere
31  scene.onBeforeRenderObservable.add(()=>{
32    sphere.rotation.y += 0.0001*scene.getEngine().getDeltaTime();
33    sphere.rotation.x += 0.0001*scene.getEngine().getDeltaTime();
34  })
35
36  // GUI
37  var plane = BABYLON.Mesh.CreatePlane("plane", 1);
38  plane.position = new BABYLON.Vector3(0.4, 4, 0.4)
39  var advancedTexture = BABYLON.GUI.AdvancedDynamicTexture.CreateForMesh(plane);
40  var panel = new BABYLON.GUI.StackPanel();
41  advancedTexture.addControl(panel);
42  var header = new BABYLON.GUI.TextBlock();
43  header.text = "Color GUI";
44  header.height = "100px";
45  header.color = "white";
46  header.textHorizontalAlignment = BABYLON.GUI.Control.HORIZONTAL_ALIGNMENT_CENTER;
47  header.fontSize = "120"
48  panel.addControl(header);
```

Deployed by Netlify

Forum

Sandbox

Documentation

Search

Gizmo controls

Babylon.js Playground v3.3.0-beta.1

Run ▶

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Save 💾

Zip 📦

Settings ⌵

Inspector 🗨

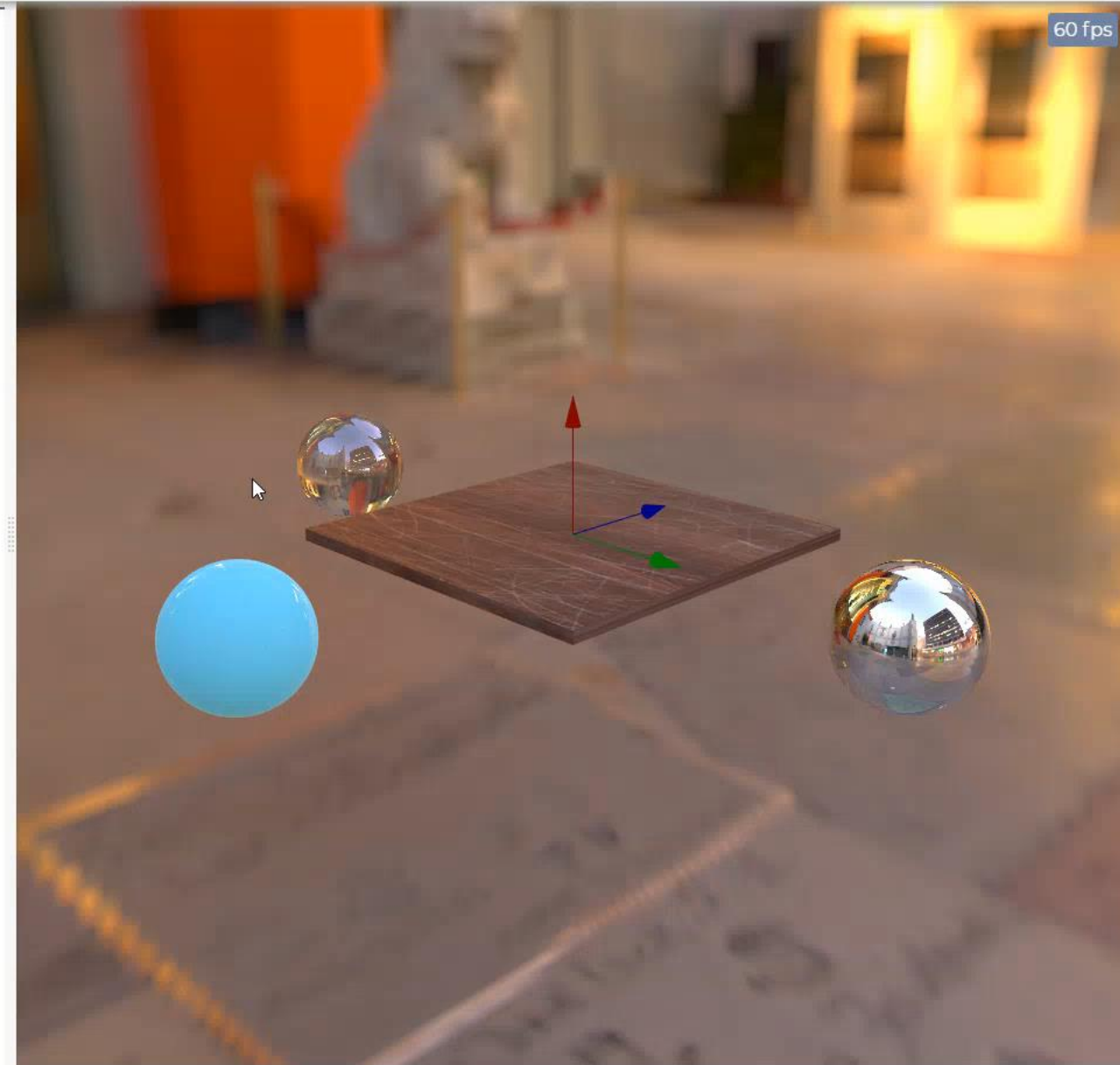
Metadata

Version: Latest ⌵

Examples ⌵

```
1 var createScene = function () {
2     // Create scene
3     var scene = new BABYLON.Scene(engine);
4     var camera = new BABYLON.ArcRotateCamera("Camera", -Math.PI / 4, Math.PI / 2.5, 10, BABYLON.Vecto
5     camera.attachControl(canvas, true);
6     camera.minZ = 0.1;
7
8     // Initialize GizmoManager
9     var gizmoManager = new BABYLON.GizmoManager(scene)
10
11     // Initialize all gizmos
12     gizmoManager.boundingBoxGizmoEnabled=true;
13     gizmoManager.positionGizmoEnabled = true;
14     gizmoManager.rotationGizmoEnabled = true;
15     gizmoManager.scaleGizmoEnabled = true;
16
17     // Modify gizmos based on keypress
18     document.onkeydown = (e)=>{
19         if(e.key == 'w' || e.key == 'e' || e.key == 'r' || e.key == 'q'){
20             // Switch gizmo type
21             gizmoManager.positionGizmoEnabled = false;
22             gizmoManager.rotationGizmoEnabled = false;
23             gizmoManager.scaleGizmoEnabled = false;
24             gizmoManager.boundingBoxGizmoEnabled = false;
25             if(e.key == 'w'){
26                 gizmoManager.positionGizmoEnabled = true;
27             }
28             if(e.key == 'e'){
29                 gizmoManager.rotationGizmoEnabled = true;
30             }
31             if(e.key == 'r'){
32                 gizmoManager.scaleGizmoEnabled = true;
33             }
34             if(e.key == 'q'){
35                 gizmoManager.boundingBoxGizmoEnabled = true;
36             }
37         }
38         if(e.key == 'y'){
39             // hide the gizmo
40             gizmoManager.attachToMesh(null);
41         }
42         if(e.key == 'a'){
43             // Toggle local/global gizmo rotation positioning
44             gizmoManager.gizmos.positionGizmo.updateGizmoRotationToMatchAttachedMesh = !gizmoManager.
45             gizmoManager.gizmos.rotationGizmo.updateGizmoRotationToMatchAttachedMesh = !gizmoManager.
46         }
47         if(e.key == 's'){
48             // Toggle distance snapping
```

Inspector panel showing a list of gizmo objects and their properties.



3D GUI

Babylon.js Playground v3.3.0-beta.1

Run ▶

New 📄

Clear 🗑️

Save 💾

Zip 📦

Settings ⌵

Inspector 🗑️

Metadata

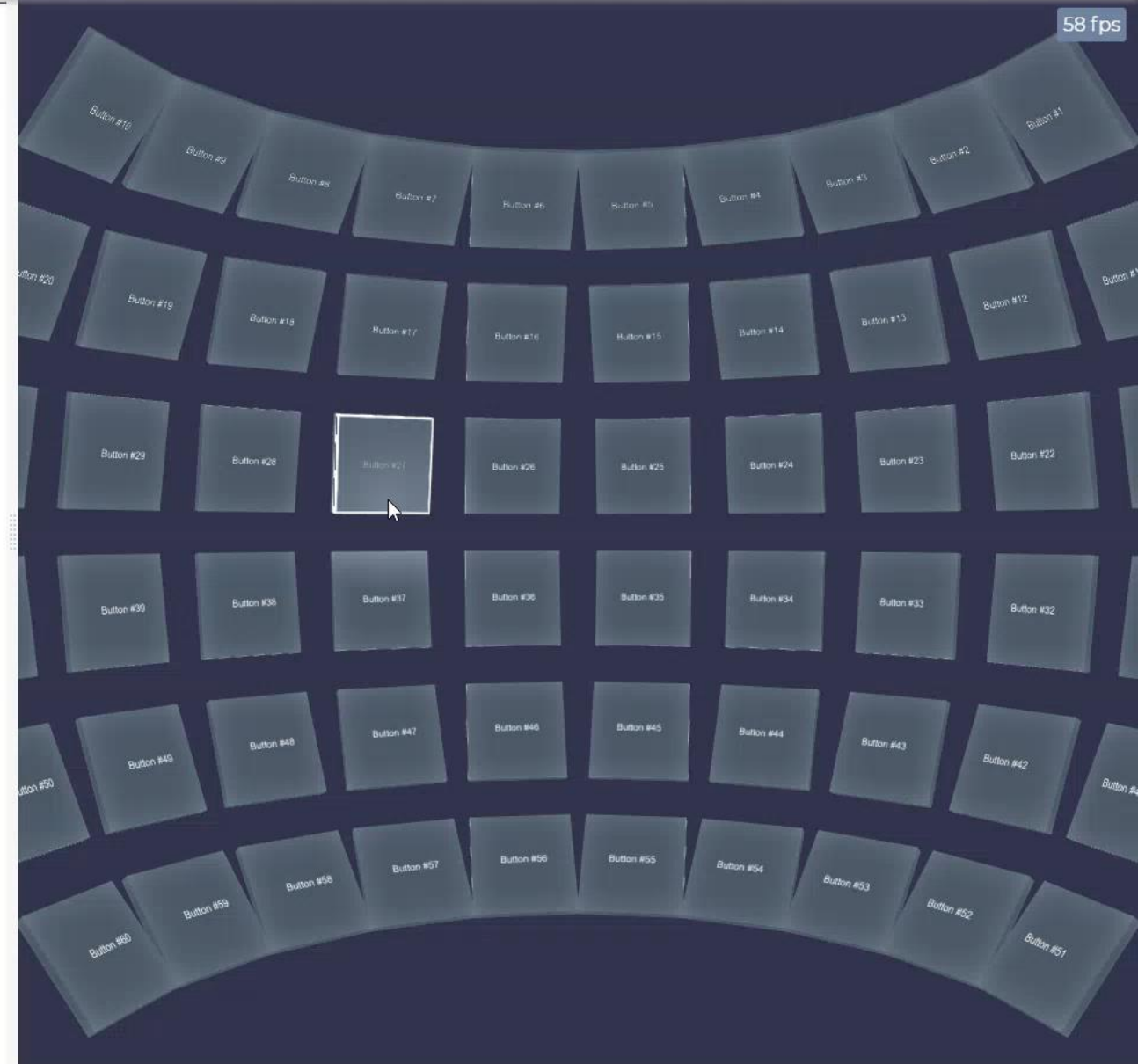
Version: Latest ⌵

Examples ⌵

```
1
2 var createScene = function () {
3     var scene = new BABYLON.Scene(engine);
4     var camera = new BABYLON.ArcRotateCamera("cam", -Math.PI / 2, Math.PI / 2, 10, BABYLON.Vector3.Zero);
5     var anchor = new BABYLON.TransformNode("");
6
7     camera.wheelDeltaPercentage = 0.01;
8     camera.attachControl(canvas, true);
9
10    // Create the 3D UI manager
11    var manager = new BABYLON.GUI.GUI3DManager(scene);
12
13    var panel = new BABYLON.GUI.SpherePanel();
14    panel.margin = 0.2;
15
16    manager.addControl(panel);
17    panel.linkToTransformNode(anchor);
18    panel.position.z = -1.5;
19
20    // Let's add some buttons!
21    var addButton = function() {
22        var button = new BABYLON.GUI.HolographicButton("orientation");
23        panel.addControl(button);
24
25        button.text = "Button #" + panel.children.length;
26    }
27
28    panel.blockLayout = true;
29    for (var index = 0; index < 60; index++) {
30        addButton();
31    }
32    panel.blockLayout = false;
33
34    return scene;
35
36 };
37
```

Inspector

Properties | Events | Hierarchy | Console



Babylon.js Viewer

```
<script src="https://cdn.babylonjs.com/viewer/babylon.viewer.js"></script>  
<babylon model="boombox.glb"></babylon>
```



BabylonJS Viewer

 [Babylon.js Viewer] Display a 3D model
A PEN BY Babylon.js

HTML

1 <html>
2 <head>
3 <title>Babylon.js Viewer - Display a 3D model</title>
4 <script src="https://preview.babylonjs.com/viewer/babylon.viewer.js">
5 </script>
6 </head>
7
8 </body>
9 </html>

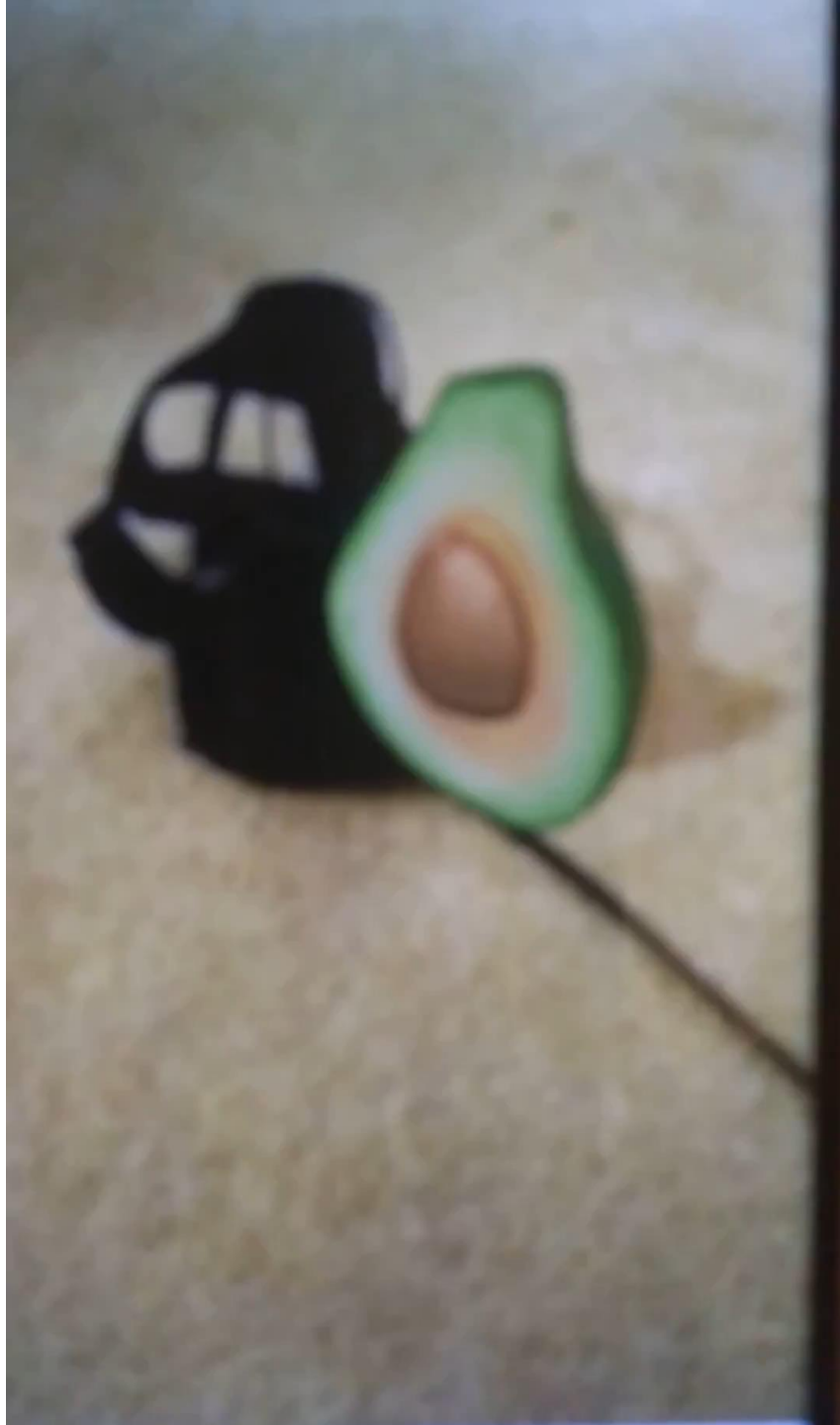
CSS

1

JS

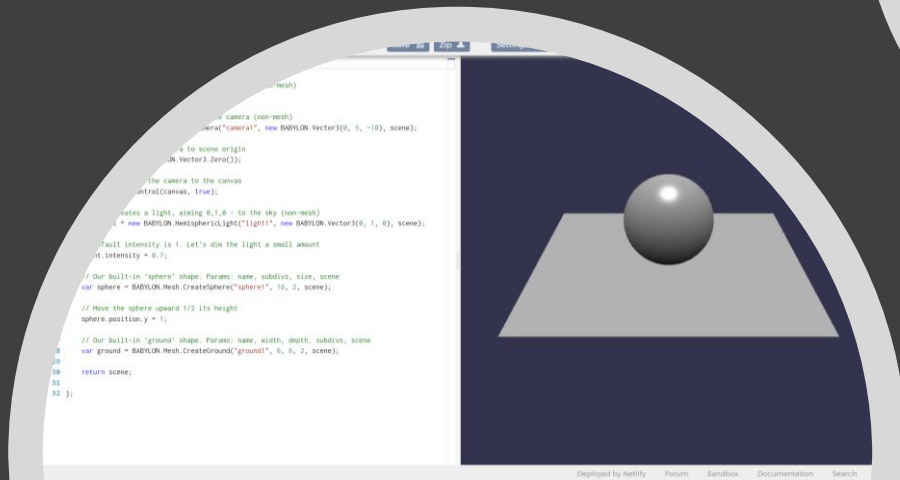
1

WebXR



Links

- <http://www.babylonjs.com/>
- <https://github.com/babylonjs/>



...js 3D framework (<http://www.babylonjs.com/>)

Questions & Answers

For questions and answers about the Babylon.js 3D framework

Announcements

Babylon.js Announcements

Bugs

Babylon.js Bugs

Demos and Projects

Babylon.js Demos and Projects

Service offers and requests

Use this sub-forum to post service offers or requests.