

A-Frame VR Tutorial

Building Animated 3D Boxes in WebVR

1 Setting up the HTML file

1. Open a code editor (**VS Code** , **Sublime Text** , or **Notepad++**)
2. Create a new file named **index.html**
3. Add the **A-Frame library** in the `<head>`:

```
<script  
src="https://aframe.io/releases/1.6.0/aframe.min.js">  
</script>
```

2 Creating the A-Frame Scene

Inside the `<body>`, add the `<a-scene>` element. This is where all VR objects live:

```
<a-scene> <!-- 3D objects go here --> </a-scene>
```

3 Loading Assets (Textures & Images)

A-Frame uses an `<a-assets>` block to preload images, models, and sounds.

Ground Texture

groundsand.jpg

Sky Image

clouds.jpg

Box Texture

wood.jpg

Normal Map

bolt.png

nm_wood.png

```
<a-assets>     
 </a-assets>
```

4

Adding the Sky

To create a skybox background:

```
<a-sky src="#sky"></a-sky>
```

This wraps the entire scene in the **clouds.jpg** texture.

5

Adding the Ground Plane

We'll add a large plane and texture it with sand:

```
<a-plane src="#floor" rotation="-90 0 0" scale="100 100"  
repeat="8 8"> </a-plane>
```

- **rotation="-90 0 0"** makes the plane flat
- **scale="100 100"** enlarges it
- **repeat="8 8"** tiles the sand texture

6

Adding Animated Boxes

Now let's add **two boxes** that spin and move up/down.



Rotation Animation

Makes boxes rotate continuously



Up/Down Animation

Makes boxes bounce up and down

```
<a-box src="#wbox" height="4" width="4" depth="4"
position="0 2 -10" normal-map="#nwood" roughness="3"
animation="property: rotation; to: 0 360 0; loop: true;
dur: 1000; easing: linear" animation__updown="property:
position; dir: alternate; dur: 1500; easing:
easeInOutSine; loop: true; to: 0 4 -10; from: 0 2 -10">
</a-box> <a-box src="#wbox" height="4" width="4"
depth="4" position="6 2 -10" normal-map="#nwood"
roughness="3" animation="property: rotation; to: 0 360 0;
loop: true; dur: 1000; easing: linear"
animation__updown="property: position; dir: alternate;
```

```
dur: 1500; easing: easeInOutSine; loop: true; to: 6 4  
-10; from: 6 2 -10"> </a-box>
```

7 Save & Test

1. Save your file as **index.html**
2. Preview from HTML editor
3. Click and drag to look around the VR scene
4. (Optional) Use a VR headset to experience it fully

Summary

Step 1

Set up HTML & load A-Frame

Step 2

Create `<a-scene>`

Step 3

Load textures in `<a-assets>`

Step 4

Add sky

Step 5

Add ground

Step 6

Add and animate boxes



Important: Make sure to preview the code directly from your HTML

editor, otherwise texture on objects will not be visible.