

// View Controller, swift (movement)

```
import UIKit
import SceneKit
import ARKit
```

```
class ViewController: UIViewController, ARSCNViewDelegate {
```

```
    @IBOutlet var sceneView: ARSCNView!
```

```
    override func viewDidLoad() {
```

```
        super.viewDidLoad()
```

```
        sceneView.delegate = self
```

```
        sceneView.showsStatistics = true
```

```
        let shipScene = SCNScene(named: "art.scnassets/ship.scn")!
```

```
        sceneView.scene = shipScene
```

```
        for node in sceneView.scene.rootNode.childNodes {
```

```
            let moveShip = SCNAction.moveBy(x: 1, y: 0.5, z: 1-0.5, duration: 1)
```

```
            let fadeOut = SCNAction.fadeOpacity(to: 0.5, duration: 1)
```

```
            let fadeIn = SCNAction.fadeOpacity(to: 1, duration: 1)
```

```
            let sequence = SCNAction.sequence([moveShip, fadeOut, fadeIn])
```

```
            let repeatForever = SCNAction.repeatForever(sequence)
```

```
            node.runAction(repeatForever)
```

```
        }
```

```
    }
```

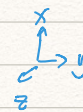
```
}
```

// ViewController2

```
import UIKit
import SceneKit
import ARKit
```

```
// open ame Art.org
```

```
textures for planets
```



```
class ViewController: UIViewController, ARSCNViewDelegate {
```

```
    @IBOutlet var sceneView: ARSCNView!
```

```
    override func viewDidLoad() {
```

```
        super.viewDidLoad()
```

```
        sceneView.delegate = self
```

```
        let mySphere = createSphere(radius: 0.1, content: "wall.png", vector: SCNVector3(0, 0.2, -1))
```

```
        sceneView.scene.rootNode.addChildNode(mySphere)
```

```
        sceneView.automaticallyUpdatesLighting = true // take care of lighting and shadowing
```

```
}
```

```
func createSphere(radius: CGFloat, content: String, vector: SCNVector3) -> SCNNode {
```

```
    let mySphere = SCNSphere(radius: radius)
```



```
let sphereMaterial = SCNMaterial()
sphereMaterial.diffuse.contents = UIImage(named: "art.scnassets/wall.png")
mySphere.materials = [sphereMaterial]

let node = SCNNode()
node.position = SCNVector3(0, 0.1, -0.5)
node.geometry = mySphere
return node
```

```
}
```

```
}
```