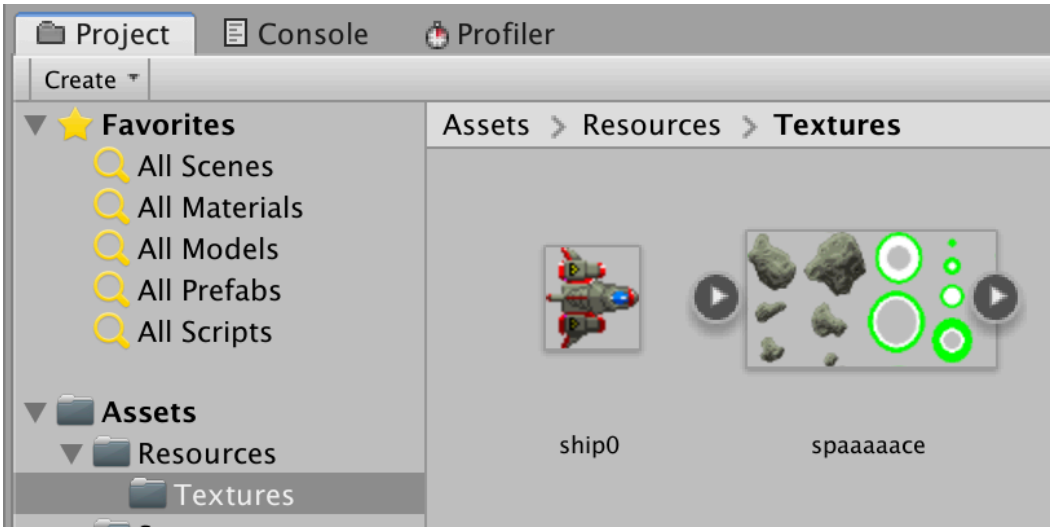
Quest 2 - Steps

1) Create Project

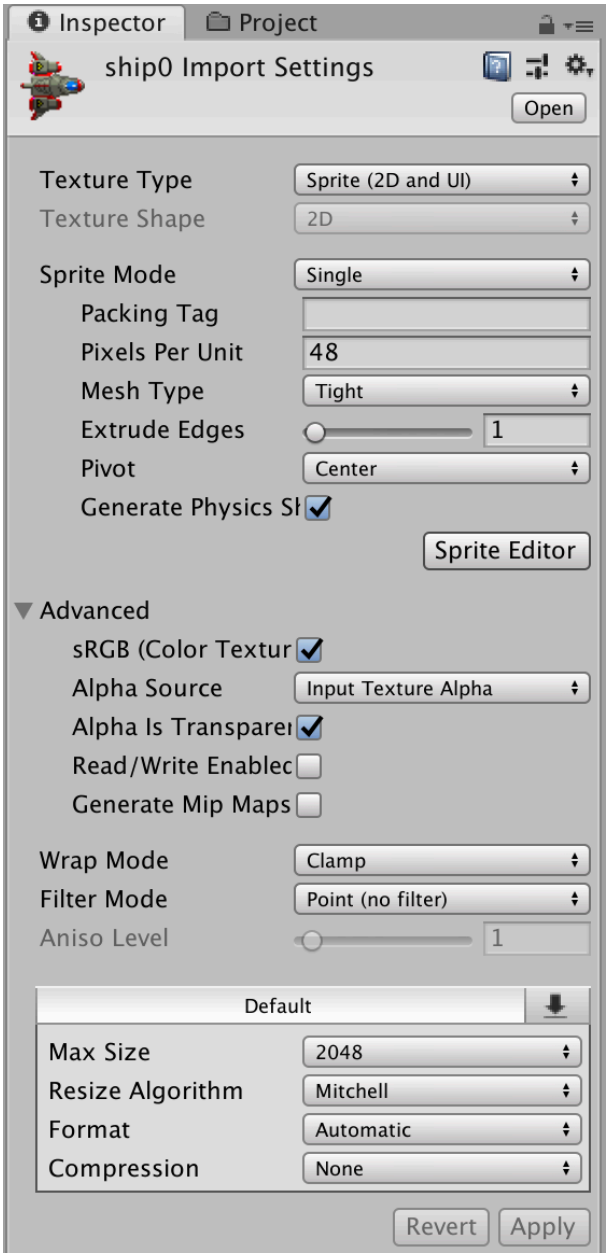
Name your project Q2_LastNameFirstName.
Template is 2D.

2) Setup Folders and Import Files

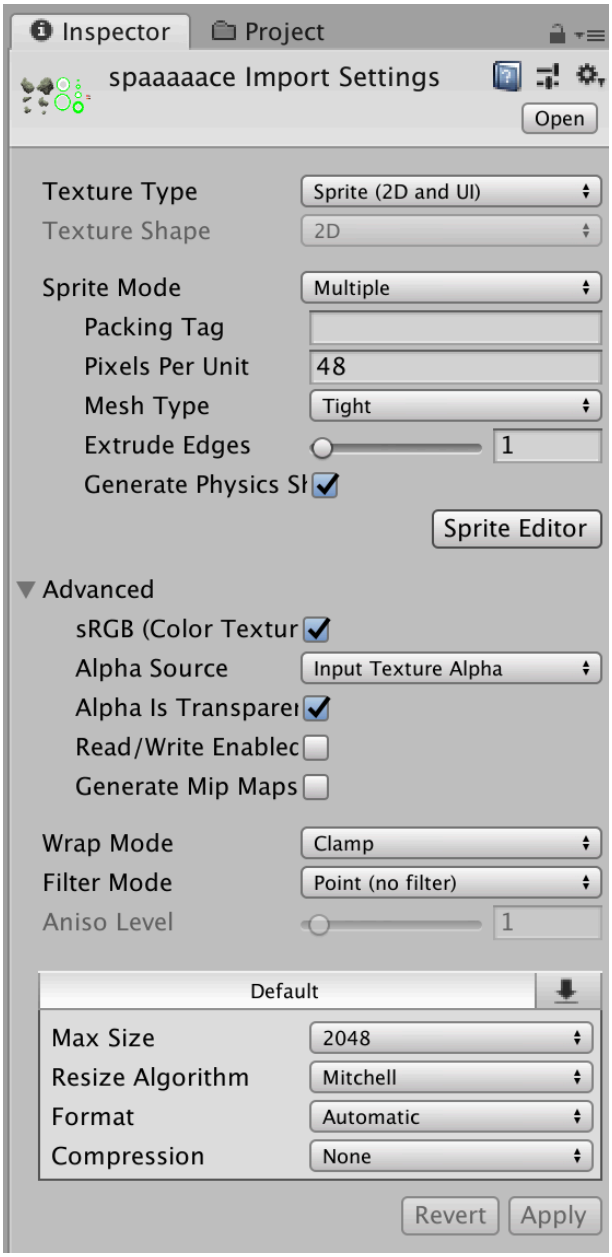
Import the supplied Q2 graphics into the Assets/Resources/Textures/ folder.



3) Import Settings for Ship Sprite



4) Import Settings for Obstacles and Goals Sprites



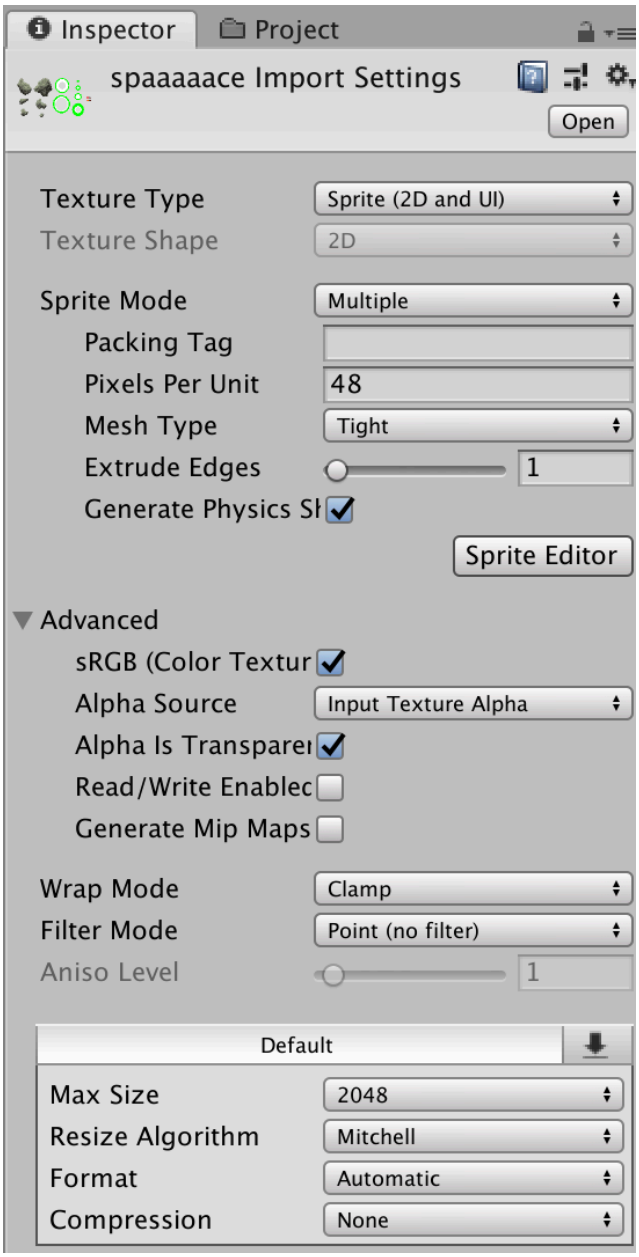
5) Multi-slice Sprites for Obstacles and Goals

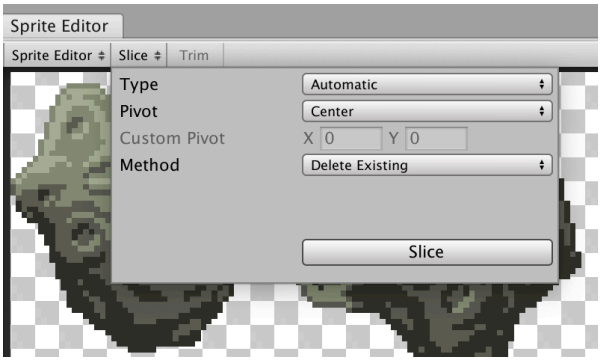
Check all the settings. Be sure Sprite Mode is set to “Multiple.”

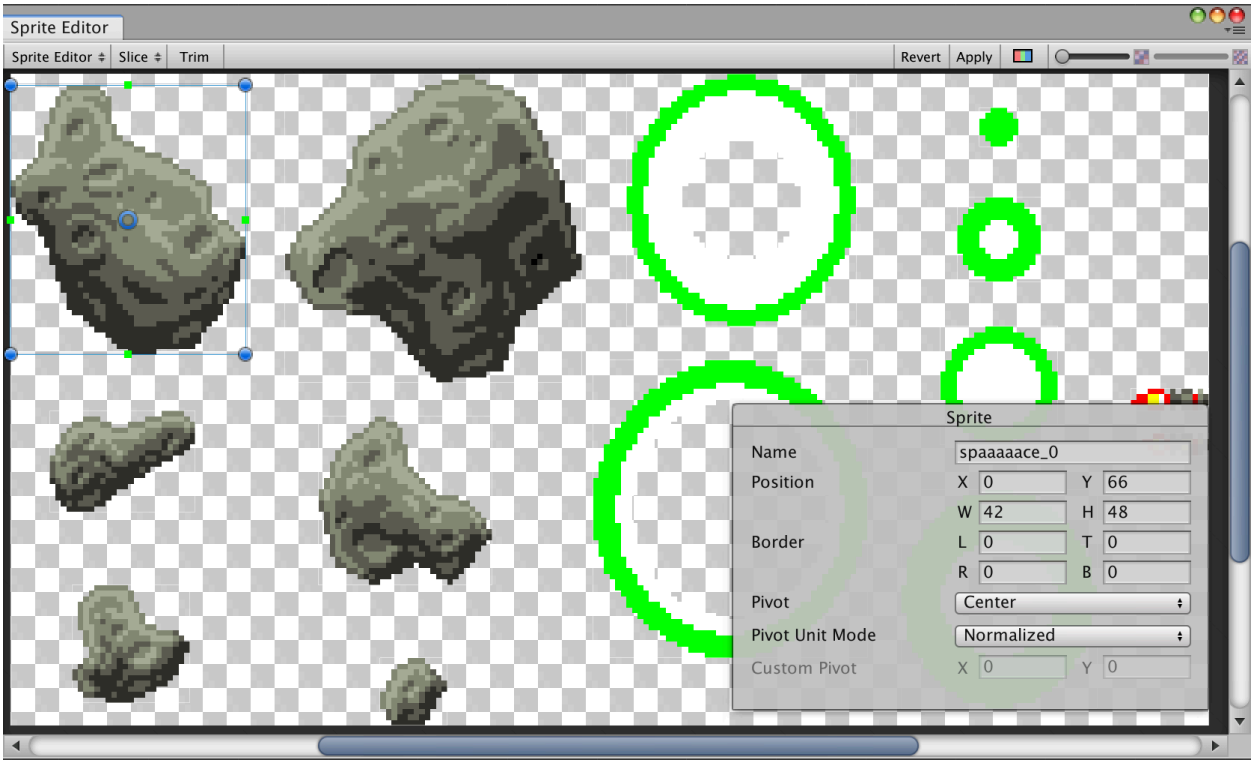
Click “Sprite Editor” to open the tool.

Click “Slice,” set Type to Automatic, and Click the Splice button.

If you click an individual graphic, you will notice it is sliced as its own sprite.





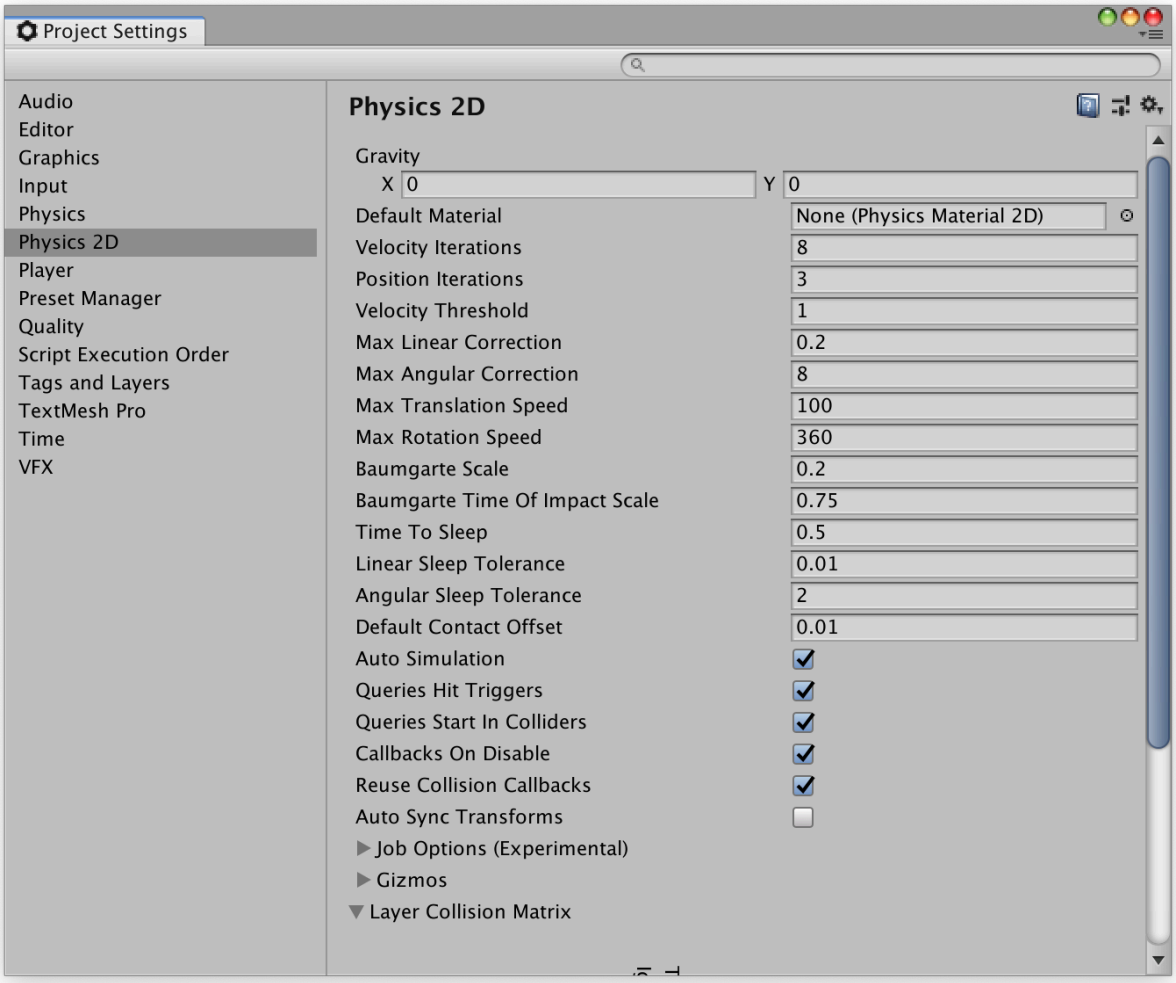


6) Set your game's Aspect Ratio to 16:9

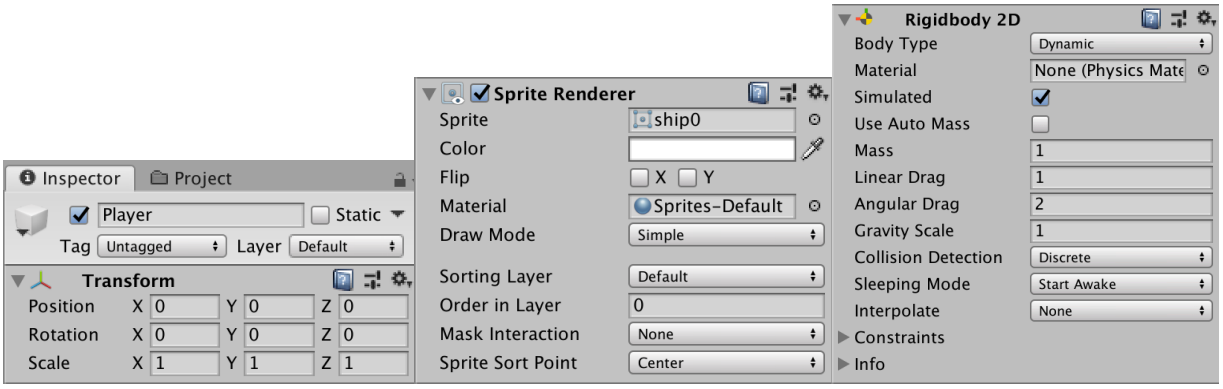
This helps ensure consistent screen boundaries across testing devices.

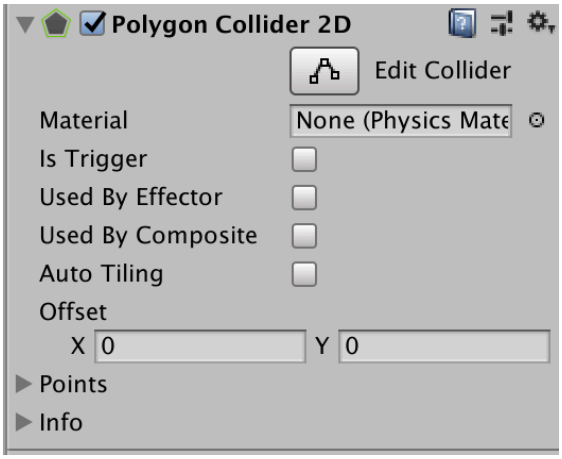
7) Turn off gravity

Edit->Project Settings->Physics 2D->Gravity



8) Create a Player GameObject and Components



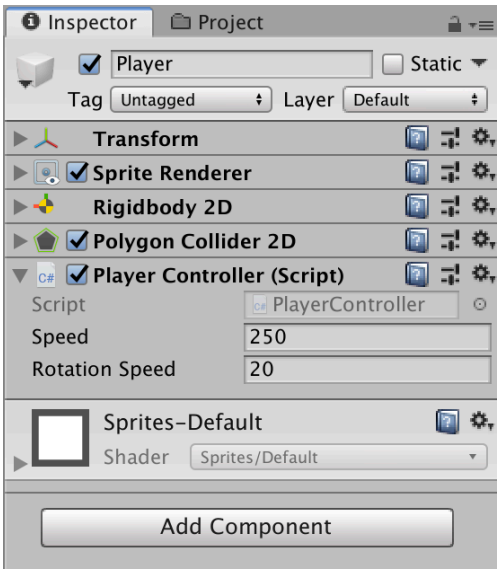


9) Create a Player Script

Create PlayerController.cs in Assets/Scripts/

```
using System.Collections;
using System.Collections.Generic;
using UnityEngine;

public class PlayerController : MonoBehaviour
{
    // Outlets
    Rigidbody2D _rb;

    // Configuration
    public float speed;
    public float rotationSpeed;

    // Methods
    void Start() {
        _rb = GetComponent<Rigidbody2D>();
    }

    void Update() {
        // Turn Left
        if(Input.GetKey(KeyCode.LeftArrow)) {
            _rb.AddTorque(rotationSpeed * Time.deltaTime);
        }

        // Turn Right
        if(Input.GetKey(KeyCode.RightArrow)) {
            _rb.AddTorque(-rotationSpeed * Time.deltaTime);
        }

        // Thrust Forward
        if(Input.GetKey(KeyCode.Space)) {
            // Use right as "forward" because our art faces to the right
            _rb.AddRelativeForce(Vector2.right * speed * Time.deltaTime);
        }
    }
}
```

10) Attach and Configure Player Script

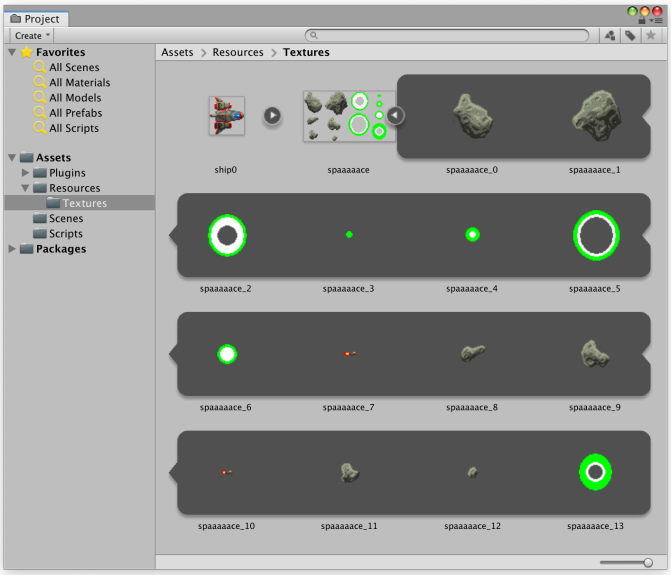


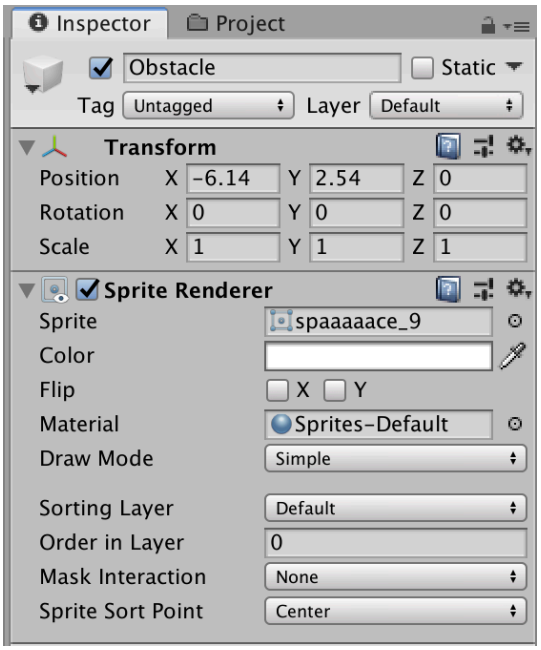
11) PlayTest for “Game Feel”

Adjust Rigidbody 2D’s Linear Drag and Angular Drag as well as PlayerController’s Speed and Rotation Speed for an appropriate “Game Feel.”

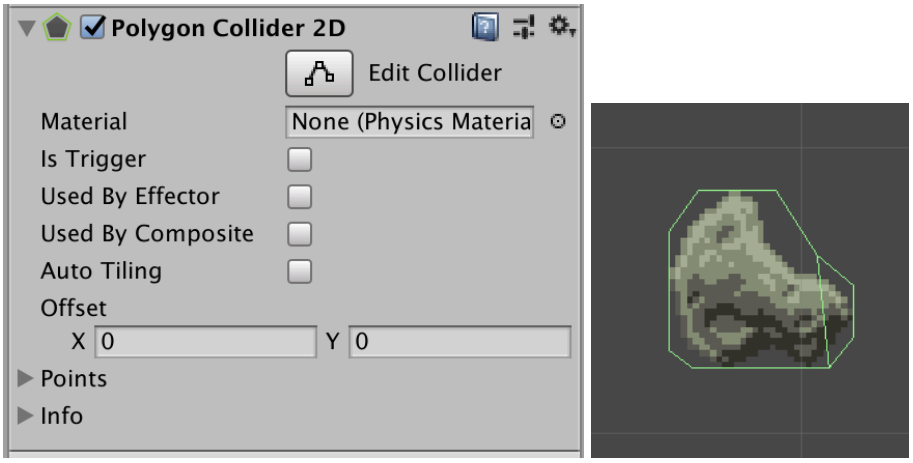
12) Create an Obstacle GameObject

Sprite sheets can be expanded to reveal individual sprites.





Set the Sprite before adding the PolygonCollider, so the engine knows what shape to generate.



13) Create an Obstacle script

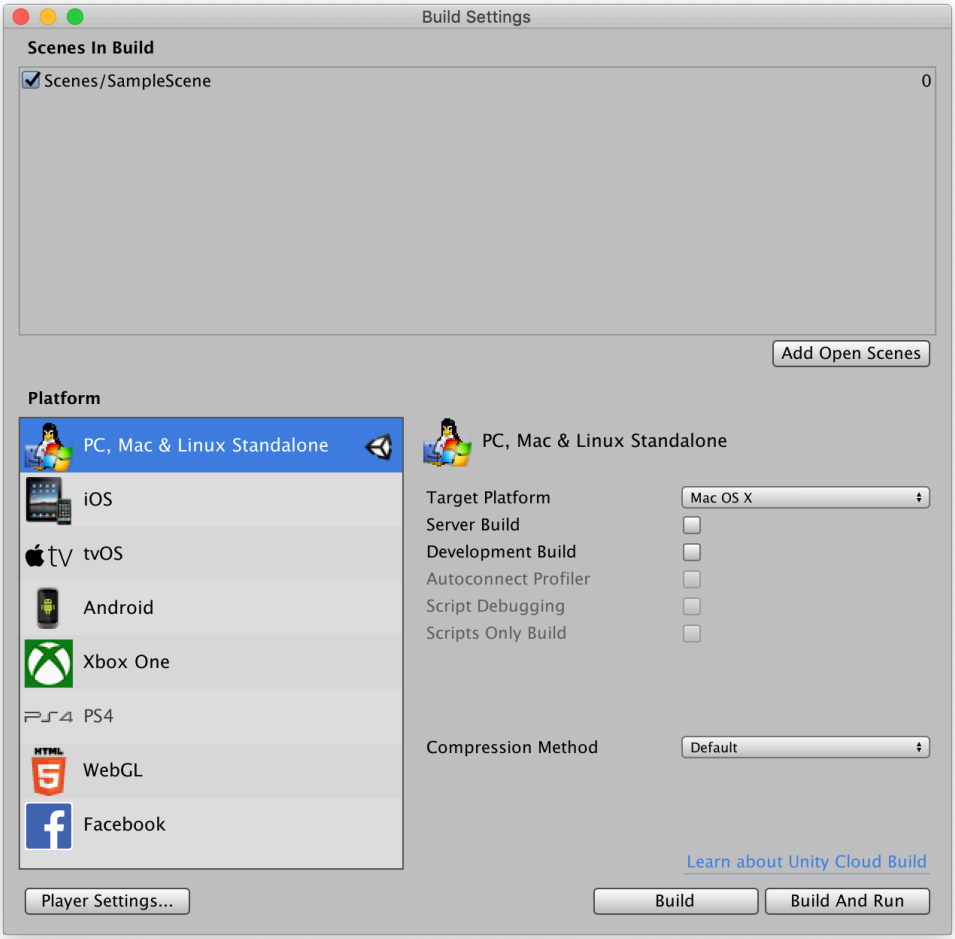
Create Obstacle.cs in Assets/Scripts/ and attach it to the Obstacle object.

Our Obstacle objects will check for Collision events with the Player and reload the Scene.

```
using System.Collections;
using System.Collections.Generic;
using UnityEngine;
using UnityEngine.SceneManagement;

public class Obstacle : MonoBehaviour
{
    void OnCollisionEnter2D(Collision2D other) {
        // Reload scene only when colliding with player
        if(other.gameObject.GetComponent<PlayerController>()) {
            SceneManager.LoadScene(SceneManager.GetActiveScene().name);
        }
    }
}
```

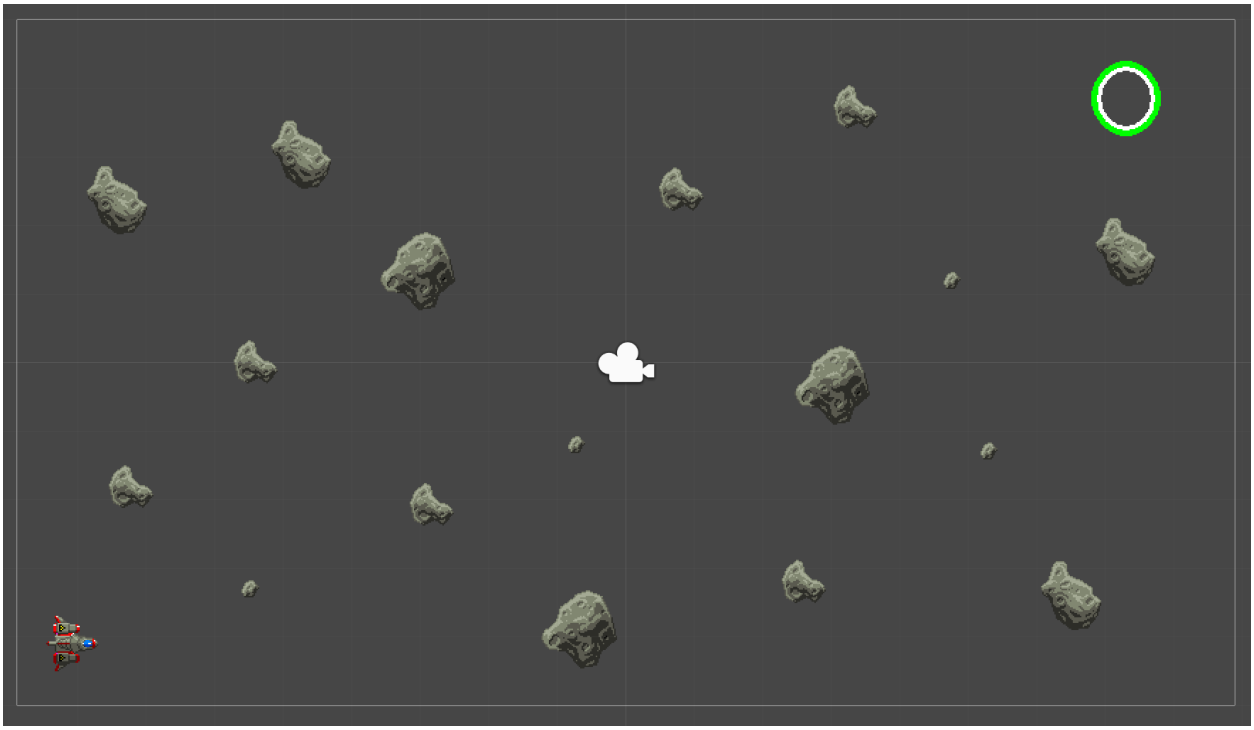
14) Scene Setup

The SceneManager can only act on scenes enabled in the Build Settings. Go to File->Build Settings. Ensure the current Scene is listed in “Scenes in Build” and is checked. You can drag in Scenes from the Projects tab.



15) Level Design

Create a challenging Level Design in which the Player must navigate through Obstacles to reach a Goal. You do not need to script the Goal for this assignment. A Goal graphic is all that is necessary.



16) PlayTest

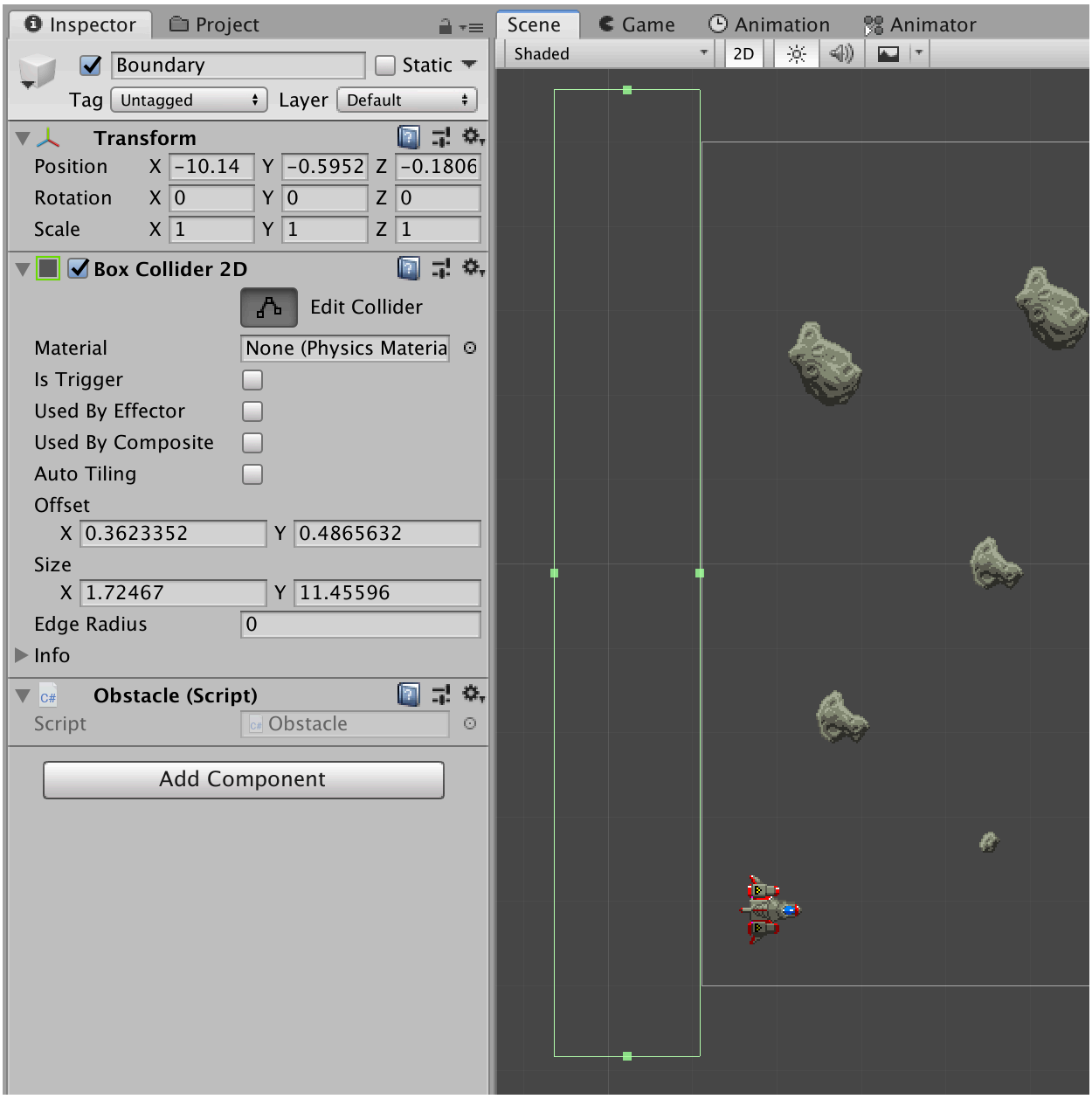
PlayTest your Level Design and adjust Level Layout and Player Physics until you are satisfied with the Game Feel.

17) Create Level Boundaries

Again, ensure your Game tab is set to an Aspect Ratio of 16:9.

Obstacles do not always have to have graphics.

Create Obstacles that represent the level boundaries by making a GameObject that has BoxColliders but no SpriteRenderer. Use the “Edit Collider” button to shape the Collider. DO NOT use the Transform->Scale to stretch it.



Finalize all four level boundaries.

18) PlayTest

Play your game again with the added difficulty and adjust balance for game feel.