3D Game Kit Getting Started Guide

Introduction

This guide will walk you through setting up an empty Scene to start creating a new level with the Game Kit. This will walk you through some of the fundamentals used in this Kit to create gameplay.

The Kit comes with a premade game, which contains examples of every part of the Kit in use if you get stuck for ideas.

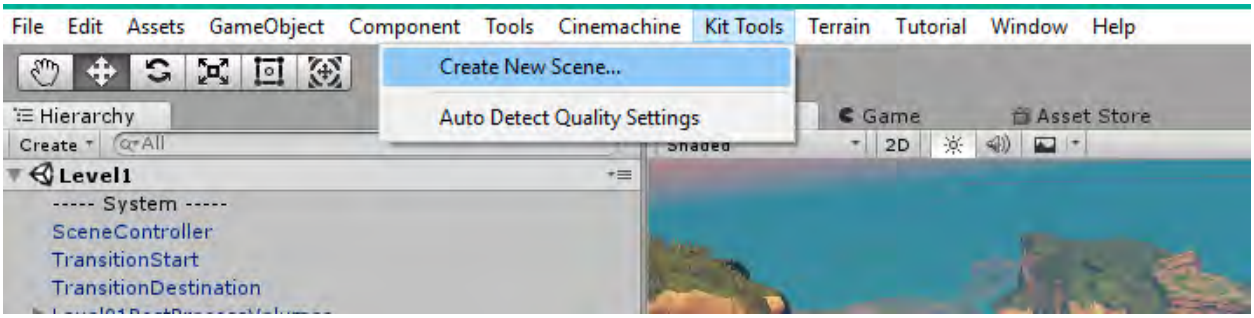
To learn how to navigate and move through the Editor, check out our Interface Essentials

Download the project here

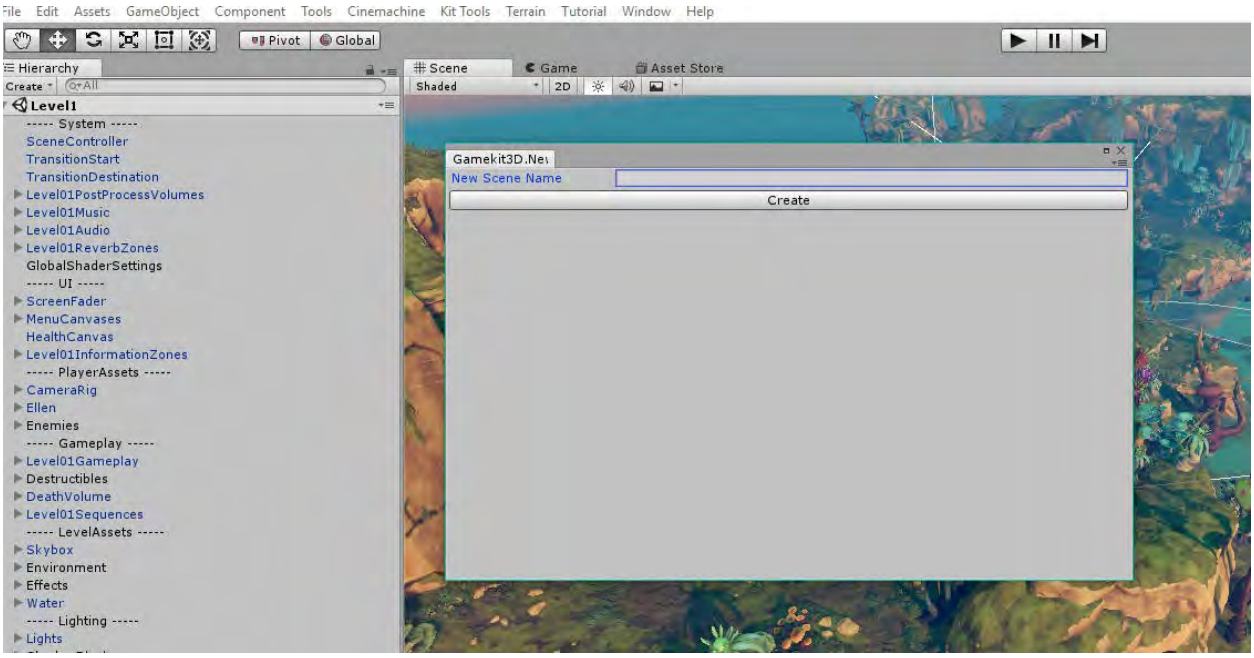
Making a New Scene

Let's begin by creating a New Scene. We have made a tool that can create a scene with everything you need to have some ground and Ellen, our hero, able to run around and attack.

- Go to **Kit Tools** > **Create New Scene**

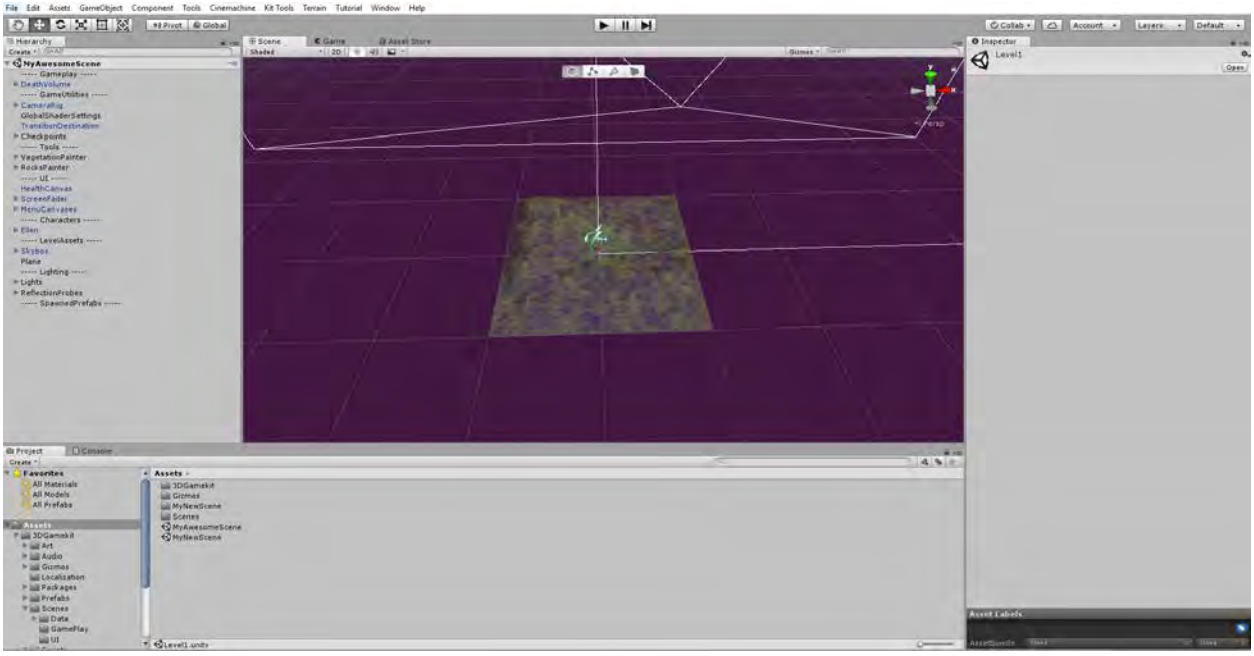


- In **New Scene Name**, enter a name for your scene.



- Click **Create**

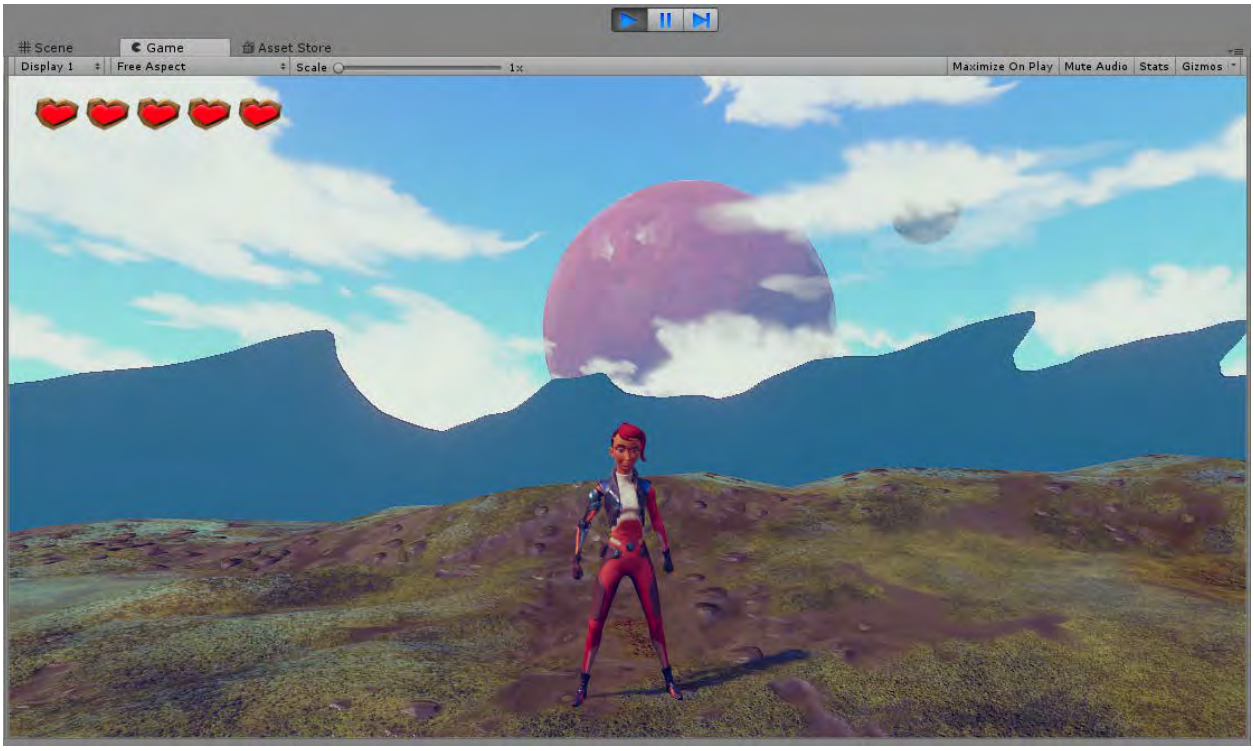
Your new Scene will show ground, Ellen, some UI and Game Menus.



- At the top of the Editor, Press **Play**

The controls for Ellen (our player character) are as follows:

Move	**W, S, A, D**
Jump	**Space**
Melee	**Left Click**
Camera Controls	**Mouse**
Pause	**ESC**

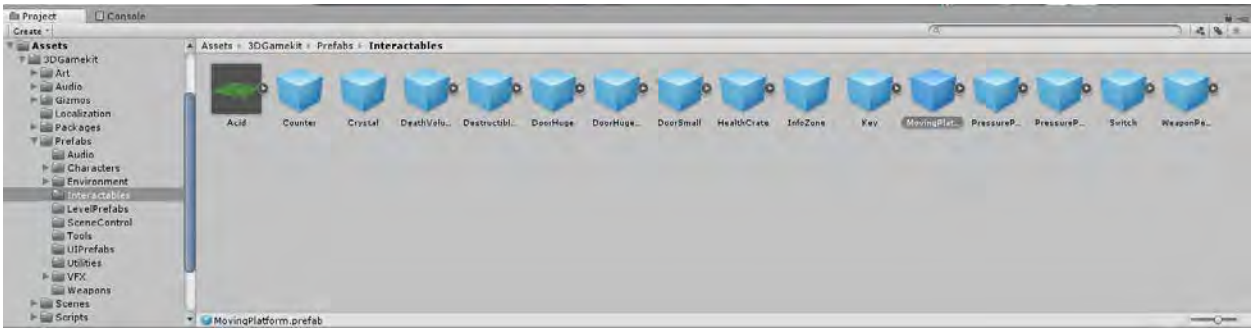


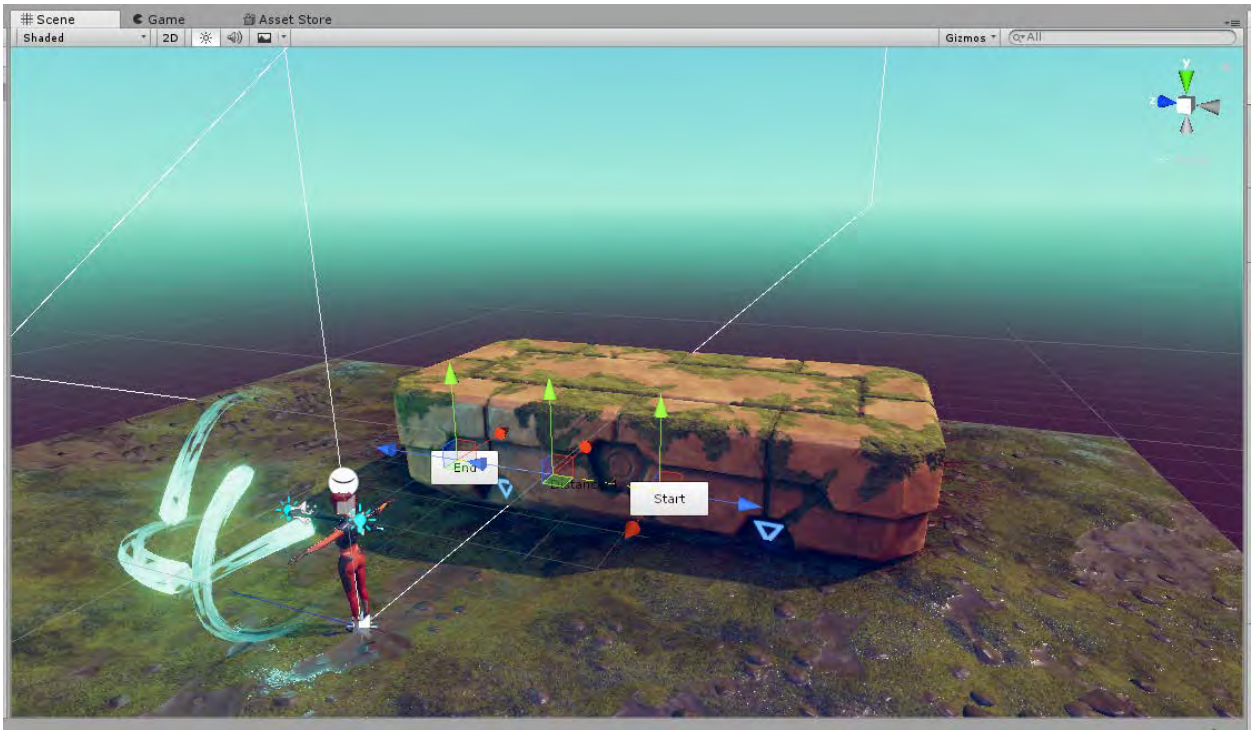
Adding a Moving Platform

We'll be adding a moving platform to our scene. All interactables are in **Prefabs** > **Interactables**

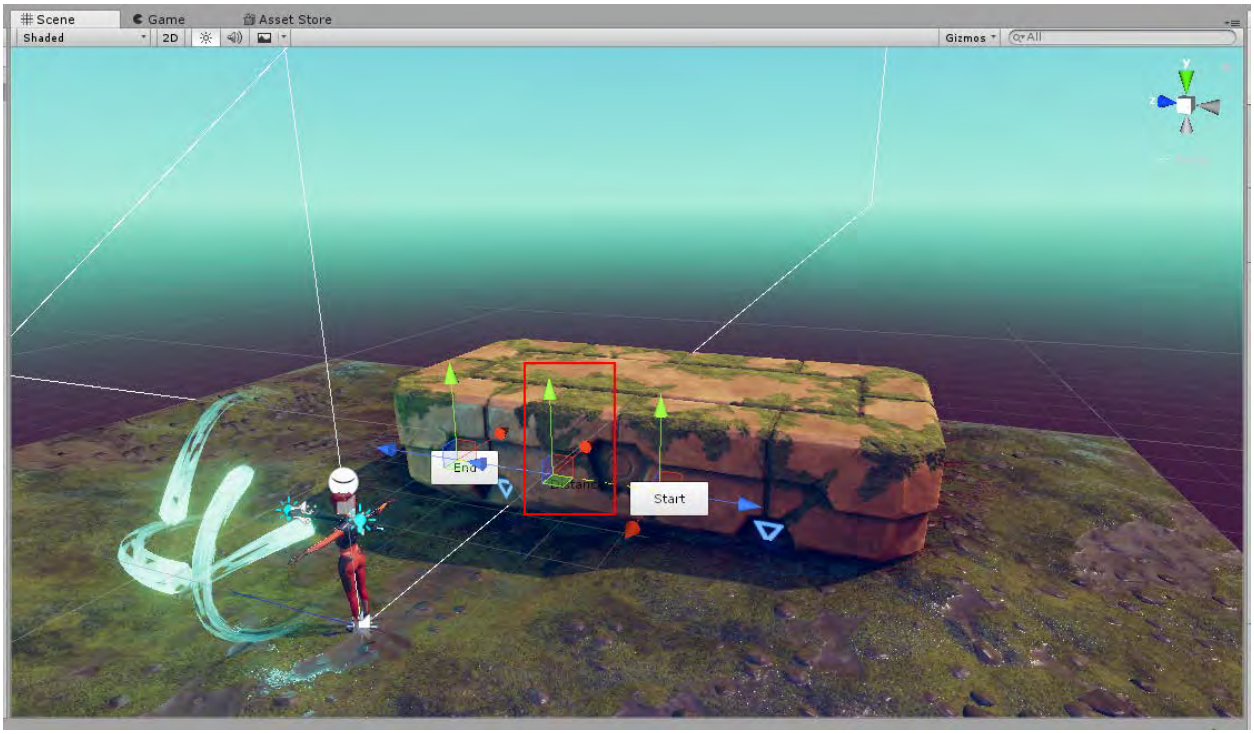
To add a **MovingPlatform:**

- Navigate to the **Project Window**
- Go to **Assets** > **3DGameKit** > **Prefabs** > **Interactables**
- Left Click and Drag **MovingPlatform** into the **Scene View**





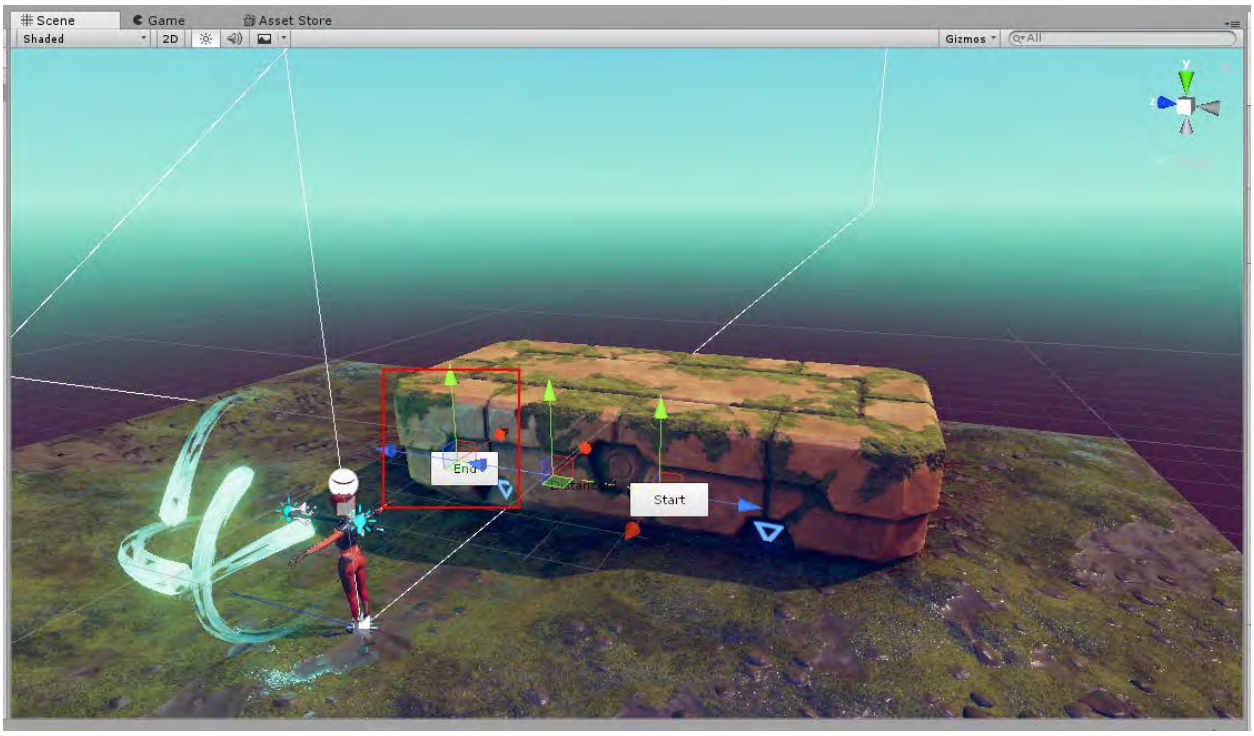
- Use the **Transform Tools** to **Translate** (**W**), **Rotate** (**E)** and **Scale** (**R)** the platform where you like.

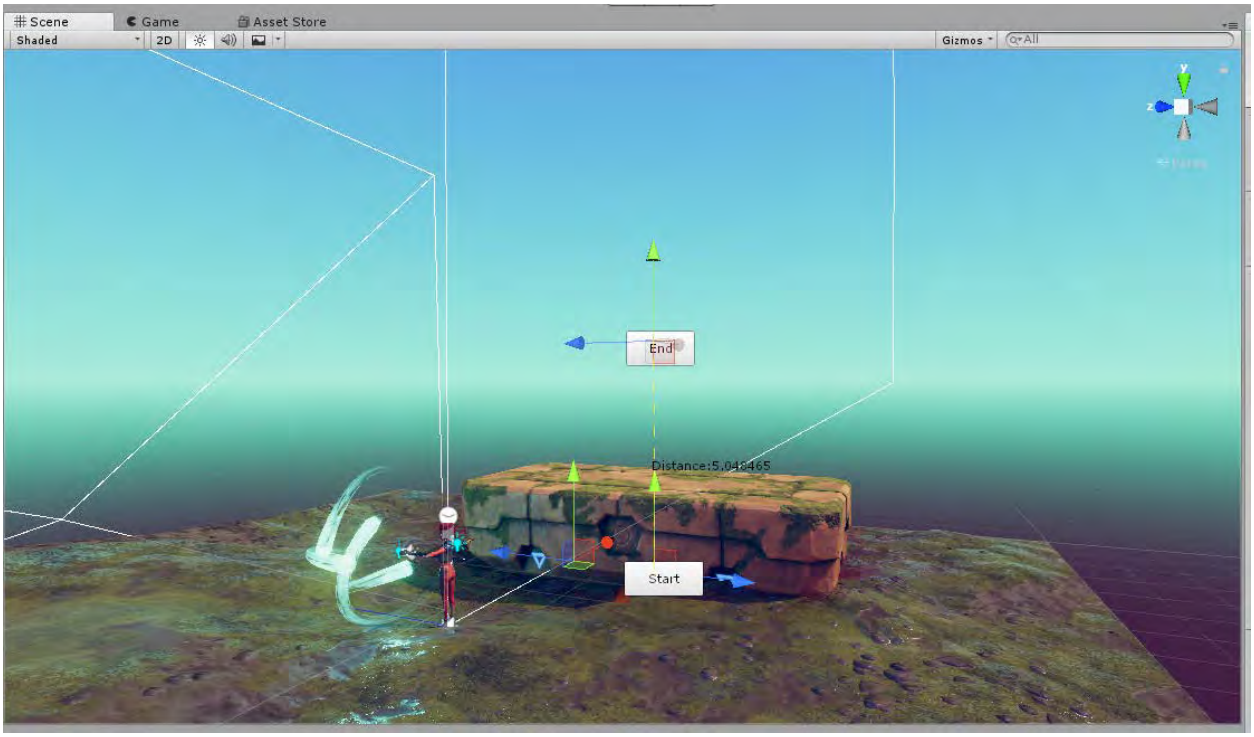


- At the top of the Editor, Press **Play**

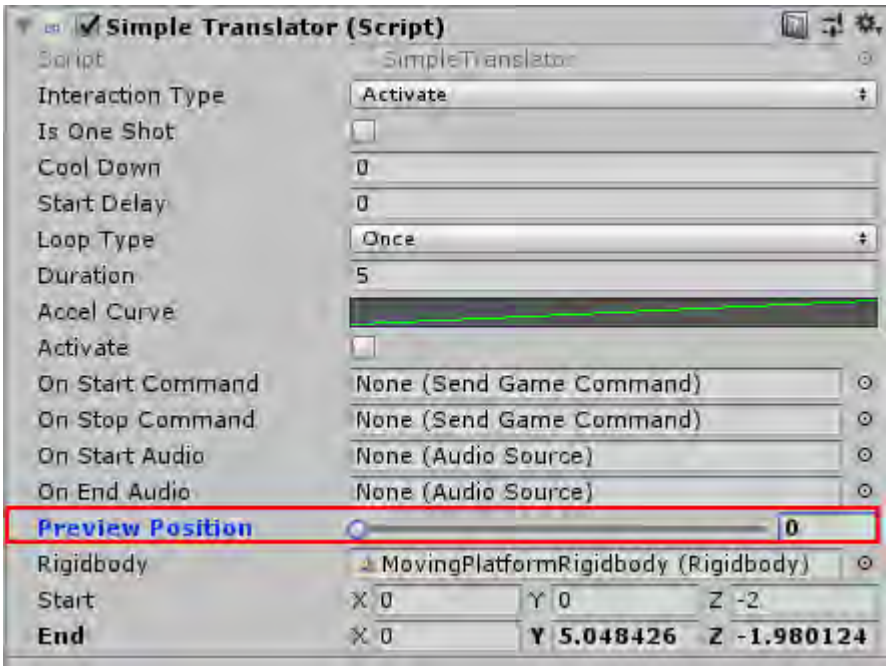
The **MovingPlatform** will be stationary. Let's make it move:

- Locate the **End Point** Tool on the **MovingPlatform** in the **Scene View**

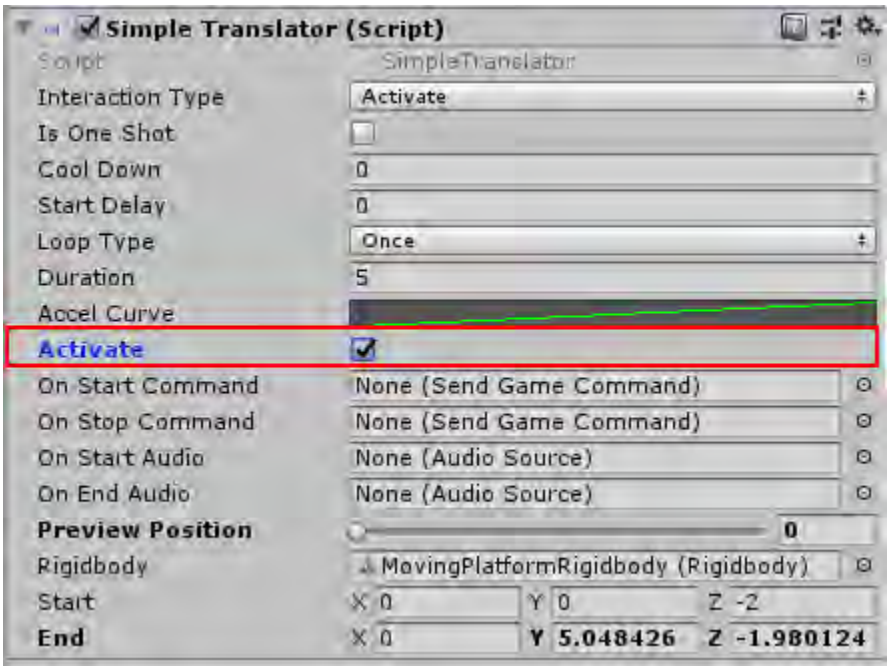




- Navigate to the **Inspector**
- In the **Simple Translator** Component
- Use the **Preview Position** slider to view where the Platform will go



- In the **Simple Translator** Component, tick the **Activate** box



- Press **Play**

Your **MovingPlatform** will move up and will stop when it reaches the top of the path you have set.

Let's make this move back and forth, with the **MovingPlatfrom** selected:

- Navigate to the **Inspector**
- In the **Simple Translator** Script
- Set **Loop Type** to **Ping Pong**

- Press **Play**

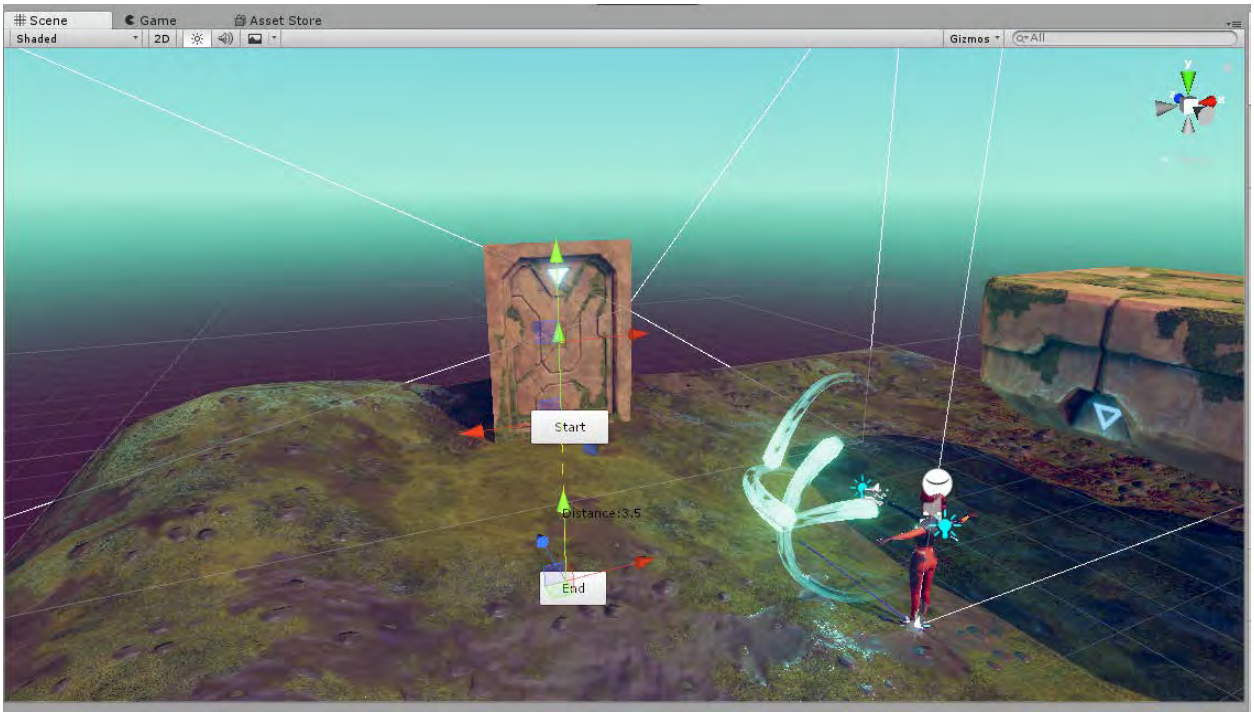
The **MovingPlatform** will now move to the top and come back down again. The **MovingPlatfrom** will go to any position you set as the **End Point.**

Opening a Door with a Command

In the 3D Game Kit, Game Commands send a signal to other objects in Unity telling them to perform an action.

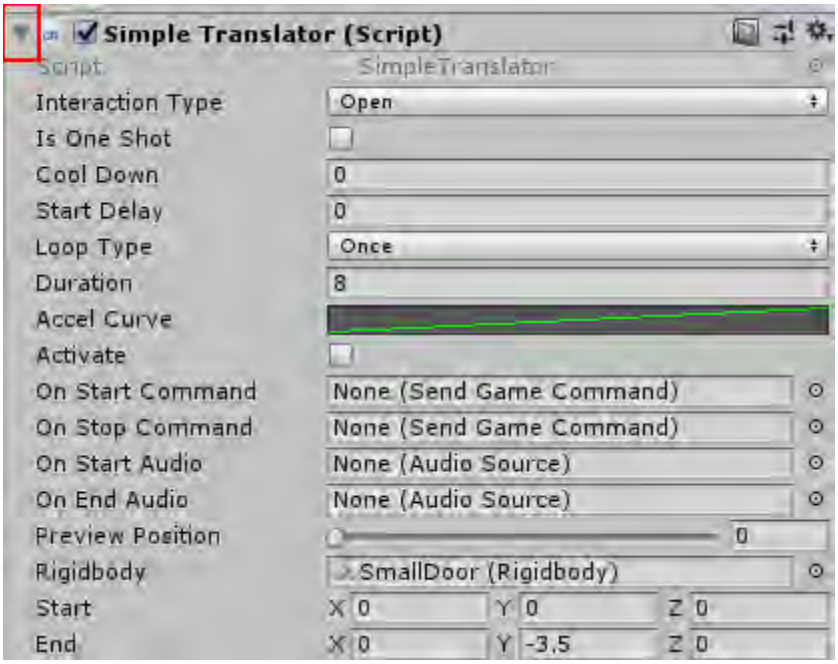
We'll be opening a Door using a Pressure Pad. Let's add a Door to the scene:

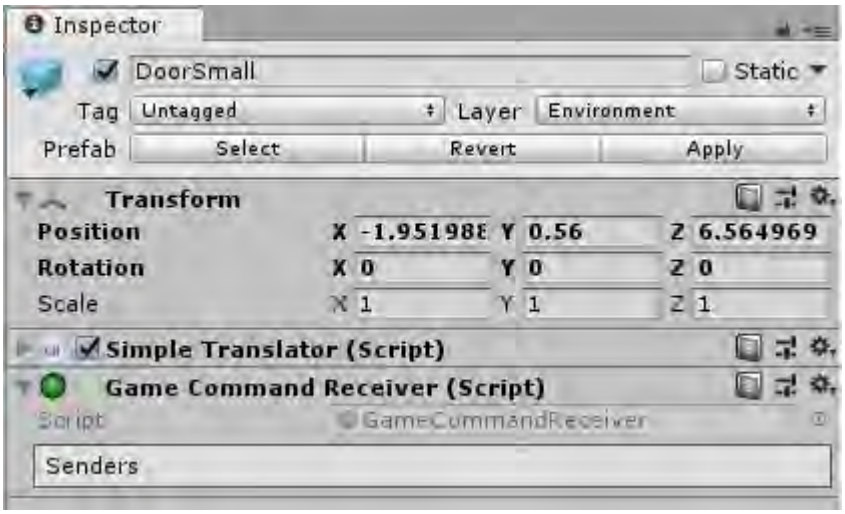
- In the **Project Window,** go to **Prefabs** > **Interactables**
- Find **DoorSmall** and drag it into the **Scene View**

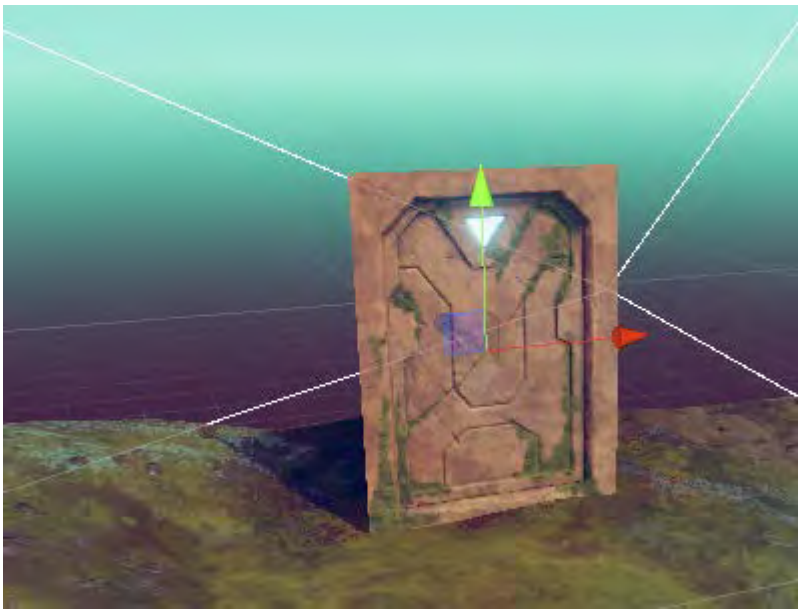


The Gizmos on this object can be overwhelming. They can be adjusted to reveal only the Transform tools for the object or easy placement:

- With **DoorSmall** selected in the Hierarchy, Navigate to the Inspector.
- Click on the arrow on the **Simple Translator** Component to collapse it


Simple Translator (Script)
Script
SimpleTranslator
Interaction Type
Open
Is One Shot
Cool Down
0
Start Delay
0
Loop Type
Once
Duration
8
Accel Curve
Activate
On Start Command
None (Send Game Command)
On Stop Command
None (Send Game Command)
On Start Audio
None (Audio Source)
On End Audio
None (Audio Source)
Preview Position
0
Rigidbody
SmallDoor (Rigidbody)
Start
X 0
Y 0
Z 0
End
X 0
Y -3,5
Z 0


Inspector
DoorSmall
Static
Tag
Untagged
Layer
Environment
Prefab
Select
Revert
Apply
Transform
Position
X -1,95198E
Y 0,56
Z 6,564969
Rotation
X 0
Y 0
Z 0
Scale
X 1
Y 1
Z 1
Simple Translator (Script)
Game Command Receiver (Script)
Script
GameCommandReceiver
Senders

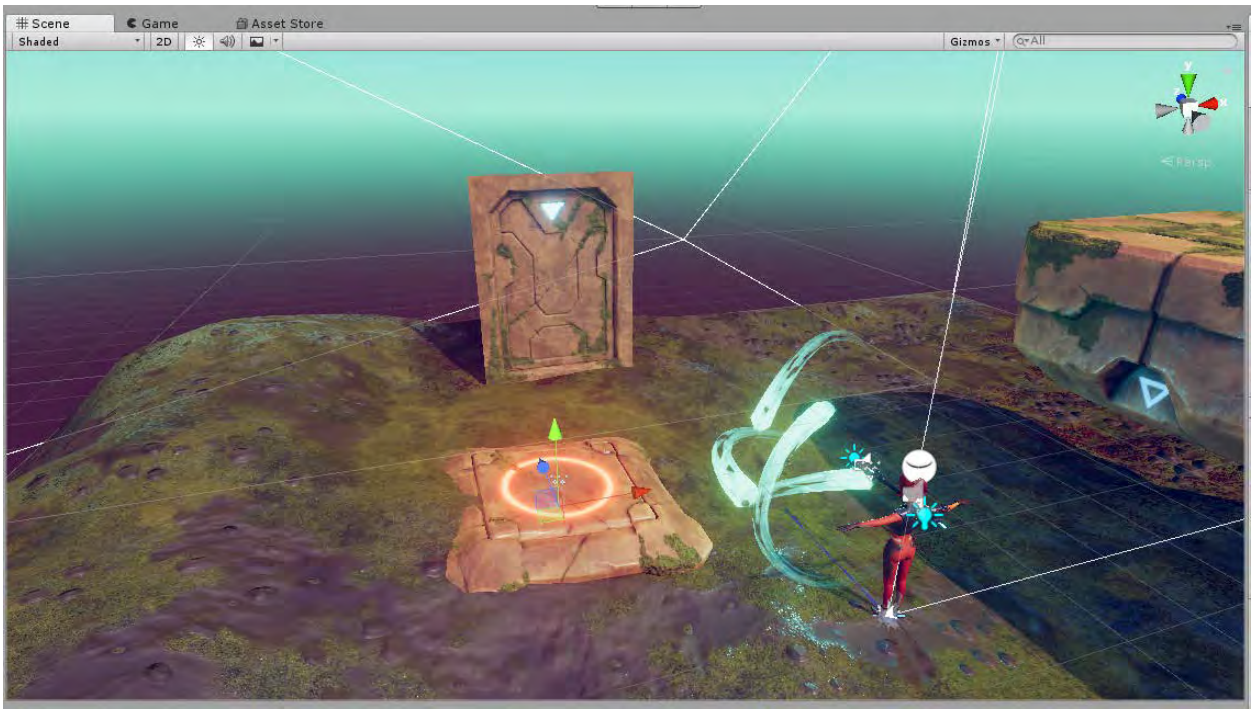


Only the Transform tool for the object will now be visible.

- Position **DoorSmall** using the **Transform Tools** where you like.

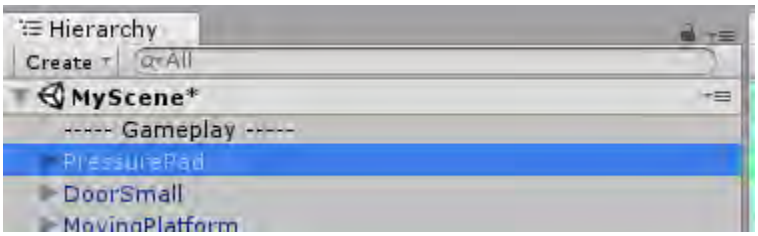
Let’s add a Pressure Pad:

- In the **Project Window** go to **Prefabs** > **Interactables**
- Find **PressurePad** and click and drag it into the **Scene View**
- Use the **Transform Tools** and place it near the door

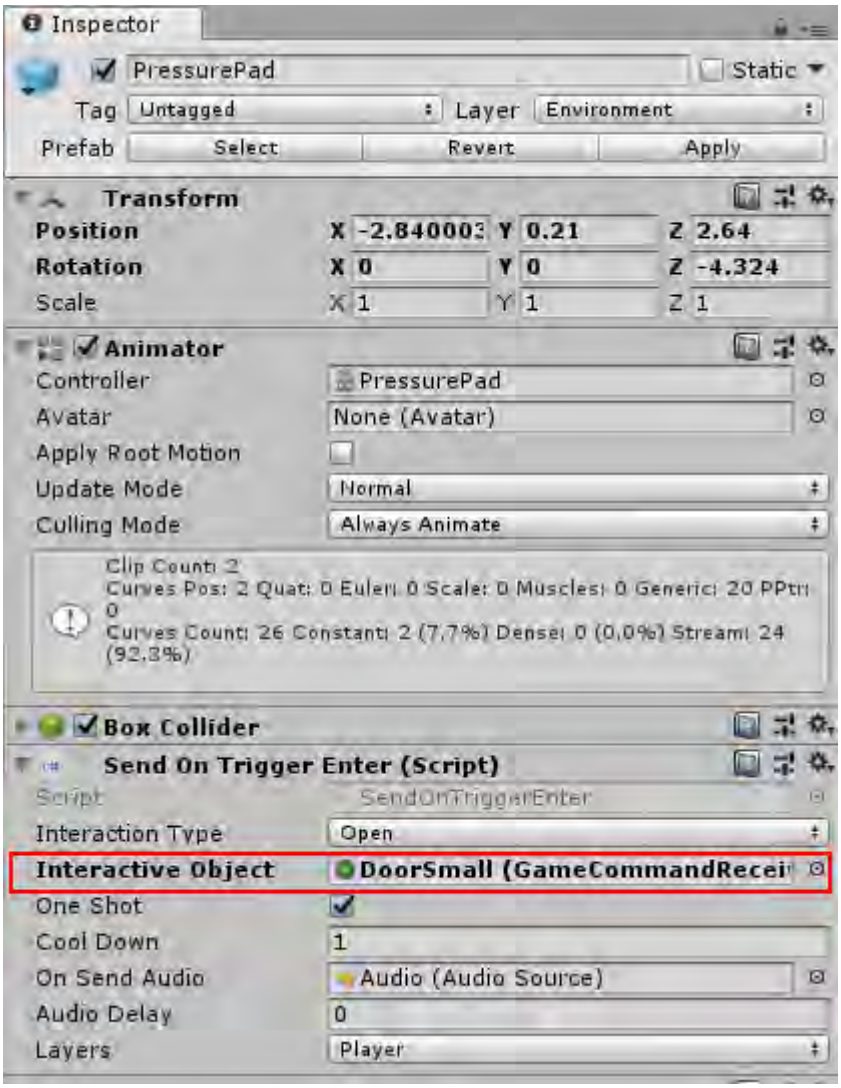


Now let's connect the **PressurePad** and **DoorSmall** so that the Door opens when Ellen steps on the Pressure Pad.

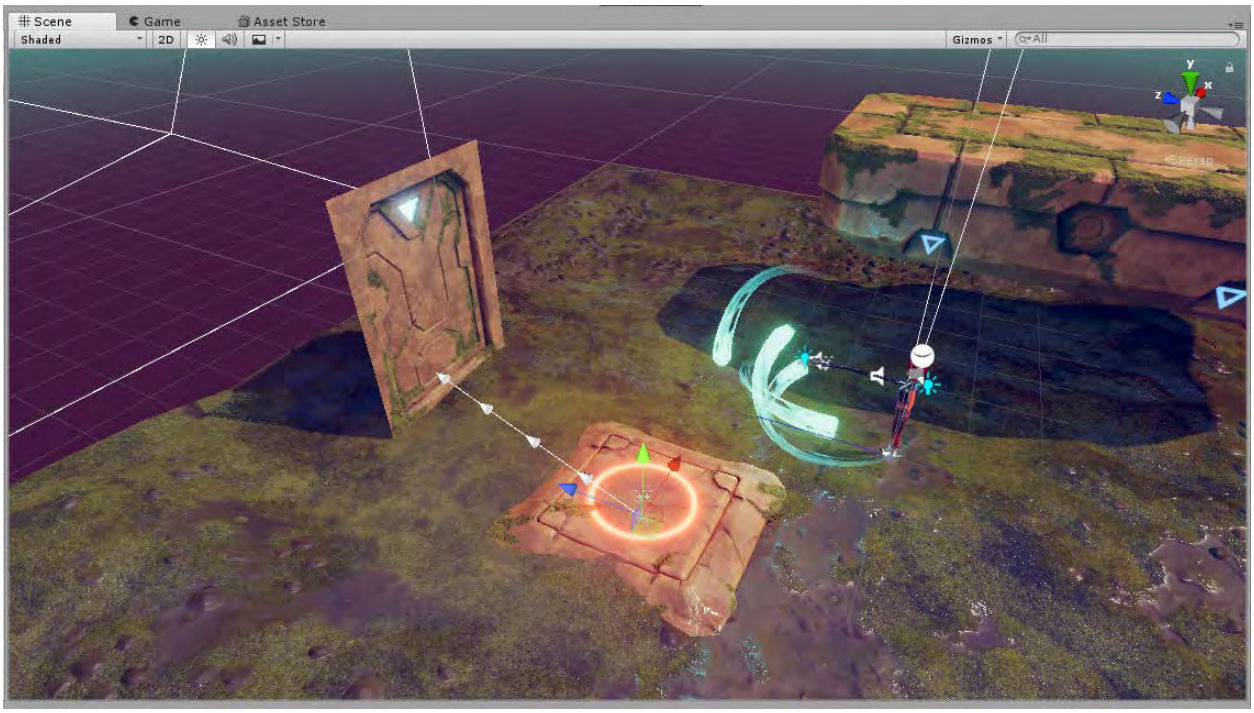
- In the Hierarchy click on **PressurePad** to select it



- In the **Hierarchy**, click and Drag **DoorSmall** to the **Interactive Object** slot in the **Send on Trigger Enter** Component on the **PressurePad**

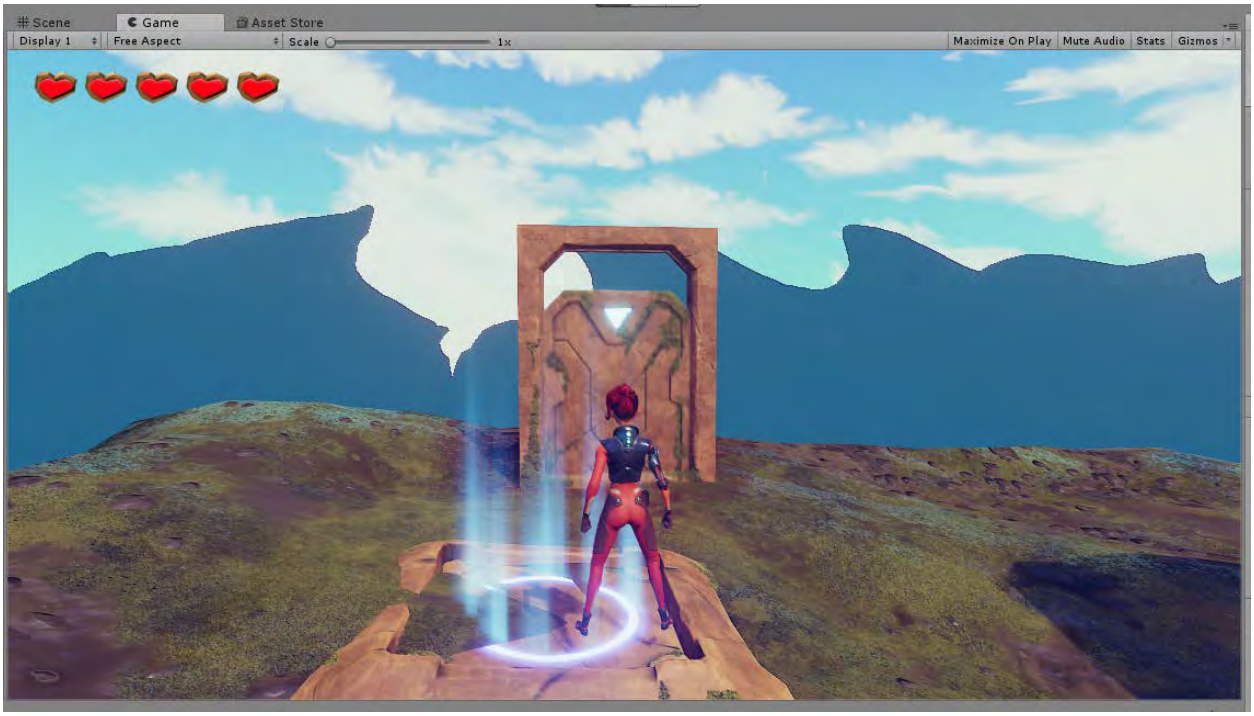


In the **Scene View** there should be a white arrowed line showing a connection from **PressurePad** to **DoorSmall.**



- Press **Play**

The Pressure Pad will illuminate, descend and make the door open when Ellen steps on it.



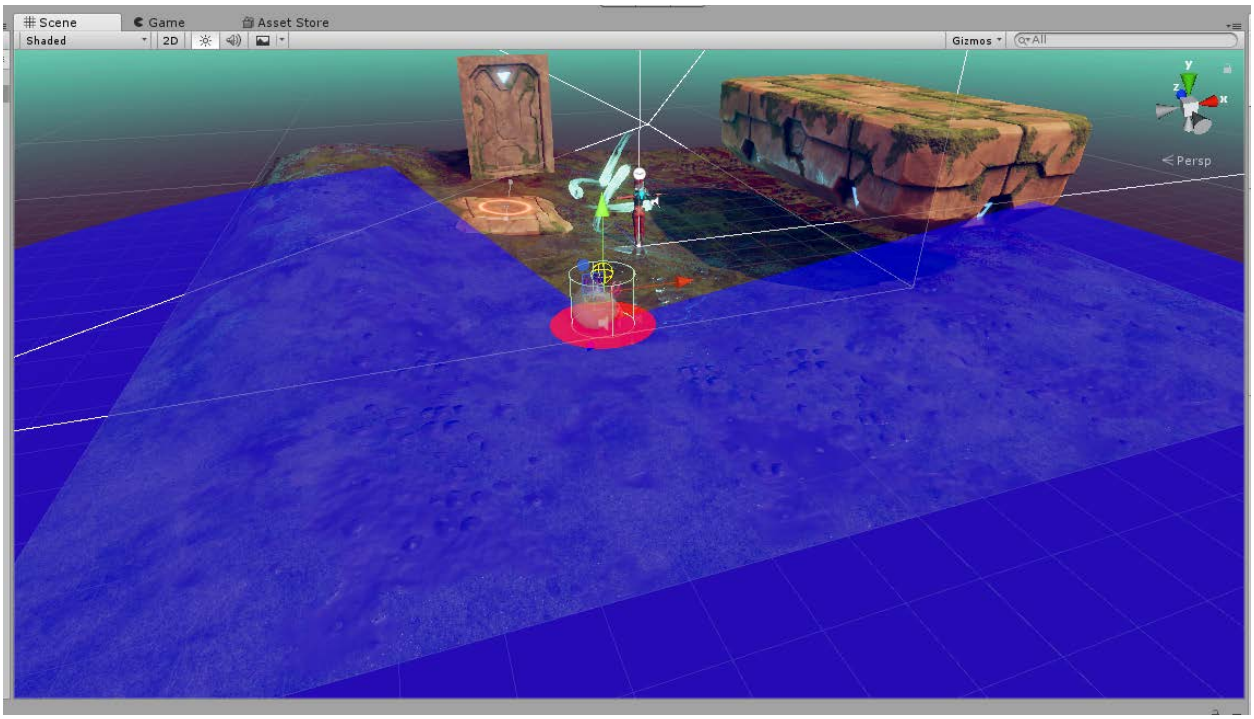
Enemies

We have 3 premade enemies in the 3D Game Kit. They can be found in **Prefabs** > **Characters** > **Enemies** > […..]

The enemies are Chomper, Spitter and Grenadier. Chomper is a close range melee enemy, Spitter is a long range projectile enemy and Grenadier is a boss type enemy with specific attack patterns, a mix of projectile, melee and a shield burst defense.

Let’s place a Chomper in the scene for Ellen to fight:

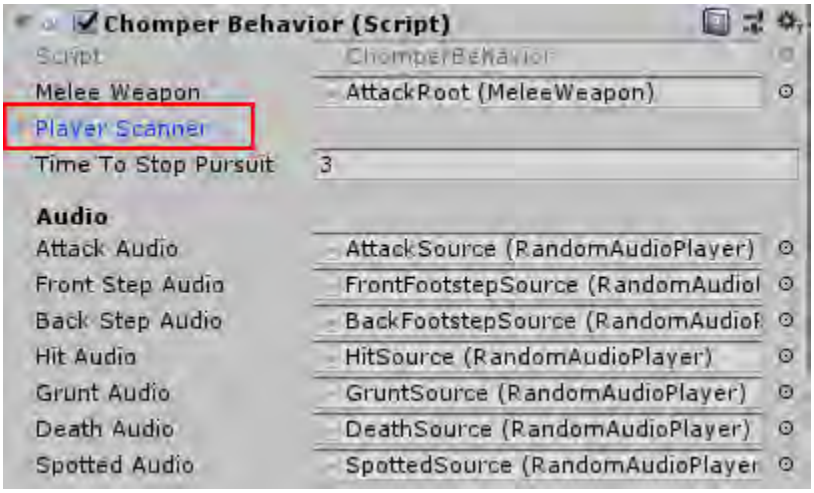
- In the **Project Window** go to **Prefabs** > **Characters** > **Enemies** > **Chomper**
- Drag **Chomper** into the **Scene View**
- Use the **Transform Tools** to position Chomper where you like



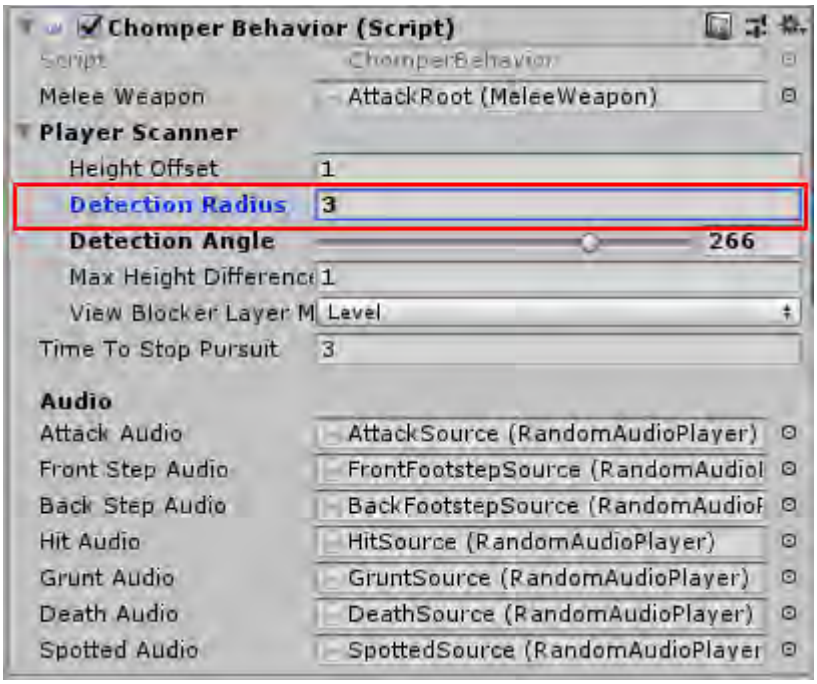
A large dark blue semi-circle will appear in front of Chomper, this is his **Detection Radius.** When Ellen walks into this area, he will chase and attack her.

Let's reduce the area in which he can see, with **Chomper** selected in the **Hierarchy:**

- In the **Inspector,** navigate to the **Chomper Behaviour** Component
- Expand **Player Scanner** by click the arrow next to it

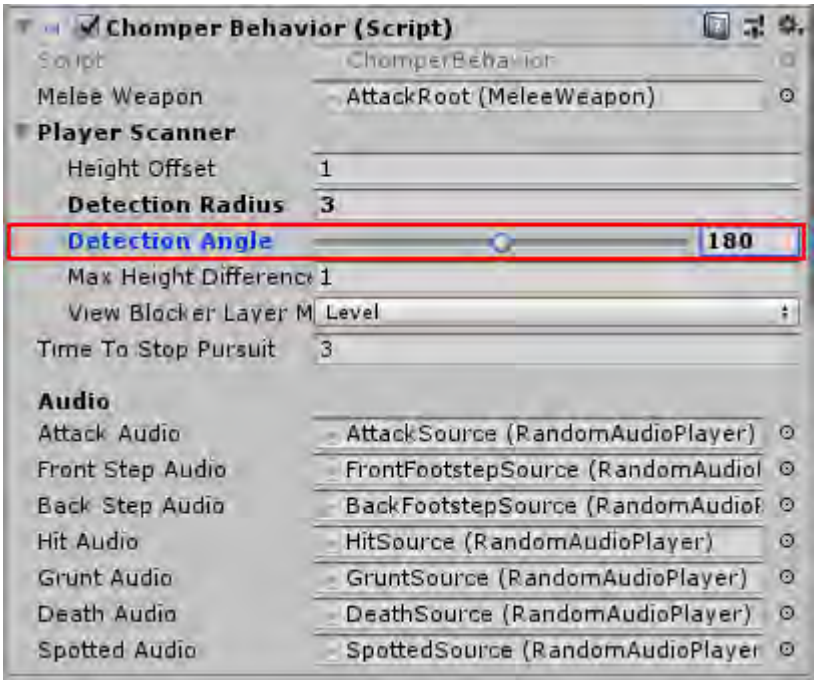


- In **Detection Radius,** set the value to **3**

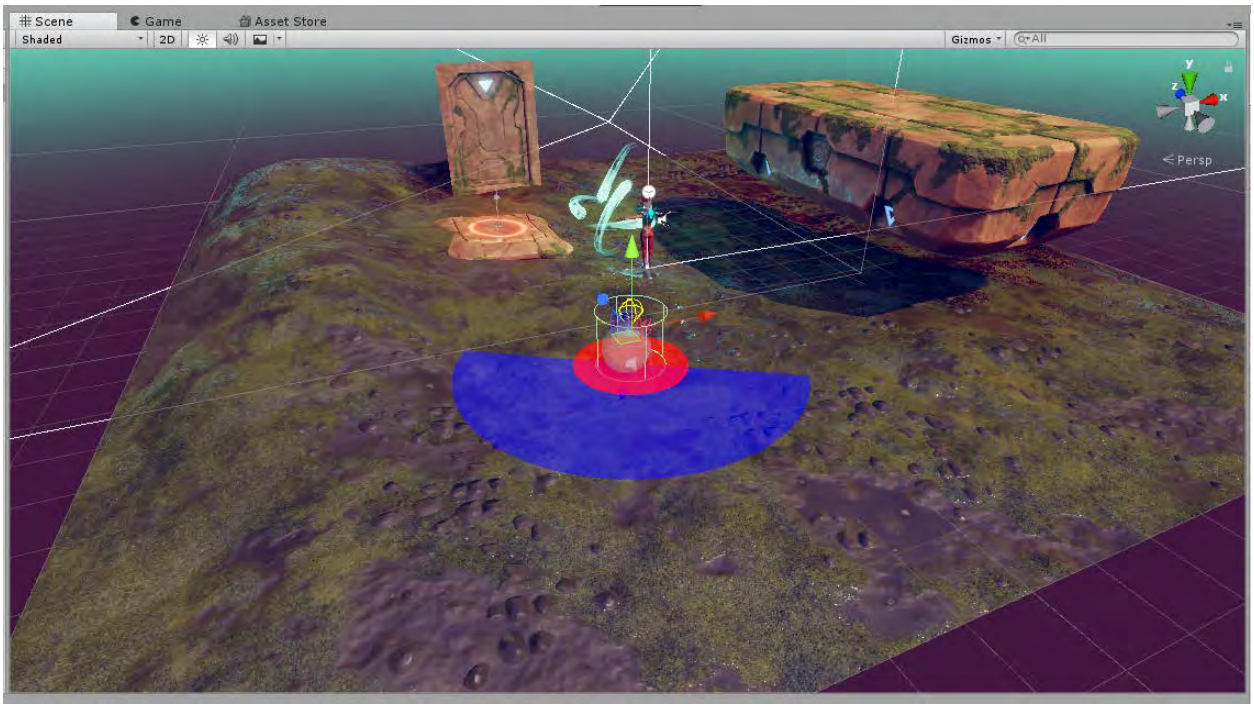


Let's also make Chomper only be able to see from the front:

- Slide the **Detection Angle** Slider to **180**



Now Chomper can only see what is in front of him and at a much closer distance.



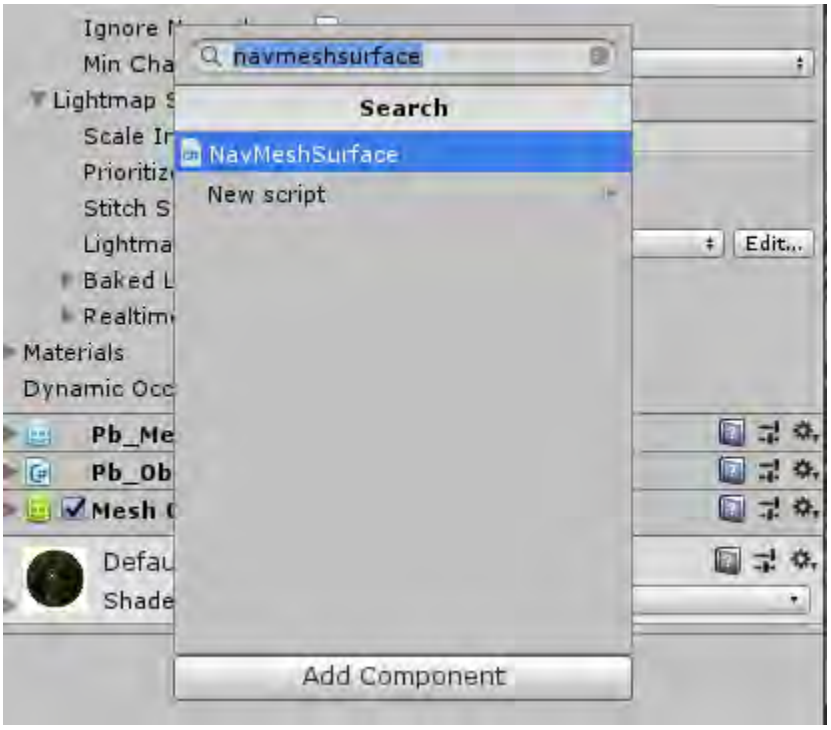
Note: To remove this Gizmo from the **Scene View,** collapse the **Chomper Behaviour** Component.

- Press **Play** and run near the **Chomper**

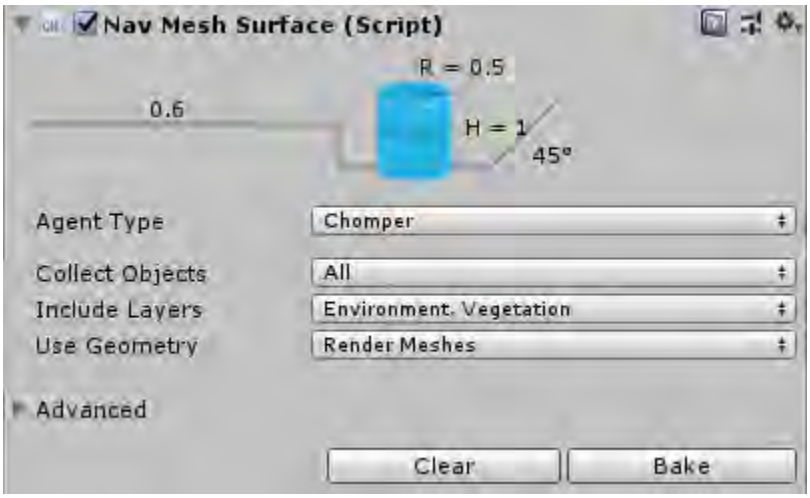
Chomper will detect Ellen, but will only run on the spot. We need to tell Chomper where he can move on the ground, we do this by adding a **NavMesh Surface.**

- In the **Hierarchy** click on the **Plane**

- In the **Inspector** go to **Add Component**
- Search for **NavMeshSurface**



- Hit Enter on the Keyboard or click on the Script to add the Component to the **Plane**
- Navigate to the **Nav Mesh Surface** Component
- Set **Agent Type** to **Chomper** (This is used for all enemy types)
- Set **Include Layers** to Nothing
- Now on **Include Layers**, select **Environment**
- On **Include Layers**, select **Vegetation**



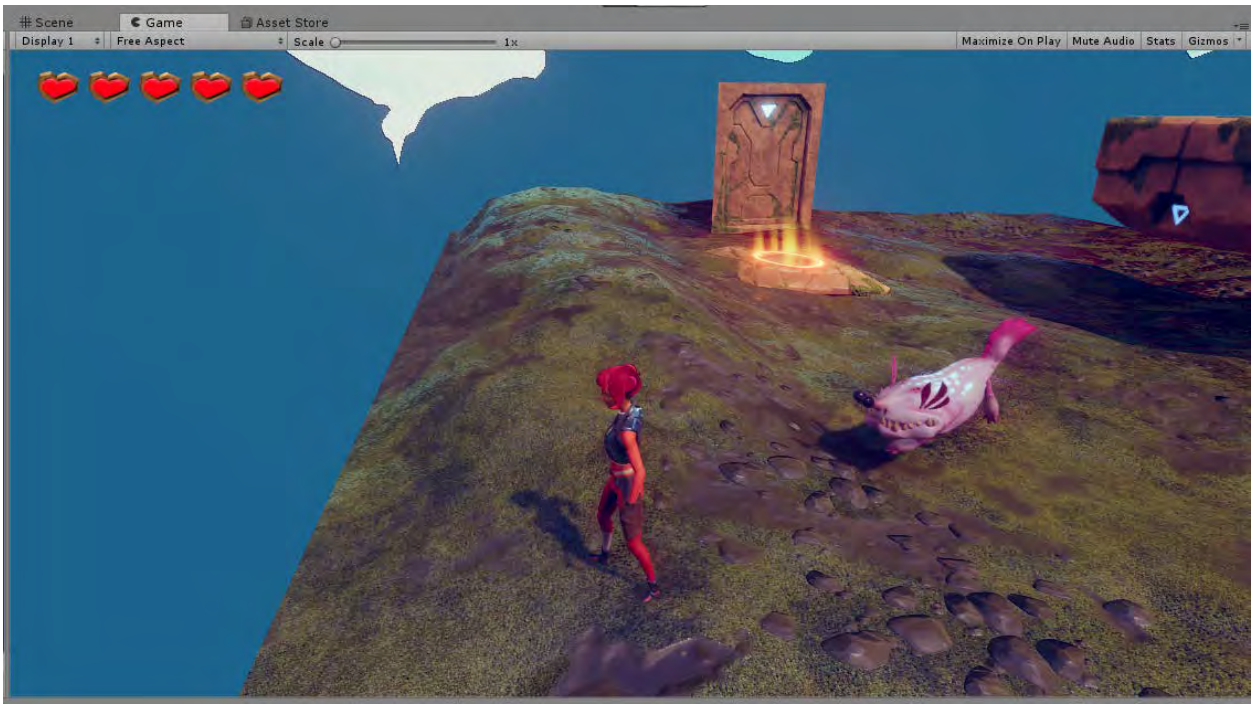
- At the bottom of the **Nav Mesh Surface** Component click **Bake**

A light blue surface will appear on top of the ground moving platform. This tells any enemy you place in the scene where they can walk.

- Press **Play** and run in front of **Chomper**

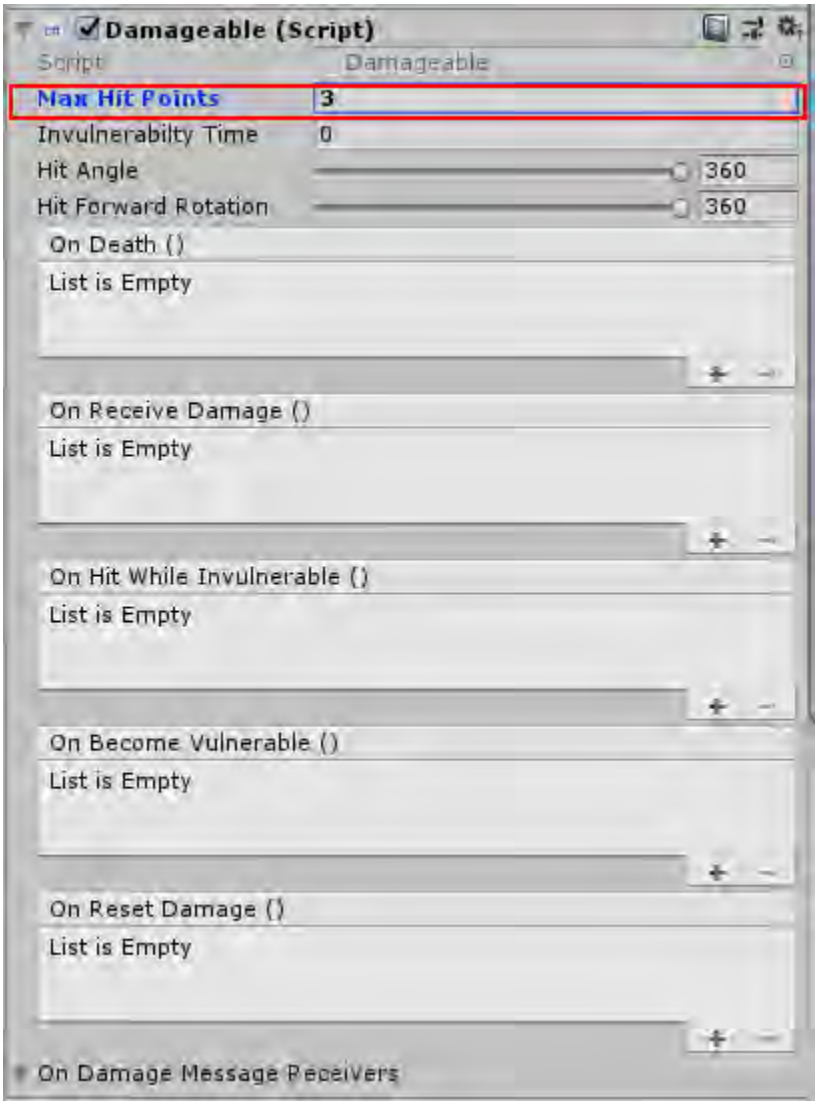
Chomper will now run after you and attack!

- Use Left Mouse Click to attack with your Staff!



Chomper will die after one hit. To increase this:

- In the **Hierarchy**, select **Chomper**
- In the **Inspector** navigate to the **Damageable** Component
- Increase **Max Hit Points** to how many hits you want **Chomper** to take before he dies. Ellen's Staff deals 1 Hit Point

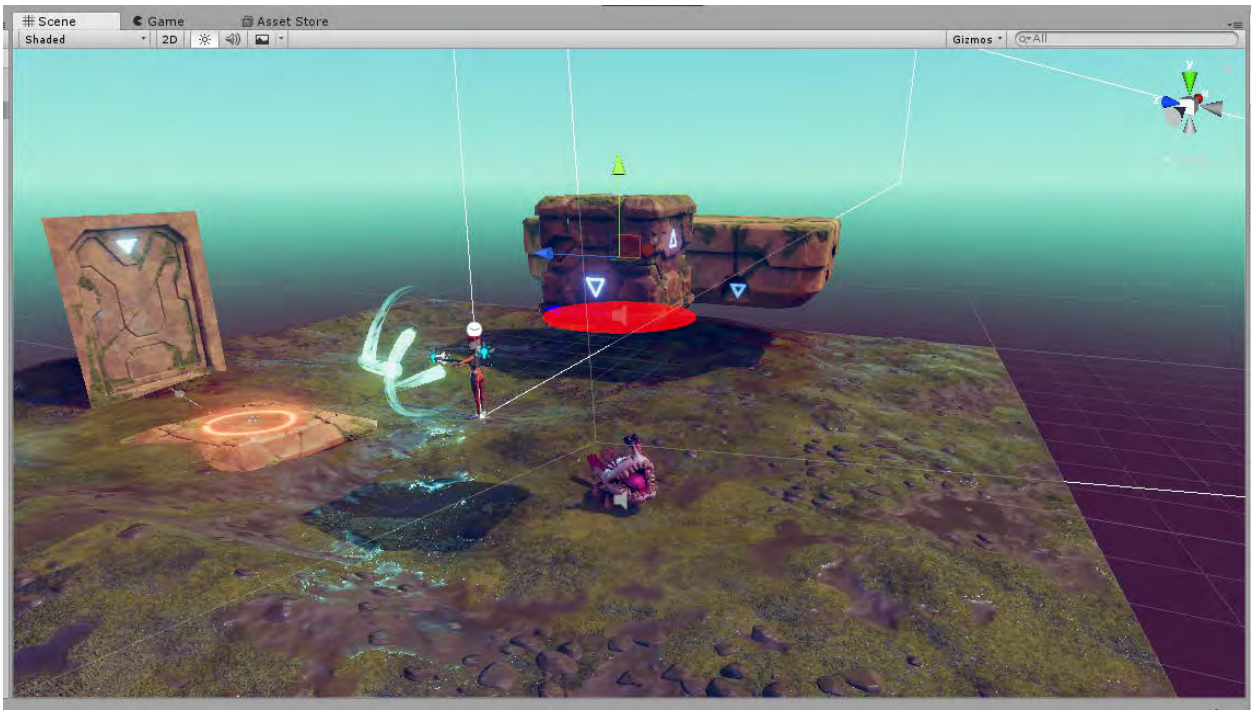

Damageable (Script)
Script
Damageable
Max Hit Points
3
Invulnerabilty Time
0
Hit Angle
360
Hit Forward Rotation
360
On Death ()
List is Empty
On Receive Damage ()
List is Empty
On Hit While Invulnerable ()
List is Empty
On Become Vulnerable ()
List is Empty
On Reset Damage ()
List is Empty
On Damage Message Receivers

Damaging with Objects

We can inflict damage on objects that has a **Damageable** Component using a **Contact Damager.**

We can Demonstrate how this works using a box and the Chomper

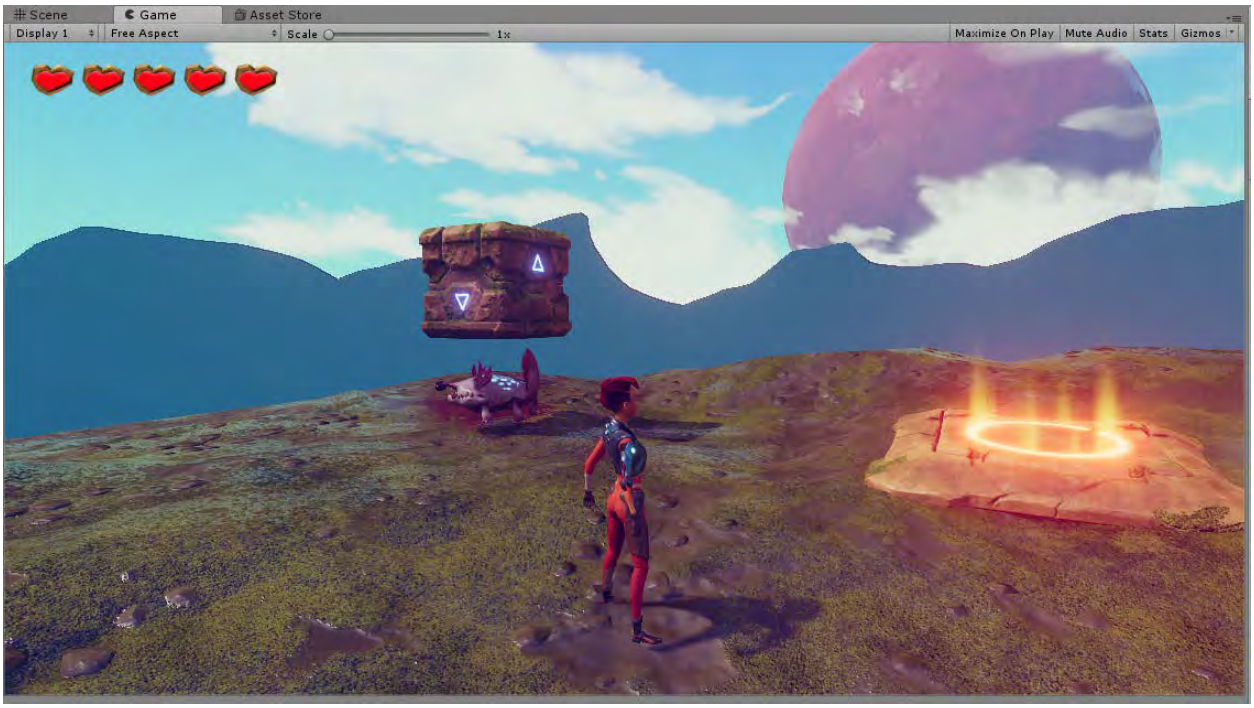
- In the **Project Window** go to **Prefabs** > **Interactables**
- Find the **DestructibleBox** Prefab and click and drag it into the **Scene View**
- Use the **Translate Tool** to position the box above **Chomper**
    - Place it high up so you have time to view it in testing



- Press **Play**

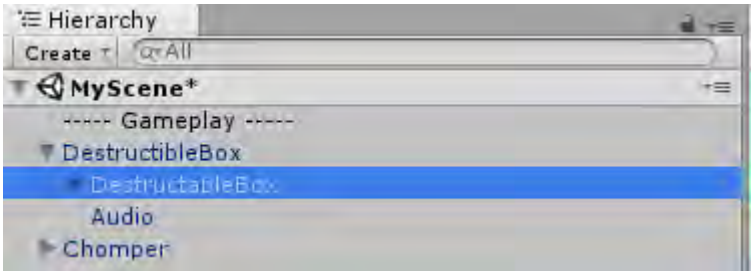
The box will fall and land on **Chomper** and stay there, nothing happens.

Note: Don't get too close to Chomper or he'll chase after Ellen. You can always reduce his Detection Radius to 0 if you wish.

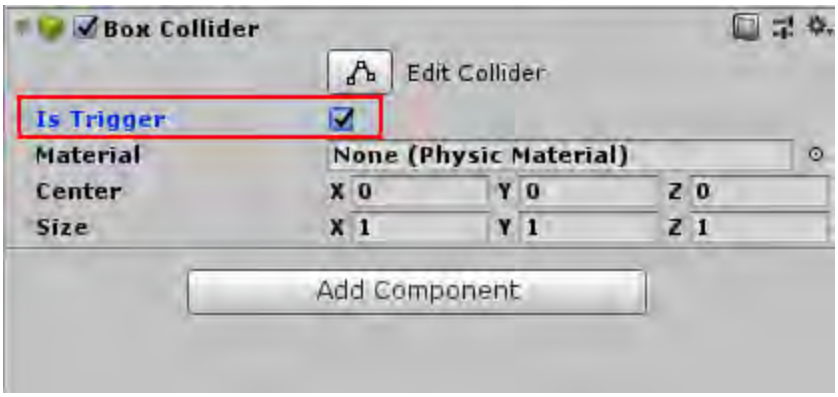


We need the box to be causing damage when it hits Chomper.

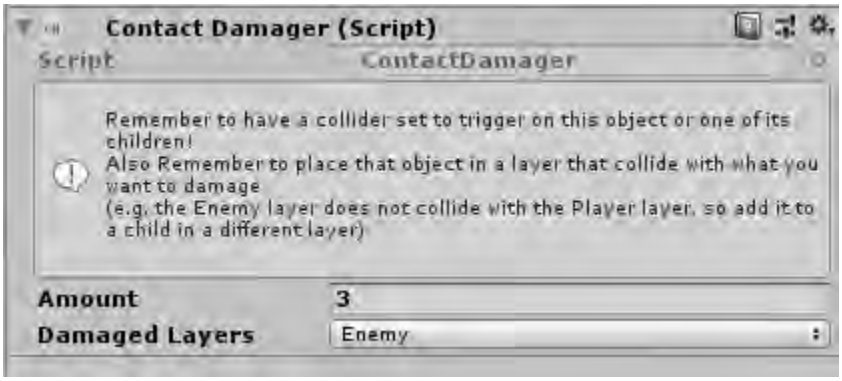
- In the **Hierarchy** click the arrow next to **DestructibleBox** to expose its Children
- Select the **DestructibleBox** child



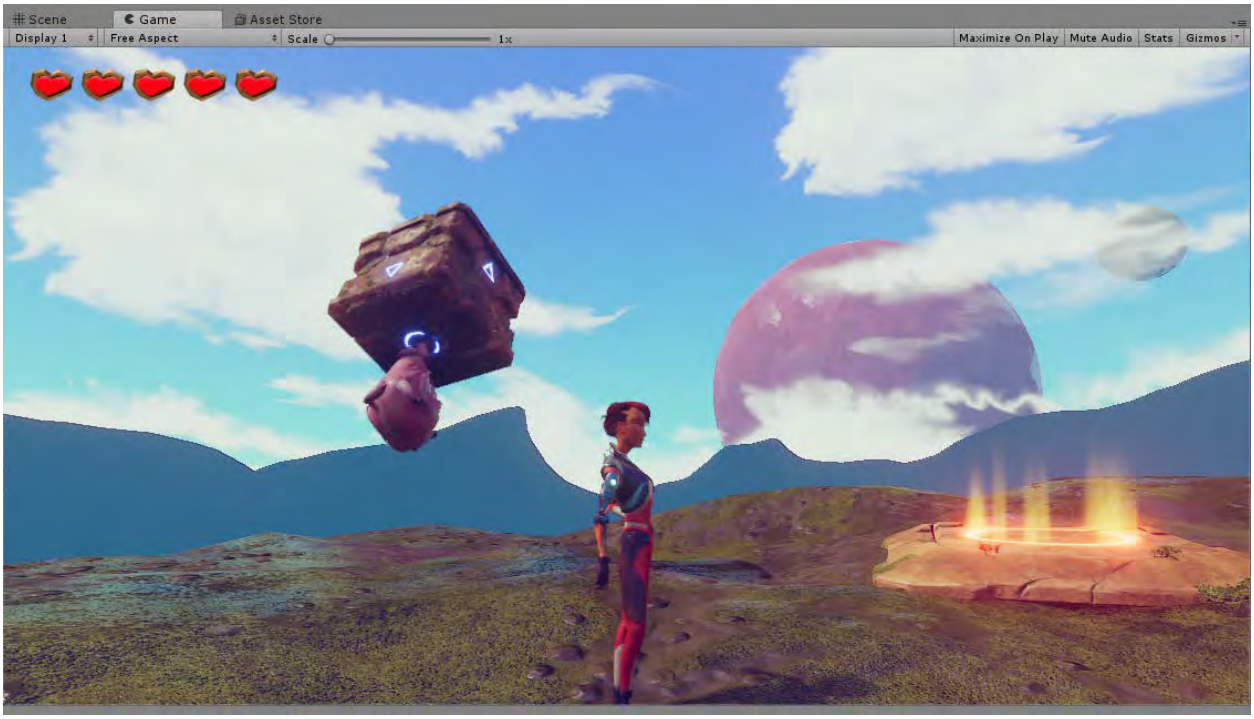
- Navigate to the **Inspector**
- Scroll to the bottom of the Inspector and Click **Add Component**
- Search for **Box Collider**
- Hit **Enter** on your Keyboard or Click on the **Box Collider** Component to add it to the **DestructibleBox**
- On the **Box Collider** Component tick the **Is Trigger** box



- Click **Add Component**
- Search for **Contact Damager**
- Hit **Enter** on your Keyboard or Click on the **Contact Damager** Script to add it as a Component
- In the **Contact Damager** Component set the **Amount** to **3**
    - Note that the Damage amount must be equal to the **Max Hit Points** you set for Chomper in order for him to receive the full amount of damage. We changed it to 3 in our project, ensure you check the **Max Hit Points** on Chomper's **Damageable** Component
- Set the **Damaged Layers** to **Enemy**

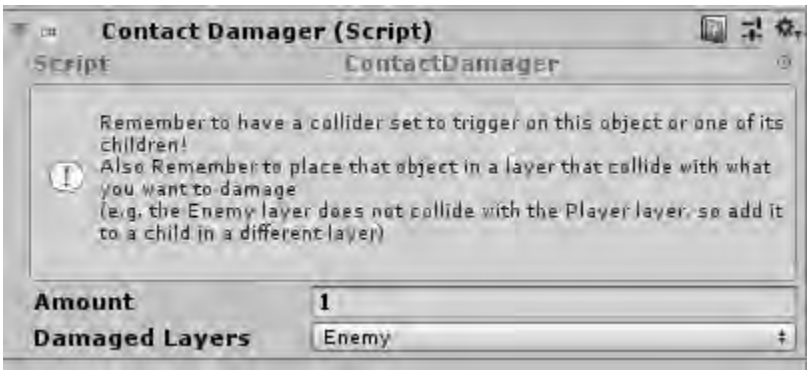


- Press **Play**



The box will land on Chomper, it will lose its health, turn into its ragdoll state and the box will bounce away. We have successfully caused enough damage to kill the Chomper, but this effect doesn't look great. We can make the box break when it hits Chomper. It already has a Contact Damager, so let's adapt it to affect the box.

- In the **Hierarchy**
- Find **Chomper** and select it
- Navigate to the **Inspector**
- Scroll to the bottom of the **Inspector**
- Click **Add Component** and search for **Contact Damager**
- Hit **Enter** on the Keyboard or click on the Script to add it to **Chomper**
- In the **Contact Damager** Component
- Set the **Amount** to **1**
- In the **Damaged Layer** drop down select **Enemy**



- Press **Play**

The box will fall on Chomper, break on impact and make **Chomper** lose all health and ragdoll.

Decorating

In the Game Kit we provide all the environment objects we used to build the example game.

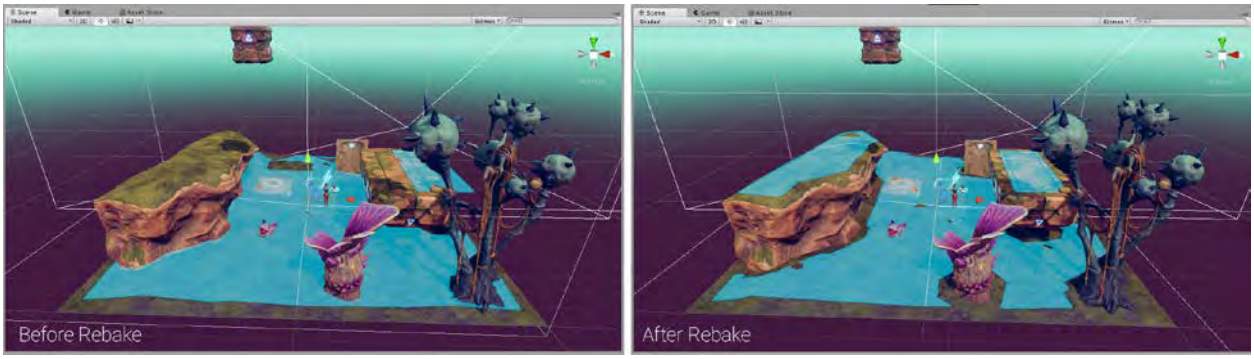
You can find these in **Prefabs** > **Environment** > ….

They are split into folders of different types of assets, got through the folders and start building out your scene.

What world can you create?

Note: You will need to rebake the NavMesh for your enemies to know that the new surfaces you add are walkable or that they need to avoid objects (like big plants).

- In the **Hierarchy** select the **Plane**
- Navigate to the **Inspector**
- In the **NavMesh** Surface click **Bake**

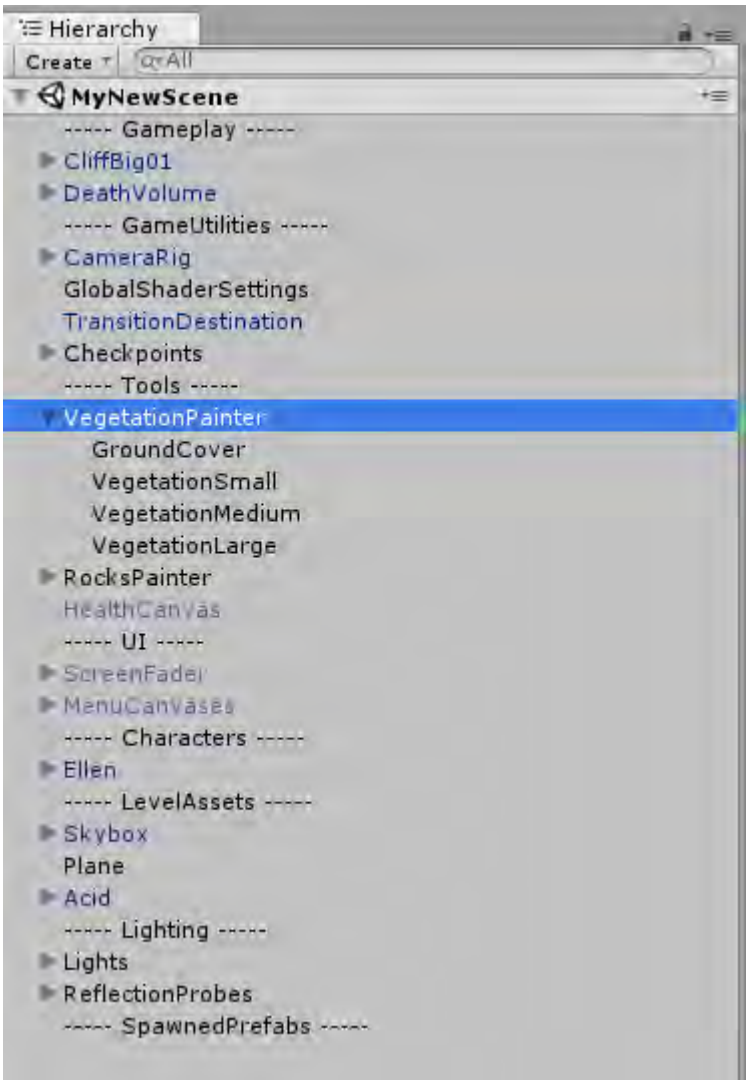


Rock and Vegetation Painter

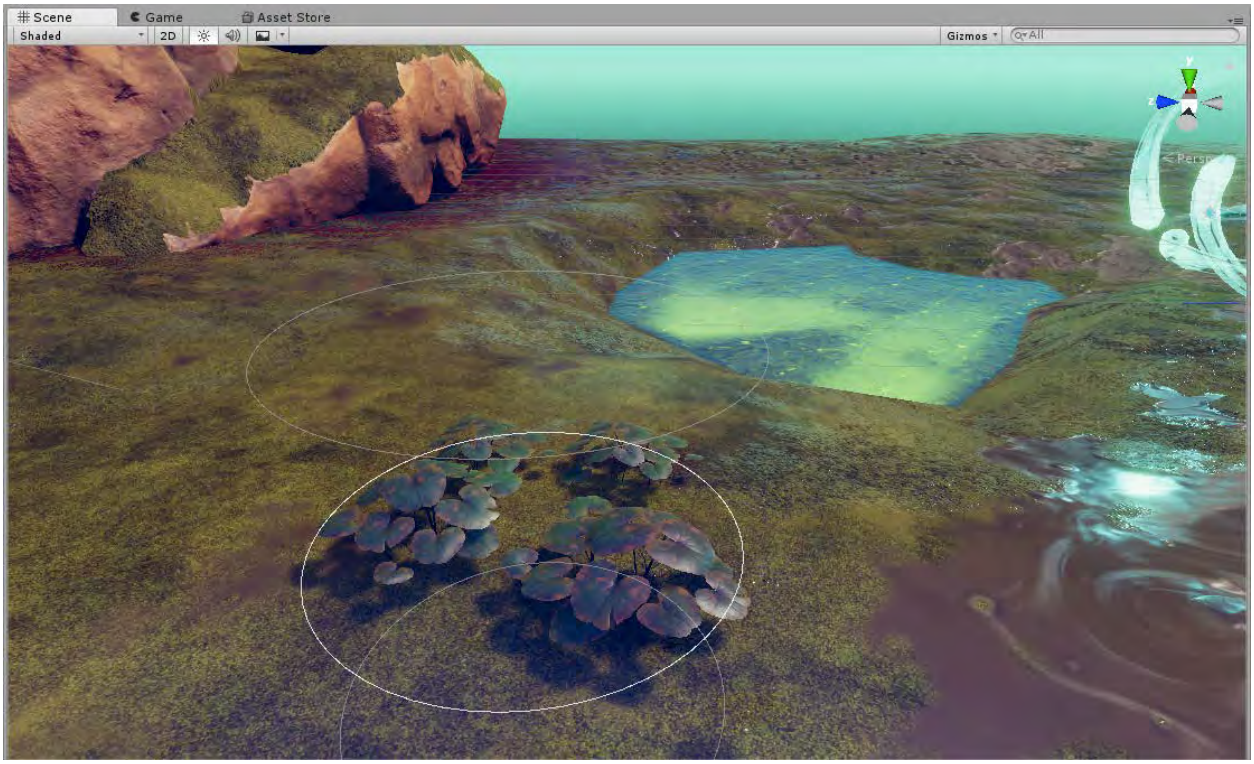
To further spruce up your scene, we have created a Rock Painter and a Vegetation Painter. These tools allow you to place vegetation and rocks with varying sizes and rotations while keeping them aligned with the surface you are painting on.

To use these tools;

- In the Hierarchy locate **VegetationPainter**
- Click on the down arrow to expand its children

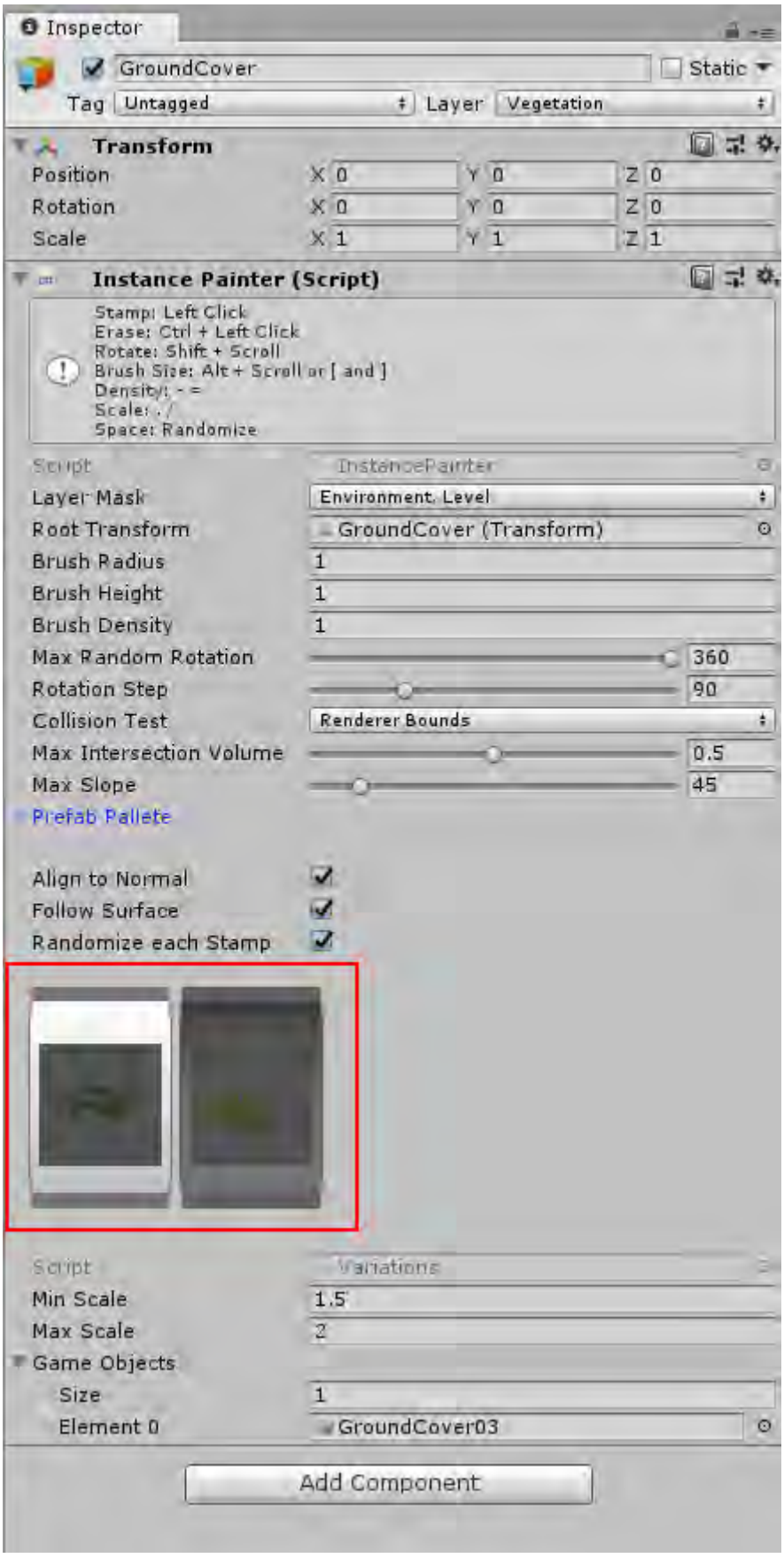


- Click on **GroundCover**
- Hover the mouse over the ground in the **Scene View**
- Left click to place some grass/lilly pads where you desire.



You can change the type of object being placed to do this;

- Navigate to the **Inspector**
- In the Instance Painter component there are pictures of each prefab in the painter.


Inspector
GroundCover
Static
Tag Untagged
Layer Vegetation
Transform
Position X 0 Y 0 Z 0
Rotation X 0 Y 0 Z 0
Scale X 1 Y 1 Z 1
Instance Painter (Script)
Stamp: Left Click
Erase: Ctrl + Left Click
Rotate: Shift + Scroll
Brush Size: Alt + Scroll or [and]
Density: - =
Scale: , /
Space: Randomize
Script InstancePainter
Layer Mask Environment, Level
Root Transform GroundCover (Transform)
Brush Radius 1
Brush Height 1
Brush Density 1
Max Random Rotation 360
Rotation Step 90
Collision Test Renderer Bounds
Max Intersection Volume 0.5
Max Slope 45
Prefab Pallete
Align to Normal
Follow Surface
Randomize each Stamp
Script Variations
Min Scale 1.5
Max Scale 2
Game Objects
Size 1
Element 0 GroundCover03
Add Component

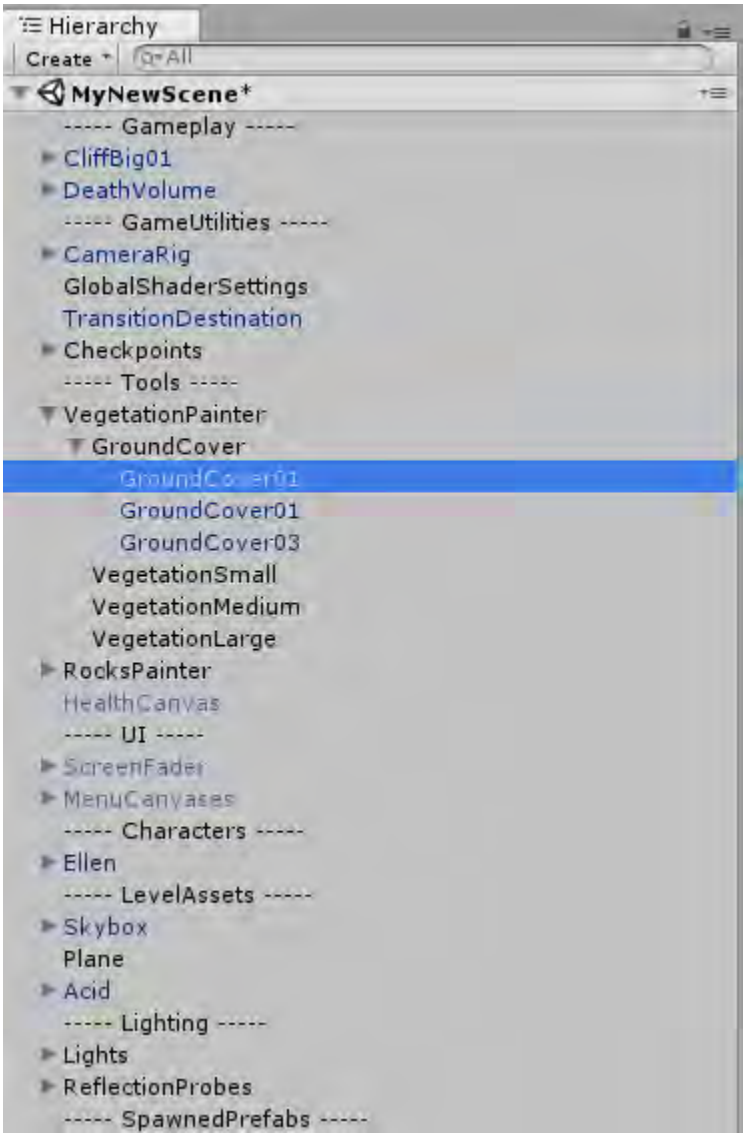
- Click on the white highlighted box to select that **Prefab** to paint with.
- The selected prefab will be grey

Controls for the painter can be found at the top of the **Instance Painter** Component, some controls to get your started;

Left Click = Paint
Ctrl (Cmd) + Left Click = Delete
Alt + Scroll = Increase Brush Size
Space = Randomize positions and rotation

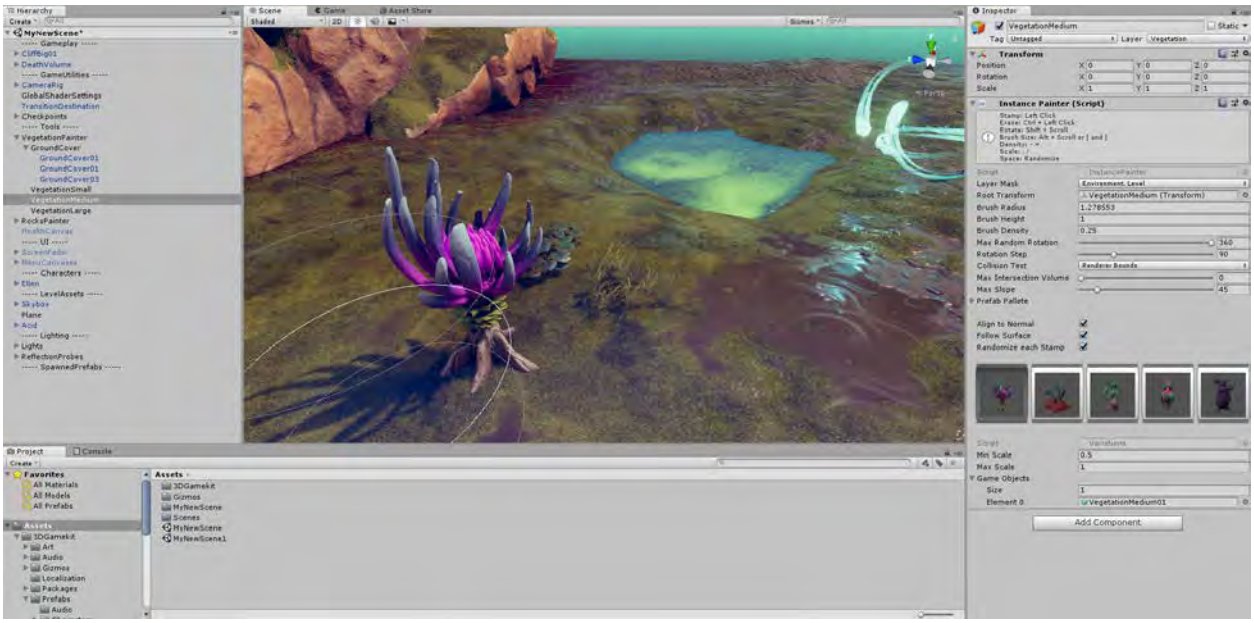
Any object you paint on will be stored as a Child of the Parent. For example;

- Navigate to the **Hierarchy**
- Expand **GroundCover**



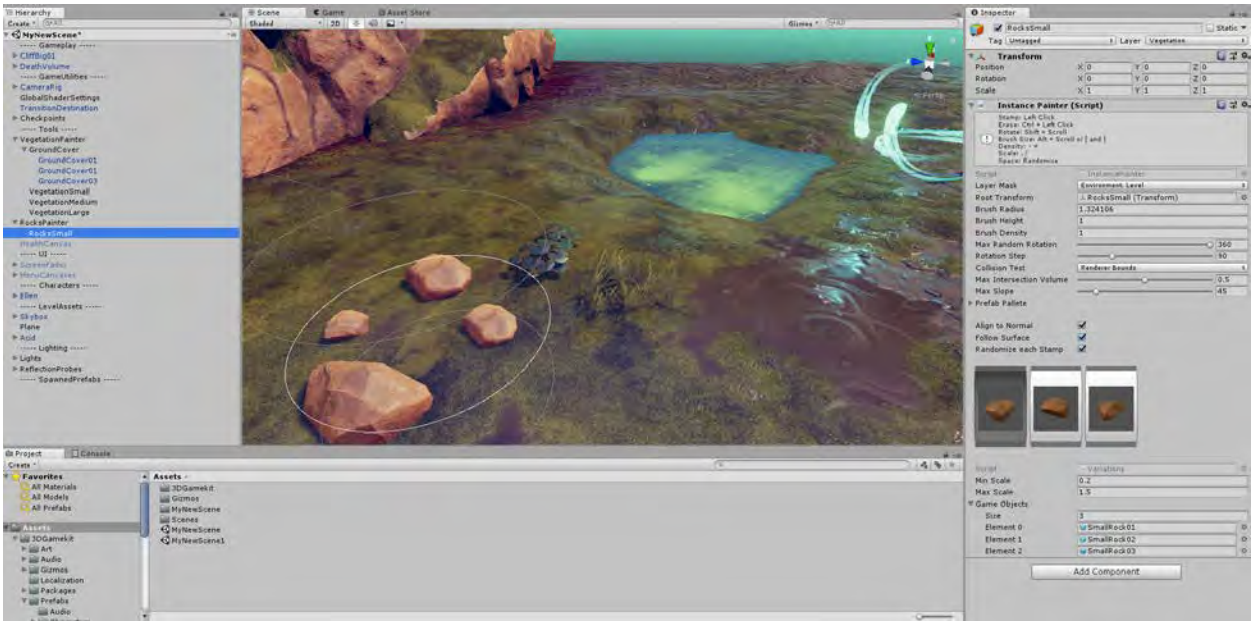
Every object of that type from the paint will be stored here as a child. You can also click on these to individually edit and place them.

The process is the same to paint **VegetationSmall**, **VegetationMedium** & **VegetationLarge**



Painting rocks is done in the same way;

- In the **Hierarchy** find **RockPainter**
- Click on the arrow to expand it's Children
- Click on RocksSmall
- Hover your mouse over the desired area to place rocks and Click to place.



Teleporting the Player

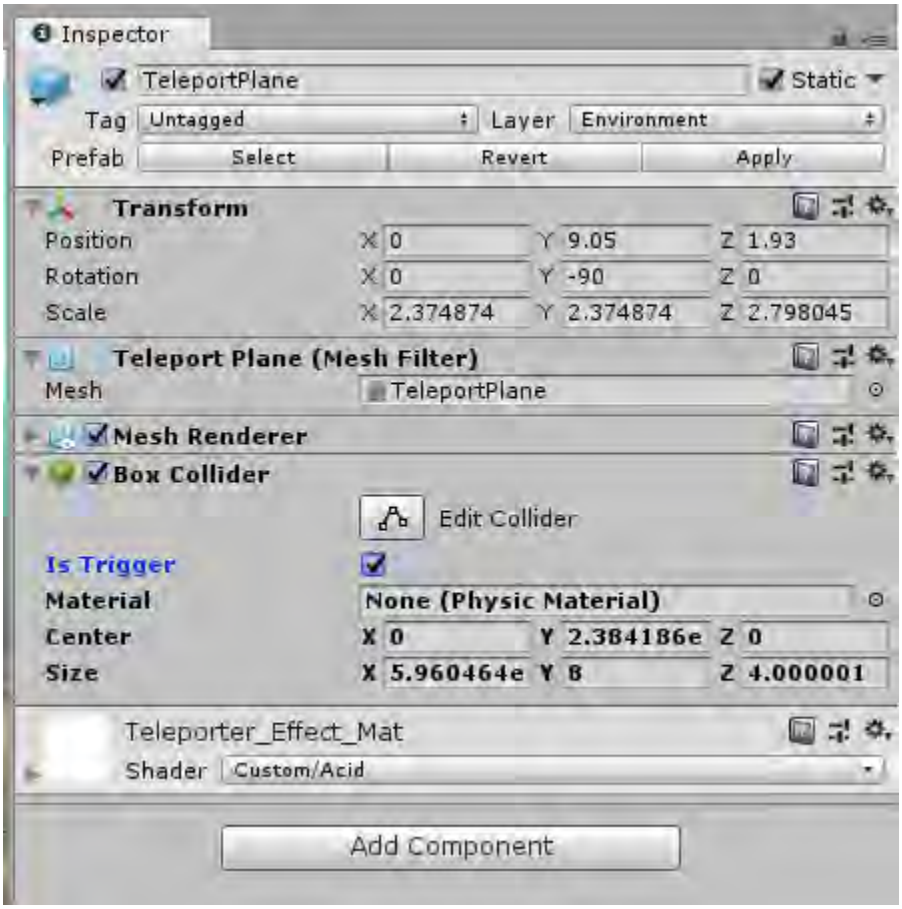
We have a teleporting system in the Game Kit, you can teleport Ellen to other Levels or to different places within your scene.

Let’s create a Teleporter within a scene;

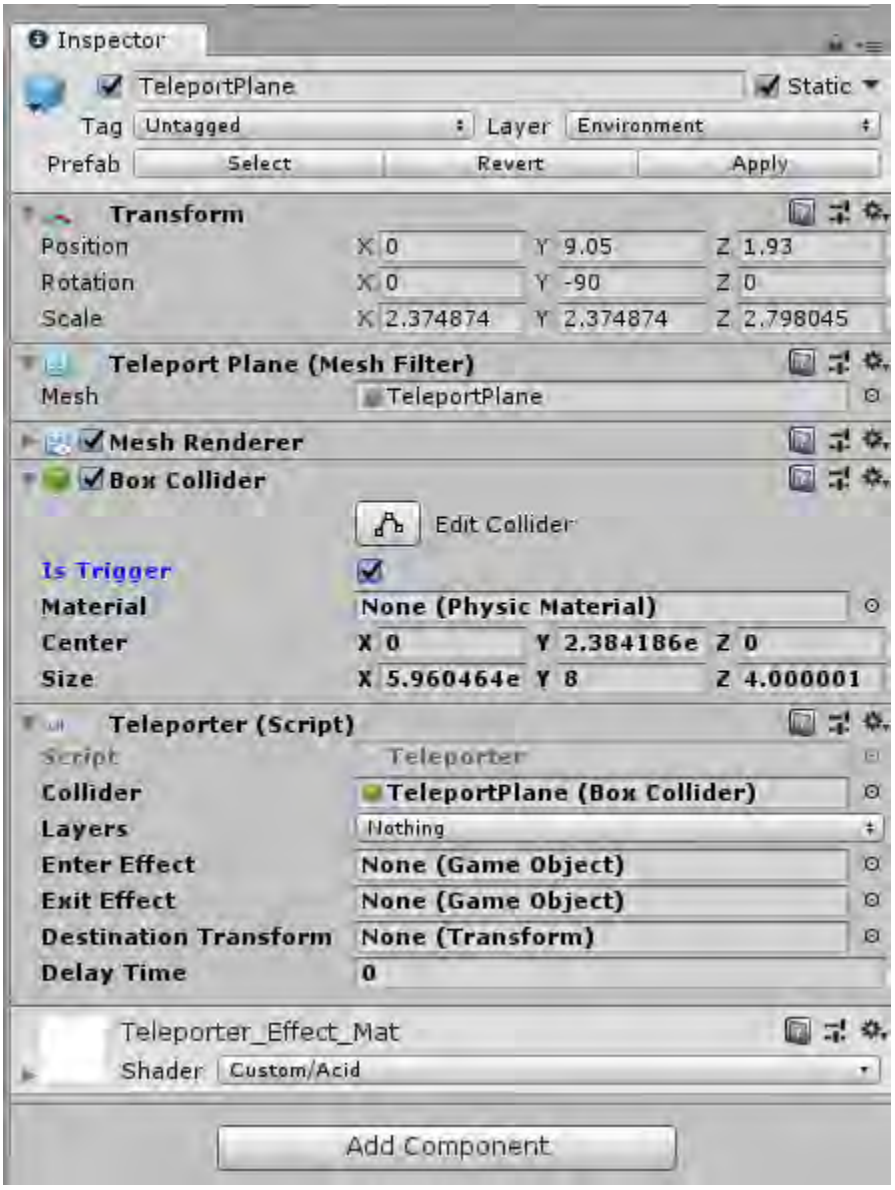
- In the **Project Window** go to **Prefabs** > **Structures**
- Find **GateWayHugeTeleporter**

As the name suggests this Gateway is huge;

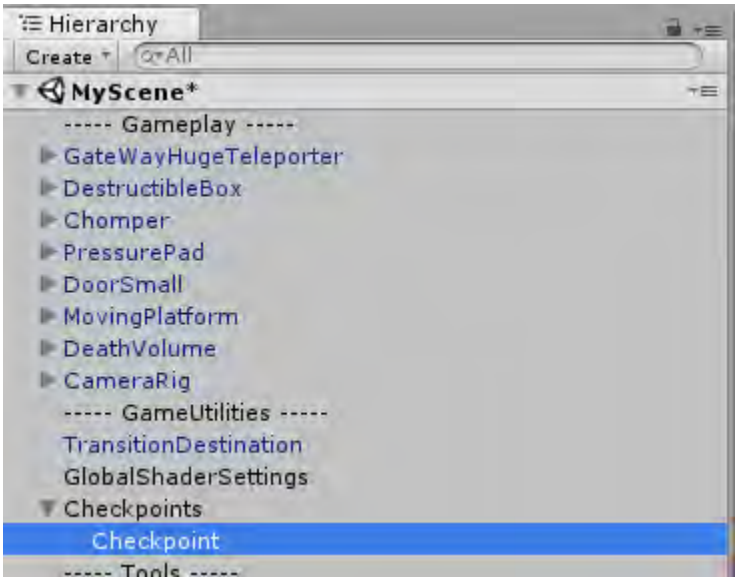
- Use the **Scale Tool** and **Translate Tools** to position it and scale it to Ellen size
- In the **Hierarchy** expand **GatewayHugeTeleporter** to expose its children
- Select **TeleportPlane**
- Navigate to the **Inspector**
- Click **Add Component**
- Search for **BoxCollider**
- Hit **Enter** on your Keyboard or Click on **BoxCollider** to add the Component to **TeleportPlane**
- On the **Box Collider** Component tick **Is Trigger**



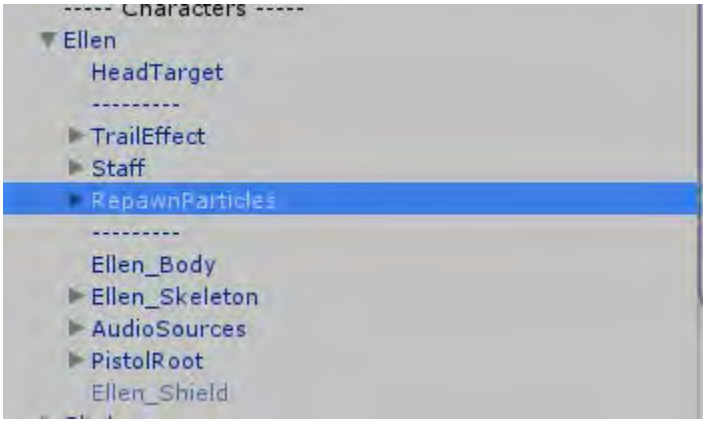
- Click **Add Component**
- Search for **Teleporter**
- Hit Enter on the Keyboard or click on the **Teleporter** Script to add it to **TeleportPlane**



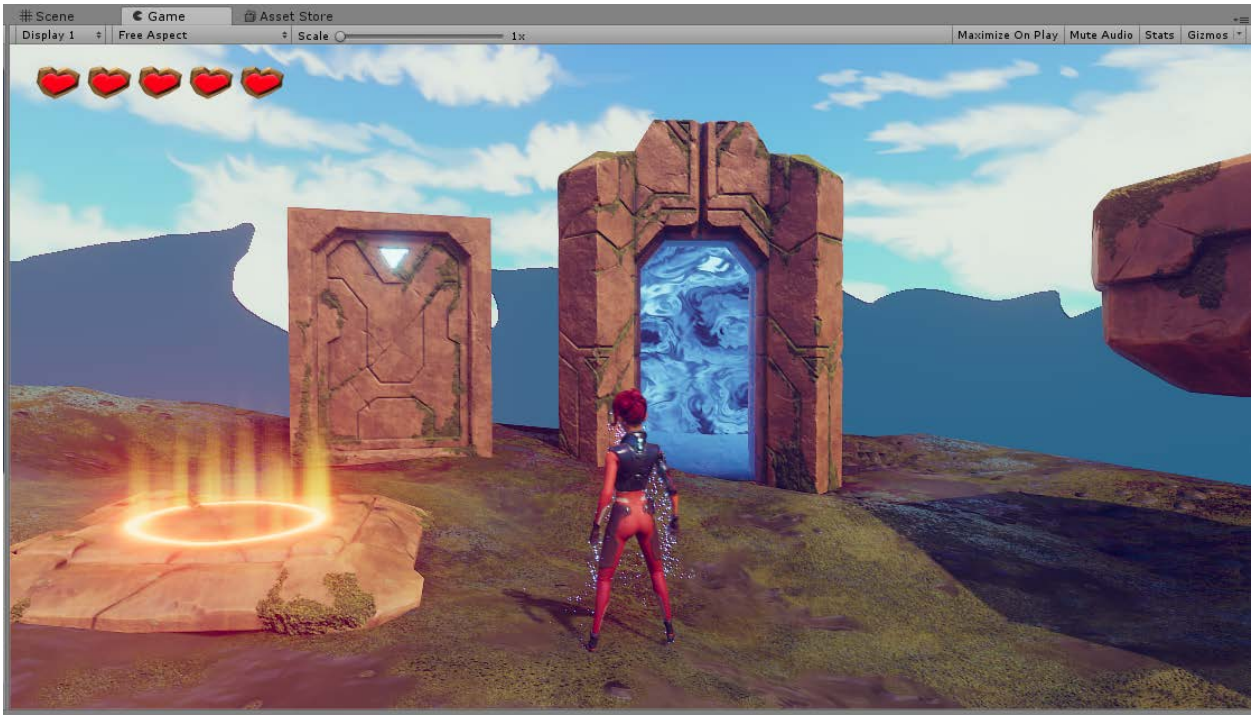
- In the **Teleporter** Component
- Change the **Layer** to **Player**
- In the Hierarchy, locate the **Checkpoints**
- Click on the arrow next to **Checkpoint** to expand its children



- With **TeleporterPlane** selected in the **Hierarchy**
- Drag **Checkpoint** (The child) into the **Destination Transform** field of the **Teleporter** Component
- In the **Hiearchy** find and expand **Ellen** to reveal its children
- Find **RespawnParticles**



- With **GateWayHugeTeleporter** selected in the **Hierarchy**
- Drag **RespawnParticles** into **Enter Effect** on the **Teleporter**
- Drag **RespawnParticles** into **Exit Effect** on the **Teleporter**
- Press **Play** and test by running into the teleporter



When walking through the teleporter, ellen will teleport to the location where she initially spawns and have blue particles coming off her.

Having Fun

Most objects within the Kit play with the Events system seen in the Pressure Pad setup.

Explore the existing Scenes in **Scenes** > **GamePlay** to see how other objects are set up using the command system in Level 1 and Level 2.

See the Components Documentation for a details of all the components and their parameters.

Happy level designing!