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:

<table>
<thead>
<tr>
<th>Action</th>
<th>Input</th>
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<tbody>
<tr>
<td>Move</td>
<td>W, S, A, D</td>
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<tr>
<td>Jump</td>
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![Game Interface Image]

![Game World Image]
Adding a Moving Platform

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

To add a MovinPlatform:

● 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 **MovingPlatform** 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 **MovingPlatform** 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
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
**Max Hit Points** | 3
---|---
Invulnerability 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

![Hierarchy with DestructibleBox child](image)

- 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.
• 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 Hierarchy 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!