Creating Basic 2D Environments in Unity With Tilemaps

Up to date as of 11/26/2025, Written By Lorenzo De Liguori

Introduction

This tutorial will cover the basics of Unity's Tilemap system. It is assumed you already have a project ready to use. If you don't know how to create a Unity Project, Unity's official guide discusses everything you need to know.

Project Setup

This tutorial was made using Unity 6000.0.61f1, the current Long Term Support (LTS) build for Unity 6 at the time of writing. Your project should have Unity's 2D package installed.

Not Sure if 2D is Installed?

If you're not sure if the 2D package is installed into your project, it's easy to check through the package manager.

Step 1: Click on the "Window" tab on the topmost horizontal bar of your project's window.

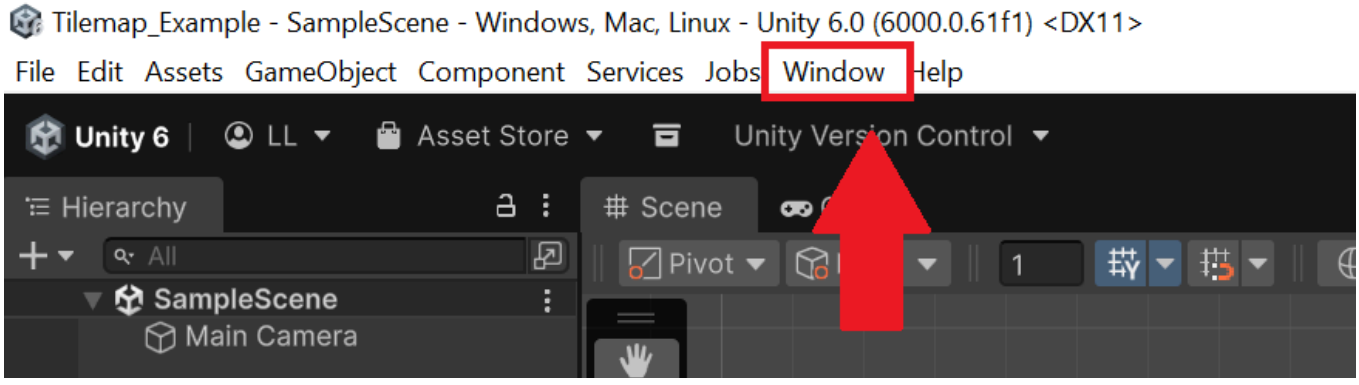

Figure #1

Step 2: Click on “Package Manager” within the dropdown.

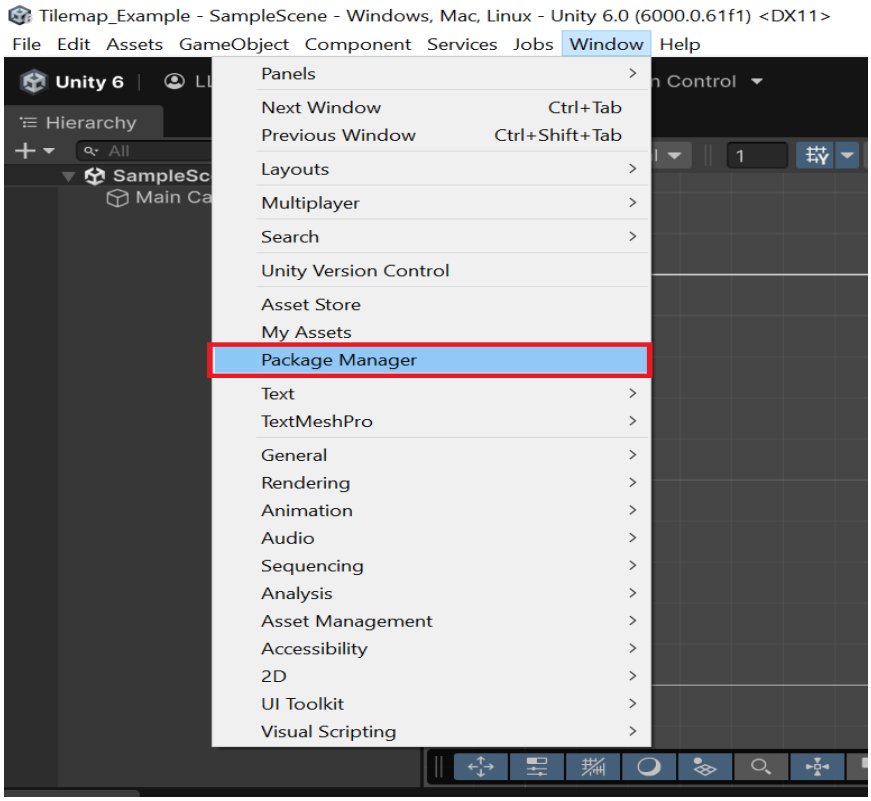

Figure #2

Step 3: Type “2D” Within the search bar.

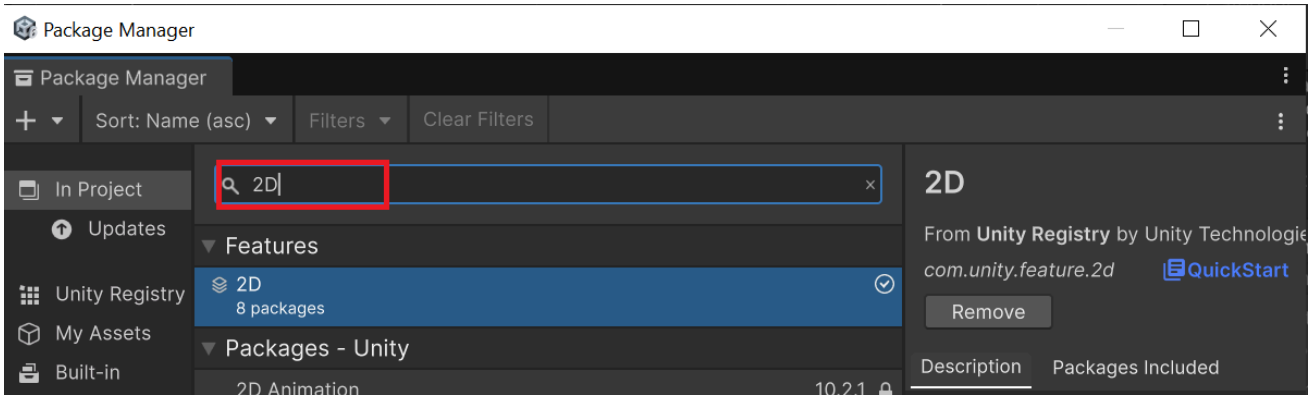

Figure #3

If you can see the 2D package along with its included packages, then the package is already installed into your project.

Optional Step: If it does not show up for you, then click on “Unity Registry”, type “2D” into the search bar, and click the “Install” button on the far right in the package details.

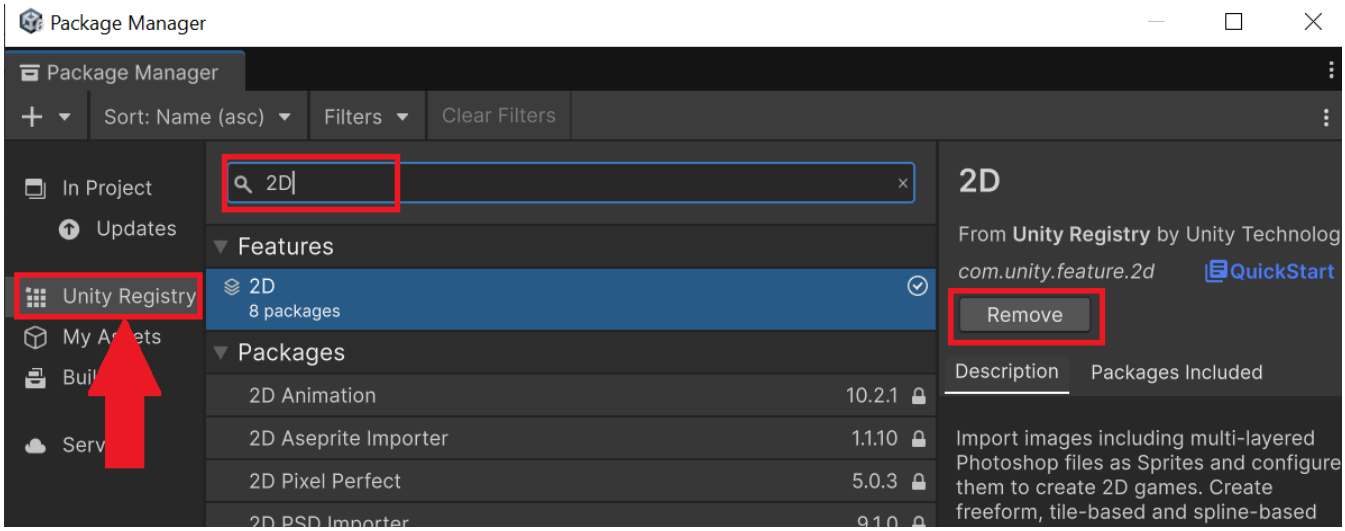

Figure #4

NOTE: It says “Remove” instead of “Install” in the screenshot because it’s already been added to the tutorial project

Importing your Spritesheet

A **Spritesheet** is an image file containing a batch of smaller images that most commonly consists of frames (for animations) or tiles (for tilemaps). Each tile in the Spritesheet is the same size as each other tile (For example, a spritesheet that is 64x64 pixels can have 8 rows and 8 columns of 8x8 pixel tiles).

This tutorial will be using a free asset I published onto opengameart.org to demonstrate. If you want to follow along, click on the link and download the spritesheet.

WARNING: You are free to use any spritesheet you want, so ensure you make the proper adjustments should you choose a different spritesheet.

Step 4: Drag your image file into the Project files tab within the Unity Editor.

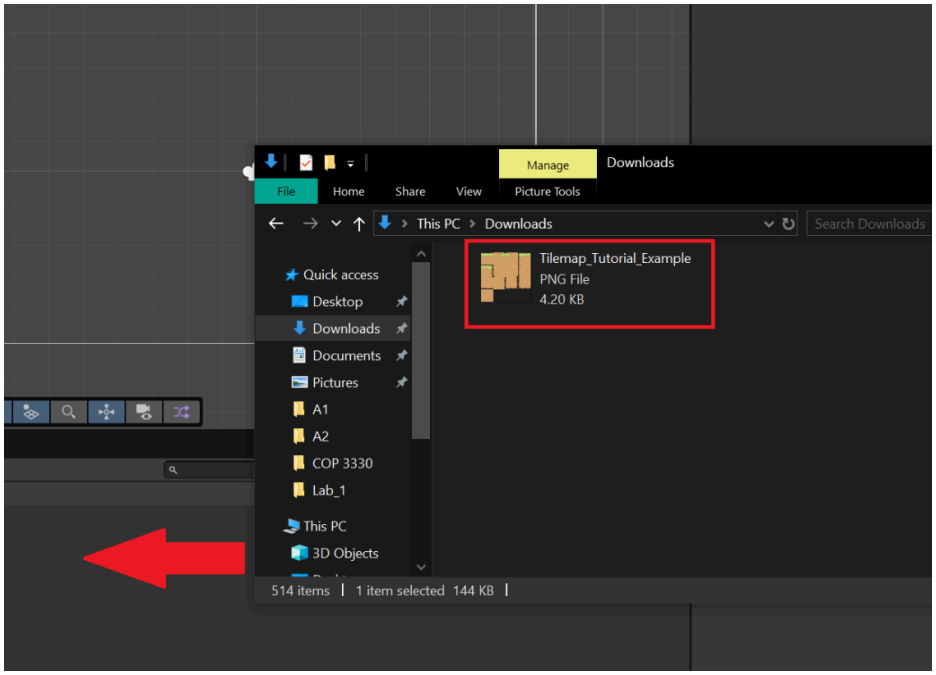

Figure #5

Step 5: Click on your spritesheet and the Inspector tab will populate with a list of import settings for the file. Set “Sprite Mode” to “Multiple”.

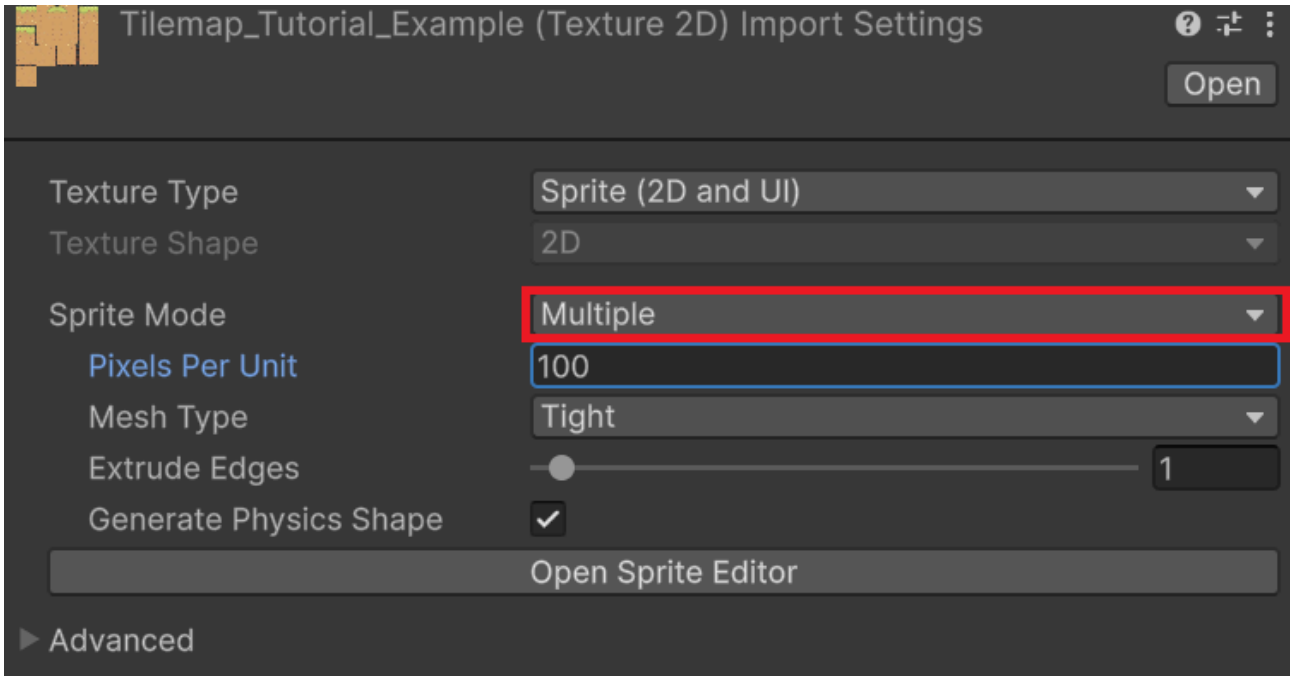

Figure #6

Step 6: Select “Pixels Per Unit” and type in the pixel size of each tile. For the example spritesheet, each tile is 32x32 pixels.

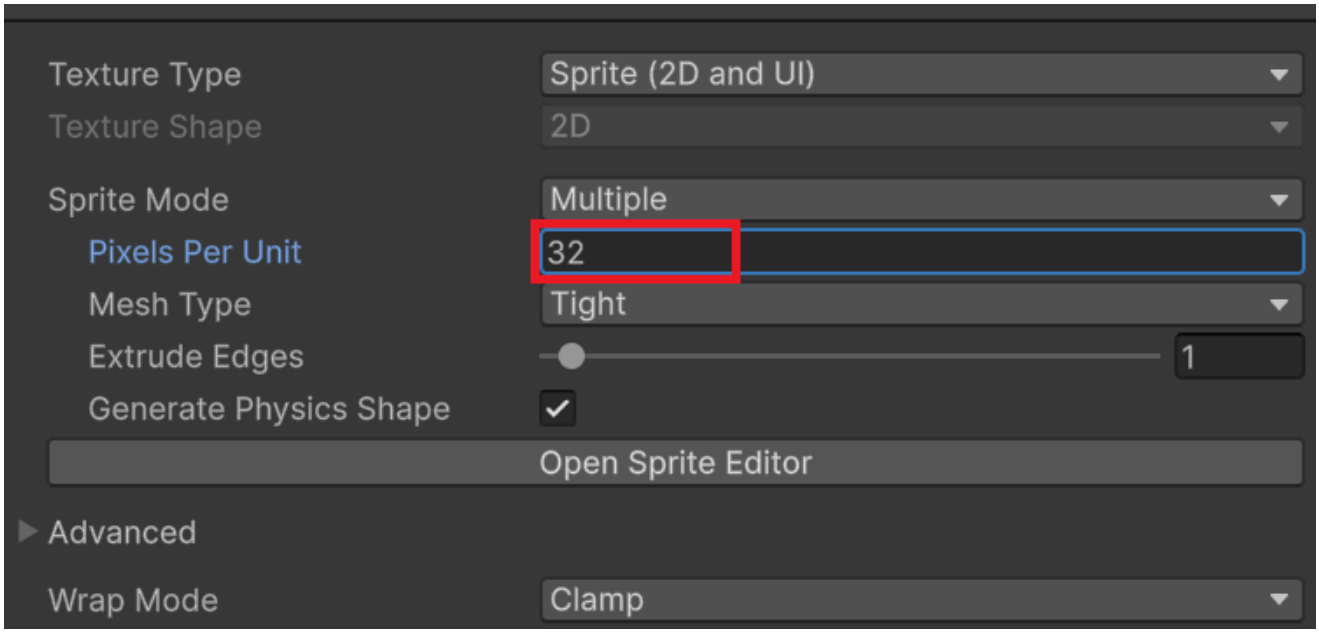

Figure #7

Step 7: Select the dropdown for “Filter Mode” and select “Point (no filter)”.

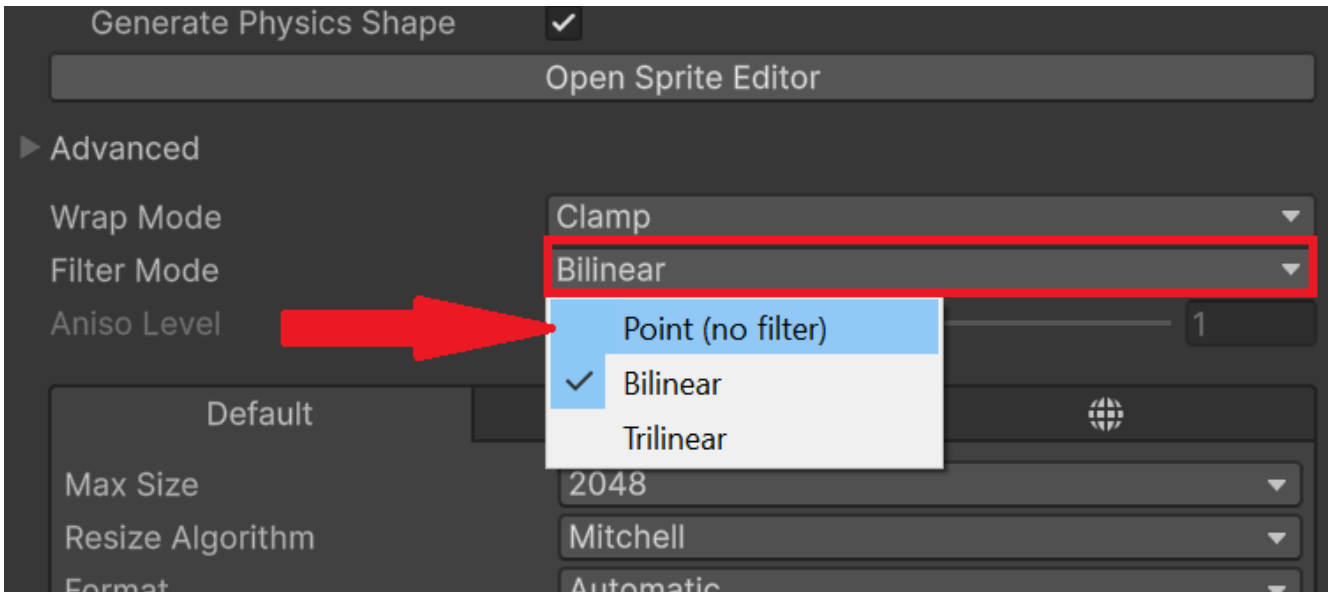

Figure #8

Step 8: Select the dropdown for “Compression” and select “None”.

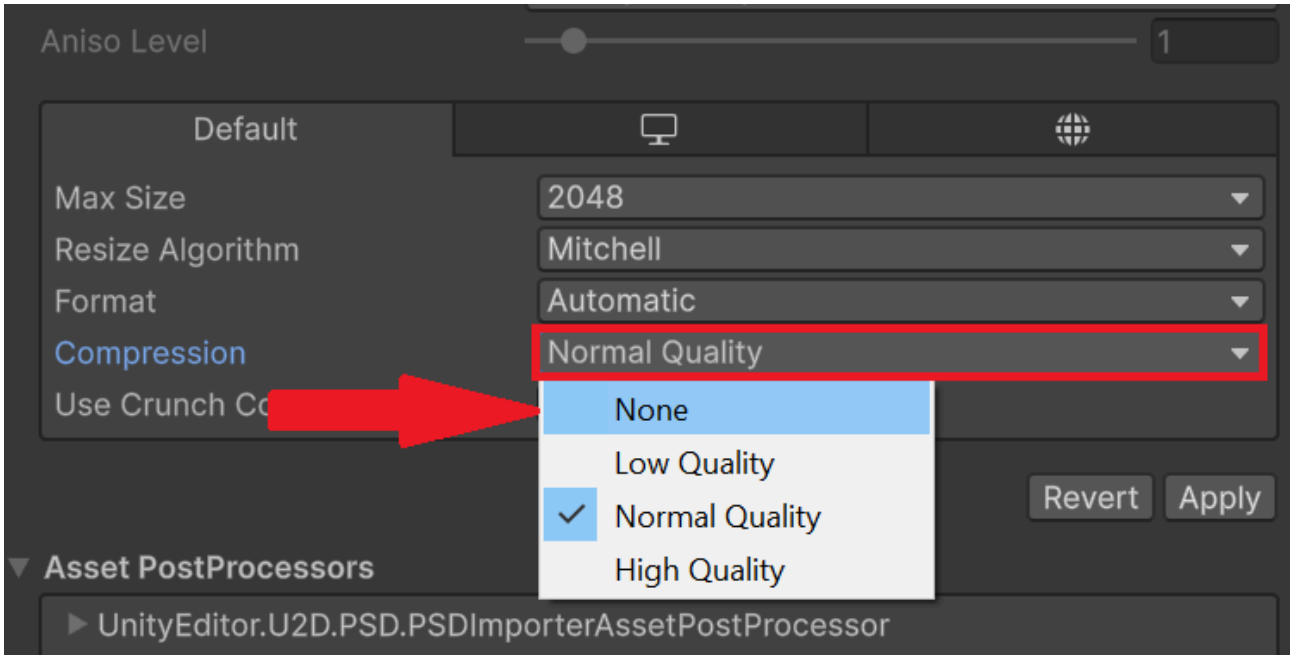

Figure #9

Step 9: Click “Apply” to finalize all of the import settings.

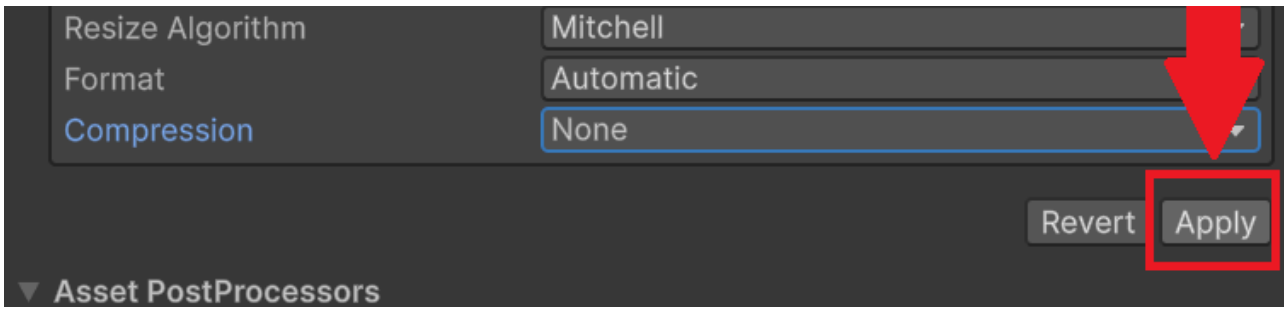

Figure #10

Sprite Editor

Step 10: Select “Open Sprite Editor” (Figure #11).

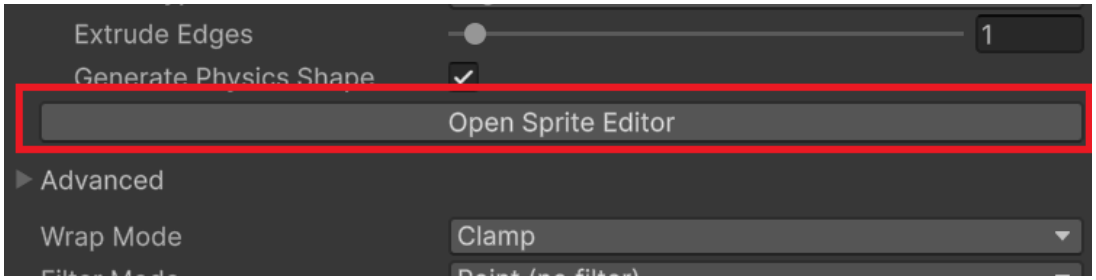

Figure #11

Step 11: Click “Slice”.

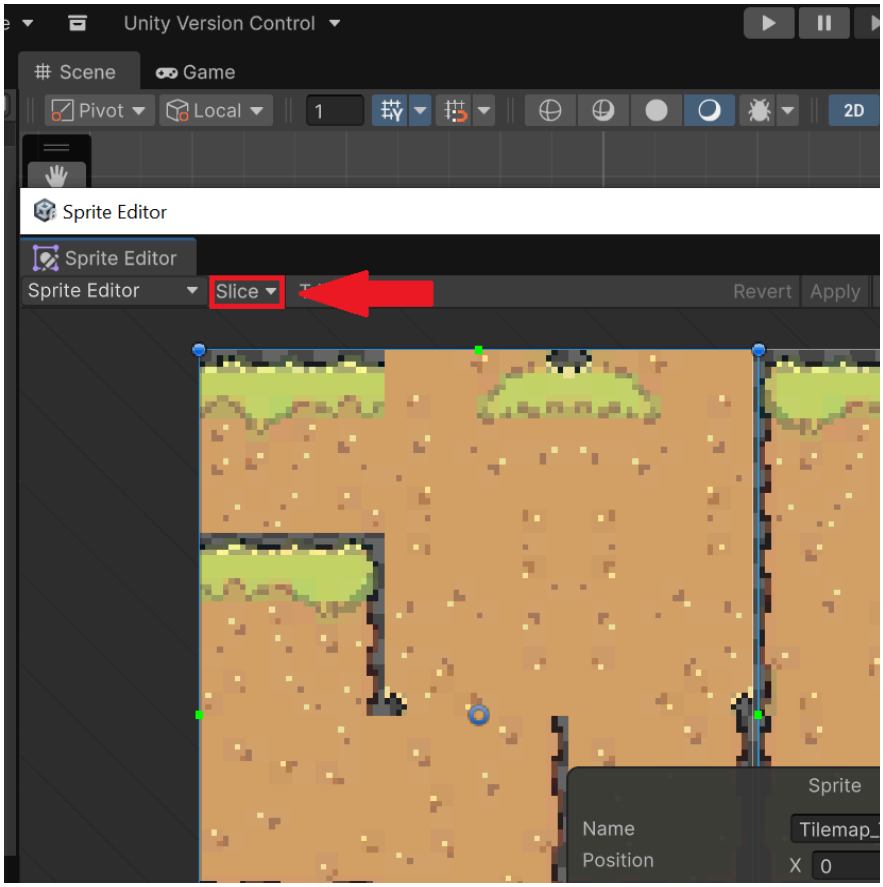

Figure #12

Step 12: Select “Type” and choose “Grid By Cell Size”.

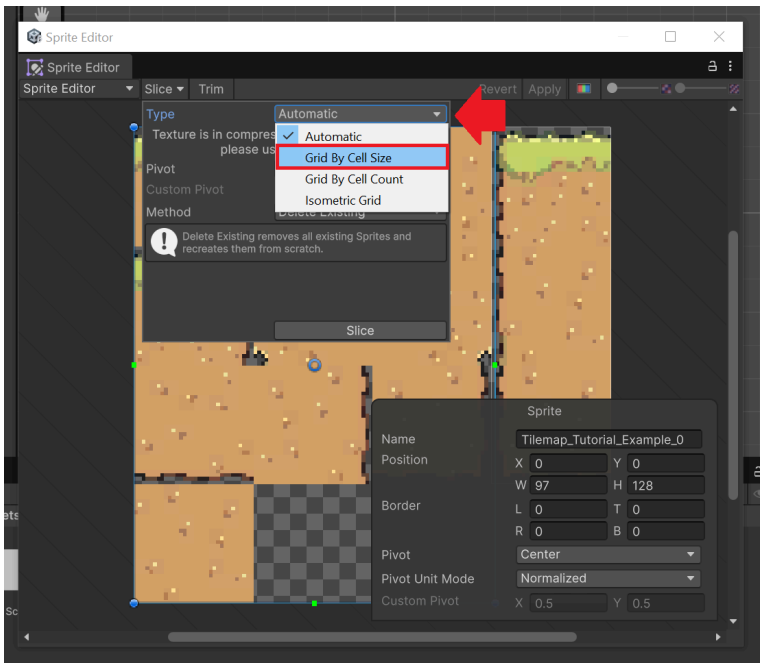

Figure #13

Step 13: Change the “Pixel Size” to match the dimensions of each tile in your spritesheet.

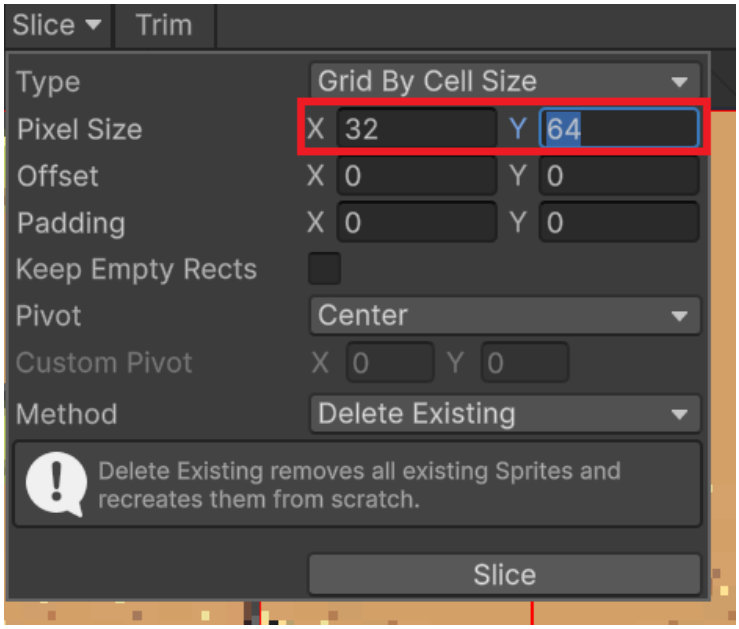

Figure #14

Step 14: Click “Slice”.

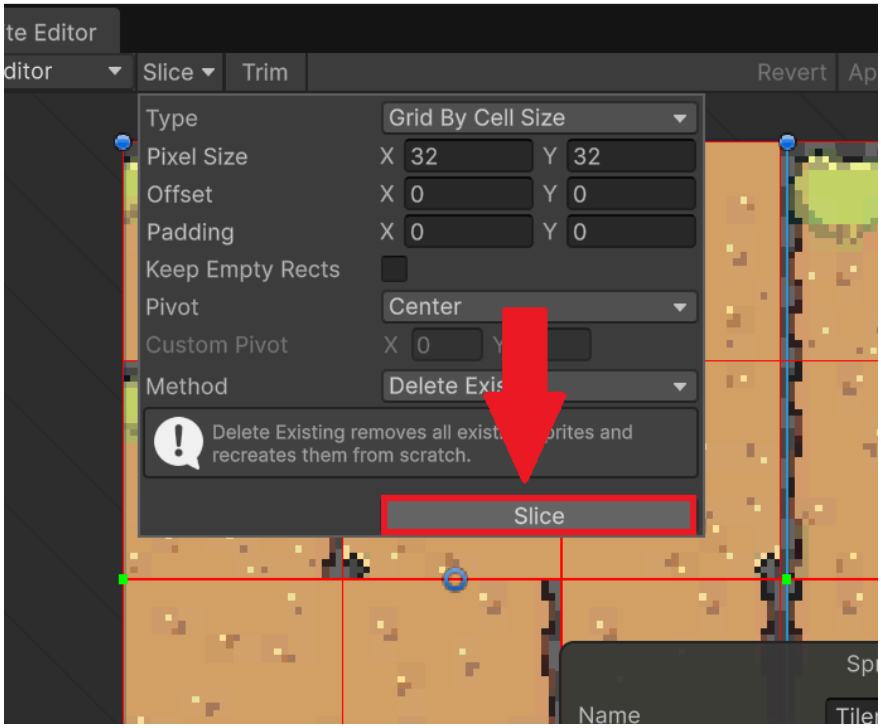

Figure #15

Step 15: Click “Apply” to finalize the slice.

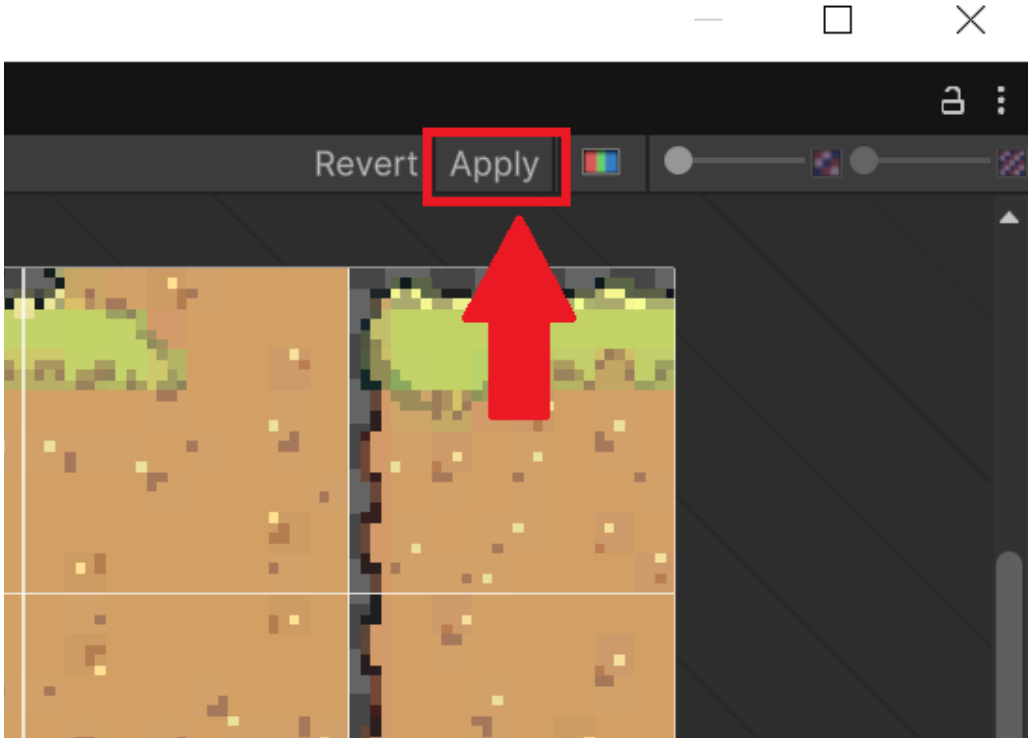

Figure #16

Step 16: Press right click in the project files, select “Create”, “2D”, then “Sprite Atlas”.

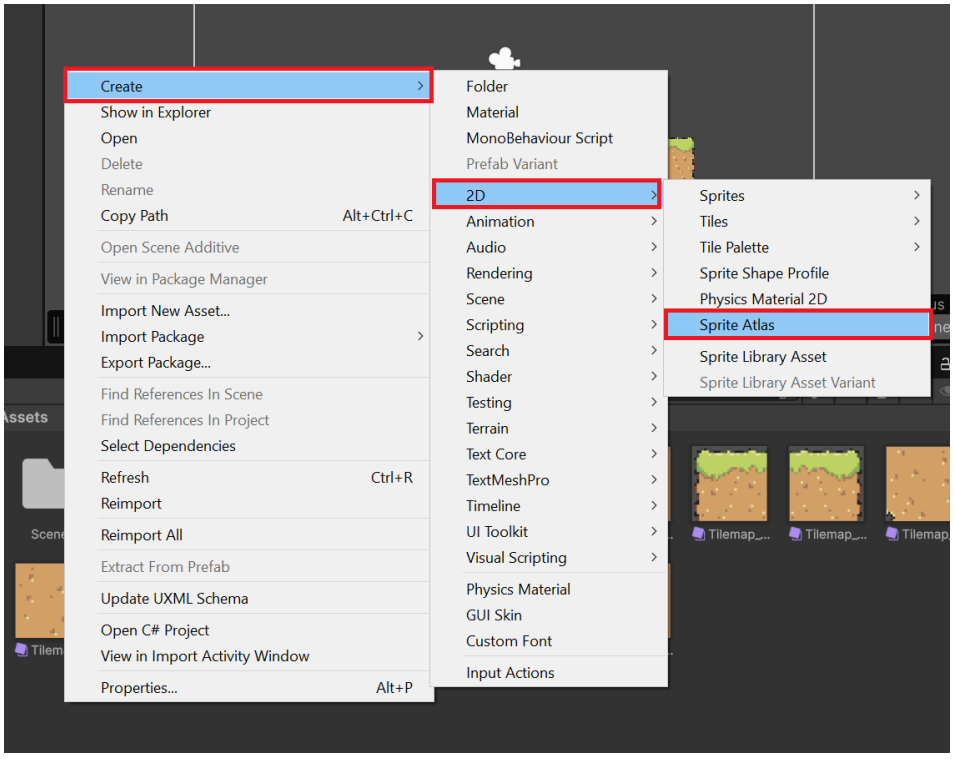

Figure #17

Step 17: Drag your spritesheet file and drop it into the header called “Objects For Packing” in the Sprite Atlas settings.

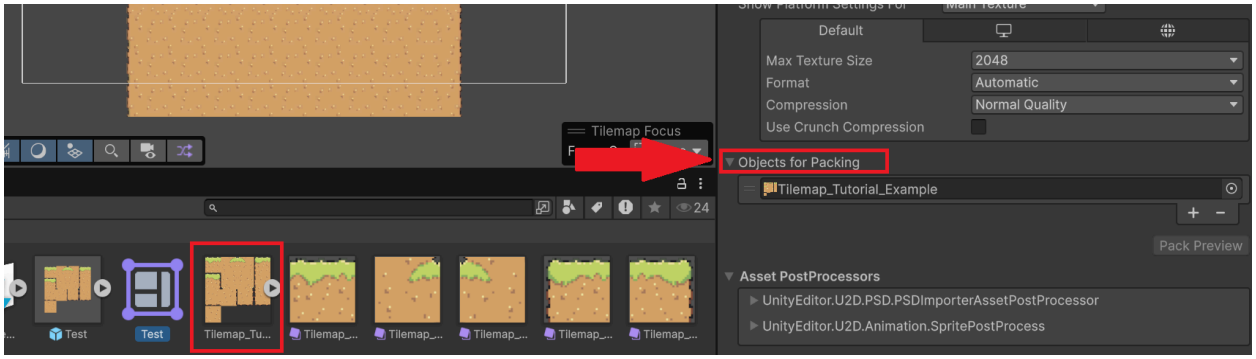

Figure #18

Once that’s done, apply the same settings you applied for “Filter Mode” and “Compression” onto the Sprite Atlas as you did with your spritesheet (Refer to steps 6 and 7).

WARNING: Although steps 16 and 17 are not required, skipping them may lead to unwanted sub-pixel artifacts later.

Tile Palette

Setup

The Tile Palette is a tool that lets you save presets of spritesheets and draw tiles into the scene. This is helpful when you have multiple spritesheets where each one is meant to represent a different environment.

Step 18: To open up the Tile Palette tab, click on “Window”, “2D”, then “Tile Palette”.

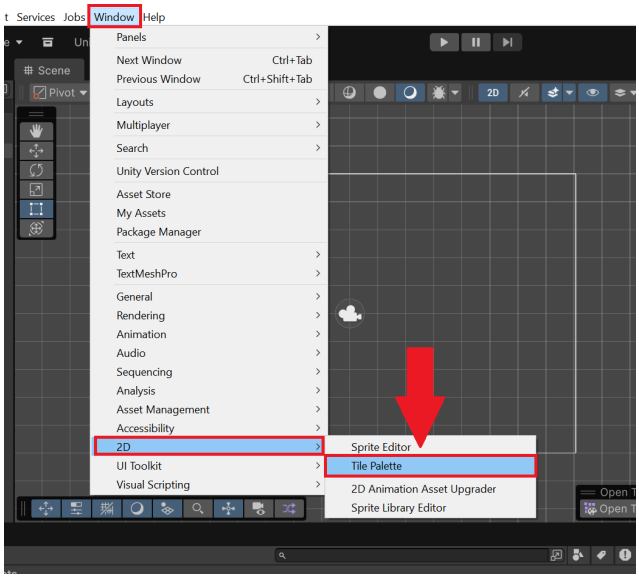

Figure #19

Step 19: Click on “Create New Tile Palette”, choose a name for your new palette, and then click “Create”.

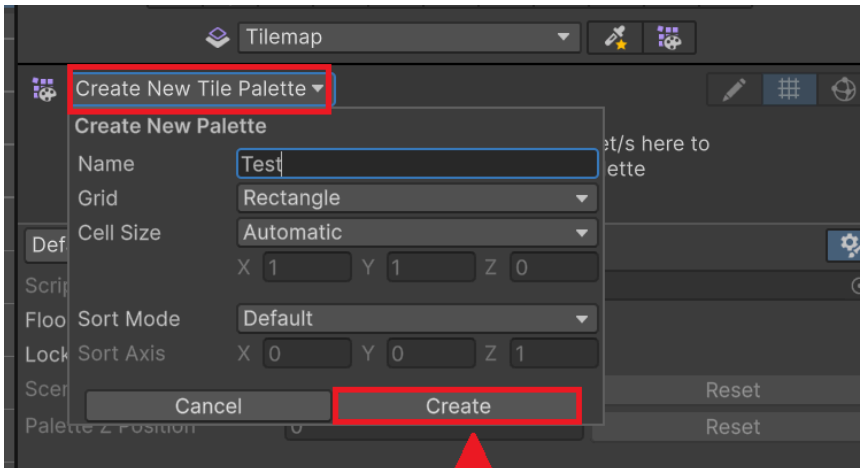

Figure #20

NOTE: Unity will ask you what folder you’d like to store this palette file. I recommend creating a folder called “Tile Palettes” and having folders for each palette.

Step 20: Drag and drop your spritesheet file into the Tile Palette window.

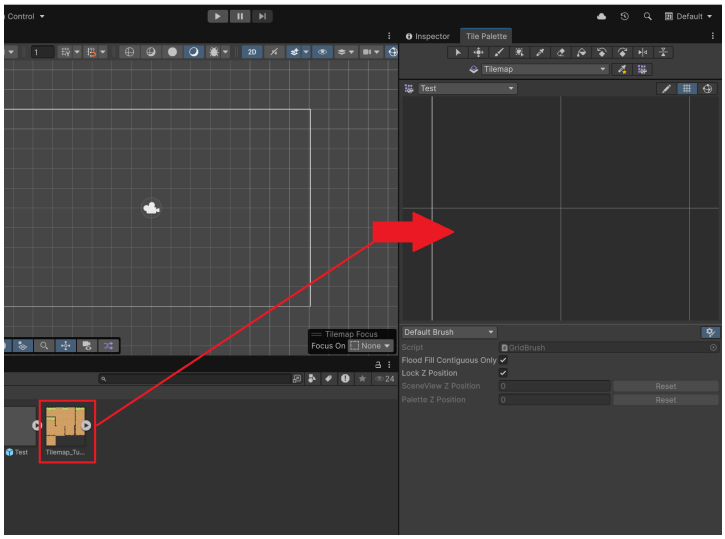

Figure #21

Tilemap Object

Step 21: In the Scene's Hierarchy, right click and select "2D Object", "Tilemap", then "Rectangular". This object will be where the tiles are placed onto, akin to a canvas for painting.

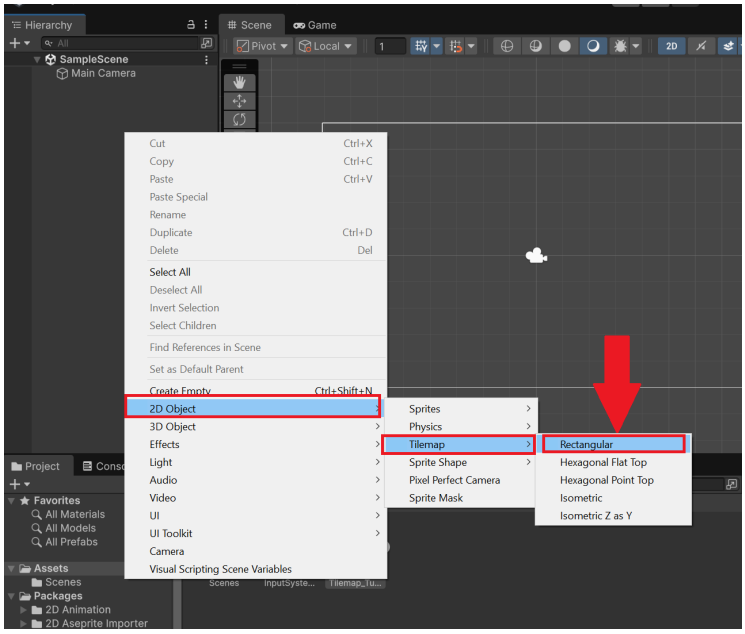

Figure #22

Tools

For basic tilemaps, the only tools you'll need is the Brush and Eraser tool. To use these tools, make sure you have your tilemap object selected.

The Brush tool ( ) will place a selected tile wherever you click on the tilemap.

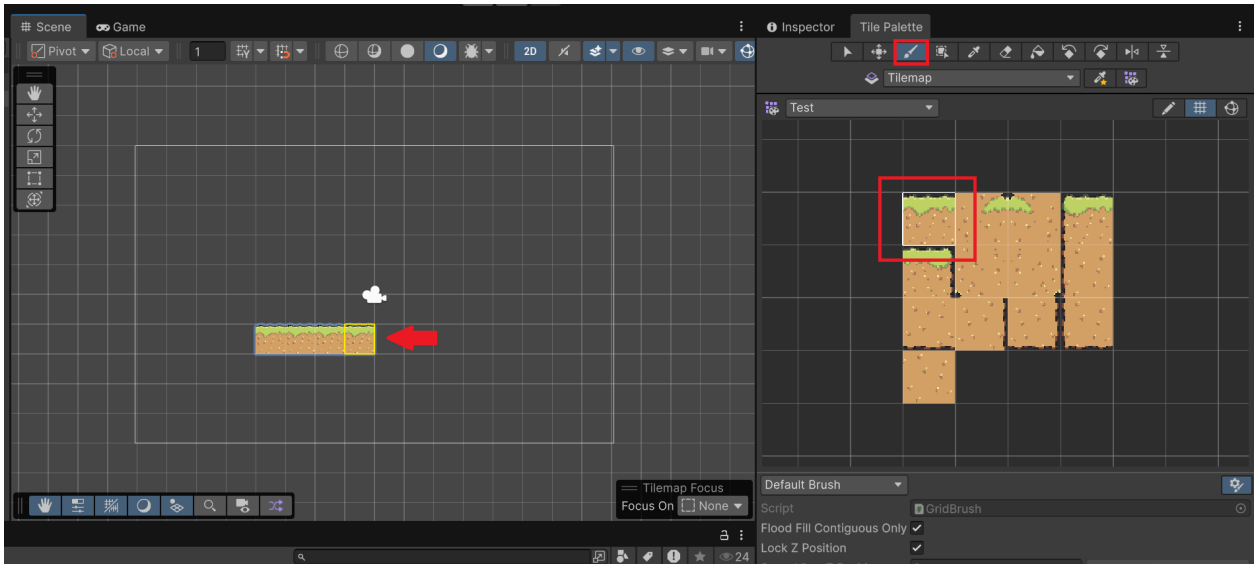

Figure #23

The Eraser tool ( ) will erase a selected tile wherever you click on the tilemap.

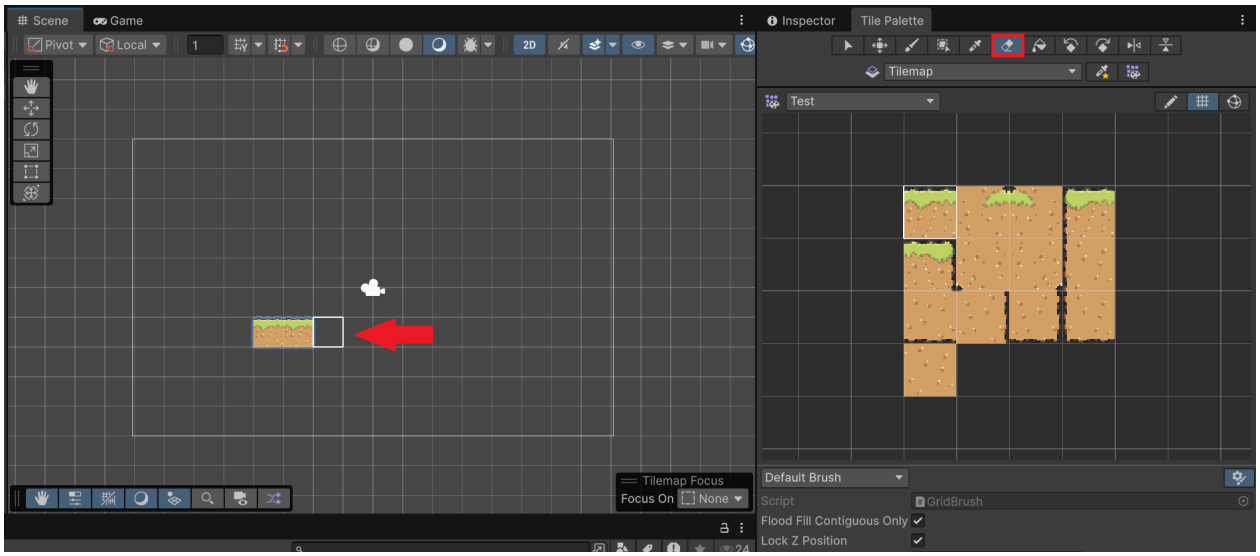

Figure #24

With that, you can now draw basic tilemaps. To practice, try replicating figure #25.

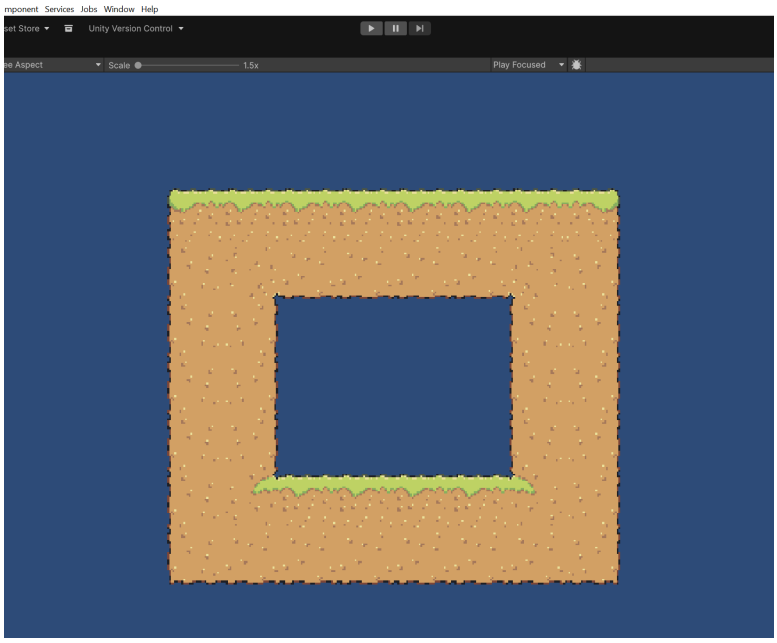

Figure #25

Conclusion

Thanks for following along to this tutorial! We've only scratched the surface when it comes to the features for Unity's Tilemap system, but after this tutorial you should have a good grasp of the foundational knowledge you'll need to become a pro at making environments in 2D with tilemaps.

If you want to learn more about advanced features, here are some good tutorials:

- Tilemap Colliders (Video)
- Rule Tiles (Video)
- Animated Tiles (Article)