



== UniRPG Ed ==
Creating Tiles
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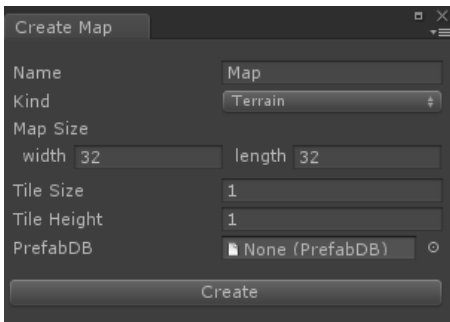
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Introduction

Please have a look at the UniRPG_Ed_Doc.pdf doc first to learn about concepts that will not be covered in this document but might be referred to.

There are 2 types of maps in UniRPG, Dungeons and Terrain, and they have different requirements when it comes to creating tiles that will work with their auto-tile tools.

Auto-tiles are tiles that knows how to draw their own walls/cliffs and corners and require these to be created in a certain way to perform correctly.



When creating a new map you have the opportunity to select the tile size and tile height. This means that you may tiles of different sizes, as long as they won't be used on the same maps. The size and height is in meters (Unity units).

You may use any values for tile size and height and the two values do not have to be the same, as long as the values you choose here are in accordance to the size of your floor tiles and the height of your walls/cliffs.

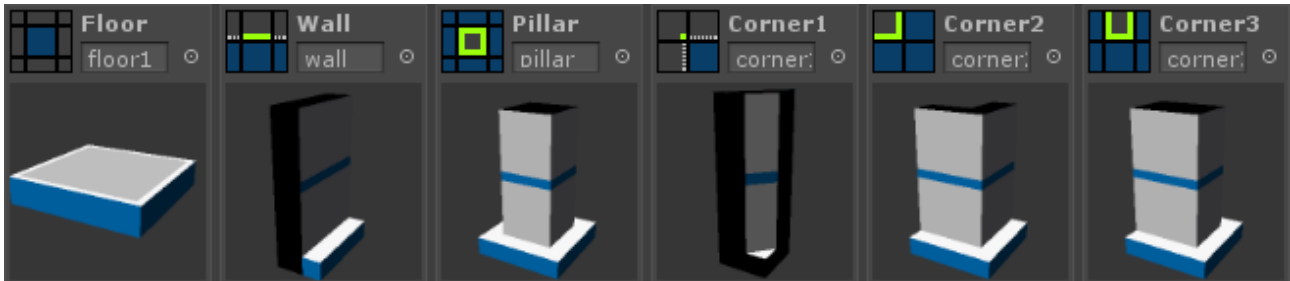
You need to add the TilePiece component to a model (or any GameObject) to make it into a tile piece that will be accepted by the PrefabDB. To add the TilePiece component you simply select the GameObject or Prefab in question and from the menu select Component → UniRPG → Tile Piece.

Note that the PrefabDB expect prefabs, so if you created a new tile in the scene/hierarchy you need to make it into a prefab saved in the project by dragging that object into the project panel under the folder you which to save it.

You can [watch this video](#) to get a quick overview of creating a tile.

Dungeon Tiles

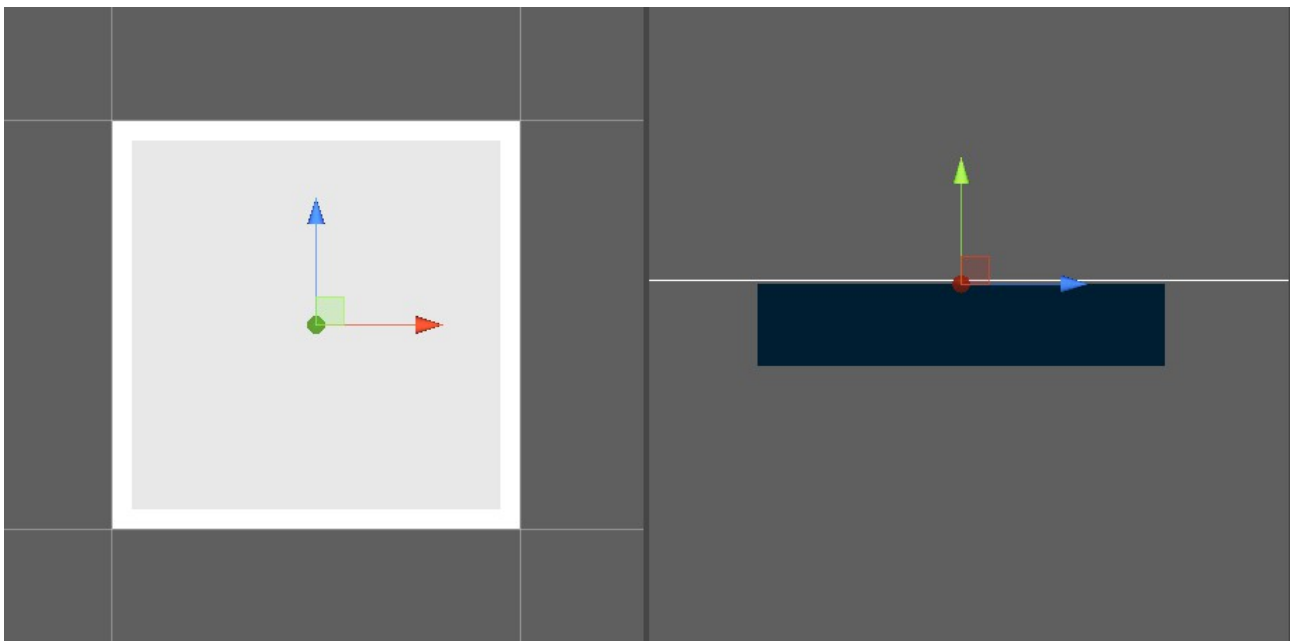
Dungeons have two levels, the normal floor level and a lower level that can be used for water, lava, etc. type of tiles or simply to indicate a lower area that can't be reached or even a hole in the floor. In both cases there are 6 tile pieces used by the auto-tile tool when painting floors.



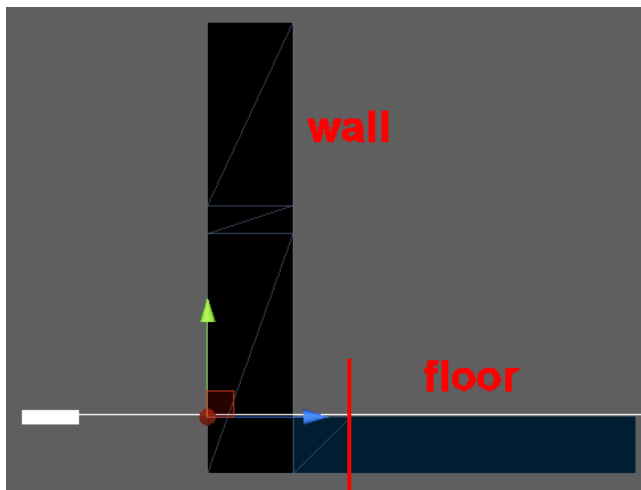
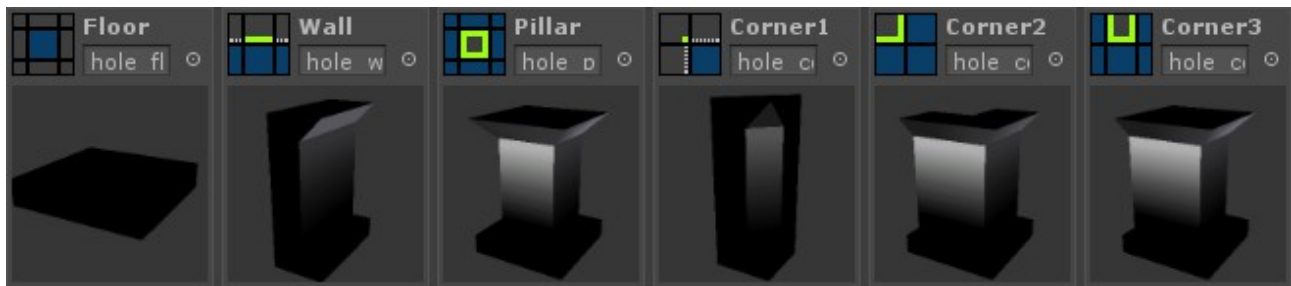
The **floor** piece is the most basic and the one you will be placing when using the auto-tool. Let's assume you created a piece of 1x1 meter then when you create the dungeon map you would enter "1" for the **tile size** parameter since that is the width and breath of on tile or floor (which takes up on tile space).

Importance of pivot position and rotation

Note that you may choose any thickness for you floor tile, so it it could even be a simple plane rather than a box as shown in the above image. The important thing is that your pivot should be on the centre of a tile. The best way to test for this is to create a new dungeon map (with empty prefabDB if you need to) to add your new floor piece to the scene and enter 0,0,0 for its position (in the inspector) and then check if it is located exactly at the first tile (centre of world – only valid if you did not change the position of the map's grid). Note, in the image below, that the pivot is not at the centre or bottom of the box but the top so that the top of the floor aligns perfectly with the grid.



The thickness you chose for the floor will influence how you create your lower tile wall and corner pieces so that it does not stick through the floor or create z-fight artefacts. The tile height value of a new map is also determined by the height you choose for your lower walls and corners.

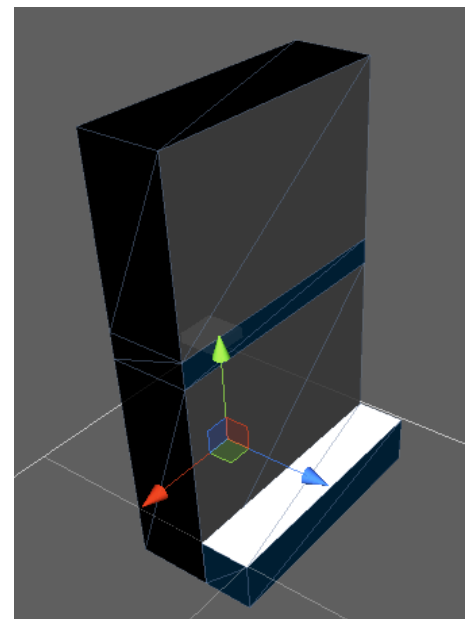


In the sample prefabs I've chosen a height of 1.4 for the Dungeon walls. Note how the lower floor wall (right) is lower in height than the normal floor wall (left) to compensate for the space taken up by the floor pieces that will be above it. Also notice that the normal floor has a thickness below the grid, just like the floor; and again I need to mention that this is up to you, you may have chosen planes for floors (no thickness) and then you would not have added this extra height to the walls either.

The last thing to mention about the pivot and tile pieces in general is their face direction. For floor pieces it does not matter that much but it is important that your wall and corner pieces face in a specific direction else the auto-tool might rotate them incorrectly when placing walls and corners.

The “forward” face for a piece is when it is facing into the z-axis (blue). So when I refer to forward, this is what I mean.

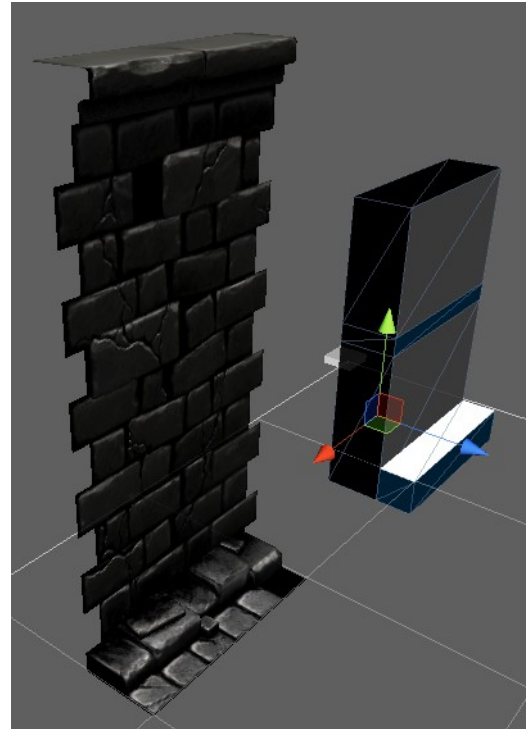
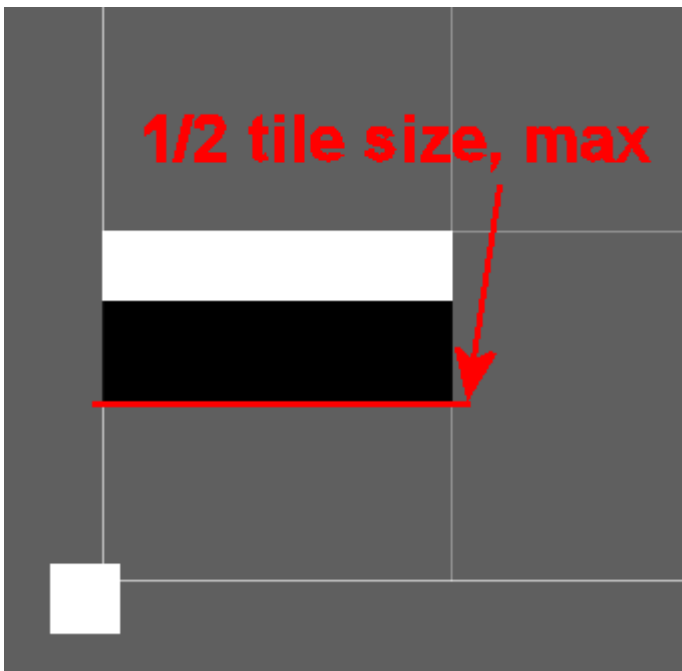
The position of the pivot should always be in the centre of a tile, whether it is a floor, wall or corner. You will now you've done it wrong when the auto-tile places pieces are strange offsets.



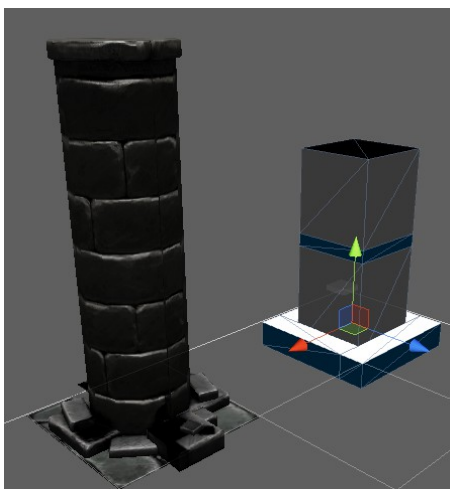
Wall Piece

For the **wall piece**, the inner face, or side that faces the floor, must face into the forward direction.

The wall piece should not be longer than the tile size, must align with a floor on its face side and should not be wider than $\frac{1}{2}$ the tile size. This width is important because wall and corner pieces can share tile space and you do not want them sticking into each other. Also note that the sample shows a “thick” wall, while you could also have used a plane shape or “thin” wall if you wanted.



Pillar Piece

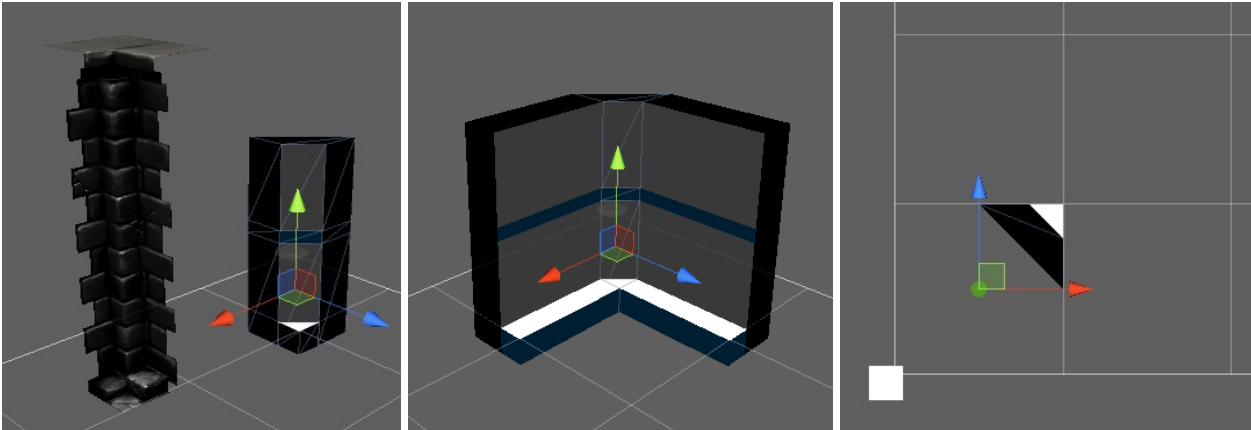


Pillars are very simple and used to fill open spaces surrounded by floors.

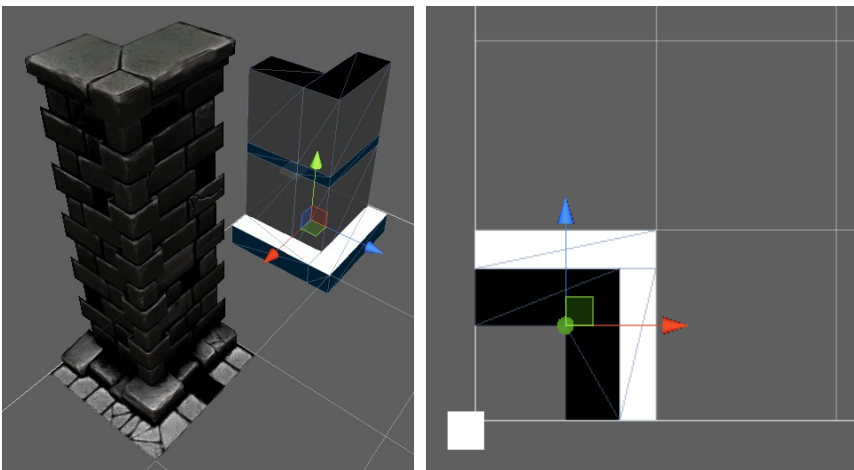
A pillar should take up a whole tile space.

Corner 1 Piece

The corner 1 piece is used where a right-angle between two walls are needed.

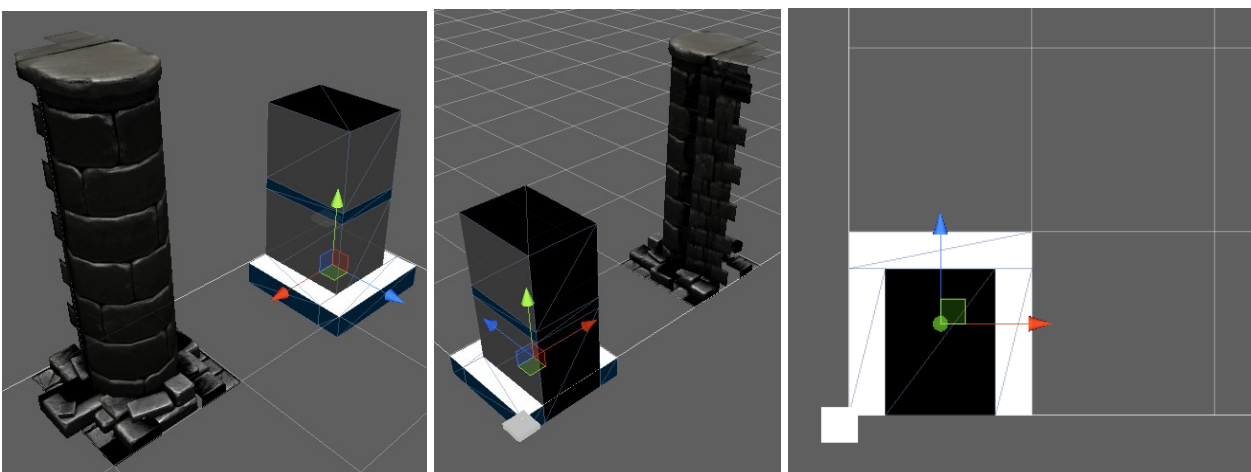


Corner 2 Piece



Corner 3 Piece

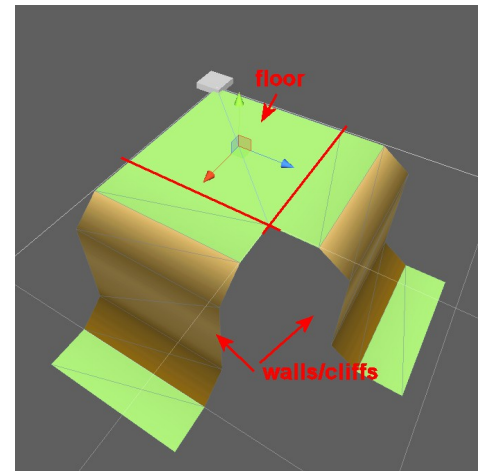
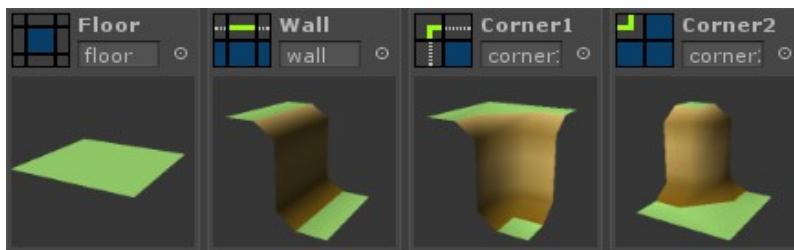
The corner 3 piece has 3 sides. It is like a pillar, but with the back side flush so that it may connect to walls on the back side. Like the pillar it also takes up a whole tile space.



Terrain Tiles

The same pivot position and tile-piece face direction rules applies to terrain tile pieces, except that the terrain walls/cliffs and corners are offset such that the top aligns with the grid in the same way the floor aligns with the grid. Each tile-piece takes up a whole tile space, cliffs/walls and corners do not share tile space like pieces of a dungeon does.

The terrain auto-tile expect only 4 pieces to function.

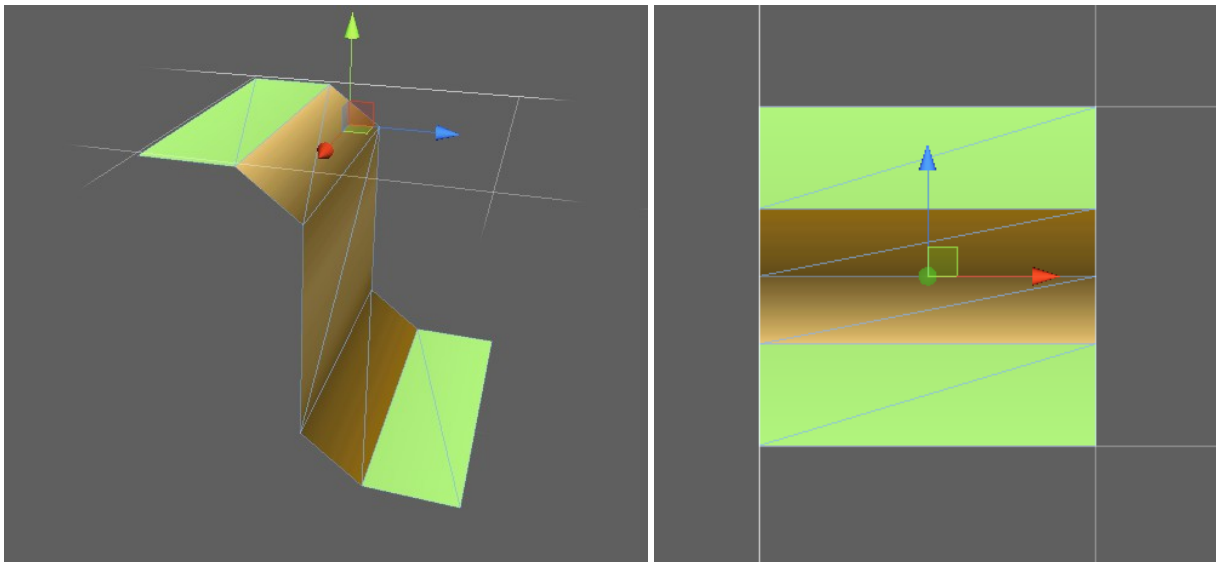


Floor Piece

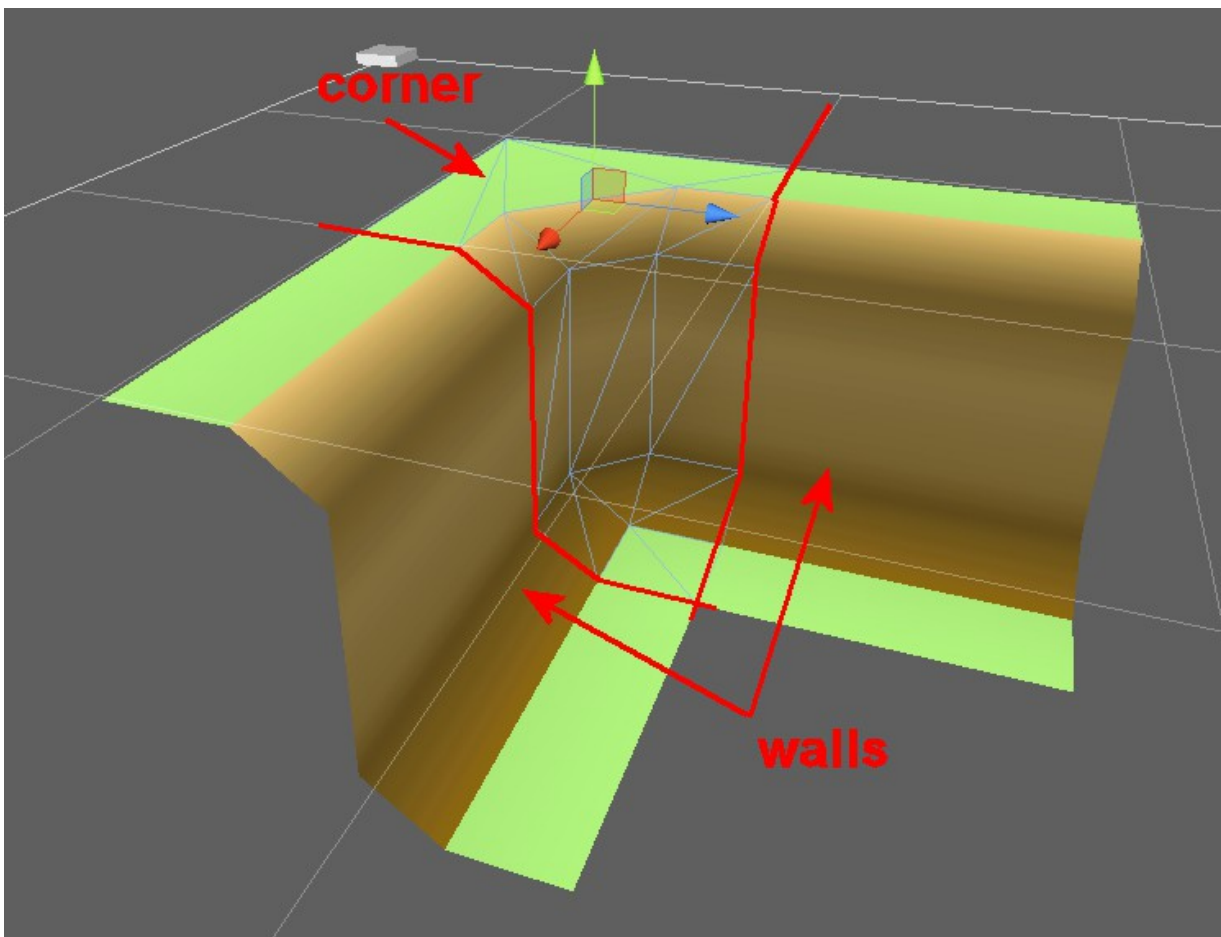
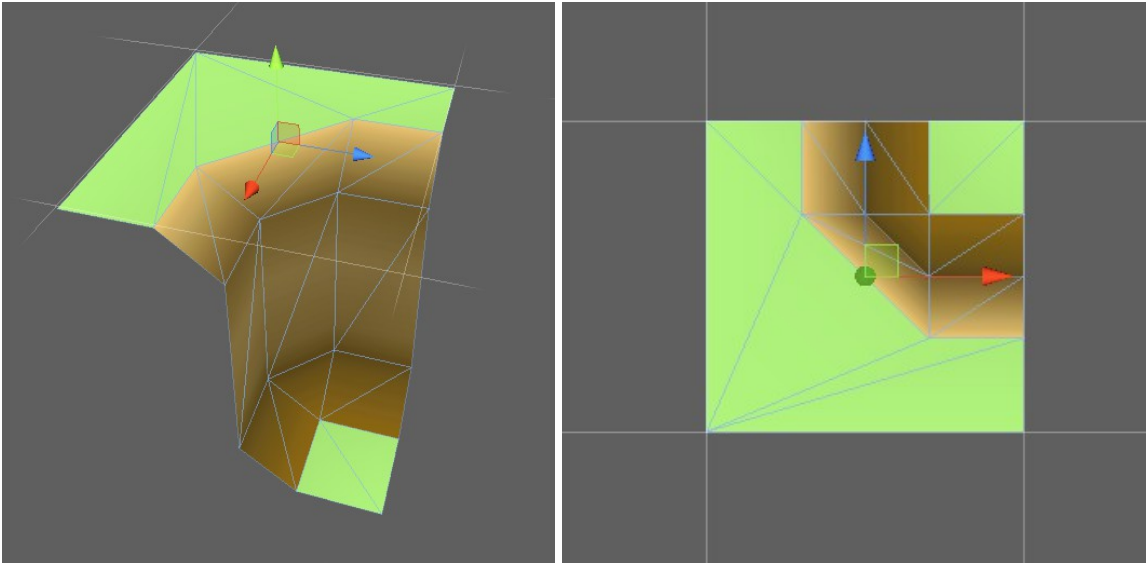
The same rules from Dungeon Tiles applies to the floor pieces of terrain.

Wall (Cliff) Piece

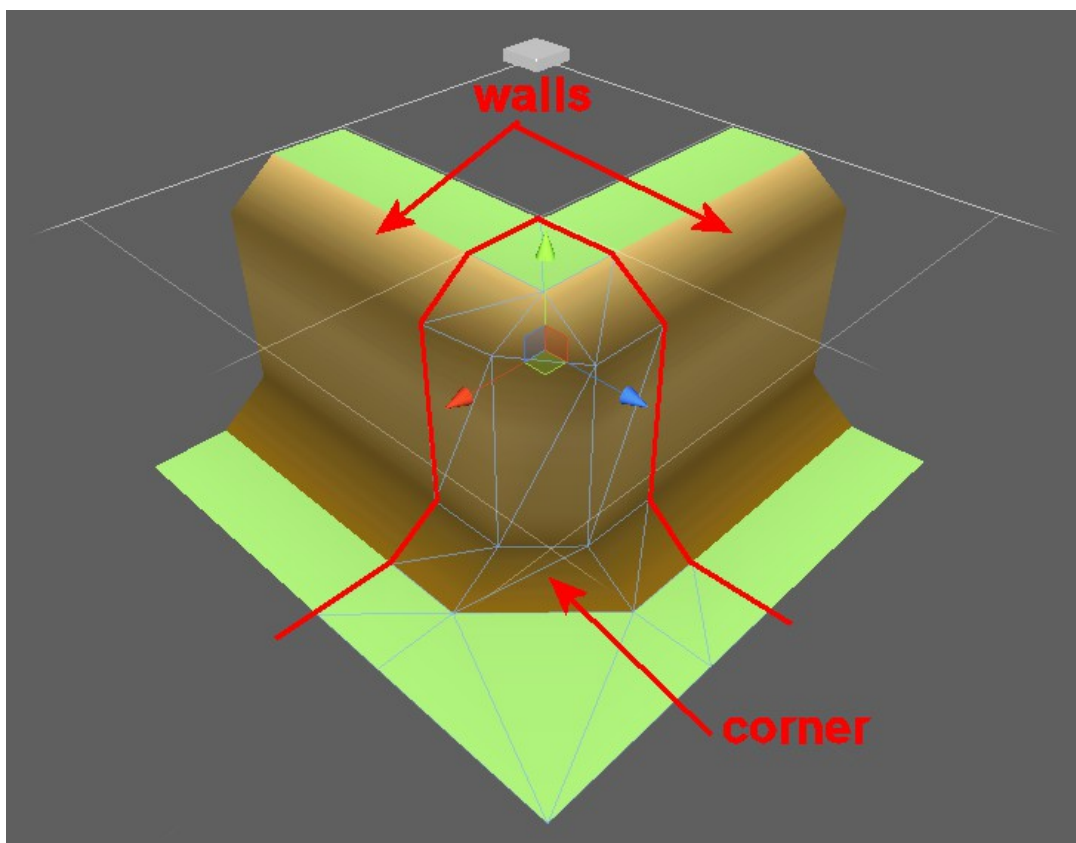
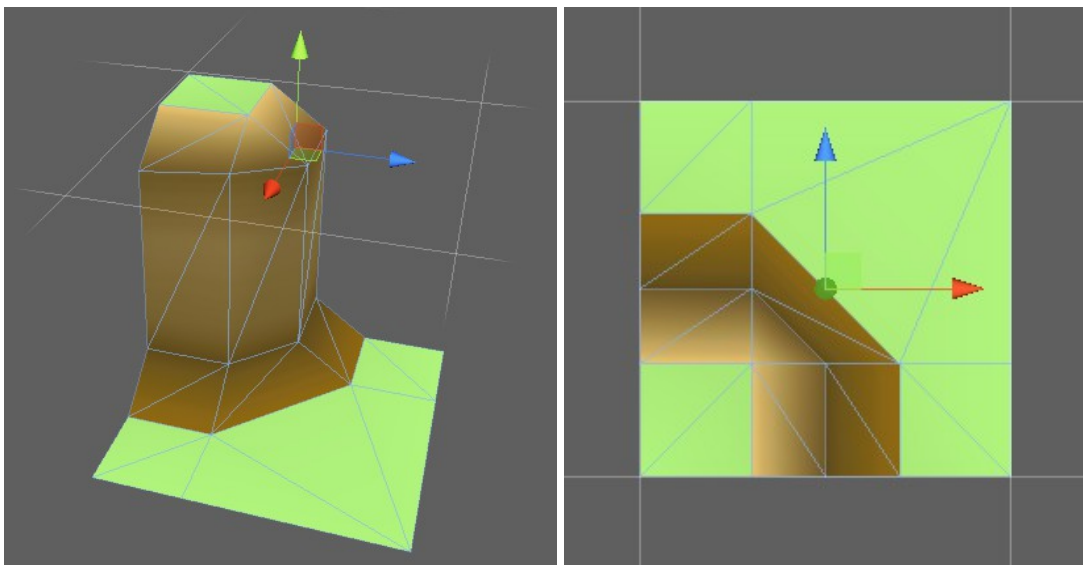
The walls of terrain acts more like cliffs. Note that cliffs/walls are not created if there is not a height difference between two floors. They can be seen as connecting a higher and lower floor.



Corner 1 Piece

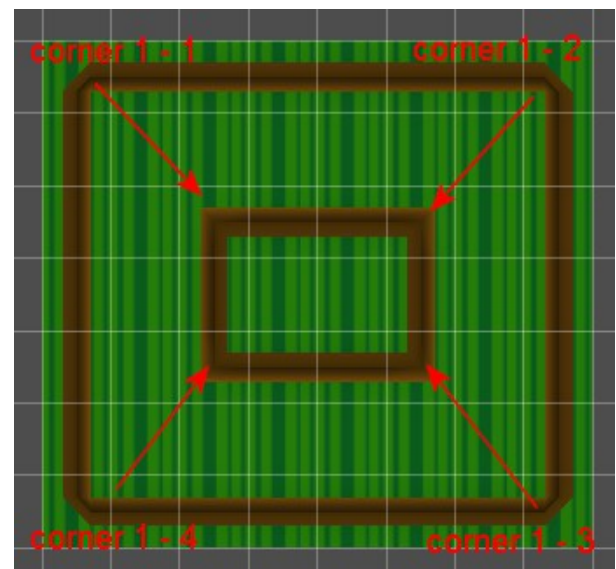
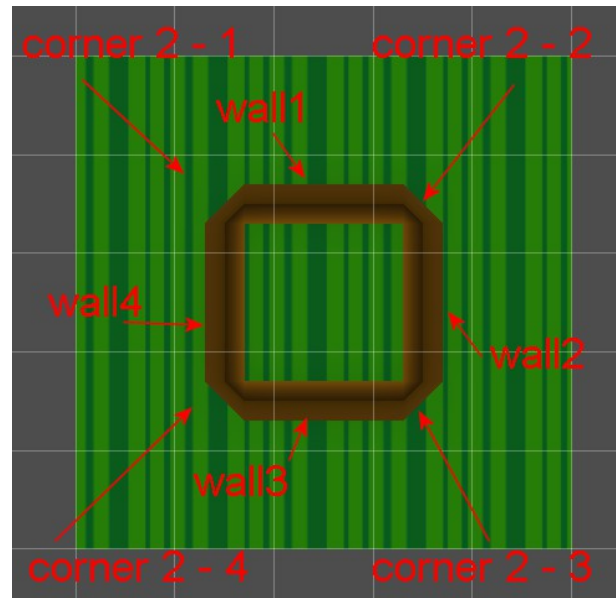
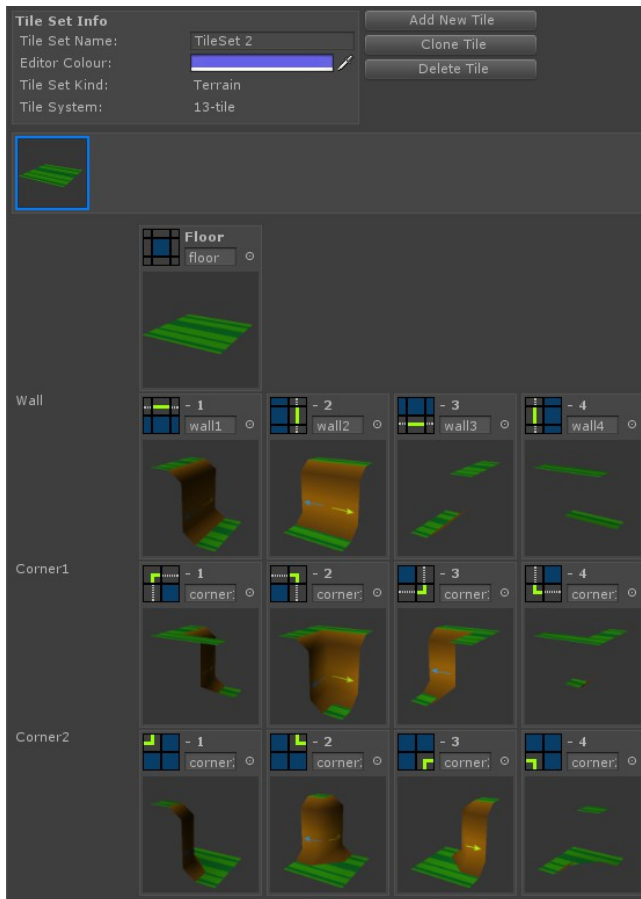


Corner 2 Piece



Terrain Tiles (13-tile system)

The terrain 13-tile system is used where you need better control of how the tile pieces' textures tile. You need to define the floor, 4 walls/cliff directions and the 4 directions for each of the 2 corner types.



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