


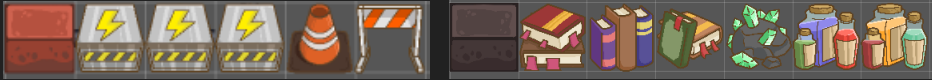


# DANGER DUCKLINGS

Level Design Guide

Made by Johnathon D'Amico and Tucker Greene

# Design Basics

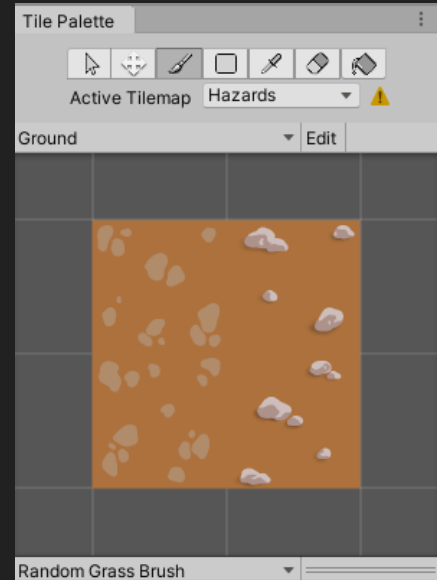
The Core of the game revolves around what the ducks can and can't interact with. There are four types of spaces a Duck can attempt to move into.

- 1. An empty tile.** Occupied with nothing but ground, the Duck can move onto it easily. 
- 2. A wall/wall type tile.** The Duck can't move through this, with no player repercussions. 
- 3. A hazard type tile.** The Duck can't move through this, with player repercussions. (Starting the level over, needing to do something before interacting with this tile, etc.) 
- 4. A button tile.** These tiles deactivate certain hazards. 

How to make a Level

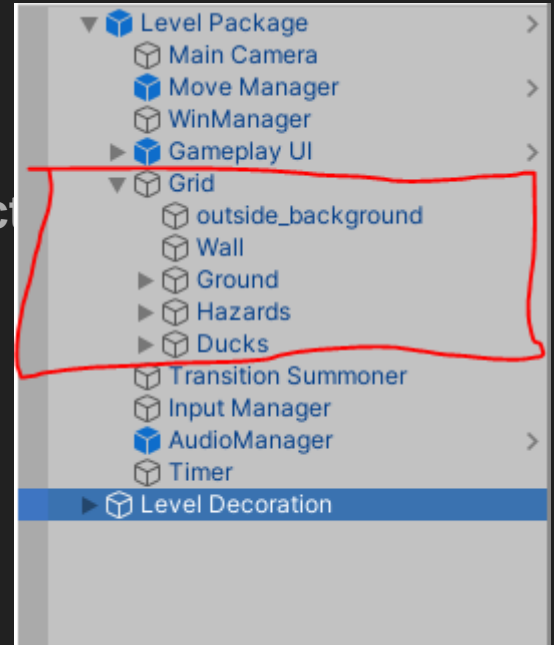
# Starting from Scratch

- Create a new Scene in Unity, delete the main camera, and drag in the level package prefab
- The Level Package automatically imports mostly everything the level will utilize.
- Danger Ducklings Level's are built on a grid with tile palettes. To access these, select window > 2D > Tile Palette. A pop up window will appear, looks like this:



# Layers

- In the level package, you will see a Grid game object. In it lies the layers that the game is drawn on. **It's important to make sure you've selected the correct Layer when drawing the level.**
1. Walls and anything the duck collides with (That isn't a hazard that forces a restart or undo) goes on **Walls**
  2. Ground Tiles, Win tiles, and EButtons go on the **Ground layer** (Basically anything that the ducks can Step on (**Buttons and Win Tiles**))
  3. Hazards, (as described above) go on the **Hazards layer**
  4. Ducks go on the **Duck layer**. They should be the only thing in this layer.



# Exploring the Tile Palette

- **Black box-** Tools. Use these when drawing the Level. The paint brush and eraser are the two Most important ones.
- **Yellow box-** Tiles. These are the individual tiles. Select one to draw it on the map using the paint Brush tool
- **Red circle-** tile palettes. Select these two access Other groupings of tiles, such as wall tiles.
- **Blue circle-** edit button. Use this if you want to Change the tile palette (Move, add, or delete tiles)
- **Green circle-** Brushes. These will be gone in more Depth next slide



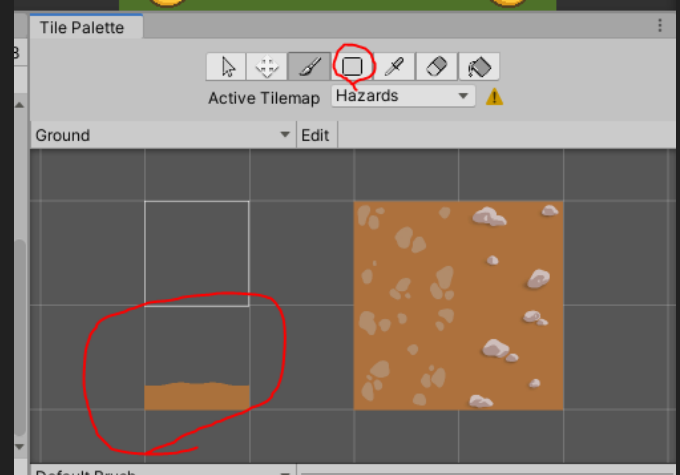
# Rule Tiles

- Certain tiles have been coded to minimize development time. These are rule tiles.

Wall Rule Tile- use the Wall Rule Tile when drawing the outline for levels



Ground Rule Tile- use the Circled tile and tool combination. Drag your mouse over the entire level to insert the ground in seconds.



# Brushes

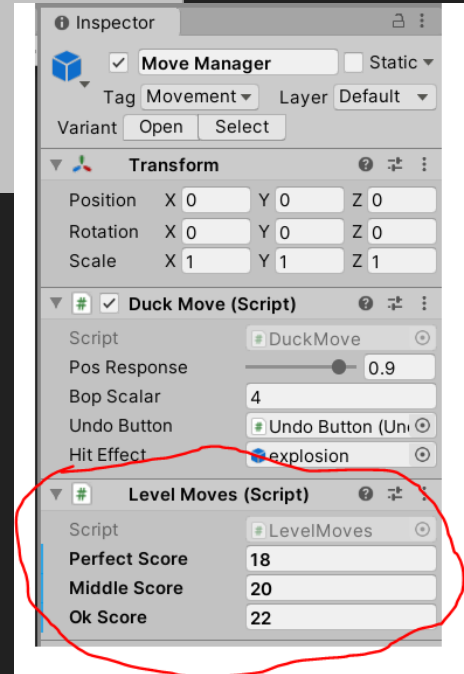
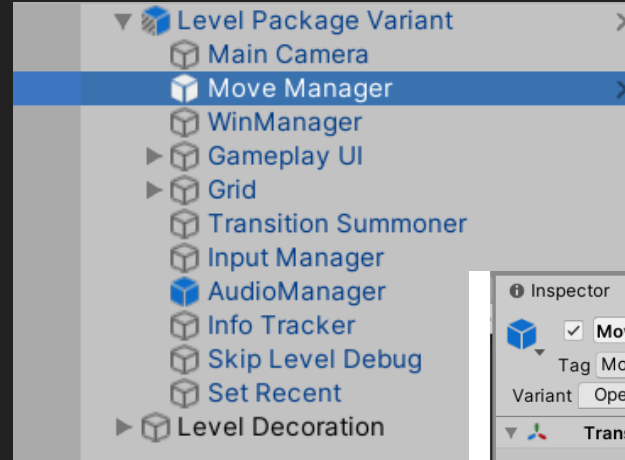
- You have to be on a certain brush to draw certain game Objects
- The major brushes are:
  - **Default Brush**-Used for walls and ground tiles
  - **WinTile Brush**-Used to draw win tiles (When Ground Layer is selected)
  - **Duck brush**-Used to draw playable ducks (When Duck Layer is selected)
- The rest are mostly brushes related to different hazards.

- Default Brush
- Random Brush
- EBButton Brush
- HorCord Brush
- HorCurrent Brush
- Manhole Brush
- Rebar Brush
- VertCord Brush
- VertCurrent Brush
- Deliverable Brush
- Duck Brush
- Mud Brush
- ✓ Random Grass Brush
- Random Ground Brush
- WinTile Brush



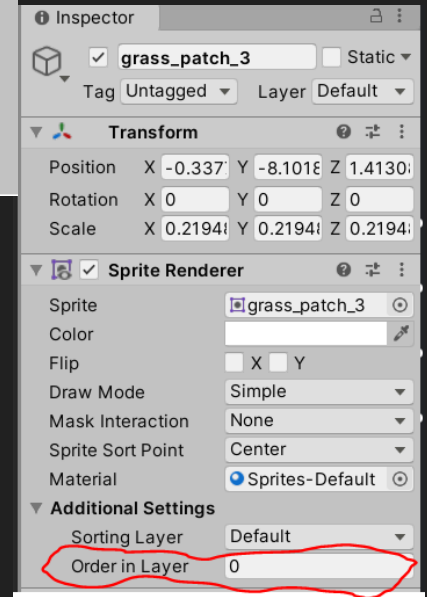
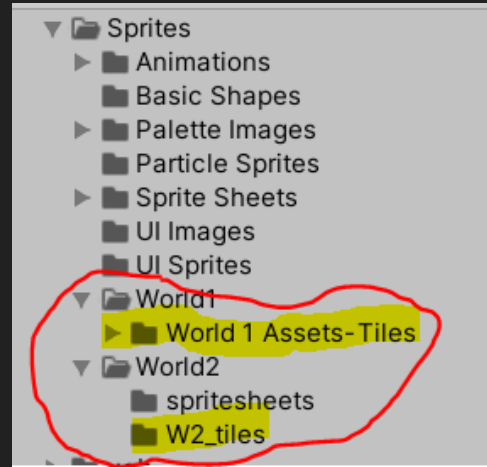
# Move Manager

- In the Level Package, find the Move Manager.
- In this object, there is a script for Level Moves with public variables.
- After finding the perfect solution to the level, add it in as Perfect Score
- [not quite sure how to go about other star counts tbh]



# Level Decoration

- To decorate a level, first create an empty game object, and name it Level Decoration
- Then, search for the World tiles in the Sprites folder for the corresponding world.
- Place these tiles outside of level boundaries, scaling as necessary.
- You can change an object's Order in Layer in Layer to make it appear on top of other objects.



# The 10 Dos and Don't when making levels

# 1. Do not make levels unnecessarily big.

- We found that making levels big without reason is a bad waste of space and makes the level not fun as well.

# 2. Levels without hazards are more likely to be perceived as boring

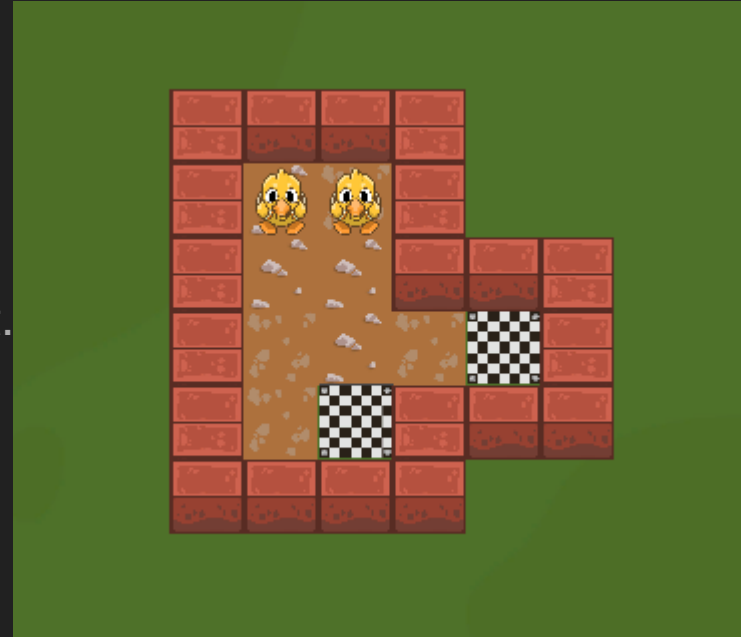
- Even if adding hazards makes a level easier, they generally engage players better. Levels without hazards should be implemented sparingly.

This level to the right was not implemented due to both of these reasons.



### 3. What is an interesting level to Devs may not be so Interesting to the general playbase.

- We saw the level pictured to the right as a good level for teaching players to use the wall to desync the ducks. Only, this Level leads itself to be uninteresting due to Its lack of hazards and very simple nature. We want players to learn how to Desync the Ducks using wall tiles, but this should come More naturally, this level is too upfront about it. It's such a core part of the game, it should Come more subconsciously.





## 5. Avoid levels that are the exact same as others, but flipped horizontally or vertically.

- These two levels are virtually the same.
- Time trials, however, are granted a bit of leniency for the sake of having more content



## 6. Some levels just don't fit our desired level curve

- These levels may not be bad, but their concepts may have been explored before, or they are a level of difficulty that we don't need more levels of in a particular world
  - These can be repurposed as time trial levels, which we just need a ton of.

These two levels didn't make the cut, there was a lot of competition for W1-6-10





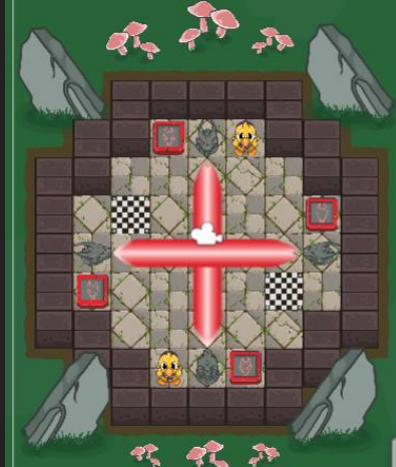
## 7. Levels/ideas can be combined with other levels

- Some levels/ideas are simple enough to be easily implemented with other levels.
  - The level idea on the left was cut and then re added to the right level.
  - Same idea, just flipped and repurposed.



## 8. Avoid levels with swirls.

- This level gives off swastika energy and it is very stressful
- With proper design, you can successfully create a level with a circular aesthetic



*The lasers are much more visible, making the level look more like a plus sign*



## 9. Avoid making levels that display game's weak points

- For example, it may be difficult to remember if your duck is stuck in the mud or not, as we don't have a great visual indication of this. Avoid situations that highlight this weak point, such as mud being next to each other.
- Some levels can be rearranged to avoid these bugs while keeping the integrity of the puzzle.



# 10. Try to avoid levels that just aren't fun to look at.

- If you don't like looking at it, the player most likely won't like it either.



# Rule Breakability

## Can Break cautiously:

3. Some levels are both interesting to Devs and players
5. Some levels can be flipped horizontally and vertically, but they should have something to differentiate the two.
8. Some levels can use swirls, but be careful with their implementation.
9. Avoid levels that include bugs-try to rework them to not waste programming time

## Cannot Break:

1. Do not make levels unnecessarily big
2. Do not make levels without hazards (Does not apply to time trial levels)
4. Do not make levels visually noisy
10. Do not make levels that are not fun to look at.

## Keep in Mind:

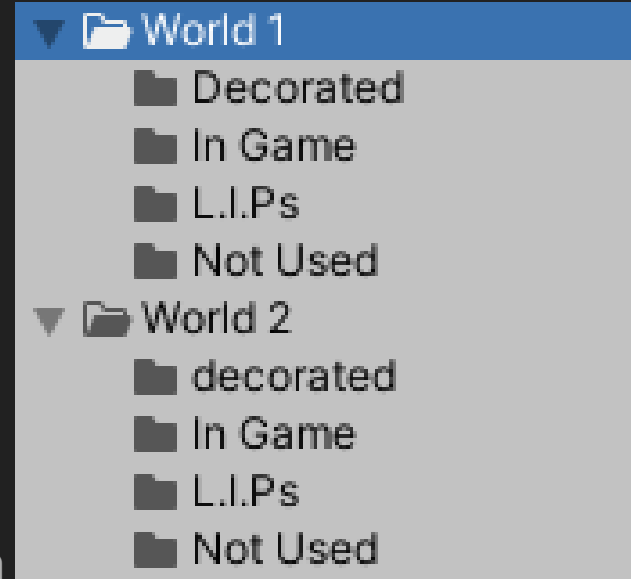
6. Some levels can be good, but don't fit the level curve
7. Levels/level ideas can be combined with other levels

# Level Storage in Unity

# World-based levels

Each world folder has 4 sub folders

- Decorated- Levels that are ready to be tested on Mobile (Should be decorated with cosmetics At this point
- In Game-Levels that are ready to be released Publically
- L.I.Ps (Levels in Progress) Levels that are Currently being constructed/are not decorated with Level cosmetics
- Not Used- Cut or scrapped levels.



# Daily Challenge Levels

Challenge levels are separated by their level of difficulty





# Adding levels to the build settings

World 1 Levels are placed (In order) Between the Main menu scene (0) and the level select scene (36)

<input checked="" type="checkbox"/> Scenes/Main Menu	0
<input checked="" type="checkbox"/> Scenes/PlayableLevels1/World 1/In Game/Level 1_GTG	1
<input checked="" type="checkbox"/> Scenes/PlayableLevels1/World 1/In Game/Rebar 1	2
<input checked="" type="checkbox"/> Scenes/PlayableLevels1/World 1/In Game/Roadblock	3
<input checked="" type="checkbox"/> Scenes/PlayableLevels1/World 1/In Game/Lock	33
<input checked="" type="checkbox"/> Scenes/PlayableLevels1/World 1/In Game/Secret	34
<input checked="" type="checkbox"/> Scenes/PlayableLevels1/World 1/In Game/Gary	35
<input checked="" type="checkbox"/> Scenes/Level Select/Level Select	36

World 2 levels are placed (In order) between Level Select (36) and Level Select W2 (72)

<input checked="" type="checkbox"/> Scenes/PlayableLevels1/World 2/In Game/shRoomWBY	69
<input checked="" type="checkbox"/> Scenes/PlayableLevels1/World 2/In Game/Toby mkIII	70
<input checked="" type="checkbox"/> Scenes/PlayableLevels1/World 2/In Game/going down	71
<input checked="" type="checkbox"/> Scenes/Level Select/Level Select W2	72