Level Design

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Let’s design a level

Nitendo used to design Super Mario levels on graph paper:
https://boingboing.net/2015/06/16/super-mario-maker-design.html
What type of game you are making?

- Competitive multiplayer game
- Puzzle game
- Open world RPG
- Strategy game
- Platformer game
- Hack ‘n’ Slash

What is the main focus when designing a level for these types of games?
What type of game you are making?

Competitive multiplayer game -> Player interactions
Puzzle game -> Creative puzzles
Open world RPG -> Lore and Locations
Strategy game -> Strategic options and balance
Platformer game -> Good use of verticality and tricky jumps
Hack ‘n’ Slash -> Pacing (monsters and loot placement)
Competitive multiplayer game

This is considered one of the best competitive map:

- Non-symmetrical
- Both objectives in the upper corners.
- Three pathways
- Chokepoints
- Multiple interleaving paths

Puzzle game

- Understandability
- Logical solution
- Environmental cues

https://icebeam.co.uk/musings/2018/8/9/how-socketeers-design-evolved
Open world RPG

What makes it interesting to explore?
Strategy game

Strategic options

Balance

http://www.ultimaratioregum.co.uk/game/2013/09/07/real-time-strategy-level-design/
Hack ‘n’ Slash

Power fantasy

- Monsters
- Loot drops

https://androidarts.com/diablo/diablo.htm
Platformer game

- Good use of verticality
- Jump design
- Timing of movable objects (platforms, enemies, bullets)

http://rachelb5.blogspot.com/2012/02/so-here-finally-is-my-final-level.html
Before designing a level

WHY Theme
WHO Characters
WHERE Setting
WHAT Plot and events
WHEN Time of events
HOW Presentation

https://www.youtube.com/watch?v=FhKjv7CPUqw
Before designing a level

**WHY**  Theme

**WHO**  Characters

**WHERE**  Setting

**WHAT**  Plot and events  ->  **Mechanics**

**WHEN**  Time of events  ->  **Pacing**

**HOW**  Presentation  ->  **Tone**
Example: Level design for a platformer game

https://80.lv/articles/the-level-design-of-hob/
How to design levels for a platformer

1. Choose a visual theme - find reference images
How to design levels for a platformer

2. Make a list

Everything the player experiences in the level:

● **Specific items:**
  a. Meet first enemy
  b. Find first powerup
  c. Learn about double jumping
  d. Pull lever to activate the moving platform

● **General items:**
  a. Flying enemies (x10)
  b. Turret enemies (x3)
  c. Power-ups (x5)
  d. Moving platforms (x3)
  e. Locked doors (x2)

How to design levels for a platformer

3. Make a rough layout

- Some areas are too big or small
- Some lines are too long (boring)
- The layout is too simple/complex
- The layout looks uninteresting

source: http://devmag.org.za/2011/07/04/how-to-design-levels-for-a-platformer/
How to design levels for a platformer

4. Sketch out the specific locations

source: http://devmag.org.za/2011/07/04/how-to-design-levels-for-a-platformer/
How to design levels for a platformer

5. Make a detailed layout

source: http://devmag.org.za/2011/07/04/how-to-design-levels-for-a-platformer/
How to design levels for a platformer

6. Build the initial layout

source: http://devmag.org.za/2011/07/04/how-to-design-levels-for-a-platformer/
Decorate the level

https://80.lv/articles/the-level-design-of-hob/
How to design levels for a platformer

7. Play the level

Determine what is fun and how long it will take to play through:

- Move, add or delete **platforms**
- Move, add or delete **power-ups**
- Move, add or delete **enemies**

How to design levels for a platformer

8. Decorate the level

https://www.pinterest.com/pin/737957088912056869/
Level design tools and techniques
Level blocking tools

Unity - ProBuilder (now free) - https://www.assetstore.unity3d.com/en/#!/404
https://www.youtube.com/watch?v=a8JOk8nuK0k

Unreal Engine - built in BSP system
Visual breakdown - Prince of Persia concept art

Task 1: make a minimal list of assets needed to create this scene
Task 2: make a minimal list of textures needed to create this scene

More in-depth analysis: https://www.youtube.com/watch?v=vz-zXbv49II
Visual breakdown - Prince of Persia concept art
Architecture in level design

https://www.slideshare.net/totter87/ecgc-2015-level-design-like-an-architect

https://www.youtube.com/watch?v=XW7KvppTspc
Architecture in level design

But you don’t need to hire architects to design your levels!

https://www.slideshare.net/totter87/ecgc-2015-level-design-like-an-architect

https://www.youtube.com/watch?v=XW7KvppTspc
Guidelines:

How to make levels visually interesting!
“Our experience of an architectural space is strongly influenced by how we arrive in it.”

Level concepting

Plan the flow of the game
Visual guiding

https://www.artstation.com/artwork/b3eDk
Approachability

Which room would you like to explore?
Approachability

Source: https://www.youtube.com/watch?v=WWXsmnImADc
Approachability
Coherence

Complex yet approachable?
Coherence

Negative Space
Coherence

Repeating patterns
Repeating patterns -> rhythm

Spatial Composition

Watch video:
http://www.youtube.com/watch?v=WWXsmnImADc&t=26m5s
Difference in scale / contrast

Too much is going on (Tomb Raider)
Difference in scale / contrast

Nice attention to scales (Assassin’s Creed Syndicate)
Difference in scale / contrast

Large Scale
Difference in scale / contrast

Medium scale
Difference in scale / contrast

Small scale / details
New objective:
Sneak onto the prison transport

Map updated
Lines

**Horizontal lines:** These imply calm and rest.

Lines

**vertical lines**: communicate power and strength.

Lines

**Oblique lines:** suggest movement, action, or change.

Lines

Lines are creating direction

Lines

Lines are creating direction

Emphasis

Break the box / corridor
Place props accordingly

What can you notice here?

Explanation -  http://www.youtube.com/watch?v=JKn7u09mR8M&t=8m32s
Prioritize

90/10 rule

Faster Dev time is more important than perfect seams and UVS.

https://80.lv/articles/overwatch-technical-overview/
Randomness in level design
Combine hand-crafted levels with procedural elements

What game is this?
Finally - Add some life to your levels

Animate everything
Finally - Add some life to your levels

http://www.youtube.com/watch?v=pXSIxXb_zOo&t=7m40s
Break The Rules

Who Knows Where It Will Lead?