Level Design

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Let’s design a level

Nintendo used to design Super Mario levels on graph paper:
https://boingboing.net/2015/06/16/super-mario-maker-design.html
Level design focus

What is the main focus when designing a level for these types of games?

Competitive multiplayer game  -> ?

Puzzle game  -> ?

Open world RPG  -> ?

Strategy game  -> ?

Platformer game  -> ?

Hack ‘n’ Slash  -> ?
Level design focus

What is the main focus when designing a level for these types of games?

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

- World building
- 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
- Pacing:
  - 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*
Level design steps

0. The idea

● **Spontaneous idea** - can come at any moment.
● **Deliberate idea** - developed intentionally.

Questions:

● What do you find interesting about the idea?
● What is the purpose of the level?

Level design steps

1. Choose a visual theme - find reference images
Level design steps

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)

Level design steps

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/
Level design steps

4. Sketch out the specific locations

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

5. Make a detailed layout

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

6. Build the initial layout

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

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**

Level design steps

8. Decorate the level

https://www.pinterest.com/pin/737957088912056869/
Decorate the level

https://80.lv/articles/the-level-design-of-hob/
Level blocking tools

**Unity** - ProBuilder (free) - [https://www.assetstore.unity3d.com/en/#!/404](https://www.assetstore.unity3d.com/en/#!/404)

[https://www.youtube.com/watch?v=a8JOk8nuK0k](https://www.youtube.com/watch?v=a8JOk8nuK0k)

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

Make a minimal list of assets needed to create this scene
Make a minimal list of textures needed to create this scene
Visual breakdown - Prince of Persia concept art

More in-depth analysis: https://www.youtube.com/watch?v=vz-zXby49Ii
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

NVYVE - Originally an architectural, visualization company. Started working on a game Pamela.

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

https://www.youtube.com/watch?v=XW7KvppTspc
“Our experience of an architectural space is strongly influenced by how we arrive in it.”

Guidelines:

Tips about how to make the levels interesting

https://www.gamasutra.com/blogs/SukhraiJohal/20200108/356416/Level_Design_Case_Study__R
creating_the_First_Level_in_God_of_War_2018.php
Level concepting

Plan the flow of the game
Visual guiding

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

Simple vs Complex
Approachability

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

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

Different levels of scales (Assassin’s Creed Syndicate)
Difference in scale / contrast

Large Scale
Difference in scale / contrast

Medium scale
Difference in scale / contrast

Small scale / details
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 can create direction

Lines

Lines can create direction

Emphasis

Break the box shapes
Use your props

Explanation - http://www.youtube.com/watch?v=JKn7u09mR8M&t=8m32s
Prioritize
90/10 rule

https://80.lv/articles/overwatch-technical-overview/
Task

Find a screenshot of a level in video game.

Paint it over to point out following details (at least 2 things):

1. Visual lines in the level
2. Points of interest
3. Patterns
4. Negative space
5. Visual guidelines for the player
6. Clever use of props

Example: Overwatch Eichenwalde
Combined hand-crafted levels with procedural elements

Do you know what game is it?
Add environmental animations
Direct the player’s attention

http://www.youtube.com/watch?v=pXSIXb-_zOo&t=7m40s
Sometimes you can break the rules
Next Lecture - Milestone 2 presentations

- 5m gameplay
- 5 gameplay elements
- 2 units of scalable content (upgrades, items, enemies...)
- First UI implemented (3 views)
- First sounds implemented (5 sounds)
- First level
- First character partially animated
- Pick a team to peer review (write their name to the spreadsheet)
- Itch.io page has descriptions and pictures.
- Presentation (5 min per team)
  - Demo your game (live)
  - Tell about what went well and what went wrong
  - What changes are you going to make
Next Lecture - Milestone 2 presentations

Choose a team to Peer-review:

https://courses.cs.ut.ee/2020/gamedev/fall/Main/PeerReview