



# Procedural Maps: Infinite Player Experiences

Anna Dickinson, Bryan Luren,  
James Melsha, Cody Carey



## Goal

**Given we have a small team, figure out how to create enough high-quality levels to support a live-service game. Content needs to be fresh, dynamic, and fun for the long haul.**

## Feature

### Procedural Experience Generator

(Map layout using hybrid, bounded procedural methods)

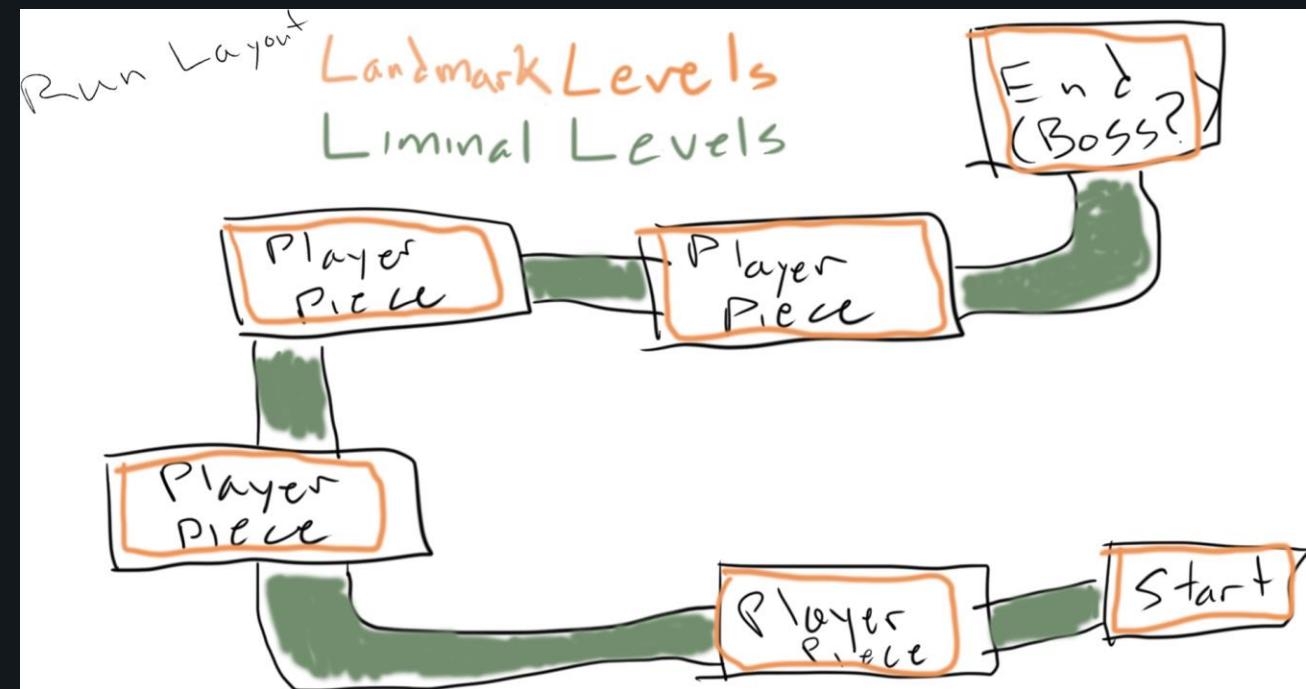


# Overview

We construct runs from player-selected, handcrafted “landmarks” connected by “liminal” spaces procedurally generated from “blocks” of experience content.

## Process

- Players collect map pieces
- Arrange on map table
- Map piece layout = seed
- Difficulty is displayed
- Hit “go” and game generates the liminal spaces
- Players start their run!





# Level Types

*“Listen Rookie. All you do is select a few landmarks and then start your run. After that the multiverse takes the wheel”. - Staff Sgt. Anderson, Witness Field Operations Manual*

## ➤ Landmark Levels

- Handcrafted
- Correspond to player-collected map pieces
- Major narrative story beats
- Puzzles, key accomplishments and power-ups
- Tactical/stealth combat, major boss fights

## ➤ Liminal Levels

- “Connectors” for map layout
- Procedurally generated, but deterministic
- Built from smaller, handcrafted, Lego-like “Experience Blocks”
- Chaotic, extra-weird
- Contain rare collectibles, mini-bosses, esoteric lore, and extra surprises



# Player Journey: The Arcade Wiz

There's nothing more thrilling than perfecting my skill at a game. I love playing Atlas because I can use that skill across a huge number of maps – I don't think I'll ever play them all! Also, while I enjoy roguelikes – always a challenge to make it to the end, and it's thrilling when you get that perfect run – the problem is, you can never repeat the same run twice. Atlas doesn't have that problem. Being lucky is great, but being skillful is better.

Atlas is fun because when you get the right map pieces, you can dial in the perfect run. Then, you can speedrun it. And move up in the leaderboards.

But to get to that point, you have to be good enough to beat the [landmark levels]. Then, you unlock tougher and tougher [liminal levels]. So, you need to put in the time. You don't get the really fun speedrunnable levels until you've been playing for a while. I like being good at things; I also like having special access to things because I'm a top-tier player.



# Player Journey: The Socialite

I'm a social gamer – love playing with my friends. The thing I like about Atlas is that it's easy to play with lots of different people. With many games, everyone needs to be at the same experience level for it to be fun. In Atlas, you can pick a difficulty just by arranging pieces in a certain way. But it takes time to figure that out, so the more you play, the better it is.

I'm the team leader. I have all the pieces. I know how to arrange them to get a difficulty which works for everyone. And that comes with experience.

It's also great for making new friends – you can find people online who have the pieces you're missing, and join their teams. Seems like everyone I know will be playing Atlas eventually!



# Player Journey: The Sci-Fi Junkie

Games are my favorite form of storytelling. I love being part of the action: in a good game, you aren't *told* the story – you *discover* it. It's almost makes you *participant* in the story.

Atlas is amazing. I love the surreal, sci-fi vibe. And I also love how that weirdness is built into the gameplay itself. Each time you build a map, you get different liminal spaces; each liminal space is a different view of the Atlas universe. Sometimes, you find weird combinations of enemies to fight; sometimes, you see weird combinations of enemies fighting each other. And then you find a piece of lore which links it all together. It's like a living universe – you find new details with each run.

But, you have to work for it – you don't just turn a page. The more map pieces you collect, the more stories you get. And the stories aren't just totally random – they're repeatable experiences.

I'll be playing this game for a while! I want to know everything about the Atlas universe!



# Liminal/Experience Blocks

*“The multiverse is like a box of chocolates, but all the flavors want to murder you.”*

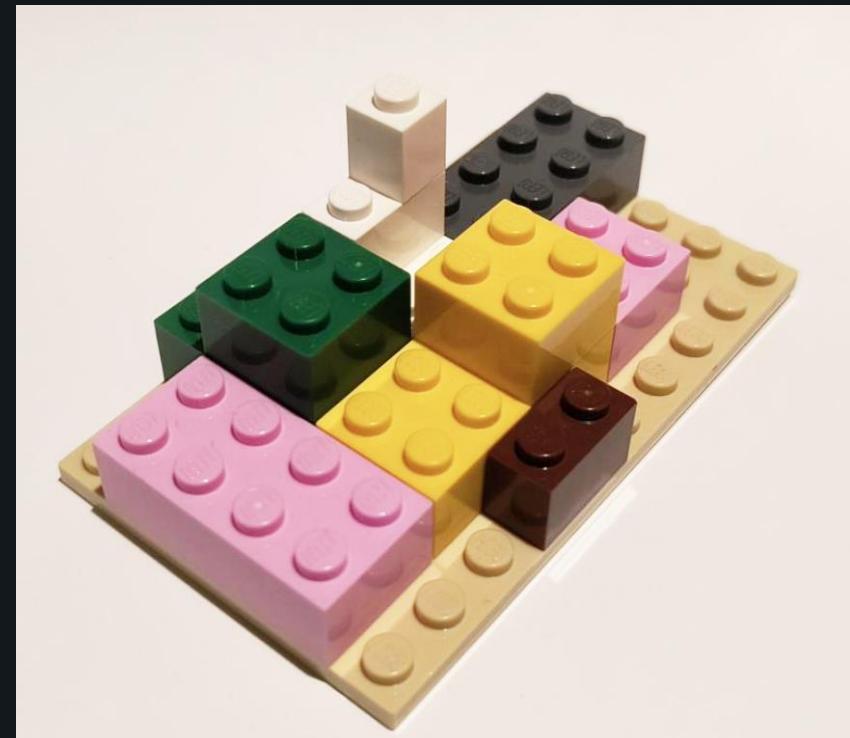
- Staff Sgt. Anderson, Witness Field Operations Manual

## ➤ Lego Pieces

- 3D to allow for verticality
- Variety of mini-biomes
- Menagerie of enemy types
- Environment is alive (influences behavior)
- Unique gameplay mechanics and weapons

## ➤ Emergence

- Enemies and biomes “bleed” into each other and from Landmarks
- Mixed enemy types; can fight each other
- Difficulty arises from enemy placement. Can be measured.
- Controllable rarity – save special blocks for big releases





# Recap

We construct runs from player-selected, handcrafted “landmarks” connected by “liminal” spaces procedurally generated from “blocks” of experience content.

## Value for Player

- Empowers players and gives them choices
- Endlessly challenging and replayable
- Encourages teamups and social experiences
- Engrosses and immerses player in an expanding story universe

## Value for Developers

- Flexibility of mixing handcrafted and procedurally generated content
- Highly directable for artists and designers
- Rapid prototyping for game modes and ideas (in Experience Blocks)
- Runs are reproducible for debugging
- Scalable project pace: release a new Landmark piece, get new Liminal spaces for “free”