



Designing the Anti-Platformer

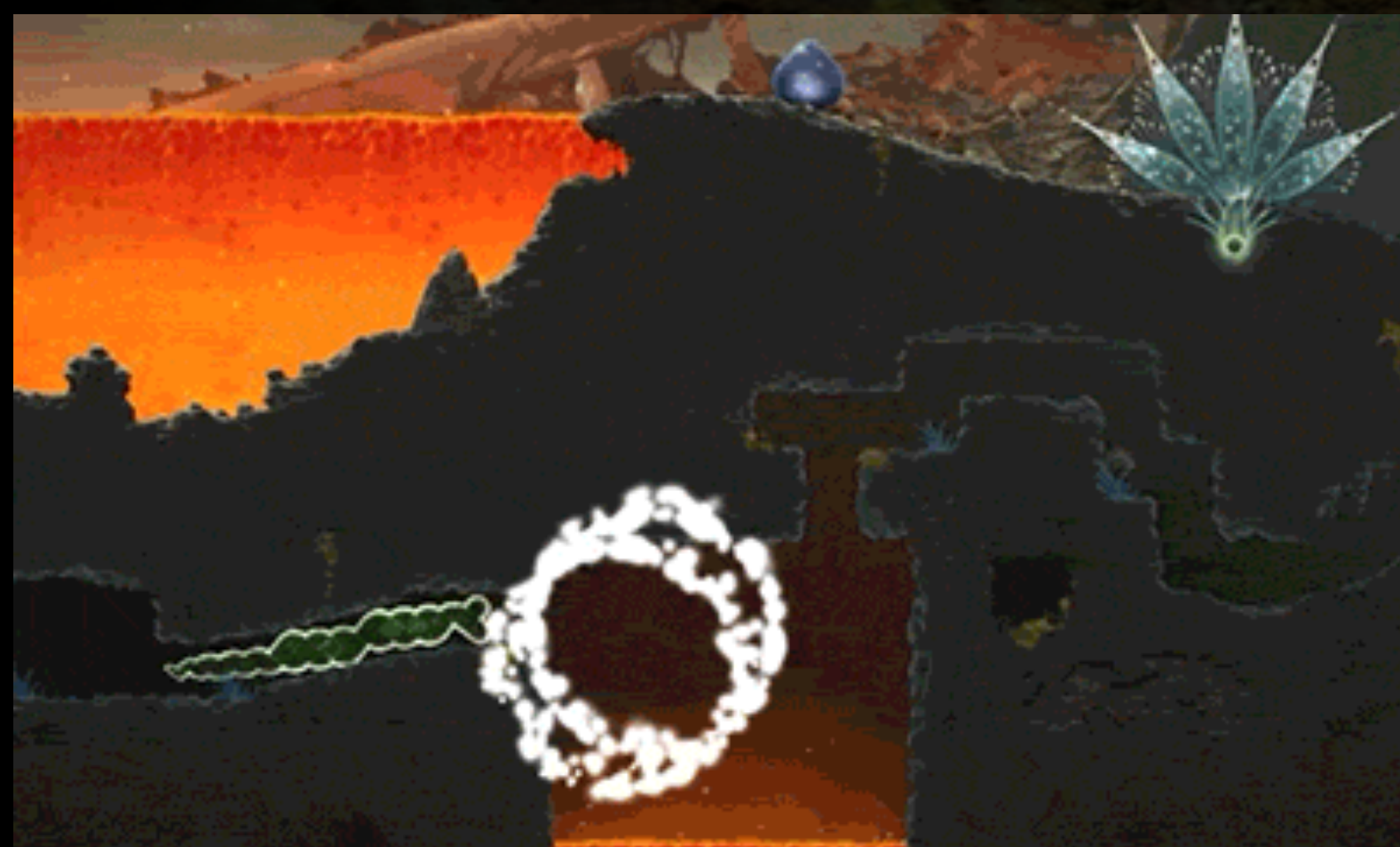
Mushroom 11 Puzzle Systems

Itay Keren
Untame





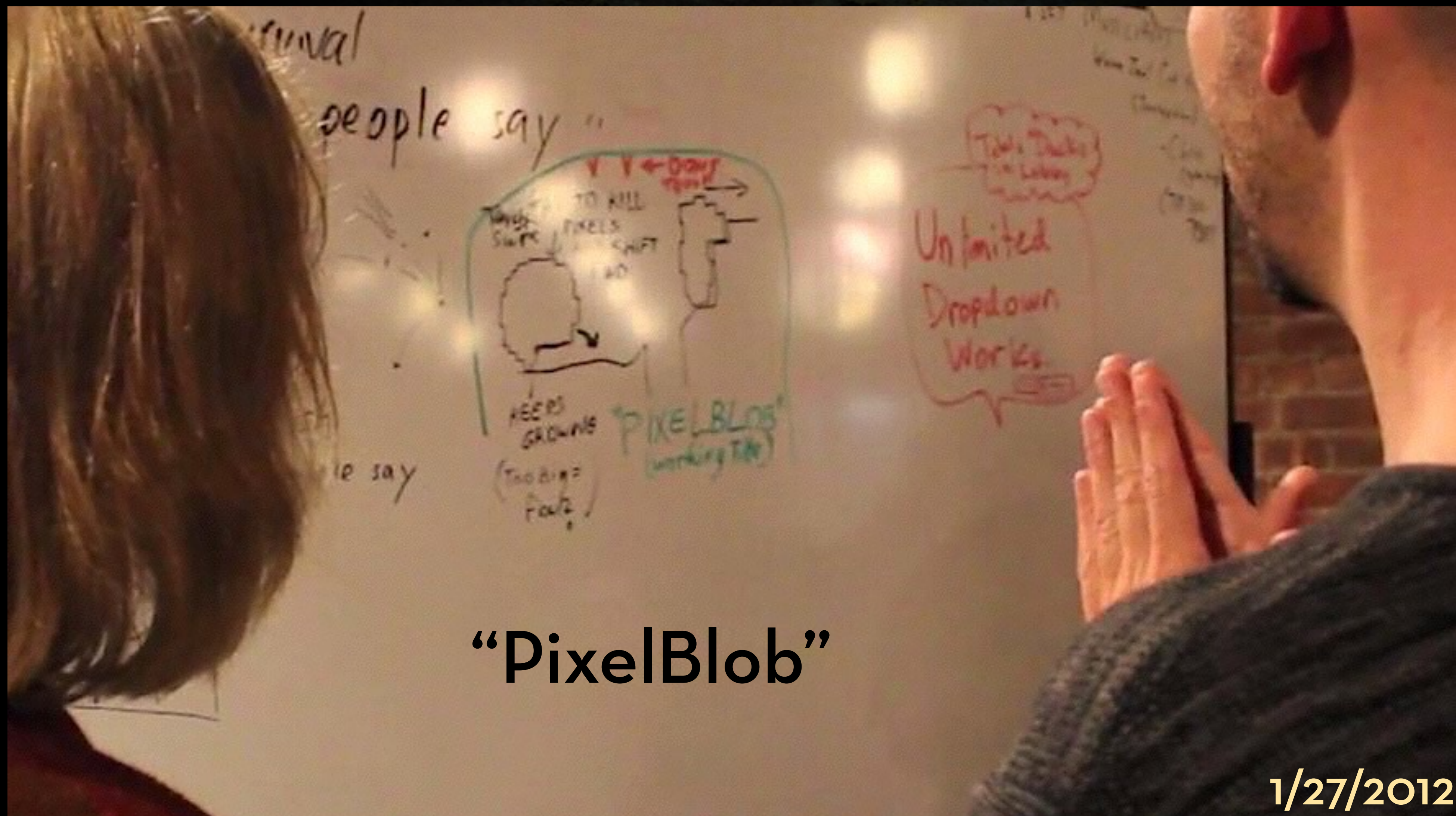
MUSHROOM 11



Background

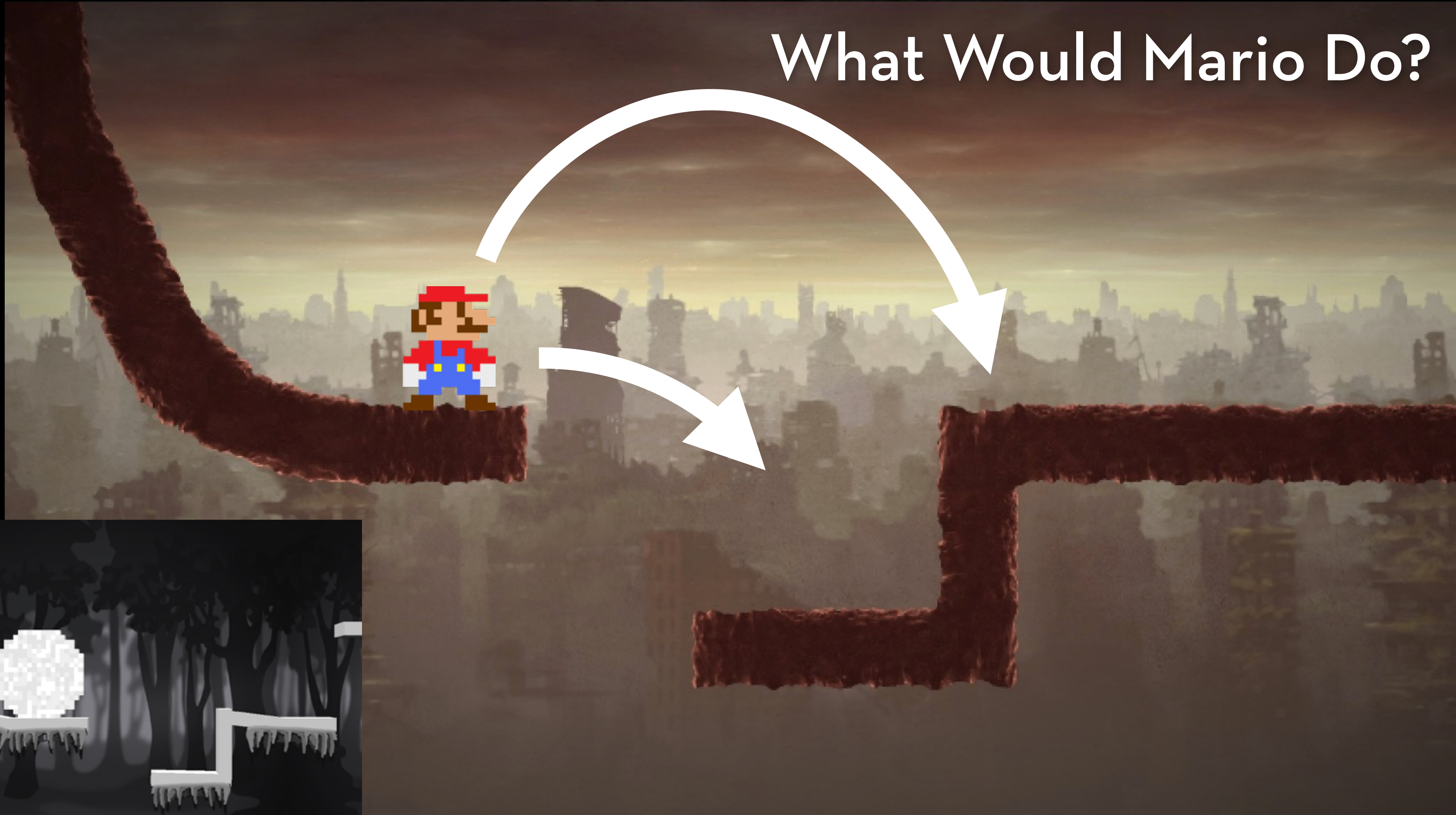


Global Game Jam 2012
Theme: Ouroboros





What Would Mario Do?



No Jump, But...



Freeform Pruning Split & Reattach Cellular Level Physics



Rigid Grid Skeleton Conform to Terrain Regenerate From Any Cell Sacrifice



Unlimited Shape & Extent Shifting Center of Mass



Gyration Momentum



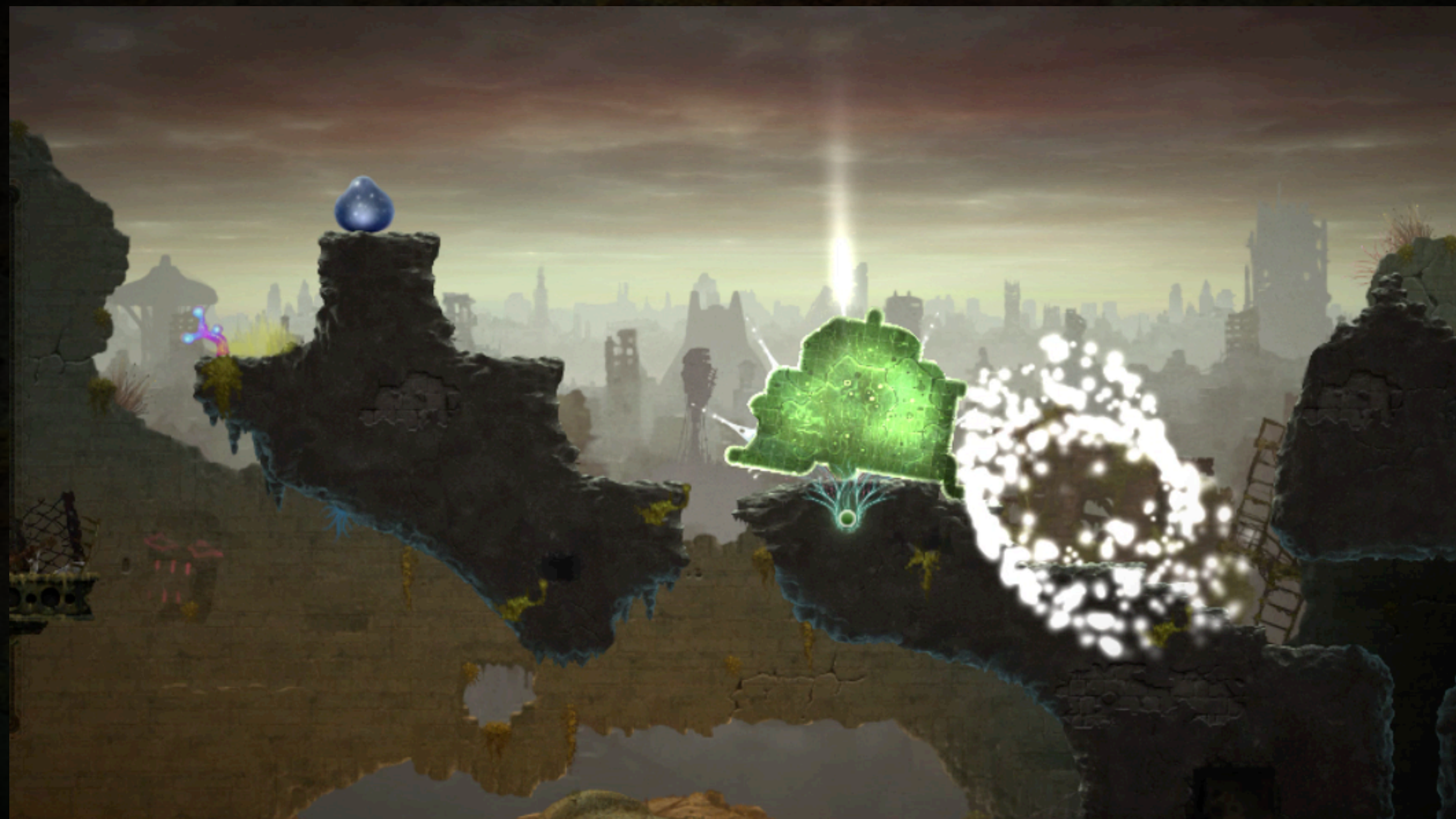


The Risk:
New Idea, Familiar Package



The Anti-Platformer

Mechanics Design



Eliminate Grow-Back

Mechanics Design



Enhanced Gyration (Basic motion more efficient)

Mechanics Design



Disable Mid-Air Growth (size control, puzzle ‘purity’)

Mechanics Design



Size: Speed/Control Tradeoff

Mechanics Design



Unlimited Growth (pickups for points only)

Mechanics Design



unsigned x;



Right to Left

Power Ups

Lighter!

Bigger!

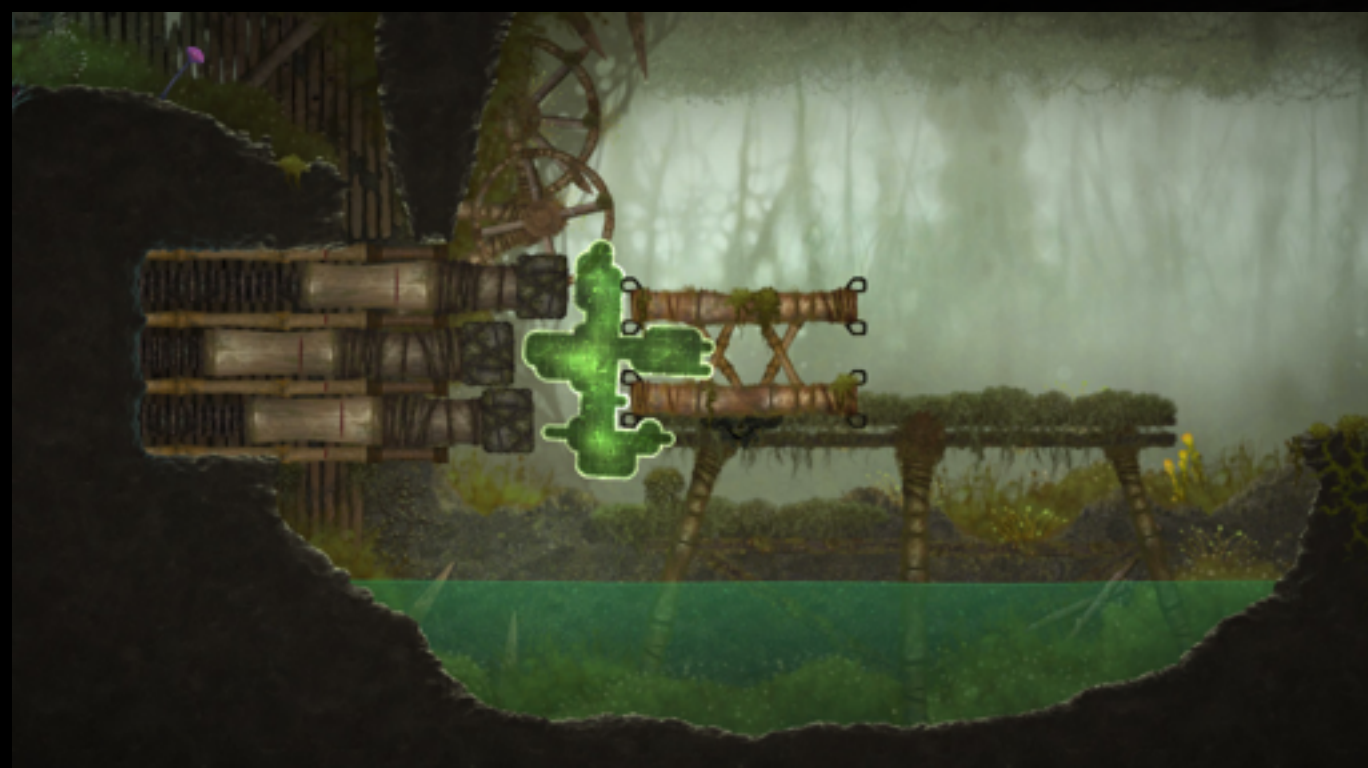
Faster!

Invincible!



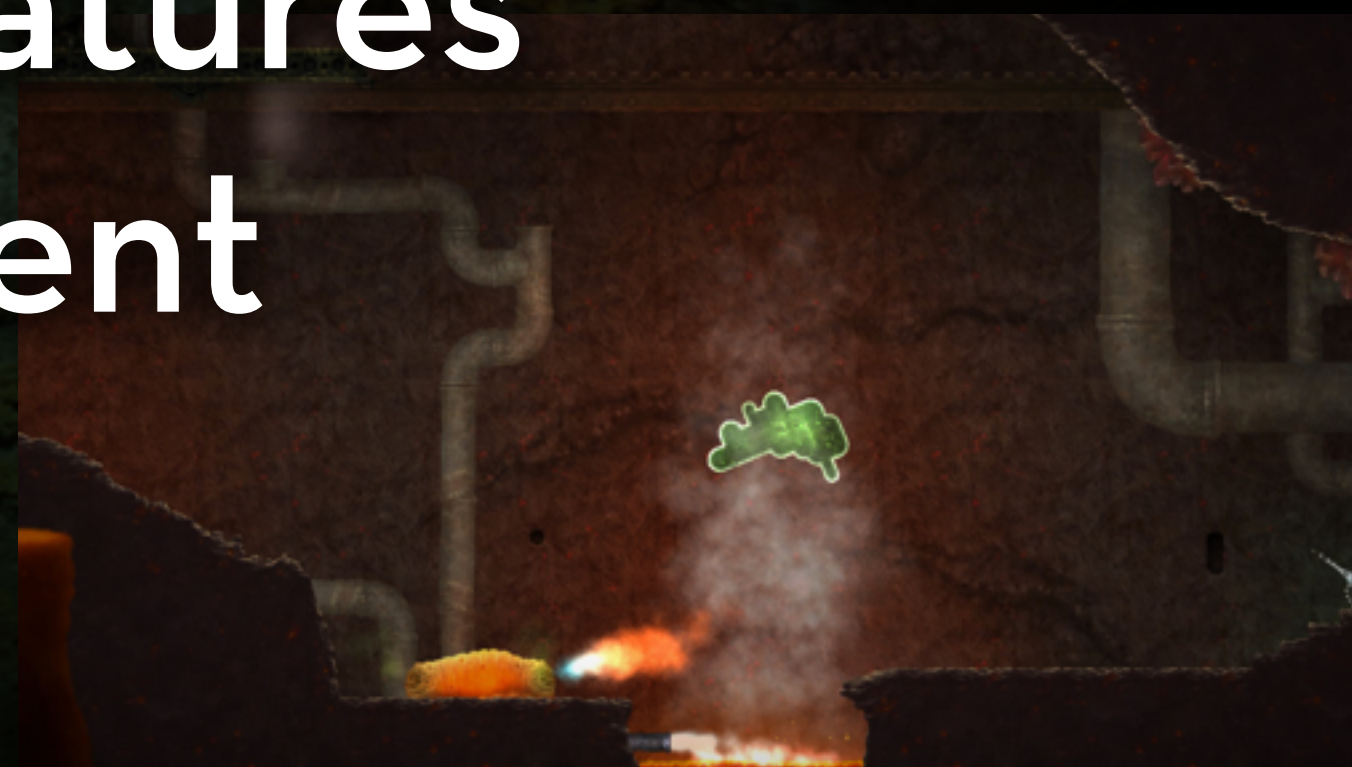
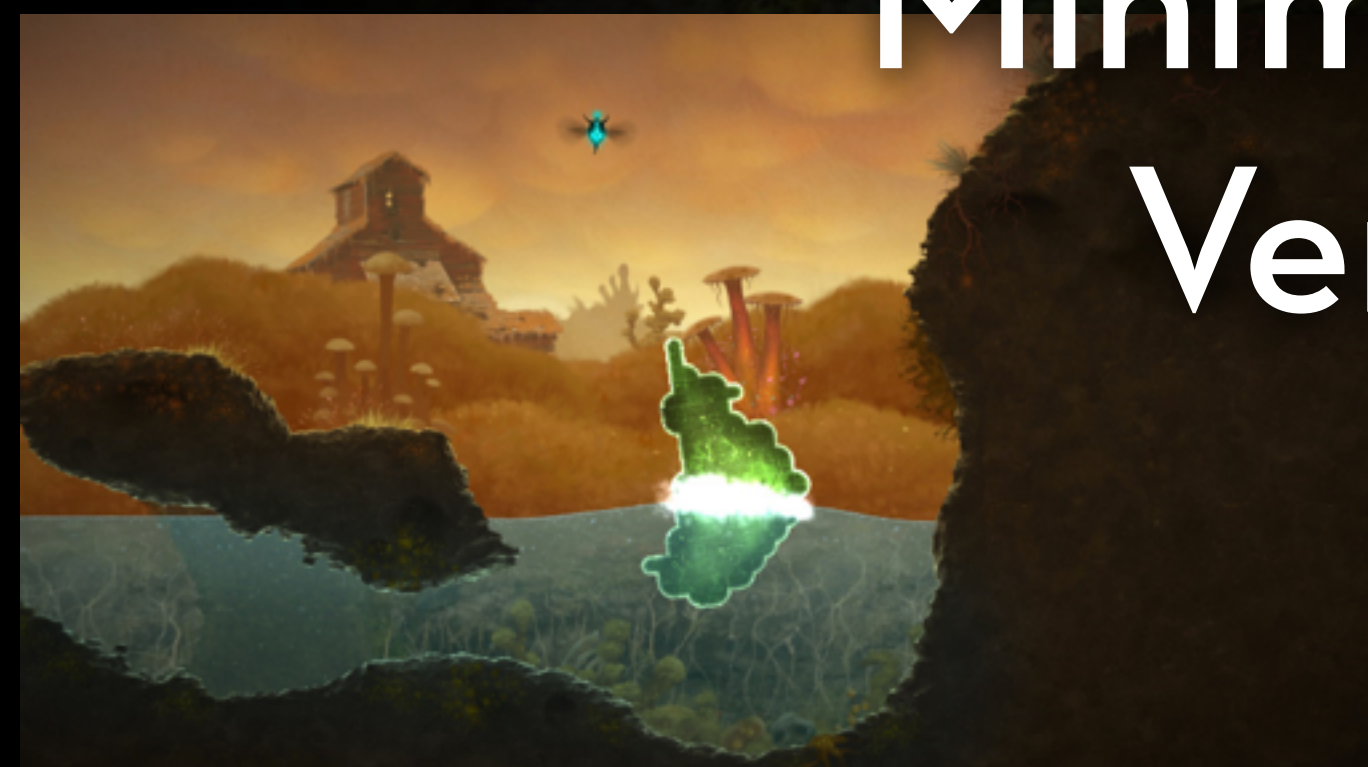


Character Mechanics Versatility Depends on Its Parameters



Environment is Mechanics

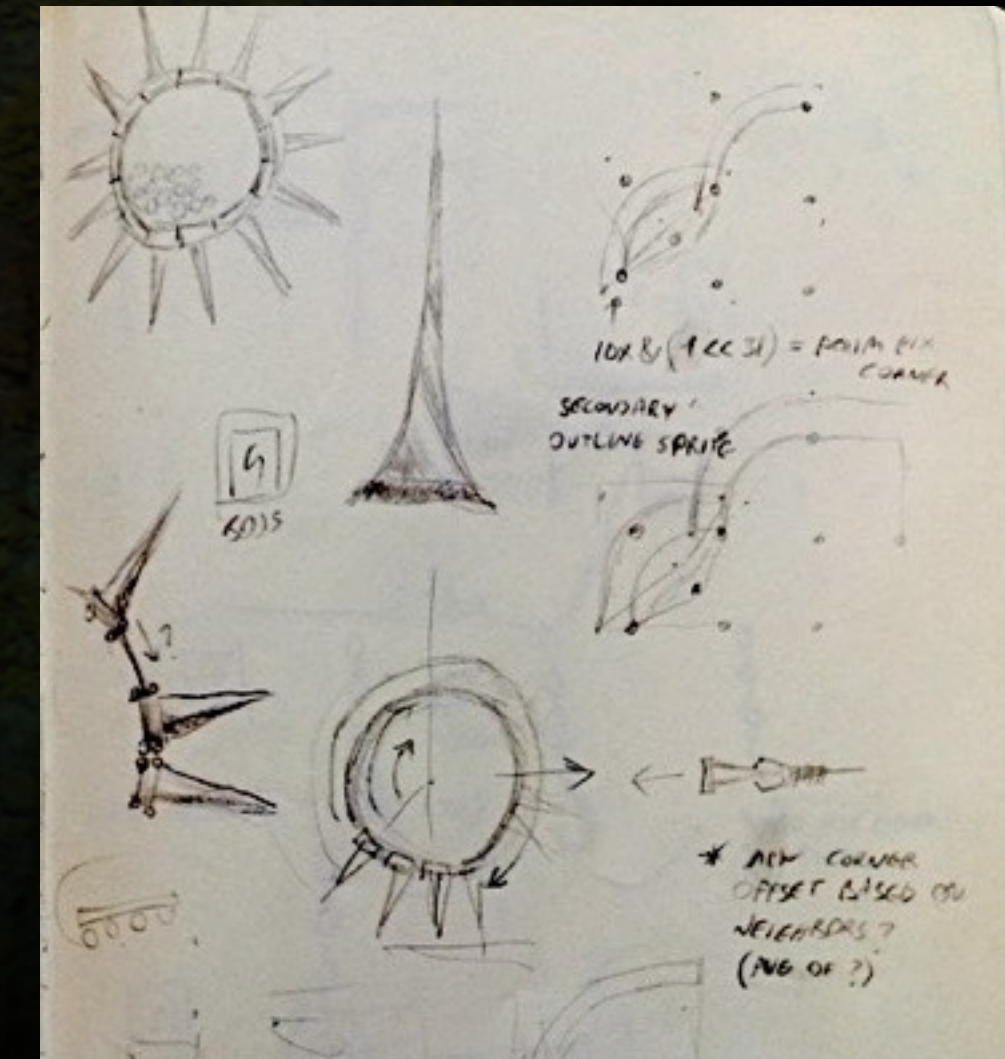
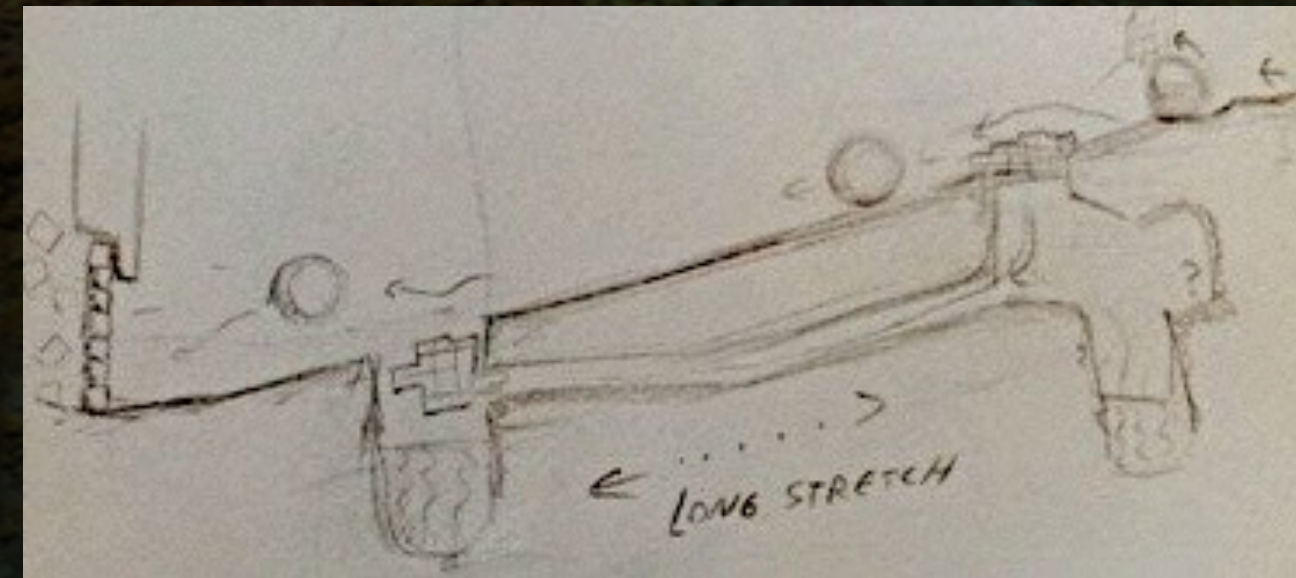
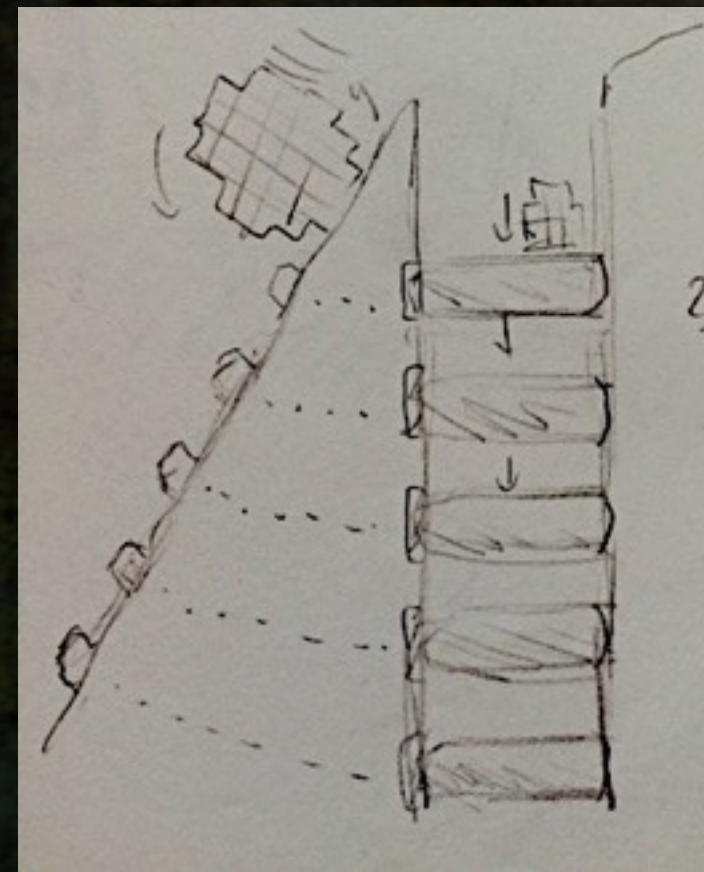
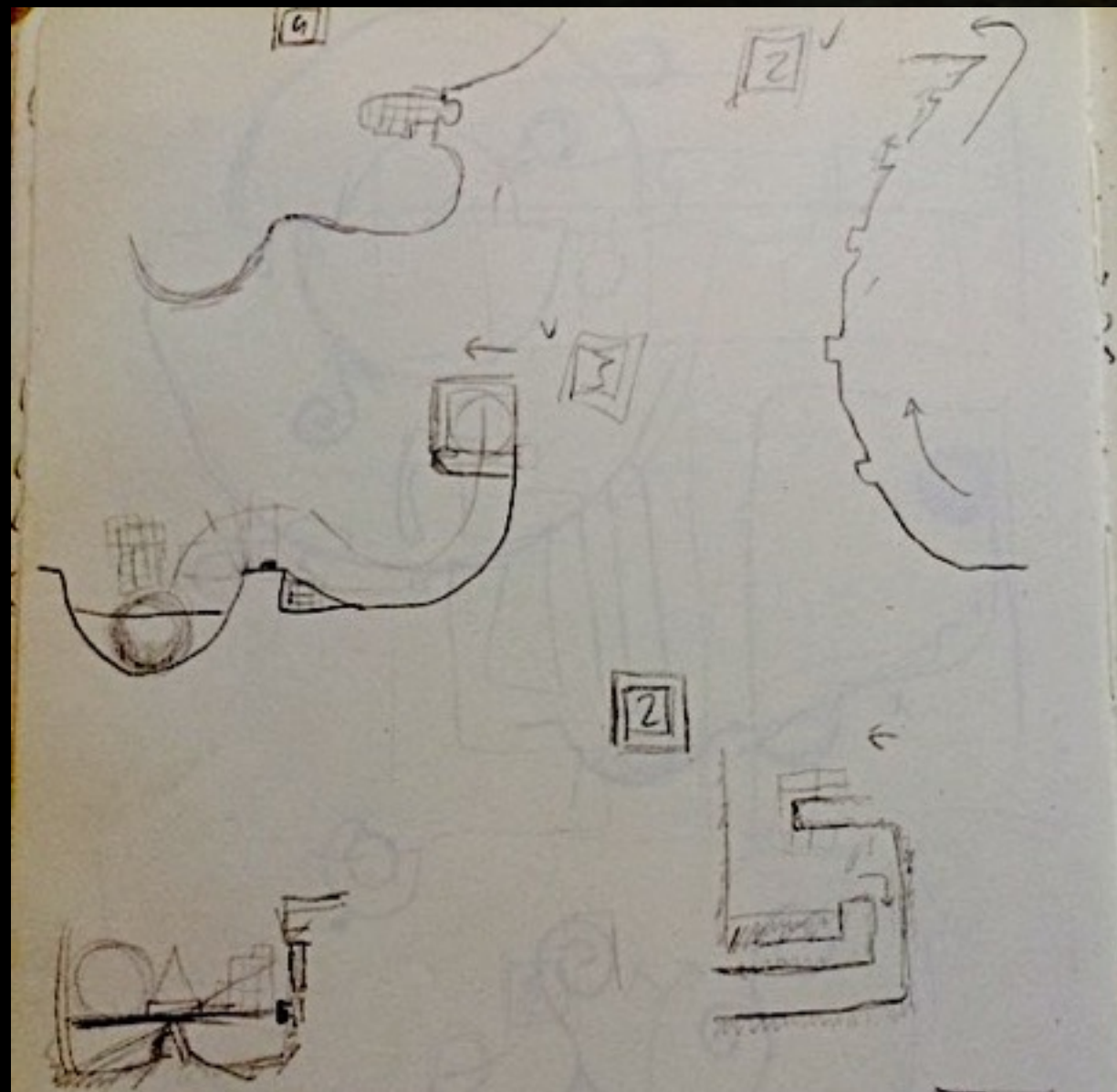
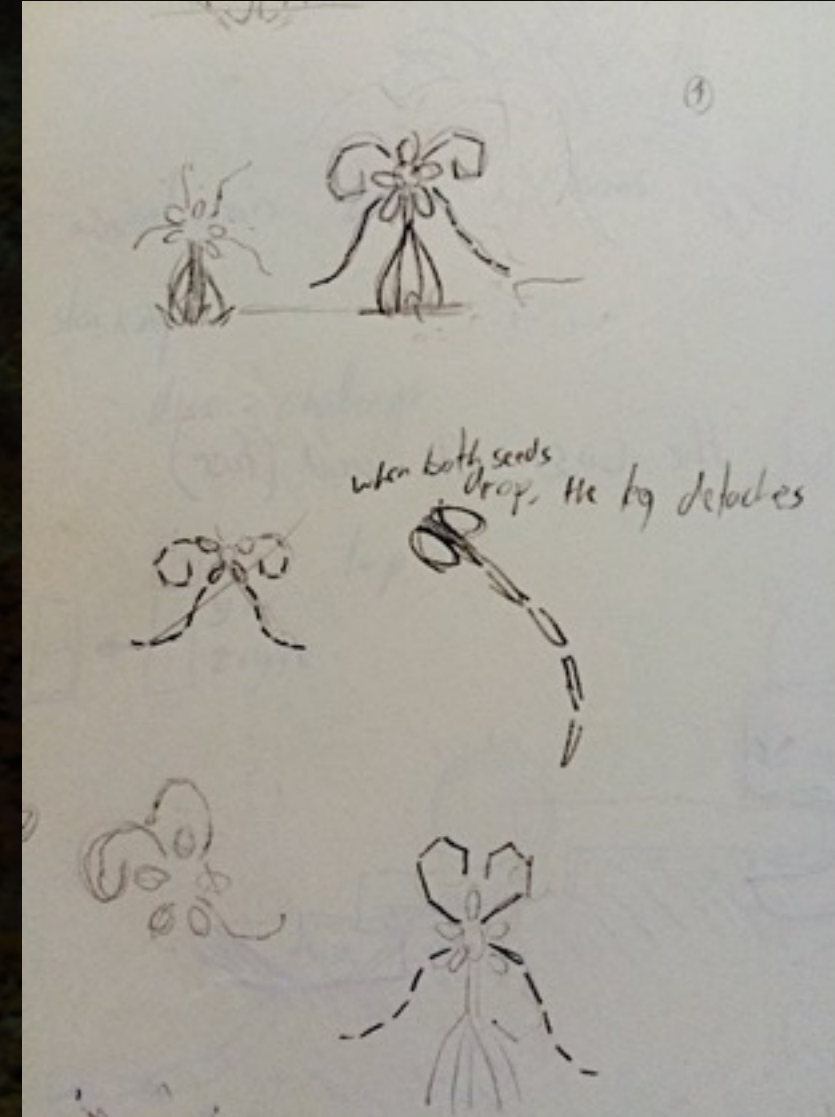
Minimal Character Features
Versatile Environment



“I’m concerned that there isn't much more
to be explored with this mechanic...”
- Festival Juror (2012)



CHALLENGE ACCEPTED



Puzzle Missions:

Create Environments That Challenge The Mechanics



Experiment with as Many Environments
and Derived Mechanics As Possible*

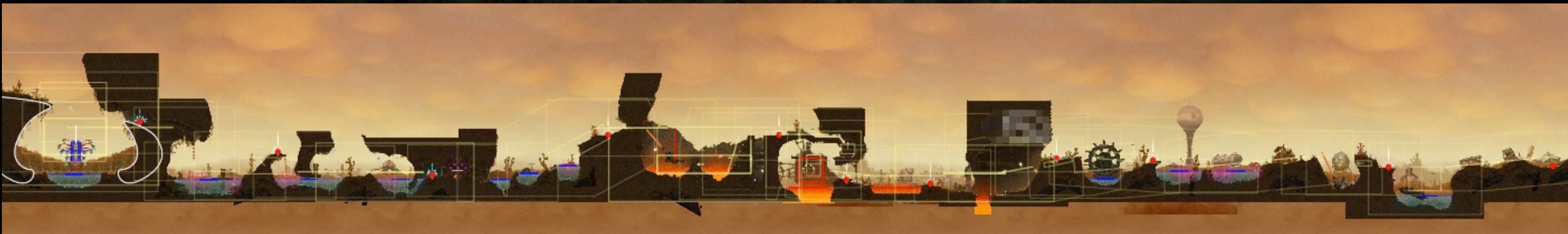
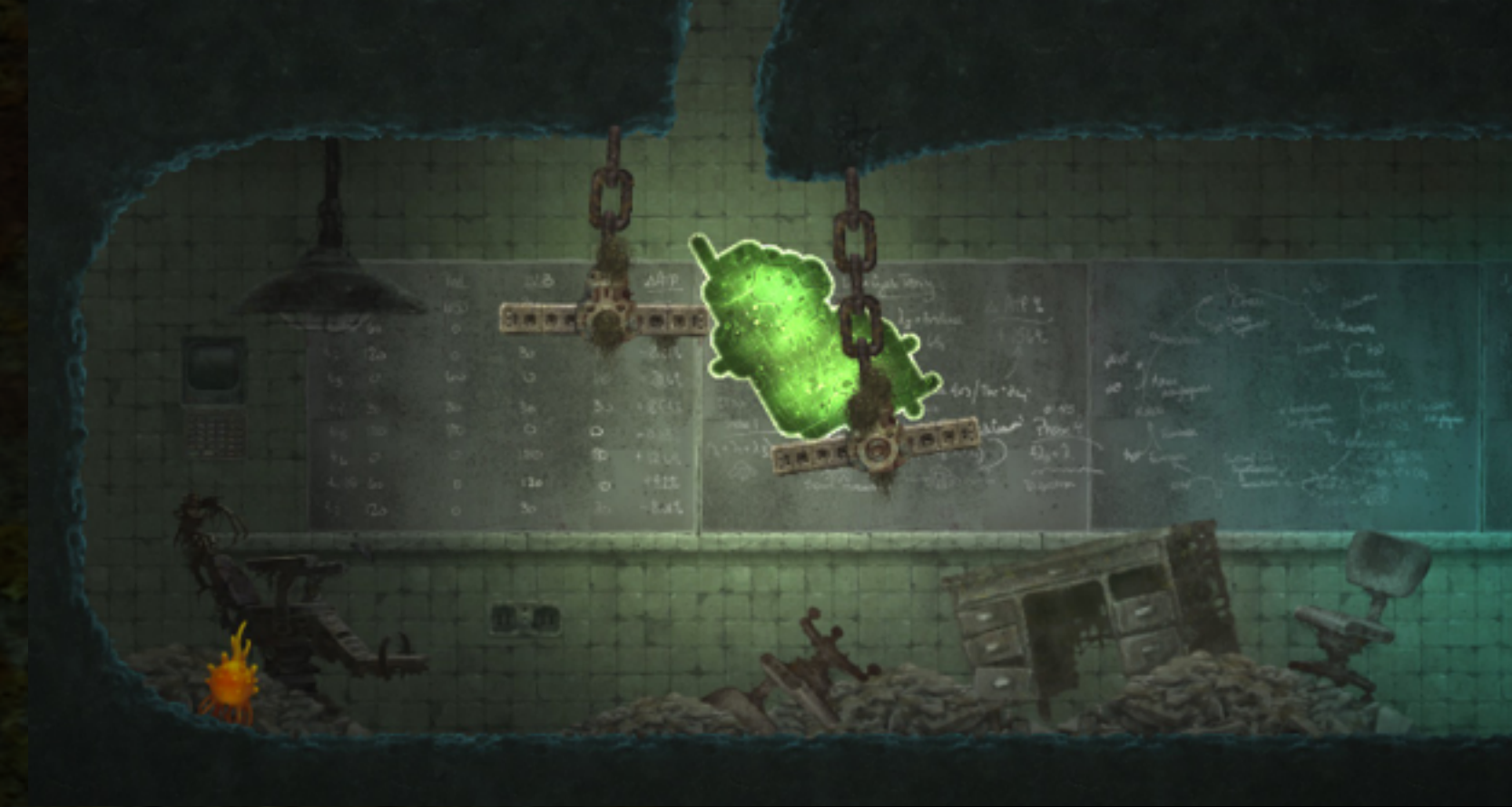
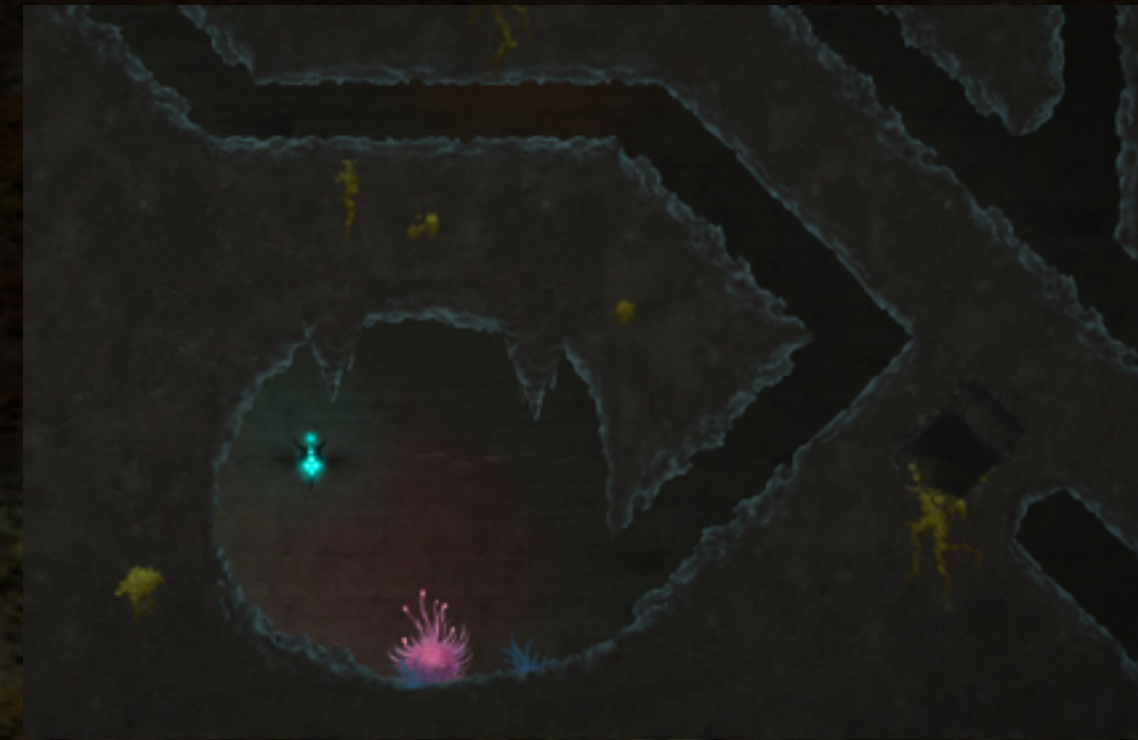
Build On and Combine Mechanics, Challenging Logic and Skill

The background of the slide is a dark, atmospheric illustration. It features large, intricate mechanical gears in shades of blue and yellow, set against a dark, textured background. Two green, worm-like creatures with a segmented, organic appearance are positioned on the gears. The overall aesthetic is reminiscent of a steampunk or industrial-themed video game environment.

Following the Core Mechanics, Encourage Exploration and Open Solutions

Make Every Challenge Unique to Mushroom 11

Goal Design



Linear, Consequential Progression (mastery, priming)



Mushroom 11 Puzzle Systems Breakdown

Shape-Shifting



Fundamentals of Controls

Shape-Shifting



Mastering Basic Motion

Balance



Unstable Foundations

Balance



Change the Environment

Balance



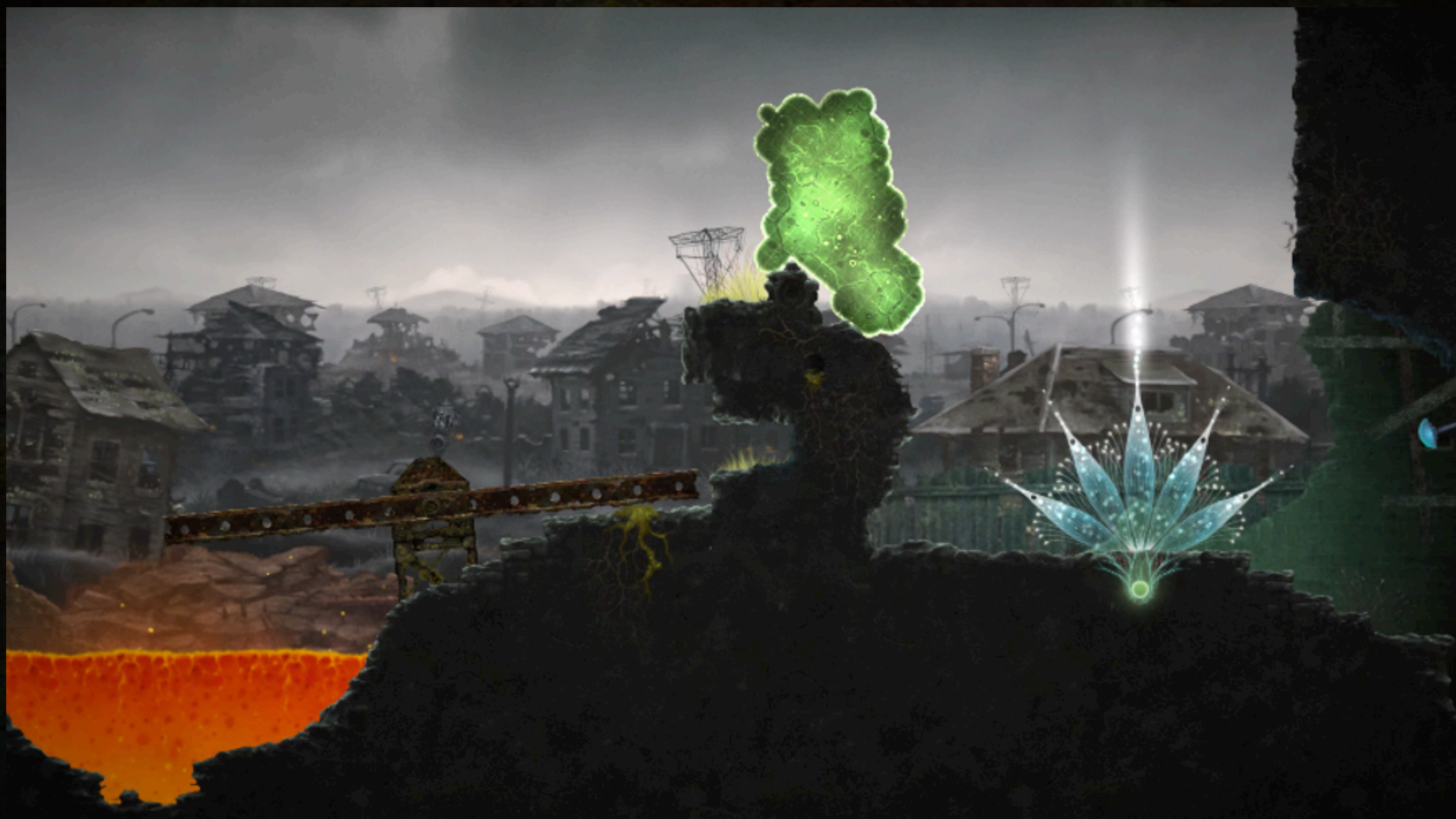
Apply Balance on Other Objects

Splitting



Distributed Growth (with no loss of mass)

Splitting



Attention Management

Splitting



Split by Environment

Structure



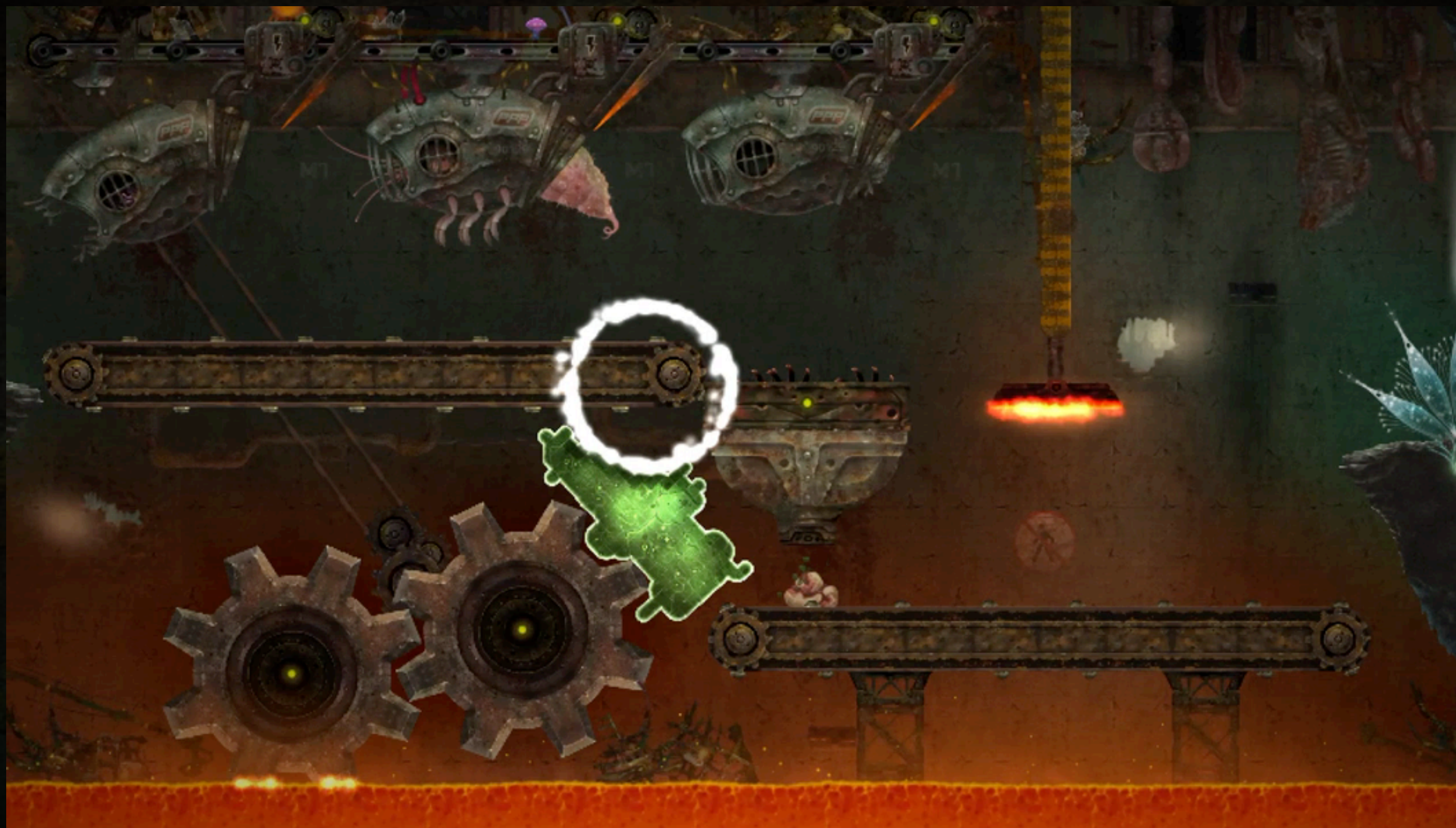
Conform & Grip

Structure



Sustain Physical Forces

Structure



Rigid Skeleton

Shape



Mold to Fit

Shape



Change the Environment

Shape



Be The Solution

The Physics of Shape-Shifting



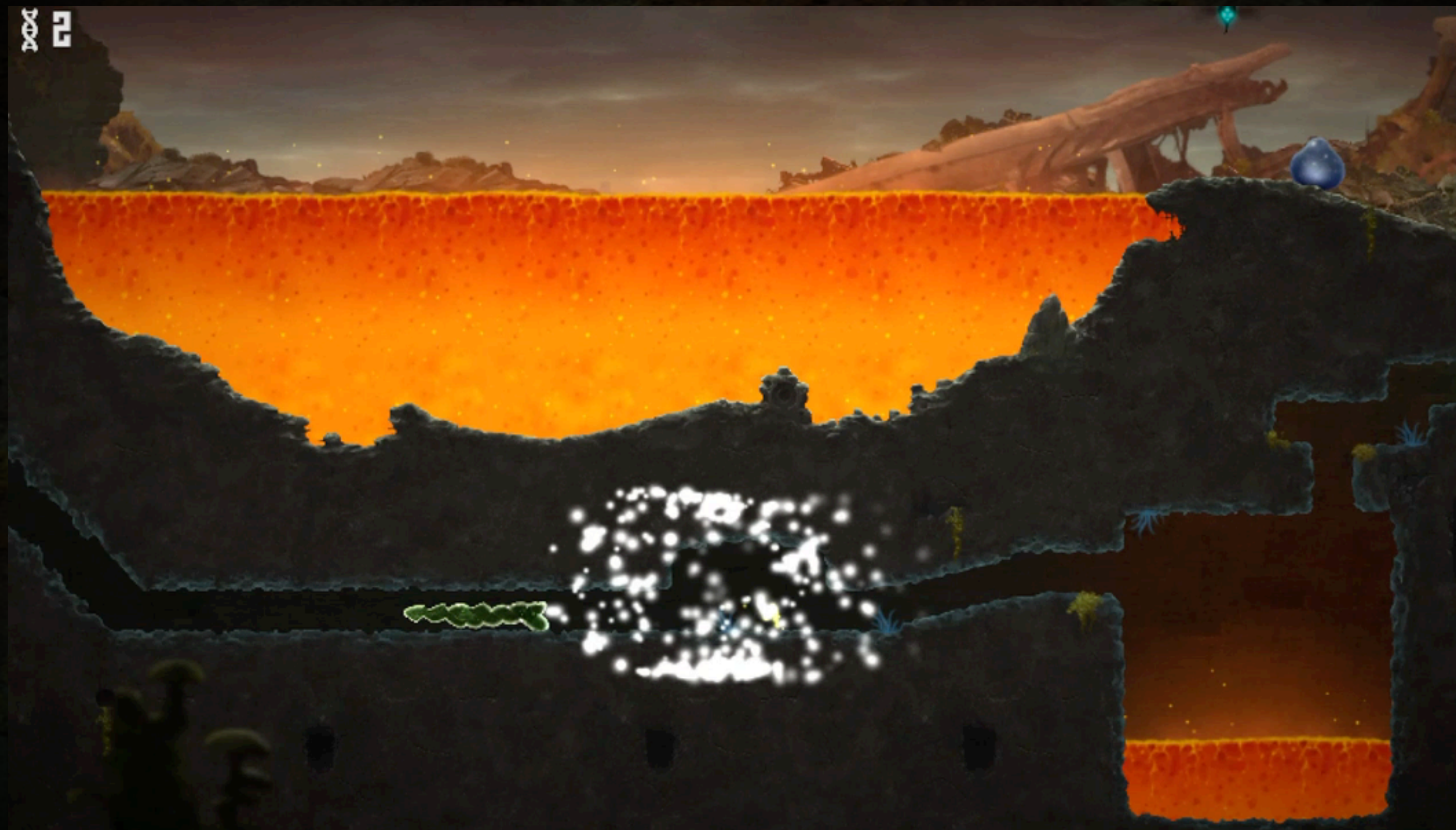
Void the Law of Conservation of Energy

The Physics of Shape-Shifting



No Force Applied

The Physics of Shape-Shifting



Grow Around, Not Into

Physics



Momentum

Physics



Cellular Level Persistence

Physics



Dynamic Mass

Physics



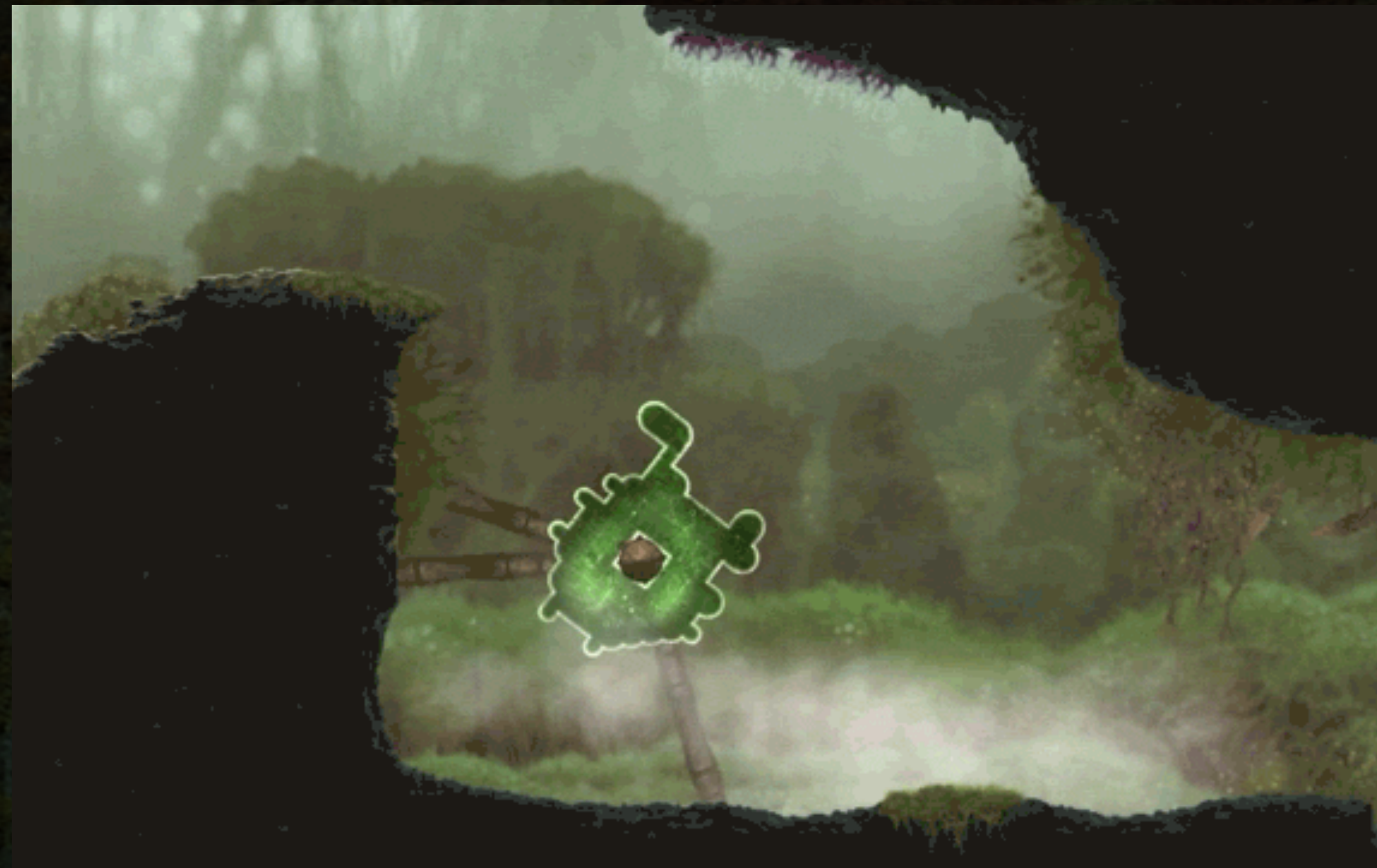
Mass Distribution

Physics



Remote Mass Shifting

Physics



External Forces

Physics



Adhesion

Physics



Buoyancy

Hazards



Slap On The Wrist

Hazards



Acid Infection

Hazards



Insta-Death

Bosses



Ultimate Test of Acquired Skills

Bosses



Procedural Puzzle Systems

Bosses



No Key-Drop

Puzzle Types



Logic

Puzzle Types



Exploration, Open Solutions

Puzzle Types



Combinations of Skill, Logic & Exploration

Puzzle Types



100% Skill

Mid-Mortem

What Went Well

- Depth and Details (environments, art, story, music, audio, tech)
- Variety (puzzles, creatures, bosses, secrets)
- Minimalism (mechanics, storytelling)
- Teaching
- Challenge
- Depth of Emotions

“Mushroom 11 Is the Weirdest, Coolest Platformer I’ve Ever Played”

KOTAKU

Platformer Of The Year

ROCK PAPER
SHOTGUN

Best of 2015 “Amazing - 9/10”

IGN

“Genuinely original and a smart...
a game you'd be foolish to miss.”

PC GAMER



Cagey Videos
@Cagey_Videos

Follow

I love Mushroom 11. I hate Mushroom 11. But I also love it.

7:33 PM - 22 Dec 2015

1 3

Mid-Mortem

What Could be Improved

Test Early,
Often, with a
Diverse Beta
Team

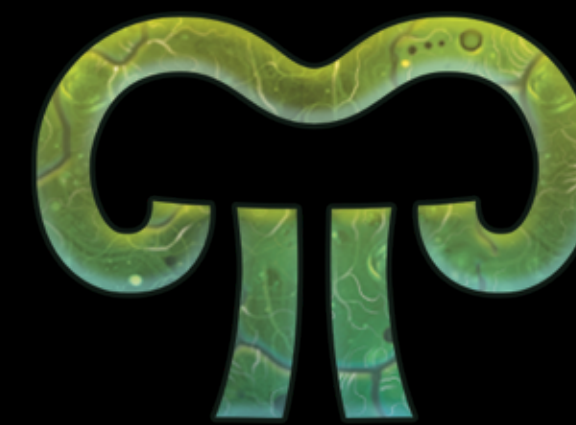
- **Difficulty Curve** (skill/time vs exploration/logic based puzzles)
- **Length, Density** (mass of high-difficulty puzzles with no relief)
- **Limited Control** (timing-based, vertical & precision control, purity vs fun)
- **Lingering Defeat / Lingering Triumph**



Tablet/Mobile Version

Featuring:

- Touch-Based (M11's original design)
- Shorter, Best-Of Cut
 - Enable modified puzzle selection
 - Better fit for intended audience & price-point
 - Tackle technical constraints:
memory, aspect-ratio, performance



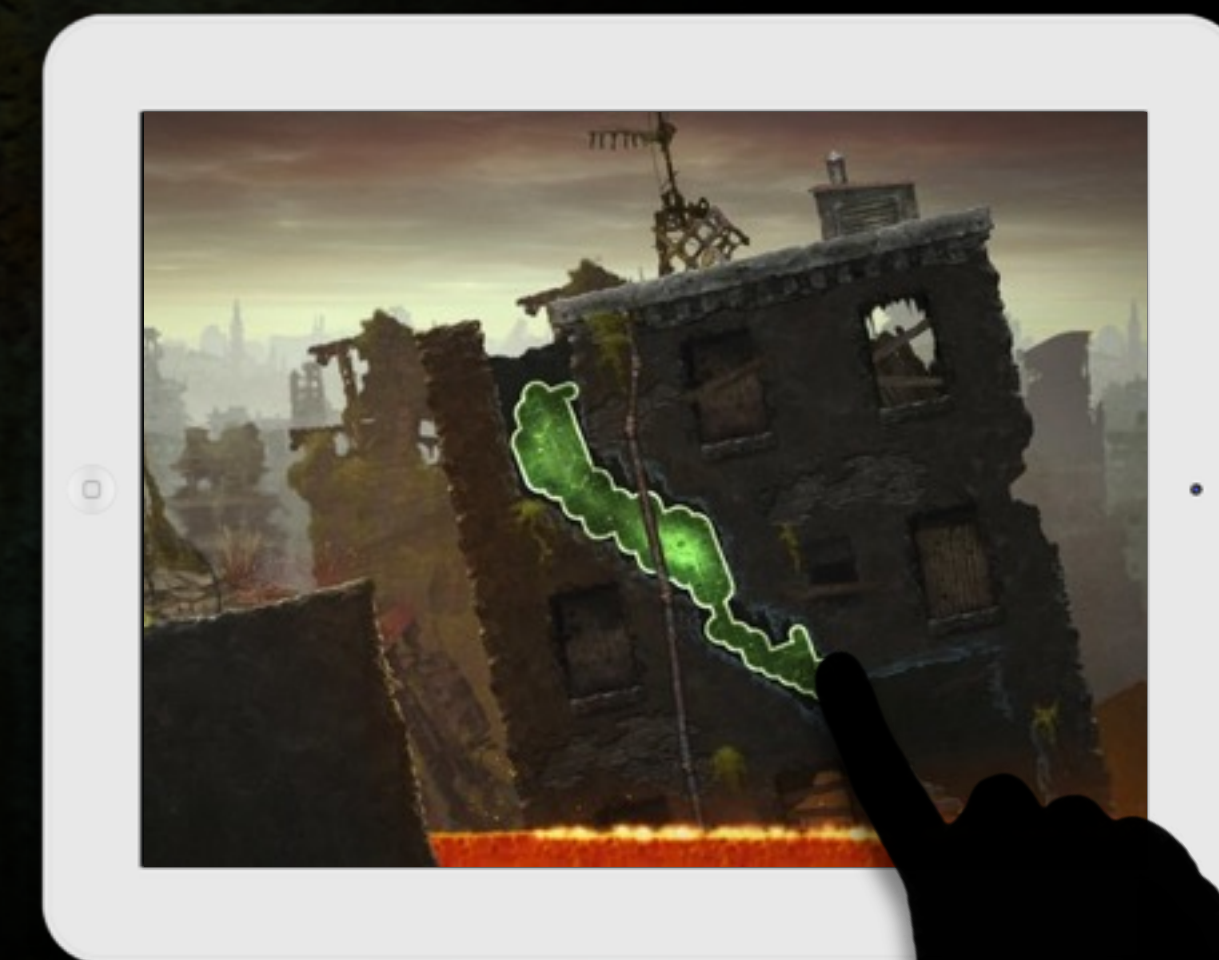
MUSHROOM 11
TOUCH OF DESTRUCTION



Coming Soon to the
App Store



COMING SOON TO
Google play

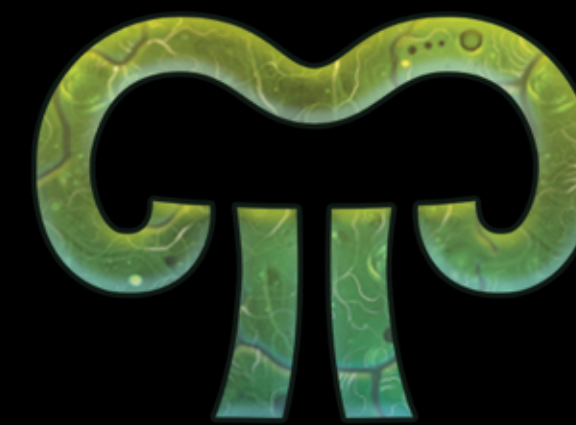


Tablet/Mobile Version

Work in Progress:

- Difficulty Curve
 - Balance skill, logic and exploration with removed and new puzzles
 - Modify or remove puzzles with limited, timing-based controls
 - Tweak general control parameters (e.g. vertical, mid-air)
- Lingering Defeat / Triumph
 - Modify puzzle layouts, less punishing replay, more checkpoints
 - Ease post-boss challenges or make it a bonus
- Constraints & Capabilities
 - Right to Left for Lefties
 - 4:3 Aspect Ratio = Some puzzles unfit
 - Multitouch puzzles allowed!

Feedback
is Welcome!



MUSHROOM 11
TOUCH OF DESTRUCTION



GDC³⁰



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Thank You!