



**MARCH 18-22, 2024**  
**SAN FRANCISCO, CA**

# System-Centric Puzzle Design in Patrick's Parabox

Patrick Traynor

**#GDC2024**

# Patrick

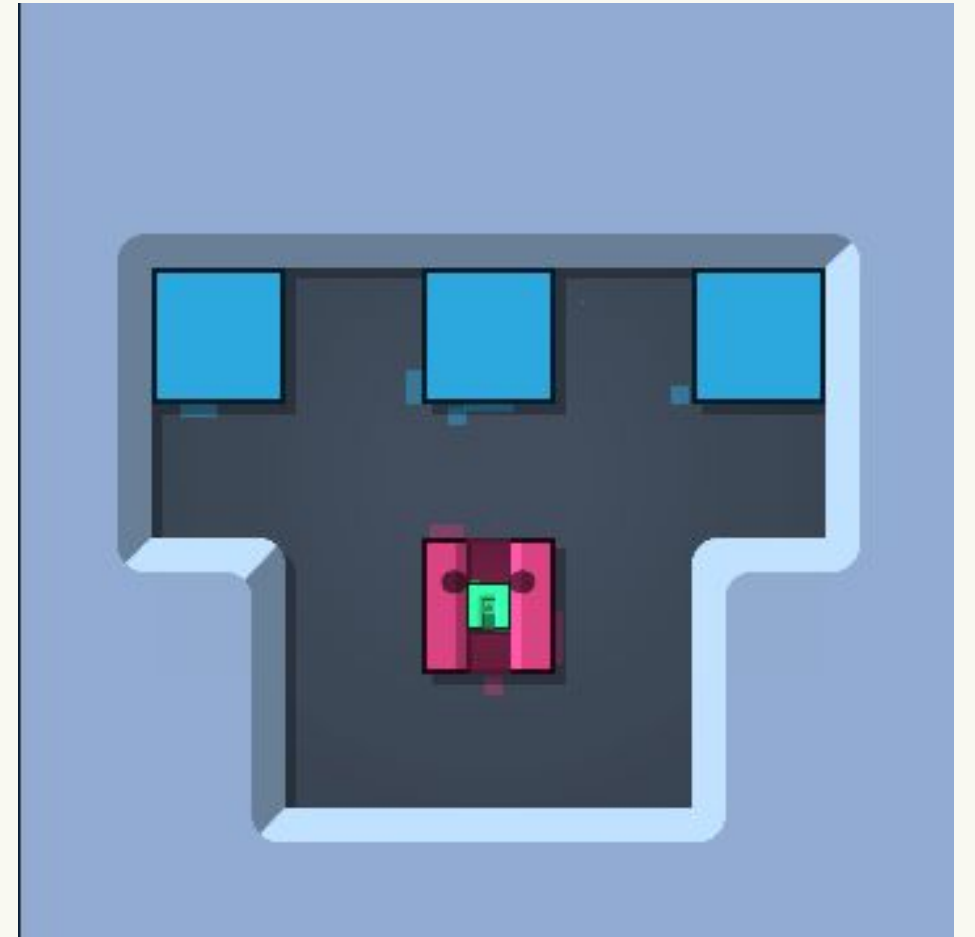
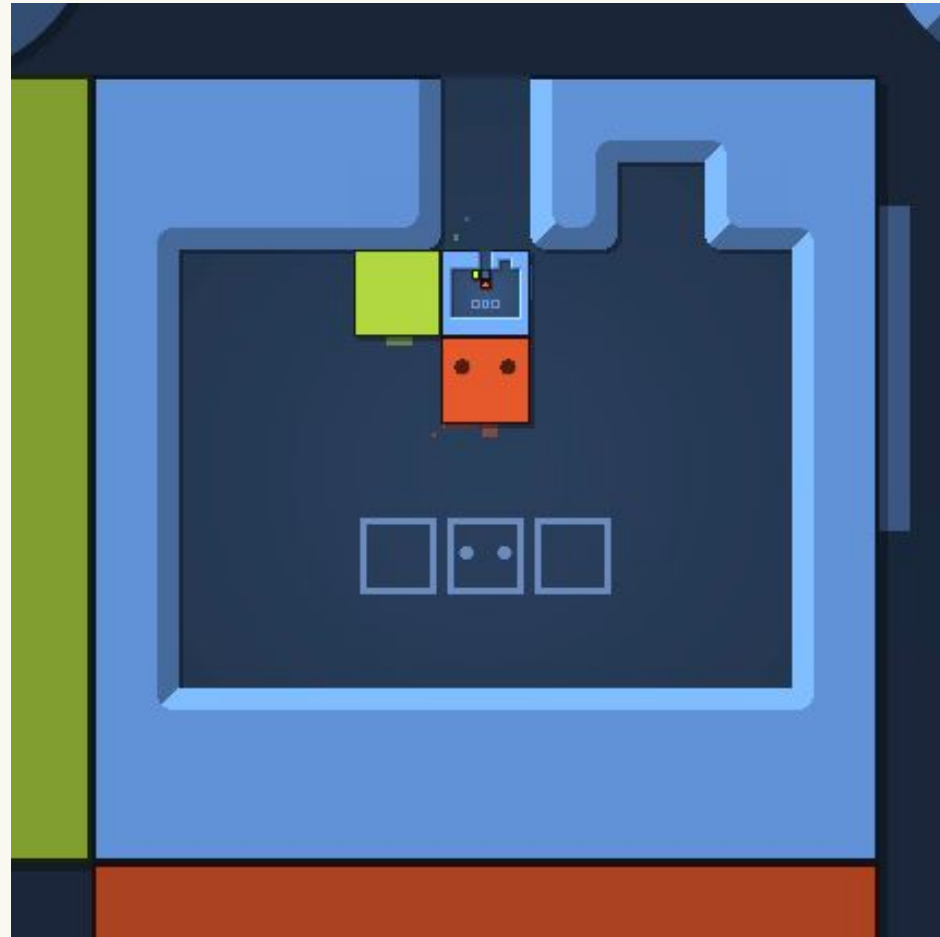
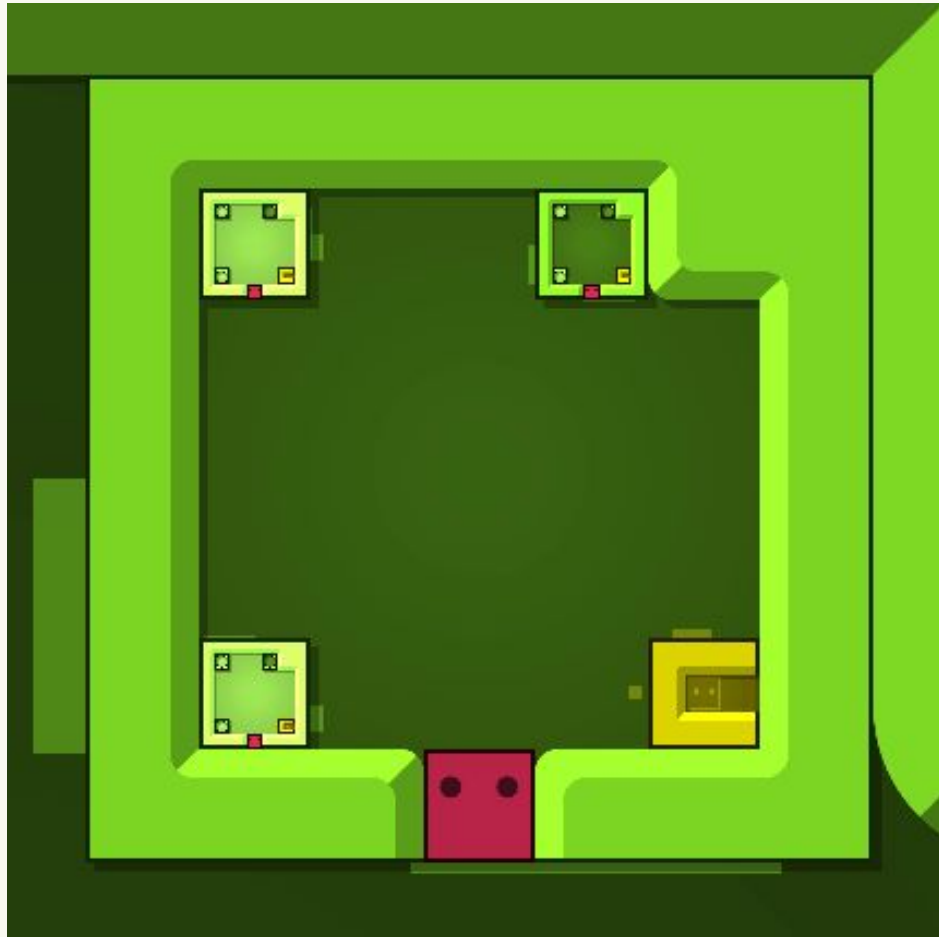
- Programming, design
- Making games since 2011
- In March 2022 I released my first commercial game called...

# Patrick's Parabox

- Block-pushing puzzle game
- 4 year development
- 2020 IGF Excellence in Design







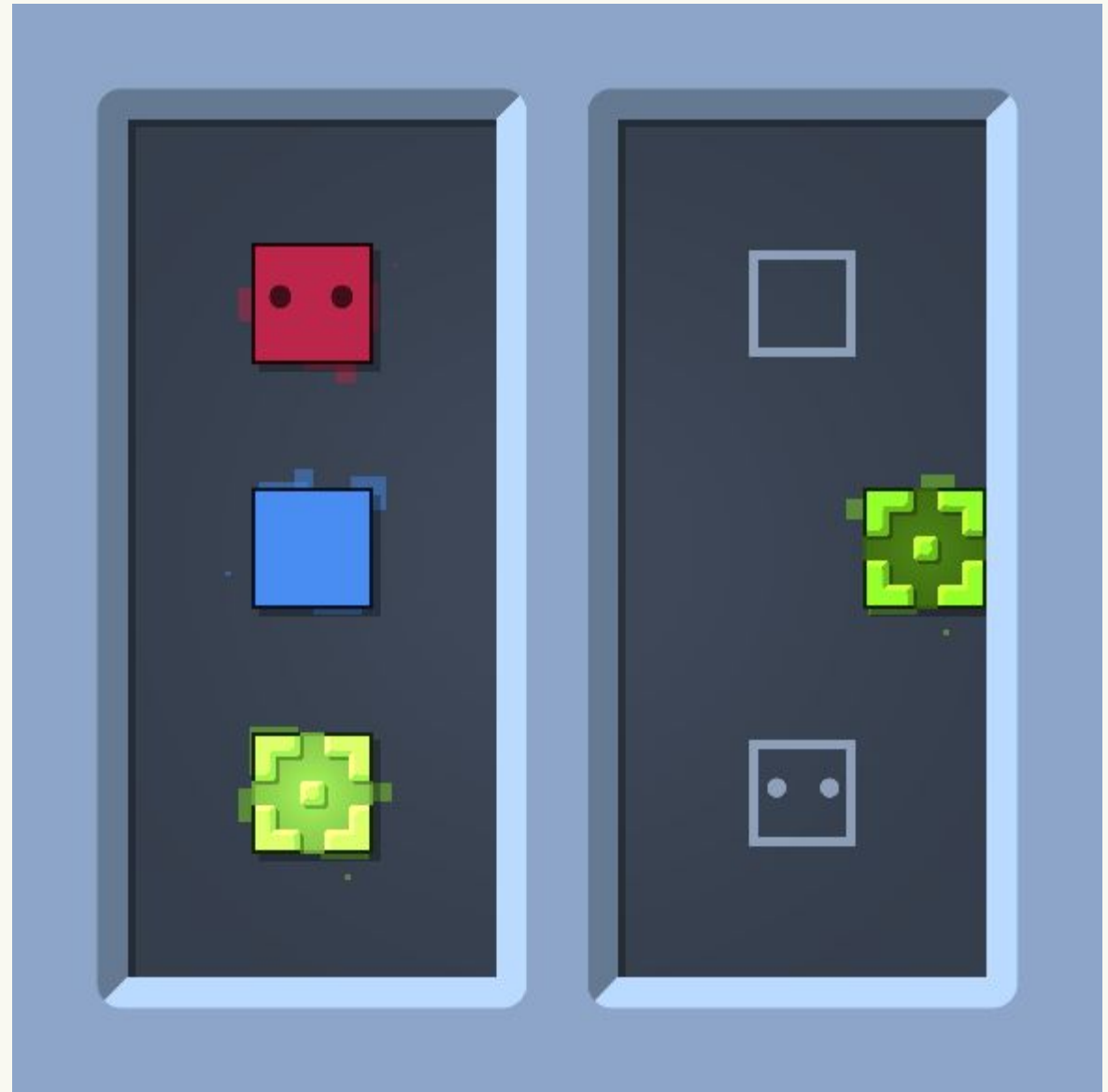
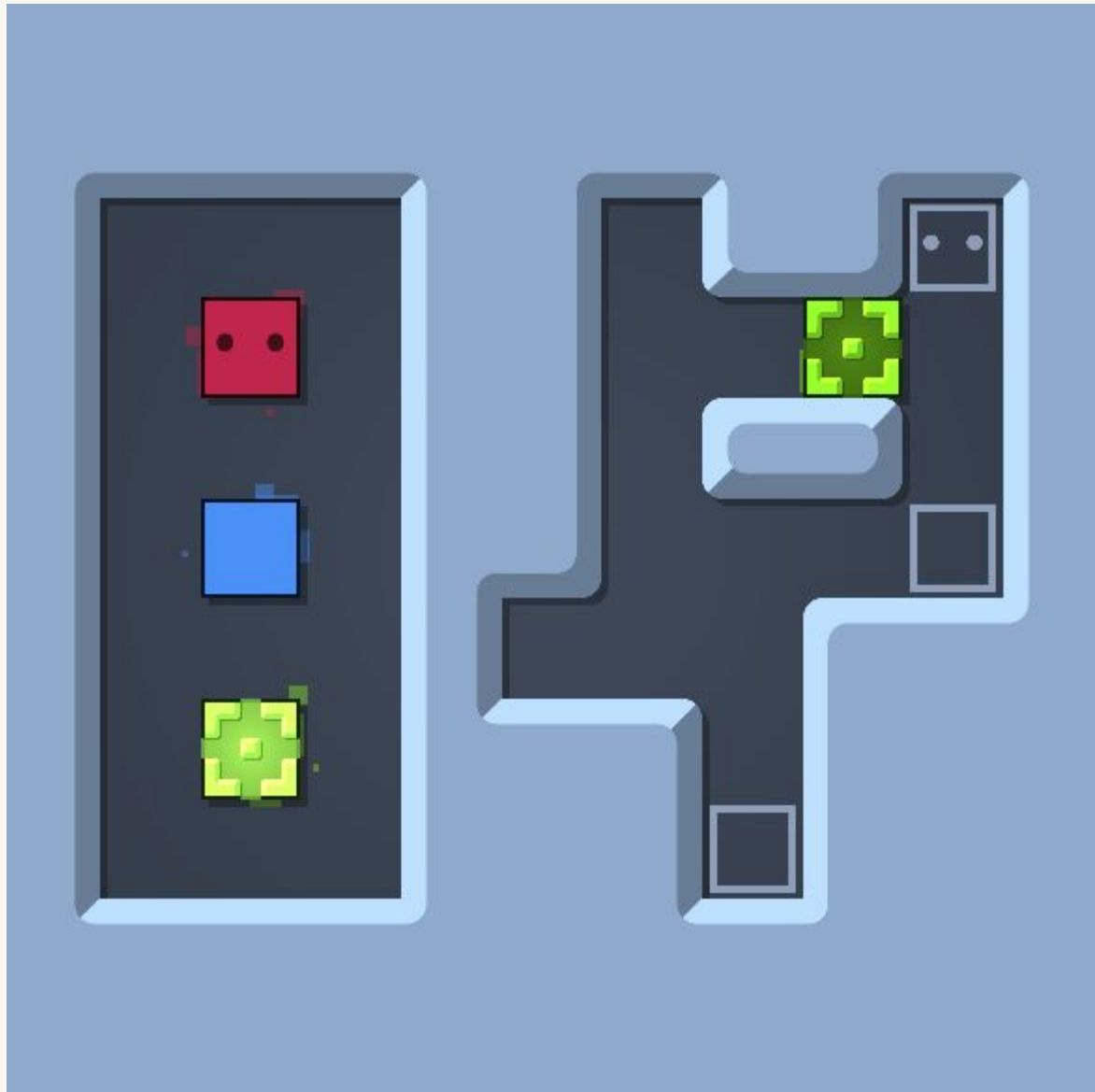
# “System-Centric”

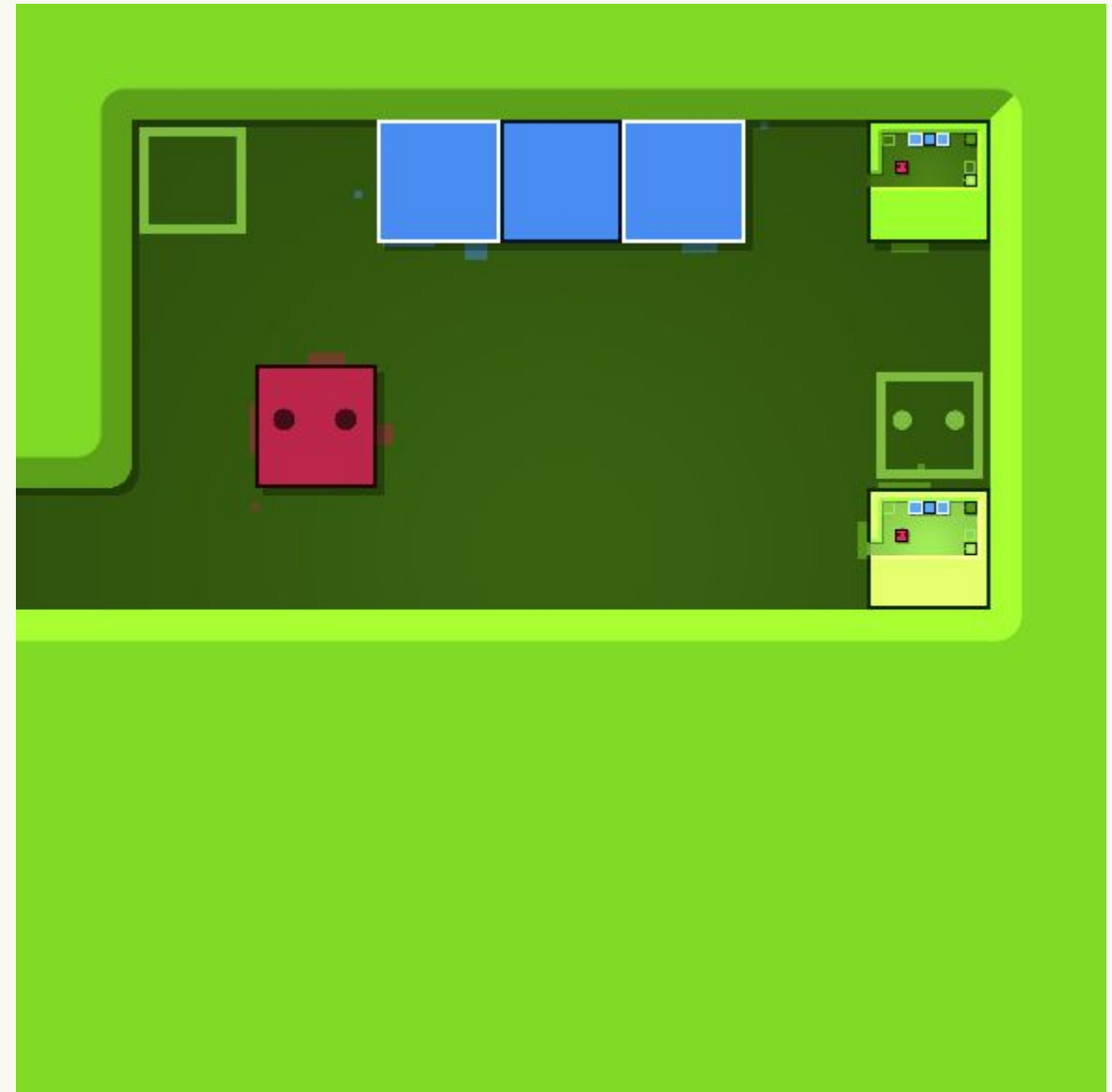
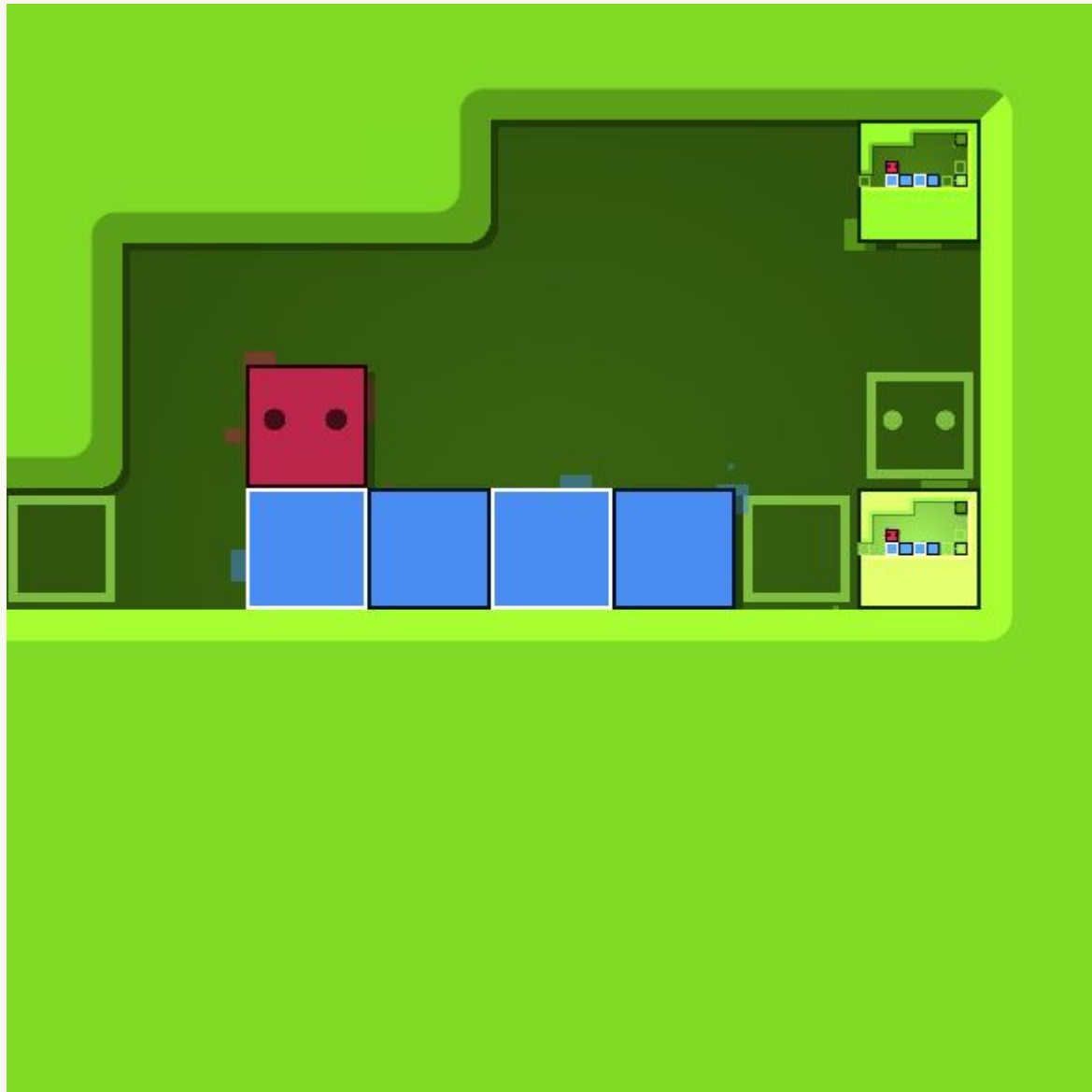
- This system is something interesting that I want to show to all my friends!
- Players’ motivation is to see more of the system! What new mechanic or setup is around the next corner?

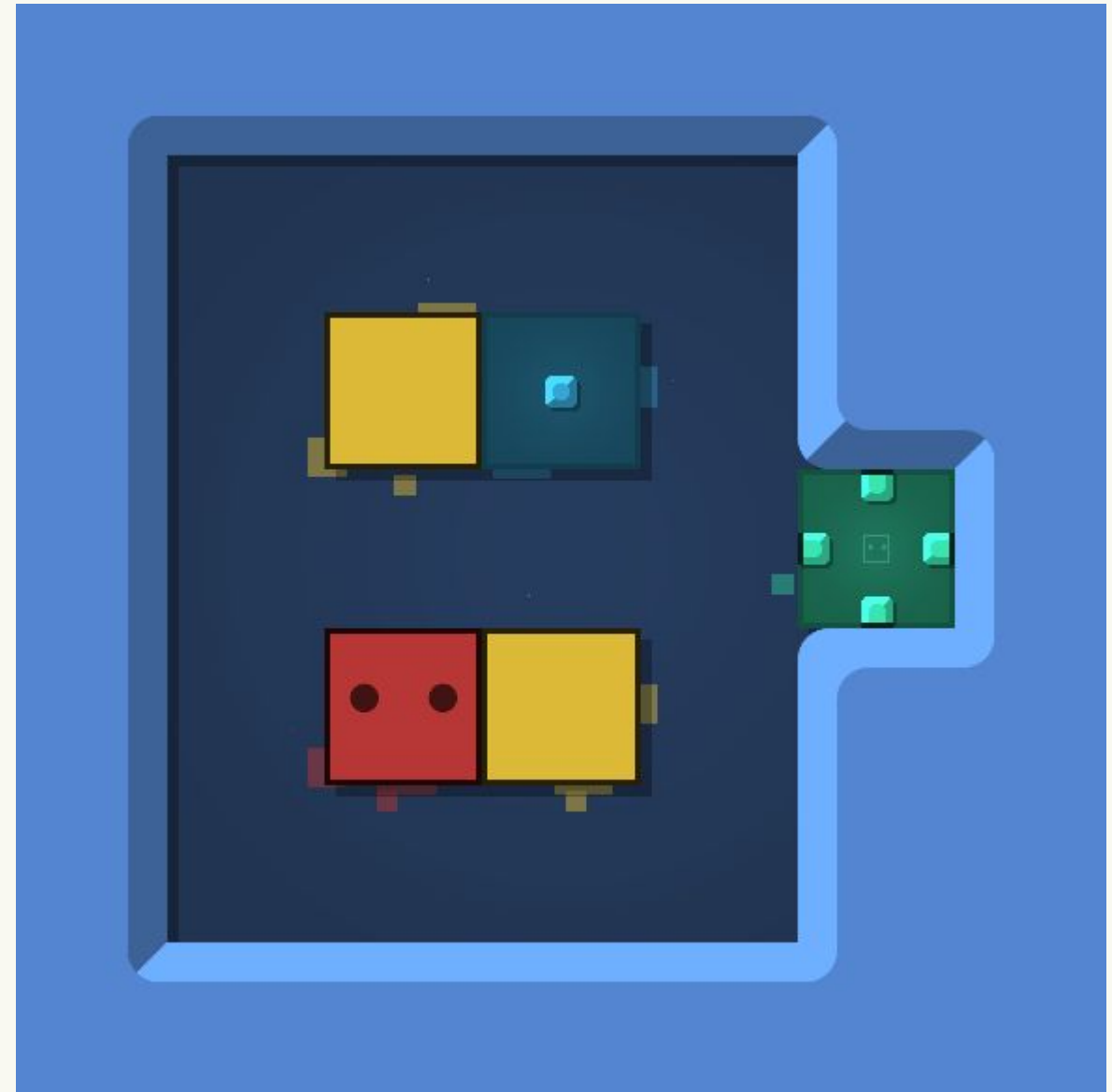
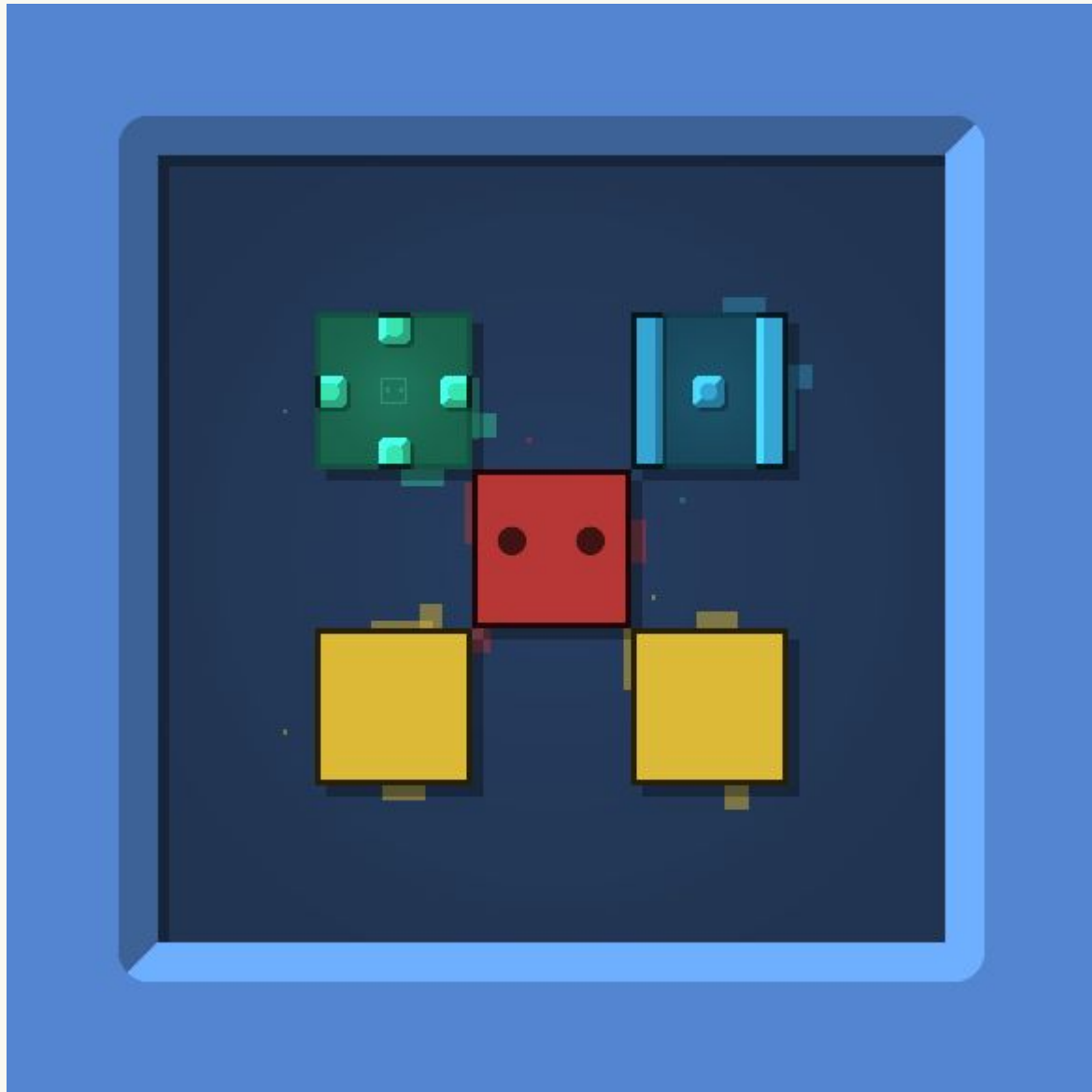
Approachable difficulty.

To showcase/communicate, not challenge/stump.

Broadened audience!





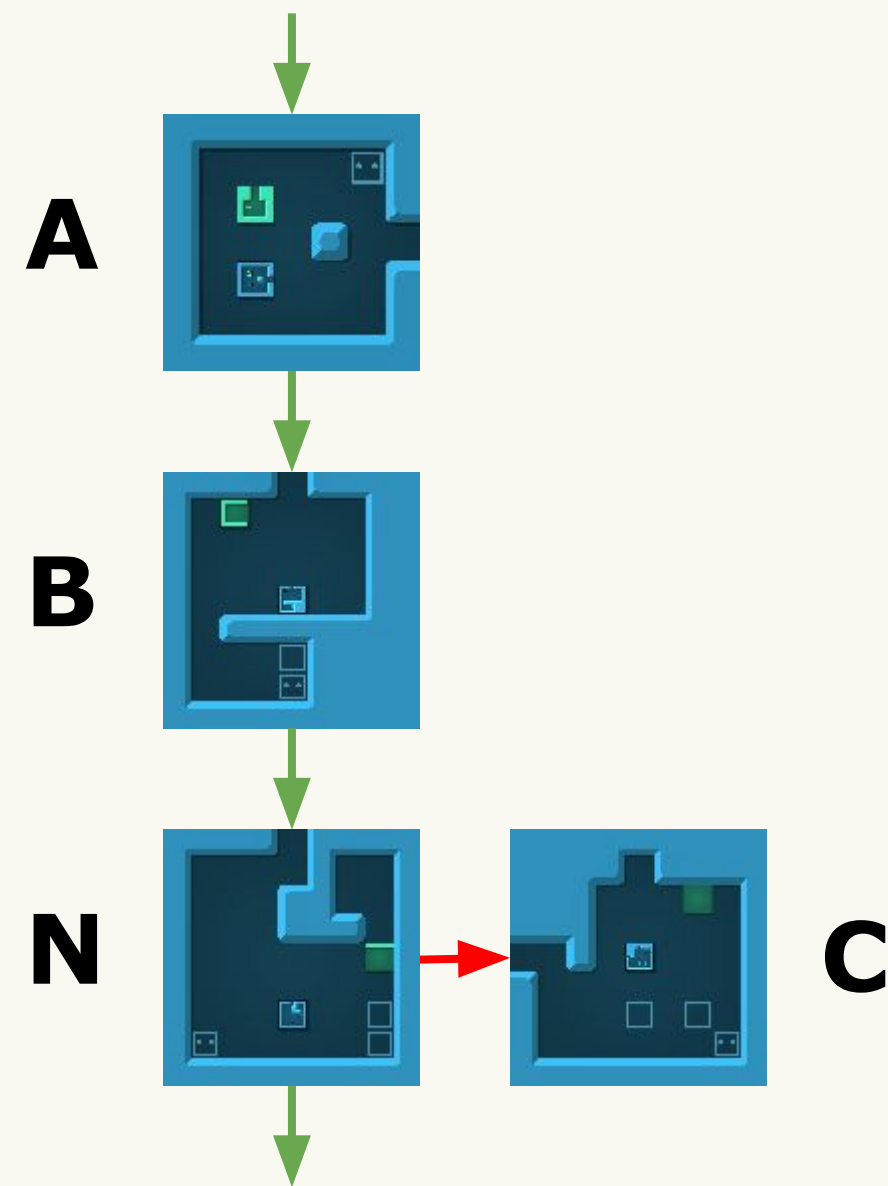
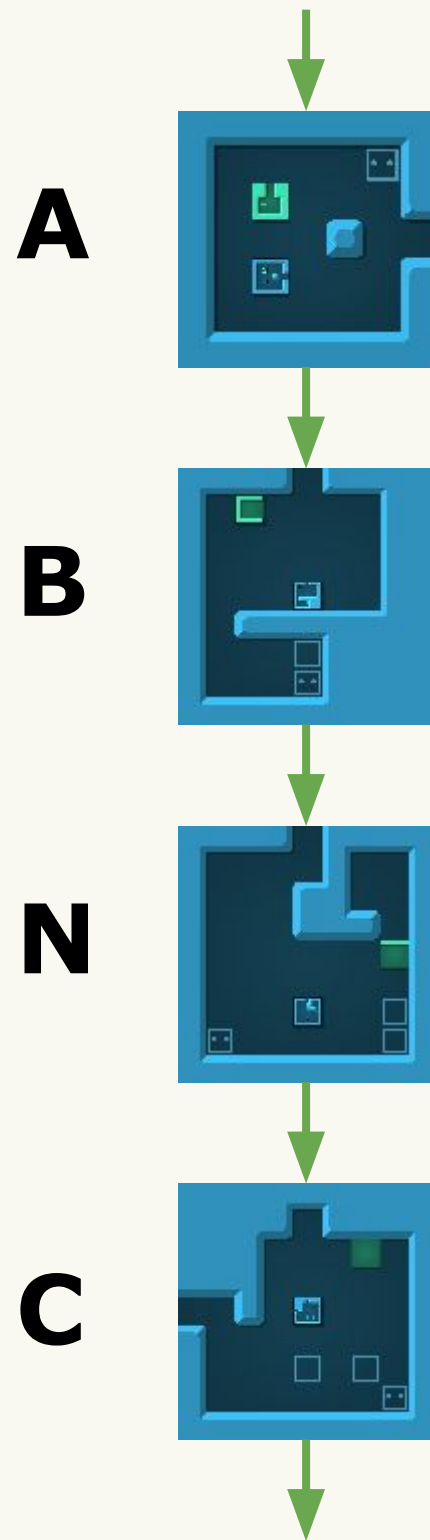
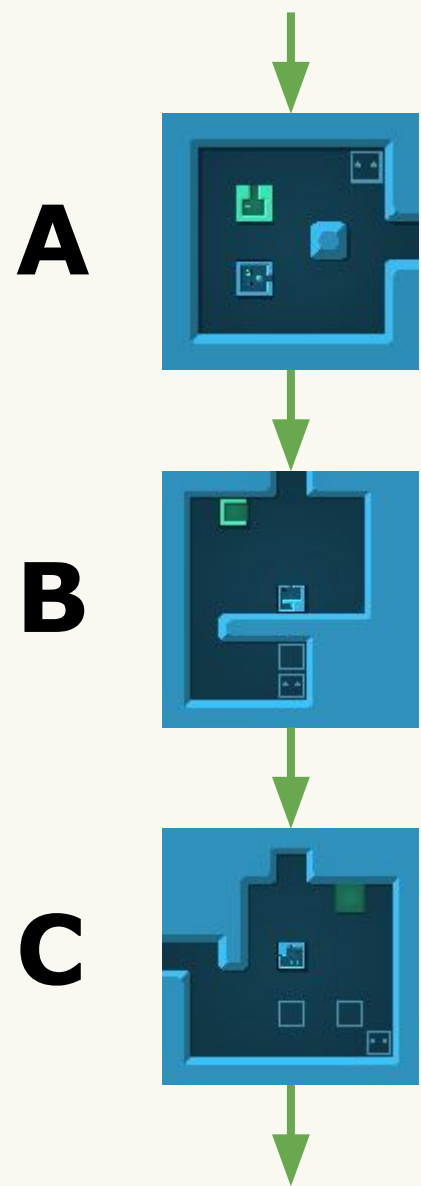


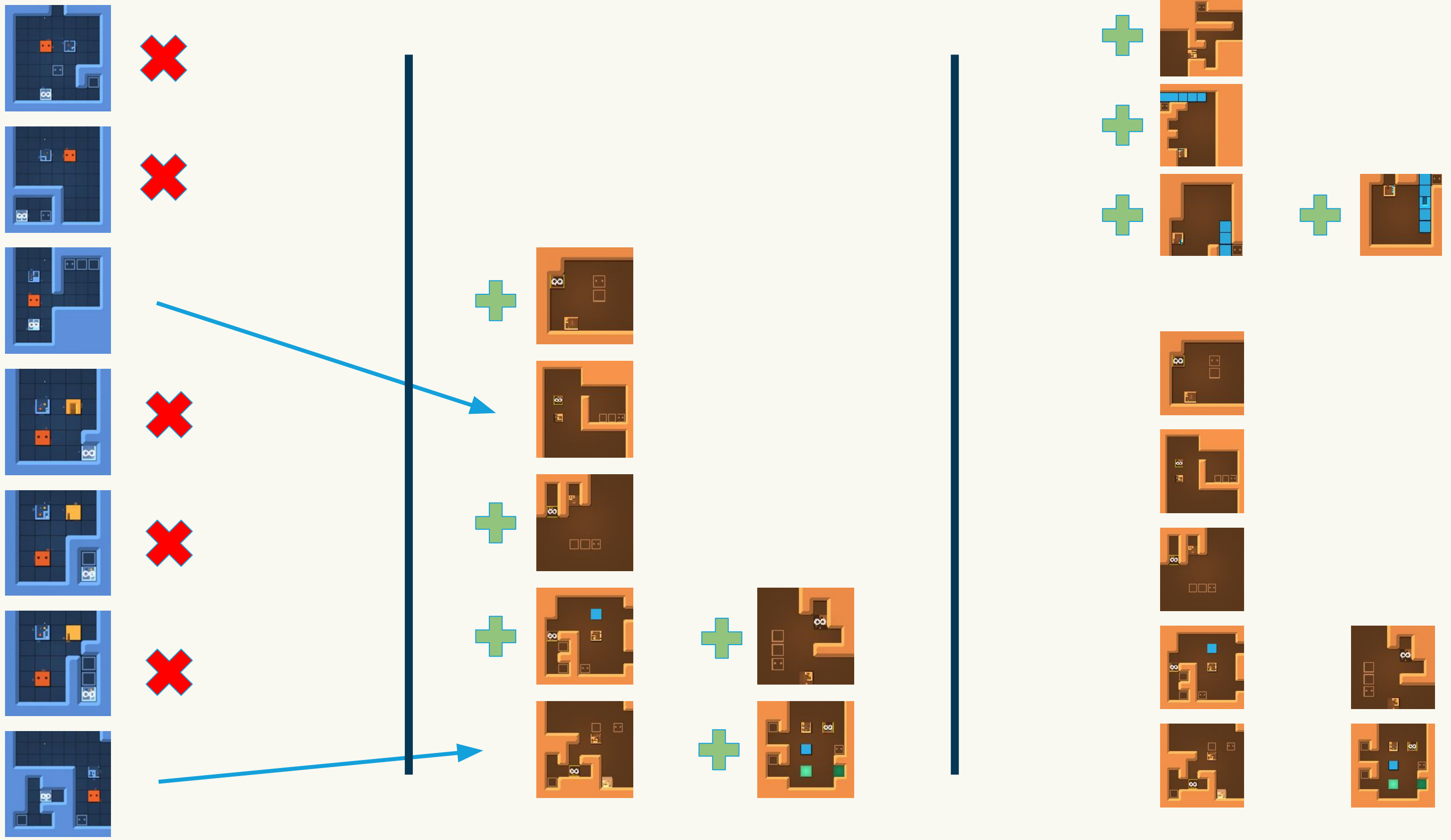
# How I made approachable puzzles

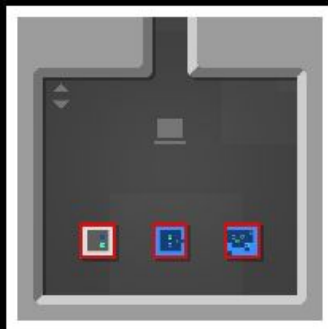
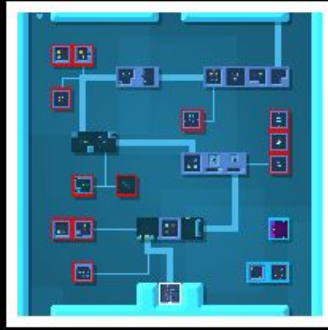
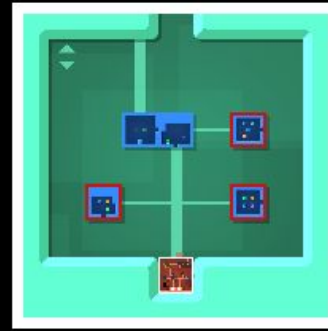
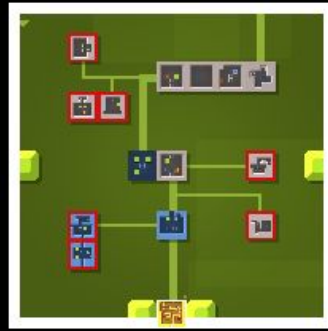
- Simplified puzzles as much as possible
- Made puzzles as easy as possible while still showing their idea
- Removed some solution steps
- Trimmed possibility space
- Kept things bite sized

How easy is too easy?

Traded off deeper understanding in favor of approachability /  
streamlining





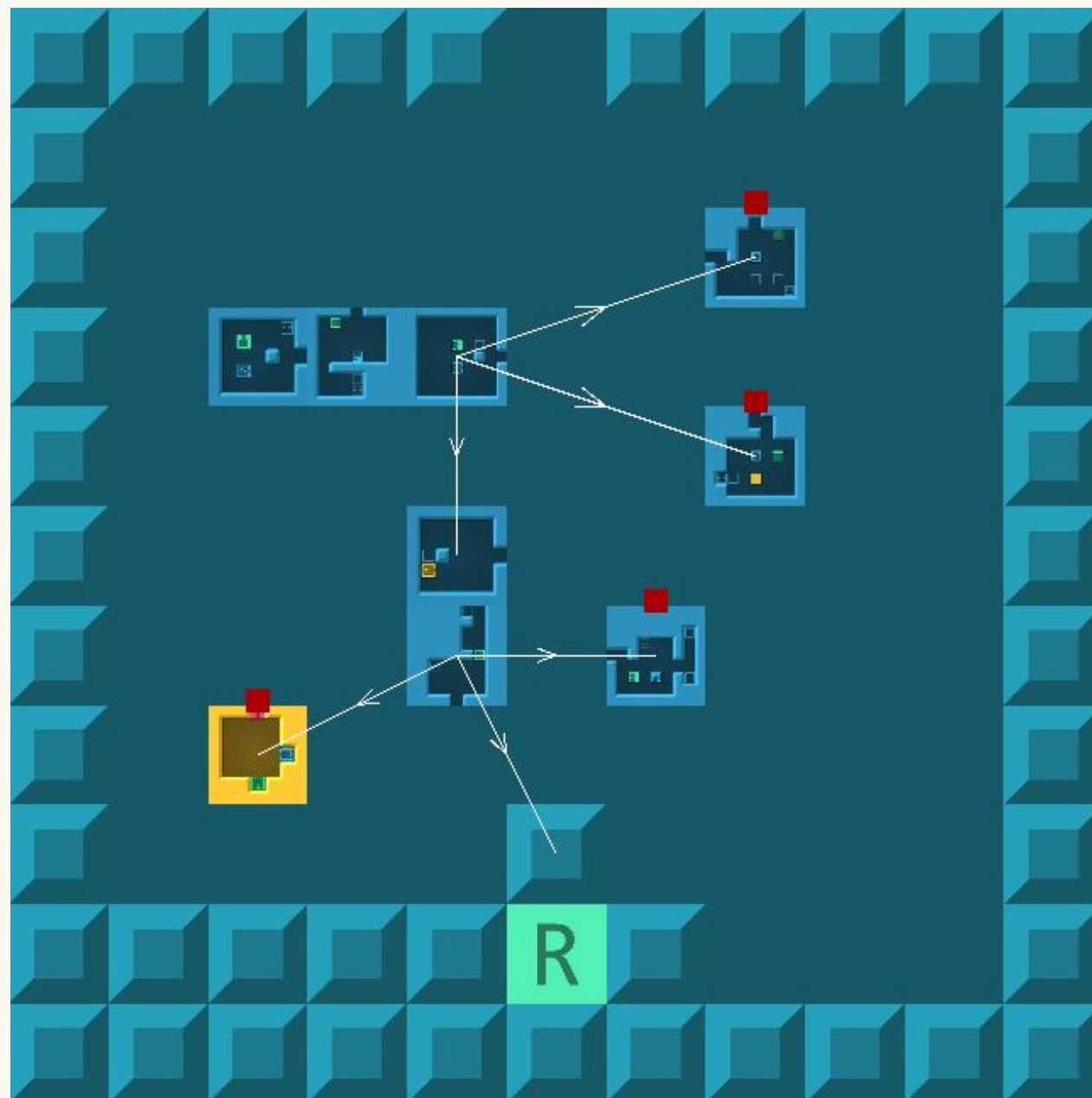


# Smoothing the learning curve

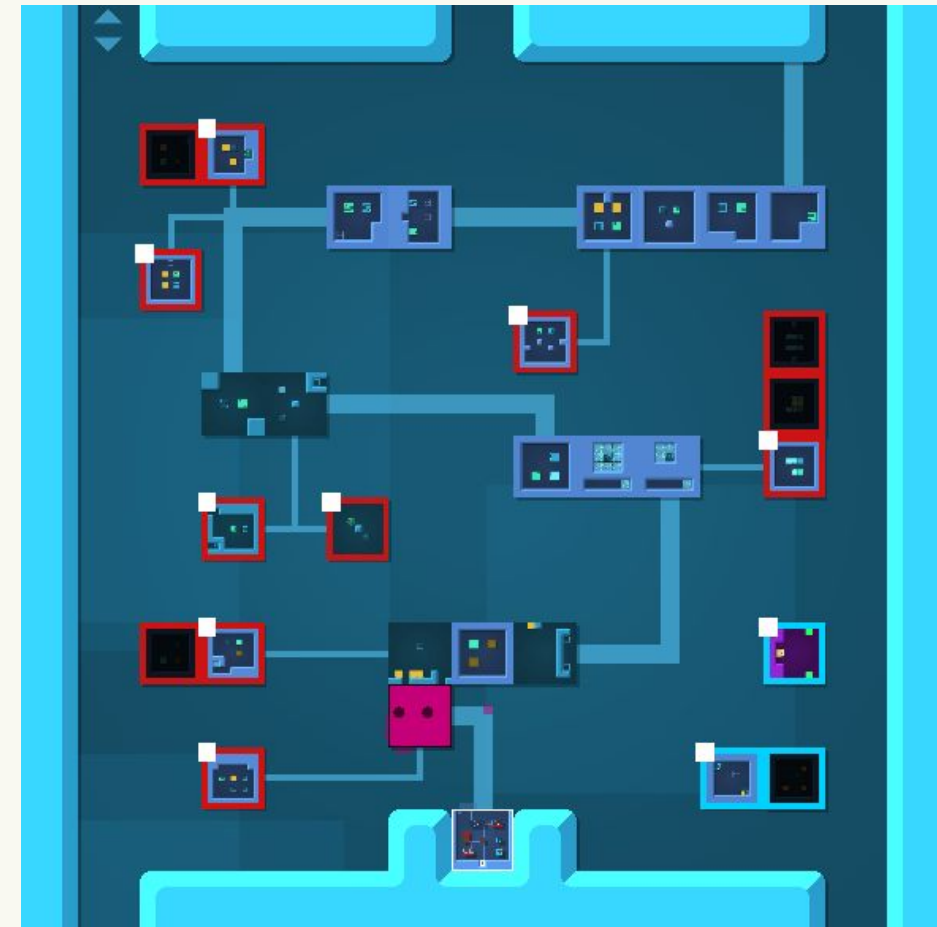
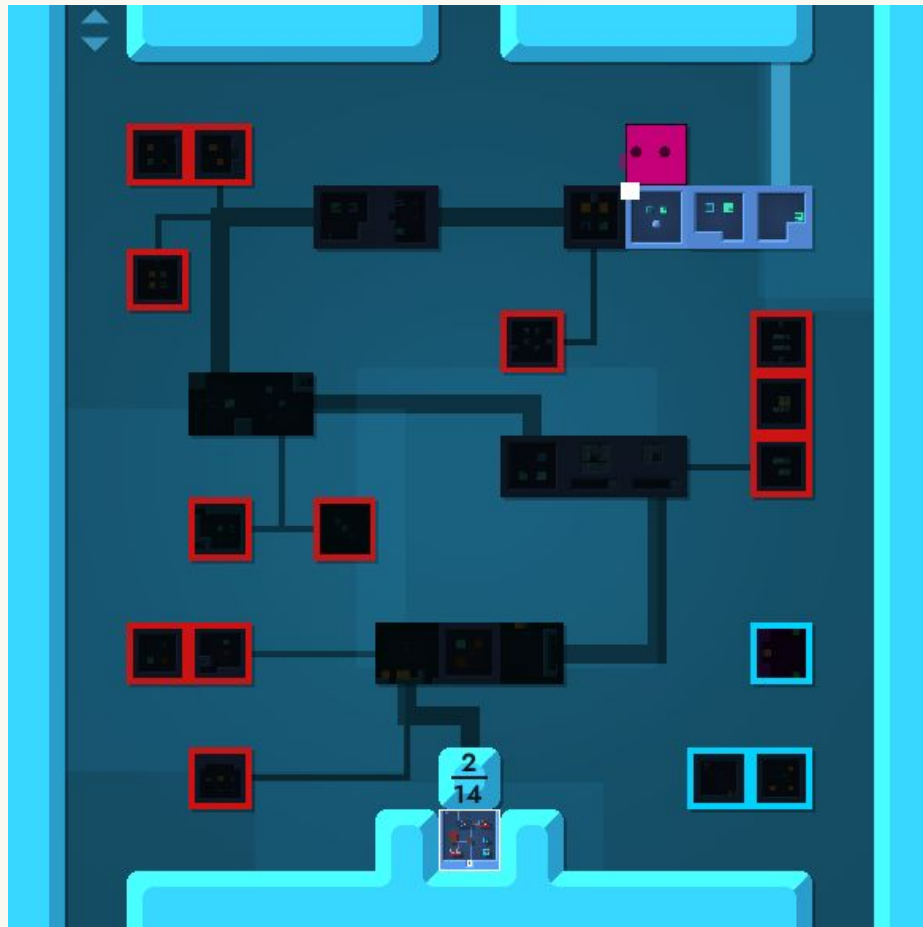
- Insert, modify, delete, reorder, optionalize
- Patched up conceptual leaps
- Improved tutorialization / clarified misunderstandings
- Reinforced knowledge, or gave a second chance to learn
- Managed playtime

I learned to treat puzzle management as a skill.

# Tools for pleasant iteration



# Unlocking leniency



# Playtesting with video recordings and narration

- See all the little things players attempt
- Hear their theories and emotions
- Measure time taken on different parts
- Videos rewatchable at later dates

# Past Patrick's Patrick's Parabox Playtesting Preferences

- Fresh playtesters each time
- Non-expert players
- Paid attention to mental models
- Small bumps -> big hurdles
- Batches of 1 or 2
- Play the full game
- Watched entire video before doing changes
- Playtested periodically

Did about 15 full-game video playtests with narration.

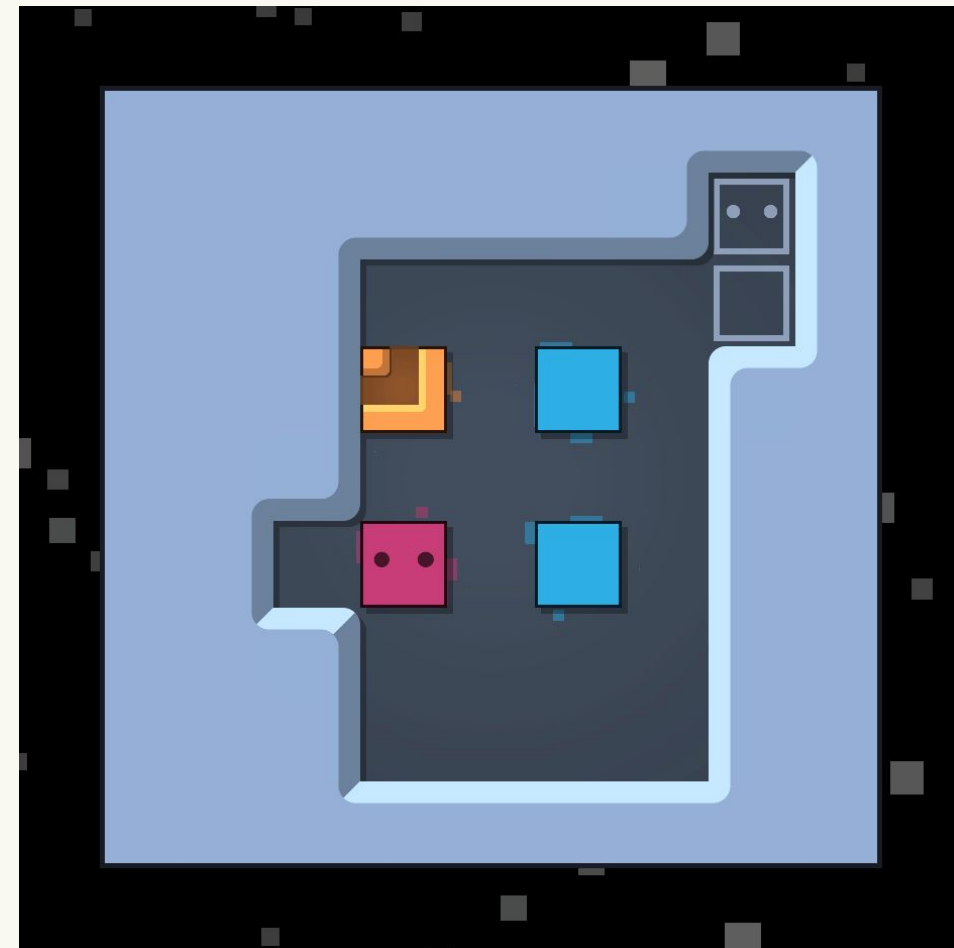
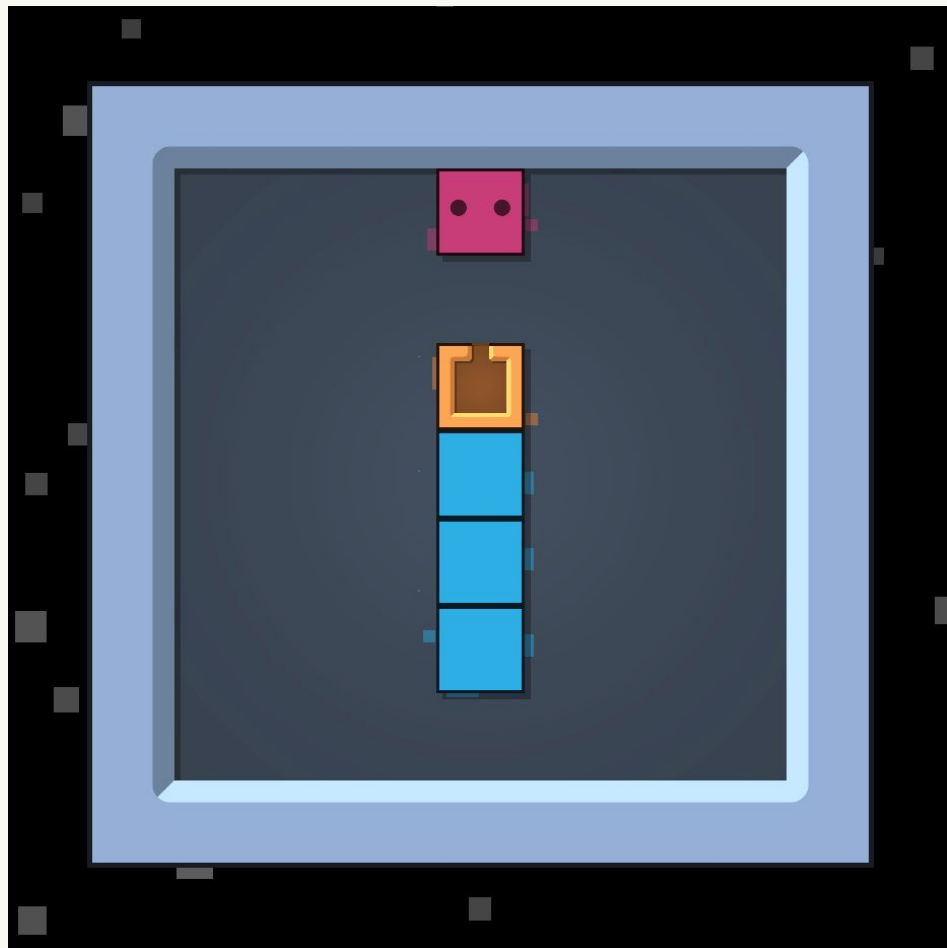
Did not reach diminishing returns!

# Finding puzzle ideas

To me, the purpose of the system is not to make cool puzzles.

**The purpose of the puzzles is to showcase this cool system!**

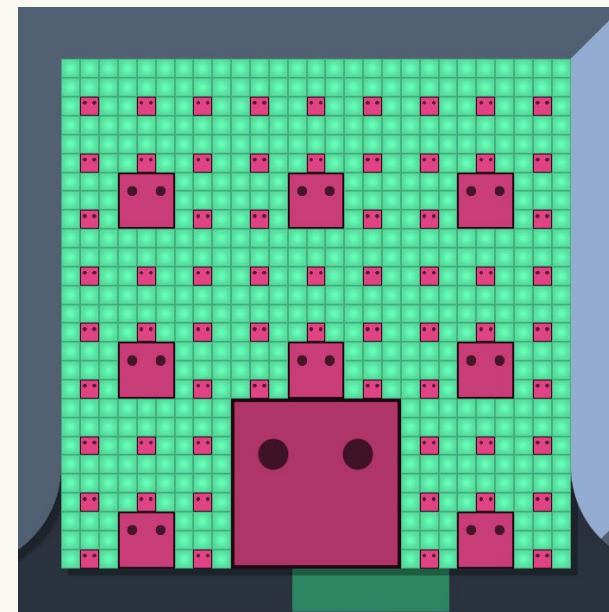
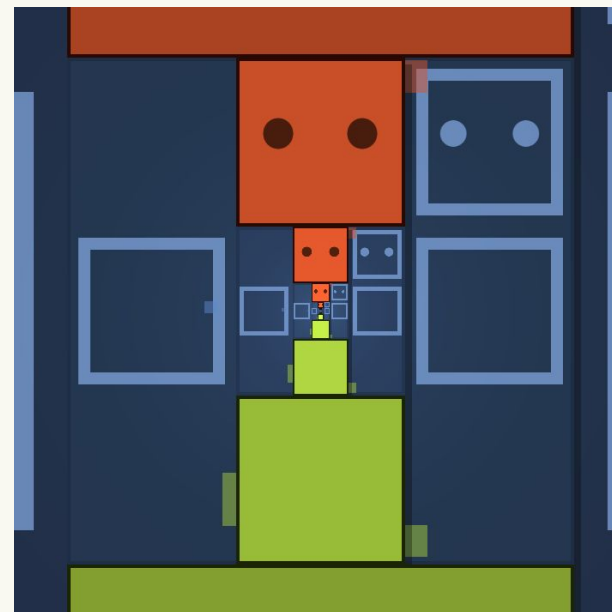
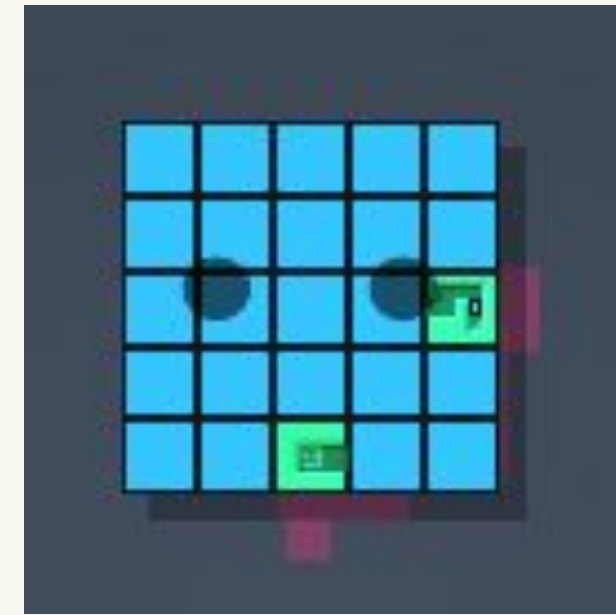
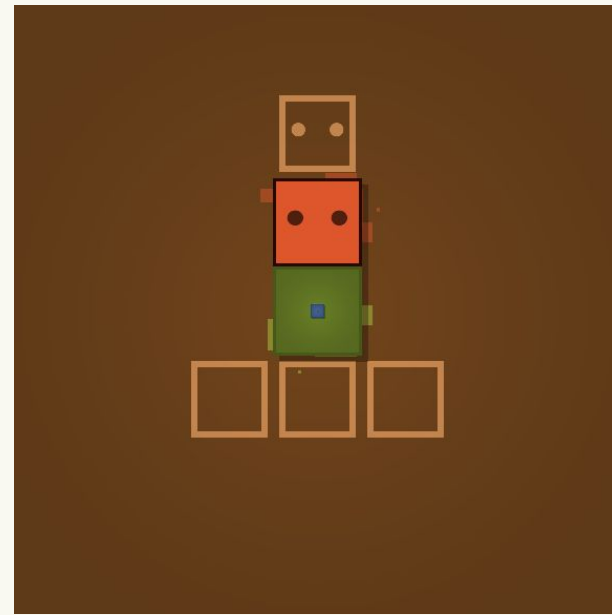
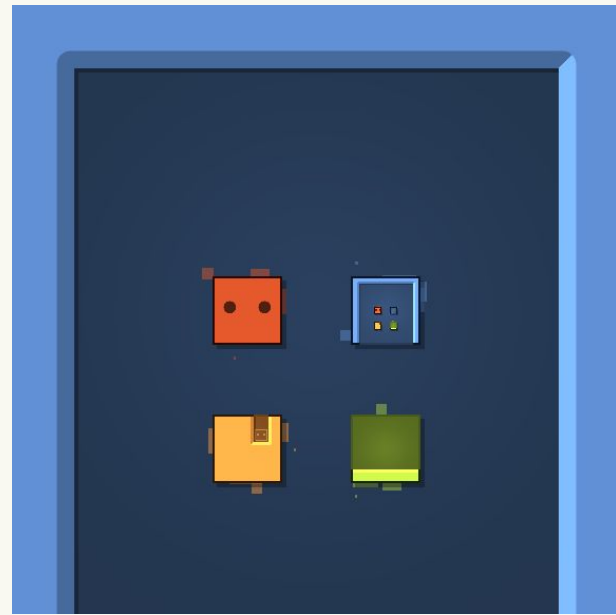
# Find an interaction and force it



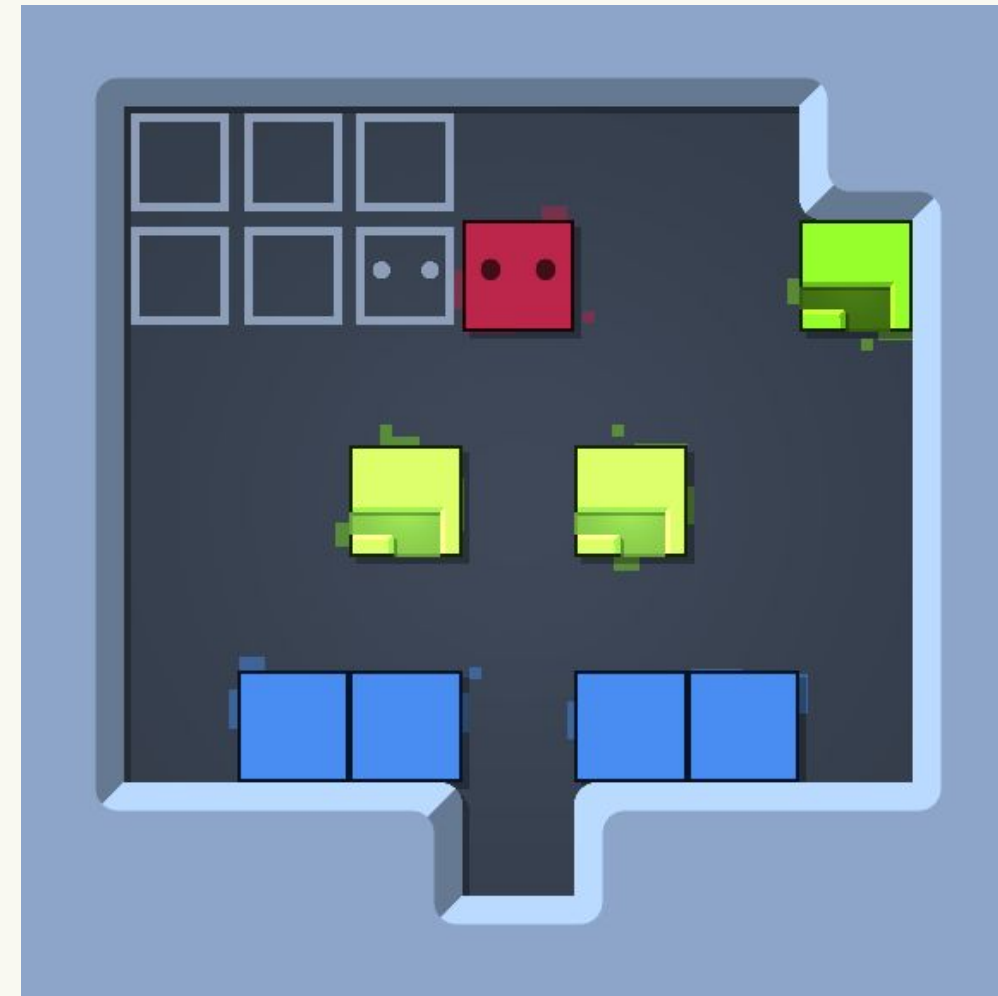
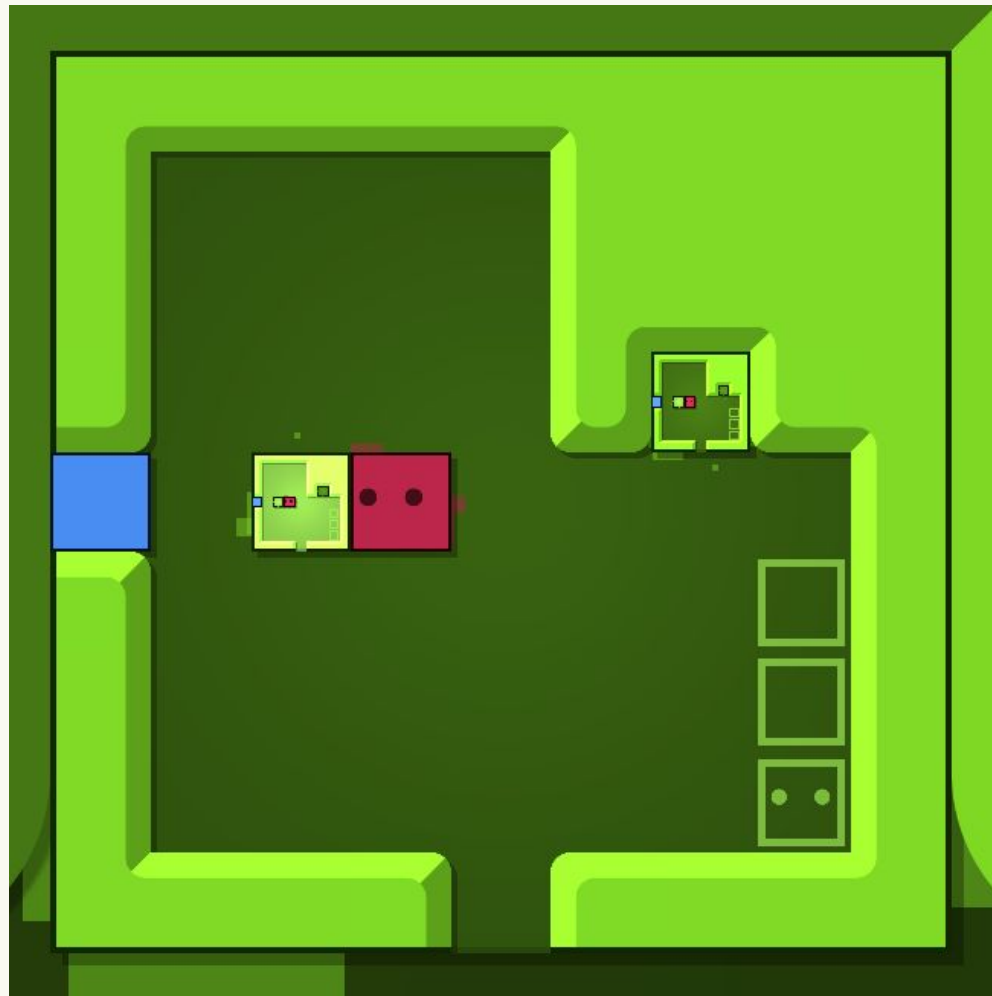
# How to find interactions?

- Play around and explore mechanics
- Playground and test levels
- Enumerate mechanic pairs (Clone+Empty, Clone+Eat, Clone+Transfer, Clone+Possess, Clone+InfExit, ...)

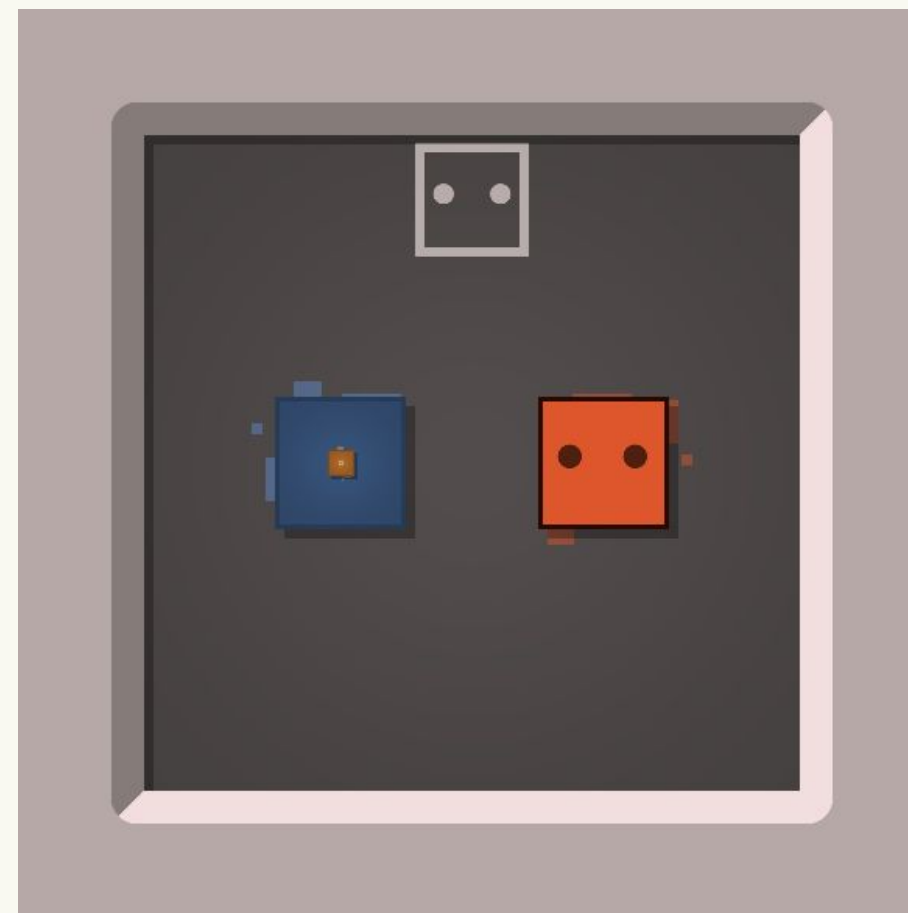
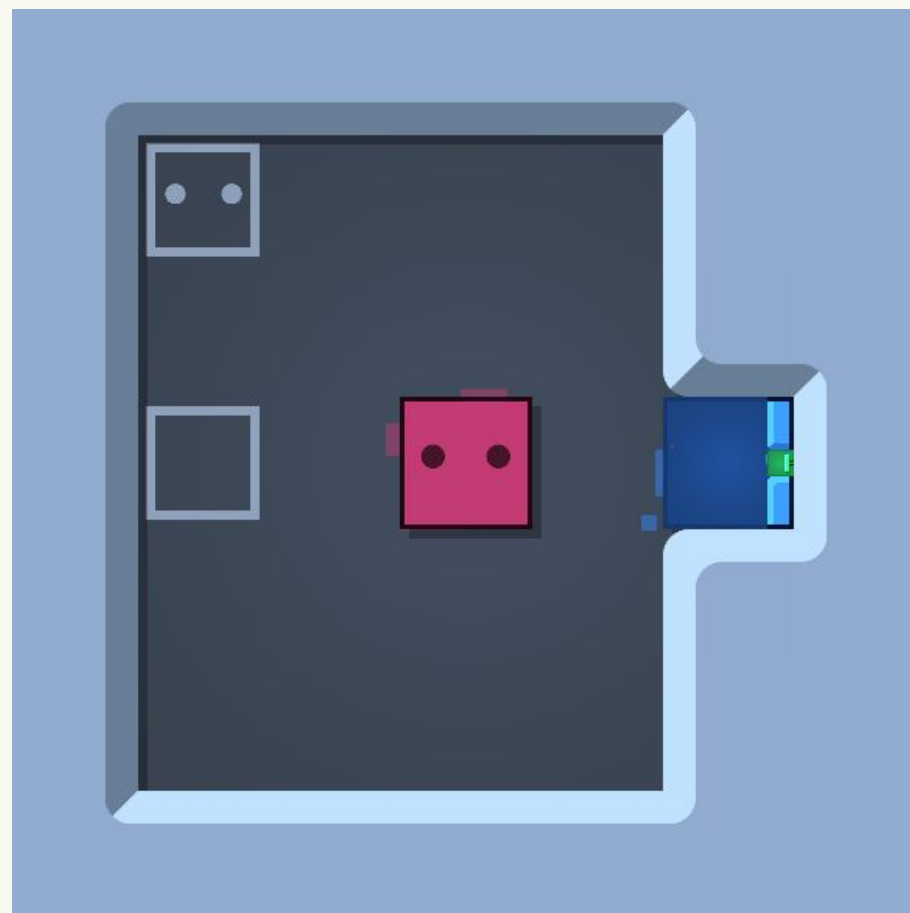
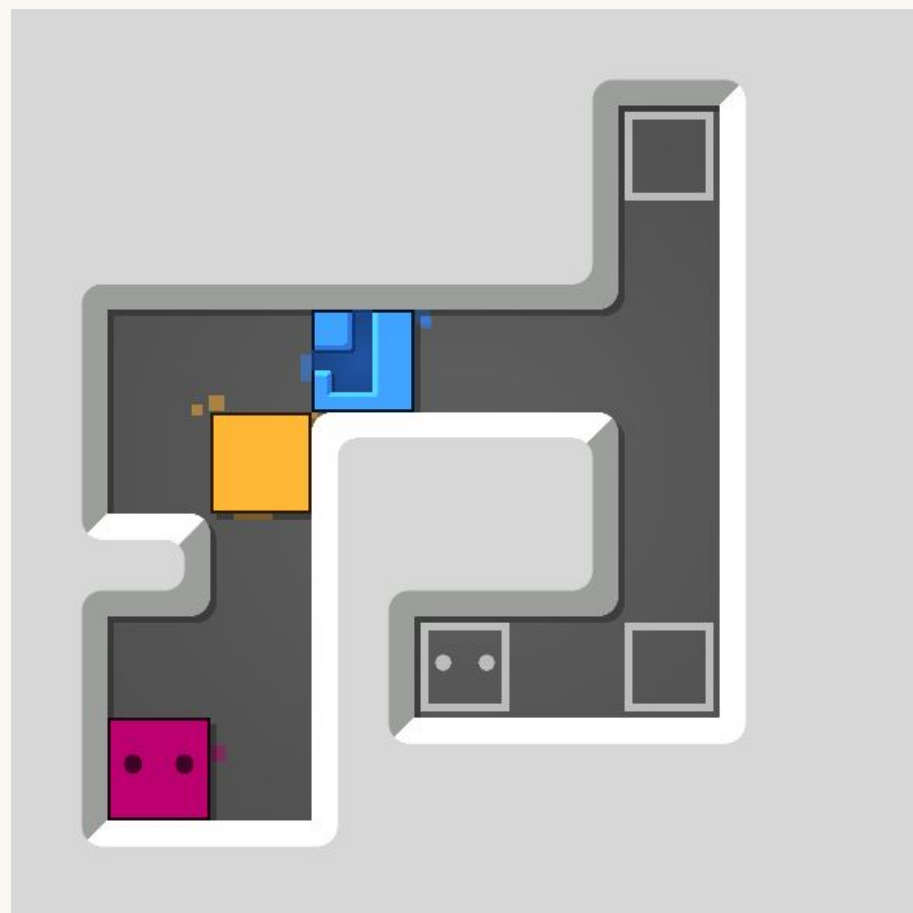
# Try interesting or extreme geometry



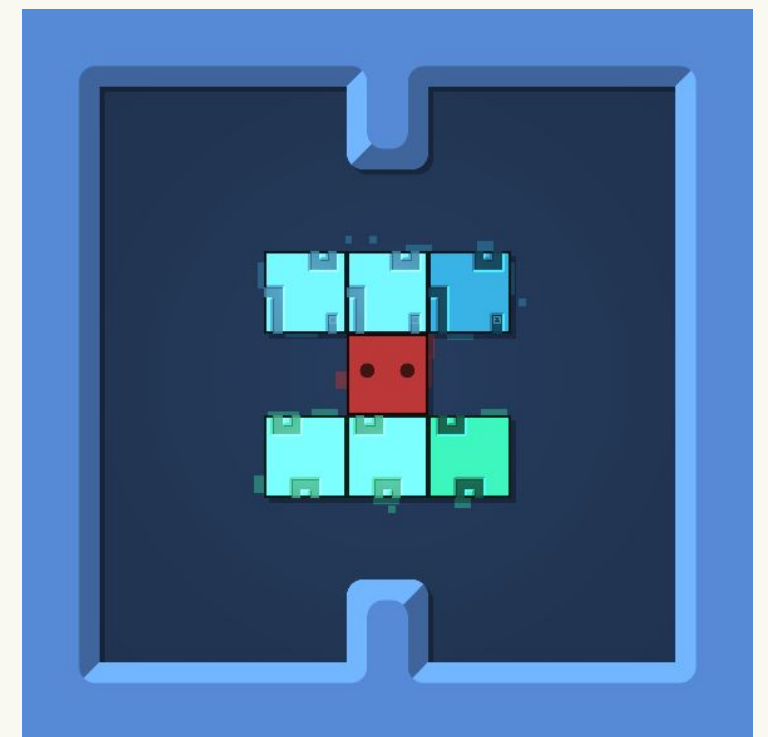
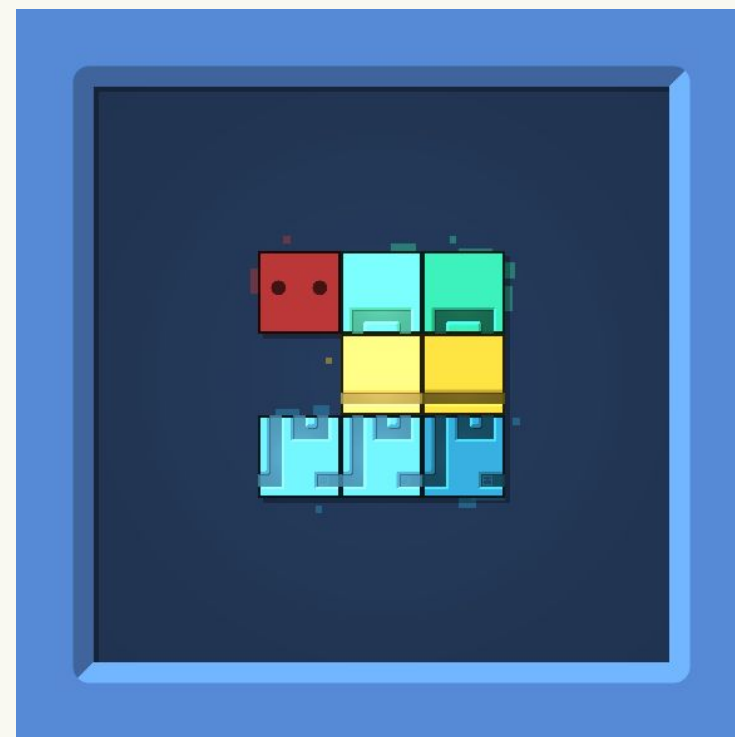
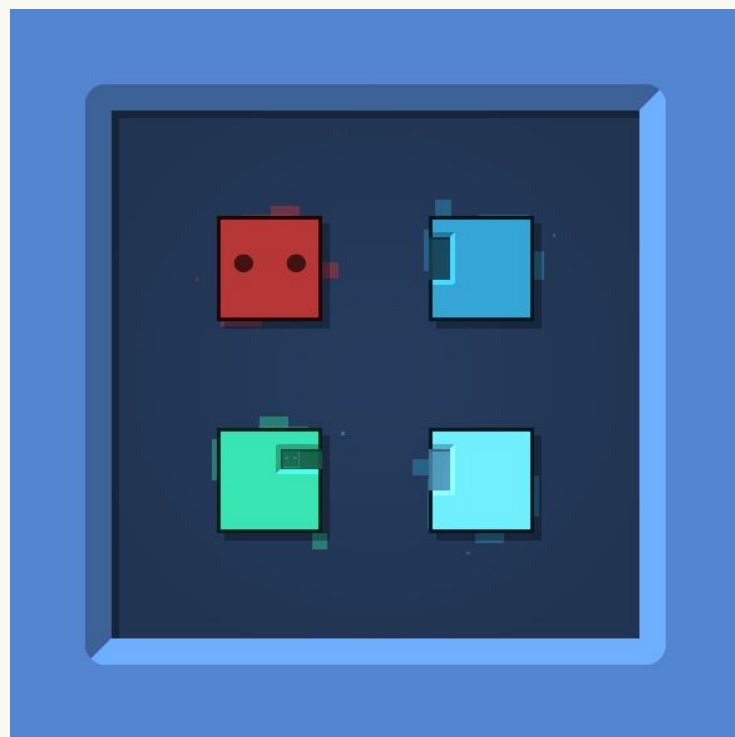
# “Things almost happen” moments



# “Show” levels



# Investigate variations

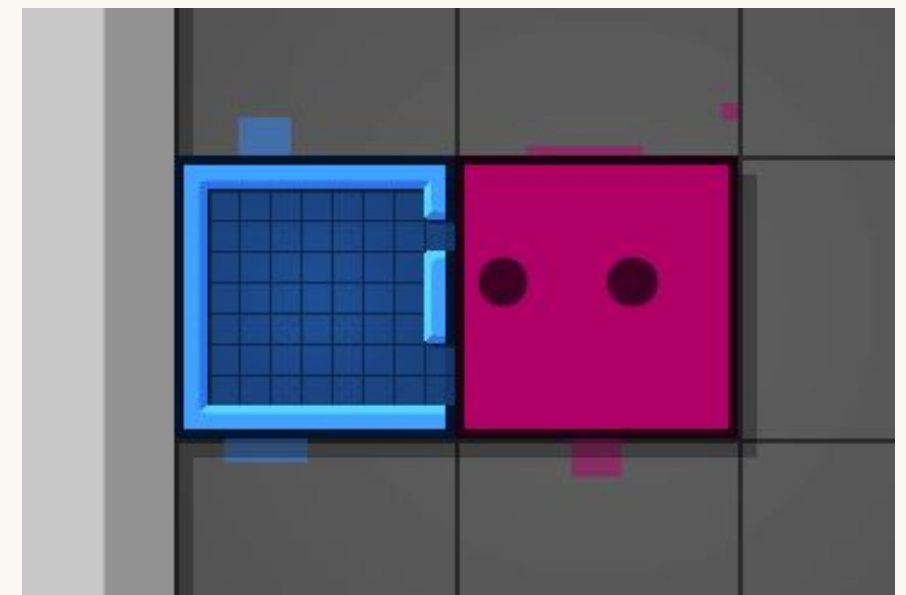
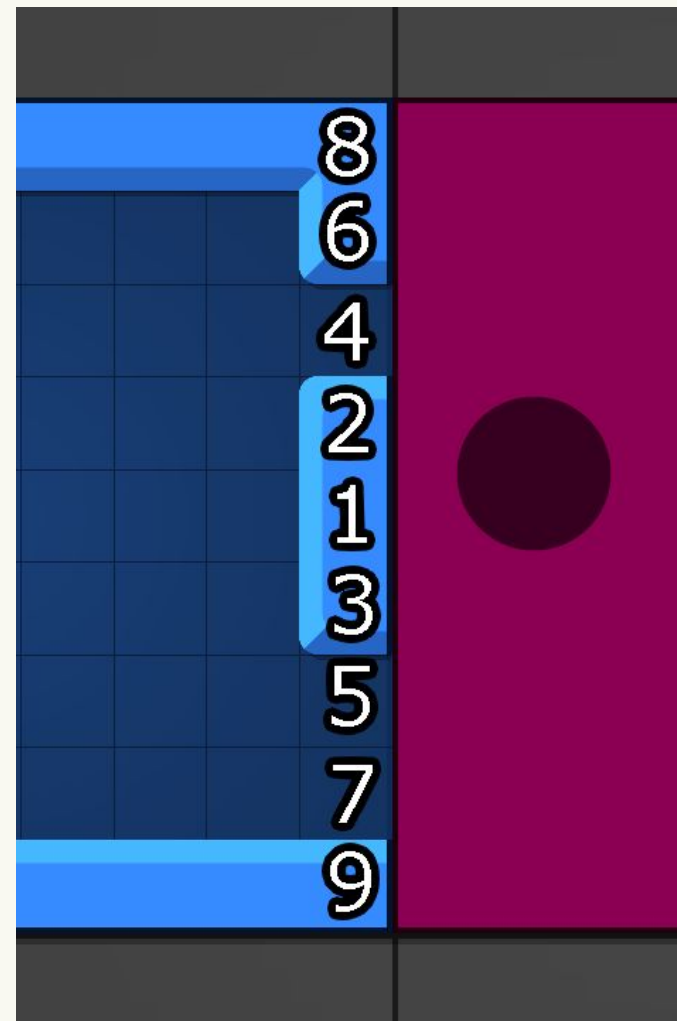
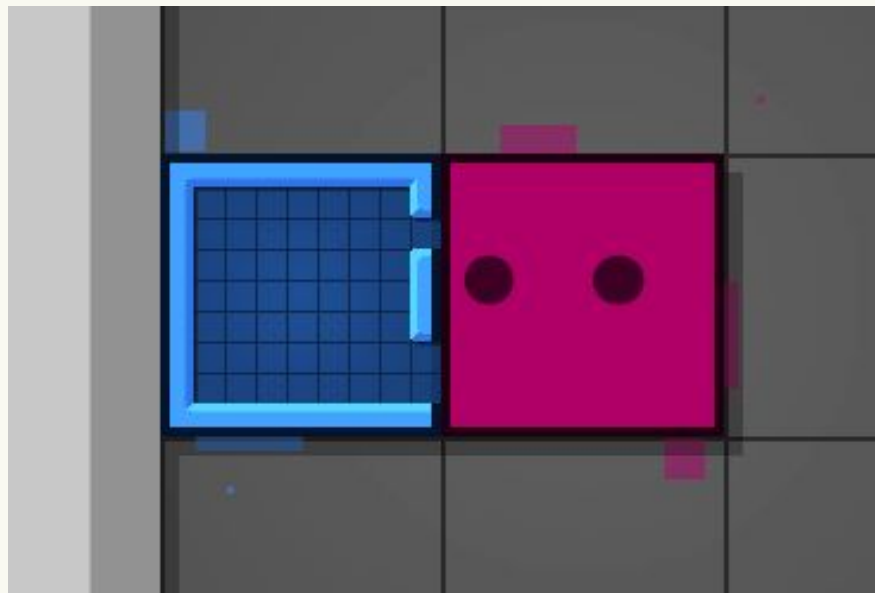


# Lots of digging

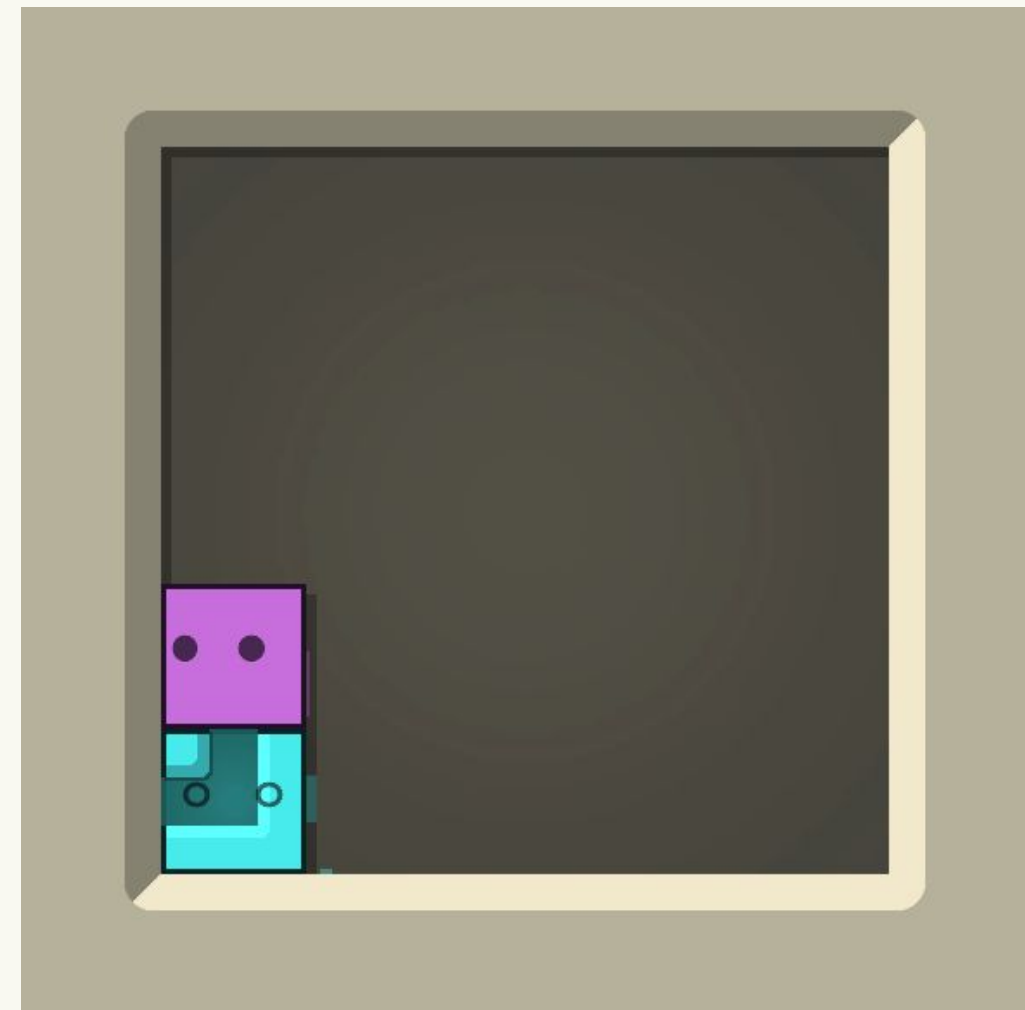
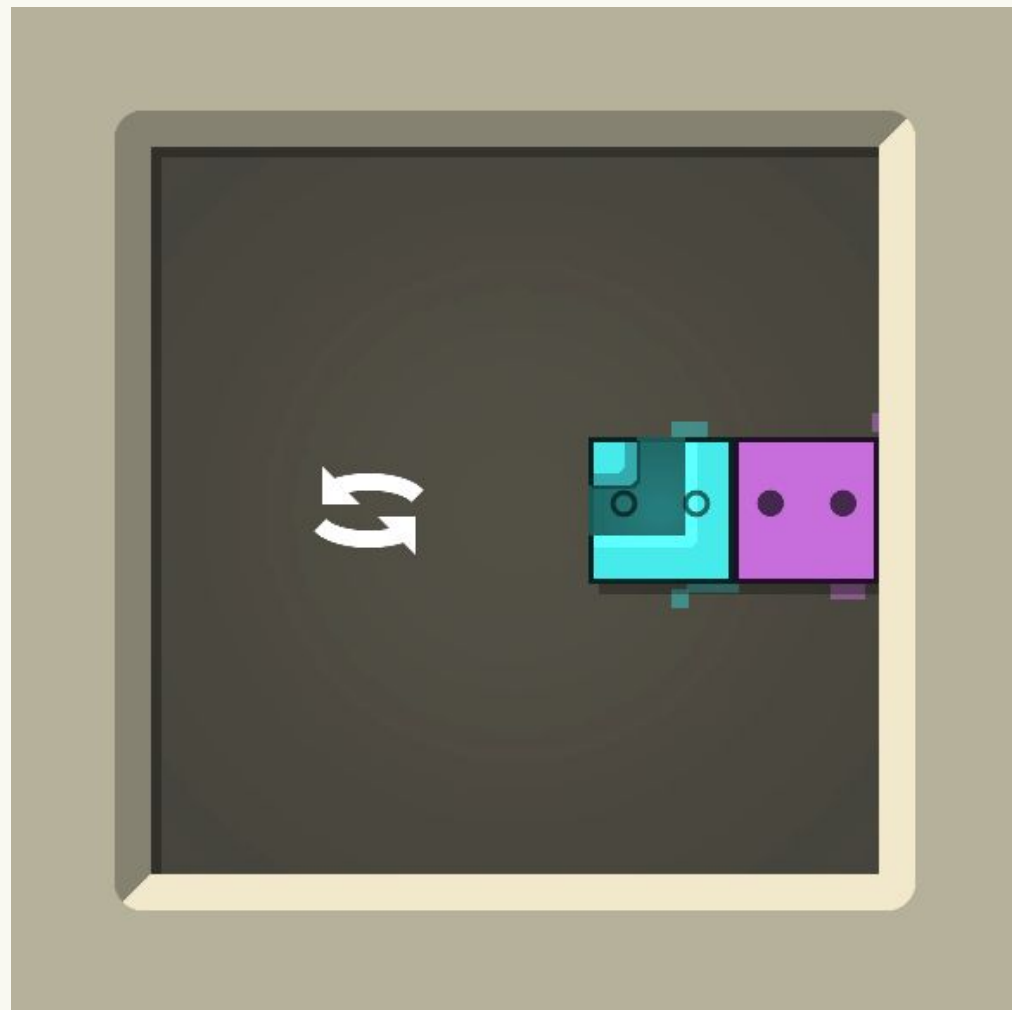
364 shipping puzzles, over 600 unused drafts

One heuristic of a good puzzle system:  
Number of puzzles you can make in it.

# Iterating on mechanics



# Iterating on mechanics

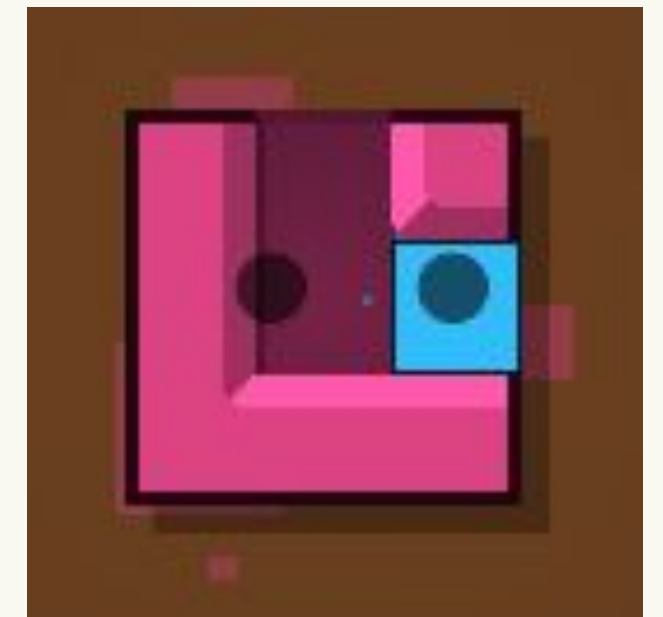
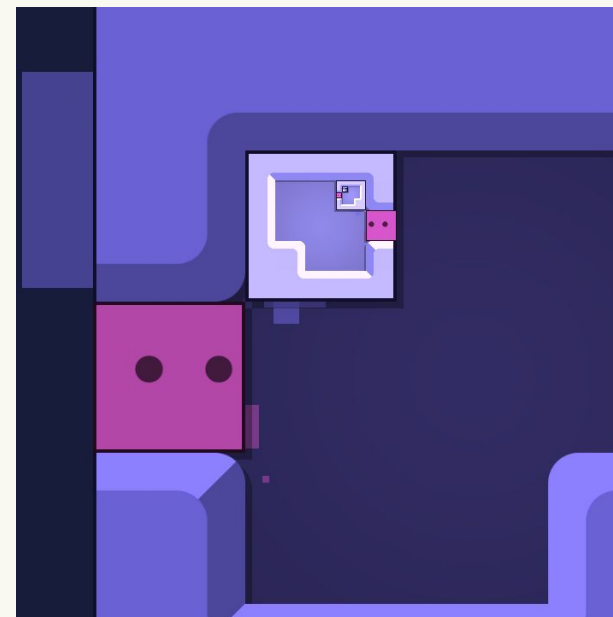
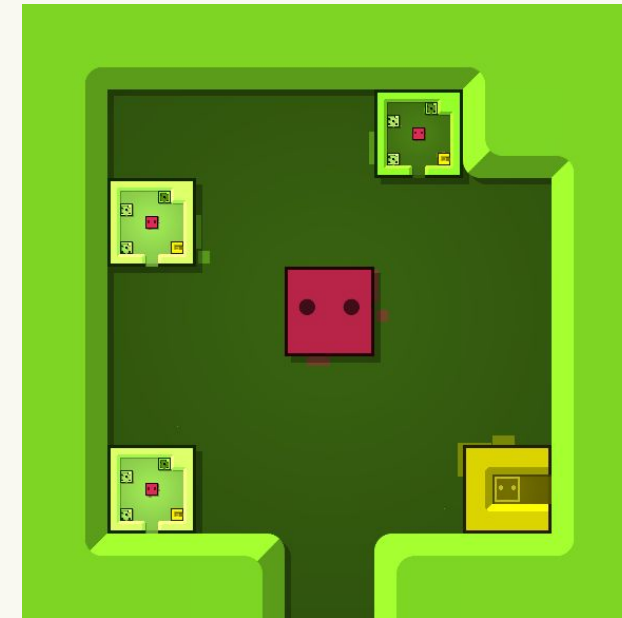


# Natural extensions

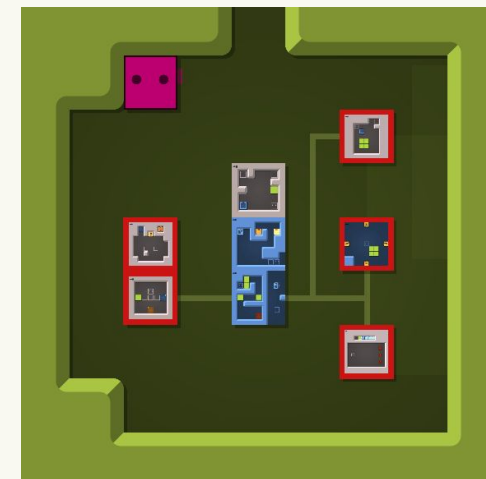
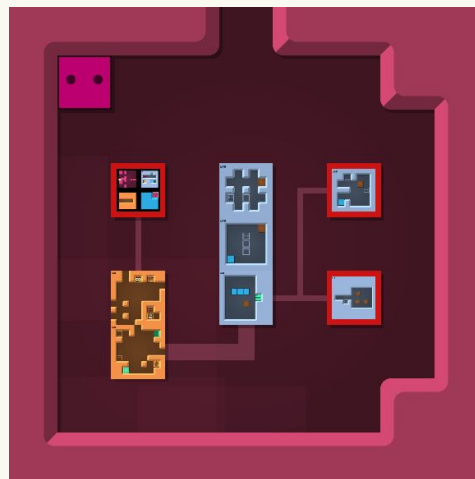
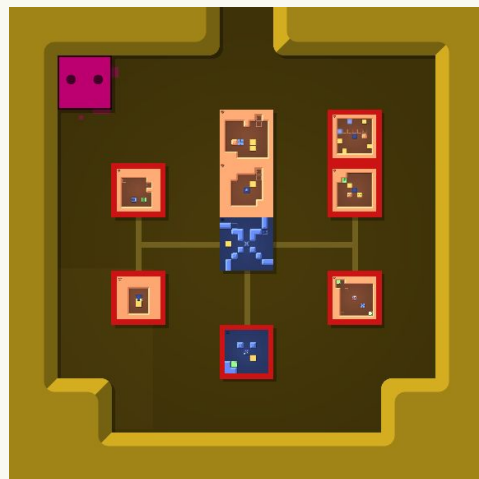
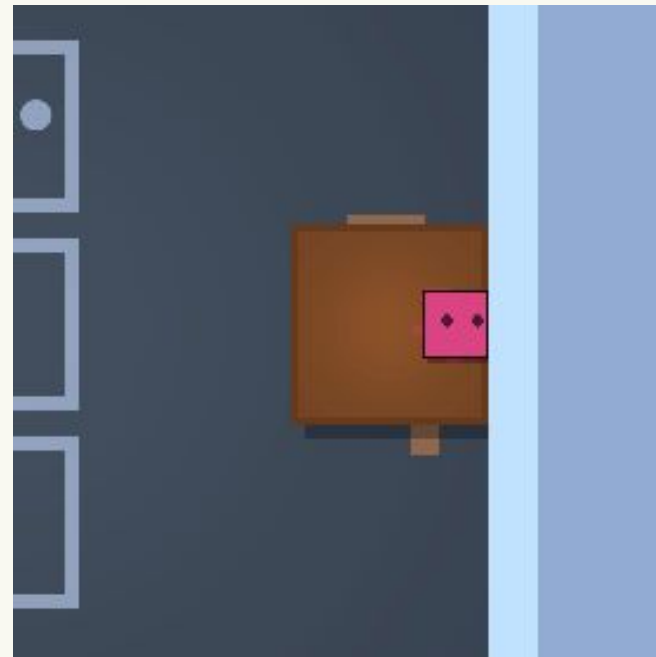
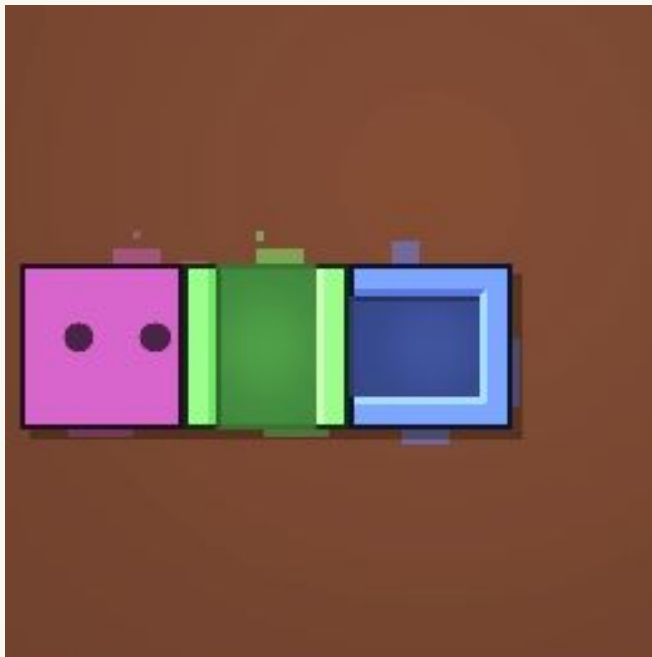
Weighted boxes

Shielded boxes

Sticky boxes



# Appendix area



# Recap

- My goal was to showcase the recursive box system
- Approachable puzzles
- Smoothing the learning curve
- Playtesting with video and narration
- Finding puzzle ideas
- Iterating on mechanics

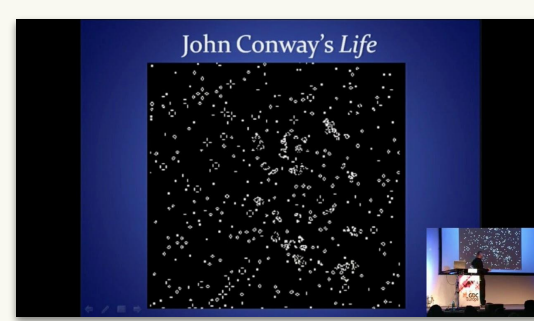
# Further reading + Contact info



**Puzzle Game Magic Secrets** – Brett Taylor



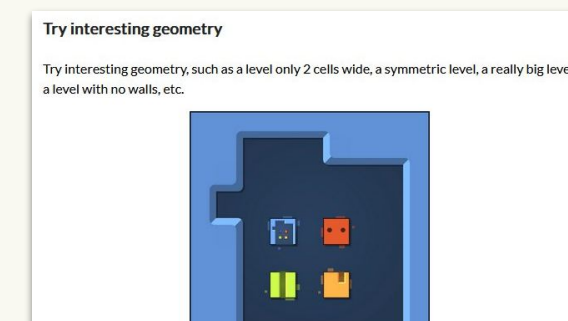
**30 Puzzle Design Lessons Extended Director's Cut** – Elyot Grant



**Truth in Game Design** – Jonathan Blow



**IndieCade 2011: Designing to Reveal the Nature of the Universe** – Jonathan Blow & Marc Ten Bosch



**Puzzle Level Idea Strategies** – Patrick Traynor

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