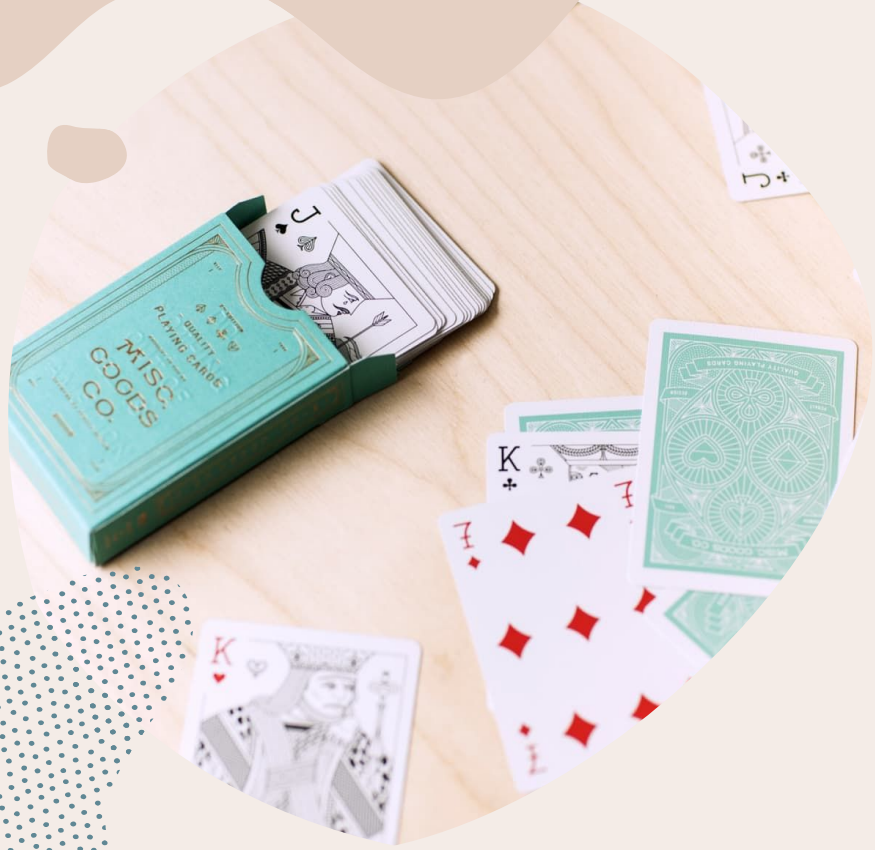
Berkeley Time Riddle

100 prisoners are sentenced to life in prison in solitary confinement. Upon arrival at the prison, the warden proposes a deal to keep them entertained, certain that the prisoners are too dim-witted and impatient to accomplish it. The warden has a large bowl containing the cell numbers of all the prisoners. Each day he randomly chooses one cell from the bowl, the corresponding prisoner is taken to the interrogation room, and the cell number is returned to the bowl.

While in the interrogation room, the prisoner will not be allowed to touch anything except the light switch, which the prisoner may choose to turn on or off. The initial state of the light is OFF when the first prisoner enters the room. The prisoner may make the assertion that all 100 prisoners have been in the room. If the prisoner's assertion is correct, all prisoners will be released. If the prisoner is incorrect, the game is over and their chance to be freed is gone.

The prisoners are given one meeting to discuss a strategy before their communication is completely severed. ***What strategy should they adopt in order to ensure, with 100% certainty, that one of them will guess correctly and all be freed?***

https://tinyurl.com/coop-week2



Cooperative Games: Week 2

Creating Conventions

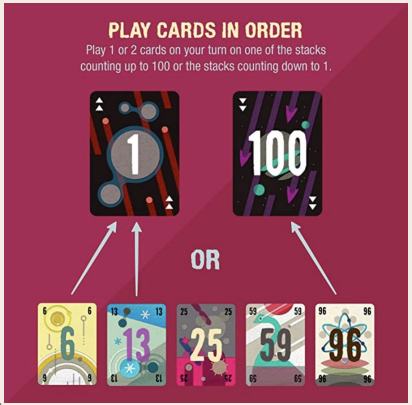
Agenda

1. The Game (Soda 405)
2. Find Your Number (Soda 310)

The Game

The Game: Rules

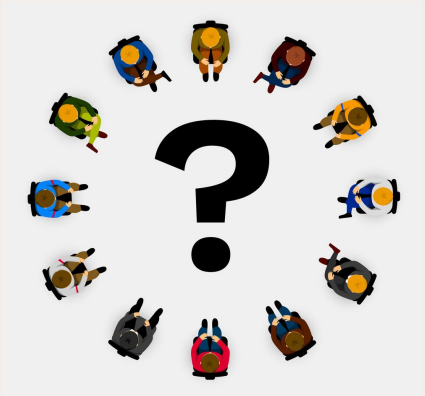
- Each player starts with 6 - 8 cards (depends on total number of players)
- Four discard piles are on the table, two starting with 1 and two starting with 100
- Every turn, each player must discard at least 2 cards from their hand and draw 2 new cards
    - The catch: You can only play cards in ascending order on the 1 pile and in descending order on the 100 pile
    - One exception: You can play a card **exactly** 10 lower or higher than the current card regardless of whether it's an ascending or descending pile
- Once the deck is empty, only required to play at least one card per round
- The game should be played **silently**. The only form of communication is that a **three sided die** is placed next to each pile, and players can rotate the die to set the **"state"** for that pile.
    - Note that the state of a die should only pertain to the pile it is placed by.
    - You all should meet beforehand to establish a **convention** for what the 1, 2, and 3 mean!
- The team **wins** if all 98 cards are placed into 4 discard piles!



Find Your Number

Find Your Number: Rules

- It is a turn based game, the youngest player starts, and turns proceed clockwise.
- Each person has a unique number between 1 and 50. You know everyone's number **except** your own.
- The team wins if everyone successfully guesses their own number
- On a given turn, you can do all of the below:
  - Guess your own number
    - If guessed correctly, the game continues with the remaining players
    - As a team, if someone guesses incorrectly, you all lose
  - Roll two dice and perform an arithmetic operation using the two values to change the base.
    - Ex: if the base is currently 12, and you roll a 4 and a 6, the new base can be 14 (12 + 6 - 4) for the next player
  - Give one hint (among a **maximum** of four previously agreed upon hints)
    - Players should meet beforehand to give meaning to each hint, e.g. "plus_one" could mean "the current value of base is 1 bigger than some player's value"
  - Point to someone
- There are **two rounds** of gameplay, after which the game ends.
  - Note that you can only guess your number on your turn, so earlier players may not be able to go twice...



Attendance Form

https://tinyurl.com/coopform-week2