Unit 4 - User Customized Game

**Fighting Babies** - introducing the idea of customizable games with an economy of resources & moves, designing units, etc.

Rules sheet: Fighting Babies Rules (docx)
Board in illustrator format: board.ai
Set of basic cards: Basic Cards.ai

How to run the exercise (about 2 hours if nothing is cut)

- explain the game and have groups play a basic version using the 10 basic cards (with asterisks) as described in the rules. I recommend using a six-sided die to track player health. It's more useful to have everyone play rather than doing a demo game where most students are watching, because the game can take a while and is easier to understand in practice.
- discuss how this game could be customized by players. Brainstorm some things that could be changed. Try to get at the idea of expressing "play styles" through the system and how a selection of "moves" (cards) could facilitate that.
- brainstorm "play styles" or "roles" (characters for Fighting Babies). Try brainstorming functional roles first, because it's too easy to get off into silly land with ideas like "robo baby" and "space baby" etc.
- divide into pairs; each pair picks one functional role / playstyle (secretly) and creates a new deck of around 10 cards. At this point they can theme their baby fighter however they want.
  - before beginning, discuss aspects of balancing and designing a card – how powerful is it? is it useful in many situations? does it create a certain "feel" beyond its name? how easy is it to understand and use? what kind of "style" is it for?
  - give them enough time to brainstorm, design cards, write up cards on blank cardstock (half an index card is usually good)
  - create new groups to play the game with 3-4 babies in each game (thus, groups of 6-8 students participating in each game)
  - each pair must give their baby to another group to "pilot" – you can't play your own baby. Students shouldn't reveal their chosen "play style," just let the pilot figure it out.
  - designers can answer questions about how the rules on their cards work
  - there should be one "vanilla" baby in each game, and up to 3 special babies.
- if time permits, an additional iteration of discussing, refining, and playing again can work well
- discuss various kinds of meta-structures that could be used for this game, and pros/cons
  - pre-designed decks with specific themes and powers (what they just did)
  - players are dealt random cards to work with
  - players bid on cards to "buy" before playing
  - other possibilities... drafting, deck-building
  - players design their own decks (can show the "advanced cards" and rules from fighting babies at this point if you want)

**Kids War** - a balancing exercise about costing multiple aspects of a character/deck's power

Rules and cards: KIDS WAR CARDS.pdf and (in Illustrator format for editing) KIDS WAR CARDS.ai

How to run the exercise (up to 2 hours)

- each student needs an 8-sided die (or 8 tokens) to track health and starts with four random characters and three random items – just shuffle a bunch together for this purpose (for 16 students, that's 64 character cards and 48 item cards) but leave most stacked up in piles for the design exercise
- this game is good to demo with two students doing a duel as the instructor explains how to play:
  - shuffle your seven cards, draw two
  - two actions per turn (except on the first turn, the first player gets one action to nullify first-mover advantage) – actions are draw a card, play a card into one of three "lanes" between the players (first card always goes in middle lane), or use a card special ability
  - after actions, attacking is automatic, kids go into combat, attacking the opposing kid in a lane – unless they were played that turn, in which case they have "summoning sickness"
  - if attack >= defense, defending kid dies and is removed; attacks are simultaneous so both kids can kill each other at once this way; if there's no defending kid, attack amount is applied to opponent's HP die/tokens
  - first HP lowered to 1 loses; or, if both players take no actions on a turn and cause no damage, game ends and player with higher HP wins
- after the demo everyone duels a partner with their random cards
- now, the assignment: in pairs, students must come up with a costing scheme for all the cards in the game. they fill out the blank sheets with cards listed in the left column, and have to arrive at a final "point cost" for each card. For deck design (as opposed to random decks) players must have exactly seven cards and no more than 100 points. How many points on average per card, you might ask them? (100 divided by 7 is around 14.3)
- what might they consider in costing cards?
  - which cards are more powerful
  - which have more broadly applicable heuristics ("useful in more situations" vs "special-casey / situational")
  - deck design principles – what kind of mix of cards do you think is good?
  - "broken" decks – are there combos of cards that are too good or too weak? how would you set point costs to prevent them?
- show how you might use excel for this game, creating a table with stats for multiple cards
  - which cards can usefully be compared to each other?
  - why to use excel: easy to add up, find averages, count how many cards of a certain kind or over/under a certain range
- after they cost their decks, discuss how we might test the decks to see if they're balanced
  - against a vanilla deck? what would be in that deck?
  - recording data? what would you record?
each pair plays against another pair – the catch: they use the other group's costing scheme to try and design a winning deck. Then battle.

after everyone has done one duel, discuss whether there were "exploitable" costing schemes, whether anyone found "loopholes" or unexpected strategies, etc.

**Cards vs Cards** - a visual design exercise

Use this rules sheet & decks of 12 cards per group: CARDSvsCARDS.pdf

(Second page of the PDF has two printable sets of 12 cards – there are also some decks already printed & cut in the "CCG" bin of game exercise materials at the back of the adjunct pit.)

Illustrator version in case it’s useful: CARDSvsCARDS.ai

- Each group must figure out how to play the game with just the instructions and cards
- Discuss what’s confusing about the game; could visual design make this game easier to understand, rules easier to remember, everything clearer? What would you want to focus players' attention on?
- Each group must now draw (on notecards or other blank cards) a new design for these cards. Could just be one or two sample cards, depending on time. (It can take quite a long time to make a full set of 12, but having at least a few cards lets them set up a sample round and see how the cards would look during play.)
- Share designs & discuss – what approaches did each group take, etc.
- Last semester I spent their work time coming up with my own mockup for one card in illustrator; more of a draft than a refined take but it's an alternative that doesn't use the typical borders & boxes, more numbers than necessary, etc: cardsVScards.scratch.png
- Show slides from existing card games and discuss the pros / cons of various designs, techniques and conventions

**Snakes & Ladders** - a computational design exercise

Students are given a simplified board for Snakes & Ladders with 25 squares and are asked: 1) what is the mean number of moves to finish a game, and 2) add or remove chutes and ladders to increase this mean by 1, so games take one more move on average. You can't work this out with pen and paper, you have to use a computer. I tell them they can use Excel or whatever code environment they have set up. Unity works fine - just do all the calculations in the Start() function of a script and have it print results to the console.

Give this sheet to students which has the problem and the rules on it: snakesandladders.ai, or pdf snakesandladders.pdf

Solutions:

- following the reading from below, here is an example spreadsheet solution (albeit it is inaccurate as it only has 10 trials https://docs.google.com/spreadsheets/d/12GLUE1So6T1o5xnS95x_x_MD_dk0ac0fBuUX7mEKRFI/edit?usp=sharing
- here is an example Codepen with a full accurate solution (and a simple editable visualization) http://codepen.io/bfod/pen/NbbWNX?editors=0010

**Lecture Slides**

**Week 3: Using computation to help balancing**

https://docs.google.com/presentation/d/1yfDcq90Y_yNFNIpuArOxy-41tJk_ZE8Ey723O6b_sV4/edit?usp=sharing

(Heuristics, races and brawls, and monte-carlo simulations as a tool of computational design balancing)

Exercise: Snakes and Ladders (see above)

Readings discussed:

- Characteristics of Games, Chapter 1-2 (unless you read this in intro)
- “Monte Carlo Simulations for Game Design” https://boardsandbarley.com/2013/09/17/monte-carlo-simulations-for-game-design/