Day 6

Teams (Aliases):

- A: Alice and Luke
- B: John and Bob
- C: Katie and Scott and Martha

Pacman Previous Days' Instructions

1. CGCC Day 2: https://docs.google.com/document/d/15I1Iyj40Zl9Hk4wFv98oNpkEx6D7PsEfIlcRgfEh8r4/edit?usp=sharing
2. CGCC Day 3: https://docs.google.com/document/d/10GdXNLsxNCRCX_H4Ugw0zRshu9PshgqEwfH3HOs7T20/edit?ts=5f11c157
3. CGCC Day 4: https://docs.google.com/document/d/1kmrGkTAZQe7nQ-JRIqVzcDKVQCC6lUXhYZX3Z6ECMoc/edit?ts=5f14f9ab
4. CGCC Day 5: https://docs.google.com/document/d/1t48Gia-dOcwU7OeqWcf7-YJ5Zo7Ij7WLSO5Sx-o5eeA/edit?usp=sharing

Resources:

- https://youtu.be/9bSX9Q5aP6E
- https://youtu.be/_sXUtLg7upA
- https://arcade.makecode.com/tutorials (most useful).

Go over Homework

- Take a picture of your project.
- Upload on Zoom.
- Show off the picture of your music application and explain it.
    - Instructions for how to explain your music application.

Take a picture of your *sweet* computer setup and upload it to Zoom.

Paper Prototyping Day 2

- Simple prototype activity (20 mins)
    - Activity:
        - Draw a music application with a black marker and paper (e.g. Apple Music or Spotify)
        - List all of the application's function (e.g. play music)
        - Take a picture of your application
        - Share the list with your partner
            - For every function that your partner mentioned, that you do not have, add it to your drawing.
            - Take a second picture of your application
            - Upload picture and share with the class
        - Prototype Competition. Whoever has the most unique features wins.
- Talk about how too many features isn't always the best idea. More bugs can be introduced. So, how do we know what the right features are? How do we know if we have too many features?
- Startup, Game Over, and Instruction Screens for Games
    - We have a start screen so that the game doesn't just immediately start. You need to start it yourself when you are ready.
    - Open Cat Jumper in MakeCode Arcade
    - Look at the Startup Screen
        - Title
        - Author
        - Multi-page.
    - Add instructions on how to teach people how to use PacMan.
    - Activity: Make a Game over screen for PacMan
- Game design paper prototype: https://www.youtube.com/watch?v=dt1bQsZ68iw (3 mins)
- Requirements: One important note is that you need to write out what the requirements are for the product that you are creating. By having that written out, you are more easily able to create a clear prototype and product. Thinking about what you are going to do before you do it is essential. (2 mins)
- Just like in the video, let's design a start screen for our Pacman game.
    - Create a list of the requirements of a start screen (5 mins)
        - Play Game
        - Save Progress
        - Load saved game

                - Settings
                - Help
            - Activity: (Think/Share)
                - Draw a start screen to support all these requirements.
                - Upload picture and share with the class.
    - Prototype Pacman on Paper
        - Activity:
            - Draw the maze you drew for today's Pacman activity on big piece of paper. Draw in pellets in pencil.
            - Place start screen page on top of maze.
            - When player "clicks" on Play Game, remove the start screen page.
            - Now create a Pacman paper character and place him on the maze in his start position.
            - Create a Pacman controller that goes up/down/left/right.
            - Play Pacman.
            - As Pacman moves over a pellet, erase it from the maze.
            - Sing the Pacman movement music as Pacman goes through the game.

Brainstorming

- Characters:
    - The Fighter: A hero who fights the enemy with their fists, feet, or weapon.
        - Examples: Street Fighter, Karateka, Mortal Kombat
    - The Big Bad: A dastardly villain who appears to be stronger than the hero, but has a hidden weakness.
        - Examples: Gannon, Donkey Kong
    - The Sage: A mystic, an odd character allied with the hero who provides helpful hints at crucial times during the game.
        - Examples: Legend of Zelda, Skyrim, Metal Gear Solid
    - The Sidekick: A companion to the hero who provides comic relief or aids the hero in solving their quest.
        - Examples: Luigi in Mario Bros, Yoshi in Mario World, Sonic 2's Tails.
- Narrative:
    - Overcoming the monster: The hero must flight and slay the monster that threatens their community.
        - Examples: Beowulf, Dracula, King Kong, Pacman, Mario Bros., Space Invaders, Asteroids, Galaga

    - Rags to Riches: An insignificant person is dismissed by others. Something happens to elevate them, revealing that person to be exceptional.
        - Examples: Ugly Duckling, Aladdin, Superman
    - The Quest: The hero must set out on a long hazardous journey to battle obstacles until they are triumphant.
        - Examples: Lord of the Rings, Harry Potter, Wizard of Oz
    - Voyage and Return: The hero travels out of their normal world into the unknown and overwhelming, before escaping back to the safety of their home.
        - Examples: Alice in Wonderland, Finding Nemo, Gulliver's Travels, Legend of Zelda, Super Mario Bros.
    - Rebirth: The hero falls under a dark spell (e.g. sleep, sickness, enchantment) before breaking free and being redeemed.
        - Examples: Sleeping Beauty, Beauty and the Beast
    - The Neverending Story: A repetitive story with infinite challenges that get more and more difficult to beat
        - Examples: Donkey Kong, Q*bert, Tetris
- Kind of game
    - Solitaire: Minesweeper
    - Head to head: Tic tac toe
    - Player vs. System: World of Warcraft
    - One against Many: Clue
    - Free for all: Monopoly
    - Team competition: Dodgeball
- Goal
    - Capture/destroy: e.g. Chess
    - Territorial Control: e.g. Risk
    - Collect things: e.g. Pacman
    - Solve a puzzle: e.g. Clue
    - Chase/race/escape: e.g. Mario Kart
    - Spatial Alignment: e.g. Tetris
    - Build: Minecraft
- Activity: Think-Team-Share
    - With a partner, choose two characters from the MakeCode Sprite gallery. Choose one of the narratives above and create a storyline for a game in which these two characters play starring roles.
    - Activity: Show two pictures of pets/animals in your house and create a narrative that describes their relationship to one another. Use this to

develop a game storyline with these two animals. Attach the pictures to the chat in Zoom. (teach how to share files on Zoom)

- Rules: Defines how the characters can move through the game world and describes the actions they can take and their effects.
    - Navigation
        - Walking, Running, Swimming, Flying
        - Constraints to only walk up/down, left/right
    - Information
        - Reading a scroll
        - Listening to a character
    - Inventory
        - Picking up an item
        - Choosing to use an item
        - Dropping an item
        - Losing an item
    - Obstacles
        - Jumping
        - Running through
        - Punching at
    - Fighting
        - Punching at
        - Jumping on top of
        - Kicking
        - Running through
        - Round-off back handspring
    - Dying
        - Getting run over
        - Getting hit
        - Jumping into a pit
        - Running into yourself
    - Winning
        - Eating all the food
        - Defeating all the enemies
        - Solving all the puzzles
- Technology:
    - Mapping the game buttons to player actions
    - Secret game modes
        - Example: Pressing A and B buttons together makes the character invisible to monsters.

- Activity: Combination Challenge
    - One of the students chooses two rules, two characters, and one narrative, and challenges the teachers to come up with a game idea. How to work in a pair

Brainstorming Activity: Pick one of these ideas to develop on a simple game with your partner.

- Choose your characters.
- Find your narrative.
- Pick the kind of game
- Determine the goal of the game
- Define the game's rules.
- Design paper prototype

How to work with a partner

- Set up regular times during class to check in with one another: every 10 minutes
- The more attention you give to your partner, the more welcome and included they will feel.
- Discuss: How shall we divide the work between us? What parts of the project would you like to work on?
- How should you get your partner's attention when they're not looking at you?
- How do you define success? What is our goal?
- For how long should you work to solve a difficult problem before asking your partner for help?
- For long should you both work to solve a difficult problem before asking the class instructor for help?
- Takeaway lessons:
    - Communicate.
    - Proactively.
    - As Often as You Can Stand It.

Scrum

- 10 minute standup meeting with team
- Teach three questions that should teams should go over each Scrum
    - What did you do?
    - Where are you stuck?
    - What are you going to do next?

Show students the MakeCode forum where they can ask questions.

- http://forum.makecode.com

Show the github project for microsoft/pxt-arcade.

- Show the Issues list.
- Teach students how to file their own feature request.