

# Game Design Academy Year 1

A cross-listed AME/ICT CTE Academy

## Unit 1: Becoming a Game Designer

### Lesson 1: What is a game?

#### Outline

- Formal Structures
  - “Rules” tell us what can and can’t happen in a game
  - Resources, Mechanics, Winning/Losing
    - Activity: Beat me at Tic-Tac-Toe
    - Activity: Diagram the Rules of Tic-Tac-Toe
    - Activity: Tic-Tac-Toe variants
  - Isomorphism, Phase Space, and game diagrams
- Theme/Narrative
  - Informs the player of what they’re supposed to be doing
  - Players can take even very simple themes and build stories out of them
- The “Magic Circle,” learning, and Play
  - Learning is essential to play
    - Conway’s Game of Life
  - Play happens when consequences don’t matter too much
    - Activity: What kinds of things do you learn when you play games?
- Discussion: Are “Sports” Games?
  - Why or why not?

#### Content

This first lesson centers around trying to build a working definition of what a “game” is. Students need to start thinking of themselves as scholars of games, and in order for that to happen, they need to have a place to divide games from the rest of the world. Raph Koster’s Theory of Fun can underpin this exploration, and his ideas about the relationship between “learning” and “fun” are important. Tic Tac Toe makes an interesting case study, since it can be easily diagrammed, and offers some clear examples of things like Isomorphism (moves that look different but are actually the same,) and optimal strategy.

#### Resources

Raph Koster’s Theory of Fun: <https://www.theoryoffun.com/excerpt.shtml#CHAPTER1>

## CTE Standards

### ICT Standards

D1.0 Identify and describe critical game and simulation studies, the resulting societal impact, and the management, industry, and career requirements.

- D1.3 Describe the role of play in human culture.

D2.0 Demonstrate an understanding of game and simulation analysis, design, standard documenta-tion, and development tools.

- D2.1 Demonstrate an understanding of the vocabulary for discussing games and play by listing and describing the general procedure and requirements of game and simulation design.
- D2.6 Demonstrate an understanding of the techniques used to evaluate game mechanics, game play, flow, and game design.

## Lesson 2: History of Games

### Outline

- Prehistoric Games
- Senet, Games and Culture
  - Activity: Talk about games you play. How do they relate to your culture?
  - Activity: Themes vs. Mechanics
    - Themes are like the outside of a car, Mechanics are like the engine
- Games in America
  - Games with “Morals”
    - Chutes and Ladders
  - Monopoly
    - The Landlord Game
- History of video games
  - Space-War and Pong
  - Rise of the Arcade
  - Home computing and Consoles
  - The Indie Revolution

### Content

Giving students a historic context for games is really important to seating them as game designers. Understanding that, as designers, they are the latest in a tradition that stretches back thousands of years and all over the globe is powerful. Also, it's crucial that students understand that the games that they play (and make) are reflections of the culture they are in. Games tell us about the people who play them, about what is important to them, about the ways that they think about the world. Chess and Go are military strategies. Mancala is about resource distribution and accumulation. Senet is about the transmigration of the soul after death.

### Resources

<https://en.wikipedia.org/wiki/Senet>

### CTE Standards

### ICT Standards

#### D1.0:

- D1.2 Describe the historical significance of electronic and nonelectronic games.
- D1.3 Describe the role of play in human culture.

## AME Standards

D8.0 Understand the impact of games and the role of play in human culture. Analyze the ethics and global impact of the game industry.

- D8.1 Discuss the word “play” and its many definitions.
- D8.2 Investigate and discuss how play can help humans acquire knowledge and social skills.
- D8.3 Describe the benefits of games and simulations, including online economies and community building.

## Lesson 3: Playing Games and Making Games

### Outline

- Making Models
  - Inputs and Outputs
  - Transformations/Processes
  - Economies
  - Loops
  - States
- Elements of Games
  - Game Play Loops
  - Player Actions
  - System Reactions
  - Resources
    - Gaining and Losing (faucets and drains)
    - Exchanging - economies
    - Activity: Creating abstract models
  - Mechanics
    - Bidding mechanics
      - Blind Bid
      - Auction
    - Exchange mechanics
      - Exchange rates
      - Preferential exchanges
      - Investments
    - Social Mechanics
      - Promises
      - Breaking promises
      - Odysseus Orders
    - Randomness
      - When is it important?
      - When is it not helpful?
        - Candyland
  - Strategy
  - Culture? - Games as Models
- Make your own Board Game
  - Must include a Design Document with:
    - Rules
    - Mechanics of Player Actions
    - Strategy

## Content

This is the capstone for Unit 1. Students will take a more complex look at various board games, which form the basis for understanding things like resource management, in-game economies, win conditions and, most importantly, strategic questions in games. At the end of this unit, students will build their own board games, test them, and present them to the class.

## Resources

**Activity: Create Abstract Models** - In this activity, students choose from a variety of familiar environments (farm, market, woodshop, gas station) and try to make simplified models of them. What are their inputs? What are their outputs? What resources transform into other resources, and how?

## CTE Standards

### ICT Standards

D3.0 Create a working game or simulation individually or as part of a team.

- D3.3 Using simple game development tools, create a game or simulation.

### AME Standards

D2.0 Analyze the core tasks and challenges of video game design and explore the methods used to create and sustain player immersion.

- D2.8 Prototype a small game using real-world objects, such as dice, cards, balls, pen and paper, etc.

## Unit 2: Becoming a Computer Scientist

### Lesson 1: Introduction to Computers

#### Outline

- History of Computing
  - First “computer” - abacus?
  - Antikythera Mechanism
  - Pascaline Calculator
  - Jacquard Loom
  - Babbage and Lovelace
  - Colossus
  - ENIAC and UNIVAC
  - IBM
  - The microprocessor revolution
  - The Internet
  - Modern Computing
  - Moore’s Law
- Anatomy of a Computer
  - Tower, Monitor, Keyboard, Mouse
  - CPU, BIOS, Motherboard, Hard Drive, RAM
  - Hardware, Software, and Firmware
    - Activity: Take Apart a Computer
- Basics of Computer Interaction
  - Creating and Saving Files
  - Keyboard Shortcuts (copy, paste, undo, redo, new tab)
  - Password Security
  - Networks and communication
  - JavaScript as a web backbone
    - Activity: Mess up a website with JavaScript
- Basics of Software
  - Memory
    - RAM vs. ROM
  - Reading/Writing
  - “Ticks” and clock speed
  - Screen Refresh Speed
  - “Assets” - 2D vs. 3D
- Ergonomics
  - How to not get Carpal Tunnel Syndrome
    - Activity: Posture check!

## Content

This short unit focuses on the very basics of how computers function and what they are. This will be review for most students, but it's important that everyone have the same understanding and, crucially, the same vocabulary to discuss this stuff.

## Resources

Sketch of the Analytical Engine with translator's notes:

<http://www.fourmilab.ch/babbage/sketch.html>

## CTE Standards

### ICT Standards

D2.0 Demonstrate an understanding of game and simulation analysis, design, standard documentation, and development tools.

- D2.1 Demonstrate an understanding of the vocabulary for discussing games and play by listing and describing the general procedure and requirements of game and simulation design.
- D2.9 Demonstrate an understanding of interface design, hardware constraints on games, including processors and I/O devices, and nonhardware constraints.

### AME Standards

D3.0 Acquire and apply appropriate game programming concepts and skills to develop a playable video game.



## Lesson 2: Introduction to JavaScript

### Outline

- What is JavaScript?
  - What is a programming language?
  - How is JavaScript used?
    - Activity: Pass out JS For Kids
- Abstraction
  - How do we describe things in terms computers understand?
- Variables and Assignments
  - What is a variable?
  - How do you assign a value?
  - How do you change that value?
    - Activity: Playing around in JSBin
    - Activity: The Assignment Game
- Data
  - Types of Data
    - Boolean
    - Numbers
    - Strings
- Operations
  - Plus
    - Increment
  - Minus
    - Decrement
  - Multiply/Divide
  - Modulo
  - Assignment and Comparison
    - Activity: Operators and Data Types
- Simple Functions
  - Print to the console
  - Alert
  - Prompt
  - Confirm

### Content

This unit introduces the fundamental concepts of JavaScript specifically, and introduces some of the basic concepts around variable assignment and computational values. It gives students their first hands-on look at actually writing a simple program. Students will play a game to help them understand how variable assignment works, by taking on the role of variables and swapping values.

## Resources

**Activity: The Assignment Game** - Some students are given values, and other students are given operators. Students must arrange themselves into coherent JS statements in order to pass the correct value to the correct variable.

Student Learning Objective: Students are able to read simple code statements and understand how values will change and be assigned and saved.

## CTE Standards

### ICT Standards

#### D2.0:

- D2.5 Know how to use tools and software commonly used in game/simulation development and become familiar with popular game tools and different gaming engines.
- D2.5 Know how to use tools and software commonly used in game/simulation development and become familiar with popular game tools and different gaming engines.
- D2.9 Demonstrate an understanding of interface design, hardware constraints on games, including processors and I/O devices, and nonhardware constraints.

### AME Standards

#### D3.0:

- D3.1 Implement common programming concepts, including logic operators, conditional statements, loops, variables, events, actions, and handling user input.
- D3.3 Examine the use of math and physics (such as gravity and friction) in game development.
- D3.4 Explore the basics of random number generation.

## Lesson 3: Processes

### Outline

- Conditional Statements
  - If-then
  - If-else
  - If-else-elseif
    - Activity: Choose Your Own Adventure Story
- Loops
  - While Loops
  - For Loops
    - Activity: Triangular numbers
- Program Flow
  - How to think about your program
    - Activity: Basic Flow Diagrams
- Modeling with Game Mechanics
  - Player Actions (inputs)
  - System Actions (outputs)
  - Game-Play Loop
- Play Progression
  - Game Dynamics
  - Strategies and Tactics
  - Designing Experiences
  - Plot and Narrative
    - Locations
    - Characters
    - Events

### Content

This lesson deepens students' knowledge of the processes that are available to them inside of JavaScript. The basics of conditional statements and loops let students deepen the possibilities available to them as engineers, enabling them to build bigger, more complex programs. The Choose-Your-Own-Adventure assignment asks them to develop a coherent story based on the actions their players take.

### Resources

**Activity: Choose Your Own Adventure** - Students will use JavaScript to build a simple CYOA story. Each story must display a text segment that ends with a choice, and then use the `Prompt()` method to allow users to choose one outcome. The program should then display the

next sequential piece of the story. Students will write eleven total short story fragments. Incorrect user input should return an error.

## CTE Standards

### ICT Standards

#### D2.0:

- D2.4 Understand the general principles of storytelling and the use of storyboarding in game design.
- D2.7 Describe the complex interaction between games and players and the role it plays in the popularity of a game.
- D2.8 Experience the methods used to create and sustain player immersion.

#### D3.0 Create a working game or simulation individually or as part of a team.

- D3.1 Create a storyboard describing the essential elements, plot, flow, and functions of the game/simulation.

### AME Standards

#### D4.0 Students will demonstrate mastery of game art and multimedia, including music, sound, art, and animation.

- D4.6 Design a game environment using lines, fills, and color to set a specific mood and feel of a scene.

## Lesson 4: Basic Algorithms

### Outline

- Functions
  - Writing Functions
    - Activity: TURTLE
  - Inputs (arguments)
  - Outputs (returns)
  - Calling Functions
  - Calling Functions with Arguments
    - Passing Values
    - Activity: Rewrite the Triangle Activity with functions
- New Data Type
  - Arrays
    - Sorting
    - Iterating over
    - Activity: Rewrite your Choose Your Own Adventure with Arrays
    - Splitting, Popping, and Pushing
- Introduction to Crafty
  - Crafty Objects
  - Calling Functions
  - Scenes
  - Passing Values
    - Activity: Build a simple platformer
- Career Exploration and Role Assumption

### Content

This is the first unit that introduces students to the concept of writing their own functions. Additionally, this unit connects them to the Crafty library for the first time. It's pretty complex stuff, so it needs to go slowly. Firstly, we focus on building functions, using TURTLE as an example. After going through inputs and outputs, as well as writing and calling functions, students have to rewrite some of their old code in functional form. This lesson also introduces a new data type, arrays, and again asks students to rebuild some old code using arrays. Finally, the lesson introduces the basic concepts in Crafty, including Crafty objects, scenes, and physics.

### Resources

Crafty Game Library

<http://craftyjs.com/>

## CTE Standards

### ICT Standards

#### D2.0:

- D2.10 Make informed decisions about game physics: how the game world works, how the players interact with the game world, and how the players interact with one another.

#### D4.0 Identify, describe, and implement standard game/simulation strategy and rules of play.

- D4.4 Understand the process of creating and designing player actions.
- D4.6 Assess common principles and procedures in game flow design.
- D4.7 Describe rule creation elements of player challenge.

### AME Standards

#### D3.0:

- D3.2 Understand the basics of game physics, including collision and motion.
- D3.3 Examine the use of math and physics (such as gravity and friction) in game development.
- D3.5 Implement a small video game utilizing mathematics and physics that features at least one moving object (such as a spaceship) which rotates along an axis and moves in whichever direction it is facing after rotation. The game must include collision physics.

#### D6.0 Understand the general procedures, documentation, and requirements of large scale game design projects. Examine and categorize the significant processes in the production of games.

- D6.1 Identify processes of design and development from concept to production, including content creation, filling team roles, design documentation, communication, and scheduling for video game design teams.

## Unit 3: The Design Process

### Lesson 1: Problem Solving

#### Outline

- Use the Problem Solving Process
  - 1) What is the problem we're trying to fix (and/or audience experience we want our audience to have)
  - 2) Develop a plan (research)
  - 3) Build a paper prototype
  - 4) Iterate/Reflect
- Planning
  - Design Document
    - Designer outlines the problem/feature desired
    - Outlines possible solutions
    - Outlines how we know if the feature is well implemented
    - Outlines how we know if the feature is broken
    - Gives that design document to the engineer
    - Engineer implements

#### Content

This unit asks students to begin the design process for their games. In the strict design process, we try to solve problems, but in this situation, we're trying to get students to think about audience experience, and apply the design process to that. This is a good time to start breaking students up in terms of which game they're going to be working on for the rest of the semester. In this lesson, we can apply the design thinking/problem solving process in the abstract to a variety of situations.

Students should come up with a series of audience experiences they want to replicate. They want their games to be "exciting" or "sad" or "scary." They want audiences to feel curious, or powerful, or delighted. And then break down those emotions into experiences. What makes a person feel happy or sad or excited? This is the "identify the issue" portion of the design process.

In the second part of the lesson, students will research other games that have tackled the same material. How did those games succeed or fail? How can the students' games succeed where other games have failed? Once they've finished research, they should be able to put together a plan, make a paper prototype, and iterate. The paper prototype is NOT an optional part of this lesson, and is the center of the lesson. Students should work to break down the moment-by-moment gameplay into actions that they can build a paper prototype for.

Finally, students should begin thinking about their capstone game. Specifically, how will the capstone game respond to a real-world need?

A final important element of this lesson is starting the design document. The design document should outline the aim of the game, the way we will know if the game hits that aim, and what to do if it doesn't.

### CTE Standards

#### ICT Standards

##### D2.0:

- D2.3 Develop a game design document or blueprint.

#### AME Standards

##### D8.0:

- D8.3 Describe the benefits of games and simulations, including online economies and community building.
- D8.4 Compare and contrast the different opinions on the effects of games on behavior, cognitive development, and motor skills.
- D8.7 Design a game you believe will have positive impact on the world.



## Lesson 2: Design Doc and Storyboard

### Outline

- Building your Design Document OR STORYBOARD
  - Theme of the game
  - Storyboard
  - Gameplay (SPECIFICALLY)
  - Objectives
  - Obstacles
  - Who is the document for?
- Creating Assets and the Asset Pipeline
  - Art Assets
    - Piskel
    - Free online assets
  - Sound Assets
    - Free Online Assets
- Submit your Design Document

### Content

This deepens the conversation around the design document. The Design Document is one of the most important elements of game design; a single document that lays out all of the elements of the game, as well as the art direction, sound design, and development plan. As such, it requires students to think ahead at the needs of their game, which can feel very abstract. Breaking the design document down into sections helps students tackle each one individually. In general, it's important to model how to approach each section, let students discuss how they're going to approach each section as it applies to their specific game, and then let them get to work.

### Resources

There are a lot of 8-bit online art programs, Piskel is nice because it has a simple animation interface as well:

<https://www.piskelapp.com/>

### CTE Standards

#### ICT Standards

D5.0 Integrate music, sound, art, and animation as it applies to the environmental design of the game/simulation.

- D5.1 Understand the methodologies for integrating digital media into a game or simulation.
- D5.2 Identify commonly used art and animation production tools in the game design industry.

#### AME Standards

##### D6.0:

- D6.1 Identify processes of design and development from concept to production, including content creation, filling team roles, design documentation, communication, and scheduling for video game design teams.
- D6.2 Discuss the iterative nature of game and simulation design.
- D6.3 Develop design plans, character sketches, documentation, and storyboards for proposed games.

## Unit 4: Production

### Lesson 1: Alpha

#### Outline

- Proof of Concept
  - Movement
  - Environments and Interactions
  - Basic Gameplay Loop
- Alpha Build
  - Full example of play
    - At least one Enemy
    - At least one Power ups
    - Etc.
  - Prototype Art
- Proof of Concept Pitches
- Mock Interviews

#### Content

This lesson involves building an Alpha Plan for student games. An Alpha submission is an early, proof-of-concept submission where the basic design of the game is vetted. The majority of the work in this unit should be students actually building their Alpha submissions, with certain specific elements that must be present in the final submission. As students are working on their submissions, they are also building and rehearsing an Alpha Submission pitch.

In their pitch, students should be able to clearly describe their gameplay loop, major interactions, and core mechanics. At the end of the Alpha process, projects that still lack clear conceptualizations can be decommissioned and their students assigned to other projects if necessary.

#### CTE Standards

#### ICT Standards

##### D5.0:

- D5.3 Understand the general concepts of environmental design.
- D5.4 Describe how environmental design is used in conjunction with game level design.

#### AME Standards

##### D6.0:

- D6.4 Enumerate individual tasks of a project using basic time management skills to complete each task and track its completion.
- D6.5 Describe the importance and interrelationship between development schedule and budget constraints in a video game design project.
- D6.7 Create a set of original design documents and build a small game.

## Lesson 2: Beta

### Outline

- Feature Complete
  - All Enemies in game
  - All power-ups
  - All interactions
  - FINAL ART
- Beta Presentations
  - Dynamics - how does the game change over time
  - Emotional impact - how does that game keep players engaged?
  - QA Plan - what bugs have already been observed? Where are more bugs likely to appear?

### Content

This is the beta section for student games. Students must finish, display, and present on their beta submissions. A Beta submission is a more complete version of the final project: “feature complete,” meaning that every element of the final game is present, but final level design and final bug-fixing don’t need to be present.

In their Beta presentations, students should describe the larger arc of their game. How does the story tie into the final experience? Where does the game get easier or harder, and what effect does that have on the player? At the same time, students should have a clear sense of the last steps that they need to work on to finish their games. What are the QA tasks left? What about final level design?

### CTE Standards

#### ICT Standards

##### D5.0:

- D5.2 Identify commonly used art and animation production tools in the game design industry.

#### AME Standards

D10.0 Students will build a game that demonstrates teamwork and project management by creating a game design production plan that describes the game play, outcomes, controls, rewards, interface, and artistic style of a video game.

- D10.1 Use design documents to create a game design production plan.
- D10.2 Solicit and accept constructive criticism.
- D10.3 Use computer tools to create game programming, art, and audio.
- D10.4 Create and use animated objects in a game.

## Lesson 3: Gold

### Outline

- Basics of Marketing
  - Intended Audience
  - Reaching that Audience
  - Intended Impact
- Gold Submission
  - Bug free sign-off
  - Final level design sign-off
  - Final art sign-off
  - Marketing Plan sign-off
- Gold Presentations
  - Basic Mechanics and gameplay loop
  - Art style
  - Story
  - Design Journey

### Content

This is a CTE Capstone presentation, where students must both finish their Gold submissions and present them. The Gold Submission is a final prototype of about 5-10 minutes of gameplay, polished and complete, and also includes a Marketing Plan. The Marketing Plan discusses what kind of an audience the game will appeal to (trying to be as specific as possible) and how to reach that audience in an authentic and respectful way.

Each presentation will cover an overview of the Gold submission from mechanics to art, as well as a discussion of the design journey that led there. What kinds of problems did the team encounter, and how did they solve them? If they could continue development, what would they want to tackle next?

### CTE Standards

#### ICT Standards

D3.0 Create a working game or simulation individually or as part of a team.

- D3.1 Create a storyboard describing the essential elements, plot, flow, and functions of the game/simulation.
- D3.2 Create a design specification document to include interface and delivery choices, rules of play, navigation functionality, scoring, media choices, start and end of play, special features, and development team credits.
- D3.3 Using simple game development tools, create a game or simulation.
- D3.4 Present the game or simulation.

## AME Standards

### D5.0:

- D5.6 Test a classmate's game project and create a bug report for the game. For each error submitted, write steps in sufficient detail so it is identifiable and reproducible to the developer. Use a metric to identify how critical the error is based on its negative impact on game play.

## Juniors Fall Semester

Week of School	Dates	Lesson/Topic Covered	Associated game	Assignment	Riddle
1	8/21-8/25	Classroom Policies, Class Procedure, etc.	None? Maybe the board games		River Crossing: <a href="https://www.youtube.com/watch?v=ADR7dUoVh_c">https://www.youtube.com/watch?v=ADR7dUoVh_c</a>
2	8/28-9/1	Unit 1, Lesson 1: Basics and Terminology	Tic-Tac-Toe		Counterfeit Coin: <a href="https://www.youtube.com/watch?v=tE2dZLDJSjA">https://www.youtube.com/watch?v=tE2dZLDJSjA</a>
3	9/5-9/8 (Labor Day)	Lesson 2/Lesson 3	Poker/Blackjack		Professor's Plane: <a href="https://www.youtube.com/watch?v=dzrwnwOx0fw">https://www.youtube.com/watch?v=dzrwnwOx0fw</a>
4	9/11-9/15	Lesson 3	Poker/Blackjack		Bridge Riddle: <a href="https://www.youtube.com/watch?v=7yDmGnA8Hw0">https://www.youtube.com/watch?v=7yDmGnA8Hw0</a>
5	9/18-9/22	Lesson 3	Board Games	Make your game	Virus Riddle: <a href="https://www.youtube.com/watch?v=ZKh6z0X6KRw">https://www.youtube.com/watch?v=ZKh6z0X6KRw</a>
6	9/25-9/29 (Dead week)	Lesson 3	Board Games	Present your game	Prisoner Hat: <a href="https://www.youtube.com/watch?v=N5vJSNXPEwA">https://www.youtube.com/watch?v=N5vJSNXPEwA</a>
7	10/2-10/6	Unit 2: Lesson 1: Basics of Computers	Take apart a computer		Passcode Riddle: <a href="https://www.youtube.com/watch?v=7Vd1dTBVbFg">https://www.youtube.com/watch?v=7Vd1dTBVbFg</a>
8	10/10-10/13 (Ind. Peoples' Day)	Lesson 2: Basics of Javascript		Mock Interviews and Job Shadows	Frog Riddle: <a href="https://www.youtube.com/watch?v=cpwSGsb-rTs&amp;list=PLJicmE8fK0EiFRt1Hm5a_7SJFaikIFW30&amp;index=15">https://www.youtube.com/watch?v=cpwSGsb-rTs&amp;list=PLJicmE8fK0EiFRt1Hm5a_7SJFaikIFW30&amp;index=15</a>



9	10/16-10/20	Lesson 2	Assignment Game		Monty Hall: <a href="https://www.youtube.com/watch?v=9vRUxbzJZ9Y">https://www.youtube.com/watch?v=9vRUxbzJZ9Y</a>
10	10/23-10/27	Lesson 3: Processes	Zork In Class		Two Guards
11	10/30-11/3 (Dead Week)	Lesson 3	Asphyx	Choose-Your-Own-Adventures	Three Gods: <a href="https://www.youtube.com/watch?v=LKvjlsyYng8">https://www.youtube.com/watch?v=LKvjlsyYng8</a>
12	11/6-11/9 (Veteran's Day)	Lesson 3	Last Door		Blindfolded Coins: <a href="http://io9.gizmodo.com/you-can-solve-this-puzzle-by-following-one-simple-rule-1700280480">http://io9.gizmodo.com/you-can-solve-this-puzzle-by-following-one-simple-rule-1700280480</a>
13	11/13-11/17	Lesson 4	Number Game?	Triangular Numbers	Free Week
15	11/27-12/1	Lesson 4	Turtle	Rewrite CYOA Assignment	Locker Riddle: <a href="https://www.youtube.com/watch?v=c18GjbnZXMw">https://www.youtube.com/watch?v=c18GjbnZXMw</a>
16	12/4-12/8	Lesson 4/Review		Build a platformer	Green Eyed Dragons: <a href="https://www.youtube.com/watch?v=98TQv5IAtY8">https://www.youtube.com/watch?v=98TQv5IAtY8</a>
17	12/11-12/15 (Dead Week)	Design Jam		Design Jam	
18	12/18-12/21 (Finals Week)	Design Presentations		Design Presentations	Einstein's Riddle: <a href="https://www.youtube.com/watch?v=1rDVz_Fb6HQ&amp;list=PLJicmE8fK0EiFRt1Hm5a_7SJFaiklFW30&amp;index=11">https://www.youtube.com/watch?v=1rDVz_Fb6HQ&amp;list=PLJicmE8fK0EiFRt1Hm5a_7SJFaiklFW30&amp;index=11</a>

## Juniors Spring Semester

Week of School	Notes	Lesson/Topic Covered	Assignment
1	1/8-1/12		
2	1/16-1/19 (MLK Day)		
3	1/22-1/26		
4	1/29-2/2		Design
5	2/5-2/9		Design
6	2/12-2/15 (Lunar New Year)(Dead Week)		Design Presentations
7	2/20-2/23 (President's Day)		Alpha
8	2/26-3/2		Alpha
9	3/5-3/9		Alpha
10	3/12-3/16		Alpha Presentations
11	3/19-3/23 (Dead Week)		Beta
12	4/2-4/6		Beta
13	4/9-4/13		Beta
14	4/16-4/20		Beta Presentations
15	4/23-4/27		Gold
16	4/30-5/4		Gold
17	5/7-5/11 (Dead Week)		Gold
18	5/14-5/18 (Finals Week)		Gold Presentations
19	5/21-5/25 (Wrap Up)	None	None