Gaming Industry: Job Descriptions

Unit: Mentoring

Problem Area: Career Counseling

Lesson: Gaming Industry: Job Descriptions

Student Learning Objectives.

Instruction in this lesson should result in students achieving the following objectives:

1. **Define the different jobs available in the gaming industry.**
2. **Describe how the different jobs relate/interact with each other.**

Resources.

The following resources may be useful in teaching this lesson:

E-unit(s) corresponding to this lesson plan. CAERT, Inc. http://www.mycaert.com.

Crosby, Olivia. "Working So Others Can Play: Jobs in Video Game Development," *U.S. Department of Labor: Bureau of Labor Statistics.* Accessed April 5, 2013. http://www.bls.gov/opub/ooq/2000/summer/art01.pdf.

"How to Be a Video Game Sound Designer," *G4 University.* Accessed April 5, 2013. http://www.g4tv.com/thefeed/blog/post/716470/how-to-be-a-video-game-sound-designer/.

"How to Become a Video Game Designer," *foothill.edu*. Accessed April 5, 2013. http://www.foothill.edu/career/documents/Video_Game_Designer.pdf.

"Occupational Outlook Handbook," *U.S. Department of Labor: Bureau of Labor Statistics.* Accessed April 5, 2013. http://www.bls.gov/ooh/arts-and-design/multimedia-artists-and-animators.htm.

"Video Game Industry: How to Become a Game Developer," *YouTube*. Accessed April 5, 2013. http://www.youtube.com/watch?v=—-9fXPL4hg&feature=fvwrel.

"Work for Play," *Occupational Outlook Quarterly.* Accessed April 5, 2013. http://www.bls.gov/opub/ooq/2011/fall/art01.pdf.

Equipment, Tools, Supplies, and Facilities

- ✓ Overhead or PowerPoint projector
- ✓ Visual(s) from accompanying master(s)
- ✓ Copies of sample test, lab sheet(s), and/or other items designed for duplication
- ✓ Materials listed on duplicated items
- ✓ Computers with printers and Internet access
- ✓ Classroom resource and reference materials

Key Terms.

The following terms are presented in this lesson (shown in bold italics):

- audio director
- game artist
- game designer
- game design team
- game tester
- lead designer
- level designer
- scripter
- user interface designer
- video game programmer
- writer

Interest Approach.

Use an interest approach that will prepare the students for the lesson. Teachers often develop approaches for their unique class and student situations. A possible approach is included here.

> *Tell your students that it takes many people with different skill sets to bring a video game to market. Ask them to spend three minutes listing (on paper) some of the jobs/skills that would be needed.*

CONTENT SUMMARY AND TEACHING STRATEGIES

Objective 1: Define the different jobs available in the gaming industry.

Anticipated Problem: What types of jobs are available in the video game industry?

I. Computer game industry jobs

A. The computer game industry has evolved a great deal over the past 20 years.
   1. Job descriptions have evolved into a large range of career paths and jobs.
   2. Once there was one job title for people who wanted to create games: game author. The game author was the designer, writer, programmer, artist, musician, sound technician, and tester for the game.
   3. The person who ran the business end was called the game publisher. He or she was responsible for the product's manufacturing and marketing, including market research and all aspects of advertising.

B. The game industry is a mainstream multibillion-dollar industry that demands a multitude of degreed individuals with engineering, programming, art, writing, and management skills.
   1. Universities and colleges around the world are trying to turn out qualified individuals for this demanding industry.
   2. Jobs in the game industry can be divided into about six different professions: designer, writer, programmer, visual artist, audio engineer, and tester.
   3. Now all game design is the result of a ***game design team***, which is a group that encompasses all disciplines headed by a lead designer who oversees the development of a video game property.

C. Game industry job descriptions
   1. The ***lead designer*** is a person who directs a team of people with varying expertise to develop a game.
      a. Each video game job involves a different aspect of the video game, and it is necessary to coordinate these different aspects to create the whole game.
      b. The lead designer works with programmers, artists, animators, producers, and audio engineers to turn an original vision into a working game.
      c. The lead designer ensures team communication, makes large design decisions, and presents designs outside of the team.
   2. A ***game designer*** is a person who designs gameplay, conceiving and designing the game rules and structure.
      a. Brainstorming and inventing new game ideas is a small portion of game design.

b. The game designer writes and diagrams a game in a game design document, which includes information about the game's characters, worlds, and story, among other details.

3. The ***level designer*** is a person who creates the terrain and scripts the enemy's behavior and skills utilizing the designer-created elements and mechanics. The games editor is used to build, arrange, and balance that game segment.
   a. The level designer is responsible for creating game environments, levels, and missions.
   b. The level designer must have the ability to create environments using game editors, scripting, or a 3D modeling program (e.g., Maya or 3ds Max).
4. ***User interface designer*** (UI designer) is a person who creates complex user interfaces for a variety of applications (e.g., computer programs, video games, and websites).
   a. A UI designer makes the connection between the player and the game world.
   b. A UI designer often develops multiple interfaces that can be selected from to best suit a certain game type.
   c. The job will require advanced knowledge of HTML, CSS, AJAX, Flash, and other computer publishing environments.
5. The ***writer*** is a person employed to conceive the game's narrative, dialogue, commentary, cut scene narrative, journals, and video game packaging content.
   a. It is the responsibility of the writer to collaborate with primary designers to place content into the game, creating immersion, avoiding repetition, and providing feedback.
   b. Writing for games involves a different set of skills from those for traditional works (e.g., novels and screenplays) because the writer must collaborate with the designers and others on the team during the writing process.
   c. A game writer "designs" or creates the game scrip, which can include the voiceovers, dialogue, and scenes for intros or cut-scenes.
6. A ***game artist*** is a visual person who creates video game art, such as concept art, item sprites, character models, etc.
   a. The artist's job may be 2D oriented or 3D oriented. Several disciplines are involved.
   b. The art production is overseen by an art director or art lead who makes sure his or her vision is followed.
      (1) The art director manages the art team, scheduling and coordinating within the development team.
      (2) The art director must make sure art produced by different team members is consistent within the game.
   c. A concept artist is a person who works with the game designers to produce character and environment sketches as well as storyboard to influence the "look" of the game.
      (1) A concept artist's job is to follow the art director's vision.

(2) The produced art may be in traditional media, such as drawings or clay molds, or 2D software (e.g., Adobe Photoshop).

d. A story boarder is a concept artist who designs and articulates scene sequences for review before the main art production.

e. A sprite artist creates nonstatic characters and objects or sprites for 2D games. Each sprite may consist of several frames used for animation.

f. A modeler or 3D moideler creates meshes for characters and objects, using 3D computer graphics software, such as 3ds Max or Maya.

g. A character modeler is a 3D artist adept at creating lifelike character models.

h. A texture artist creates textures or skins and applies them to 3D model meshes.

i. A map artist or background modeler creates static art assets for game levels and maps, such as environmental backdrops or terrain images for 2D games.

j. An interface artist works with the interface programmer and designer to produce game interface, such as game menus.

7. An ***audio director*** is a person who is responsible for the processing, storage, and playback of sound effects and music in a game.
   a. He or she writes the software tools and utilities to support the sound and music.
   b. It is a highly skilled job, so an audio director needs a high level of technical knowledge and understanding of a wide range of computer programs as well as a passion for games.
8. A ***video game programmer*** is a person who specializes in software programming and engineering. He or she is mostly responsible for creating codebase to be used in video games and similar software, including game development technology.
   a. There are numerous specialties within the game programming industry, and each specialist is considered a game programmer.
   b. A game programmer is not the same thing as a game designer. A designer is responsible for developing new games.
   c. A game engine programmer develops the graphics and simulated physics that make up a video game's base engine.
   d. A graphics engine programmer specializes in clever optimizations and algorithms.
      (1) This specialist spends most of his or her time designing and troubleshooting complicated 3D graphic renderers.
      (2) With the popularity of smartphones, handheld game systems and PDAs have created demand for programmers specializing in 2D graphics.

e. An artificial intelligence (AI) programmer designs and develops the technology within game systems that simulates lifelike human behavior and characteristics.
   (1) An AI programmer may program enemy tactic, strategy, and path-finding systems.
   (2) Programming for these types of functions is one of the most difficult components of game programming, and the technology is constantly evolving.

f. A gameplay programmer specializes in developing strategy and a game's overall feel. He or she is frequently required to develop strategy tables, troubleshoot input code, and/or alter other game factors.

9. A ***scripter*** is a gameplay programmer who develops video game code that serves as the basis of game content. The coding that permitted a command to be sent to a game console from a player was usually completed by a gameplay programmer.
10. ***Game testing*** is the software testing process for quality control of video games. The primary function of game testing is the discovery and documentation of software defects (bugs).

Teaching Strategy: *Use VM–A through VM–O. Assign LS–A.*

Objective 2: Describe how the different jobs relate/interact with each other.

Anticipated Problem: How do the different job roles interact in the development of a video game?

II. The role of game jobs on a game design team

A. Game design teams

1. Mainstream games are generally developed in phases.
2. In preproduction, pitches, prototypes, and game design documents are written.
3. If an idea is approved and the developer receives funding, a full-scale development begins. This usually involves a 20- to 100-person team with various responsibilities (e.g., designers, artists, programmers, and testers).
4. The games go through development, alpha, and beta stages until finally being released.
5. Most of the jobs are for artists, followed by programmers, designers, audio specialists, and two to three producers in management. These positions are employed with full-time staff.
6. Other staff positions, such as testers, may be employed part-time.

B. Design teams work in three stages: concept, elaboration, and tuning.
   1. During the concept stage
      a. It is necessary to define the fundamental game concept, including the game genre.
      b. It is important to define the game audience (e.g., male/female, age, interests, and demographics).
      c. It is essential to determine the player's role in the game.
      d. It is wise to consider how to fulfill the player's dream.
      e. The concept should not change after this stage.
   2. During the elaboration stage
      a. It is essential to define the primary game mode.
      b. It is necessary to design the protagonist.
      c. It is important to define the game world.
      d. The core mechanics must be designed.
      e. Additional modes must be created.
      f. The first playable level must be created.
      g. The story must be written.
      h. It must be built and tested.
   3. During the tuning stage
      a. The design is locked in, so no more features may be added to the game at this point.
      b. The design team may make small adjustments to levels and core mechanics.
      c. Then polishing occurs. It is a subtractive process of removing imperfections.
      d. The testers ensure that the game falls within the proposed design: It must work and must be entertaining. This involves the testing of all features, compatibility, localization, etc.

Teaching Strategy: *Use VM–P through VM–Q to begin a discussion. Assign LS–B.*

Review/Summary. Use the student learning objectives to summarize the lesson. Have students explain the content associated with each objective. Student responses can be used in determining which objectives need to be reviewed or taught from a different angle. Questions at the end of chapters in the textbook may be used in the Review/Summary.

Application. Use the included visual master(s) and lab sheet(s) to apply the information presented in the lesson.

Evaluation. Evaluation should focus on student achievement of the objectives for the lesson. Various techniques can be used, such as student performance on the application activities. A sample written test is provided.

Answers to Sample Test:

Part One: Matching

1. j
2. d
3. i
4. h
5. b
6. a
7. g
8. f
9. e
10. c

Part Two: Short Answer

1. An audio director is responsible for processing, storing, and playback of sound effects and music in the game.
2. The answer must include three of the following answers. The elaboration stage includes defining primary game mode, designing the protagonist, defining the game world, designing the core mechanics, creating additional modes, creating the first playable level, writing the story, and building and testing the game.
3. The answer must include three of the following answers. The concept stage includes defining the fundamental game concept, defining the audience, determining the player's role in the game, considering how to fulfill the player's dream. In addition, the concept should not change after this stage.

Part Three: True/False

1. T
2. F
3. T
4. F
5. T
6. F

Sample Test

Name _____

Gaming Industry: Job Descriptions

Part One: Matching

Instructions: **Match the term with the correct definition.**

a. game artist
b. game designer
c. game design team
d. game testing
e. lead designer
f. level designer
g. scripter
h. user interface designer
i. video game programmer
j. writer

_____1. A person employed to conceive the game's narrative, dialogue, commentary, etc.

_____2. The software testing process for quality control of video games

_____3. A person who specializes in software programming and engineering

_____4. A person who creates complex user interfaces for a variety of applications

_____5. A person who designs gameplay, conceiving and designing the game rules and structure

_____6. A visual person who creates video game art, such as concept art, item sprites, and character models

_____7. A gameplay programmer who develops video game code that serves as the basis of game content

_____8. A person who creates the terrain and scripts the enemy's behavior and skills, utilizing the designer-created elements and mechanics

_____9. A person who directs a team of people with varying expertise to develop a game

____10. A group that encompasses all disciplines headed by a lead designer who oversees the development of a video game property

Part Two: Short Answer

Instructions: **Answer the following.**

1. What are three duties of an audio director?

2. What are three steps that occur during the elaboration stage?

3. What are three steps that occur during the concept stage?

Part Three: True/False

Instructions: **Write *T* for true or *F* for false.**

_____1. The lead designer is responsible for the game development team.

_____2. Art directors oversee a staff of game artists responsible for different elements.

_____3. Testing is done in the elaboration stage of game design.

_____4. A scripter is a person who writes about the game's main characters.

_____5. Generally, game design teams include 20 to 100 people.

_____6. The subtractive process of removing imperfections occurs during the concept stage.

VM–A

EARLY COMPUTER GAME INDUSTRY JOBS

The computer game industry has evolved a great deal over the past 20 years.

- One or two job descriptions have evolved into a large range of career paths and jobs.
- During the past 20 years, there was one job title for those who wanted to create games: game author. He or she was the designer, writer, programmer, artist, musician, sound technician, and tester for the game.
- The game publisher was the person who ran the business end. He or she was responsible for the product's manufacturing and marketing, including market research and all aspects of advertising.

VM–B

CURRENT GAME INDUSTRY JOBS

The game industry is a mainstream multi-billion-dollar industry demanding a multitude of degreed individuals with engineering, programming, art, writing, and management skills.

- Universities and colleges around the world are trying to turn out qualified individuals for this demanding industry.
- Jobs in the game industry can be divided into about six different professions: designers, writers, programmers, visual artists, audio engineers, and testers.
- All game design is the result of a game design team—a team that encompasses all disciplines headed by a lead designer who oversees the development of a video game property.

LEAD DESIGNER

A lead designer is the person who directs a team of people with varying expertise used to develop the game.

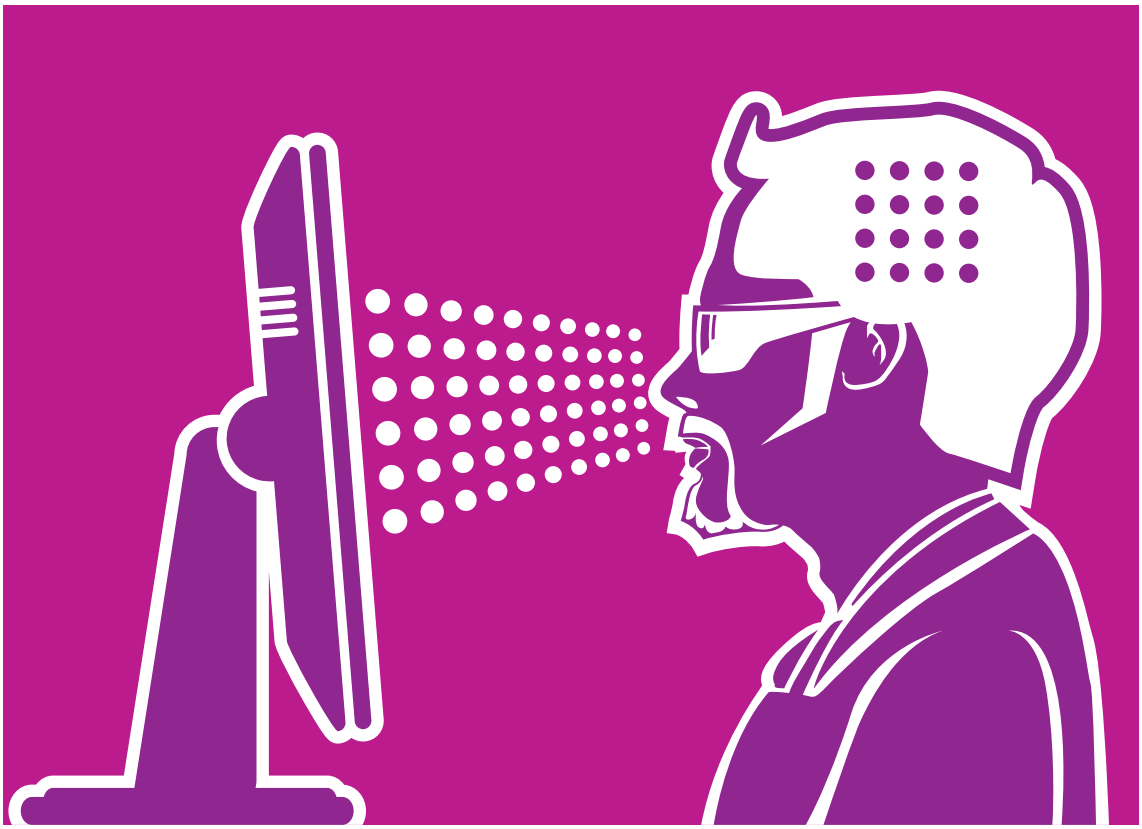
- Each video game job involves a different aspect of the video game, and it is necessary to coordinate these different aspects to create the whole game.
- A lead designer works with programmers, artists, animators, producers, and audio engineers to turn an original vision into a working game.
- The lead designer ensures team communication, makes large design decisions, and presents designs outside of the team.

VM–D

GAME DESIGNER

A game designer is a person who designs gameplay, conceiving and designing the game rules and structure.

- Brainstorming and inventing new game ideas is a small portion of game design.
- A game designer writes and diagrams a game in a game design document, which includes information about the game's characters, worlds, and story, among other details.



VM–E

LEVEL DESIGNER

The level designer creates the terrain and scripts the enemy's behavior and skills, utilizing the designer-created elements and mechanics. The games editor is used to build, arrange, and balance that game segment.

- The level designer is responsible for creating game environments, levels, and missions.
- The level designer must have the ability to create environments using game editors, scripting, or a 3D modeling program (e.g., Maya or 3ds Max).

VM–F

USER INTERFACE DESIGNER

A user interface designer (UI designer) creates complex user interfaces for a variety of applications (e.g., computer programs, video games, and websites).

- A UI designer makes the connection between the player and the game world.
- A UI programmer often develops multiple interfaces that can be selected from to best suit a certain type of game.
- The job will require advanced knowledge of HTML, CSS, AJAX, Flash, and other computer publishing environments.

WRITER

The writer is a person employed to conceive the game's narrative, dialogue, commentary, cut scene narrative, journals, and packaging content.

- It is the responsibility of the writer to collaborate with primary designers to place content into the game, creating immersion, avoiding repetition, and providing feedback.
- Writing for games involves a different set of skills from those for traditional works (e.g., novels and screenplays), as the writer must collaborate with the designers and others on the team during the writing process.
- A game writer "designs" or creates the game scrip, which can include the voiceover s, dialogue, and scenes for intros or cut-scenes.

GAME ARTISTS

A game artist is a visual artist who creates video game art (e.g., concept art, item sprites, and character models).

- The artist's job may be 2D oriented or 3D oriented. Several disciplines are involved.
- The art production is overseen by an art director or art lead, making sure the vision is followed.
- The art director manages the art team, scheduling and coordinating within the development team.
- The art director must make sure art produced by different team members is consistent within the game.

CONCEPT ARTISTS

A concept artist works with the game designers, producing characters, environment sketches, and storyboards to influence the "look" of the game.

- A concept artist's job is to follow the art director's vision.
- The produced art may be in traditional media (e.g., drawings or clay molds) or 2D software (e.g., Adobe Photoshop).

OTHER TYPES OF ARTISTS

A storyboarder is a concept artist who designs and articulates scene sequences for review before the main art production.

- A sprite artist creates nonstatic characters and objects or sprites for 2D games.
- Each sprite may consist of several frames used for animation.
- A modeler or 3D modeler creates meshes for characters and objects, using 3D computer graphics software (e.g., 3ds Max or Maya).
- A character modeler is a 3D artist adept at creating lifelike character models.
- A texture artist creates textures or skins and applies them to 3D model meshes.
- A map artist or background modeler creates static art assets for game levels and maps, such as environmental backdrops and terrain images for 2D games.
- An interface artist works with the interface programmer and designer to produce game interface (e.g., game menus).

AUDIO DIRECTOR

An audio director is responsible for the processing, storage, and playback of sound effects and music in the game.

- The audio director writes the software tools and utilities to support the sound and music.
- It is a highly skilled job, so an audio director needs a high level of technical knowledge and understanding of a wide range of computer programs as well as a passion for the games.

VIDEO GAME PROGRAMMERS

A video game programmer specializes in software programming and engineering.

- A video game programmer is mostly responsible for creating codebase to be used in video games and similar software, including game development technology.
- There are numerous specialties within the game programming industry, and each specialist is considered a game programmer.
- A game programmer is not the same as a game designer. A designer is responsible for developing new games.

- A game engine programmer develops the graphics and simulated physics that make up a video game's base engine.
- A graphics engine programmer specializes in clever optimizations and algorithms.

This specialist spends most of his or her time designing and troubleshooting complicated 3D graphic renderers.

- The popularity of smartphones, handheld game systems, and PDAs has created a demand for programmers specializing in 2D graphics.

OTHER TYPES OF PROGRAMMERS

Other types of programmers

- An artificial intelligence (AI) programmer designs and develops the technology within game systems that simulates lifelike human behavior and characteristics.
- An AI programmer may program enemy tactic, strategy, and path-finding systems.
- Programming for these types of functions is one of the most difficult components of game programming, and the technology is constantly evolving.
- A gameplay programmer specializes in developing strategy and a game's overall feel.
- A gameplay programmer is frequently required to develop strategy tables, troubleshoot input code, and/or alter other game factors.

SCRIPTER

- A scripter is a gameplay programmer who develops video game code that serves as the basis of game content.
- A command sent to a game console from a player occurs due to the coding usually completed by a gameplay programmer.

GAME TESTERS

Game testing is the software testing process for quality control of video games.

- The primary function of game testing is the discovery and documentation of software defects (bugs).

GAME DESIGN TEAMS

Mainstream games are generally developed in phases.

- In preproduction, pitches, prototypes, and game design documents are written.

If the idea is approved and the developer receives funding, a full-scale development begins.

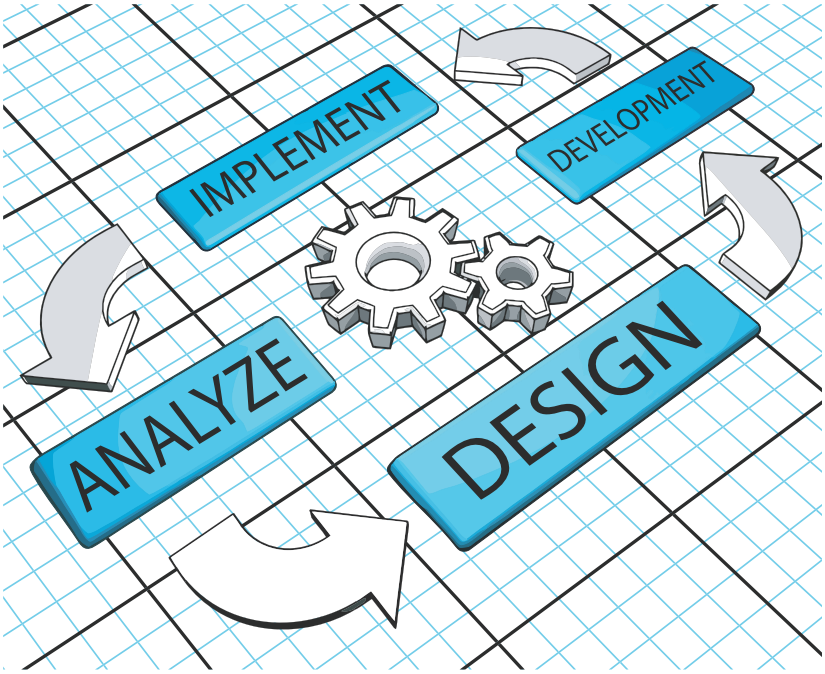
- Development usually involves a 20- to 100-person team of various responsibilities, including designers, artists, programmers, and testers.
- The games go through development, alpha, and beta stages until finally being released.
- Artists are represented the most, followed by programmers, designers, and audio specialists, with two to three producers in management.
- These positions are employed with full-time staff.
- Other positions, such as testers, may be part-time positions.

THE CONCEPT, ELABORATION, AND TUNING STAGES

Design teams work in three stages: concept, elaboration, and tuning.

During the Concept Stage:

- Define the fundamental game concept, including the game genre.
- Define the audience (e.g., male/female, age, interests, and demographics).
- Determine the player's role in the game.
- Consider how to fulfill the player's dream.
- The concept should not change after this stage.



During the Elaboration Stage:

- Define the primary game mode.
- Design the protagonist.
- Define the game world.
- Design the core mechanics.
- Create additional modes.
- Create the first playable level.
- Write the story.
- Build and test the game.

During the Tuning Stage:

- The design is locked in, so no more features may be added to the game.
- The design team may make small adjustments to levels and core mechanics.
- Then polishing occurs; it is a subtractive process of removing imperfections.
- The testers ensure that the game falls within the proposed design: It works and is entertaining. This involves testing all features, compatibility, localization, etc.

LS–A

Name _____

Define Different Jobs in the Game Industry

Purpose

The purpose of this activity is to define the different jobs and skills required to be employed in the video game industry.

Objectives

1. Use the Internet to research the descriptions of various jobs available in the video game industry.
2. Fill out a chart defining characteristics of each job.

Materials

- writing utensil
- list of Resources (your teacher will provide copies or will have the list displayed)
- computer with Internet access

Procedure

1. Access the websites listed in the Resources provided to obtain information on the different jobs in the video game industry.
2. Fill out the attached sheet with the information you find on the jobs and their requirements.
3. Use additional space if needed.

Job Titles	Responsibilities	Job Requirements	Educational Requirements	Average Salary
Lead designer				
Game designer				
Level designer				
UI designer				
Writer				
Game artist				
Audio director				
Video game programmer				
Game tester				

LS–B

Name _____

Define the Roles of Each Position on the Game Development Team

Purpose

The purpose of this activity is to define the roles played by the different disciplines on the game development team.

Objectives

1. Use the Internet to research the roles of individuals on the game development team.
2. Fill out the chart defining each job at each stage.

Materials

- writing utensil
- computer with Internet access

Procedure

1. Access the websites listed in the resource section to find out information on the different roles in a game development team.
2. Fill out the attached sheet with the information you find on the jobs and their requirements. If they have no role at a particular stage, insert N/A.
3. Use additional space if needed.

Job Title	Role in Concept Stage	Elaboration Stage	Tuning Stage
Game designer			
Lead designer			
Level designer			
Audio director			
Art director			
Programmer			
Writer			
UI designer			
Tester			