AP Computer Science A
Lesson 01: Introduction to Game Development (2 Days)

Objectives	Students will be able to: **1.** Explain common elements that are present in most fun games. **2.** Identify how common elements manifest in familiar games. **3.** Use comparative analysis to determine features that appeal to their target users.
Standards	**9-12.DL.2** Communicate and work collaboratively with others using digital tools to support individual learning and contribute to the learning of others. **9-12.DL.4** Independently select advanced digital tools and resources to create, revise, and publish complex digital artifacts or collection of artifacts.
Materials	▪ Google Slides ▪ Worksheets

Day 1:

Development (Do Now) [5 mins]	Question 1: What is a game? Question 2: What may be a **fun** game for one but not for another? Have students share their thoughts with their elbow partners, then have a whole class discussion.
Development (Activity 1) [15 mins]	**Direct Instruction: What Makes a Good Game?** Go over the slides covering common elements that are present in most fun games. ▪ Discuss what may be a **game** for one but is not a game for another: For example, doing laundries, I could see it as a game to fold all clothes neatly in the shortest amount of time, whereas you could just see it as a chore. ▪ Discuss what may be a **fun game** for one but is not for another: For example, I find Sudoku fun, but you might find it boring. ▪ Sid Meier, a very successful Canadian programmer and game designer, said "A game is a series of interesting decisions."
Development (Activity 2) [20 mins]	Students will play the game **Breakout** (https://codehs.com/demos/breakout) and explore how the game applies the four elements: 1. All games present some sort of **challenge** or **goal** for the player to overcome or achieve. 2. All games provide the player with the opportunity to make **meaningful choices** that impact their outcomes. 3. All games **change** over the course of play. 4. All games have defined **rules** and **procedures**. Students will complete the Elements of a Game worksheet to summarize their findings.
Closing/Summary [5 mins]	Have students share how the game Breakout applies the four elements.
Assessment	Deliverable: Elements of a Game analysis

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Development (Do Now) **[5 mins]**	Have two or three students share their favorite game and how these games apply the four game elements.
Development (Activity 1) **[5 mins]**	**Guided Discussion:** ▪ What are some of your favorite games? ▪ How can we categorize different games? ▪ What do your favorite games have in common?

Development (Activity 2)
[30 mins]
	Game Design Activity:
	▪ Hand out the Game Design Research description sheet.
	▪ Students will work in groups of 2-3 people.
	  - Students can pick their group
	  - Or groups can be assigned by teacher based on students' programming abilities.
	▪ Each group will research digital games for a targeted client. Each group will need to research their target user and the games they play.
	▪ **Targeted User**: Each group will create a user persona and describe their characteristics and features.
	▪ **Comparative Analysis of Existing Games**: Each group will identify 2-3 existing digital games their persona is likely to play. Students will analyze the games using the four game elements we discussed in the previous lesson.
	▪ **Deliverable**: Each group will write a brief summary of the analysis and submit it on Google Classroom.

Closing/Summary **[5 mins]**	Each group will share their characteristics of their persona and the digital games their persona is likely to play.
Assessment	Deliverable: Game Design Research

Names: _____

Elements of a Game

Directions:

1. Open the **Breakout Game** (https://codehs.com/demos/breakout).

2. Click Run to start the game.

3. Click on the game environment to begin.

4. As you play, think about how the game applies the four game elements:

    4. All games present some sort of **challenge** or **goal** for the player to overcome or achieve.

    5. All games provide the player with the opportunity to make **meaningful choices** that impact their outcomes.

    6. All games **change** over the course of play.

    7. All games have defined **rules** and **procedures**.

5. Answer the following questions:

    a) Explain how this game presents a challenge or goal for the player to overcome or achieve.

    b) Explain how this game provides the player with the opportunity to make meaningful choices that impact their outcomes.

    c) Explain how this game changes over the course of play.

    d) Explain how this game defines rules and procedures.

Names: _____

Elements of a Game
Homework

Directions: Choose one of your own favorite games and write about how it applies the four elements listed below:

1. All games present some sort of **challenge** or **goal** for the player to overcome or achieve.

2. All games provide the player with the opportunity to make **meaningful choices** that impact their outcomes.

3. All games **change** over the course of play.

4. All games have defined **rules** and **procedures**.

Name of Your Game: _____

a) Explain how this game presents a challenge or goal for the player to overcome or achieve.
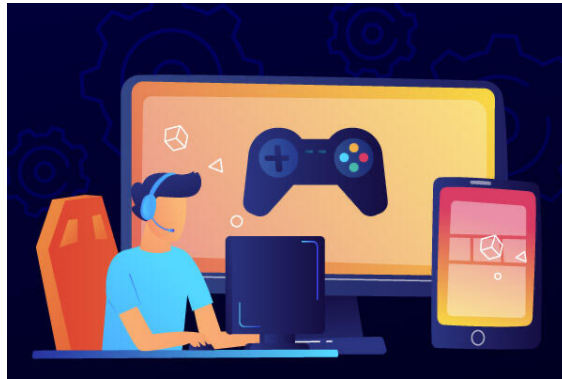

b) Explain how this game provides the player with the opportunity to make meaningful choices that impact their outcomes.

c) Explain how this game changes over the course of play.

d) Explain how this game defines rules and procedures.

Game Design Research

Your team is researching digital games for a client. You need to research their target user, and the games they play. This assignment has three phases: the creation of a user persona, a comparative analysis of existing games, and a summary describing game features that appeal to your team's persona.

1. Choose a picture from the [Profile Photos](#).
2. Create a single user proto-persona and describe their characteristics and features.
3. Identify 2-3 digital games your persona is likely to play.
4. Analyze the games and identify each game's primary features and which features the games have in common using the four game elements.
5. For each game, identify: what appeals to your user? Which of the game's features are a negative or a turn-off to your user? Why? Which features would be good to include in a game that appeals to your user? Why?
6. As a group, write a brief summary of the analysis and submit it on Google Classroom.

You only need to submit one copy for the group, but make sure each team member has their name on the paper.