AP Computer Science A
Lesson 09: Prototyping and Beta Testing

Aim	How can game testing be used to improve game design?
Objectives	Students will be able to: **1.** Describe what prototyping is and is not, and how it its used in game design. **2.** Describe what play testing is in game design. **3.** Explain why play testing is important.
Standards	**9-12.CT.9** Systematically test and refine programs using a range of test cases, based on anticipating common errors and user behavior. **9-12.CT.10** Collaboratively design and develop a program or computational artifact for a specific audience and create documentation outlining implementation features to inform collaborators and users.
Materials	Laptops
Development (Do Now) [5 mins]	Have students discuss with their group members what are some ways/techniques game developers use to improve their game designs. Then have one or two groups share their discussion with the class.
Development (Activity 1) [5 mins]	**Guided Discussion: Prototyping and Play Testing** ▪ Have students discuss with their group members what they think prototyping and play testing mean in game design. ▪ **Prototyping** is a technique in which a designer brings an idea to a tangible form in order to experiment and further explore and test ideas. ▪ **Play testing** is a process in which a variety people get to play your game and provide valuable, first-hand feedback. This helps the designer see what works and what doesn't work, which elements are fun and which are not, whether a level is too easy or too challenging, and if there are any unintended bugs in the game.

Development (Activity 2)	**Beta Testing:**
	▪ Each group with set up their Play Testing station, they will have their game set up ready for other groups to play.
	▪ Each group will be assigned one of the four game 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**.
	▪ Each group will rotate around the stations and play testing other groups' game. For each game, students will provide constructive feedbacks on the game element they were assigned at the beginning of the class.

Closing/Summary [5 mins]	Have each group share their thoughts on the play testing.
Assessment	Deliverable: A simple version of the game that is working and playable.