Grades: 4-5

SciGirls, "Game Changers"

This series showcases bright, curious real girls putting science and engineering to work as they answer questions and make unexpected discoveries in the world around them. In this episode it's game on for Jolie and her pals! Teaming up with professional game designers, the SciGirls create a hands-on board game adventure for and code an app, then share the fun at a professional game makers showcase.

After watching this episode, choose from the following questions and/or tasks to extend your learning

Question Box 1

- What is the central message in this program? Explain?
- What are the program's supporting claims or reasons that support the central message?
- What is the author trying to say through the TV program? What from the text makes you believe this?

Identify and Design:

- Why are the girls interested in game design?
- Why does Laura, the game designer, suggest that you need to play games to design games?
- What different games do the girls explore?
- What do they learn about games?
- What are "mechanics" of a game?
- Why might the "theme" of the game be important?
- What is a "core loop" in gaming?
- What are other aspects that need to be considered when developing a game?

Design and Develop:

- What is a prototype?
- What aspects do the girls brainstorm for the game they plan to develop?
- What kind of game do they develop? Describe the game board and the goal of the game.
- What is the responsibility of each girl in the game development?

Test with the Mentor:

- What do the girls discover while sharing their game with Laura?
- How does Laura help the girls?
- What do the girls do to revise their game board?
- What is the digital component they plan to use? Describe.

Testing the Prototype:

- What was the importance of testing the game with classmates?

Continued on the next page…

- What do the girls learn?
- Why was the survey important?
- What did the girls learn?

Share:

- What did the girls take away for their experience at the gaming show?

Question Box 2

- What did you enjoy about this program?
- If someone else were looking at this program, what might they learn?
- What is one thing I would like to add to this topic?
- What would you change about this program?
- If a part 2 of this program was created, what you like them to focus on?
- What would you like to research for extra credit? Why?
- What might you want next year's teacher to know about this program?
- The name of this episode is called “game changers”, what is the significance of this title? Think about a game that you enjoy playing. Think about ways you can change the game to improve it. Can your game be made into a digital game?

Box 3 (Tasks)

- In a board game, using a single number cube, how many different outcomes can there be with three rolls of the number cube? Explain your thinking.
- In planning the game makers showcase, how long would individual presentations be if there is one hour for all of the presentations if there are 12 different games? 14? How would you make the schedule?
- Design your own game:
  Download: Game Changers under the section titled “Related Links”
  Follow the directions and enjoy!
- Describe how the SciGirls use science in creating their app.
- What steps did the SciGirls use to make a board game into a digital app?

Box 4 (Enrichment)

- Try the same program the SciGirls used in this episode:
  Scratch Studio - Coding Kids
- What coding language did the SciGirls use to build their app and why did they choose that particular language?
- What sort of engineering did the SciGirls need in order to build the app?

Box 5 (Extend/Real-Life)

- Learn how to code: Codecademy: Learn to Code - for Free
- What sort of education does a professional game designer need?