**DESIGN YOUR OWN GAME**

What is a game? How is it different from a puzzle, a toy, or any other fun activity? People don’t universally agree on what makes a game, but generally accepted components include: rules, decision making, goals, interaction, and potential for change each time the game is played. Your girls play games all the time. Now, SciGirls challenges them to create their own!

**SMART START:**

🌟 Ask girls to bring in at least one of their favorite games from home (including directions). Provide additional board games for those who don’t bring them.

🌟 To be an effective facilitator, try to create your own game before introducing this activity to your girls.

**Here’s how:**

1. **Brainstorm.** Since the goal of this activity is to create a game, have girls work in small groups to make observations about how games work. Before playing, decide which observations to record about the games you are playing. Some things to consider are:

   - **Mechanics** How things work or the rules in a game. In Candyland, when you draw a red card you move to the next closest red spot. But if you draw a gumdrop card, you move to the gumdrop spot. In Trivial Pursuit, if you roll the dice and get a 5, you move 5 places.

   - **Goal** How you win a game or how a game ends. In Monopoly, your goal is for everyone else to run out of money before you do.

   - **Game pieces** Items that you use to play a game. (Not all games have pieces.) In Chess, you use six different pieces including a king, a queen, knights and pawns. In Monopoly, you use dice, player tokens, cards, houses and hotels, and money.

   - **Theme** The story told in a game. (Not all games have a theme.) In Clue, you investigate a murder and determine the culprit, the weapon, and the location of the crime.

   - **Dynamic** The main pattern of play that is
characteristic of a game. In an exploration game like Clue or Battleship, you explore the game space. In a collection game like Hungry Hungry Hippos or Hi Ho! Cherry-O, you gather items as you play. In a race to the end game like Candyland or Chutes and Ladders, you want to get ahead of your opponents and be the first to finish.

2. **Research.** Distribute one game to each small group, and tell them to read the instructions even if they have played the game many times. Before they begin, have each girl in the group select one of the game components you brainstormed in step 1 to observe. Make sure each girl chooses a different component. As they play the game, the girls should record observations on their chosen component. After 15 minutes, ask the girls to stop playing and discuss:

- **Are the rules easy to understand?** Do they make sense? What mechanics did you observe while playing?
- **Are there clear goals?** How do you know when you win or the game is finished?
- **What types of game pieces did it use?**
- **What was your game about?** Did it have a theme?
- **Can you identify the dynamic in the game you played?**
- **Is the game fun or interesting enough that you want to play it more than once?**

3. **Present client information.** A company wants to make a new game for first and second graders that two to four children can play and that cannot take more than 15 minutes to finish. Deliver the **SciGirls Challenge**: Create a game that meets the client’s requirements.  

4. **Plan.** Have each group choose one dynamic and one mechanic for their game. Girls must come up with a:

- **Theme** It should appeal to first and second graders. Encourage creativity!
- **Goal** A goal can be how the game ends, instead of how a player wins.
- **Game pieces** Remember not all games use game pieces—think of Tag!

**POINTER:** If girls are stuck on what kind of game to create, suggest they start with a game they know and alter it to fit their theme.

5. **Create Prototype 1 and test.** Create a prototype of the game using available materials. This version should not be the final, refined game—it could be nothing more than pieces of paper. However, the prototype must include written directions so that another group can play. Each group should play their game before sharing it with others.

Visit pbskidsgo.org/scigirls for videos and projects!
6. **Share.** Each group should now play another group’s game. One girl from each group should stay with their game to hear feedback, take notes, and help the testing group if they are struggling. At the end of testing, have each group give feedback about the game they played. Is the game fun? Are the directions clear? What did they like about the game? What didn’t they like? Can they think of any ways to improve it?

7. **Create Prototype 2.** Based on the feedback about the game, each group should refine their game by adding or removing different components, one at a time (mechanics, goal, games pieces, etc.). Groups should test their game after each change. Girls should add a title to the game and make sure the rules are clearly written out for anyone to pick up and play. (If there’s time, you can test your directions by watching a new group play without helping them.)

8. **Playtime!** Set up a time for everyone to go around and play as many games as possible. Invite families! Celebrate each group’s success and allow time for groups to share their process and struggles.

The **SciGirls and Kimberly discuss designing and building a game created to meet their clients’ requirements, on the SciGirls Invent DVD.** (Select The Awesome App Race: Mentor Moment.)

**SciGirls Got Game!**
SciGirls staffers have developed several games for young people. Check them out with the girls in your group and have them critique the games.

**brainSTEM**
Face a variety of challenges in Science, Technology, Engineering and Mathematics in this board game. [scigirlsconnect.org/page/brainstem-game-1](scigirlsconnect.org/page/brainstem-game-1)

**SciGirls Dream Team**
Play this cooperative game to learn more about working together to change the world! [scigirlsconnect.org/page/Dream-Team](scigirlsconnect.org/page/Dream-Team)

**Mentor Moment**
Kimberly Bryant is an IT project manager who works with companies to create applications, or apps, for use on mobile devices. Most recently, she founded Black Girls CODE to introduce girls of color to digital technology and computer programming. Kimberly hopes to inspire a new generation of coders to become creators of technology.