Activity Description

Students will work in groups to design a board game based on a book they have read. Students will be responsible for creating all aspects of the game including the game board, markers or tokens, question or challenge cards (if needed), spinners or dice, and the written directions for the game.

Activity Goals

Students will gain a better understanding of working collaboratively to generate ideas, choose an idea from those generated, and then developing all the necessary components for their idea. Students will
need to identify key components of a story (main characters, major events, plot, etc.), think creatively, and problem solve as they work through the process of creating their game.

Challenge questions:
- Did the game work? Can another group successfully it?
- Did you understand how to play the game without asking for clarification?
- Does your game have strict rules, or is there room for “House Rules”? (think, Monopoly)
- What are some changes that the designers made to the game?
- What are some changes you (the game players) would make to the game?

Standards

**ISTE 1a** - Students articulate and set personal learning goals, develop strategies leveraging technology to achieve them and reflect on the learning process itself to improve learning outcomes.

**ISTE 1c** - Students use technology to seek feedback that informs and improves their practice and to demonstrate their learning in a variety of ways.

**ISTE 3d** - Students build knowledge by actively exploring real-world issues and problems, developing ideas and theories and pursuing answers and solutions.

**ISTE 4a** - Students know and use a deliberate design process for generating ideas, testing theories, creating innovative artifacts or solving authentic problems.

**ISTE 4c** - Students develop, test and refine prototypes as part of a cyclical design process.

**ISTE 4d** - Students exhibit a tolerance for ambiguity, perseverance and the capacity to work with open-ended problems.

**ISTE 5c** - Students break problems into component parts, extract key information, and develop descriptive models to understand complex systems or facilitate problem-solving.

**ISTE 6a** - Students choose the appropriate platforms and tools for meeting the desired objectives of their creation or communication.

**ISTE 6b** - Students create original works or responsibly repurpose or remix digital resources into new creations.

**ISTE 6c** - Students communicate complex ideas clearly and effectively by creating or using a variety of digital objects such as visualizations, models or simulations.

**ISTE 6d** - Students publish or present content that customizes the message and medium for their intended audiences.

**ISTE 7c** - Students contribute constructively to project teams, assuming various roles and responsibilities to work effectively toward a common goal.
Materials & Resources

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| Available for each team:  
  - ½ sheet Poster board  
  - Markers / Crayons  
  - Pencils  
  - Notebook Paper  
  - Copy of Game Guidelines paper  
  - Access to the rest of the craft STEAM materials, including the Maker Cart  
  - Sample Board Games / Games as examples  
  - Ziploc Baggies for each team’s game components  
  - Copy Paper  
  - Masking or Clear Tape  
  - *** potentially lots of dice (reusable for each rotation) | A physical copy of each book being used - for reference purposes.  
  - Sample Board Games / Games as examples |

Setup

Arrange students into groups based on books they have read in common. You may even want, in advance, to assign a book to the group to read.

Have board games set-up around the room for students to observe.

Have copies of Game Guidelines for each team.

Implementation

Learning Context

Discuss with the students various board games they may have played. This discussion could include other non-board games such as Memory, Guess Who, etc. Try to avoid games such as Pie Face, where the game is simply a matter of luck; no knowledge or skill is involved.
Procedure

1. **Anticipatory Set:** Allow the students to observe the components of the example games around the room.
2. Discuss, as a class, some of the components that the games have in common. (game board, spinner or die/dice, directions, possibly cards, etc.)
3. Write a list of the common components on the whiteboard.
4. **Direct Instruction:** Provide each team with a Game Guideline paper.
   a. Have them take a moment to review the expectations and ask/answer any questions.
   b. Explain that they will be able to use any of the STEAM materials they need to create their game
      i. Explain that reusable components, must remain unmodified (i.e. taping something to a Keva plank is fine; gluing is not).
      ii. Explain that the ½ sheet of posterboard is for their game board, but they only get one, so they need to be sure they have sketched out their ideas on paper before working on the board itself.
      iii. Discuss the appropriate way to use the items on the Maker Cart. Specifically, that any items not used are to be returned there each day. Additionally, students should only use what they need (conservation and sharing, not waste). 
5. **Guided Practice:** Prompt the students to brainstorm some ways of designing tokens (different colored bottle caps, different pieces from the Maker Cart (think, Monopoly), varying lengths of paper clip chains, etc.)
   a. Does your game need a spinner? How could you make one?
   b. Are you going to try to make paper dice or use real ones?
   c. How many people can play your game at one me? (minimum 2)
6. **Check for Understanding:** Answer any questions.
   a. Write on the whiteboard the following outline for all groups to follow:
      i. Determine how the game will work
      ii. Decide on the important spaces (main ideas /locations from the story) to be included on the board
      iii. Sketch out a plan for the game board
      iv. Brainstorm game piece ideas
      v. Draw game board
      vi. Design pieces
      vii. Write instructions
      viii. Try it!
      ix. Adjust as necessary
7. **Independent Practice:** Allow the groups to work independently to develop their own game, including mechanics, board, pieces, instructions, etc.
   a. If a team seems stuck, have them look at (or think about) how some of the real board games function (the differences between checkers and chess (the way the pieces move), or Monopoly and Chutes & Ladders or CandyLand (the way the game board functions).
   b. If they cannot determine what to include on the board game, have them talk through the story, encouraging them to write down important events or locations (spaces for their game).
   c. As needed, have groups store their game components in ziploc baggies.
d. Written directions need to be included with the game. Can be handwritten or typed/printed.
e. Have the group try playing their game to see if the mechanics work as anticipated.
f. Encourage students to adjust any aspect of their game as needed.

8. Realistically, the games do not necessarily need to be developed on the poster board. For example, a group could use the floor as their game board, using tape to designate the play area, and demarcate specific squares.

9. Closing: Have students present their games to the class, discussing the book they read, and how they incorporated major components of it into the game. Allow groups to try playing each other’s games and providing feedback.

**Differentiated Instruction & Coaching Tips**

**Visual Learners** - Encourage students to draw their ideas or map out their thoughts on paper. Computer drawing programs could be utilized for visualization of ideas.

**Auditory Learners** - Read any directions/challenges out loud, and encourage the students to talk together to solve the problems.

**Kinesthetic Learners** - Encourage students to physically move around the room as needed to help them work out their ideas for how to design the game.

**ELS Students** - Encourage students to collaborate with their teammates to work out their ideas. Provide guidance and demonstrations only as needed.

**At-risk Students** - Encourage participation with the group. Encourage each student to come up with an idea for how to solve the proposed challenge. There are many tasks with this lesson; ensure that they are being delegated and inclusive, appropriately. Allow students to create a different style of game rather than a board game. For example, Memory, Go Fish, Guess Who, etc.

**Advanced Learners** - Encourage students to consider adding an additional component to their game (such as the Community Chest Cards in Monopoly).

**Younger Grades** - Allow students to create a different style of game rather than a board game. For example, Memory, Go Fish, Guess Who, etc.