Board Game Design: Uncertain Outcomes
Edith Kort

Presentation #417, Friday April 11, 2008, 10:30 – 12 noon,
Salt Palace Convention Center 155B

Description:
Students use of a variety of mathematics when they design board games. Participants will
design a board game with materials for teaching a unit. Discussion includes chance versus skill
in game play, and cooperative versus competitive games.

Materials

Game Boards
From Bare Books
18” square poster board
Foam core board

Dice, Spinners
Playing Pieces

Flip Chart Paper
Rulers

Index Cards
Money

Pencils, Colored pencils
Clip Board

Paper: Plain, lined, graph, Colored Paper

Adhesive: glue stick, tape, masking tape, clear packing tape

Markers: Regular and permanent

Scissors / Paper Cutter
Compass
**Day by Day Schedule**

**Day 1**  
Introduction,  
Play Games and Evaluate

**Day 2**  
Discuss Strategy vs. Chance;  
Discuss Elements of a Successful Game;  
Play 'the Yacht' game (Yahtzee)

**Day 3**  
Discuss Competitive vs. Cooperative Games;  
Play Crazy 8s, Tic-Tac-Toe, Mancala  
Students complete teammate requests

**Day 4**  
Form Teams;  
Play cooperative Scrabble;  
Choose team name; choose game theme;  
Brainstorm criteria for game Evaluation

**Day 5**  
Work on Game;  
Draft board or play method;  
Evaluate Progress

**Day 6**  
Work on Game  
Make 'to do' list

**Day 7**  
Work on Game  
Make 'to do' list

**Day 8**  
Complete Game and 'package it' with instructions and all materials;  
Test play

**Day 9**  
Play other Teams' Games  
Start Game Revision

**Day 10**  
Finish Game Revision  
Class Presentation  
Celebration
Group Evaluation Form

Name ____________________                  Group Name: ______________________

Members: _________________________
___________________________________   __________________________________
__________________________________

Identify something each of your group members did that helped the group to be effective.
_________________________________________________________________________________
_________________________________________________________________________________
_________________________________________________________________________________
_________________________________________________________________________________

On a scale of 1 (low) to 10 (high), our group worked well and accomplished our goal ____________ .

General Comments: Describe your team’s roles in the games process using the ideas below as a guide.

You:                        A ___ B ___ C ___ D ___ E ___

________________________________________
___________________________________
___________________________________

Member 1 A ___ B ___ C ___ D ___ E ___

________________________________

Member 2 A ___ B ___ C ___ D ___ E ___

________________________________

Member 3 A ___ B ___ C ___ D ___ E ___

________________________________

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<thead>
<tr>
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<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
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</thead>
<tbody>
<tr>
<td>A</td>
<td>A1. Always relies on others to do the work</td>
<td>A2. Rarely does the assigned work – often needs reminding.</td>
<td>Usually does the assigned work – rarely needs reminding.</td>
<td>Always does the assigned work without having to be reminded</td>
</tr>
<tr>
<td>D</td>
<td>D1. Usually want to have things their way.</td>
<td>D2. Often sides with friends instead of considering all views.</td>
<td>D3. Usually considers all views.</td>
<td>D4. Always helps team to reach a fair decision.</td>
</tr>
<tr>
<td>E</td>
<td>E1. Distracts teammates or talks off the subject.</td>
<td>E2. Sits quietly and doesn’t work with other team members</td>
<td>E3. Does a team task when asked to.</td>
<td>E4. Always tries to help and work with the team.</td>
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</table>
Chance vs. Strategy

Chance ←---------------------------------------------------------------→ Strategy

| Bingo | | | | | Chess |
|-------|---|---|---|---|
| War   | Monopoly | Scrabble |

Cooperative vs. Competitive

Cooperative - all players work toward a common goal

Competitive - each player tries to be the winner.
Themes

Sea Life
Haunted House
Music
Holidays
Celebrities
Sports
Dance
Skiing
Legends

Personality
Roller Coaster
TV
Places
Fashion
Colors
Food
Recreation
Book-related Theme

Elements of a Successful Game

Fun
Multiple Players
Good Graphics
How long play lasts
Skill and Luck
Entertainment
Creative
Relaxing
Board
Game Cards

Competitive
Accessories
Colors
Variations
Hand-eye coordination
Brain Bending
Suspense - unexpected events
Purpose
Path(s)
Dice

Frustration in game play (not instructions)
Game Evaluation Sheet

Game Name __________________________________________

Evaluators __________________________________________

What did you like about this game?

What was frustrating about this game?

What suggestions do you have to improve this game?

What would you tell a friend about this game?
### Game Feedback Sheet

Name ___________________________  
Game: game 1 / game 2 / game 3 / game 4

Likes:  
1.  
2.  
3.

How does it meet game criteria?  

<table>
<thead>
<tr>
<th>Fun</th>
<th>least</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>comments</th>
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<tbody>
<tr>
<td>Easy to Understand</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td></td>
<td></td>
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<tr>
<td>Attractive</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
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<td></td>
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<tr>
<td>Time to Play</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Interaction</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
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<table>
<thead>
<tr>
<th>Scoring/Winning</th>
<th>Not appealing</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>appealing</th>
<th>comments</th>
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<tbody>
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<td>Objective</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
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<td></td>
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<tr>
<td>Theme</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
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Chance/Strategy (chance) 1 2 3 4 5 (strategy)

What would give the game more strategy?

How could the game be changed into a cooperative game?

What makes the game interesting to play?

What would make it more interesting?

Would you recommend this game to a friend? __ Yes __ No
Why/why not?

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http://www.mtholyoke.edu/proj/summermath/
References

On-Line

http://www.1stingames.com/homelinks.htm  Games-Related Links
http://www.1stingames.com/rules/  Game Rules and Score Sheets
http://www.1stingames.com/rules/yahtzee/scoresheet.pdf  Yahtzee Score sheet
http://www.barebooks.com/gameboards.htm  Bare Books – Commercial-type blank game boards, money, markers, cards, dice and spinners

Dollar Tree Stores  Dice, Cards, Poker chips, pieces to use for markers
Staples, Office Max, Office Depot, BJ’s  Poster Board

http://www.banknotes.com/images.htm  Money Images
http://www.mtholyoke.edu/proj/summermath/  SummerMath

Books

Board Games Round the World  by Robbie Bell and Michael Cornelius

More Math Games & Activities from Around the World  by Claudia Zaslavsky

Math Games & Activities from Around the World  by Claudia Zaslavsky

New Rules for Classic Games  by Wayne Schmittberger