



## Representation of Mathematics Through Bridge



Kitty Cooper

American Contract Bridge League

Booth 559

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1

National Council of Teachers of Mathematics 2007 Annual Meeting, Atlanta, GA, March 21-24 **Booth 559**



## Session Objectives

- Introduce math teachers to the game of bridge as an illustrative teaching tool
- Demonstrate using bridge in the classroom



2

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# Contents

- What is Bridge?
- Math Basics in Bridge
- Using Bridge in the Classroom
- Summary



3

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# Background Information



- Bridge is played all over the world
- It has been popular for more than a century
- It can be played at home, on the computer or informal competitions

4

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# What is Bridge?

*"All of life's lessons are learned in the game of bridge"*

- Intense fast-paced competitive card game
- Demands concentration, quick thinking
- Easy to learn at all ages
- Requires socializing, teambuilding, strategizing
- Sharpens skills needed in the classroom and in life
- Great to learn analytical and social skills
- Thousands of all ages, play it daily
- Played globally in schools for learning
- It's fun!



5

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# The Gym For Your Brain

- Improves memory and concentration
- Improves ability to develop and modify plans
- Develops judgment and teamwork abilities
- Develops logic and analytical skills
- Increases social skills
- Levels the playing field for students with physical challenges



6

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## All Kids “Make The Team”



- *Bridge builds relationships, feelings of self-worth and concentration.*  
Barbara Trahan, Principal, Westlawn Elementary School.
- *Bridge allows me to compete fairly with adults and sometimes win!*  
Katie Tong, Sophomore, Benjamin N. Cardozo High School, Bayside, New York.
- *I play because it's fun, but playing bridge also requires I practice logic and probability.*  
Annie Martin, Senior, Thomas Jefferson High School.

7

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## A Cornucopia of Skills

- Addition
- Comprehension
- Communication
- Concentration
- Cooperation
- Creativity
- Critical Thinking
- Defending Decisions
- Decision Making
- Ethics
- Handling Challenges
- “Language” of Bridge
- Listening
- Logical Thinking
- Long Division
- Multiplication
- Pattern Recognition
- Problem Solving
- Reasoning
- Recall
- Recognition
- Statistics
- Strategy
- Subtraction
- Teamwork



8

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# What the Research Says

Based on two national surveys: an online survey with 16-26 year olds from across the country and a phone survey with K-8 teachers nationally.

**69%**  
Of teachers would consider teaching bridge or MiniBridge in the classroom if shown to improve math, communication and socialization skills

**37%**  
of students would be interested in learning bridge

**25%**  
of teachers are interested in learning bridge for fun

9

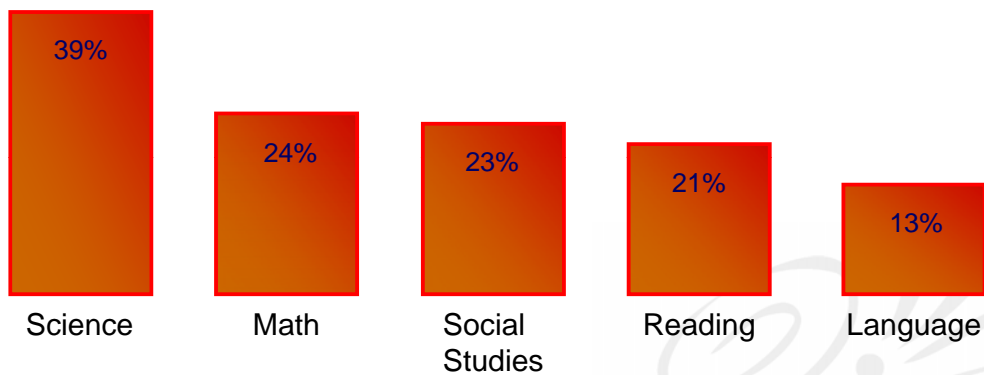
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# What the Research Says

Researcher finds link between bridge and improved test scores in children.  
"Statistically Speaking." [Bridge Bulletin](#) 17 Aug. 2006.



Shows the average increase of standard test scores among bridge players when compared to non-bridge players.

10

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## Increased Popularity with Youth



*I used to think it was just a game, but it turned out to be more like math and more fun. It has made me smarter – there's a lot of mental math.*

Mili Raina, (10), One of the winners of the Georgia State Championship Youth Open Teams Bridge Championship, March 2007.

11

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## Math Basics



12

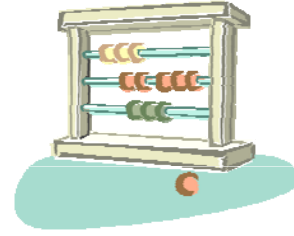
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## Demonstration of Skills

- Addition and Subtraction
  - Scoring, hand evaluation, number of cards left in suit
- Logic
  - Figuring out the opponent's hand from the bidding and the play
- Percentages and Statistics
  - The number of hands any player can have is 635 *billion*



*To be discussed further when we play*

13

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## Critical Thinking Skills

*Bridge develops and reinforces:*

Critical thinking  
Reasoning  
Concentration  
Problem solving  
Communication  
Inferential reasoning

14

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# Bridge in the Classroom



15

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# Scoring

<i>GAME Contracts</i>	<i>Scoring</i>
<b>3 NT</b>	<i>first trick 40 others 30</i>
<b>4 ♠</b>	<i>MAJORS</i>
<b>4 ♥</b>	<i>30 points a trick</i>
<b>5 ♦</b>	<i>MINORS</i>
<b>5 ♣</b>	<i>20 points a trick</i>

- 1. *Partscore Bonus*
- 1. *Game Bonus*
- 50 *Each Undertrick*

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## Resources

- ACBL School Bridge Lesson Series
  - A proven program since 1989
  - 6,000+ students participate each year in more than 400 programs in North America
- Learn to Play Download
- MiniBridge Download
- [www.KittyCooper.com](http://www.KittyCooper.com)
- [www.acbl.org](http://www.acbl.org)
- [www.bridgeiscool.com](http://www.bridgeiscool.com)



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17

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## Summary

- Bridge is a fun way to illustrate math principles in the classroom.
- Popularity of bridge is growing worldwide.
- Support and resources are available.
- Contact the ACBL for more information at [www.acbl.org](http://www.acbl.org).
- Resources and information also available at [www.BridgeisCool.com](http://www.BridgeisCool.com).



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18

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