



Math at Home!

Sean Davey

Rithmetic
MATH CLUB



Why Games?

- Games build more than just basic math skills
- Games help develop a *fondness* for math
- Games give you a real window into both their computational skills and their strategic thinking
- Games can help build confidence

“I love the games because even though I struggle in math, I feel like I’m just as smart as everyone else. I can learn more when we play.”



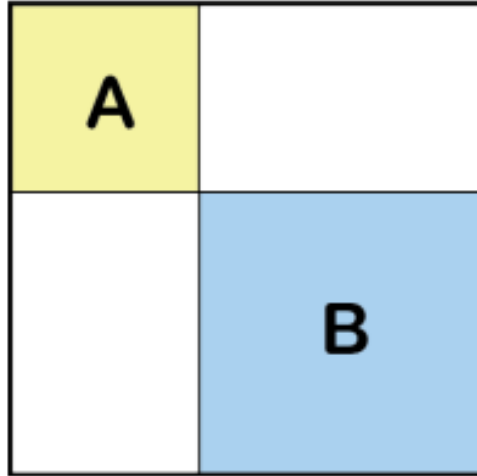
Why Games?

- Games build more than just basic math skills
- Games help develop a *fondness* for math
- Games give you a real window into both their computational skills and their strategic thinking
- Games can help build confidence
- Games aren't graded or judged
- Games are a lot easier to get most kids to do!



The “How”!

- Not just games and puzzles.
- Do it *whenever* they have time.
Schedule time!
- Do it before they do something else.
- Try to “teach” as little as possible.
- Do word problems.
- Treat mistakes as opportunities.
- Look for math in the world
- Learn something new with them.
- Fill your home with blocks and games and puzzles.
- Read non-fiction.
- Food, sleep, and exercise!



Square A has an area of 16 cm^2 and square B has an area of 36 cm^2 .
What is the perimeter of the original square?

*Other Good
Stuff!*

- Khan Academy:
www.khanacademy.org/
- Kangaroo Math:
<https://kangaroo.math.ca/>
- Solveme:
<https://solveme.edc.org/>
- <https://mathszone.co.uk/>
- www.k5learning.com/free-math-worksheets
- www.cemc.uwaterloo.ca/resources/elementary.html
- nrich.maths.org/
- www.mathsisfun.com/

Thank You!

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- www.rithmetic.ca

Plus-Minus

- **Requirements:** One deck of regular playing cards with face cards removed.
- **Two player game:** One player adds and the other subtracts.

How to play:

- Shuffle what is left of the deck and split the cards *roughly* evenly between the two players.
- The goal of this game is to get to your target amount before the other player gets to their target.
- The player that is adding goes first by flipping over a card.
- Because there is a slight advantage to going first, you can cut cards or do rock, paper, scissors to determine who gets to add.
- Using 15 as a starting point, the first card is added to 15 with the goal of eventually getting to 30. The second player will flip a card and subtract the amount of his overturned card from the new total, with the goal of getting to zero.
- So if player one flips a 7, the total goes to 22 ($15 + 7$). Then if player two flips a 6, we go back to 16 and so on until someone wins by hitting either 30 or 0.
- Sometimes the game lasts only a few flips, sometimes it goes through the whole deck.
- If it does go on for a while, when someone runs out of cards, the other player gives them enough to make things equal and they then play to the end of the deck, with the winner decided by who is closest to their goal.
- A tie would result only if you ended back at 15 at the end of the deck.

Five Generals

- **Requirements: Deck of cards with face cards removed**
- **Two player game**

How to Play:

- Deal out five cards each face down in a row in front of each player. Do not look at your cards – These are the armies.
- Then deal out 5 cards each face up, one on top of each army. These are the generals.
- Decide who goes first (cut cards, R/P/S, etc.)
- The first player, after looking at only the generals, decides which opposing army to attack and the two players flip those army cards. The winner of the battle is the player with the largest sum or product. The winner keeps all four cards.
- The loser of the battle gets to counter-attack by choosing one of the opposing players armies to battle with one of their remaining armies.
- If there is a tie, a second set of armies is chosen to go into battle and the winner of that battle gets all eight cards.
- The winner of the game is the player that wins the most cards/battles
- If there is a tie in the fifth battle and the game is even at two battles a piece then each player choses two new cards, with the greater sum or product winning the game.

Tic-Tac-Toe Products

- **Requirements: Playing Board, Game Markers**
- **Two player game**

How to play:

- Player 1 and Player 2 each place a marker under one number (from 1 – 9) at the bottom of the game board.
- Player 1 then moves only one of the two markers under a new number and then places one of their markers on the grid covering the sum of the two numbers.
- Player 2 then moves only one marker at the bottom to a new number and then places one of their markers on the grid over the resulting sum.
 - The markers *can* both be placed under the same number.
 - For example $6 + 6 = 12$.
- Players alternate moving one number marker at a time and continue placing their markers on the grid until a player has marked four sums in a row.
- After the game players should discuss their strategies.

Tic-Tac-Toe Products

1	2	3	4	5	6
7	8	9	10	12	14
15	16	18	20	21	24
25	27	28	30	32	35
36	40	42	45	48	49
54	56	63	64	72	81

1 2 3 4 5 6 7 8 9