Mega-Fun Mathematics Games for the Classroom and Home
Presented by Dr. Karol L. Yeatts

<u>**CARD GAMES**</u>

Find Your Place Value *(from Mega-Fun Card-Game Math Grades 1-3)*
This game will show whether children have a good grasp of place value and are able to read numbers.
Deal out the cards (aces through 9 and the Jokers=0. Players place their cards in a stack face down in front of them. Players turn over four cards and places them in front of them. Next, players arrange three of their cards to make the largest possible 3-digit number. One of the four cards turned over may be discarded. Players take turns reading their number. The player with the greatest number is the winner of that round and collects all the played cards. Play continues until all cards are used. The player with the most cards at the end of the game is the winner. **NOTE:** This game can be adapted by having four or more places or by having children arrange their cards to form the least number.

"Oh, No!" *(from Mega-Fun Card-Game Math Grades 1-3)*
This game provides children with an opportunity to practice the operation of addition and to dabble in a game of chance.
Remove all the face cards. Shuffle the cards (aces-10s) and stack them face down in one pile. The first card on the stack is turned over and becomes the "Oh No!" card. The object of the game is for Players to gather as many cards as possible before an "Oh No!" card comes up. At any time during the game Players may choose to stop drawing cards. When Players choose to stop, they add the value of their cards. The sum of their cards is their score for that round. If Players continue to draw cards and an "Oh No!" card is drawn, all Players (except for those who have chosen to stop) lose all of their cards and receive no points for that round. After an "Oh No!" card is drawn, all the cards are reshuffled and placed back in the pile. The game continues with a new "Oh No!" card being drawn from the pile. The game ends when a Player reaches 100 points.

Plus and Minus *(from More Mega-Fun Card-Game Math Grade 3-5)*
This game reinforces addition and subtraction facts.
Players need 1 shuffled deck of cards pencils and paper and Calculator (optional). There are four steps to the game as players select cards to add and subtract as they try to get the greatest answer. The player with the greatest answer wins the game.
- Step 1: One player deals five cards to each player and stacks the remaining cards face down in a pile. Each player selects any two cards to use to add together and then discards the remaining cards. Players record the total of the two cards.
- Step 2: Players are dealt three cards and each player selects one card to use to subtract from the previous answer. Players record their new answer. The remaining two cards are discarded.
- Step 3: Players are dealt two cards and each player selects one card to use to add to the previous answer. Players record their new answer. The remaining card is discarded.
- Step 4: Players are dealt one card and each player uses the card to subtract from the previous answer. Players record their new answer.

Step 1: Add two cards	Step 2: Subtract one card	Step 3: Add one card	Step 4: Subtract
$12 + 9 = 21$	$21 - 3 = 18$	$18 + 10 = 28$	$28 - 9 = 19$

Balancing Act *(from Mega-Fun Card-Game Math Grades 1-3)*
This game is an introduction to the basic algebraic principle of balancing equations..
Players will need one shuffled deck of cards with the face cards removed and a copy of the Balancing Act game board. One player places four cards on the Balancing Act game board arranging the cards to make two addition problems. The first player selects a card from the deck and decides which card on the game board he/she will remove and substitute the newly drawn card for. If the player is able to balance the expressions, the player scores a point. If the player is unable to balance the expressions, the next player draws a card from the deck to try and balance the expressions. Players continue drawing one card at a time until the sums balance. The game ends when one player reaches ten points.

Multiple, Multiple *(from More Mega-Fun Card-Game Math Grade 1-3)*
This game reinforces the multiplication facts from 1-10
Players use 1 shuffled deck of cards Aces (1) through 10 with face cards removed. One player deals the cards evenly between the players. Each player turns over two cards. Each player multiplies the values of the cards and states the answer. The player that correctly answers the problem first wins the round. If both players answer correctly, the player with the greater product wins the round. If a player answers incorrectly, the other player(s) score one point.

Popular Products *(from More Mega-Fun Card-Game Math Grade 3-5)*
This game reinforces the multiplication facts from 1-6
Players use 1 shuffled deck of cards Aces (1) through 6, a table numbered 1-36 and 10 counters/chips for each player. Players place their 10 counters on their numbered grid in any way they choose. More than one counter may be placed on a number. Player 1 draws two cards and finds the product of the cards. If any player has placed a counter on that number on the numbered grid then he or she removes the counter. If more than one counter covers the number only one counter may be removed at this time. The next player draws two cards and the play continues. Reshuffle the cards as needed. The game ends when a player removes all ten counters.

Number One! *(from More Mega-Fun Card-Game Math Grade 3-5)*
This game reinforces the order of operations and parentheses as players create equations that equal 1.
Players will need 1 shuffled deck of cards with face cards removed cards with parentheses and operation symbols. One player deals ten cards to each player. Players group their cards, using parentheses, to make an equation the equals 1. Players check each other's equations. If the equation is correct, players receive 1 point for each card used and 5 points for each set of parentheses. If the equation is incorrect, players loss 10 points. Reshuffle the cards and begin round two. At the end of 5 rounds, the player with the highest number of points wins.

Equation Completed!
This game provides practice for creating equations for a given answer.
Players will need 1 shuffled deck of cards with face cards removed and a calculator (optional). One player deals ten cards to each player and stacks the remaining cards face down in a pile. When all players have their cards and are ready to play, one player turns over the top card on the pile and lays it down for everyone to see. This is the answer card. Players use their cards to create an equation that equals the value of the answer card. Players may use any operation, addition, subtraction, multiplication, division or any combinations of operations (following the order of operation rules) and must use at least two of their cards when creating their equations. The first player to make an equation says, "Equation Completed!" The player must then prove that his or her completed equation is correct. If the player's completed equation is correct, the player scores 5 points.   If the equation is incorrect, the player loses 10 points. The game continues by turning over the next card on the stack.

As Close As Possible
This game reinforces estimation skills as players decide where to place their cards.
Players need 1 shuffled deck of cards with tens and face cards removed, *Choose Your Place* game sheet for each player and pencils. One player deals seven cards to each player and stacks the remaining cards face down in a pile. Player 1 chooses one of his or her cards to place in a space trying to get as close as possible to the indicated card value. After placing the card, Player 1 draws a card from the pile and Player 2 takes a turn. The game continues until all spaces are filled. Players find the difference between their card values and the card values shown on the game sheet. Players total their differences. The player with the lowest total wins

Player's Card Value		Difference	Card Value	
5		0	5	
2	3	2	2	5
4	9	1	5	0
1	0 1	1	1 0	0

The total of the difference between each card value is __4__.

Equivalent Pairs *(from More Mega-Fun Card-Game Math Grade 3-5)*
*The game reinforces equivalent fractions.*
Players will need 1 shuffled deck of cards with face cards and jokers removed. Players take turns drawing one card at a time from the deck. Players must decide where to place their cards to create two fractions that are equivalent. If a player does not want to use a drawn card, the card is placed face up on the discard pile. Players continue drawing and discarding cards until one player forms an equivalent pair. The first player to form an equivalent pair scores one point. Cards are reshuffled and another round begins. The first player who scores 10 points wins the game.
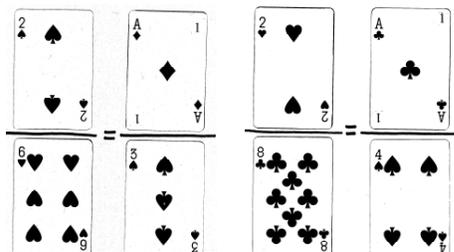
Fraction Line-Up *(from More Mega-Fun Card-Game Math Grade 3-5)*
This game reinforces ordering fractions as players arrange fractions from the least to the greatest.
Players need 1 shuffled deck of cards with face cards and jokers removed. One player deals 12 cards to each player and stacks the remaining cards face down in a pile. When all players have their cards and are ready, the game begins. Players must first use all of their cards to create six fractions. Players then place their six fractions in order from the least to the greatest fraction. The player who correctly lines up the fractions first is the winner and scores one point. All the cards are collected and reshuffled and round two begins. The first player who gets five points wins. Example: The player receives the following cards and creates six fractions and arranges them in order from the least to the greatest fraction.
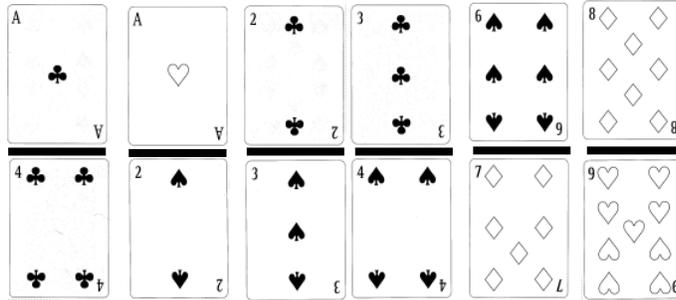
Dueling Decimals *(from More Mega-Fun Card-Game Math Grade 3-5)*
This game provides students with practice comparing decimals as they create a decimal number with the greatest value.
Players need 1 shuffled deck of cards and Jokers (0) with tens and face cards removed and the Dueling Decimal game sheet. Player 1 removes an Ace (1), 2, 3 and 4 from the deck of cards and shuffles these four cards and lays them facedown. Player 2 then turns over one of the four cards. Starting from Box 1 on the Dueling Decimal game sheet, Player 2 counts to the right the number of boxes equal to the value of the turned over card and places the card facedown on that box. This becomes the decimal point. For example Player 2 turns over a 3 and places this card facedown on Box 3 to indicate the decimal point. Player 1 picks up the remaining three cards and shuffles them into the deck of cards. Players now take turns drawing a card from the deck. Cards are placed on the Dueling Decimal game sheet starting with the box furthest to the right and moving to the left. Players continue drawing cards from the pile and filling in the boxes on the game sheet. After all boxes are filled, players compare their decimal number. The player with the greatest decimal number wins the round. The game continues until all cards in the deck are used.

Player 1 has 38.6   Player 2 has 59.4
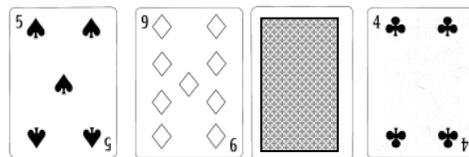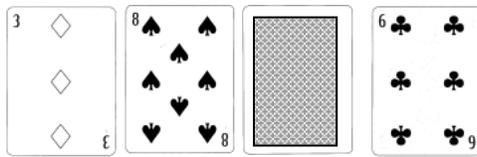
Box   1   2   3   4   Box   1   2   3   4
Player 2 has a greater number than Player 1 and wins the round.

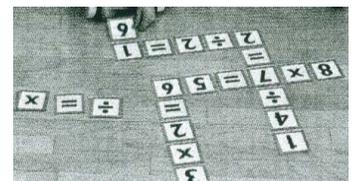**Coordinate Pairs in a Row** *(from More Mega-Fun Card-Game Math Grade 3-5)*
This game reinforces plotting coordinate pairs.
Players will need 1 shuffled deck of cards with jokers and face cards removed, a coordinate grid and two different colors of counters. Players take turns drawing two cards at a time from the deck. The first card drawn is the x-axis and the second card is the y-axis. Players locate the coordinate pair on the game sheet by counting over on the x-axis and up on the y-axis. Players place a counter on the coordinate pair and discard the cards. If an opponent's counter is already on a coordinate, a player may choose to bump the counter off and place his or her counter on that coordinate. Players continue taking turns drawing and discarding cards until one player gets three counters in a horizontal, vertical or diagonal row to win the round. Cards are reshuffled and another round begins.

Math Scramble *(from Houghton Mifflin's 2005 Mathematics Series)*
This game reinforces multiplication and division.
Players need 3 sets of cards 1-9 and 15 cards with the symbols **x,** ÷ and = . Player 1 deals all the number cards. Players take the symbol cards as needed. Player 1 builds a multiplication or division sentence using the number cards and any symbol card as needed. Player 2 builds a number sentence onto Player 1's number sentence. Players take turns building connecting number sentences until one of the following happens. One player has used all of his/her number cards. Neither player is able to build another number sentence. The player who runs out of cards first wins. If both players have cards left, the player with fewer cards wins.

Quotient Quest *(from Houghton Mifflin's 2005 Mathematics Series)*
This game reinforces division.
Players need 2 sets of cards 1-9 and a division frame. Players shuffle cards and deal five cards to each player. Players arrange their cards in the division frame so the quotient will be the least possible one that can be made. Players divide to find their quotient and then compare each other's quotients. The player with the least possible quotient scores one point. Play continues until a player scores ten points.
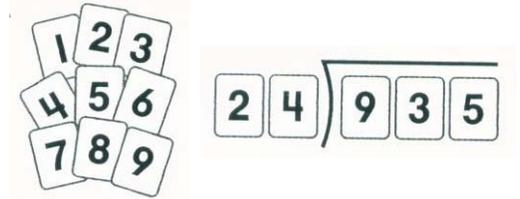
Estimation Destination *(from Houghton Mifflin's 2005 Mathematics Series)*
This game reinforces estimation skills.
Players need one number cube, 0-9 playing cards, pencils and paper. One player rolls the number cube twice and writes the numbers rolled in order. The other player uses a marker as a decimal point and places it before, after, or between the numbers. This is the target number. Each player then draws four number cards. Players use the cards to make two decimal numbers whose sum or difference is a s close as possible to the target number. The sum or difference closest to the target number scores two points. Repeat. The first player with 10 points wins.

Card Teasers
This activity reinforces critical thinking and problem solving skills.
Using only cards 1-9, have players make two straight lines of numbers, each with five cards that have the same total.
Using only cards 1-9, have players divide the cards into three groups, each having the same number of cards and the same total.

NUMBER CUBE GAMES

Make a Difference *(Quick-and-Easy Learning Games: Math Grades 1-3)*
This game reinforces number sense and comparing numbers (greater than, less than, and equal to).
Players will need a number board, chips and a number cube. Players take turns rolling two number cubes. The number cubes represent rows from which the player selects numbers. For example, a roll of 6 and 3 means that the player can choose any number from Row 6 and another number from Row 3. If a player rolls doubles, both numbers are selected from the same row. Once the rows have been determined and the numbers are selected, the player completes a subtraction problem using the selected numbers. The player whose difference is the greatest, earn a point for that round. The first player to earn 5 points wins the game.

Rectangle Race *(Quick-and-Easy Learning Games: Math Grades 1-3)*
This game reinforces multiplication, addition, area and visual/spatial reasoning.
Players need a grid sheet, number cubes and crayons. Taking turns, players roll the number cubes for the dimensions of a rectangle to shade in on the grid. For example, a player who rolls 3 and 5 may shade in a 3 x 5 rectangle or a 5 x 3 rectangle anywhere it will fit. Rectangles may border each other but may not overlap or extend past the game grid. Play continues until a player does not have enough space to shade a rectangle. At that point, everyone finds the total number of grid boxes that they had shaded. The player who has shaded the greatest number of squares (area) wins.

Toss and Tally *(Quick-and-Easy Learning Games: Math Grades 1-3)*
This game reinforces addition, patterns, combinations, graphing and probability.
Players need a game sheet, two number cubes and pencils. Players will roll the number cubes and color a space of the game sheet that represents the sum of the number cubes rolled. Play continues until a player fills a column completely to the top.

Catherine and Napoleon *(from Number Cube Games: Grades 3-6)*
This game reinforces number sense, greater than and less than and problem solving skills.
Players will need two number cubes and 20 counters. Players place four counters in the center of the table. Each player rolls the two number cubes in secret. The sum of the number cubes is the player's secret number. Players take turns guessing each other's secret number. If a player guesses incorrectly, the other player says either "Catherine" or "Napoleon." Catherine means that the secret number is greater than the number guessed. Napoleon means the secret number is less than the guessed number. A round ends when each player has made one guess. After each round one counter is removed. Whoever guesses the other player's secret number first wins the counters left on the table.

Knock Out *(from Number Cube Games: Grades 3-6)*
This game reinforces addition and problem-solving strategies.
The object of the game is to roll the number cubes to knock out as many numbers from 1 to 9 as you can. Add the leftover numbers to the score. The low scorer wins. Each player writes the numbers 1 to 9 on a piece of paper. Player 1 rolls two number cubes. The player looks at the number rolled and "knock out" either the numerals on both number cubes or the sum of the number cubes. The player then crosses out the "knock out" numbers on his or her paper. Player 1 keeps rolling as long as he or she can knock out numbers. Add the leftover numbers (numbers not crossed out) for the score. Player 2 takes a turn. After both players have rolled, compare scores. The lowest scorer wins the round. The high scorer starts the next round.

Overboard! *(from Number Cube Games: Grades 3-6)*
This game reinforces addition, place value and probability.
The object of the game is to roll a number cube until a score of exactly 25 has been reached. If you "go overboard" (score higher than 25), you lose! Players take turns rolling a number cube. For each roll, add the number to the player's score. If a Player's score gets close to 25, he or she can pass (choose not to roll). If every player passes in a round, the game ends. The player closest to 25 wins. If a player's score goes over 25, he or she is out. If a player scores exactly 25, he or she wins. If all but one player goes overboard, the remaining player wins. Start a new round. A different player rolls first on each round.

Score 24 *(from Number Cube Games: Grades 3-6)*
This reinforces computation skills, fractions, exponents, decimals, place value and problem-solving strategies.
The object of the game is to make four numbers total 24. The closer you come to 24, the fewer points you earn. The low scorer wins the game. The first player rolls four number cubes. Each player must use these four numbers to try to make an equation that equals 24. Players can use any math operation. They can also combine numbers to make two- and three-digit numbers. For example a player rolls a 1, 2, 3, and 6. Player 1 uses the 1 and 2 to make a two-digit number, 12, then adds 12 + 3 + 6 = 21. The score is 3 (24-21=3). Player 2 uses 3 x 6 = 18; 18 + 2 = 20; 20 + 1 = 21. The score is 3 (24 - 21 = 3). Player 3 uses 3 - 1 = 2; 2 x 2 = 4; 4 x 6 = 24. The score is 0 (24 - 24 = 0). Players record their scores. Roll the number cubes to begin the next round. After 5 rounds, the low scorer wins.

Gridlock *(from Number Cube Games: Grades 3-6)*
This game provides addition practice for sums to 14.
Players take turns rolling one number cube and writing the number in any open grid space. Players continue rolling and recording their numbers on the grid until a player creates a row, column, or diagonal that adds up to 14. If a player creates a sum of 14 and does not see it, whoever spots it before the next roll can claim the win.

Twenty Wins
This game reinforces addition and subtraction.
The first player rolls two number generators. The player can either add or subtract the two numbers. Next, the player writes the sum or difference anywhere on the game sheet. The second player then does the same thing. The game continues until one of the players can successfully put the four digits together into a square that totals 20. That player scores one point. The game continues until the board is full of numbers.

Three in a Row
This game reinforces the order of operations
Players need 4 dice per group, pencils, paper, the Three in a Row game board, Timer, calculators (optional). Players decide who goes first. Player 1 begins by rolling all four dice. Player 1 has three minutes to use the four numbers shown on the dice to create problems with a solution that appears on the game board. The four numbers must be arranged following rules for the order of operations. Example: Player rolls a 1, 3, 5, and 6 and creates the following problems:

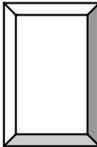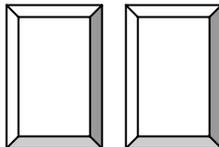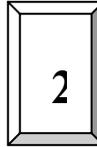   63 + 15 = 78   65 + 1 + 3 = 69   6 x 5 + 13 = 43   6 x 3 x 5 + 1 = 91
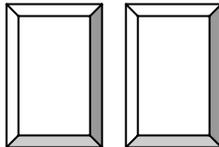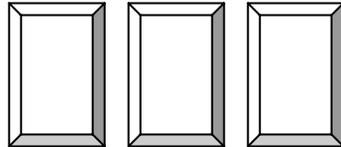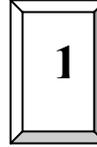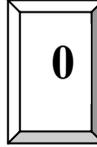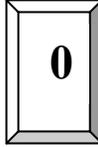
After Player 1 completes the problems he/she shares the solutions with the other players who check to see if the problems are correct. If the player's solutions are correct, the player places markers on the game board to cover the solutions. The game continues as the next player rolls four dice and creates problems. The game ends when one player has three markers in a row (horizontal, vertical or diagonal).
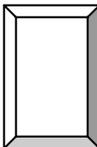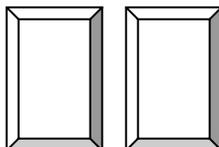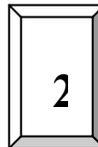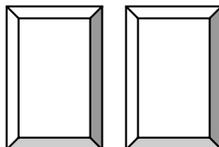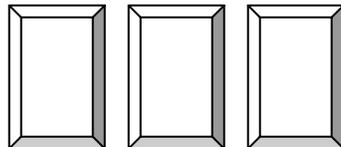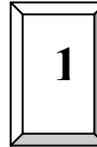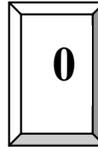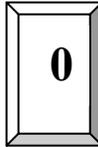
Resources
1. Egan, Lorraine Hopping, *Number Cube Games: Grades 3-6*. Scholastic Professional Books: New York, NY, 1998.

2. Greenes, C., Larson, M., Leiva, M., Shaw, J., Stiff., Vogeli, B., and Yeatts, K. , *Houghton Mifflin Math* Grades K-5. Houghton Mifflin Company, 2005.

3. Yeatts, Karol L., *Mega-Fun Card-Game Math: Grades 1-3*. Scholastic Professional Books: New York, NY, 2000 (1-800-724-6527)

4. Yeatts, Karol L., *More Mega-Fun Card-Game Math: Grades 3-5*. Scholastic Professional Books: New York, NY, 2005.
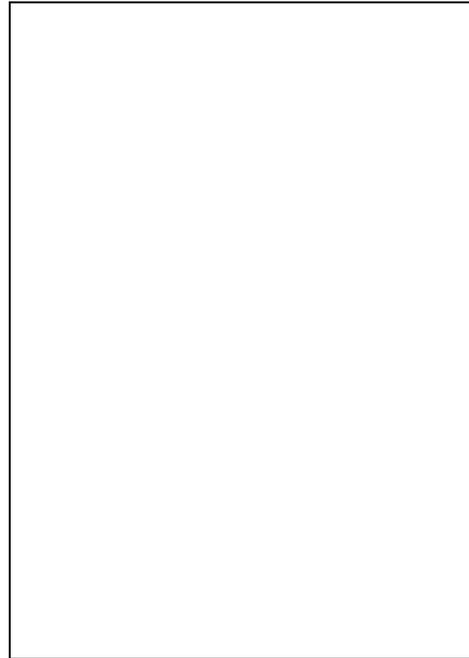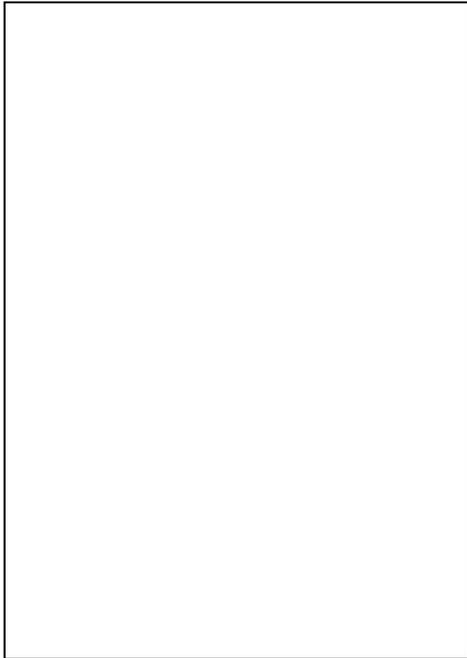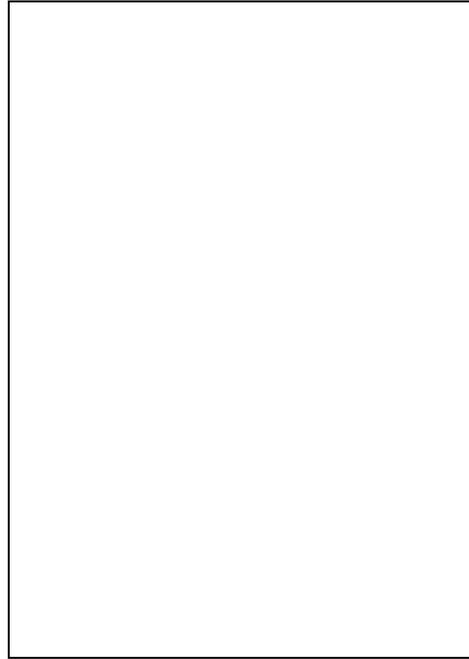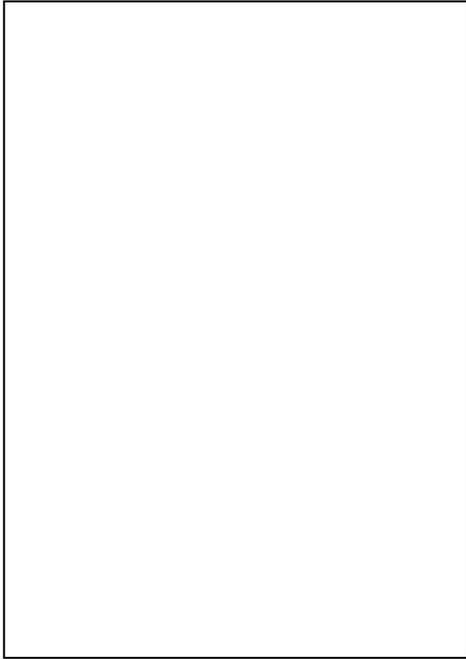
As Close As Possible Game Sheet

Your Card Value	Difference	Card Value
☐		5
☐ ☐	_____	2 5
☐ ☐	_____	5 0
☐ ☐ ☐	_____	1 0 0
	_____	

My total of the difference between each card value _____

Your Card Value	Difference	Card Value
☐		5
☐ ☐	_____	2 5
☐ ☐	_____	5 0
☐ ☐ ☐	_____	1 0 0
	_____	

My total of the difference between each card value _____

Equivalent Pairs Game Sheet

=

Parentheses and Operation Symbols

| $+$ | $-$ | $\div$ | $\times$ |

| $($ | $)$ | $=$ |

| $+$ | $-$ | $\div$ | $\times$ |

| $($ | $)$ | $=$ |