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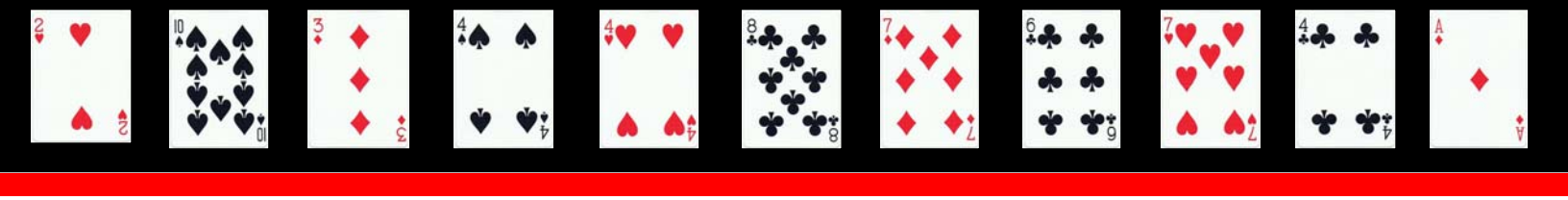
A Collection of Math Games

Acing Math

(One Deck At A Time!)



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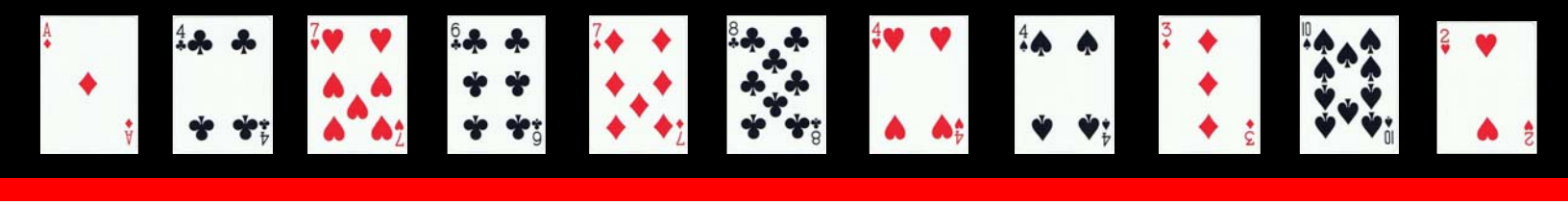

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Acing Math (One Deck At A Time!)
A Collection of Math Games

The Positive Engagement Project believes it is possible for a teacher to make the material and activities they use challenging and still have fun in their classroom. We know time is one of the biggest obstacles in teaching, so we have compiled a collection of engaging math games, ranging from Kindergarten to the upper elementary grades, using only an ordinary deck of playing cards. These games have been created by The Positive Engagement Project or found online to help make math entertaining and lively. Keeping our students interested, active, and engaged makes a significant difference in the overall learning experience and we believe this collection of math games will do just that.

In mathematics, basic addition, subtraction, multiplication, and division facts are the foundation upon which the rest of our students' math learning will be built. While many children recoil at the mere suggestion that they work on these vital basics, all kids love to play games. Acing Math has games covering these four core skills! In addition to these core skills, there are games covering fractions, percents, decimals, patterns, positive and negative integers, as well as many others. Using games from Acing Math during instruction can be an effective educational tool as well as a way to make math fun for the students and the teacher. As author Marilyn Burns says in her book, *Win-Win Math Games*: "Games help to lift math off the textbook pages, and they support students' learning about numbers and operations."

Besides the benefit of giving students a break from worksheets, math card games are an effective multisensory reinforcement tool. “The cards enable a concrete and user-friendly introduction to, and motivator of, the more formal and abstract concerns of several branches of academic mathematics” (Baker, 1999). Acing Math provides extra repetition and creative ways to practice the same thing using the same set of cards in a variety of ways making it seem new and different. Let’s take a closer look at some of the benefits.

Benefit #1 - Multisensory Support

Math card games provide an excellent source of multisensory support as part of a well rounded educational program. What a card game does is give the students something to hold, touch, and move around while they see the facts on the cards and say them as well. Manipulating the cards in a variety of games, whether it is matching, making decisions on which answer is higher, or creating groups of similar attributes, is a highly effective multisensory tool. “Cards provide a manipulative that is inexpensive, easily stored and kinesthetically accessible to most humans. The standard deck is imbued with a rich mix of patterns and symmetries that are visually recognizable” (Baker, 1999).

Benefit #2- Extra Repetition

When you play a card game there are a limited amount of facts that can be used. In a regular deck of cards there are four of each number; as a result, when playing a card game, the same fact will

present itself over and over again, allowing the students plenty of opportunity for repetition to support the objective of the given lesson.

Benefit #3- Variety Allows the Same Thing to Look New

Teachers can go crazy thinking of different ways to practice the same facts to help students learn without getting bored. There are a plethora of card games within Acing Math as well as never ending adaptations. With all the varieties available in this collection of games, practicing the same facts over and over again will seem like a new activity with each new version of a game played. Also, "…card game activities offer a physiological and psychological edge over traditional didactic methods in the math classroom" (Baker, 1999).

Acing Math is a supply of unique and interesting card games to use in math class that will help make math fun for students. The students will be happy to play games and the games will help their memories absorb the facts; all while the teacher benefits by keeping educational quality alive and breaking the routine with something fun, engaging, and effective at the same time. Math practice games are also useful as centers, during free time, or during indoor recess. You will be surprised at how many students will ask to play these math games after you teach them how to play. As you can see the possibilities are endless, so enjoy and ***please let us know of any games you have that we can add to this resource for teachers everywhere.***

You can contact The Positive Engagement Project at: pepreps@yahoo.com

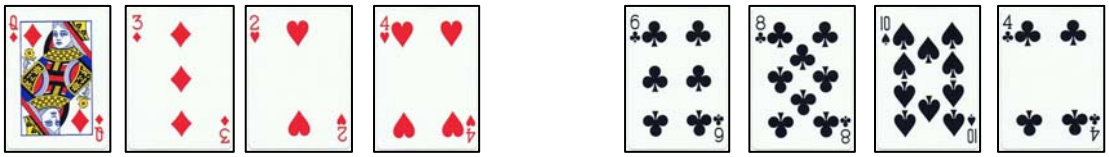
Card Sort (Grades K - 3)

Players: Individual or groups of two

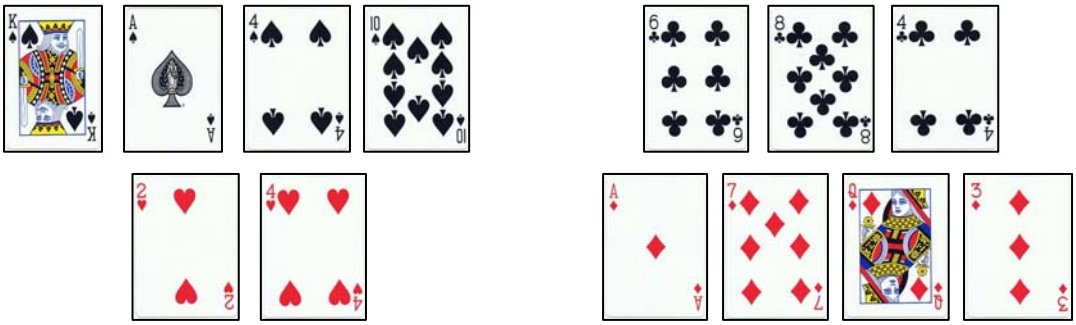
Materials: Deck of cards

Skill: Number recognition and group, sort, or categorize by attribute

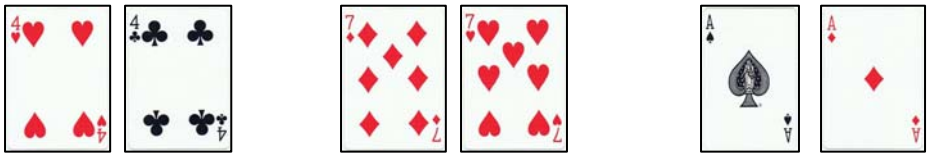
How to Play: As a group, or individually, have students use the full deck of cards to sort and create groups by attribute. Some sorting possibilities are by color, suit, or number.



Students can sort by color.



Students can sort by suit.



Students can sort by number.

Greater or Less Than (Grades K - 3)

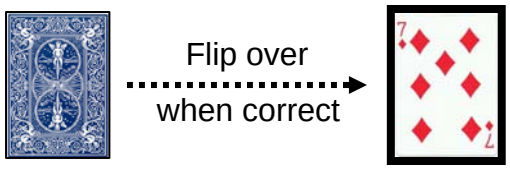
Players: Groups of two

Materials: Cards Ace through 10 for each player, face cards removed

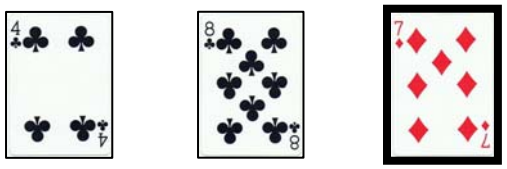
Skill: Number recognition, order, and sequencing

How to Play: Each child gets a set of cards Ace through 10 (for the numbers 1-10).

One player selects a "secret card" from his/her hand and places it face down.



The second player tries to guess what the number on the card is by selecting a card from his/her hand and placing it face up.



The first player then tells whether the secret card is greater than or less than the face-up card. The second player continues to make guesses by selecting and showing different cards until he/she has discovered the value of the secret card.

Players then switch roles.

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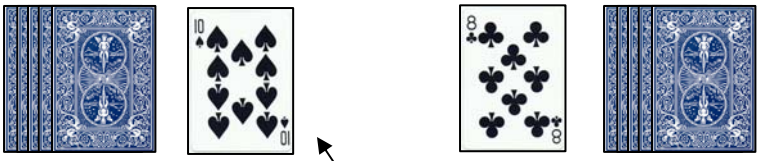
Number Battle (Grades K - 3)

Players: Groups of two

Materials: Deck of cards, face cards worth ten, Ace worth 1 or 11 (teacher decides)

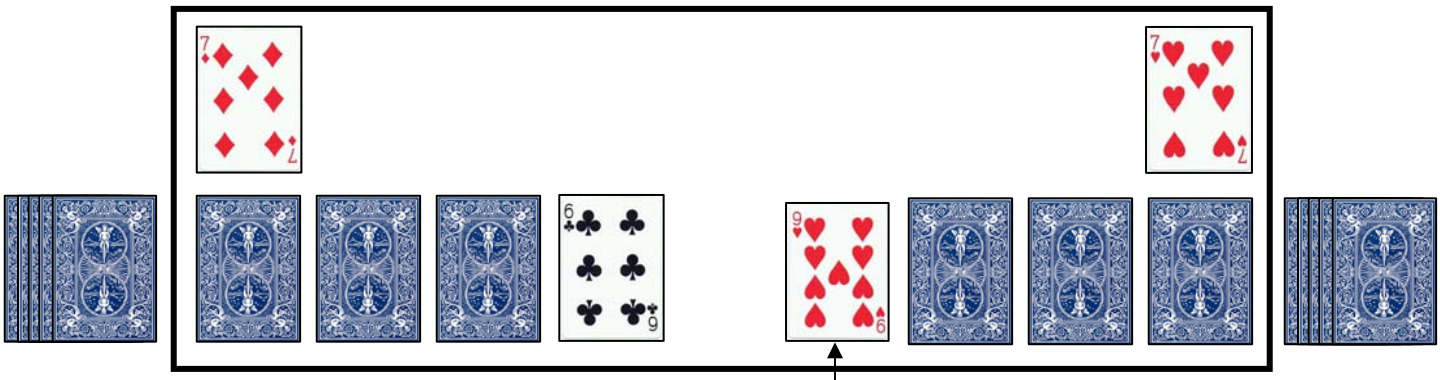
Skill: Number recognition, order, and sequencing

How to Play: This classic game, *commonly called WAR*, helps students recognize relative values of numbers. Players split a deck of cards and simultaneously flip over their top cards.



Player 1: value is 10 Player 2: value is 8

The highest-value card wins the pair.



Player 1: value is 6 Player 2: value is 9

The highest-value card wins the pair.

If the cards have the same value, each player lays three cards face down, then a new card face up. The card with the highest value wins all the cards from the round, including the face-down cards.

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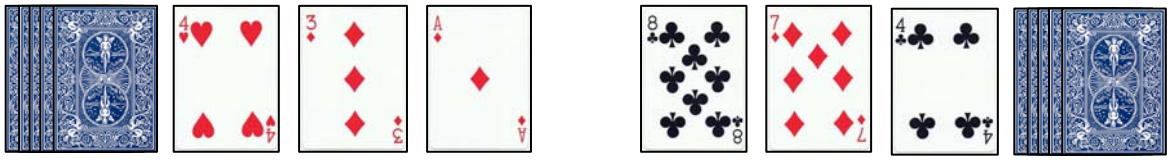
Place Value Number Battle (Grades 1 - 6)

Players: Groups of two

Materials: Deck of cards with the face cards and 10s removed, Ace worth one

Skill: Number recognition, place value, order, and sequencing

How to Play: Players split a deck of cards and simultaneously flip over their top three cards to create a 3-digit number. Players may move the cards and place in any position of the number they wish.



Player 1: number is 431

Player 2: number is 874

The highest number wins all six cards.

* Note that you can increase the number of cards to flip if you are working on larger numbers.

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Addition Number Battle (Grades 1 - 3)

Players: Groups of two

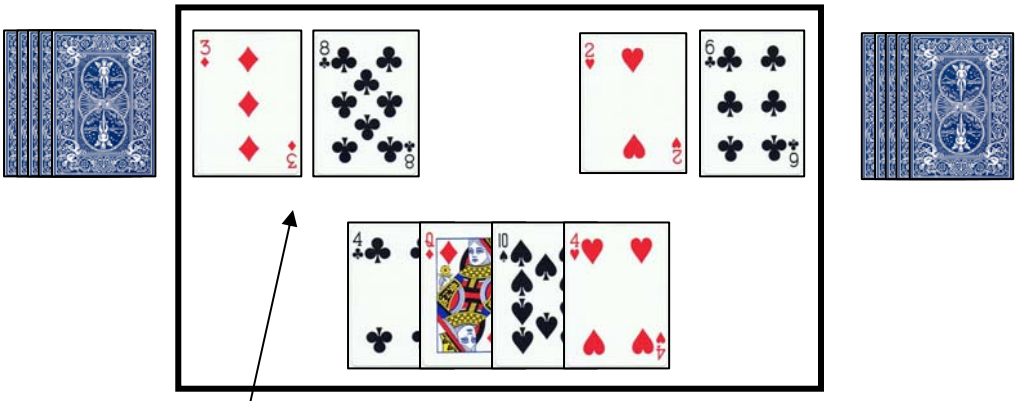
Materials: Deck of cards, face cards worth ten, Ace worth 1 or 11 (teacher decides)

Skill: Number recognition and addition

How to Play: Players split a deck of cards and simultaneously flip over their top two cards.

Player 1: sum is 13 Player 2: sum is 18

The highest sum wins all four cards.



Player 1: sum is 11 Player 2: sum is 8

If the cards sums have the same value, the cards are placed in a center pile. The next hand is played normally and the winner of the next addition number battle takes the center pile as well.

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Advanced Addition Number Battle (Grades 1 - 6)

Players: Groups of two

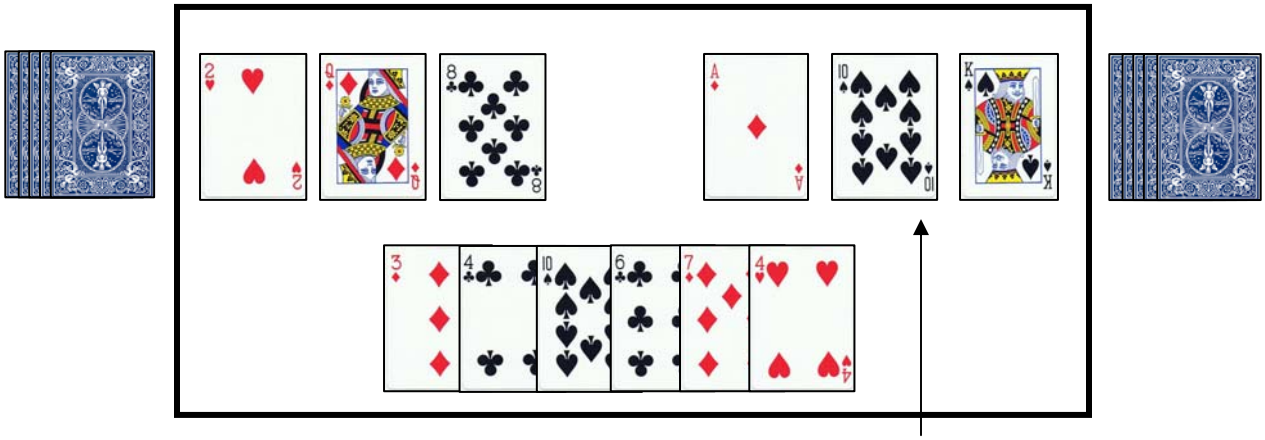
Materials: Deck of cards, Ace worth 11, Jack worth 12, Queen worth 13, King worth 14

Skill: Number recognition and addition

How to Play: Players split a deck of cards and simultaneously flip over their top three (or four) cards.

Player 1: sum is 25 Player 2: sum is 27

The highest sum wins all six (or eight) cards.



Player 1: sum is 23 Player 2: sum is 35

If the cards sums have the same value, the cards are placed in a center pile. The next hand is played normally and the winner of the next addition number battle takes the center pile as well.

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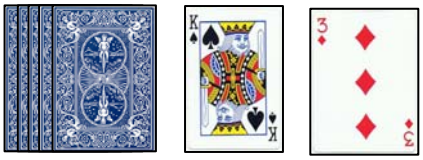
Subtraction Number Battle (Grades 1 - 3)

Players: Groups of two

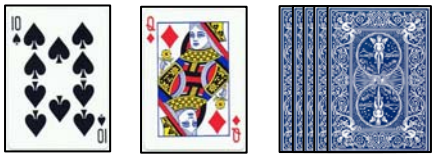
Materials: Deck of cards, face cards worth ten, Ace worth 1 or 11 (teacher decides)

Skill: Number recognition and subtraction

How to Play: Players split a deck of cards and simultaneously flip over their top two cards and subtract the smaller number from the larger number.

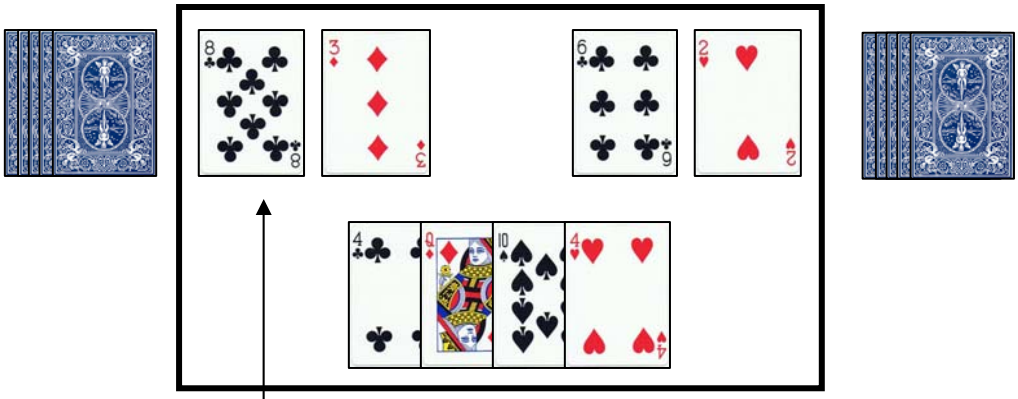


Player 1: difference is 7



Player 2: difference is 0

The greatest difference wins all four cards.



Player 1: difference is 5

Player 2: difference is 4

If the cards differences have the same value, the cards are placed in a center pile. The next hand is played normally and the winner of the next subtraction number battle takes the center pile as well.

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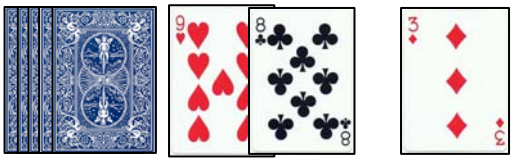
Multi-Digit Subtraction Number Battle (Grades 1 - 3)

Players: Groups of two

Materials: Deck of cards with the face cards and 10s removed, Ace worth one

Skill: Number recognition, place value, and subtraction

How to Play: Players split a deck of cards and simultaneously flip over their top three cards. Make two of them into a 2-digit number and subtract the third. Players may move the cards and place in any position of the number they wish.



Player 1: 98 – 3 = 95

Player 2: 76 – 4 = 72

The greatest difference wins all six cards.

* Note that you can increase the number of cards to flip if you are working on larger numbers.

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Multiplication Number Battle (Grades 3 - 6)

Players: Groups of two

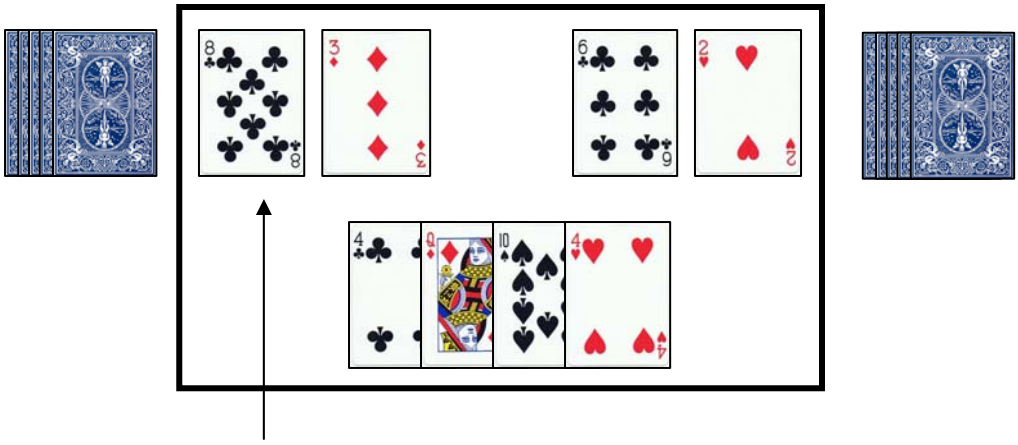
Materials: Deck of cards, face cards worth ten, Ace worth 1 or 11 (teacher decides)

Skill: Number recognition and multiplication

How to Play: Players split a deck of cards and simultaneously flip over their top two cards.

Player 1: product is 30 Player 2: product is 80

The highest product wins all four cards.



Player 1: product is 24 Player 2: product is 12

If the cards products have the same value, the cards are placed in a center pile. The next hand is played normally and the winner of the next multiplication number battle takes the center pile as well.

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Advanced Multiplication Number Battle (Grades 3 - 6)

Players: Groups of two

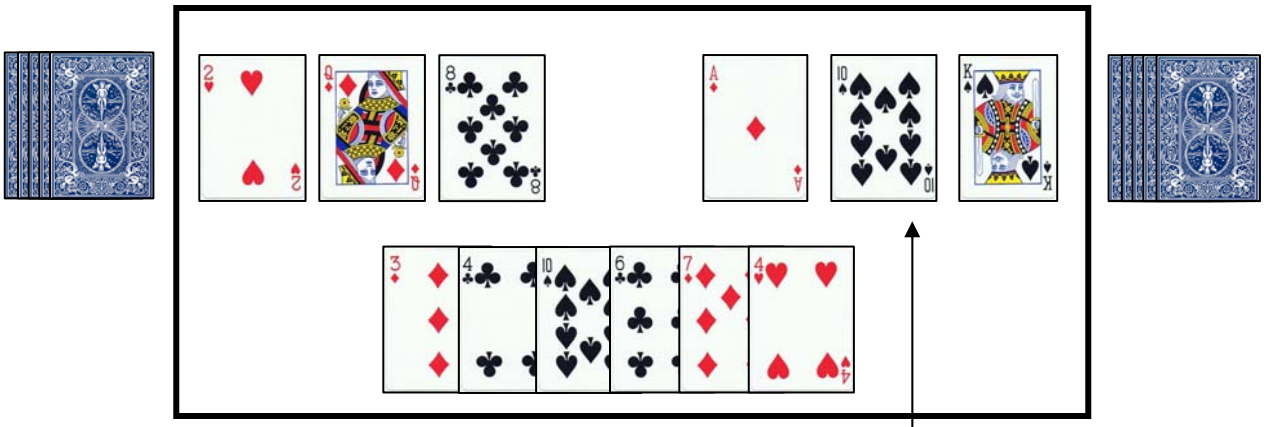
Materials: Deck of cards, Ace worth 11, Jack worth 12, Queen worth 13, King worth 14, scratch paper

Skill: Number recognition and multiplication

How to Play: Players split a deck of cards and simultaneously flip over their top three (or four) cards.

Player 1: product is 336 Player 2: product is 520

The highest product wins all six (or eight) cards.



Player 1: product is 208 Player 2: product is 1,540

If the cards products have the same value, the cards are placed in a center pile. The next hand is played normally and the winner of the next multiplication number battle takes the center pile as well.

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Multi-Digit Multiplication Number Battle (Grades 3 - 6)

Players: Groups of two

Materials: Deck of cards with the face cards and 10s removed, Ace worth one, scratch paper

Skill: Number recognition and multiplication

How to Play: Players split a deck of cards and simultaneously flip over their top three (or four) cards. Make two of them into a 2-digit number and multiply by the third. Players may move the cards and place in any position of the number they wish.

Player 1: product is 261

Player 2: product is 384

The highest product wins all six (or eight) cards.

* Note that you can increase the number of cards to flip if you are working on larger numbers.

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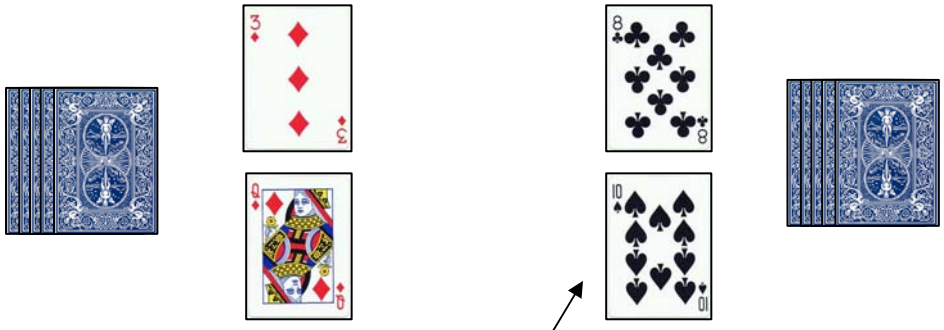
Fraction Number Battle (Grades 4 - 6)

Players: Groups of two

Materials: Deck of cards, Ace worth 11, Jack worth 12, Queen worth 13, King worth 14, scratch paper

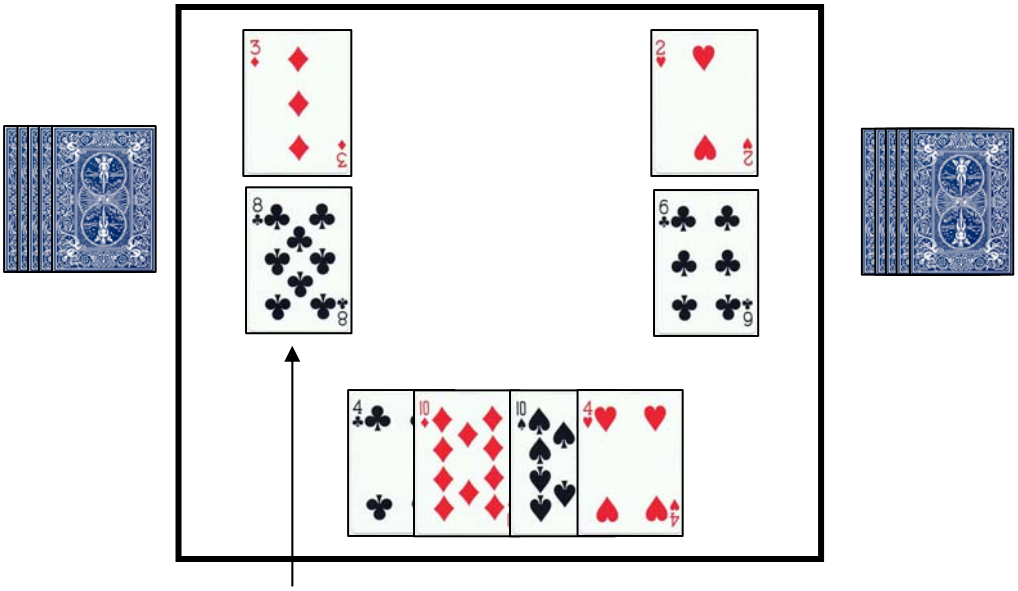
Skill: Number recognition, multiplication, fractions, numerator, and denominator

How to Play: Players split a deck of cards and simultaneously flip over their top two cards, using the smaller card as the numerator.



Player 1: fraction is 3/13 Player 2: fraction is 8/10

The greatest fraction wins all four cards.



If the cards are equivalent fractions, the cards are placed in a center pile. The next hand is played normally and the winner of the next fraction multiplication number battle takes the center pile as well.

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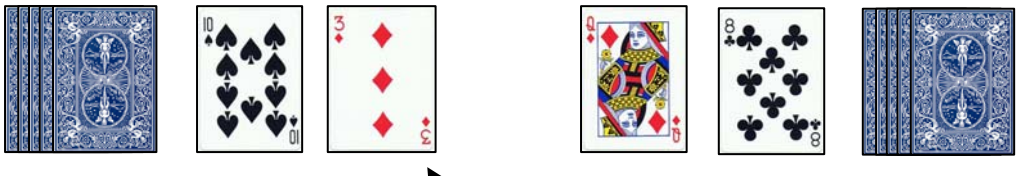
Integer Addition Number Battle (Grades 5 - 8)

Players: Groups of two

Materials: Deck of cards, Ace worth 11, Jack worth 12, Queen worth 13, King worth 14, scratch paper

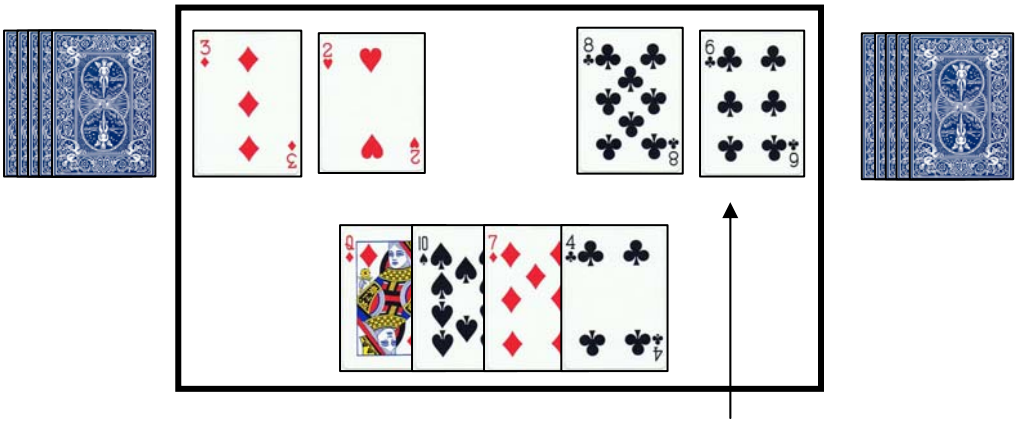
Skill: Number recognition, positive integers, negative integers, and addition

How to Play: Black cards are positive numbers; red cards are negative numbers. Players split a deck of cards and simultaneously flip over their top two cards. Remember -2 is greater than -7.



Player 1: sum is 7 Player 2: sum is -5

The highest sum wins all four cards.



. Player 1: sum is -5 Player 2: sum is 14

If the cards sums have the same value, the cards are placed in a center pile. The next hand is played normally and the winner of the next addition number battle takes the center pile as well.

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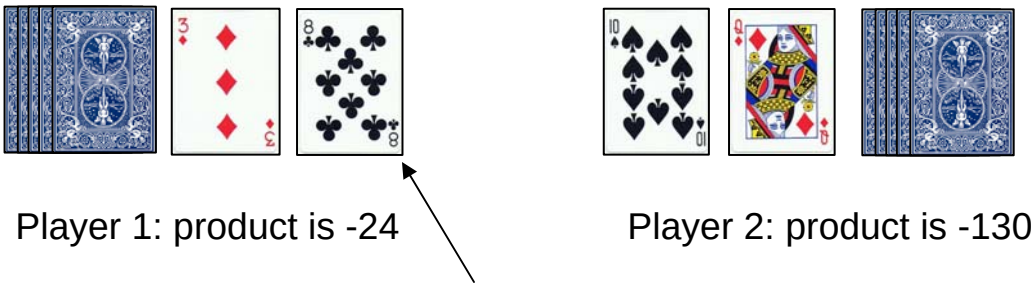
Integer Multiplication Number Battle (Grades 5 - 8)

Players: Groups of two

Materials: Deck of cards, Ace worth 11, Jack worth 12, Queen worth 13, King worth 14, scratch paper

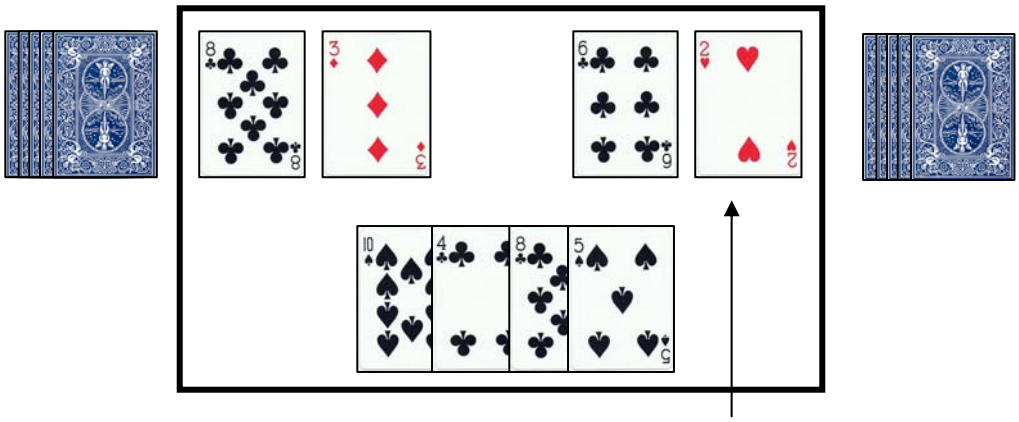
Skill: Number recognition, positive integers, negative integers, and multiplication

How to Play: Black cards are positive numbers; red cards are negative numbers. Players split a deck of cards and simultaneously flip over their top two cards. Remember that two negative numbers make a positive product and -2 is greater than -7.



Player 1: product is -24 Player 2: product is -130

The highest product wins all four cards.



Player 1: product is -24 Player 2: product is -12

If the cards products have the same value, the cards are placed in a center pile. The next hand is played normally and the winner of the next multiplication number battle takes the center pile as well.

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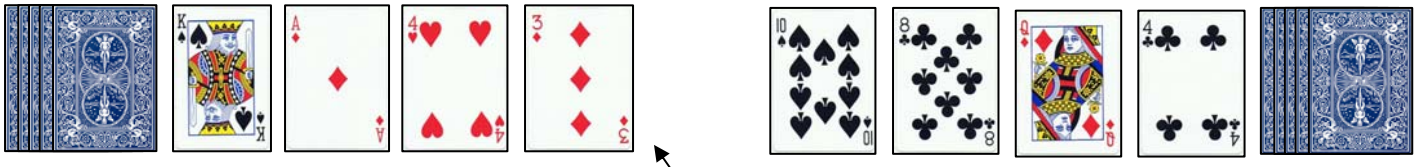
Strategy Number Battle (Grades 5 - 8)

Players: Groups of two

Materials: Deck of cards, Ace worth 11, Jack worth 12, Queen worth 13, King worth 14, scratch paper

Skill: Number recognition, addition, subtraction, multiplication, positive integers, negative integers, and mathematical reasoning

How to Play: Black cards are positive numbers; red cards are negative numbers. Players split a deck of cards and simultaneously flip over their top four (or five) cards. Players may do what ever math manipulation they wish with the numbers to create the largest result. Players may move the cards and place in any position of the equation they wish.



Player 1: (14 + -11) x (-4 x -3) = 36

Player 2: 10 + 8 + -13 x 4 = 20

The greatest answer wins all eight (or ten) cards.

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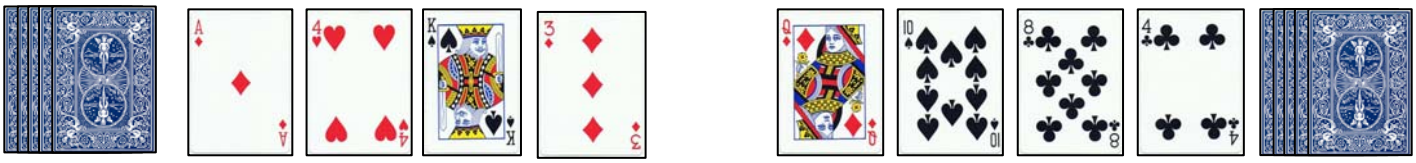
Absolute Strategy Number Battle (Grades 5 - 8)

Players: Groups of two

Materials: Deck of cards, Ace worth 11, Jack worth 12, Queen worth 13, King worth 14, scratch paper

Skill: Number recognition, addition, subtraction, multiplication, positive integers, negative integers, and mathematical reasoning

How to Play: Black cards are positive numbers; red cards are negative numbers. Players split a deck of cards and simultaneously flip over their top four (or five) cards. Players may do what ever math manipulation they wish with the numbers to create the smallest result. Players may move the cards and place in any position of the equation they wish.



Player 1: -11 - -4 + 14 + -3 = 4

Player 2: (-13 + 10) + (8 – 4) = 1

The answer with the lowest absolute value (closest to zero) wins all eight (or ten) cards.

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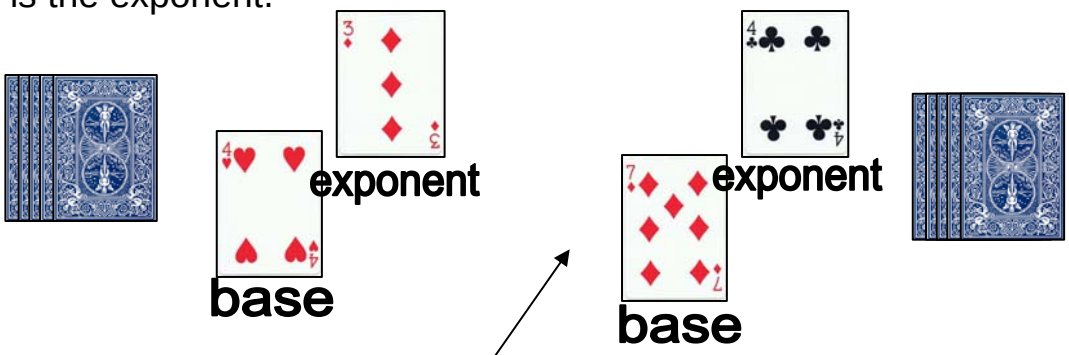
Exponent Number Battle (Grades 5 – 8)

Players: Groups of two or more

Materials: Deck of cards, face cards worth ten, Ace worth 1 or 11 (teacher decides), scratch paper

Skill: Multiplication, base, exponents

How to Play: Players split a deck of cards and simultaneously flip over their top two cards, the first card is the base and the second card is the exponent.



Player 1: (4 x 4 x 4) = 64

Player 2: (7 x 7 x 7 x 7) = 2,401

The highest product wins all four cards.

Play continues until all cards are played. Player with the most cards wins.

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End Game (Number Battle Extension) (Grades 1 - 6)

Players: Groups of two

Materials: Deck of cards, face cards worth ten, Ace worth 1 or 11 (teacher decides)

Skill: Number recognition, order, and sequencing

How to Play: When the players have battled through the entire deck, shuffle the captured cards and play on until someone collects such a huge pile of cards that the other player surrenders.

* End Game can be played with any of the Number Battle games mentioned in Acing Math.

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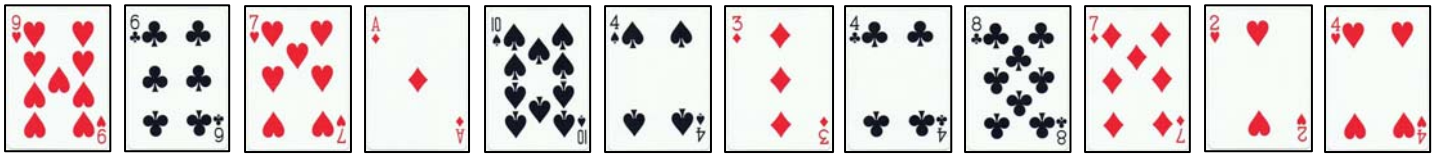
Give Me 10 (Grades 1-3)

Players: Groups of two or more

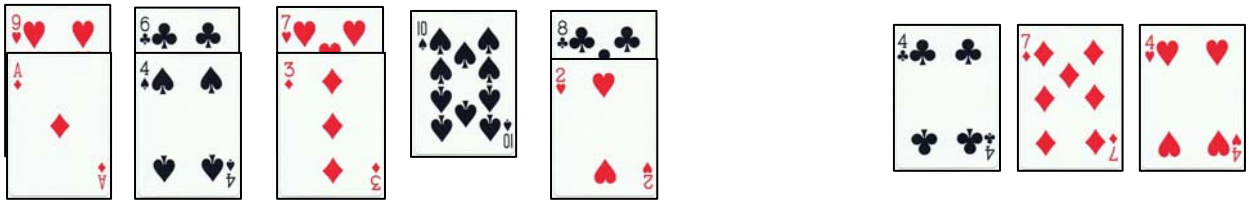
Materials: Deck of cards with the face cards removed, Ace worth one

Skill: Number recognition and addition

How to Play: Deal 12 cards face up.



Players take turns finding and removing combinations of cards that add up to 10.



When both the players agree that no more tens are possible, the next 12 cards are dealt face up.

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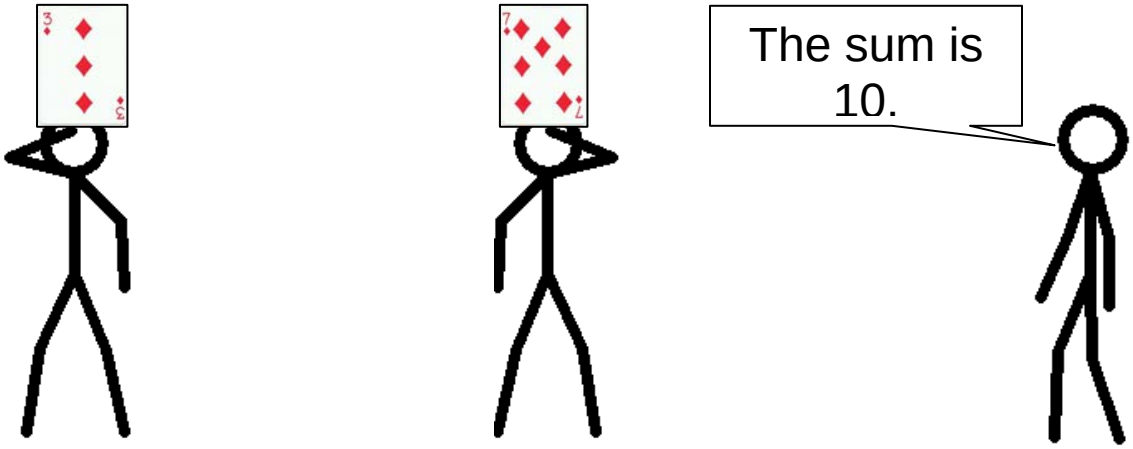
Reading Addition Minds (Grades 1 - 5)

Players: Groups of three (groups of four or five for more advanced)

Materials: Deck of cards

Skill: Addition, sum

How to Play: In this game for three players, one student is the leader and the other two are the “mind readers”.



The two players each draw a card and, without looking at it, hold it up to their foreheads so that everyone else can see it, but themselves. The leader announces the sum of the two cards. Each “mind reader” must figure out which card is on his or her own forehead and say it aloud. When both “mind readers” have figured out their cards, a new leader is chosen and the game continues.

With Reading Addition Minds, all players get practice with sums and addends in every round.

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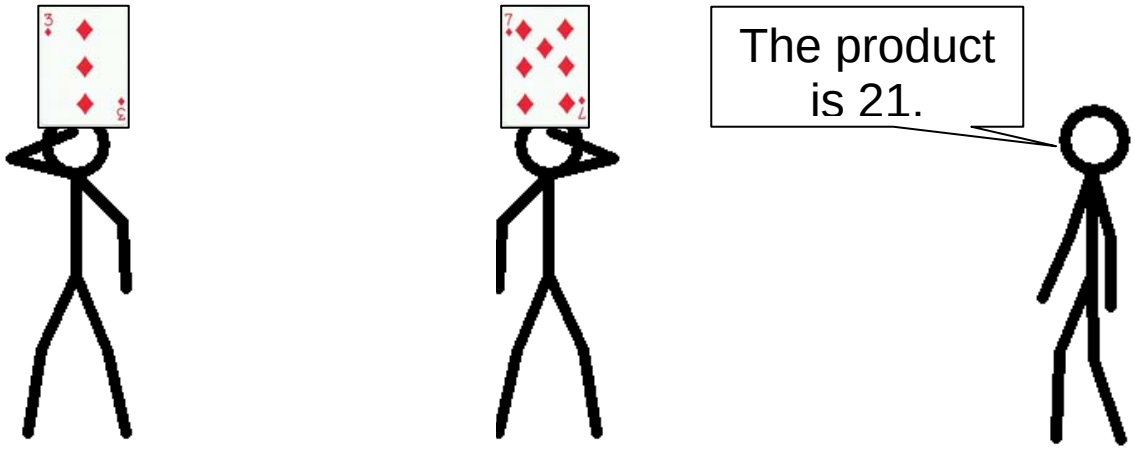
Reading Multiplication Minds (Grades 3 - 6)

Players: Groups of three (groups of four or five for more advanced)

Materials: Deck of cards

Skill: Multiplication, product

How to Play: In this game for three players, one student is the leader and the other two are the “mind readers”.



The two players each draw a card and, without looking at it, hold it up to their foreheads so that everyone else can see it, but themselves. The leader announces the products of the two cards. Each “mind reader” must figure out which card is on his or her own forehead and say it aloud. When both “mind readers” have figured out their cards, a new leader is chosen and the game continues.

With Reading Multiplication Minds, all players get practice with products and factors in every round.

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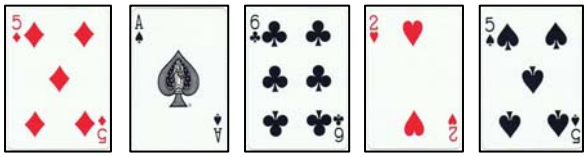
Hit The Target (Grades 4 - 8)

Players: Groups of two to five players

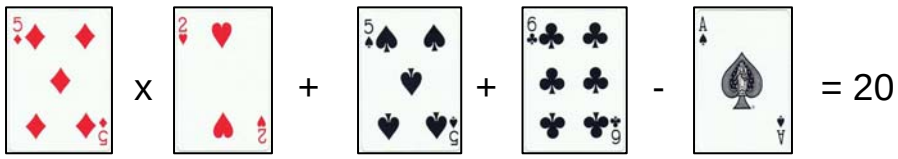
Materials: Deck of cards, Ace worth 1 or 11, Jack worth 12, Queen worth 13, King worth 14, scratch paper

Skill: Multiplication, addition, subtraction, division, order of operations, and mathematical reasoning

How to Play: Each group of 2 - 5 students selects a target number from 1-30. One of the players will turn five cards from the deck face up and the object is for students to make a number sentence using all five cards with any operations to reach the target number.



For example, suppose the target number is 20 and the cards in play are 5, 5, 6, 2, and Ace (worth 1).



One winning combination is: 5 x 2 + 5 + 6 - 1 = 20. Another is (6 x 5) - (2 x 5 x 1). Also, (6 ÷ 2) x 5 + (5 x 1) works, as do many more.

The first player to find a winning combination keeps the cards and chooses the next target number. If no combination is found in about a minute, flip over another card and try to make a combination using six cards.

To keep the game fair for players of different abilities, introduce the rule that if a player hasn't made a combination in three rounds, he or she may make combinations using four of the five cards until they make a winning combination; other players must use five.

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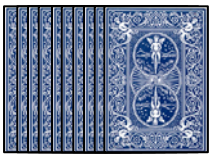
Multiplication Zone (Grades 4 - 8)

Players: Two to four players

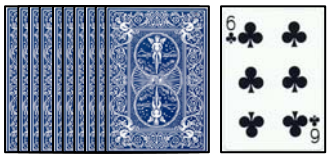
Materials: Deck of cards, Ace worth 11, Jack worth 12, Queen worth 13, King worth 14, scratch paper

Skill: Multiplication and estimation

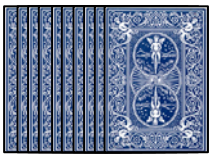
How to Play: Each player is dealt 10 cards. A card from the remaining stack is flipped face up.



Player 1



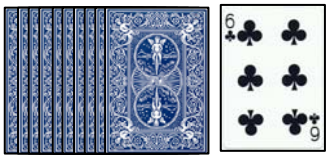
Remaining stack



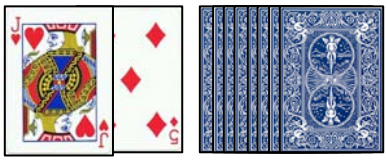
Player 2

Its value is multiplied by 10, and players look at their pile of cards and try to find a pair of cards whose product is in that "decade."

Player 1: 63



Remaining stack
Zone: 60 - 69



Player 2: 60

For example, if the flipped card is a six, then the zone is any number in the sixties (60-69), so a winning pair would be 9 and 7 (product 63) or 12 and 5 (product 60), etc.

Any player who can make a pair removes those cards from his or her hand. Flip over the next card in the remaining stack to determine the next zone. Play continues until one player's hand is empty.

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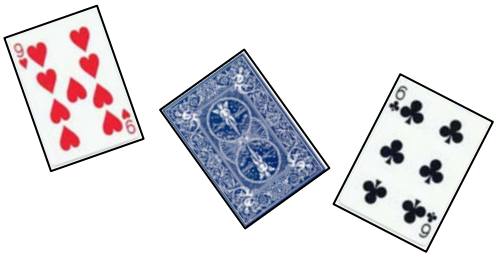
Addition Toss Up (Grades 2 - 5)

Players: Groups of two or more

Materials: Deck of cards, Ace worth 11, Jack worth 12, Queen worth 13, King worth 14, scratch paper

Skill: Addition

How to Play: Each player draws three cards from the deck. On the count of three, each player tosses their cards into the air.



Player 1: sum is 15

Player 2: sum is 12

Each player adds only their own cards that land face up. Points are earned for every card that lands face up. The first player to reach a designated amount of points wins (50 or 100).

* Make sure students don't toss their cards too close to one another or too high.

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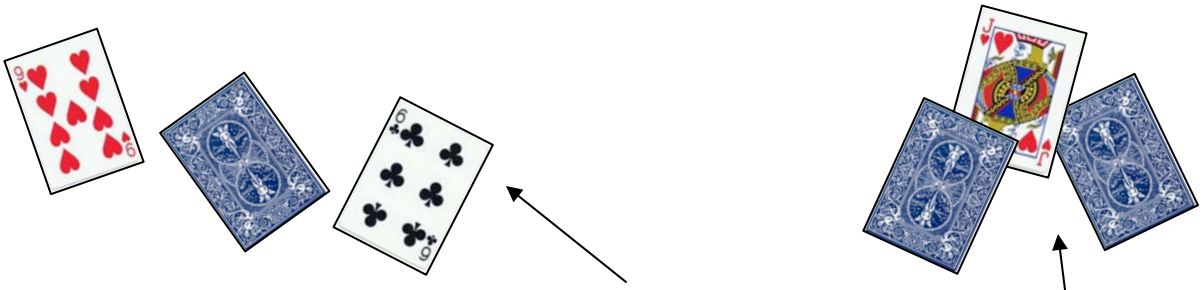
Subtraction Toss Up (Grades 4 - 6)

Players: Groups of two or more

Materials: Deck of cards, Ace worth 11, Jack worth 12, Queen worth 13, King worth 14, scratch paper

Skill: Addition, subtraction, positive and negative integers

How to Play: Each player draws three cards from the deck. On the count of three, each player tosses their cards into the air.



Player 1: sum is 15, then subtract the face down card

Player 2: sum is 12, then subtract the face down cards

Each player adds only their own cards that land face up and then subtracts the card(s) that land face down. Points are earned for the difference of all of the cards. It is possible for answers to go into the negatives, so only play this game if students have been introduced to both positive and negative integers. The first player to reach a designated amount of points wins (50 or 100).

* In this particular game, card color does NOT determine if a number is positive or negative.

* Make sure students don't toss their cards too close to one another or too high.

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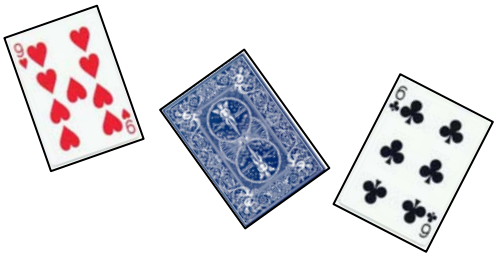
Multiplication Toss Up (Grades 3 - 5)

Players: Groups of two or more

Materials: Deck of cards, Ace worth 11, Jack worth 12, Queen worth 13, King worth 14, scratch paper

Skill: Multiplication

How to Play: Each player draws three cards from the deck. On the count of three, each player tosses their cards into the air.



Player 1: product is 54

Player 2: product is 12

Each player multiplies only their own cards that land face up. Points are earned for every card that lands face up. The first player to reach a designated amount of points wins (100 or 200).

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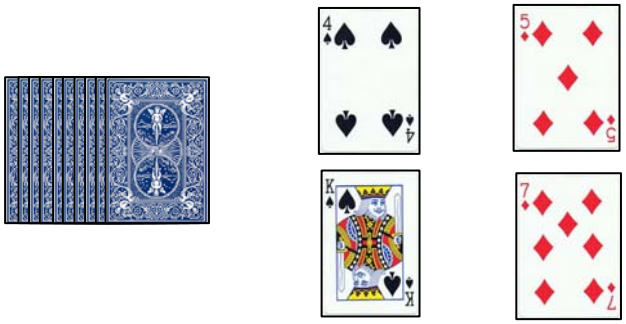
Sum Fractions (Grades 5 – 8)

Players: Groups of two

Materials: Deck of cards, face cards worth ten, Ace worth 1 or 11 (teacher decides), scratch paper

Skill: Adding fractions, multiplication, division, numerator, denominator

How to Play: The two players work as a team as they add fractions. Deal four cards and place them face up. Use the four cards to create two fractions (example: 4, 5, 7, and a King).



For this game, *do not* use improper fractions, but rather make the two largest cards the denominators: 4/10 and 5/7. Players use paper to figure out and record the common denominator and then add the fractions. Reduce answer to its simplest form. 78/70 is reduced to 1 and 4/35.

* This is not a game, but rather an opportunity for students to work collaboratively and manipulate the problems.

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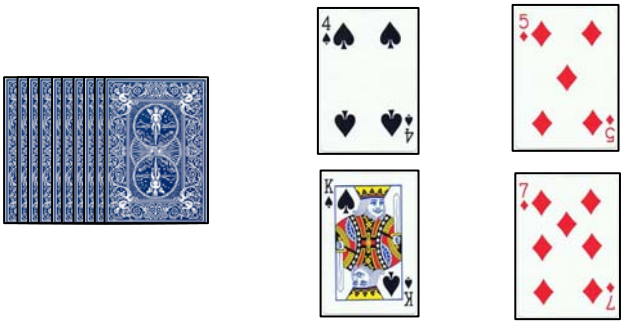
Difference Fractions (Grades 5 – 8)

Players: Groups of two

Materials: Deck of cards, face cards worth ten, Ace worth 1 or 11 (teacher decides), scratch paper

Skill: Subtracting fractions, multiplication, division, numerator, denominator

How to Play: The two players work as a team as they subtract fractions. Deal four cards and place them face up. Use the four cards to create two fractions (example: 4, 5, 7, and a King).



For this game, *do not* use improper fractions, but rather make the two largest cards the denominators: 4/10 and 5/7. Players use paper or to figure out and record the common denominator (70) and then subtract the fractions. Reduce answer to its simplest form. 22/70 is reduced to 11/35.

* This is not a game, but rather an opportunity for students to work collaboratively and manipulate the problems.

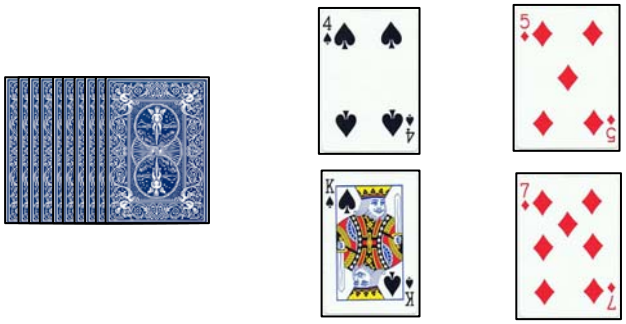
Product Fractions (Grades 5 – 8)

Players: Groups of two

Materials: Deck of cards, face cards worth ten, Ace worth 1 or 11 (teacher decides), scratch paper

Skill: Multiplying fractions, multiplication, division, numerator, denominator

How to Play: The two players work as a team as they multiply fractions. Deal four cards and place them face up. Use the four cards to create two fractions (example: 4, 5, 7, and a King).



For this game, *do not* use improper fractions, but rather keep with the two largest cards being the denominators: 4/10 and 5/7. Players use paper or to figure out and record any work used to solve fractions. Reduce answer to its simplest form. 4/10 X 5/7 would equal 20/70 and is reduced to 2/7.

* This is not a game, but rather an opportunity for students to work collaboratively and manipulate the problems.

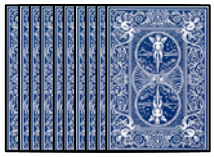
Quotient Fractions (Grades 5 – 8)

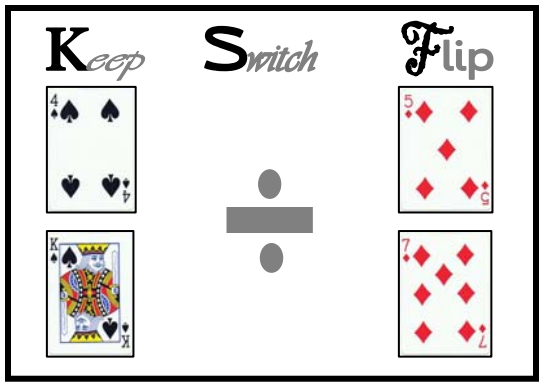
Players: Groups of two

Materials: Deck of cards, face cards worth ten, Ace worth 1 or 11 (teacher decides), **KSF game-board**, **multiplication cover card**, scratch paper

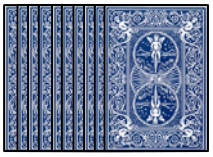
Skill: Dividing fractions, multiplication, division, numerator, denominator

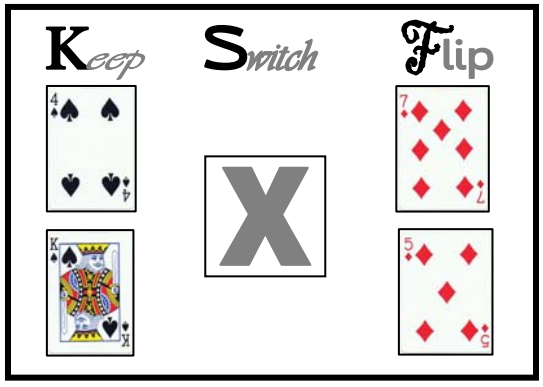
How to Play: The two players work as a team as they divide fractions. Deal four cards and place them face up. Use the KSF game-board, multiplication cover cards, and four playing cards to create two fractions (example: 4, 5, 7, and a King).





For this game, *do not* use improper fractions, but rather keep with the two largest cards being the denominators: 4/10 and 5/7.





Players keep the first fraction the same, use multiplication cover card to switch operations, and flip the last fraction to solve the problem. 4/10 X 7/5 would equal 28/50 and is reduced to 14/25.

* KSF game-board and multiplication cover cards are on following pages.

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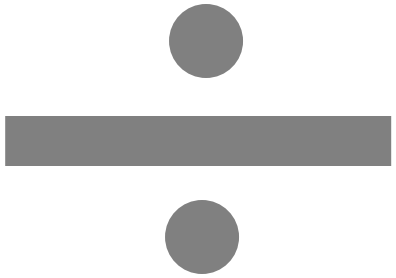
Keep

Switch

Flip



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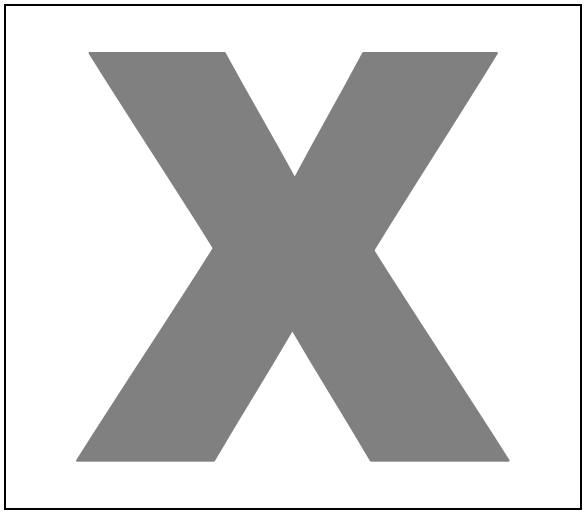
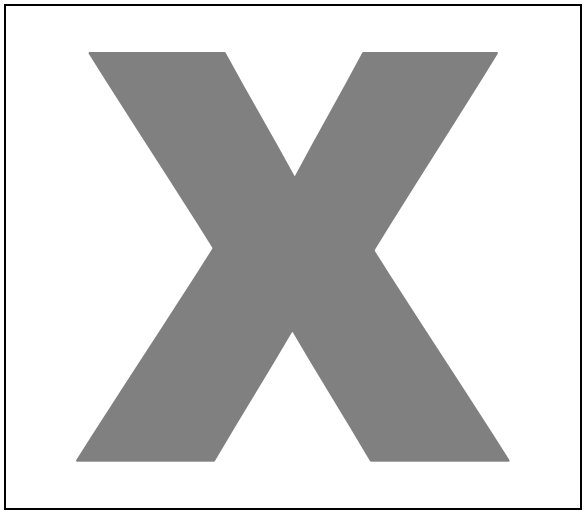
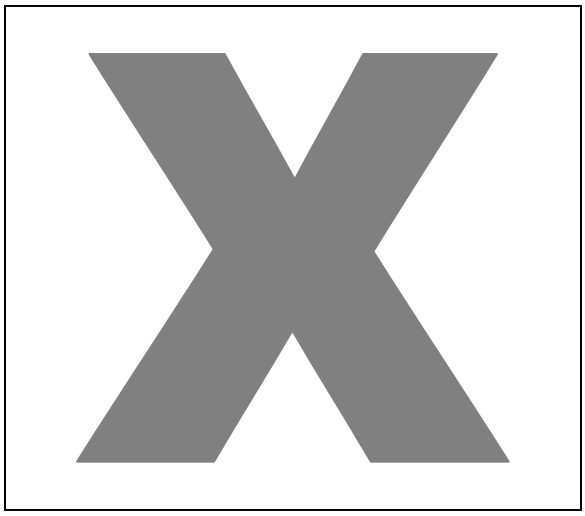
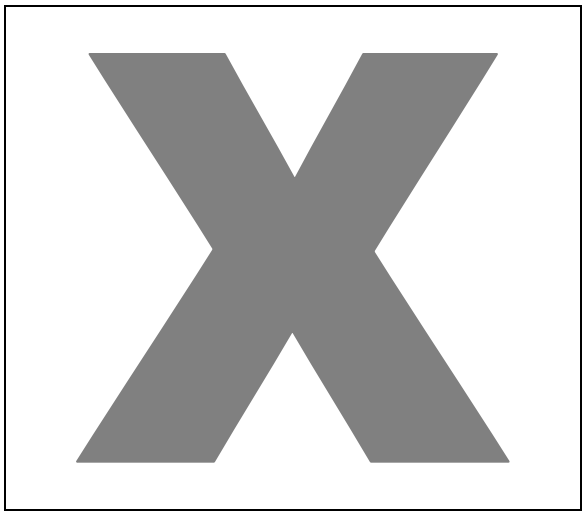
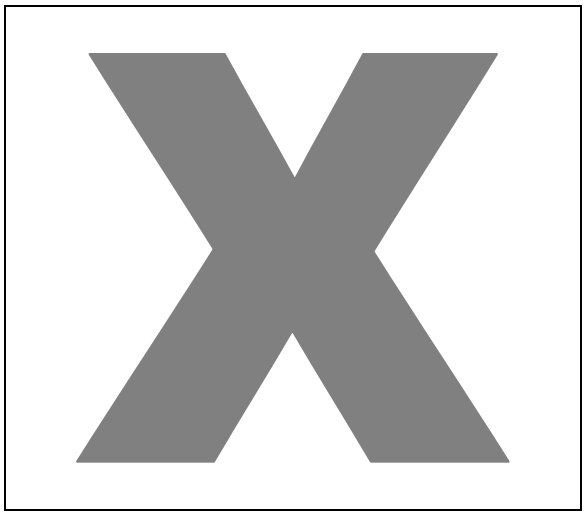
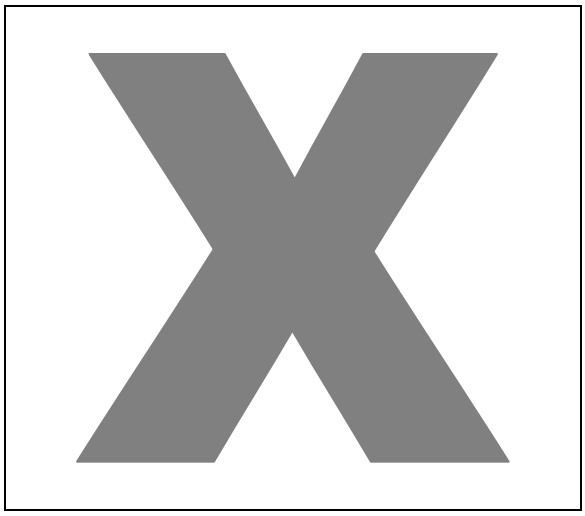
Multiplication Cover Cards

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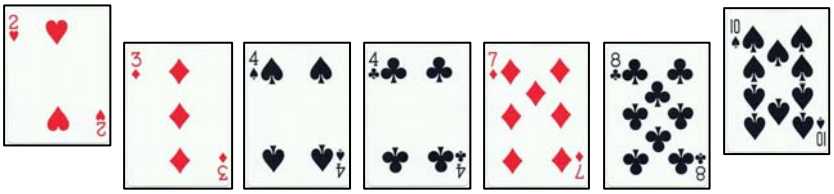
M & M & M s (Grades 4 – 6)

Players: Groups of two or more (Be sure not to go over a maximum of 4 players!)

Materials: Deck of cards, Ace worth 11, Jack worth 12, Queen worth 13, King worth 14, scratch paper

Skill: Finding mode, median, mode, and range of a set of data, addition, subtraction, multiplication

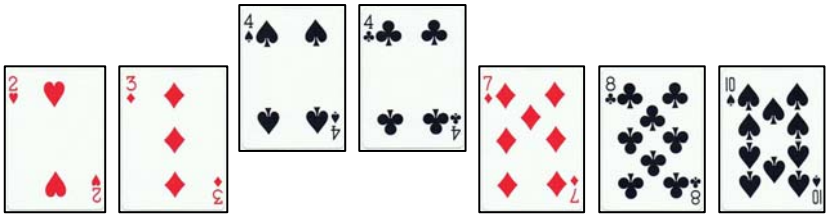
How to Play: Deal out 7 cards to each group. Ask each group to arrange their cards in sequential order.



Range: 10 – 2 = 8…..Range = 8

Once they have the cards in sequential order, have students raise the first and last card of the set. Subtract the first card from the last card to find the range. Then, depending upon which M you want to play, follow the directions below:

Finding the first M…. the Mode: Each player finds the mode in their hand of cards.



Mode = 4

To locate the mode of the set of data, have students raise any cards that are the same.

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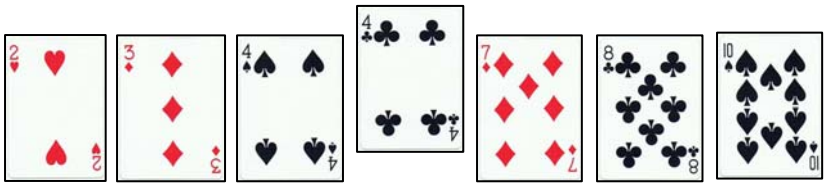
M & M & M s (Grades 4 – 6) ….continued

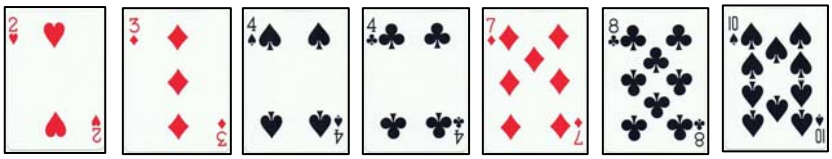
Finding the second M…. the Median: Each player finds the median card in their set of data.



Median = 4

To locate the median of the set of data, have students raise the card that is in the middle. Thus, using the hand above, the median of the cards is 4, since it's the value of the middle card.

Finding the third M…. the Mean: Each player finds the sum of all their cards, then divides the total by 7 (the total number of cards) to find the mean.



Mean = 4

To find the mean, have the students add 2, 3, 4, 4, 7, 8, and 10 and then divide the total by 7.

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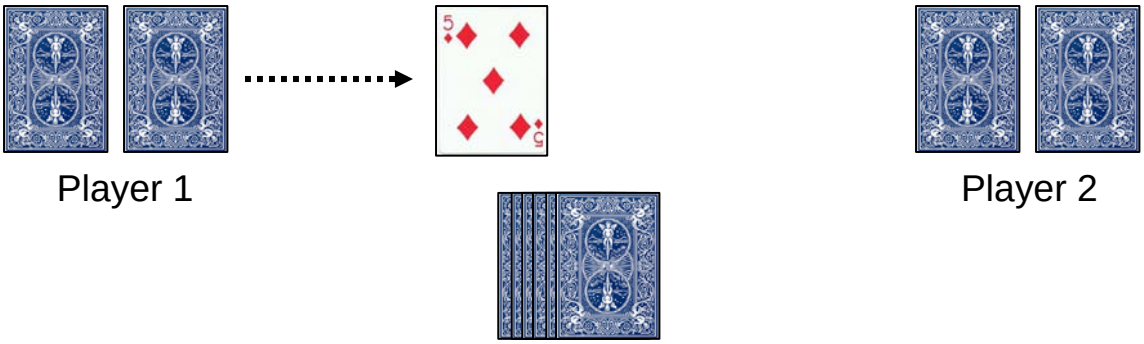
The Chosen One (Grades 5 – 8)

Players: Up to four players

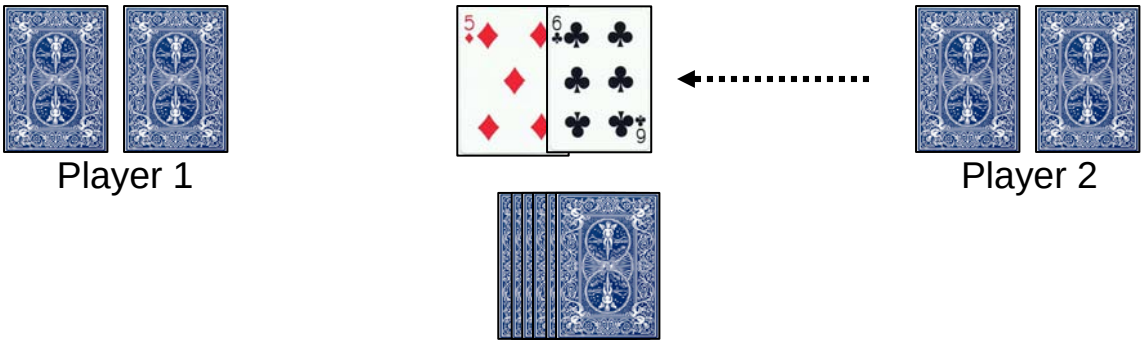
Materials: Deck of cards, Ace worth 11, Jack worth 12, Queen worth 13, King worth 14, scratch paper

Skill: Adding positive and negative integers

How to Play: The goal of the game is to reach a total of one by adding and subtracting. Deal 2 cards to each player.



Player one plays a card, states its value and immediately picks up another **(*players must hold 2 cards at all times.)** The value can be positive or negative eg +5 or –5



Player two plays and adds or subtracts card 1, which is 5, and card 2, which is 6. Player two can add to make 11 or subtract to make –1. Play continues until a positive 1 is made.

The player who makes positive 1 wins the cards. Play continues until all cards are played. The player with the most cards wins.

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Make it Texas Size! (Grades 2 – 5)

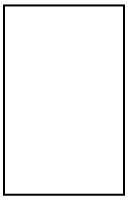
Players: Individual or in groups of two

Materials: Deck of cards with the face cards and 10s removed, Ace worth one, Make it _____ Size! page

Skill: Place value and comparing numbers

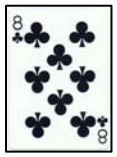
How to Play: Use the Make it _____ Size! page, (or have kids create their own on a blank sheet of paper). Students deal out six cards face down. They can shuffle those cards for an even further mix up, but no peeking. This is a game of chance and reasoning in which the players are trying to create the largest number possible. The players must think carefully where to place each card. *Once a card is placed it cannot be moved.*

_____ _____, _____ _____



throw away

The player flips over one card at a time and decides where to place it to form the largest number possible, or the most Texas sized number. The throw away box is for any card they feel will not help in creating a large number; a 2 or 3 for example.

 ,

throw away

Once a card is placed it cannot be moved. Notice the 5 was placed in the hundreds; to make the largest number possible, it would have been better placed in the tens place.

* Make it _____ Size! page is on the page after Make it Rhode Island Size!

* Note that you can increase the number of cards to flip if you are working on larger numbers.

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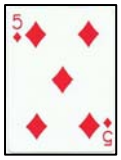
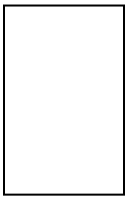
Make it Rhode Island Size! (Grades 2 – 5)

Players: Individual or in groups of two

Materials: Deck of cards with the face cards and 10s removed, Ace worth one, Make it _____ Size! page

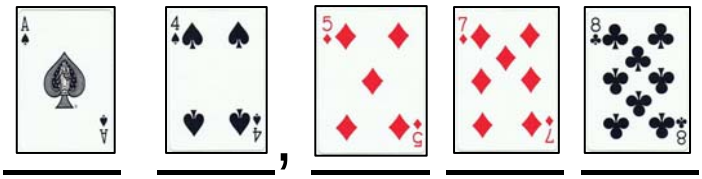
Skill: Place value and comparing numbers

How to Play: Use the Make it _____ Size! page, (or have kids create their own on a blank sheet of paper). Students deal out six cards face down. They can shuffle those cards for an even further mix up, but no peeking. This is a game of chance and reasoning in which the players are trying to create the smallest number possible. The players must think carefully where to place each card. *Once a card is placed it cannot be moved.*

throw away

The player flips over one card at a time and decides where to place it to form the smallest number possible, or the most Rhode Island sized number. The throw away box is for any card they feel will not help in creating a small number; a 8 or 9 for example.



throw away

Once a card is placed it cannot be moved. In the example above, the player was able to make the smallest number possible.

* Make it _____ Size! page is on following page.

* Note that you can increase the number of cards to flip if you are working on larger numbers.

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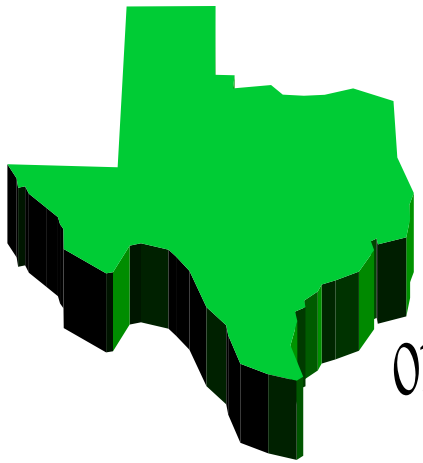
Make It  or Size!

Throw Away

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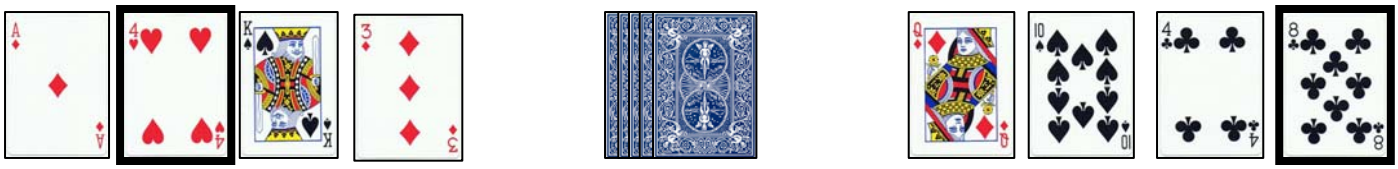
Elevator (Grades 1 – 3)

Players: Groups of two or more

Materials: Deck of cards, Ace worth 1 or 11, Jack worth 12, Queen worth 13, King worth 14

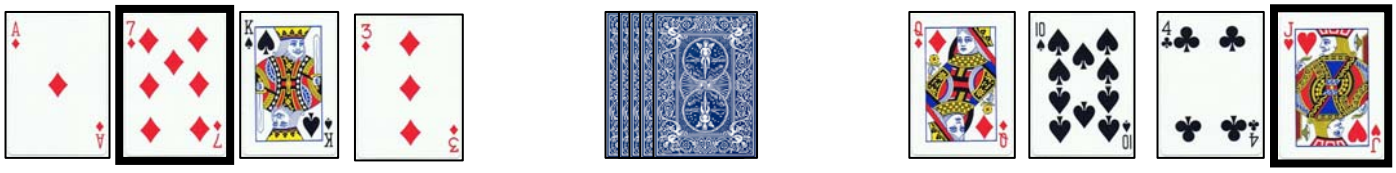
Skill: Number recognition, order, and sequencing

How to Play: Each player is dealt four cards face up. The remaining cards are placed in a deck in the center of the table. The aim of the game is to be the first player to arrange the cards in either ascending or descending order. This does not have to be in consecutive order, ie. 4,5,6,7. It could be 2,5,6 and 9. Both players can go in the same or different directions. *Cards cannot be rearranged – only exchanged.*



Player 1: 11, 4, 14, 3 Player 2: 13, 10, 4, 8

Starting with Player 1, each player may exchange one of his/her cards for one from the top of the deck. The card which is exchanged is placed at the bottom of the deck in the center. Players alternate turns.



Player 1: 11, 7, 14, 3 Player 2: 13, 10, 4, 12

Player 1 exchanged their four of hearts for a seven of diamonds. Player 2 exchanged their eight of clubs for a Jack (12) of hearts. Player 1 is closer to having a descending order if they trade out the King (14) for a 6, 5, or 4. Player 2 still needs trade out the Jack (12) to get a 3, 2, or Ace. The first player to arrange his/her cards in order is the winner of that round.

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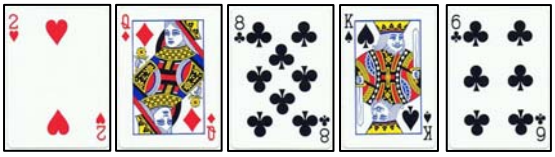
Pattern Points (Grades 1 – 5)

Players: Groups of two or more

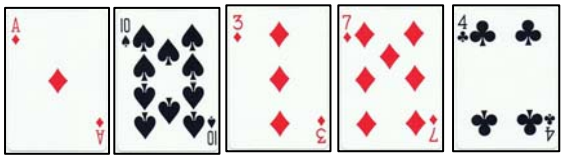
Materials: Deck of cards, Ace worth 1 or 11, Jack worth 12, Queen worth 13, King worth 14, scratch paper

Skill: Patterns, number order, addition, subtraction, multiplication, and division

How to Play: Each player is dealt five cards. Players rearrange the cards and create a pattern using as many cards as possible.

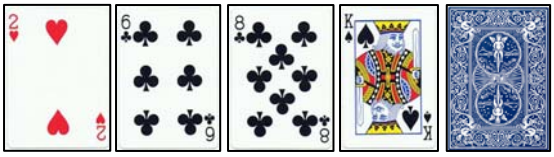


Player 1

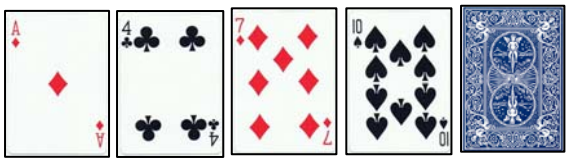


Player 2

Players create a pattern using as many cards as possible.



Player 1: four points



Player 2: four points

Player 1 had the cards: 2, 13, 8, 14, 6. The player made the pattern 2 6 8 14, or two cards added together makes the sum of the next card. This pattern would score 4 and the player would discard their pattern and pick up 4 more cards for the next round.

Player 2 had the cards: 1, 3, 7, 10, 4. The player made the pattern 1 4 7 10, or adding 3 each time. A point is awarded for each card used. This pattern would score 4 and the player would discard their pattern and pick up 4 more cards to play again.

The winner is the player who has the highest score after 5 rounds.

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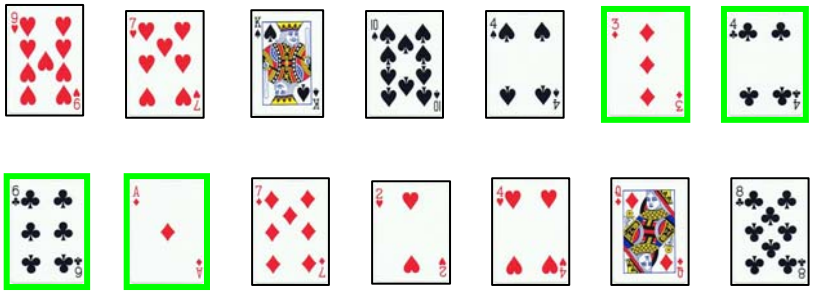
I Spy Sums (Grades 1 – 3)

Players: Groups of two or more

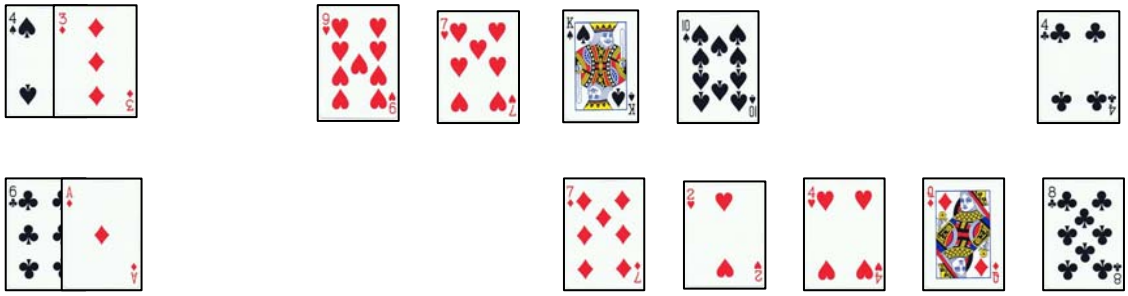
Materials: Deck of cards, Ace worth 11, Jack worth 12, Queen worth 13, King worth 14, scratch paper

Skill: Addition

How to Play: Deal out the entire deck of cards face up in a 13 X 4 array. *Example is not in the 13 x 4 array due to space.*



One player challenges the other player to find two cards next to each other, either vertically or horizontally, that add to make a number by saying, “I spy two cards with a sum of 7.”



The other player then looks for two cards that add to make the sum then picks this pair up and any other pair(s) that add to make the stated sum.

If the second player misses any pair(s) that add to the chosen sum, then the first player may claim them. Players swap roles and continue until the table is cleared. The winner is the player with the most cards at the end of the game. *As large gaps appear the size of the array may be reduced to help fill the gaps.*

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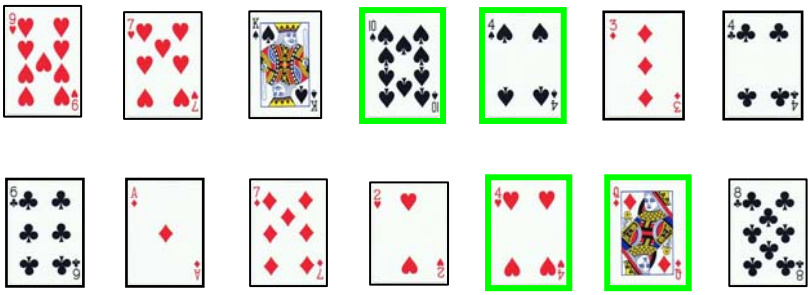
I Spy Products (Grades 3 – 6)

Players: Groups of two or more

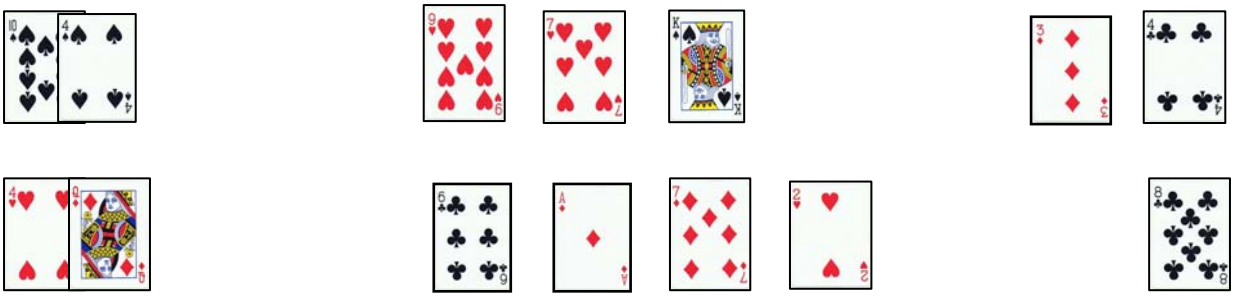
Materials: Deck of cards, face cards worth ten, Ace worth 1 or 11

Skill: Multiplication

How to Play: Deal out the entire deck of cards face up in a 13 X 4 array. *Example is not in the 13 x 4 array due to space.*



One player challenges the other player to find two cards next to each other, either vertically or horizontally, that multiply to make a number by saying, “I spy two cards with a product of 40.”



The other player then looks for two cards that multiply to make the product then picks this pair up and any other pair(s) that multiply to make the stated product.

If the second player misses any pairs that multiply to the chosen product, then the first player may claim them. Players swap roles and continue until the table is cleared. The winner is the player with the most cards at the end of the game. *As large gaps appear the size of the array may be reduced to help fill the gaps.*

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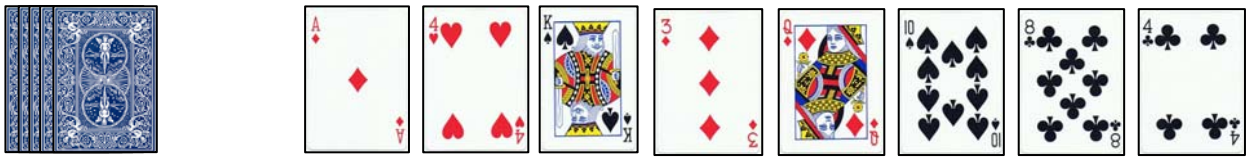
Flip Out (Grades 1 – 5)

Players: Whole class

Materials: Deck of cards per student, face cards worth ten, Ace worth 1 or 11, scratch paper

Skill: Addition

How to Play: Each student shuffles his/her deck and lays it face down on the desk. The teacher calls out, ”Go!” and then the students flip over one card at a time, keeping a running total of the sums. After thirty seconds, one minute, or two minutes (depending on the ability of the class), the teacher says, “Stop!”



Player 1: 1 + 4 = 5 + 10 = 15 + 3 = 18 + 10 = 28 + 10 = 38 + 8 = 46 + 4 = 50
8 cards flipped

The players then record the total they reached and the number of cards flipped in order to reach the total.

Flipped cards are switched with a predetermined partner who checks for accuracy.

Cards are handed back to students and each student reshuffles his/her deck and prepares for the next round.

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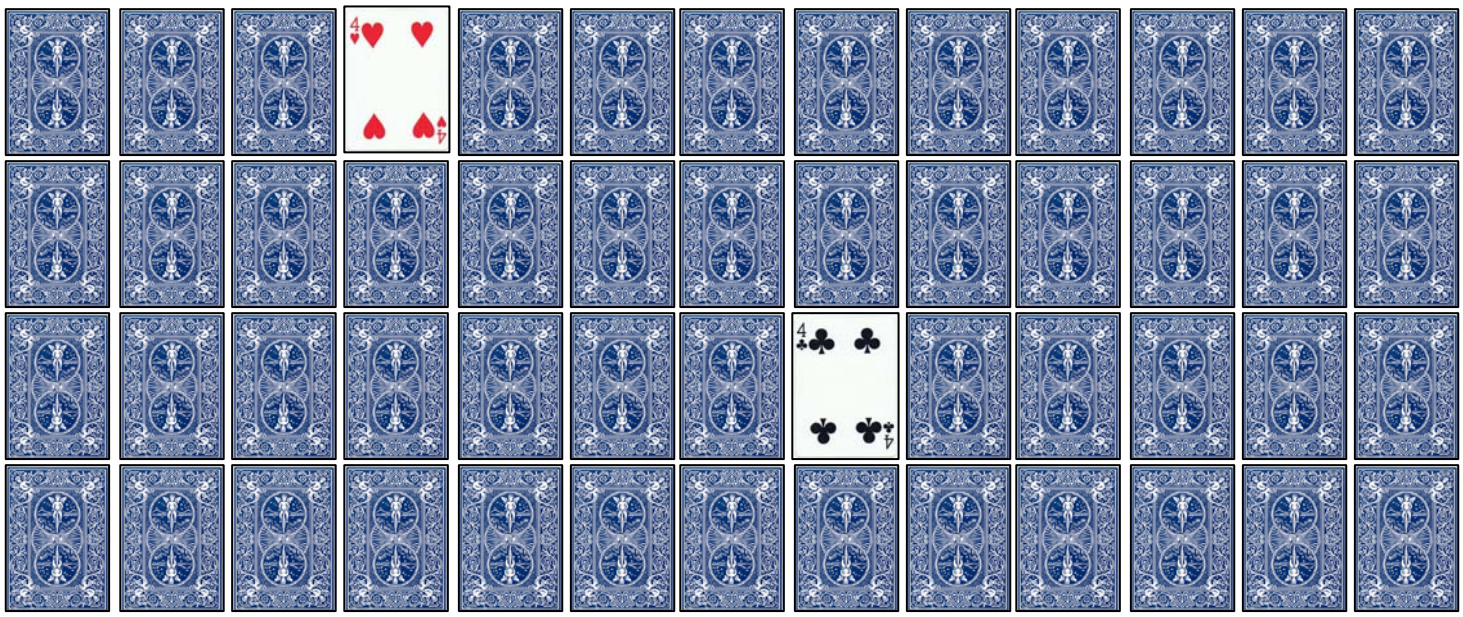
Number Memory (Grades 1 – 5)

Players: Groups of two or more

Materials: Deck of cards

Skill: Number recognition

How to Play: Arrange the cards face down in 13 x 4 array.



Players take turns turning over a pair of cards. If the numbers match, the player wins the two cards and takes another turn.

If the cards do not match, they're flipped face down and the next player has a turn. Play continues until all number matches are found.

:

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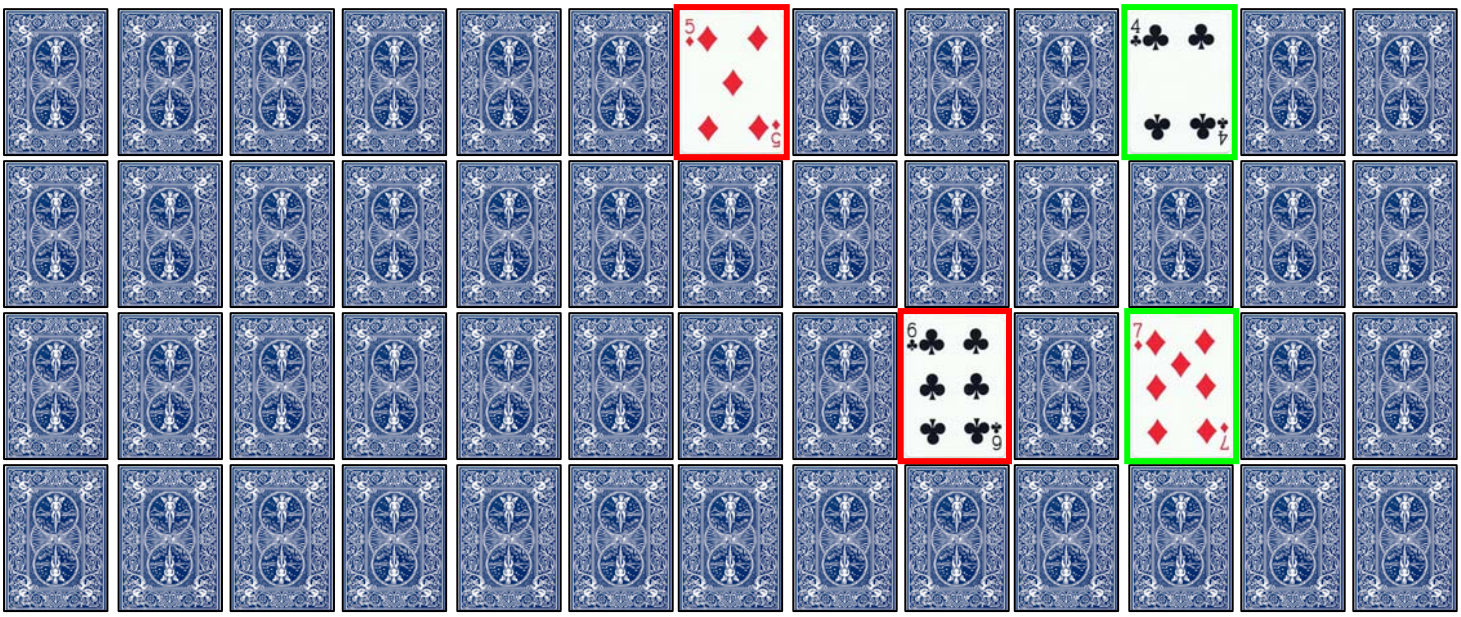
Addition Memory (Grades 1 – 5)

Players: Groups of two or more

Materials: Deck of cards, face cards worth ten, Ace worth 1 or 11

Skill: Number recognition and addition

How to Play: Arrange the cards face down in 13 x 4 array.



Player 1 turns over a pair of cards and solves to find the sum. Player 1 then turns over a second pair of cards and If the sums match, Player 1 wins the four cards and takes another turn.

If the sums do not match, they're flipped face down and the next player has a turn. Play continues until no more matches can be made.

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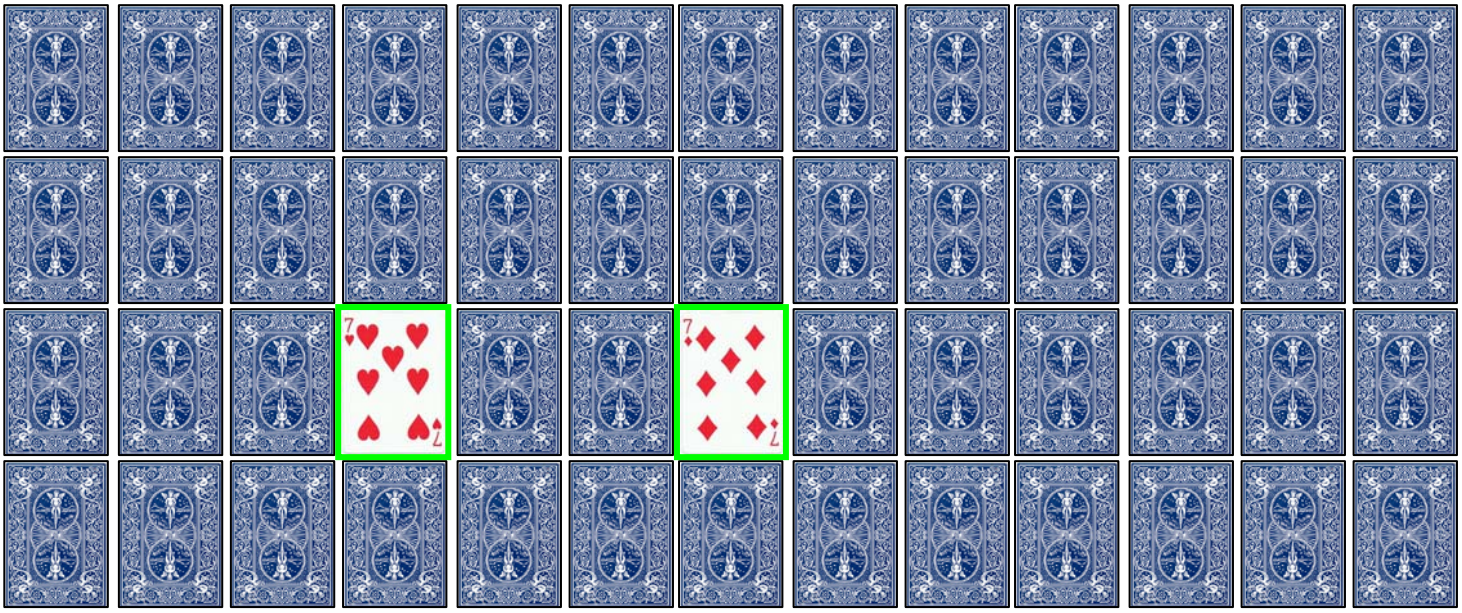
Color Number Memory (Grades 1 – 5)

Players: Groups of two or more

Materials: Deck of cards

Skill: Number recognition

How to Play: Arrange the cards face down in 13 x 4 array.



Players take turns turning over a pair of cards. If the numbers and colors match, the player wins the two cards and takes another turn.

If the cards do not match both value and color, they're flipped face down and the next player has a turn. Play continues until all number matches are found.

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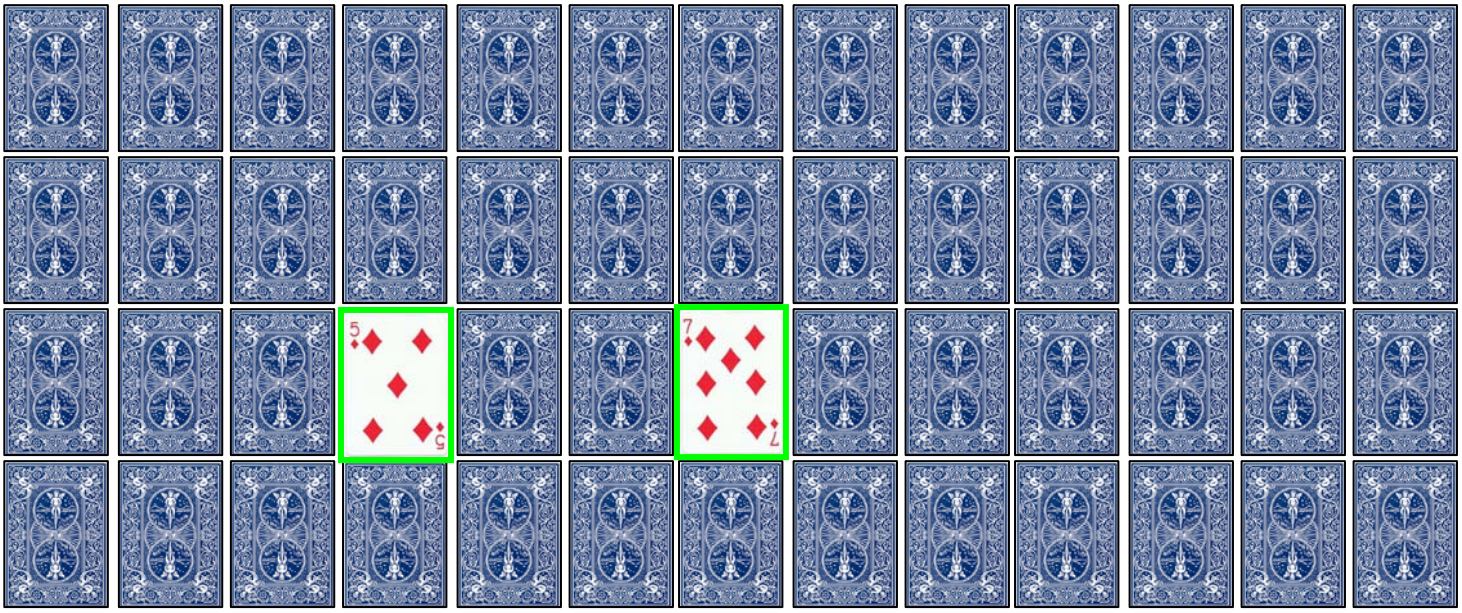
Odd/Even Number Memory (Grades 1 – 5)

Players: Groups of two or more

Materials: Deck of cards

Skill: Odd or even number recognition

How to Play: Arrange the cards face down in 13 x 4 array.



Players take turns turning over a pair of cards. If the numbers are both odd or both even, the player wins the two cards and takes another turn.

If the cards are not both odd or both even, they're flipped face down and the next player has a turn. Play continues until all odd or even number matches are found.

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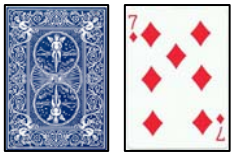
Hit (Grades 5 - 8)

Players: Groups of two or more

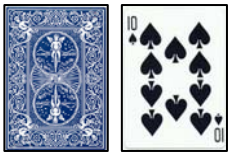
Materials: Deck of cards with face cards removed

Skill: Number recognition, addition, subtraction, multiplication, positive integers, negative integers, and mathematical reasoning

How to Play: Black cards are positive numbers; red cards are negative numbers. For each player, turn one card face down and one card face up. Everyone can see the face-up card, but only the player gets to look at his/her face-down card (until the end of the game, when all cards are revealed). The goal of the game is to get as close to zero as possible.

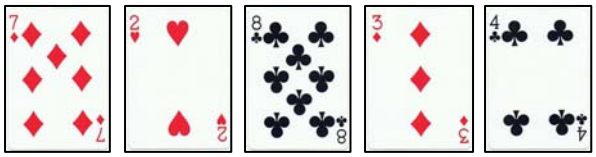


Player 1



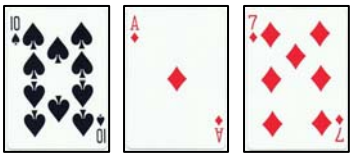
Player 2

Each player adds his/her cards together in their head. Then he/she may ask for up to 5 "hits," or extra cards, that are dealt face up, for a maximum of 7 cards total.



Player 1: asked for 3 hits, total is 0

-7 + -2 = -9 + 8 = -1 + -3 = -4 + 4 = 0



Player 2: asked for 1 hit, total is 2

10 + -1 = 9 + -7 = 2

Player 1 is closest to zero, so they win that round.

When everyone is done asking for hits, all cards are turned face up. Whatever each player's cards add up to is his/her score, and whoever scores closest to zero when all of the cards are revealed wins that round and becomes the dealer for the next round.

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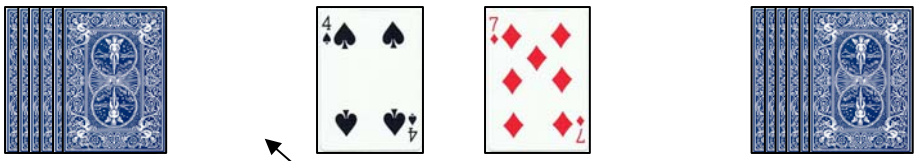
Over-Under (Grades 3 - 6)

Players: Groups of two

Materials: Deck of cards with face cards removed, Aces worth one

Skill: Multiplication

How to Play: Players split a deck of cards. One player is the Under 30 player and the other is the Over 30 player.



Player 1: Under 30 Player 2: Over 30

The product is under 30. Player 1 keeps the cards.

Each player turns over a card at the same time and the two numbers are multiplied together. If the product is less than 30, the Under 30 player keeps the cards. If the product is greater than 30, the Over 30 player keeps the cards.

If the answer is exactly 30 each player takes back their card and places it back in their deck.

When all the cards have been used the person with the most cards is the winner.

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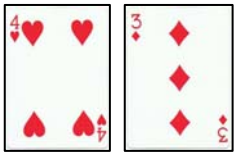
First to Fifty Addition (Grades 2 - 5)

Players: Groups of two or more

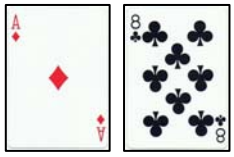
Materials: Deck of cards, Ace worth 11, Jack worth 12, Queen worth 13, King worth 14

Skill: Addition

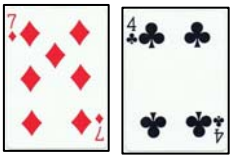
How to Play: Deal two cards to each player. Each player then turns over the two cards they have been given and determines the sum.



Player 1: sum is 7



Player 2: sum is 19



Player 3: sum is 11

The greatest sum is 19, so player 2 keeps their cards.

The player with the largest sum keeps their two cards while the other cards are returned to the bottom of the deck and new hands are dealt again. Players total the value of the cards they have won until one player is the first to fifty (or higher).

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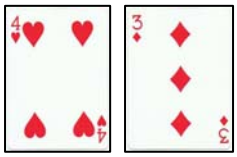
First to Five Hundred Multiplication (Grades 3 - 5)

Players: Groups of two or more

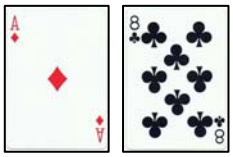
Materials: Deck of cards, Ace worth 11, Jack worth 12, Queen worth 13, King worth 14

Skill: Multiplication

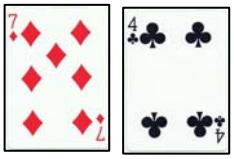
How to Play: Deal two cards to each player. Each player then turns over the two cards they have been given and determines the product.



Player 1: product is 12



Player 2: product is 88



Player 3: product is 28

The greatest product is 88, so player 2 keeps their cards.

The player with the largest product keeps their two cards while the other cards are returned to the bottom of the deck and new hands are dealt again. Players total the value of the cards they have won until one player is the first to five hundred (or higher).

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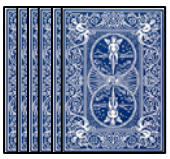
Give Some Percent! (Grades 4 - 6)

Players: Groups of two or more

Materials: Deck of cards, Ace worth 11, Jack worth 12, Queen worth 13, King worth 14, scratch paper

Skill: Percentages and division

How to Play: Shuffle the cards and place the deck face down in the center of the table. Decide on a percent for the first game. For example, let's use 50%.



Turn over the top card. Players race to find the given percentage (50%) of the value of the card. (Let's say it is a four of spades.) The first player that can give a correct answer wins the card. (In this example, 50% of 4, the answer would be "2".)

Play until the deck or time runs out. The player with the most cards wins. In the case of an odd number, have students use decimals or fractions to represent the answer (50% of 11 is 5.5 or 5 ½).

Allow the winner of each round to determine the percent used for the next round.

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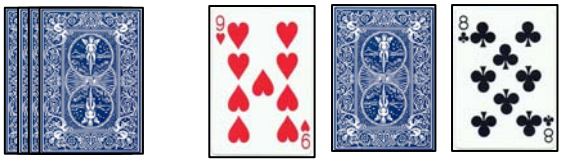
Get to the (Decimal) Point Addition (Grades 3 - 5)

Players: Groups of two or more

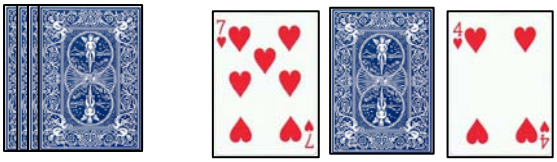
Materials: Deck of cards with face cards and tens removed, Ace worth 1, scratch paper

Skill: Decimals and addition

How to Play: Players split a deck of cards and deal out three cards each, placing them face down.



Player 1: 9.8



Player 2: 7.4

Each player turns over the first and third cards and leaves the second card face down to represent the decimal point.

Together, players line up the decimals and add both numbers together to get the sum.
9.8 + 7.4 = 17.2

Players put those cards in the “used” pile and select another 3 cards for the next decimal problem.

* This is not a game, but rather an opportunity for students to work collaboratively and manipulate the problems.

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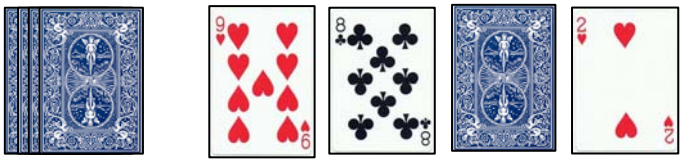
Advanced Get to the (Decimal) Point Addition (Grades 3 - 5)

Players: Groups of two or more

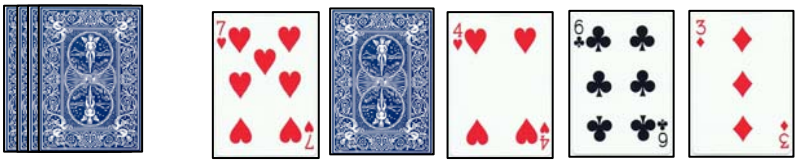
Materials: Deck of cards with face cards and tens removed, Ace worth 1, scratch paper

Skill: Decimals and addition

How to Play: Players split a deck of cards and deal out three to five cards each, placing them face down.

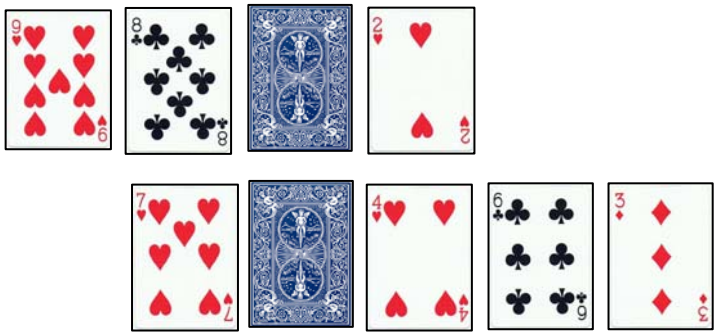


Player 1: 98.2



Player 2: 7.463

Each player leaves one card of their choice face down to represent the decimal point and turns over all other remaining cards.



The players then align the decimals and add both numbers to get the sum (98.2 + 7.463 = 105.663). Players put those cards in the "used" pile and select another set of cards for the next decimal problem.

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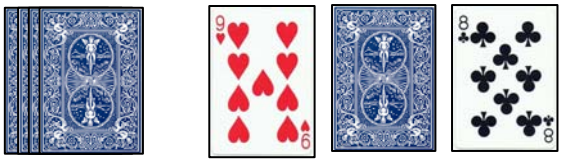
Get to the (Decimal) Point Subtraction (Grades 3 - 5)

Players: Groups of two or more

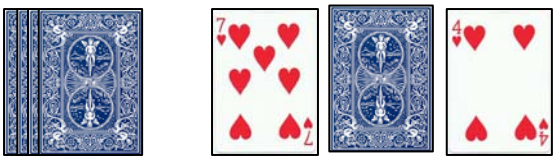
Materials: Deck of cards with face cards and tens removed, Ace worth 1, scratch paper

Skill: Decimals and subtraction

How to Play: Players split a deck of cards and deal out three cards each, placing them face down.



Player 1: 9.8



Player 2: 7.4

Each player turns over the first and third cards and leaves the second card face down to represent the decimal point.

Together, players decide which number is larger, line up the decimals, and then subtract the smaller number to get the difference. 9.8 - 7.4 = 2.4

Players put those cards in the “used” pile and select another 3 cards for the next decimal problem.

* This is not a game, but rather an opportunity for students to work collaboratively and manipulate the problems.

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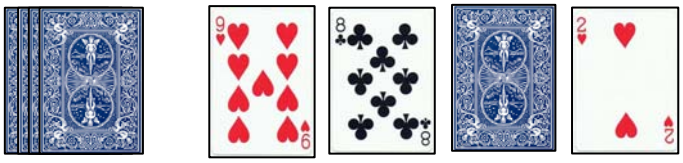
Advanced Get to the (Decimal) Point Subtraction (Grades 3 - 5)

Players: Groups of two or more

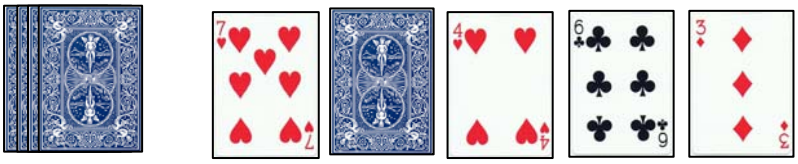
Materials: Deck of cards with face cards and tens removed, Ace worth 1, scratch paper

Skill: Decimals and subtraction

How to Play: Players split a deck of cards and deal out three to five cards each, placing them face down.

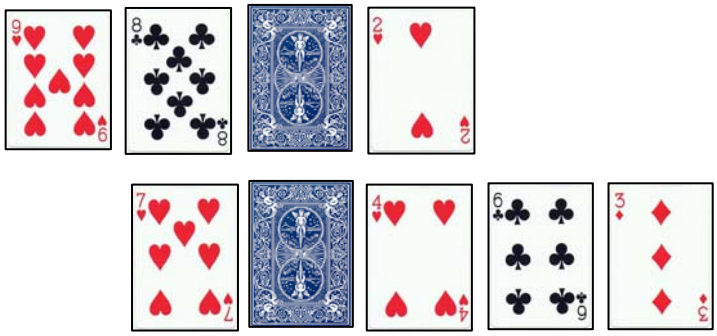


Player 1: 98.2



Player 2: 7.463

Each player leaves one card of their choice face down to represent the decimal point and turns over all other remaining cards.



The players decide which number is larger and then align the decimals and subtract the smaller number to get the difference (98.2 - 7.463 = 90.737). Players put those cards in the “used” pile and select another set of cards for the next decimal problem.

* This is not a game, but rather an opportunity for students to work collaboratively and manipulate the problems.

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Odd-Even Race (Grades 1 - 3)

Players: Groups of two or more

Materials: Deck of cards, Ace worth 11, Jack worth 12, Queen worth 13, King worth 14, scratch paper

Skill: odd or even number recognition

How to Play: Place one odd numbered card and one even numbered card in the center of the table. Players split the rest of the deck.

Player 1 Evens Odds Player 2

Students race to get rid of all of their cards by placing their odd number cards on the odd stack and the even number cards on the even stack.

The first player to correctly get rid of all of their cards wins!

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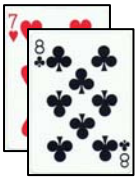
Finders Keepers (Grades 1 - 5)

Players: Groups of two or more

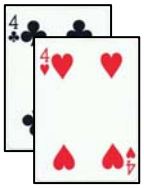
Materials: Deck of cards, Ace worth 11, Jack worth 12, Queen worth 13, King worth 14

Skill: Addition, subtraction, number recognition, sequence, and order

How to Play: Players split a deck of cards evenly amongst all players. *The players cannot look at their cards*. Each player takes turns flipping one card from their pile and placing it in the center of table. The goal of the game is to find one of the following rules.



One More Rule: Players may grab the pile if the top card played on the pile is one more than the previous card. First player to find the rule can grab the center pile.



Same Number Rule: Players may grab the pile if the top card played on the pile is equal to the previous card. First player to find the rule can grab the center pile.

One Less Rule: Players may grab the pile if the top card played on the pile is one less than the previous card. First player to find the rule can grab the center pile.

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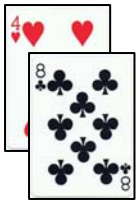
Finders Keepers (Grades 1 - 5)….continued



Double It Rule: Players may grab the pile if the top card played on the pile is double the previous card. First player to find the rule can grab the center pile.

If a player makes an illegal grab, they have to give two cards to the bottom of the center pile. If player makes a legal grab, they get all the cards in the center pile.

The player that collects all 52 cards, or no more rules can be found, wins!

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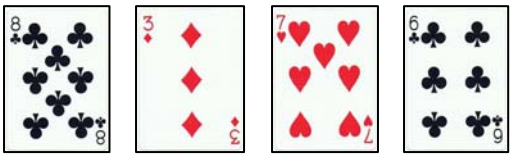
Round and Round (Grades 2 - 5)

Players: Groups of two

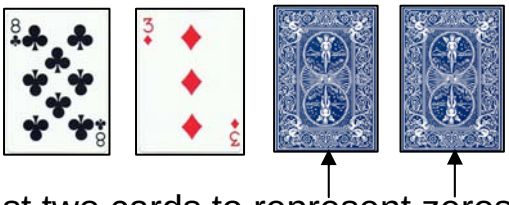
Materials: Deck of cards with face cards removed

Skill: Rounding and place value

How to Play: Teacher decides what the groups will be rounding to. In this example, groups will be rounding to the nearest thousand.



Deal out 4 cards to the group face-up to create a four digit number.



Turn over the last two cards to represent zeros since they are not needed to determine the outcome of the rounding.

Students look at the number to right of the thousands place and determine if the number should be rounded up by one to 9 or stay the same at 8.

Flip the card in the hundreds place to represent a zero and to show the entire number rounded to 8,000. Place used cards to the bottom of the deck and deal out the next four cards. *In the case that the number needs to be rounded up, students can look through their deck of cards to find the card needed to correctly show the new number rounded.*

* This is not a game, but rather an opportunity for students to work collaboratively and manipulate the problems.

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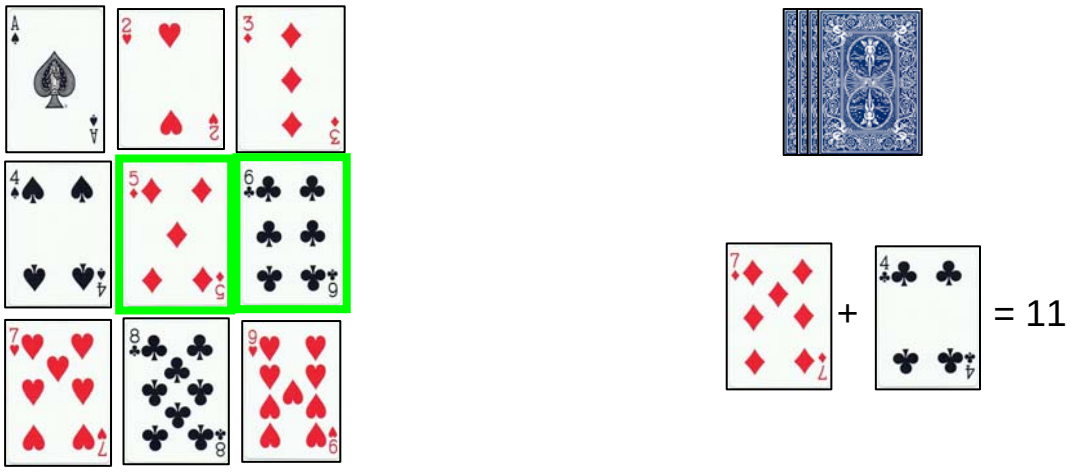
Addition Squares (Grades 2 - 5)

Players: Groups of two

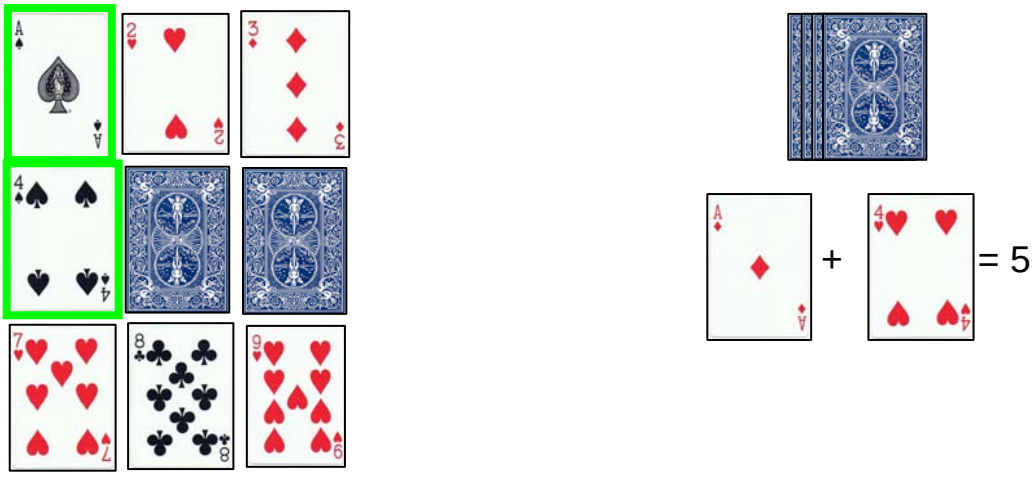
Materials: Cards Ace through 9, all face cards and tens removed

Skill: Number sense and addition

How to Play: Place one set of Ace through nine cards in order, face up, in a 3 X 3 grid. The other three sets of Ace through nine cards are shuffled and turned face down.



Player 1 selects the top two cards from the shuffled deck and determines the sum of the two numbers. Player 1 then turns over any number or numbers of the playing grid that have the same sum. In our example, we chose 5 and 6 for the sum of 11, but there are other combinations that could have been made.



Player 1 then draws the next two cards of the shuffled deck and repeats.

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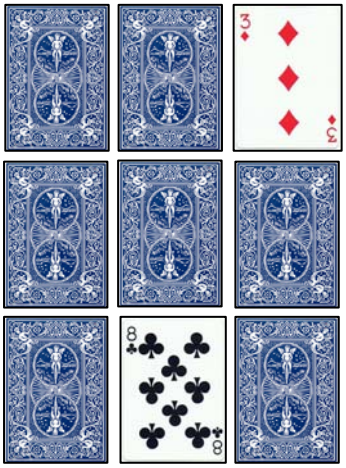
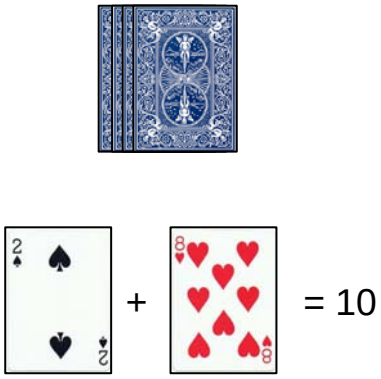
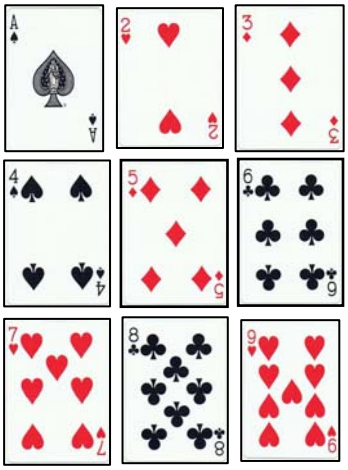
Addition Squares (Grades 2 - 5)….continued





Player 1: score for the round is 11

Player 1 continues until they can no longer turn over the *exact sum* drawn from the face down deck. If there are numbers are on the playing grid still showing, Player 1 adds those numbers together and that is their score.



At this point, the grid is reset with all grid cards facing up and the drawing deck is reshuffled and it is now Player 2's turn. Lowest score wins the round with zero being a perfect score.

After playing three rounds, add up the scores from each round and the player with the *lowest total points is the game winner.*

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