

Using Playing Cards to Build Understanding and Fluency

**Games are with a standard playing deck of cards with K, Q, J and jokers taken out unless otherwise noted.**

In addition to numeracy skills, playing games encourages social skills (taking turns), self-control (being a good winner or loser), patience (waiting for the other player), resiliency (attempting the skill with each new round of the game) and memory. These are all learned traits.

You can always use a game from a previous grade level, or modify games to fit your students’ needs and abilities.

Grade	Skill Level	Game
Kindergarten	<p><b>S</b> For struggling students use fewer cards and leave some or all of the cards with the numbers visible. You can also line a second set of cards face up above the cards which are face down.</p> <p><b>A</b> For more able students, turn over a starting card that is NOT 1, such as 5, and place larger consecutive numbers to the right up to 15 or 20.</p> <p><b>S</b> For struggling students, use A-5 for matching and/or keep the one set of cards face up.</p>	<p><b>Concepts:</b> <u>Counting and 1:1 correspondence; One more, one less</u></p> <p><b>X Ray Vision (Teacher and student)</b> Set-up: Using one suit of cards, lay cards A – 10 right side up so they read smallest to greatest left to right for the student. Touching the cards one at a time, read the numbers together. Turn the cards over in place so the order is preserved.</p> <p><b>Version 1:</b> Leave all cards face down and ask student to point to one card. Tell them you are going to use your X ray vision to see the number. Knowing the counting sequence, tell them the number of the card they point to and turn it over to check. Return that card to the face down position and them to use their X ray vision when you point to a card. Always turn the card over to check.</p> <p><b>Version 2:</b> Turn one card over and ask student what number is one more than the card you turned over. Turn the card over to check.</p> <p><b>Version 3:</b> Repeat Version 2, but ask what number is two more.</p> <p><b>Version 4:</b> Repeat Version 2 but ask what number is one less.</p> <p><b>Version 5:</b> Turn A – 10 number side up. Have the student close their eyes. Take one card away, leaving a hole in the sequence. Let the student open their eyes and tell you what number is missing.</p> <p><b>Version 6:</b> Repeat Version 5 but respace the cards so that it is not apparent where the card was taken.</p> <p><b>Concepts:</b> <u>Matching and numeral recognition; memory</u></p> <p><b>Matching (2 - 4 players)</b> Using two suits of cards, lay one suit upside down on the table, lay the next suit upside down next to the first. Take turns turning over cards to match the numbers.</p>

<p>1<sup>st</sup> Grade</p>	<p><b>S</b> For struggling students, use A-5</p> <p><b>S</b> For struggling students, create a sheet of partner numbers that make 10 they can refer to. Only allow two cards to sum to 10.</p> <p><b>A</b> For more able students, allow three or more cards to be added to 10. For example, 3+3+4.</p> <p><b>S</b> When students count all marks on the cards to find how many in all, “check” their sum by starting at the highest number and counting on: 5, then 6, 7, 8</p> <p><b>A</b> For more able students add the face cards to the deck and count them as 10s.</p>	<p><b>Concepts:</b> Greater than, less than or equal</p> <p><b><i>Who’s Got More - Number? (War) (2 players)</i></b>          Divide the deck between players. Keep cards face down in a pile in front of players. Both players turn over a card and decide whose card shows the greater number. Winner takes both cards. If cards are equal, each player turns over another card. Winner takes all four cards. If the card piles get low, put the cards that have already been played on the bottom of the piles to keep the game going.</p> <p><b>Concept:</b> Adding to 10</p> <p><b><i>Go Fish to 10 (2 – 5 players)</i></b>          Deal each player 7 cards. Put the rest in the middle to be the Fish Pond. Each player looks at their cards and puts any 10s in front of them. The goal is to make 10 with the remaining cards by adding two cards. Cards that sum to 10 are placed face up in front of the player. Players take turns asking the player to their right if they have a desired card. For example, if Player One has an 8, they would ask Player Two if they had a 2. If Player Two has a 2, she gives the card to Player One and she makes a 10, placing the pair of cards in front of her. If Player Two does not have a 2, she replies “Go Fish” and Player One takes a card from the Fish Pond, which may or may not make 10. No matter what the outcome, it is now Player 2’s turn to ask for a card.</p> <p><b>Concept:</b> Adding to 20</p> <p><b><i>Who’s Got More - Adding? (War) (2 players)</i></b>          Divide the deck between players. Keep cards face down in a pile in front of players. Both players turn over <i>two</i> cards and add them together. The player with the highest sum is the winner. Winner takes all four cards. If the sums are equal, each player turns over another two cards and compares this new sum. Winner takes all eight cards. If the card piles get low, put the cards that have already been played on the bottom of the piles to keep the game going.</p>
---------------------------------	---	--

<p>2<sup>nd</sup> Grade</p>	<p><b>S</b> For struggling students, keep the decks A-10, don't add in face cards.</p> <p><b>A</b> For more able students, keep A, 2s, and 3s but put out three cards.</p> <p><b>S</b> For struggling students use only A-5 OR use place value ten bars and ones.</p> <p><b>A</b> For more able students use three cards.</p> <p><b>S</b> For struggling students, provide a list of odd ones digit numbers 0, 2, 4, 6, 8.</p>	<p><b><u>Concepts:</u></b> Greater than, less than; Adding within 10, 20 or 30; Number Sense  <b><i>Who's Got More - Adding? (War) (2 players)</i></b>                  USE TWO DECKS. ADD IN THE FACE CARDS AND COUNT AS 10s. REMOVE THE Aces, 2s AND 3s.                  Divide the deck between players. Keep cards face down in a pile in front of players. Both players turn over <i>two</i> cards and add them together. The player with the highest sum is the winner. Winner takes all four cards.                  If sums are equal, each player turns over another two cards.                  If the card piles get low, put the cards that have already been played on the bottom of the piles to keep the game going.</p> <p><b><u>Concepts:</u></b> Place value; order  <b><i>Two-Digit Winner (2 players)</i></b>                  Use cards A – 9. Sitting side by side, dealer gives each player two cards. Players secretly put their cards in order to make a two digit number. Players compare numbers to see who has the biggest number. Winner takes all four cards.</p> <p><b><u>Concepts:</u></b> Even and Odd numbers; Number concepts <math>Odd + Odd = Even</math>, <math>Even + Even = Even</math>, <math>Odd + Even = Odd</math>  <b><i>Even or Odd (2 players)</i></b>                  Players decide if they will be the Even player or the Odd player. Players each turn over one card. The cards are added together. If the sum is even, the Even player takes them. If the sum is odd, the Odd player takes them.</p>
---------------------------------	--	--

<p>3<sup>rd</sup> Grade</p>	<p><b>S</b> For struggling students, have a place value model where and write place value digits in the correct column:      H   T   O</p> <p><b>S</b> For more able students, once they master comparing three digits, increase to four digits.</p> <p><b>S</b> For struggling students, leave out 6, 7, 8, 9 cards and include these cards as student is able.</p> <p><b>A</b> For more able students, remove the Aces (1), Kings (10) and Queens (10) and place in a third bonus pile. Each player can choose to take a card from the bonus pile to try to boost their product, understanding that they may be multiplying by 1 or by 10.</p>	<p><b>Concepts:</b> Place value; order</p> <p><b><i>Three-Digit Winner (2 – 3 players)</i></b> Use cards A-9. Sitting side by side, dealer gives each player three cards. Players secretly put their cards in order to make a three digit number. Players compare numbers to see who has the biggest number. Winner takes all six cards.</p> <p><b>Concepts:</b> Greater than, less than; Multiplication facts and multiplying by 10</p> <p><b><i>Who’s Got More - Multiplication? (War) (2 players)</i></b> USE A FULL DECK. Count the Aces as 1 and the face cards as 10. Divide the deck between players. Keep cards face down in a pile in front of players. Both players turn over <i>two</i> cards and multiply them together. The player with the highest product is the winner. Winner takes all four cards. If products are equal, each player turns over another two cards. The winner of this hand takes all eight cards. If the card piles get low, put the cards that have been played on the bottom of the piles to keep the game going.</p>
---------------------------------	--	--

<p>4<sup>th</sup> Grade</p>	<p><b>S</b> For struggling students, only use A-5 cards.</p> <p><b>A</b> For more able students, try three-digit by one-digit or two-digit by two-digit multiplication</p> <p><b>S</b> For struggling students, use A – 5. Provide some possible sentence starters such as “Is the number ...”</p> <p><b>A</b> For more able students, use three cards OR only allow 15 questions.</p>	<p><b>Concepts:</b> Multi-digit multiplication: Two-digit by one-digit <b>Choose wisely (any number of players)</b> Use the Choose Wisely Template or just paper. The goal is to get the highest answer once the product of two numbers has been computed. Put the card deck with numbers A – 9 between players. Turn one card over. On their game board, each player decides where to place the digit. Once placed, it cannot be moved. Another card is turned over and that digit is placed. A third card is turned over and that digit fills the third place. The two numbers are multiplied together and the highest product wins! Great game to talk about strategy!</p> <p><b>Concepts:</b> Order; Even and Odd <b>Guess my number (20 questions) (any number of players)</b> <i>Play with A-9.</i> Player One takes two cards and secretly creates a two-digit number from them. Player Two asks Yes/No questions such as: Is the number even or odd? Is it less than 50? Is it divisible by 5? Player One can only answer Yes or No. Player Two has 20 questions to use to try to guess the number.</p>
<p>5<sup>th</sup> Grade</p>	<p><b>S</b> For struggling students, use A, 2, 3, and 4’s. Add in 8’s and 10’s next.</p> <p><b>S</b> For struggling students, use A, 2, 3, and 4’s. Add in 8’s and 10’s next.</p>	<p><b>Concepts:</b> Fractions greater than, equal to, or less than 1 <b>More or Less (2 players)</b> Players sit side by side. Divide the deck in two. Each player puts half of the deck in front of them face down. Players take one card from their deck and look at it. Player 1 predicts the kind of fraction that will be built as “more than one” or “less than one”. Player One places their card down between players as the denominator. Player Two must place their card above it as the numerator. If Player One predicted correctly, they get the cards. If the fraction is equal to one, it is a tie and each player takes one of the cards. If Player One predicted incorrectly, Player Two takes the cards.</p> <p><b>Concepts:</b> Ordering fractions <b>Who’s Got More (2 players)</b> Players sit side by side. Divide the deck in two. Each player puts half of the deck in front of them face down. Each player takes two cards from the top of their deck and makes a fraction by placing one card above the other. The player with the greatest fraction wins all four cards. If the fractions are equal, another round is played and the winner of that round takes all eight cards.</p>

<p>6<sup>th</sup> Grade – High School</p>	<p><b>S</b> For struggling students, use A – 6.</p> <p><b>S</b> For struggling students, use only A – 10 and only two suits of cards, one red and one black</p> <p><b>A</b> For more able students use K, Q, and J as 10's</p>	<p><b>Concepts:</b> Adding positive and negative integers <b><i>Red and Black – Adding (2 players)</i></b> You can use the whole deck and count the face cards as 10s. One player chooses to be Negative and one chooses to be Positive. Divide the deck in two. Each player puts half the deck in front of them, face down. Each player turns over one card from the top of their deck. The cards are added together with Black cards being positive integers and Red cards being negative integers. If the sum is negative, the Negative player gets the cards and vice versa. If the sum is zero, it is a tie and players play again. Winner of this hand gets all four cards.</p> <p><b>Concept:</b> Adding positive and negative integers <b><i>Mystery Card (2 players or any size group)</i></b> You can use the whole deck and count the face cards as 10s. Divide the deck in half. Put one card off to the side face down. This is the MYSTERY CARD. Use Black cards as positive integers and Red cards as negative integers. Each player adds their cards up using any strategy they choose. Players then add their two final numbers together and guess what the MYSTERY CARD is. Turn the card over and check! Celebrate if everyone added correctly! (The total of a complete deck should be 0. For example, if the total sum between the two players is -5, the Mystery Card should be 5 if they have added correctly.) You can put one card aside and the class can add up the cards as you show them.</p>
<p>6<sup>th</sup> Grade – High School</p>	<p><b>S</b> For struggling students, use only A – 5 black and red cards.</p> <p><b>A</b> For more able students, player of highest card must say HOW MUCH higher their card is over the lower card.</p>	<p><b>Concept:</b> Order of positive and negative numbers (magnitude and direction) <b><i>Who's Got More +/- (2 – 4 players)</i></b> Students must pay attention to the sign and the magnitude Use a whole deck of playing cards. K, Q, J value is 10, A = 1. Black cards are positive numbers. Red cards are negative numbers. Players divide the deck between them. Each player turns over a card and <b>says</b> the value of their card. (e.g. A two of hearts is negative 2) The highest card wins. Winner takes both cards. If the cards are the same value and color, players play again, and winner takes all.</p>

	<p><b>S</b> For struggling students, use only A – 5 black and red cards.</p> <p><b>A</b> For more able students, player of highest card must say HOW MUCH higher their absolute value is over the lower absolute value.</p> <p><b>S</b> For struggling students, use only A – 5 black and red cards.</p>	<p><b>Concept: Magnitude of absolute values</b>  <b><i>Who’s Got More, Absolute Value (2 – 4 players)</i></b>                  Students must pay attention to just the magnitude.                  Use a whole deck of playing cards. K, Q, J value is 10, A = 1. Black cards are positive numbers. Red cards are negative numbers.                  Players divide the deck between them.                  Each player turns over a card and <b>says</b> the absolute value of their card. (e.g. For a 2 of hearts, “The absolute value of negative 2 is 2”.)                  The highest absolute value wins. Winner takes both cards.                  If the cards are the same absolute value, players play again, and winner takes all.</p> <p><b>Concept: Order of Integers</b>  <b><i>Middle Wins (2 – 4 players)</i></b>                  Use a whole deck divided between players. If there are only 2 players, deck is divided into three piles and one pile is the invisible player.                  K, Q, J value is 10, A = 1. Black cards are positive numbers. Red cards are negative numbers.                  Each player turns over a card. If there are only 2 players, a player turns over a card for the invisible player.                  Players remember their card, and in cooperation with the other players, put their cards in order from lowest to highest. Card in the middle take all. All players must agree on the solution.                  If 4 players play, the two players with middle cards each take two cards.</p>
--	---	---

<p>High School</p>	<p><b>S</b> For struggling students, use A – 5</p> <p><b>A</b> For more able students, turn over three cards.</p> <p><b>S</b> For struggling students, use three cards but limit the number of operations to multiplication and addition.</p> <p><b>A</b> For more able students, make the black cards positive and the red cards negative.</p> <p><b>S</b> For struggling students, make the target number 12.</p> <p><b>S</b> For struggling students, create a list of 1 – 10 with lines for equations to be written on to keep thoughts organized.</p>	<p><b>Concepts:</b> <u>Multiplying positive and negative integers</u>  <b><i>Red and Black – Multiplying (2 players)</i></b>  You can use the whole deck and count the face cards as 10s. One player chooses to be Negative and one chooses to be Positive. Divide the deck in two. Each player puts half the deck in front of them, face down. Each player turns over one card from the top of their deck. The cards are multiplied together with Black cards being positive integers and Red cards being negative integers. If the product is negative, the Negative player gets the cards and vice versa. Winner gets the cards.</p> <p><b>Concepts:</b> <u>Order of Operations</u>  <b><i>Who’s Got More- All operations (2 players)</i></b>  Players sit side by side. Divide the deck in two. Each player puts half of the deck in front of them face down. Each player takes three cards from the top of their deck and makes an equations on paper to make the greatest number. They can use exponents, parentheses, addition, subtraction, multiplication or division. They must be able to prove to their opponent that their answer is correct based on order of operations.</p> <p><b>Concepts:</b> <u>Order of Operations</u>  <b><i>Go Fish to 24 (2-5 players)</i></b>  Each player is dealt 7 cards. The rest are put in the center spread out as the Fish Pond. The goal is to make 24 using any operation. Players take turns asking the other players for a card. If the card cannot be produced, they are told to “Go Fish” and take a card from the Fish Pond. The first player to make 24 wins. For example: 10, 2, 4, 1 make 24 by <math>10 \times 2 = 20</math>, <math>4 \times 1 = 4</math>, <math>20 + 4 = 24</math>.</p> <p><b>Concepts:</b> <u>Order of Operations</u>  <b><i>S’MATH (any number of players)</i></b>  Four cards are randomly chosen from the deck of A – 6 cards. Players attempt to make the numbers 1 – 10 by using all four digits chosen and by following order of operations. They can work as a team and should keep track of their equations. For example, if the cards chosen are 2, 2, 4, 5: <math>1 = (5 - 4) \times (2 \div 2)</math>, <math>2 = (5 \times 2) - (2 \times 4)</math>. <math>3 = (2 \times 2) - (5 - 4)</math> etc.</p>
--------------------	--	---