

Making Change Game (2 – 4)

Materials: 2 dice; one \$1 bill, 6 quarters, 2 dimes and 2 nickels for each player

Number of players: 2 or 3

Directions: There is no money in the bank at the beginning of the game. Players take turns depositing money into the bank. To determine the amount they are to deposit, they roll the dice and multiply the total number of dots on the dice by 5 cents. At the beginning of the game, they will be able to count out the exact amounts. Later, they make change from the money in the bank if they don't have the exact amounts. The first player without enough money to put in the bank wins.

Variations: 1) Use two different-colored dice to represent nickels and dimes. Each player starts with three \$1 bills in addition to the coins. 2) Use three different-colored dice to represent nickels, dimes, and quarters. Each player starts with six \$1 bills and one \$10 bill in addition to the coins.

Money Exchange Games (2 – 4)

Materials: Play money: twelve \$1 bills, twelve \$10 bills, and one \$100 bill for each player; a Place-Value Mat (see sample) for each player; 2 regular dice

Number of players: 2 or 3

One Hundred Dollars \$100	Ten Dollars \$10	One Dollar \$1
---------------------------------	---------------------	-------------------

Directions for Collection Game: Players put all their money in the bank. At each turn, they roll the dice, take from the bank the amount they roll, and place the money on the game mat. Whenever possible, they trade ten \$1 bills for a \$10 bill or ten \$10 bills for a \$100 bill. The first player to trade for a \$100 bill wins. Most games last 12 - 18 rounds.

Directions for Take-Apart Game: Each player begins with a \$100 bill; the rest of the money goes into the bank. At each turn, players roll the dice and put the amount they roll into the bank. They exchange a bill of a higher denomination for bills of the next-lower denomination, as needed. The first player with less than \$12 wins.

Variations:

- 1) Set larger or smaller goals.
- 2) Generate larger numbers, which shorten the number of rounds to reach a given goal, using polyhedral dice or 3 dice.
- 3) Use dollar bills, dimes, and pennies instead of \$100, \$10, and \$1 bills.

SIMPLE MATH GAMES TO PLAY AT HOME WITH A DECK OF CARDS

WAR AND DOUBLE WAR:

Use a regular deck of cards (optional: remove face cards for young children). Deal out the cards evenly between game participants. Aces represent one and face cards are ten. Play one of these versions:

Highest card wins: This is the traditional game where each player turns over the top card from their own pile and the player with the largest card wins all the cards. In the event of ties, everyone turns over an additional card and the winner takes the larger pile. In this version, students practice numeral recognition, number value, and greater than and less than.

Addition Double War: Follow the rules of War with each player turning over two cards at a time. Players add the value of their two cards and the largest sum wins. Students can practice addition strategies: counting all the "pips" on both cards for the sum, starting with one card and counting on using the pips on the second card, doubles facts, special "tricks" for adding ten and nine, sharing, and making a ten. To make this game a little more challenging, turn over three cards each time and find their sum.

Subtraction Double War: Follow the directions for Addition Double War, only the biggest difference wins. Good opportunity to practice subtraction strategies and facts.

Multiplication Double War: Follow the directions for Addition Double War, only this time the largest product wins. For a student just learning multiplication facts, use two decks of cards and start with the easiest fact families first, gradually adding the larger numbers.

Fraction War: Each player turns over 2 cards at once and tries to make the largest fraction by laying the cards vertically. For example with a 3 and 5, you can make $\frac{3}{5}$ or $\frac{5}{3}$; if the other person has a 2 and 8, the fraction could be $\frac{2}{8}$ or $\frac{8}{2}$. Variations: only allow fractions less than one or use three cards at a time and create mixed numerals.

SALUTE:

This game helps students practice adding (or multiplying) and finding the missing addend (or factor).

This is a game for three players. Remove the face cards from a regular deck of cards (ace represents one). Deal out the cards evenly to two players who sit facing each other; each holds the stack of cards face down. The third player sits where s/he can see the other two players. When the third player says "Salute," the two players with cards simultaneously take the top cards off their respective piles and hold them on their foreheads with the face of the card outwards so that they can only see the other person's card. The third player announces the sum (or product for a more advanced version) of the two cards. Each of the two players holding a card tries to be the first to announce the number on his own card (which he cannot see). The winner takes both cards. Rotate players so everyone gets a chance to be the one who says, "salute," and gives the sum and product.

PYRAMID:

Discard the face cards and use the aces to represent one. Lay out a pyramid of face up cards with one card at the top, two cards overlapping the bottom edge of that card, three cards overlapping the edges of the two cards, and so on, until there are six cards at the bottom of the pyramid. Only cards that are fully uncovered can be used. Pick up and discard cards with number combinations that equal ten. The easiest version is to discard cards in pairs that add up to ten ($2 + 8$, $3 + 7$, etc.) and the ten by itself. Make the game progressively more challenging by allowing any combination of cards that can be strung together in an equation to equal ten, for example, $9 + 3 - 2$ or $2 \times 3 + 4$. The game can also be played with the face cards with these values: J is 11, Q is 12, and K is 13 (change the target number to 13 for this version).

MAKE THE MOST OF IT:

Remove kings and jacks from the deck. Ace is one and Queen is zero. Players take turns drawing one card at a time, trying to create the largest 5 digit number possible. As each card is drawn it is placed (and cannot be moved) into the ones, tens, hundreds, thousands, or ten-thousands place. When the sixth card is drawn, the player can choose one of the cards on the table to discard and replace it with the sixth card. Largest 5 digit number wins. Make this game easier or harder by varying the number of digits.

CLOSE TO 20:

Remove the kings and jacks from a deck of cards. In this game Aces are one and Queens are zero. The object of the game is to make an addition problem with three addends as close to 20 as possible (see the sample game board below). Each game has five rounds.

To play deal out five cards and place them so all players can see them. Each player uses the numbers on any three of the cards to make a total that is as close to 20 as possible; you may use each card only once. The player writes the numbers they chose and total on their score sheets. The points for each round is the *difference between the sum and 20* (for example a sum of 24 scores 4 points and so does a sum of 16). Put all five cards in a discard pile and deal out five more for the next round. After five rounds, players total their points and the player with the lowest score wins.

Score sheet:

Round 1:	_____	+	_____	+	_____	=	_____	_____ pts
Round 2:	_____	+	_____	+	_____	=	_____	_____ pts
Round 3:	_____	+	_____	+	_____	=	_____	_____ pts
Round 4:	_____	+	_____	+	_____	=	_____	_____ pts
Round 5:	_____	+	_____	+	_____	=	_____	_____ pts

Variations:

1. Play Close to 25 and deal out six cards for each round and players may use any four cards to total as close to 25 as possible.
2. Instead of dealing the cards face up and everyone using the same numbers, deal out five cards to each player and spread the remainder in the center of the table face down. Each player uses three cards in his/her hand to add up to 20 and then discards those 3 cards face down to the center of the table. For the next round, each player chooses 3 cards from the center pile and so on until five rounds have been played.

MAKE 100:

In this game Aces are one, Queens are zero, and Kings and Jacks are wild cards. Each game has 5 rounds.

To play deal six cards to each player. Players choose any four of the cards to make two double-digit numbers that when added come as close as possible to the total of 100. Wild cards can be assigned any value. Players record their numbers and the sums on the score sheet. The player's score for each round is the difference between the sum and 100 (for example sums of 95 and 105 both score 5 points). The used cards are discarded and the two cards remaining in each hand are kept for the next round. For rounds 2 to 5, deal out four cards to each player and make two double-digit numbers, add them, and score your points. At the end of five rounds, the player with the lowest value wins.

Scoring variation: Play is the same, but when you score use positive numbers for sums above 100 and negative numbers for score below 100. The player then adds up positive and negative numbers and the one with the grand total closest to zero after five rounds wins.

Score Sheet:

Round 1:	_____	+	_____	=	_____	_____ points
Round 2:	_____	+	_____	=	_____	_____ points
Round 3:	_____	+	_____	=	_____	_____ points
Round 4:	_____	+	_____	=	_____	_____ points
Round 5:	_____	+	_____	=	_____	_____ points