

Topics: Math, Addition, Probability

Materials List

- ✓ Blank Playing Cards
- ✓ Permanent Markets
- ✓ Tokens

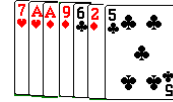
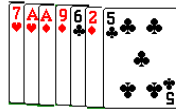
This activity can be used to teach:

Common Core Math Standards:

- Addition and Subtraction (Operations and Algebraic Thinking, Grade 1, 1, 6; Grade 2, 2; Number and Operations in Base Ten, Grade 1, 4; Grade 2, 5)
- Probability (Statistics and Probability, Grade 7, 5 & 6; High School, Conditional Probability, 2)
- Problem Solving and Reasoning (Math Practices Grades K-12)

31

A Card Game of In-Your-Head Addition



This card game helps students learn to add numbers in their heads. The objective of the game is to get as close to 31 with any number of cards, without going over 31.

Assembly

1. Use blank cards and permanent markers to create a standard deck, except face cards (jack, queen, king) should be replaced with just the number “10”.
2. As a variation, create a deck of cards that contains more 5’s, 3’s, 7’s, etc... Depending upon which numbers the students need practice with.

Playing the Game (for 3-5 of players)

1. For play: all cards numbered 2 through 10 count at face value. A “1” (or “ace”), can be valued at either 1 or 11.
2. Students take turns dealing the cards.
3. Each hand is called a “round”.
4. After shuffling the cards, the dealer will give each player, including himself, 3 cards from the deck.
5. The students will add up the value of the cards in their hands.
6. At this point the players may either take more cards (hit) or stay with the cards they have (stand). The dealer goes to each player in turn and deals more cards if requested (“hits”) until the player either “stands” or “busts”:
Hit – This means that the player requests another card from the dealer. Players can continue to “hit”, taking as many cards as they wish, as long as they do not go over 31. [Hint: If your 3 cards were equal to or less than 20 you have nothing to lose by requesting another card since your total could not exceed 31.]
Stand - This means that the player is satisfied with his hand and does not want to risk another hit. A player can “stand” with any number of cards.
Bust - If the total of the cards is greater than 31 then it is called a “bust” and the player will be out until the next round.
7. The student who comes closest to 31 (or has 31 exactly) will be the winner of the round, receiving one token. If two players tie for the highest total, each receives a token.
8. The winner of the game is the first person to receive 5 tokens.

The Math Behind the Activity

This activity reinforces basic arithmetic skills, and also encourages students to incorporate probability into their gaming strategy. While adding single digit numbers to 31 is a very basic skill, many students do not get the opportunity to add numbers in their heads with any frequency. Like any other skill, frequent repetition is required to maintain competency. Probability also comes into play. Knowing that there are 16 cards showing a “10” in the deck of 52, students will soon figure the odds of drawing a “10” are better than the odds of drawing any other number. This activity can serve as a springboard to more detailed probability lessons.

Web Resources (Visit www.raft.net/raft-idea?isid=265 for more resources!)

- Teacher designed math courses – <https://njctl.org/courses/math>