

This activity was written by Candace Walkington.

Black Jack Madness!

In the card game Blackjack, the dealer gives you two cards from the deck, and your goal is to get as close as possible to 21 without going over. Face cards (king, queen, jack) are worth 10, Aces are worth 1 or 11 (your choice), and numbers are worth their value. After you've been dealt two cards, you have the choice of whether to be "hit," which means have the dealer give you another card. You can keep getting "hits" until you go over 21, and automatically lose. Going over 21 is called "busting."

- 1) Your group's first task today is to figure out the probability of being dealt a "blackjack" (a 21) in the first two cards that the dealer gives you from a 52 card deck. You can use any method you choose to solve the problem, but be ready to justify your answer to the class, explaining your process and why it works. You will be given a deck of cards to help you with this activity.
- 2) Your second task is to investigate the following scenario: The dealer opens a 52-card deck, and deals you the king of spades and a 6 of hearts. The dealer deals himself the eight of diamonds, and another face-down card. Should you hit or should you stay? Answer this question mathematically by determining the probability you will bust if you're hit with another card, and the probability the dealer will beat you if you stay at 16 (assume for this that the dealer does not take another hit). If you need help, look at the cards remaining in the deck.
- 3) Figure out the probability of another scenario in blackjack that your group is interested in – be ready to present your findings to the class!

