

## BANDIT PROBLEM ACTIVITY

**Preparation:** Attached are four different decks of cards. They represent payoffs for bandits. Print each deck on a different color card stock.

**Demonstration:** Shuffle and place the A and B decks on the projector. Get a volunteer. Tell the student that they will eventually get to pick 10 cards total. On each card is a dollar amount, and they want to try and maximize the total amount of money they get from the cards. Have them choose a deck, pick up the top card and show it to them. Repeat this process nine more times.

**Play:** Pass out the decks of cards to the students. Let them play by themselves or in groups if they like. Remind them not to look at the cards, but have them shuffle the cards. Have them play each combination:

1. A versus B
2. A versus C
3. A versus D
4. B versus C
5. B versus D
6. C versus D

And be sure they record what their total payoff is in each combination.

Now get the groups of students back together. Ask them what they think each deck looks like.

**Discussion:** What do you think the best way to play this game is when you don't know about the makeup of the deck? Discuss different strategies.

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