Big Ideas Math®

War with a Twist

▶ Materials:

- 36 playing cards: 2 twos, 2 threes, 2 fours, 2 fives, 3 sixes, 3 sevens, 3 eights, 3 nines, 4 tens, 4 jacks, 4 queens, and 4 kings
- Paper
- Pencil
- Calculator

▶ Directions:

Students play in pairs.

Divide the playing cards equally among the two players. Each player turns two cards face up and determines the probablility of randomly selecting those two number and/or face cards from the set of 36 cards. The player with the greater probability takes all four cards and places them at the bottom of his or her stack.

Example:

Player 1 turns over a king and a 7.

$$P(\text{King, 7}) = \frac{4}{36} \cdot \frac{3}{35} = \frac{1}{105}$$

Player 2 turns over a 5 and a 7.

$$P(5, 7) = \frac{2}{36} \cdot \frac{3}{35} = \frac{1}{210}$$

Player 1 has the greater probability. So, Player 1 takes all four cards and places them at the bottom of his or her stack.

If there is a tie, each player turns two new cards face up and determines the probability of randomly selecting those two number and/or face cards from the set of 36 cards. The player with the greater probability takes all eight cards.

Play continues until one player runs out of cards, or time is called.

▶ Who Wins?

The player with all the cards, or the player with the most cards when time is called, wins.

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