NUMBER RELATIONSHIPS AND DISTANCE FROM ZERO

**Name:** Combinations   **Type:** Game

About the Game: Using two-sided counters or other tools to represent zero pairs is a concrete way to begin exploring this idea. Students can combine numbers in a variety of ways to make zero pairs. For example, they might use −4 and −5 to combine with 9. But they can also use −4, −5, and −6 to combine with 8 and 7 to clear more cards with each turn. Encourage students to be creative and look for clever solutions as their skill grows.

Materials: A deck of playing cards (queens = 0, aces = 1; remove kings and jacks)

Directions:
1. Red cards represent negative numbers and black cards represent positive numbers.

2. Players deal themselves five cards from their deck face up.

3. Player 1 begins by looking for combinations that make a zero. For example, they might have a red 7 (−7) that they combine with a black 7 (7).

4. When Player 1 cannot make any more combinations, their turn is over and they can choose to discard one of their remaining cards or not discard any cards.

5. Player 2 then looks for combinations. At the end of their turn, they can also discard one card or not.

6. Player 1 then begins their next turn by dealing themselves a new card and looking for combinations.

For example, Jayson deals the five cards shown on the left. He combines 9 with the 8 (−8) and the ace (−1) and removes them. He is left with 2 and 6 (shown on the right). He chooses not to discard.
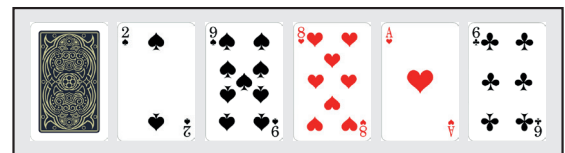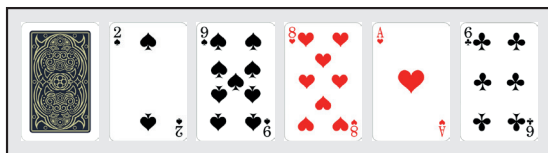
On his next turn (left example), he deals a 3. He cannot make a combination and chooses not to discard. On his next turn, he deals another red 3 (right example).
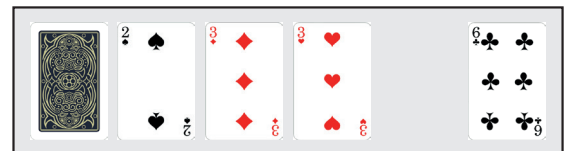
He pairs the two red threes (−3 and −3) to combine with the black 6 and discards the 2 to clear his cards and win the game.
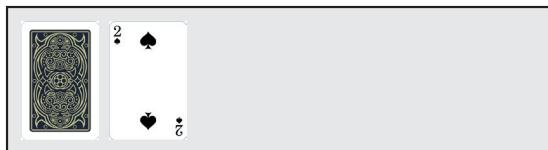
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