Group_Initiative_Morgan_Reid

Group Initiative: **The Card Rally** (Theme: Connection)

The Card Rally is a travel-out-and-back team game in which students in groups use the values on playing cards to get them to checkpoints around the school and back to their Home Base in the classroom. The cards provide distance values which tell how many steps to walk from their position. Students are practicing integer addition and making connections to the effect of integer sign as a real-world forward and back movement. Students are also making connections with their teammates in groups.

Procedure:

1. Students are grouped into five teams of approximately four students, and given a table to call Home Base.
2. Each team receives a deck of cards with face cards removed.
3. The teacher explains that the objective is to reach checkpoints in or around the school in any order they choose, using the value of the cards drawn from their deck to count the distance. The rules and checkpoint locations are posted / projected.
4. Black cards are positive values. Red cards are negative values. Aces are valued 1.
5. Each time a card is drawn, the group travels the distance indicated on the card, in steps. For example, the group pulls a black 5. They move 5 steps toward their next objective. Next they pull a red 7. They move backward 7 steps away from their objective or toward home base.
6. Total sum of all cards in their decks is zero. They must try to reach as many checkpoints as possible while still returning home. For teacher planning purposes, the checkpoint map could in the shape of a lower case t. This provides sufficient challenge, although a group could choose to reduce risk by only going to one checkpoint.
7. Success for a team is twofold: Reaching checkpoints and getting to home base. Maximum success would be to reach all checkpoints and get to home base. Partial success would be either reaching fewer than all checkpoints or not getting all the way home.

Math notes for the Teacher: Odds and Topology

- For the teacher's information: the theoretical and reasonably probable maximum positive distances are based on the totals of card values:
    - Black cards: Clubs: A, 2, 3, 4, 5, 6, 7, 8, 9 = 45, Spades: 45 so, 90 positive

    - Red cards 90 negative.

- Topology and Odds:
    - The theoretical shape of the checkpoint course can be a lower case t. As long as the distance from home to the end of the first branch of the t, then to the top end, and to the end of the next branch is 90 steps or less, the theoretical path is possible. Note that although the course could be shaped like a t, the path taken need not follow any lines. Students could choose to take diagonal paths.
    - Practically, the odds of drawing all positive cards on the outbound path are infinitesimal, and a group might waste negative cards before leaving. So, practically, it could be assumed that there will be at least 50% waste. Therefore two measures could be taken to increase—but still not guarantee—the possibility of groups succeeding.
        - The distance of the outbound journey should be about 45 steps.
        - Decks should be shuffled and then manually adjusted with about 15-20 worth of positive (black) cards near the front.

Materials:

Five decks of playing cards, face cards removed

Spatial requirements:

Indoor or outdoor space allowing one or more roughly t-shaped courses approximately 45 steps one way.

Variants on game:

. Extend the course or add more checkpoints
. Require exact landing at checkpoints and Home Base
. Use red and white dice instead of playing cards
. Use a much longer course and multiplication instead of subtraction: pull two cards and travel the distance of the product. Red cards are negative, black are positive. Integer multiplication rules apply.

Awareness of process dialogue:

- What did you observe?
- What worked well? (note: things like luck of the draw from the shuffled deck and choice of routes could come up here)
- What didn't work well?
- In what ways did you get to know yourselves and your classmates better?
- How could what you did here apply to Math?
- How could you apply what you did here in life?
- What did we do to ensure we were responsible members of the community while were doing the activity?