

TEAM LEADERSHIP PROBLEM

24. MONTE CARLO

Theme: Leadership Styles

Estimated Time: 25-30 minutes

Resources Required: Dice (one die for each person), matches (four for every person). You can ask everyone to bring these from home if you can't supply them.

Activity Description and Step-by-Step Instructions:

Monte Carlo simulations use random numbers as inputs to show the probability of an outcome. More importantly, leaders can use such simulations to help solve problems.

Divide the group into about two equal teams. Arrange the teams to form a production line and state that the objective of the activity is to maximize production.

Each person should have one die and four matches. State that each person is a workstation in the production line and their job is to process their product (the matches). The die determines how many pieces the worker can process per turn. In theory, each person should be able to process an average moving 3.5 pieces per turn $(1+2+3+4+5+6)/6$ sides).

Let each team also know that the team is really a company that only gets a profit for everything that is sold, so the team must be aware to reduce inventory, if possible.

Let everyone roll their die and pass to the next person in their assembly line the number of matches that the die indicates. For example, if you rolled a two, then pass two matches to the next person. If the die shows six, for example, and you only have four matches, then you can only pass the four that you have.

Roll the dice again and repeat the process. Allow three more iterations and stop the process. Ask if there is anyone with no matches. Ask if there is anyone with more than 10 matches.

Let the teams complete this process until one side has no matches left to pass. Ask the last person in each team to count their matches. These are the products that are sold, so the highest number wins.

Let the teams strategize on how to improve their process flow and allow them to rearrange their production line accordingly. Repeat the process until one team has no more matches to pass or when 30 total minutes are up, whichever comes first.