



Paper Airplane Factory Challenge

Objective: Students will apply manufacturing leadership principles by managing a paper airplane assembly line, evaluating how teamwork and process design impact production quality.

Materials:

- Paper
- pencils/pens

Activity Instructions:

1. Demonstrate folding a paper airplane.
2. Divide into groups of 4–6 and select a Plant Manager to lead each team. Each factory must replicate the exact blueprint of the model airplane shown.
3. For the first round, the Plant Manager is not allowed to touch a paper airplane. Teams have 5 minutes to build 8 paper airplanes of the exact same size.
4. The appointed Plant Manager writes down observations of how the process can be improved.
5. Plant Managers will lead a team meeting to delegate specific assembly roles and map out an efficient production system.
6. Under the Plant Manager's leadership, teams have exactly five minutes to manufacture 8 standardized airplanes.
7. Students will utilize a T-Chart to evaluate the operational outcomes and leadership effectiveness of both simulation rounds.

Post Activity Discussion Questions:

What did you like most about this activity?

What did you like the least about this activity?

Based on this activity, do you think a great manufacturing operations manager needs to be a brilliant engineer who knows how to build everything, or a great communicator who knows how to organize people? Can they be successful with only one of those skills?

Extension Activities:

Using cardboard, clay, and tape, students must prototype a specialized tool or custom tray that helps a paper airplane folder crease the paper faster and with less hand strain.

Run the paper airplane factory a third time, but play a loud metronome beat over the classroom speakers. Workers are only allowed to pass their paper to the next station precisely on the click.

Split the class into a historical debate. One side represents 19th-century master blacksmiths and weavers protecting their craft. The other side represents early industrial factory owners trying to mass-produce cheap goods for the public.