## AIR TRAFFIC CONTROL CHALLENGE:

# **MANAGING** A BUSY AIRPORT

### DURATION

60-75 minutes

### AGE GROUP

12-14 years old

#### THEME

**Aviation Logistics** and Problem-Solving

### **OBJECTIVE**

Students will work in teams to manage a simulated busy airport, dealing with various challenges and optimising airport operations. This activity enhances problem-solving, teamwork, and critical thinking skills while introducing more complex aviation concepts.



### **MATERIALS**

- Large poster board or whiteboard to represent the airport
- Coloured pens or magnets to represent different planes
- Dice for randomizing events
- Stopwatch or timer
- Calculators (optional)
- Laptop/tablet for each team (if available) for flight scheduling

### TEAM FORMATION AND ROLE ASSIGNMENT

(5 MINUTES)

- Form teams of 4-5 students.
- Assign roles: Air Traffic Controller, Gate Manager, Weather Analyst, Emergency Response Coordinator.

### AIRPORT SETUP

(IO MINUTES)

- Teams create their airport layout on the poster board/ whiteboard.
- Include 2 runways, multiple gates, and designate airspace zones.

## (35-45 MINUTES)



### ACTIVITY BREAKDOWN

**INTRODUCTION** (IO MINUTES)

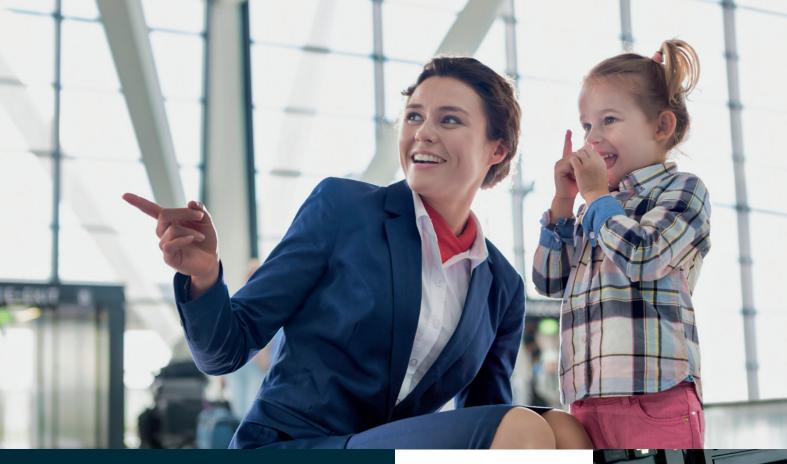
- Explain air traffic control basics and airport operations.
- Introduce key aviation terms: runways, taxiways, gates, holding patterns.

### THE CHALLENGE

- Teams manage their airport for a simulated 12-hour period (30-40 real minutes).
- Every 5 minutes, roll dice to introduce new challenges: 1-2: Weather event (fog, storm) 3-4: Technical issue (runway repair, system outage) 5-6: Special flight (VIP arrival, emergency landing)

#### **Teams must:**

- Schedule and manage arrivals and departures
- Assign gates efficiently
- Handle emergencies and unexpected events
- Maintain safety protocols



## **SCORING SYSTEM**

- Points for each safely landed / departed plane
- Deductions for delays, safety violations, or mismanaged emergencies
- Bonus points for efficient gate usage and quick problem resolution

### DEBRIEFING AND ANALYSIS

(IO MINUTES)

- Teams present their final airport status and score.
- Discuss strategies used and challenges faced.
- Analyse how real airports might handle similar situations.

## EXTENSION IDEAS

- Introduce budget constraints for airport operations
- Add international flight complications (customs, different plane sizes)
- Simulate a full 24-hour airport cycle with shift changes



### LEARNING OUTCOMES

- Enhanced problem-solving and decision-making under pressure
- Improved understanding of complex systems and interdependencies
- Developed skills in resource management and prioritisation
- Increased awareness of aviation industry challenges and solutions



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