



Drone Exploring: Career Spotlights

Advanced Air Mobility — Club

Overview: Advanced Air Mobility (AAM) is the fast-growing world of electric flying vehicles — from delivery drones to future “air taxis” that could one day fly people over traffic. In this session, youth explore what AAM is, why these aircraft are electric and quieter than helicopters, and practice designing a mini “vertiport” network where aircraft can safely take off and land without colliding.

OBJECTIVES

- Introduce youth to Advanced Air Mobility and the types of aircraft involved (delivery drones, air taxis, emergency response aircraft).
- Explain why AAM aircraft are electric and take off and land vertically (eVTOL).
- Practice planning safe takeoff and landing spots through a hands-on activity.
- Build awareness of the teamwork and communication needed to keep shared airspace safe.

SUPPLIES

- Flip chart or whiteboard and markers
- Paper airplanes, toy helicopters, or small foam gliders to represent AAM aircraft
- Cones, hula hoops, or paper circles to mark “vertiports” (landing pads)
- A large open area (indoor or outdoor)
- Printed handouts: “What Is Advanced Air Mobility?” and “Design a Vertiport Network”

ADVISOR NOTES

- Keep the focus on the big idea: AAM aircraft take off and land like a helicopter (vertically) but are electric like a drone.
- Emphasize that safe air taxi and delivery drone networks depend on careful spacing, scheduling, and communication — not just fast flying.
- If space is limited, shrink the vertiport activity to a tabletop version using paper cutouts instead of a full-room simulation.
- Consider inviting a guest speaker (someone who works in aerospace engineering, airport or vertiport planning, or a local drone company) to share how real AAM systems are being built — see Optional Extensions.
- If no guest speaker is available, Advisors can run the entire session using this outline and the resource links below.

SESSION OUTLINE

- **Welcome and Icebreaker** (10 min)
 - “Future Flight:” Ask youth to imagine what it would be like if a small electric aircraft could pick them up from their backyard.
- **Safety Moment (Sharing the Sky Safely)** (10 min)
 - Many aircraft sharing the same low-altitude airspace need clear rules, spacing, and scheduling to avoid collisions.
 - AAM aircraft rely on sensors and communication systems to “see” and avoid other aircraft.
 - Ask: “Why do you think busy airports need air traffic controllers, and how might that apply to a sky full of delivery drones and air taxis?”
- **Mini-Lesson: What Is Advanced Air Mobility?** (15 min)
 - Explain eVTOL (electric vertical take-off and landing) aircraft and how they differ from airplanes and helicopters.
 - Discuss real-world examples: delivery drones, air ambulance concepts, and passenger air taxis being tested today.

- **Activity: Design a Vertiport Network** (20–25 min)
 - Set up 3–4 vertiports (marked landing pads) around the room using cones or hula hoops.
 - In small groups, use the Design a Vertiport Network handout to plan flight paths between vertiports that avoid crossing too closely.
 - Teams “fly” their paper airplanes or toy aircraft along their planned paths, one group at a time, while others watch for close calls.
- **Discussion: What Went Wrong (and Right)?** (10 min)
 - Discuss any near-misses or scheduling conflicts and how real AAM systems solve these problems with technology and rules.
- **Wrap-Up Share-Out** (10 min)
 - Groups share what they’d change about their vertiport network to make it safer or more efficient.

REFLECTION SECTION

Advisor Note: Some sample questions are below. They are designed to help the participants apply what they have learned to their own interests. You are welcome to use these questions or develop your own.

Focusing Questions

- What surprised you about planning routes between vertiports?
- What would you want an air taxi or delivery drone to be able to do?

Analysis Questions

- Why do multiple aircraft sharing the sky need more planning than a single aircraft flying alone?
- How is a vertiport like or different from an airport?

Generalization Questions

- Where else in life do people need to share limited space safely, like a busy hallway or parking lot?
- What’s one part of Advanced Air Mobility you’d like to learn more about?

Challenge: This week, look up one company working on air taxis or delivery drones and be ready to share one fact you learned.

OPTIONAL EXTENSIONS

Guest Speaker: Invite someone who works in aerospace engineering, vertiport or airport planning, or a local drone company to share how real AAM systems are being built, in person or by video call.

Advisor-Led Option: If a guest speaker isn’t available, Advisors can run this session using the outline above and the resource links below — no outside expert is required.

Resource Links: search “advanced air mobility explained” or “eVTOL air taxi” on a video platform for kid-friendly explainer videos.

Group Extension: Sketch a design for your own eVTOL aircraft, labeling where the propellers, seats or cargo space, and battery would go.

Handout: What Is Advanced Air Mobility?

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Read through the key terms below before starting the vertiport activity.

Advanced Air Mobility (AAM)

A new category of flight that includes electric aircraft used for cargo delivery, air taxis, and emergency response.

eVTOL

Stands for electric Vertical Take-Off and Landing — aircraft that lift straight up and down like a helicopter but run on electric power like a drone.

Vertiport

A small landing pad or hub designed for eVTOL aircraft to take off, land, and recharge, like a mini airport.

Why It Matters

AAM could someday reduce road traffic, speed up emergency response, and deliver packages faster — but only if the airspace is managed safely.

Handout: Design a Vertiport Network

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With your group, plan flight paths between your vertiports. For each path, note which vertiports it connects and how you'll avoid crossing another team's path.

Path #	From Vertiport	To Vertiport	How We'll Avoid Collisions
1			
2			
3			