

AERIAL *DRONE* COMPETITION

Aerial Drone Competition Program

Robotics Education & Competition Foundation





Introduction

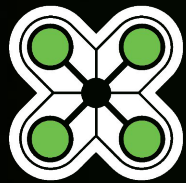
Welcome

- Introduce yourself in the chat box
- Share your name and where you are from

[Website](#)

[Resource Library](#)

✉ Email: drones@recf.org



AERIAL *DRONE* COMPETITION

Starting an Aerial Drone Competition Team

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Aerial Drone Competition Program

Robotics Education & Competition Foundation





About the REC Foundation



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Our Vision

Meeting the challenges of today for our future students

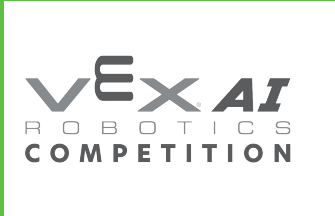
We see a future where every student designs and innovates as part of a team, overcomes failure, perseveres, and emerges confident in their ability to meet global challenges.

REC Foundation Competitions

The Aerial Drone Competition Program began in 2019, with just a handful of teams. In the 2023 -2024 season we have over 1500 teams nationwide.



AERIAL **DRONE**
COMPETITION



1.1 million students in 70 countries

Have participated in the REC Foundation's VEX family of robotics programs from elementary through college.

Our VEX robotics programs have reached more than 100,000 students at more than 2,000 schools around the globe.



Over 500
Scholarships
combined total
of \$10 Million

Student Resources

Scholarship Program

By partnering with universities and colleges to offer a scholarship program, the REC Foundation hopes to encourage students in our programs to continue their education and pursue careers in STEM.

Contact scholarships@roboticseducation.org for more information or to sponsor a scholarship.



ONLINE CHALLENGES



LEARNING BEYOND THE COMPETITION FIELD

Online Challenges

Learning beyond the competition field

Aerial Drone Competition teams have the opportunity to participate in Online Challenges including our Career Readiness for Drones Challenge to win prizes.



- Multiple sponsored categories
- Diverse challenges
- Open to all levels from Elementary to University



Why Drones?

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Benefits of Drones

Sparking student curiosity in drones

- Drones are quickly finding their way into our everyday lives.
- Drones in the hands of the students spark curiosity in aviation, engineering, coding and much more.
- Drones are attracting students from all backgrounds, who have not previously shown interest in STEM.
- Drones are an effective tool to encourage students to learn skills that are not easily taught in traditional classroom settings.



Awareness of future career opportunities

Teaches critical thinking, communication, and collaboration along with problem solving, and perseverance



Drone Pilots

Demand on the Rise

Emergency drone market to top \$16 Billion by 2033*

The median salary for a drone pilot is \$82K *

Projected 51.1% growth in drone sales by 2027*

100,000 jobs will be created for drone pilots by 2025*

Currently there are 1,000+ open drone pilot jobs on Indeed*

**PR Newswire*

<https://www.prnewswire.com/news-releases/global-emergency-drones-market-projected-to-reach-16-7-billion-by-the-end-of-2033--301746127.html>

**DroneU*

<https://www.thedroneu.com/blog/drone-pilot-salary-how-to-make-money-with-a-drone/>

**Research and Markets*

https://www.researchandmarkets.com/research/8nrv62/global_drone

**The Association for Unmanned Vehicle Systems International*

<https://www.auvsi.org/our-impact/economic-report>

**Indeed.com*

<https://www.indeed.com/q-drone-jobs.html?vjk=fc7a54d0da9152fb>

Benefits of Drones

Relating drones in real world applications

- Drones are a tool being used by professionals in the industry.
- Students who have exposure to Drones are more likely to explore the plethora of careers that use them.
- Drones education helps to bridge the gap between STEM and Non-STEM Careers.





The Competition

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Future Innovators on the Rise

Raising the bar through competition

4 Missions - 1 Competition Students compete in local and national events. Competitions are recommended for students in grades 5-12.



Piloting Teamwork Mission

Drones are piloted by students. Two teams fly together on the same competition field to maximize their score in a 90 second match.



Autonomous Flight Skills Mission

Drone is programmed by students to operate entirely autonomously. Each team competes alone to score as many points as possible in a 60 second match.



Piloting Skills Mission

Drone is piloted by students to fly through an obstacle course. Each team competes alone to score as many points as possible in a 60 second match.

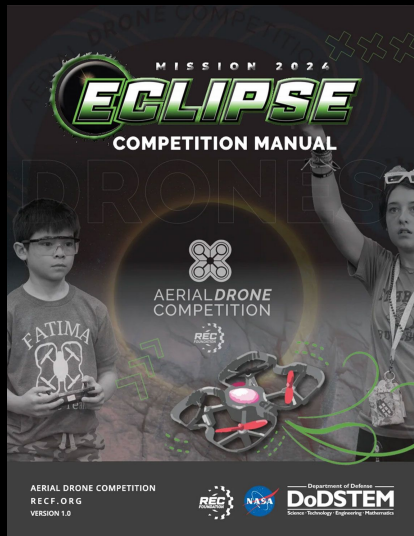


Communications Mission

Teams interview with Judges about their Drone, Programming and Competition Logbook Documentation.

MISSION 2024 **ECLIPSE**

The Rules



The Video



Judging Rubrics



COMPETITION
LOGBOOK RUBRIC



TEAM INTERVIEW
RUBRIC

Drone Awards

Performance and Judged

Performance Awards

Teamwork Champions - awarded to the top two teams at the end of the Elimination Rounds

Skills Champion - awarded to the team with the top combined Autonomous Flight and Piloting Skills score

Judged Awards

Excellence Award - awarded to the Top Overall Team.

Flight Operations Award - awarded to a team that demonstrates an organized and systematic approach to planning and strategizing, project and time management, and team organization.

Think Award - awarded to a team that recognizes the most effective and consistent use of coding techniques and programming design process to solve the game challenge.

Inspire Award - awarded to a team that demonstrates passion and positivity for the Aerial Drone Program.

Judges Award - awarded to a team that distinguishes themselves in some way.

Drone Schedule

Competitions, tournaments and championships

Teams attend local events and earn invitations to represent their state at a Regional Championship Event based on season performance and awards.

Learn more about the [Qualifying Criteria](#)

Season Timeline

- **April 2024** - Mission 2025 Season Opens for Team Registration
- **September 10, 2024** - Mission 2025 Competition Rules Released
- **October 2024 - March 2025** - Local Qualifying Events
- **December 13, 2024** - Deadline for Team Registration
- **April 2025 - June 2025** - Regional Championships





Your Drone Team

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“Tell me, and I’ll forget.
Show me, and I’ll
remember. Involve me,
and I’ll learn.”

– Marla Jones

Coaches role

What does a drones coach do?

- Register teams
- Manage Teams
- Place Orders
- Organize meeting space
- Schedule Work Sessions
- Register for Events
- Organize Travel
- Show Students where to find resources
- Allow Students to Learn in a safe environment

PRO TIP: Register teams early to have the best opportunities to attend local events, plan out your season and participate in trainings

Develop your team

- A drone for every team (1 drone = 1 team)
- It is common for a school/organization to have multiple teams
- Recommended team size is 3-5 Students
- Plan your space
 - When practicing, you may not need a full field set up
- Plan your schedule
 - Some teams meet once a week for a few hours;
 - others will meet more frequently and for longer times
 - Younger students = shorter sessions
- Help your team to set goals
- Celebrate successes





Competition Logbooks

Teams keep a Logbook and document

- Game Analysis
- Drone Data
- Safety Plans
- Flight Logs
- Drone Career Connections



COMPETITION
LOGBOOK RUBRIC



The Equipment

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www.recf.org/grants

Grant Assistance

Grant Assistance Available

The REC Foundation partners with organizations (including NASA) to offer grant packages for new teams, returning teams and event Partners.

Packages can include

- Drones
- Field Elements
- Game Elements
- Team Registration Fees

APPLY TODAY

Field Element Kit

One time purchase that can be used year after year. Ideal for setting up practice fields and even hosting your own events.

\$1,000

Field Element Kit - \$1,000 and includes:

- 3 Sets of Arch Gate Hardware
- 5 Fabric Arch Gates (2 Red, 2 Blue, 1 Screen)
- 2 Keyhole Gates (1 Yellow, 1 Green)
- 2 Landing Pads (1 Red, 1 Blue)
- 2 Cubes 12" (1 Red, 1 Blue)
- 2 Cubes 18" (1 Red, 1 Blue)



Pro Tip: If funds are limited, get creative. Use pool noodles, hula hoops, and boxes. Approximate measurements of the field elements can be found in the competition manual.



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Registration Fees

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Registration Fees

Two types of registration fees Season Registration and Event Registration

Season Registration

Funds go to REC Foundation and help cover costs of the program including:

- Coach and Event Partner Support and Training
- Competition Design and Rule Development
- Scoring Software
- Judging Rubric and Volunteer Training
- ...and more

\$175 Per Team

Most organizations have multiple teams.

Event Registration

Funds go to the person/organization hosting the competition and help cover costs including:

- Venue Rental
- Competition Fields
- Audio/Video Equipment
- Trophies
- Volunteer Lunches
- ...and more

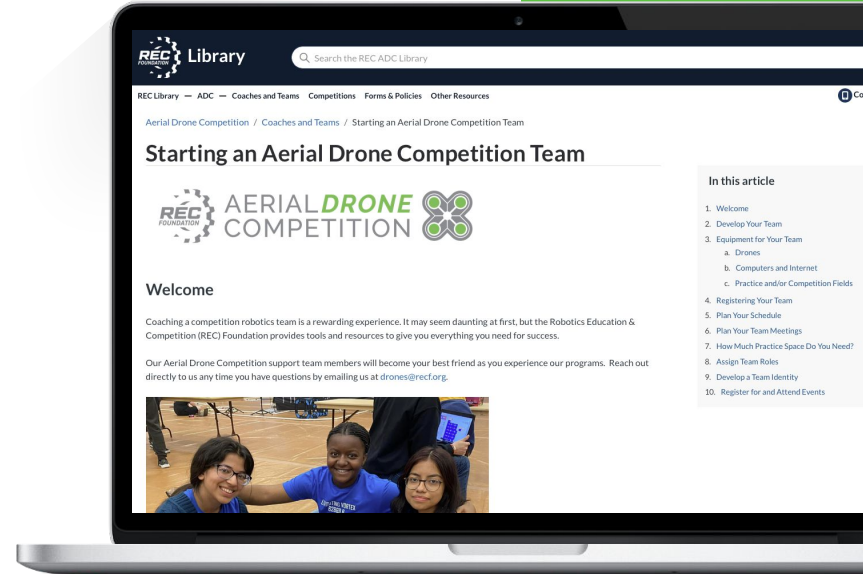
Typically \$50 - \$100 per team per event - varies by region

PRO TIP: You can host your own event as a fundraiser to support your teams.

Registration

Ready to be part of our mission?

1. Purchase your Drones at [Robolink.com](https://www.robolink.com)
2. Register your Teams at [RobotEvents.com](https://www.robotevents.com)
3. Complete a background check.
4. Create teams of students (3-5 students per team)
5. Bookmark [REC Library](#) for more support
6. Register your teams for a Local Competition
7. Ask us about hosting your own event
8. Volunteer at an Event! You will learn so much by being a referee or judge and take that information back to your own team
9. Have fun!



Drones in Action

NASA Langley Drone Competition

“To have a sport that’s related to skills needed right now for jobs that are emerging is awesome.”

-Coach Kovach

[Albuquerque Public Schools News](#)

It’s not a race.
It’s a challenge.
Take flight with the
Aerial Drone
Competition!



The logo for REC FOUNDATION, featuring the word "REC" in a bold, white, sans-serif font above the word "FOUNDATION" in a smaller, white, sans-serif font. The text is centered within a white gear-like shape with a jagged, circular border.

REC
FOUNDATION

Questions?

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