

2024 Droneworks Helpful Hints

To help you get started, here are some helpful hints and answers to questions that you might have about Droneworks. If you have any additional questions, please check out the FAQ section of the Droneworks website (www.droneworksite.com) for more information.

EVENT

Q: Do we have to code the drone to compete? Do we have to have an autonomous drone?

A. No. The 2024 competition is ALL MANUAL flight; no coding necessary.

Q: Do we have to make a poster (MS) or portfolio (HS) to be able to fly?

A. No. Most importantly, we want everyone to fly and have fun. You can still fly without them, but you will not make the top 12 semifinalists and won't be eligible for a trophy.

Q: Can we make a physical poster (MS) and then take a picture of it for our PDF?

A. Yes. Just make sure everything is still readable.

FLYING

Q: We're new to drones, where do we start?

A. Start with getting comfortable flying the drone and how it moves. Once both team members are comfortable with flying, work on communicating as a pilot and spotter. Practice navigating to a specific spot to land using only voice commands. Can the pilot fly the drone without watching it?

CONSTRUCTION OF MISSIONS

Q: Do we have to build the missions? What if we don't have the time, materials, or space to build the missions?

A. No. All you really need is creativity. Use the space and materials you have available. If you built missions for the 2023 competition, all the dimensions are the same.

If you don't have time or materials, make your own substitute obstacles. Practice flying under chairs instead of the **M2-Flash Flood** PVC slalom gates. Find a box and cut a hole in it to practice flying into the PVC building for **M1-Earthquake Examination**.

Tape off squares on the floor to practice precision landing.

Q: If you were only able to build one mission, which one would you choose?

A. **M3-Wildfires**. Build at least one of the posts to hold a golf ball and practice, practice, practice. Try to get proficient knocking the golf ball (fire retardant) off in the direction you want it to fall. Make the post different lengths, so the golf ball is at varying heights.

Q: Why wasn't there a kit available to buy the missions?

A. Supply chain issues, a company merger, cancellation of the Tello, and poor planning.

MISSIONS

Q: Do we have to complete all of a mission to score points?

A. No. Each element within a mission scores points. For example, you can fly through one Tall Gate in **M2-Flash Flood** and get points. You don't have to fly through all three gates.

Q: What direction do we fly through the gates in M2-Flash Flood? Can we fly out the top opening of the building in Mission 1?

A. It doesn't matter. As long as your drone flies completely through the gate, you will get points. You must cross the plane of the building from the outside to the inside to score the points for **M1-Earthquake Examination**.

Q: Does all of the drone have to be within one of the landing areas to count?

A. As long as part of the drone is touching the designated area, it will score.

Q: Can we redo a mission if it doesn't work right during competition?

A. Yes! You can redo missions as many times as you want within the allotted time,.

Q: Can we do the same mission multiple times and get more points?

A. No. You will only score points **once** for a completed mission.

Q: What are the locations of the missions? How far apart is everything?

A. The location and placement of the missions will be a surprise and will be revealed on the day of the competition.

Q: In the Theme and Mission document there is a warning about "Natural disaster sites often have obstacles, debris, etc." What does that mean?

A. To add to the challenge and make the conditions more realistic, the airspace may have elements, such as downed power lines, broken tree limbs, poor visibility, etc., that make flying a drone more difficult.

Q: For high school, what is the M5-Mystery Mission?

A. A brand new 5th mission will be revealed on the day of the competition. It may require a drone skill that teams have not practiced.

SEMIFINAL INTERVIEW

Q: What questions will be asked?

1. Please tell us about one way a drone may be used after a natural disaster. If you researched more than one way, just pick one to describe.
2. Is this solution currently being used or is it a new solution you envisioned?
3. How is the natural disaster problem being solved without the use of a drone?
4. What advantage does a drone offer compared to the non-drone solution?
5. What are the challenges/difficulties to using a drone in your natural disaster solution?