Summer Mini FLL Competition

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Robot Game

The Robot Performance Award recognizes a team that scores the most points during the Robot Game. Teams have a chance to compete in at least **three 2.5 minute** matches and only the highest score out of the three matches counts.

https://www.youtube.com/watch?v=akuN95EyXJk

Missions

M05 – Careers – Many scientists, engineers, and technicians are needed to keep up with today's trends in waste reduction.

1. Move at least one person to the Sorter Area to earn a helpful exception to the Rules.
2. Specific physical requirement, visible at the end of the match as needed: At least one Person is completely in the Sorter Area.
3. **Value: 60**

M07 – Cleanup – For discarded material, the only outcome worse than waste is pollution. Plastic Bags for example, seem to be everywhere, causing a variety of problems – jamming Equipment, threatening Animals, etc.

- Move Bags from the Sorter and/or the Beach, and return Animals to their favorite spots.
- Specific physical requirement, visible at the end of the match as needed (Score Any That Apply):
  Value: 30 Per Bag Plastic Bags are completely in Safety.
- **Value: 20** Per Animal *Animals are completely in any circle which is completely empty of Plastic Bags.

M09 – Salvage – A building being demolished should only be a shell of its former self. Many tons of valuable materials and objects can be salvaged first.

- Move the Valuables to Safety.
- Specific physical requirement, visible at the end of the match:
- **Value: 60** The Valuables are completely in Safety

M10 – Demolition – Compared to the amount of material discarded by a family every week, the amount of material discarded from a demolition site is unbelievable. Where does it all go? Where SHOULD it all go?

- Demolish the Building and decide what to do with the materials.
- Specific physical requirement, visible at the end of the match:
- **Value: 85** none of the Building's twelve beams is left standing in Setup position.

M11 – Purchasing Decisions – Some manufacturers put products in packaging which is hard or impossible to divide into pure sorted recyclables. What choices do you have when you see that?

- Decide about buying Toy Planes based on their Packaging.
- Specific physical requirement, visible at the end of the match:
- **Value: 40** Per Plane Toy Planes are completely in Safety.

M12 – Repurposing – Recycling gives new life to the materials an object is made from, but the process does take time and energy. Instead, is there a way to give new life to the object itself?

- Use the packaging from a Toy Plane as a flower box by putting compost in it. Specific physical requirement, visible at the end of the match:
- **Value: 40** The Compost is perfectly nested inside one of the Packages from which a Toy Plane has been removed. The Package is in original condition.

Robot Design

10 minutes.

The Robot Design judging session is more about the team's ability to present the robot and all the thoughts and considerations that went into their final product than it is about its performance. The performance is covered under the Robot Performance Award. The judging session is the time for the Judges to learn from the teams the design processes they used to make decisions and gain understanding; it also allows discussion so that Judges can be sure that the teams did the work.

During the judging the team can expect questions from the judges on the following topics

1. Robot Design Sample Questions Strategy, Process, Problem-Solving
2. What was the greatest design or programming difficulty you encountered?
3. How did you solve that problem? Innovative Design Question
4. What part of your design, program or strategy do you think is unique to your team?
5. How did you come up with the idea? Locomotion & Navigation Questions
6. Would you explain how your robot turns (or travels a specific distance, or goes from base to a specific destination)? How satisfied are you with this?
7. Would you explain which sensors you used, and how and why you used them?
8. Would you explain how what program do you feel is your best? Why?
9. What did you do to make your programs more understandable and easier to use? Structural Questions
10. How did you get your robot to stay together?
11. If your robot has attachments, tell us about them. Which attachments are most difficult to put on and/or take off? Overall Design Questions
12. How many of the missions has this robot completed successfully in a single match?

Core Value

15 minutes

Your Core Values judging session will have the following format:

1. 5 minutes – Teamwork Activity: When your team enters the judging room, they will be given a short, fun activity while the Judges observe how the team works together.
2. 5 minutes – Questions and Answers: Time reserved for the Core Values Judges to ask questions about the Teamwork Activity, the Poster and the season.