



Unknown Mission Challenge

Mission tasks are totally unknown until the day of competition.
Robots are built and programmed at the competition.

V 2.0 – Final Version for 2023 season

(changes after 1/5 in RED)

This file can be found under the **Get Involved / Unknown Mission Challenge (UMC)** page on the website
Coaches are responsible for communicating rules updates to participants

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1. UMC Overview

Learning Objectives

- Autonomous navigation
- Critical thinking
- Computer programming logic
- Use of sensors
- Adjusting to environmental conditions
- Problem solving
- Learning on the fly
- Design and construction of robots

Synopsis

- An Open Category competition, which will take place at the World Robofest Championship
- There are no qualifying competitions for this challenge
- Mission tasks will be totally unknown until the day of competition
- The goal of this challenge is to provide an opportunity to develop problem-solving skills on the fly without any help from adult coaches

2. UMC Age Divisions and Team Size

- Two Age Divisions
 - Junior Division (Grades 5-8)
 - Senior Division (Grades 9-12)
- Team Size: Maximum four (4) members
- Team Registration Fee: \$75
- Related important document – 2023 [General Rules](#) on the robofest.net website
- Each team member must bring the signed [Robofest Consent and Release Form](#) on the day of the event, if not completed on-line

3. Robot Requirements

- Teams may only use one of the following approved robot platforms, and must bring their own robot parts
 - LEGO NXT sensors, motors, parts, and one NXT controller
 - LEGO EV3 sensors, motors, parts, and one EV3 controller
 - VEX IQ sensors, motors, parts, and one VEX IQ controller
 - LEGO Spike Prime/Robot Inventor and one Spike Prime/**Robot Inventor** Controller
- No limit to part quantities, except for the limit of one controller
- Pre-assembled robots cannot be used
- All robot components must be unassembled at the beginning of the competition
- Sensor or motor multiplexers are not allowed
- Any programming language is allowed and team must bring their own computer to program the robot
- No internet or cell phone use allowed

4. Allowed/Not Allowed

Allowed

- LEGO NXT/EV3/Spike Prime or VEX IQ kits/parts all disassembled
- Computer
- Programming software
- Multiple programs
- Measuring tape/stick

Not Allowed

- Pre-assembled robots
- Starting jigs
- Build Instructions
- Multiplexers

5. Competition Procedures

- Only participants are allowed in the work area, team tables, and game fields throughout the competition day
- Jr and Sr divisions will have different missions
- The Unknown Mission Challenge is unveiled at the start of the event. No adult help is allowed after the unveiling
- Teams must share the practice fields and are limited to one practice run at a time if other teams are waiting
- Team ID must be visible on the robot
- Robots will be impounded at the end of the work time
- Teams will have “official” runs that will be judged
- Winners will be decided based on the scoring of their individual runs
- The exact method of determining final scores will be unveiled at competition