



Junior Robotics Showcase

The Robotics Showcase is a team event. Teams of four to eight members will design, program, construct, and implement their robot in order to address the **2023-2024 Robotics Challenge: Sort, Move, Stack**.

Teams will bring preconstructed robots and props to showcase their interpretation of the challenge having incorporated skills in science, technology, engineering, and mathematics. A club may have only one entry.

Competition Guidelines

- Teams must consist of four to eight members.
- Teams will bring a preconstructed robot from their choice of materials that can perform one or more of the functions that abide by the **2023-2024 Robotics Challenge: Sort, Move, Stack**.
- The school name, state, team name, robot name, and a short description of the robot's functions must be included in the performance area. This may include a poster or trifold board for presentation. This information must be visible and shared with the judges during the presentation.
- Set-up time for robots and all props will be no more than 15 minutes. Adults may assist the team during the set-up time.
- Teams will be given two minutes to demonstrate/performance the challenge. Following the two minute demonstration/performance, a one minute Q & A regarding details of how the robot was built, equipment used, and approach to the challenge will be used for judging.
- Each robot must comply with all restrictions, measurements, and other specifications listed below.
- Teams will be given an area of 12 feet x 12 feet to perform the challenge.
- In order to showcase the functions of the robot, teams may bring additional props/materials to use in conjunction with their robots to effectively perform the challenge.

- Teams may wear coordinating outfits/costumes that represent their interpretation of the challenge.
- Team members may only enter the 12 feet x 12 feet performance area to reset props/materials. Team members must not assist the robot in the competition performance functions.
- No prerecorded videos may be used at anytime during the demonstration/presentation.
- Due to different types of flooring at convention sites, teams are allowed to bring their own flooring material, but it must fit within the performance area.
- Electricity, Internet or Wi-Fi will not be provided.
- All teams will remain in the competition room until all judging is completed. Viewing of the Robotics Showcase will take place when judging is completed. Teams will demonstrate the challenge for viewing during this time.
- Teams must clean their assigned space and remove robots and props immediately following competition.

Robot Specifications

- The student built robot may be made of a variety of materials, but must fit within a 24”x24” x24” cube. This means that the robot’s measurements for height, width, and length must be less than or equal to 24”.
- Robots may be constructed from a kit or built from the ground up. They may be fully automated, controlled by a remote, tethered or coded.
- All robots are to be electrically powered only. No combustion engines allowed.
- Liquids may not be used in any form of the challenge.
- All power sources must be 100% contained in the robot body.
- Robots must be singular in form. No secondary robots or self-propelled devices that detach themselves from the main robot will be allowed.
- All robots with active moving parts must have a master kill switch that deactivates the moving parts immediately.
- Operable push outs or extensions are allowed; however, when contracted, the robot must still comply with the 24” length, width, and height limits.

Educational Connections

- Critical Thinking, Decision Making, and Analytical Skills

- Creativity and Collaboration
- Computational Thinking
- Problem Solving
- Effective Communication and Presentation Skills
- Science, Technology, Engineering, the Arts and Mathematics (STEAM)
- Students will investigate, and find solutions, designs, and strategies from an infinite number of possibilities using inquiry, collaboration, and process-based learning.

How to Enter

- Visit www.betaclub.org/registration and follow directions.
- Register students and then select competitions to enter.

National Eligibility

All Plaques Awarded at State Convention

Judging Criteria

Robotics Showcase	16-20	11-15	6-10	1-5
Innovation/Creativity	Excellent use of innovation and creativity in applying new, unique or unexpected features, designs, programs and/or applications in the interpretation of the challenge.	Good use of innovation and creativity in applying new, unique or unexpected features, designs, programs and/or applications in the interpretation of the challenge.	Average use of innovation and creativity in applying new, unique or unexpected features, designs, programs and/or applications in the interpretation of the challenge.	Minimal use of innovation and creativity in applying new, unique or unexpected features, designs, programs and/or applications in the interpretation of the challenge.
	Excellent ability	Good ability to	Average ability	Minimal ability

<p>Team Display/ Presentation</p>	<p>to display and present specified information listed in the guidelines for the challenge.</p>	<p>display and present specified information listed in the guidelines for the challenge.</p>	<p>to display and present specified information listed in the guidelines for the challenge.</p>	<p>to display and present specified information listed in the guidelines for the challenge.</p>
<p>Automation/Navigation</p>	<p>Excellent ability to perform and complete all three tasks with no intervention.</p>	<p>Good ability to perform and complete two tasks with little intervention.</p>	<p>Average ability to perform and complete one to two task(s) with some intervention.</p>	<p>Minimal ability to perform and complete one task with extensive intervention.</p>
<p>Durability/ Capability</p>	<p>Excellent evidence of structural durability and capability to achieve all three tasks of the challenge.</p>	<p>Good evidence of structural durability and capability to achieve two tasks of the challenge.</p>	<p>Average evidence of structural durability and capability to achieve one to two task (s) of the challenge.</p>	<p>Minimal evidence of structural durability and capability to achieve one task of the challenge.</p>
<p>Design Process</p>	<p>Excellent explanation of the design process including the alternatives, improvements and decisions made to demonstrate the challenge.</p>	<p>Good explanation of the design process including the alternatives, improvements and decisions made to demonstrate the challenge.</p>	<p>Average explanation of the design process including the alternatives, improvements and decisions made to demonstrate the challenge.</p>	<p>Minimal explanation of the design process including the alternatives, improvements and decisions made to demonstrate the challenge. .</p>
<p>Deductions</p>	<p>This will be taken one time by the coordinator.</p>	<p><i>Did not follow competition guidelines -10</i></p>		

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