ROBOTICS
Each county may submit 3 entries total from 50285, 50286, 50288, 50289, 50292; and 1 from 50293.

NOTE: If applicable for their class and display, exhibitors must bring their own computers for demonstration purposes; computers will not be provided. Internet access will not be available.
- Exhibits in classes 50284, 50285, or 50286 are designed to be used with LEGO Mindstorms (NXT or EV3).
- Any other programmable robot kit such as Arduino or Raspberry Pi, should be exhibited under Free Range Robotics Class (50290), Innovation Class (50292) or Ready4Life Challenge Class (50293).

50285  Robotics 1: Intermediate: Exhibitors should complete Activities 7-12. Exhibitors will design, build and program a robot that uses at least one sensor to autonomously follow a path, respond to, and or avoid obstacles. Exhibitors in this class must use at least one sensor in their robot design. They will bring their Robotics Notebook to share what they learned about the engineering design process and programming.

50286  Robotics 2: Exhibitors should complete Activities 1-7. Exhibitors will design, build and program a robot that uses sensors and programming to complete one of the provided challenges. They will bring their robot and Robotics Notebook to share changes they made to the robot and/or program along the way, and to describe their experience with completing the challenge.

50292  Robotics Innovation Open Source Class: Open to youth enrolled in Robotics 3, but may also include youth in Robotics 1 or 2 if the exhibits meets the guidelines. Exhibit an original robot, either homemade or a kit that does not fall under Robotics 1 or 2 that can complete a task using MULTIPLE sensors. If a robot kit is used, then some parts of the robot must be built using other components such as wood, plastic or metal. The robot can include any types of motors, pneumatics or sensors. The Innovation class can also be used for LEGO Mindstorms or Vex kits where the exhibit does not fall under Robotics 1 or 2 exhibit option. Autonomous control of the robot may also be achieved using an “open source” platform such as Arduino or Raspberry Pi and can be programed using a coding language that is publicly available. Exhibitors in Robotics Innovation/Open Source class must bring a detailed engineering notebook that describes how the exhibitor designed, built and programmed the exhibit.

Junk Drawer Robotics: All exhibits should be original designs made with everyday objects and materials. Exhibits with purchased kits will not be accepted. Exhibitors are also required to bring their Junk Drawer Robotics Youth Robotics Notebook with the sections completed for the project they are exhibiting, including the sections leading up to the activity they are exhibiting. For example, if a youth is bringing Activity E from Junk Drawer Level 1, they should have robotics notebook sections A-E completed.

50288  Junk Drawer Robotics 2, Robots on the Move: Exhibit any item from the “To Make” activity from the Junk Drawer Robotics Level 2 Book. Be sure all robotics notebook sections within the module being exhibited are filled in.

50289  Junk Drawer Robotics 3, Mechatronics: Exhibit any item from the “To Make” activity from the Junk Drawer Robotics Level 3 Book. Be sure all robotics notebook sections within the module being exhibited are filled in.

50293  Robotics Ready4Life Challenge: (Open to 11- to 18-year-olds enrolled in any Robotics project) Exhibits in this category must include the following: a) a physical representation of the career or business product such as a model, prototype or display/portfolio that includes images of accomplished work; b) verbal or written explanations that demonstrate knowledge of the related career or business fields, potential careers, and the appropriate requirements for achievement in those fields. The judging criteria for this class values thoroughness of career and/or business exploration and pursuit above the workmanship of the physical specimen on display.