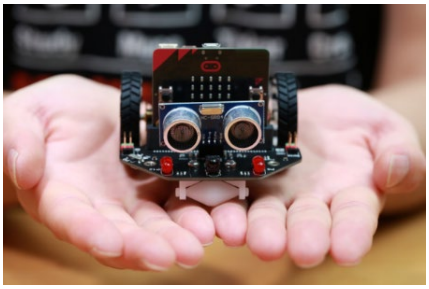
AFRL
NEW MEXICO
STEM ACADEMY

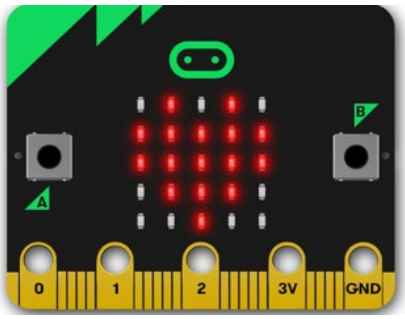
Robotics Challenge

The Robotics Challenge mission, for middle school students, is a school-based program in which students explore systems engineering, computer science and robotics by learning to build and program small robots to complete tasks and solve problems.

For the 2020-2021 school year, we will be offering a modified version of the Robotics Challenge Mission for all participating students. This flexible adaption will be conducted using online resources, include a different robot platform, provide activities for individual students to complete, and culminate in an online event. For this school year, there will be more emphasis on students working individually instead of in teams.

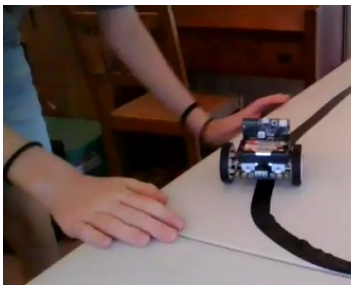


Coaches (Teachers) and students are provided with online training and materials related to robotics and computer science. AFRL NM STEM Academy provides teachers with materials they can use to explore and apply computer science and engineering concepts with their students over the course of the school year.



We have selected a new lower-cost robot that makes individual participation possible by providing more robots to participating schools. The micro:Maqueen robot uses the micro:bit microcontroller and the Python programming language. Additionally, the micro:bit can be used for a variety of activities beyond the robot.

We have developed new Python tutorials that will help coaches and students with learning coding. The tutorials have challenge projects that students must complete before being eligible to work with one of the micro:Maqueen robots.



Students will complete a series of online assignments to earn points toward qualification for the culminating Robotics Challenge Expo. The culminating Expo event will be held online in the spring. For the Expo, students will demonstrate and share creative applications of their skills and knowledge and complete programming challenges.

The Robotics Challenge is a great opportunity to actively involve your students in innovative applications of science, technology, engineering, and math (STEM) concepts.

You provide the students, the enthusiasm, and the expertise, and make the following commitments:

- Complete and submit the Coach Registration Form.
- Attend the online Robotics Challenge Coach Orientation.
- Complete the Robotics Challenge Coach online training.
- Ensure that your school submits an EPA Modification Form.
- Recruit students for the Robotics Challenge.
- Complete and submit a Student Registration Form to register your students.
- Ensure that your students have access to computers for programming.
- Provide guidance and advice as your students work through the units building and programming their robots.
- Ensure that students meet assignment requirements (including file sizes) BEFORE submitting assignments.

If one or more of your students qualifies for the Robotics Challenge Expo:

- Attend the Robotics Challenge Online Expo with your students.
- Complete and submit two (2) Coach Feedback forms: one covering the online training and one covering the Robotics Challenge program and Expo.

If you have questions or need additional information, please contact us at:

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or

Visit our website:

https://afrlnm.com/stem/missions/robotics-challenge/