



Engineering Challenge



Teams of elementary and middle school students build
A Nuclear Waste Cleanup Robot and complete a series of tasks.
Contest Support provided by the Discovery Science Place of the University of Texas at Tyler

Contest Rules

(Revised September 2024)

Levels of Competition

Elementary – Students must be in 3rd-5th grades.

Middle School – Students must be in 6th-8th grades

Schools with 3rd – 6th grades may have teams competing at two levels – Elementary and Middle School.

Team

A Team at either level is comprised of 4 students from the eligible grades. ONLY 4 students may participate in the contest. In the event of illness, etc., a Team may compete with 3 students.

Schools and groups are certainly welcome to have “alternates” in the early stages of Team development. HOWEVER, ONLY 4 Team Members may be registered and are allowed to build the Nuclear Waste Cleanup Robot used for the contest, create items for the presentations, complete parts of the Journal or participate in testing challenges at the contest. Coaches do NOT register “Alternates” but may make substitutions after the initial registration has been submitted. Any “Alternates” are not eligible for any cash awards or application for scholarships. Only the 4 Team Members and Coach are invited to the Awards Celebration IF the Team places.

Mission of Engineering Teams

- ✓ Build a Nuclear Waste Cleanup Robot AND present the NWCR in the different components of the Engineering Challenge Contest.
- ✓ The NWCR MUST have a way of moving the Robot without any team member physically touching the Robot.
- ✓ The team must keep a Lab Notebook during the engineering process. Check the Lab Notebook Scoring Form for maximum point details.
- ✓ Each team will do verbal and poster presentation components within the contest. Check the Poster Display and Poster Presentation Scoring Forms for maximum point details.

See the Engineering Challenge Contest Manual for procedures.

Other information and resources are available on the Engineering Contest page

Preparation

1. Schedule for contest is set and posted after School/Group Contest Registration is complete.
2. Set is picked up from Academic Rodeo during the pickup week or by other arrangement.
3. Teams may use school LEGO sets if the sets meet the requirements for the contest and have received approval from Academic Rodeo.

Contest Procedures

1. Each team is given an arrival time, allowing 15 minutes for set-up and preparation time before the team begins the testing challenges. Teams may arrive earlier, but they must remain in the staging area and will not move ahead in the schedule unless another team does not arrive or has a catastrophic breakdown during their course run.
2. The team proceeds through these stations in the challenge:
Incline Test, Torque Test, Poster Presentation, “Meltdown” Speed Challenge, and Retrieval Challenge.
Each station will have a time allotment of 10-15 minutes.
Factors related to breakdowns and other issues that may arise for the team could result in delays or disruptions to the schedule.
3. See the Engineering Challenge Contest Manual and the individual challenge Scoring Forms for specifics about the tests that occur in the Course.
4. Teams may not watch other teams compete before running the course.
5. Teams are released when they have finished all testing challenges, set up poster and NWCR for display and turned in the Lab Notebook for evaluation. All teams will have a photo taken with the NWCR before leaving.
6. The NWCR, notebook, and poster remain on display throughout Academic Rodeo.
7. Coaches will be sent an email with the results, and they will then be posted on the website “Results” page.
8. The coach or a representative must collect the NWCR and display items AFTER the Awards Celebration, dismantle the NWCR and inventory the components **with the students**. The LEGO kit is then returned to Academic Rodeo by the set deadline OR school will be invoiced to replace the missing kit – **\$500 for the Sets**. Those who fail to return kits promptly will not be allowed to check out LEGO sets for future contests without making a deposit.

Awards

1st, 2nd, and 3rd place teams will be recognized in each contest level. In addition, special recognitions may be announced as determined by the judges.

Teams receive a trophy. The members of the team receive Place Ribbons.

Elementary students who place receive cash awards.

Middle School students who place may apply for Academic Rodeo Scholarships.