Engineering Challenge

Teams of elementary and middle school students build
a Mars Rover and complete a series of tasks.
Contest Support provided by the University of Texas at Tyler Ingenuity Center

Contest Rules

(Revised July 2020)

See the Engineering Challenge Contest Manual for complete rules and procedures.

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.

Mission of Engineering Teams

- ✓ Build a Mars Rover AND present the Rover in seven different areas at the Engineering Challenge Contest.
- ✓ The Rover MUST have a rock collection device and a rock storage area.
- ✓ Keep a Lab Notebook during entire process that MUST include:
    a. Timeline
    b. 3 itemized budgets
    c. Day-to-day notes
    d. Individual pie charts.
- ✓ Each team must do a verbal and poster presentation at the contest.

Other Information and Resources online or in the Engineering Contest Manual

The Design Challenge
Teacher Activity Manual
Responsibilities of Coaches and Participants
LEGO Information
Rover Construction and Display
Scoring Details
Lab Notebook
Engineering Design Process
Student Activity Manual
Things to Consider
Non-LEGO Allowable Elements
Rover Testing
Scoring Forms

Preparation

1. Schedule of competition is set after School/Group Registration is complete in October.
2. A date is set for pick-up of Lego Sets assigned to each team.
3. Teams may use their own Lego sets if they 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 of set-up and preparation time before the team starts the process through each challenge. 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: Weigh-in, Incline Test, Poster Presentation, Course #1, Course #2, and Course #3. Fifteen minutes are allotted for the first two

stations combined and for each additional station. 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 for specifics about the tests that occur in the Course.
4. Teams may not watch other teams compete before they run the course.
5. Teams are released when they have finished all challenges, set up poster and rover for display and turned in the Lab Notebook for evaluation. All teams will have a photo taken with the rover before leaving.
6. The rover, notebook, and poster display remain on display throughout the remainder of Academic Rodeo.
7. Results are announced within two days following the contest.
8. The coach or a representative must collect the Rover and display items AFTER the Awards Celebration, dismantle the Rover and inventory the components with the students. The Lego kit is then returned to Academic Rodeo within 1 month of the contest. Failure to do so can result in an invoice to your school to replace the missing kit – **$300 for the Elementary Set; $400 for the Middle School Set.** 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.

Members of teams who do not place receive a Participation Certificate.