

JUDGES INSTRUCTIONS: ENGINEERING DESIGN CHALLENGE

VERY IMPORTANT: Please make sure that no pictures of the EDC are posted online until March 5, 2019. The same challenge is used statewide and we do not want to spoil the surprise or give an advantage to another group.

EVENT SCHEDULE (APPROXIMATE AND SUBJECT TO CHANGE)

- 11 a.m. Judges training
- 12:00 p.m. Students move into the auditorium for instructions.
- 12:30 p.m. Teams move to the design and construction area. They may not read instructions or touch supplies until instructed to do so.
- 12:40 p.m. Announcement will be made to start the Team Design Challenge! Teams have 60 minutes to complete the design, build and test phases.
- 1:40 p.m. Evaluation begins. **NO ADDITIONAL WORK OR TESTING CAN BE DONE AFTER TIME IS CALLED.** Please help us watch to make sure all teams stop working on their project at this time.

TRAINING

- Review regulations (page 2 student instructions), judging area and score sheet.
- Review sample prototype built by EDC Coordinator, and walk through the judging process.
- Break into judging teams and pick up supplies (clipboards, pens, extra forms, baggies).
- Verify that you have a set of teams to judge.

JUDGES RESPONSIBILITIES DURING THE DESIGN AND BUILD PHASES

Your primary responsibilities are to make sure that the teams you are assigned to judge:

- have all listed supplies
- follow verbal and written instructions:
 - start and stop on time
 - only use supplies listed in the instructions and provided by TAME.
 - receive **no** assistance from anybody outside of the team. No cell phones can be used.
- have legible, complete project documentation
- have an opportunity to hold a 60 mL cup of BBs to understand the weight of the “fluid” they are transporting.

Share your enthusiasm for the students’ creativity but give **no** advice on the design or construction of the project!

JUDGES RESPONSIBILITIES DURING THE EVALUATION PHASE

You will work with another judge. All projects will be judged at the build site.

Ask questions, celebrate creative ideas and provide positive feedback!

First, introduce yourself to the teams in your assigned area. Then, for each team:

1. Collect the entire student instruction packet. Verify the team member names and team number are entered on the scoring sheet.
2. Verify that that returned items are intact and unaltered and record the total count on the scoring sheet.
3. Collect the BBs given to the team with their supplies. Record the number of BBs returned on the scoring sheet.
4. Ask the team to make their presentation and record scores on the scoring sheet. This section features multiple point values (2, 4, 6, 8, 10) for each metric – please give considerable thought to these choices as they may be the deciding factor in team placement.

PRESENTATION					
Strategy to maximize points earned	2	4	6	8	10
Engineering challenges and design choices	2	4	6	8	10

5. Verify and record whether the construction meets the following design specifications:
 - Team name and number are written on the landscape.
 - The mountain is assembled, accurately placed and not altered.
 - The channel is covered/closed at all locations.
 - Entry and exit are in the designated areas of the landscape.
 - All parts of the channel lie inside the boundaries of the landscape with no segment/portion outside the boundaries.
 - Channel has support structures in water.
 - Record if the channel crosses protected lands.
 - Record if there is a support structure in the protected lands.

All of these elements are listed in the scoring sheet the students will give you. Make sure to circle only one Yes or No answer per line.

DESIGN	Point Allocation	
Channel has a name marked on landscape	Yes (+10)	No (0)
Team number is marked on landscape	Yes (+10)	No (0)
Mountain is assembled, placed in accurate location and not altered	Yes (+10)	No (-50)
Entire channel is covered	Yes (0)	No (-30)

6. Ask the Environmental Engineer for the team to hold the Ziploc bag to collect the BBs securely around the exit point of the channel.
7. Provide the Operations Engineer on the team with one 60 mL plastic cup of BBs for testing.
8. Ask all other team members to move away from the testing area.
9. Ask Operations Engineer to release BBs into the source area when you start the timer. The Operations Engineer may slowly release BBs until time is called.
10. Call time at 30 seconds, at which point collection stops, and the Ziploc bag is removed from the collection area. If there are more BBs in the system, ask another team member to collect them with a Ziploc baggie you provide.
11. If any BBs fell out during judging, record this spill in the documentation.
12. Ask Environmental Engineer to pour collected BBs into the student's 60 mL plastic cup for measuring.
13. Record how much was collected at the destination.
14. Any violation of the rules, including use of improper materials, is an automatic disqualification. Please write "Disqualified" on the bottom of the score sheet and notify your lead judge if this occurs.
15. Retrieve all BBs and instruct students on how to clean-up. Prepare plastic cup with 60 mL of BBs for the next team. Move to the next table for judging.
16. Please briefly record any special or noteworthy details about teams you judge – these specifics are invaluable when announcing winning teams.

Congratulate the team on a job well done! Release them to the next activity on the agenda.

JUDGES RESPONSIBILITIES AFTER ALL PROJECTS HAVE BEEN TESTED

Turn in your Scoring Sheets and Project Documentation forms to the lead judge. They will collate the data and identify the winners. Please complete an evaluation form for the event. We value your input!

Thank you for volunteering. Your time and effort are truly appreciated!