



Challenge Overview

August 8, 2022 | St. Cloud, Minnesota

Challenge Scenario

You have been hiking into the remote wilderness for three (3) days. While crossing a rushing river, you lose your footing and your backpack with all your gear floats down the river out of sight. You manage to hold on to your sleeping bag, duct tape, band aids, a short rope, and a lantern, keeping them safe and dry. You improvised and redesigned your small battery operated lantern to use as a water filtration device. Once returning home, you realized the potential of your new design. Use at least one technology or component discovered from your lantern to create a life-saving water filtration device.

Important Note: Your team will develop a Conceptual Design (drawn on paper) and a Rough Prototype Design. The Conceptual Design can include ANY materials. The Rough Prototype Design can only include the materials provided during the challenge.

Judging Sessions

TEAMWORK TIME | 60 Minutes

Judges will observe and evaluate your team during this time.

During this time:

1. Disassemble and examine in detail the given item.
2. Identify technology from the item that can be used to solve the given challenge.
3. Create a Proposed Solution using that technology. Your Proposed Solution should include:
 - a. Conceptual Design – This is a drawing of your design; identifying all of the part, components, materials, and other important details. The Conceptual Design can include ANY materials.
 - b. Tough Prototype Design – This is a rough construction of your design and can only include the materials provided during the challenge.

SOLUTION PRESENTATION | 10 Minutes

Your team will present your Proposed Solution to a panel of judges. Presentation time will be limited to 5 minutes, following by 5 minutes of questions from the judges.

You can take the following items to your Solution Presentation:

1. Rough Prototype Design
2. Conceptual Design
3. Notes

SCORESHEET RUBRICS

1. [Teamwork Scoresheet Rubric \(50 points\)](#)
2. [Team Presentation Scoresheet Rubric \(50 points\)](#)
3. [Proposed Solution Scoresheet Rubric \(50 points\)](#)

Supplies

Teams will need to bring their own writing utensils. They may also bring written notes and/or printed information they wish to reference during the challenge.

The following items will be given to each team to use during their judging session.

1. Printed Copy of Challenge Scenario
2. Challenge Item to Dismantle
3. Challenge Item Specs
4. Prototype Materials
5. Safety Glasses for Each Team Member (as needed)
6. A Tape Measure
7. Necessary Tools to Dismantle Challenge Item
8. Paper for Writing Notes
9. Markers and Easel Paper for Presentation Visual Aid(s)

Rules

Failure to comply with any of the following rules may result in disqualification. Judges' decisions are final.

1. No outside items are allowed in the judging area except those noted above.
2. No use of any electronic devices.
3. No outside coaching.
4. Protective eyewear must be worn at all times.
5. Causing safety concerns or an unsafe environment for self or others (be especially cautious when deconstructing the item).
6. Profane, indecent, or lewd expressions, offensive symbols, graphics, or language.
7. Interfering with other teams.
8. Unsportsmanlike conduct by team members or affiliates.