



2023 Challenge

Major environmental issues including climate change and pollution are currently facing our world. Your team is being tasked to research environmental issues, identify one that your team would like to address, and create a solution to that issue. Build a prototype out of K'Nex that supports your solution.

Additional Middle School Challenge

Teams competing in the grades 6-8 division will also be asked to present a budget for their project. They will need to inventory each K'Nex piece they use and list a price for each piece. They will need to present their inventory and the overall cost of their project.

Rules:

- A team of 4 students (maximum) will work together on the project.
- Teams may use up to 1400 pieces. Any pieces, as long as they are K'Nex, may be used. String, tape, and rubber bands are permitted.
- Schools must bring their K'Nex pieces on the day of the competition.
- Students will have 2 hours to put together their project at the competition.
- Each team will need to bring a design notebook and blueprint to the competition.
- Each team will need to prepare a presentation (max 2 minutes) on their model and how they answered the challenge. Middle school students will also need to present their inventory.
- Projects must fit on a 6-foot-long table. Water may not be used as part of the display.

Judging Criteria:

- Creativity
- Teamwork
- Challenge Success
- Design
- Presentation

Competitions

This year's Intermediate Unit competitions may be held virtually or in person. Please check with your Intermediate Unit on the specifics of their regional competition. The first-place team at each Intermediate Unit will be invited to compete at the state competition to be held in May in Harrisburg.



Parts of the competition:

Design Notebook

- This should be a journal of the team's progress from start to finish.
- The Notebook should include elements of the Engineering Design Process.
- [Resources for Design Notebooks](#)

Blueprint

- A blueprint is a technical drawing or design plan for a project. It is used to represent the final product.
- Blueprints for the STEM Design Challenge can be a drawing, cad drawing, online sketch, etc. Pictures may not be used.
- [Resources for blueprint ideas](#)

Prototype

- Teams will answer the challenge by creating a prototype of their idea using K'Nex pieces.
- The prototype will be a representation of their solution. They may expand on their solution during the presentation.
- Teams may include a backdrop or artwork, but judges will not consider this in their scoring.

Presentation

- Teams are asked to share their ideas in a presentation for the judges.
- Each presentation will be 2 minutes or less.
- Every student on the team should participate in the presentation.
- Judges may ask questions of the team after the presentation.