



2022 Challenge

Infrastructure is the framework of our world. Buildings, roads, and power supplies are part of the infrastructure needs of our society. Your challenge is to improve our transportation system. Think of current transportation systems like air travel, vehicle travel, bicycling, etc. In what ways can they be improved to create a safer, healthier, and cleaner world? Or does your team have an idea for a new transportation system? Create a prototype that shows this improved, or new, transportation system. Demonstrate how your system works by moving a ping pong ball (or similar object) through your prototype.

Rules:

- A team of 2-4 students will work together on the project.
- This year we are asking students to create their prototype using recyclable materials and/or K'Nex.
- Each team will need to create and submit a design notebook and a blueprint.
- Each team will need to prepare a presentation (max 2 minutes) on their model and how they answered the challenge.

Judging Criteria:

- Creativity
- Teamwork
- Challenge Success
- Design
- Presentation

Awards:

- Awards will be given to top three teams in grades 4-5 and grades 6-8
- The 1st place team in each division (grades 4-5 and grades 6-8) at each Intermediate Unit regional competition will advance to the state competition

Competitions

This year's competitions may be held virtually or in person. Please check with your Intermediate Unit on the specifics of their regional competition. Information on the state competition will be sent to the winning teams.



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 photo, drawing, cad drawing, online sketch, etc. Be creative!
- [Resources for blueprint ideas](#)

Prototype

- Teams will answer the challenge by creating a prototype of their idea. This year teams may use recyclable materials or K'Nex pieces.
- 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 present.
- Judges may ask questions of the team after the presentation.
- [Resources for presentation videos](#)