Scenario

Whether it's a multifunctional tool or a wheelchair-accessible van, people need products that can be transformed to serve multiple purposes. Public spaces and consumer products that are multifunctional provide numerous benefits and offer unique solutions to real problems. Transformable spaces allow communities to support a multitude of purposes and serve the ever-changing needs of community members. Multifunctional products increase efficiency, save space, and reduce costs as they allow users to perform multiple tasks with a single device.

From an environmental perspective, such consumer products and public spaces reduce waste and lower energy consumption. A wheelchair-accessible playground that converts into an open-air theater, for instance, becomes an inclusive area for all demographics, promoting social cohesion and interaction. Integrating innovative design elements that can transform into new shapes and functions contributes to the aesthetic appeal and richness of the user experience.

Entrepreneurs and scientists are finding new ways to take advantage of transformable products and spaces. This creates an opportunity for entrepreneurs like you to reimagine your surroundings and design a versatile object or structure that meets the needs and desires of your community.

Challenge

Your challenge is to design a physical structure that addresses a community need and can be transformed to support multiple purposes.

Your solution should:
1. **Address a community need.** Describe how your physical structure can be transformed to help address a community need.
2. **Accommodate multiple purposes.** Explain how users can easily transform the structure using simple actions, such as translating, reflecting, rotating, and dilating features.
3. **Include a prototype of your structure.** Create a 2-D model of your structure. This should include:
    a. A 2-D model of your structure and its transformations, and
    b. Precise representations and detailed instructions showing how the structure can be transformed using translations, rotations, reflections, or dilations.