

Overview

Most of our building supplies come from natural resources—trees, stones, brick, adobe, etc. Unfortunately not all of the resources available are suitable for building materials (Retrieved January 2016, https://en.wikipedia.org/wiki/Natural_building). As these natural resources are being consumed, builders are beginning to question how might they use alternative materials or unusual materials to build homes within our communities.

Design Rationale

People around the world live in a variety of structures—some structures are highly portable and mobiles while others are more permanent. Climate, culture, political and economic stability, and geography impact how and where people live.

Problem Scenario

Your team has been selected to develop a prototype or scale model of a dwelling that might be unique in your community. It needs to be movable and/or portable and able to withstand the climate and geography of your area. Your team needs to consider the availability of materials, local and traditional designs, and the needs of the ideal family who might live in the structure.

Your prototype or scale model must satisfy at least two of the following identified concerns:

- Be able to house families of different sizes
- Be able to withstand climate and natural events of the area
- Be accessible for a variety of family members
- Be portable
- Replace natural resource available in your community/region

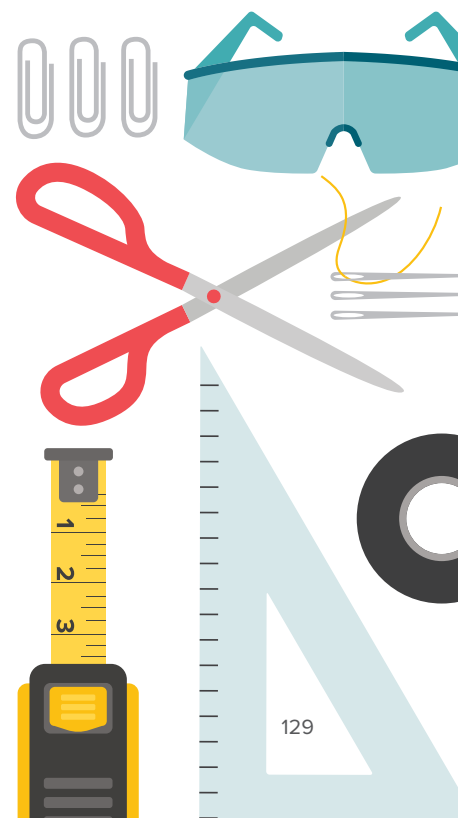


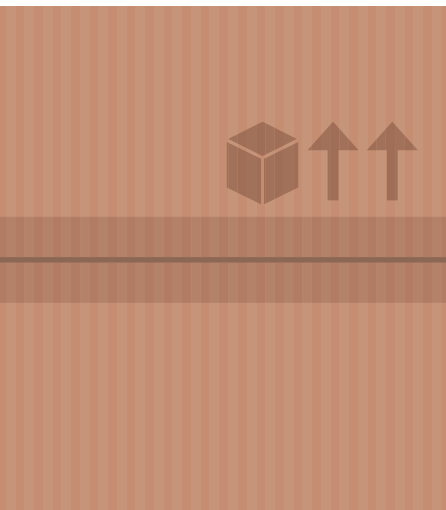
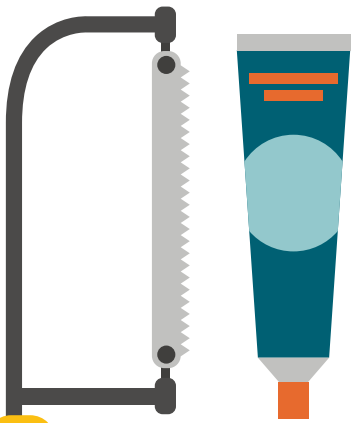
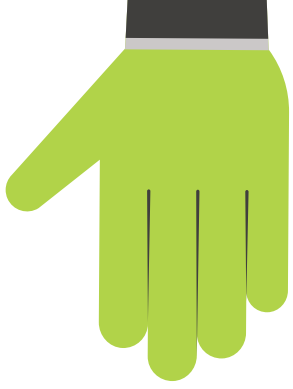
Suggested Grade Level

- Upper elementary through to secondary school
- Possibly primary grades with adult assistance

Suggested Subject Area

- Citizenship—including school culture/community
- ADST
- Geography
- Science
- Social Studies





Success Determinants

Success will be determined by:

- Alignment of the prototype with the design sketch
- Alignment to design motto: “Make it smaller, stronger, do more, be easier to use, be cheaper, be clean, be greener”
- Degree to which your prototype looks like your design sketch
- Ease of long term maintenance and durability
- Functionality
- Is able to fit with other buildings in the area (colours, design, structure)
- Shows understanding of the geography of the land for which the structure is being built
- Uniqueness and usability of your prototype and the degree to which it solves an actual problem

Parameters

- You must complete a display panel, which includes your design thinking sketch, your prototype, your design notes, and your reflections on the activity.
- You must consider how to make your prototype colourful, intriguing and ergonomic.
- You must present your design thinking sketch, your prototype and design notes.
- You must use some of all the items in the participant group kit in some way.
- You should use the tools located in the shared tool area.