BRIDGE BUILDING

Build a bridge that is strong enough to hold weight

POSSIBLE BUILDING MATERIALS

- Paper
- Recycled cardboard
- Corks
- String/Yarn
- Books
- Sticks/Tree bark

TOOLS

- Scissors
- Tape

TESTING MATERIALS

To test that the bridge can hold weight:

- Small figurine/Toy/Object (select this in advance to help with planning)

SET UP THE PROBLEM

1. Bridges help us cross water or land that would be hard to walk or ride over.
2. Build a bridge that can help an object or favorite toy cross a tricky location.

ENGINEERING BACKGROUND

Civil engineers assist with the design, construction, and maintenance of physical and naturally built environments (such as roads, bridges, canals, and sewage systems).

LEARNING GOAL

During engineering activities, children can be prompted to engage in *counterfactual reasoning*, which is thinking about alternative outcomes. Children think about what might happen if different design elements were used instead of the ones they chose, or what might happen if something heavier tried to cross the bridge.

TIPS FOR ADULTS

Before building: Ask children what they already know about bridge design and the features that might be important to make a bridge strong enough to hold weight "What do you know about bridges? What do you think you should include in your design so that the bridge is strong enough to hold your item?"

After building a prototype, ask children to try out their bridge and evaluate whether the design worked "Did your bridge hold your item?"

If it did not work, ask them to consider what they might change to improve the strength of the bridge "How do you think you can make it stronger?"

And, if it did work, ask them to see how much weight the bridge can hold "Do you think your bridge might be able to hold two items? or "Do you think your bridge could hold something a little heavier?"

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For more ideas visit: BayAreaDiscoveryMuseum.org/ThinkMakeTry