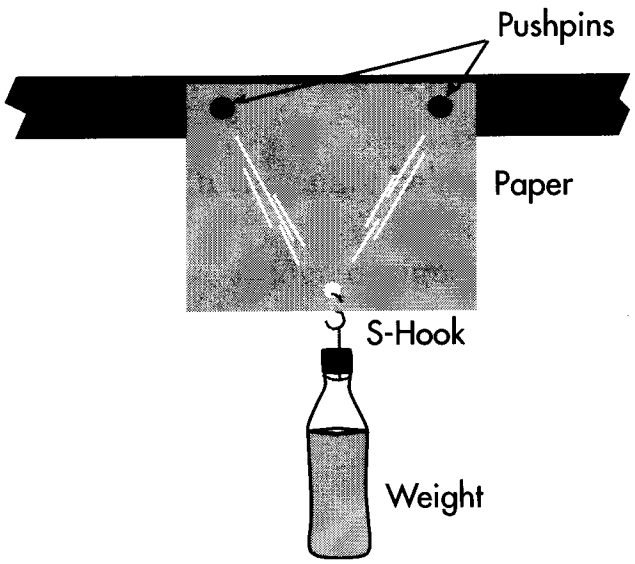
Challenge 1
Single Load Bridge

Challenge Objective

Design a bridge truss from a single sheet of notebook paper. You must use as little paper as possible to support a 750-gram weight for 10 seconds.



Challenge Scenario

You are an engineer called in to help rebuild a war-torn nation. Among other structures, the country needs to rebuild the bridges destroyed by bombing. The most important bridge crosses the largest river in the nation's capital city. You and your team will help design a replacement bridge. Due to the country's current financial crisis, the design must be as economical as possible.

Materials

- Design Sheet (one for each iteration)
- Data Sheet (one for each iteration)
- Notebook paper: 16-pound, 8 1/2 x 11 inches (21.6 x 27.9 cm), with holes for a standard three-ring binder
- Plastic self-adhesive hole reinforcements
- Scissors
- Ruler
- 1/4-inch (6 mm) single hole punch
- Pencil

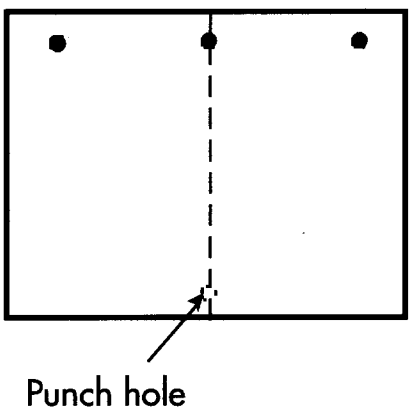
Single Load Bridge

TEAM NAME: **DATE:**

DESIGN # **TIME:**

Procedures

1. Fold your paper in half to locate the center.



2. Punch a hole in the bottom of the paper on the center fold line.
3. Place reinforcements on both sides of all holes for support.
4. Design and cut out your bridge removing as much material as possible.
5. Sketch and label your design in the space below.

NOTE: You must test at least three bridge designs. Complete a Design Sheet and a Data Sheet for each design.

Single Load Bridge

TEAM NAME: **DATE:**

DESIGN # **TIME:**

Test Results

Weight of Bridge _____

Circle One: Success / Failure

If your design failed, describe how, where, and why this happened.

_____

_____

_____

_____

_____

_____

Improving the Design

What will you change? Why will you make these changes?

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