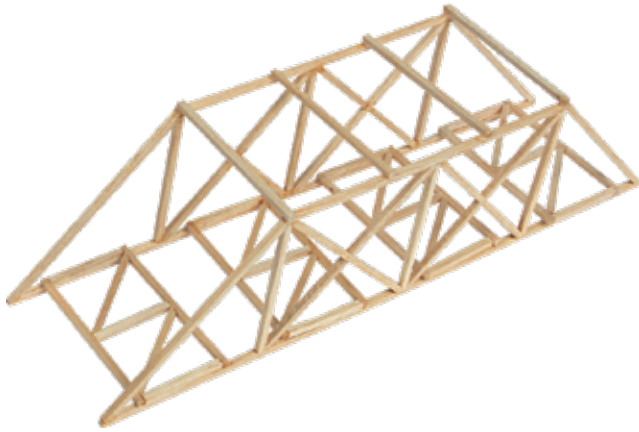


Bridges

Grades 6+ | Students Served: 25

MIDDLE LEVEL

HIGH SCHOOL



Essential Questions

If you were to build a bridge, what material would be best to use considering the physical properties of the material?

How are bridges a form of art?

What problems can occur before and during construction, and how might you learn from these problems? How can engineers avoid these problems?

Career Connections:

- City Planner
- Architect
- Civil Engineer
- Carpenter

STEM Connections

Science

- Modeling
- Equilibrium
- Forces

Technology

- Construction
- Design processes
- Historical perspectives

Engineering

- Design aesthetics
- Data analysis
- Technological design

Math

- Pythagorean theorem
- Efficiency
- Symmetry



Sample Activity

Balsa Bridges Falling Down

Challenge

Students determine the breaking point of a balsa bridge.

- Prior to building, students research basic bridge designs and sketch their selected design.
- Each bridge must span 30-45 cm and be 8 cm wide.
- Bridges are tested for load capacity using the Structures Testing Instrument.
- Document the results of load capacity.

Discussion

Compare the results of students' bridges – construction, design, and breaking point.

Continuation

Vary the length of the span to 10" to 24" and compare the results.