

## **GatorTRAX and FES Bridges Module:**

### **Module topics:**

#### **Vocabulary:**

Span	Force
Compression	Tension
Beam	Pier
Cantilever	Load
Truss	Stable
Deform	Buckling
Snapping	Dissipate
Transfer	

Identify pictures of different words in action.

Identify pictures of different kinds of bridges.

#### **Physics:**

Force

Simple machines

Unit conversions

Efficiency ratios

Relation of length width and height to volume, and thus to density and mass

Use of correct measuring tools for real-world situations

Cost of parts

#### **Math:**

Scaling measurements (i.e. 1 inch = 4 feet)

Pythagorean theorem

Percentages, Fractions, and Decimals

Geometry – arches

Equations

Inequalities

Graphing

Inequalities

Use of symbols

Estimation

How many cars could we fit on a bridge?

Measuring and selecting appropriate units of measurement

Range, mean, median, and mode

## Supply List:

There are lots of suitable materials for building bridges. We used a hole punch to punch holes in the ends popsicle sticks. Then we used brass fasteners (pictured below) to attach sticks together. Some students also used string to try to make suspension bridges. These did not turn out as strong as the truss bridges made by other students, but they were in some ways even more fun to build. Suspension bridges require string as well as the other supplies.

