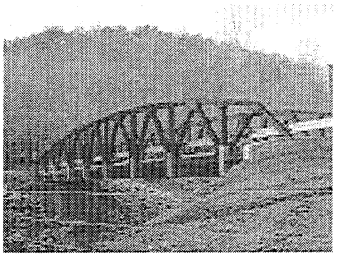
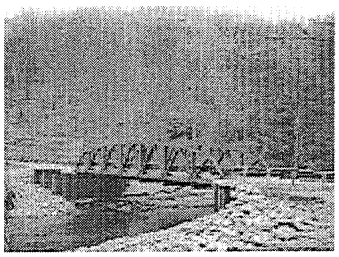
Bridge Builders

Ryan J Volke
Homestead High School
1-(262)-238-5662
rvolke@mtsd.k12.wi.us

Name _____
Period_____

BRIDGE BUIDERS





Overview: There are many different types of bridges. Some are simple bridges that have beams underneath to support the bridge deck like the type used for highway overpasses. This type is usually used for spanning things like roads or small rivers. Other bridges use truss design and can "span" wider roads or rivers or to support heavy loads such as trains. Another type of bridge is a suspension bridge. Suspension bridges are used for very long spans. The word "span" means the distance between the supports that hold up the bridge. Most of the bridges that students build for the bridge competition are the truss type because they have a high strength to weight ratio but you can build any type of bridge as long as the bridge conforms to the rules.

Purpose: Design a bridge that spans an 11" gap. Your bridge must be built with material provided by the instructor, and built to specifications. The model will be tested to destruction to determine its load-carrying capacity as related to its weight when subjected to a load. The goal of this project is to design a bridge using methods researched by the students. Grades will be given based on how much weight the bridge holds divided by how much the bridge weighs. Students will also be graded on their research, drawings, and creativity.

Materials:

1. 12' of 1/8" X 1/8" balsa wood.
2. Wood Glue
3. Graph Paper
4. Exacto Knives
5. Wood Cutters

Bridge Dimensions

1. Length: 12 inches
2. Min. Width: 2 inches
3. Max. Height: 4 inches

Specifications:

1. The bridge must be able to hold a 3" X 3" plate in order to test the bridge.
2. The bridge must be made to drawing design.
3. All materials must be handed in the day after the competition.
4. All materials must be typed and easy to read.
5. The wood cannot be treated or painted in any way. Such treatment would alter the strength characteristics of the wood.
6. All entries will indicate the name and grade of each participant responsible for entry construction.
7. Entries will be disqualified if materials other than those furnished by the instructor.
8. The model will be loaded until failure; failure is defined as a permanent decrease in the load carrying capacity.
9. The load will be applied to the bridge and a minimum of 20 lbs must be carried.

Weight Held_____ / Weight of Bridge_____

Overall Score_____