

# File Folder Bridge Project

**September 15 – September 26, 2007**

**Project Description:** Each student will construct an A-Truss Bridge made entirely out of card stock (or manila file folders) and glue. Glue may only be used to secure the pieces of card-stock together. The bridge must span 30cm and hold a 5kg load at mid-span for at least 20 seconds without failing. Students will be given some, but not all, of the materials required to construct the bridge. Students will have access to a PowerPoint presentation that gives most, but not all, of the instructions necessary to construct the bridge. Students will be provided with a list of materials that may help with the construction of the bridge. Be aware that you do not need all the materials on the list (so do not go and buy everything that is on the list thinking that having those items will earn you a top grade).

**Purpose:** The purpose of this project is to develop students who are truly independent interdependent learners motivated from within. This will be achieved using the following methods:

1. Provide students the opportunity to complete a new and unfamiliar task independent of teacher/parent directed interference.
2. Support student through the process of studying and understanding a problem with its frustrations and insecurities and help them develop strategies for success.
3. The teacher is a resource for questions and problems.
4. The students must use their common sense to figure out how to complete the task independent of direct step-by-step instructions from the teacher.
5. Students are encouraged to collaborate, cooperate and share discoveries with one another to maximize learning.
6. The first most basic understanding to be gained from this project is the value of a plan involving set deadlines for completion of specific phases (sub-sets) of the project.
7. Skills like manual dexterity, visualization, precision, accuracy, and understanding material limitations will also be developed as a part of the project.
8. Quality work is important!

**Rubric:** Your grade will be based on the following criteria

Project Deadline	Project Must be turned in complete and DRY by the conclusion of class Thursday September 25,2007
Drop Test	Dead weight test Friday September 26

Project deadline Thursday Sept. 18, 2007 <b>20%</b>	Completed Half (one side truss) 10 % will be deducted per calendar day for late bridges.
Project deadline Monday Sept 22, 2007 <b>20%</b>	Completed Second Half (one side truss) 10 % will be deducted per calendar day for late bridges.
Project deadline Thursday Sept. 25, 2007 <b>15%</b>	Complete Bridge Dried and decorated
Project deadline Friday Sept. 26, 2007 <b>20%</b>	20% credit will be awarded to bridges that hold the load for 20s or more 15% credit will be awarded to bridges that hold the load for 15s - 20s 10% credit will be awarded for bridges that hold the load for 10s - 15s 5% credit will be awarded for bridges that hold the load for 5s - 10s 0% credit will be awarded for bridges that hold the load less than 5s.
Cosmetic Appearance <b>5%</b>	The following criteria will be used to evaluate the appearance of the bridge. Are the bridge pieces assembled with precision? Are the bridge pieces aligned? Is the bridge decorated with paint, markers, etc that add to its aesthetic ?

**List of Materials Provided by Teacher:**

1. Template Bridge pieces printed on card-stock (Note: The template of pieces I provide is not complete. You will have to figure out what pieces you need but don't have)
2. Elevation and Plan View drawings of the bridge (11in.x17in.)
3. PowerPoint presentation with instructions may be found at the following address. The Elevation and Plan view drawings are available here as:  
<http://homepage.mac.com/colbertiii/physics.html>
4. The following website might also be of interest  
<http://bridgecontest.usma.edu/ffb.htm>

**List of materials you may need**

1. Scissors
2. exacto-knife
3. Glue (Elmer's, or wood glue work well)
4. Ruler
5. Ball point pen
6. Wax paper or plastic wrap
7. Pins
8. Tape
9. Building board (Styrofoam, cork board, card board work well)