



The Straw Challenge

Name: _____ Level: I or II (circle one) School: _____

A cantilever is a common structure studied by engineers. A cantilever is a beam structure supported only at one end, much like a diving board. Consideration must be given to compression, tension, temperature and wind conditions, and weight during the construction of a cantilever.

Objective

The challenge in this activity is to construct a 14" (horizontally) cantilever beam within the allotted time that will support the most weight. Teams will be given scissors, tape, and straws to construct a self-supporting cantilever. The team that constructs the strongest cantilever will be the winner.

Rules

1. _____ Each team will consist of no more than two members.
2. _____ No materials, other than what is given, may be used for the cantilever. The materials that will be given are scissors, 24 inches of masking tape, and 24 straws.
3. _____ The Cantilevers must be self-supporting and extend out 14" from the edge of the table or it will be disqualified.
4. _____ The cantilever must not sag lower than 6 inches from the surface of the table.
5. _____ The back most edge of the cantilever must not be further than 8 inches in from the edge of the table. The tables will be marked with this distance.
6. _____ No more than 6 pieces of tape 2" long may be used to attach the structure to the table.
The anchor tape is part of the 24 inches of masking tape
7. _____ Teams may enter the contest only once.

Contest

1. Each team will be given the allowed materials for the cantilever.
2. Once all the materials have been distributed, each team will have a maximum of 25 minutes to construct their cantilever.
3. After a maximum of 25 minutes, all remaining materials will be collected. Judges will measure the length of each cantilever and will disqualify those that do not meet the requirements.

• Judging:

The team with a qualifying cantilever that **does not sag lower than 6 inches** from the surface of the table and meets the above rules will be given a cup to attach to the cantilever @ 13.5" from the edge of the table, then the judge will start adding dimes to the cup until the structure fails. The judge will determine structure failure, and the Cantilever supporting the most weight in dimes will be declared the winner.

In case of a tie; the cantilever completed in the shortest amount of time will be designated as the winner.

Any rules violations will result in disqualification

Minutes used to complete the structure: _____

Number of dimes supported by the structure: _____

Entrance Ranking: _____

