Spaghetti Bridge Building Rules

The object of the competition is to design and build a bridge that will carry the heaviest load while meeting specifications. All bridges will be loaded until they fail.

Rules

1. The bridge is to be built from spaghetti (the cylindrical form of pasta), Elmer's glue and/or cold glue (glue gun)

   Spaghetti, Elmer's Glue, glue sticks and glue guns will be provided. Construction may not contain any other materials. The pasta may be carved, notched, steamed, boiled, and curved. The bridge may not be painted or stained. No piece of spaghetti may have glue applied its entire length to fix it to another piece of spaghetti

2. All construction work is to be done at school and the bridges under construction will be stored in lab drawers while no work is being done on the bridge.

3. The bridge will be free-standing and must span two level surfaces which are 35 cm apart.

4. The support for the bridges will be from the top of the level surfaces. The edge of the surfaces may not be used in any way for support.

5. The bridge must include a decking of spaghetti to provide a suitable road surface at least 5 cm wide across the full span of the bridge. Three conditions must be met:

   a) gaps in the bridge deck are not to exceed 5 mm

   b) a block of wood 5 cm X 5 cm X 10 cm representing a car must be able to move along the length of the decking unobstructed from end to end.

   c) the deck of the bridge must not be more than 5 cm above or below the ends of the bridge for any point along its length.

6. Maximum length of the bridge will be 40 cm.

7. Maximum vertical depth of the bridge from the highest point in its structure to the lowest cannot exceed 13 cm.

8. Maximum weight of the bridge shall not exceed 750 g.

9. You must include a space for a loading platform from which the weights will be hung. This space will consist of a hole in the decking of a minimum of 1cm and a maximum of 1.5cm in diameter through which a 3/8th inch eyebolt will be passed

from the bottom of the bridge and inserted through an upper 40mm square of plywood and secured with a wing nut. An s-hook and metal rod will hang from the eyebolt to support the load applied to test the bridge. During loading, if the bridge twists in such a way as to cause the bridge to touch the rod at any point other than the eye-bolt, thus lending additional support, the bridge will be disqualified.

10. At the competition, bridges will be loaded with increasingly greater amounts of weight until they fail. After a bridge fails, team members are responsible for cleaning up the spaghetti from their bridge.

11. Teams are responsible for daily clean-up of their workplace and for making sure that their bridge is stored properly between classes. No student may enter the storage space of another team without the permission of the team "owning" the storage space and without the permission of the instructor.

12. Horseplay and other violations of lab safety rules will result in disqualification of the team and the assignment of an alternative seatwork activity to be completed instead of the bridge building competition.