Skills Compétences Canada
British Columbia

Cariboo Junior Skills Competition

Scope Document

Spaghetti Bridge (2024)

Thompson Rivers University
March 1, 2024

THOMPSON RIVERS UNIVERSITY | Trades & Technology

Skills Compétences Canada
British Columbia

Spaghetti Bridge 2024

Eligibility:

This competition is open to teams of students in grades 6 through 9. Each team may be comprised of three (3) people.

Purpose of the Challenge:

- To increase students' awareness of careers in trades and technologies through a hands-on competitive event.
- To construct a spaghetti bridge

NOTE: Teams may **not** pre-construct a spaghetti bridge to be used in the competition. Only sketches and blueprints may be brought to the competition.

The challenge is to:

- In advance of the competition, to work as a team to design a model bridge.
- submit drawings of a bridge of the type being built this must be produced at the competition
- Build a model that demonstrates the important physical elements of the bridge building such as tension, compression, torsion, shear force, etc.
- convey to the judges, during an oral presentation, the reasoning of the bridge design.

Registration:

- There is a limit of 12 teams consisting of two to three (2-3) team members

Note: Should space permit, additional teams will be entered on a "first come, first served" basis. If necessary, schools should initiate a school-based run-off to see which team will advance to the regional competition.

Tools and Materials:

Supplied by the school:

- Paper, regular bond, 8.5" x 11"
- Poster board, 22" x 28"

Supplied by the Cariboo Regional Skills Coordinator:
On the day of the competition

- 2 boxes of Duram wheat spaghetti
- glue gun with glue sticks
- specified loading mass platform
- scale
- official 0.5Kg and 1 Kg weights
- judging platform

Design and Construction Rules and Regulations:

- Each team must bring **TWO COPIES** of the model bridge design sketch or blueprint, ready for display. Posters must include team name and school name.
- The design must show evidence of originality and critical thinking.
- The quality of the sketch or blueprint will be an evaluation factor.
- Teams may choose to appoint a Team Leader. Teamwork, participation by all team members, and time management will also be evaluated.

Construction Rules and Regulations:

- The Spaghetti Bridge is to be constructed **at the contest** within 2 hours using only spaghetti and hot glue.
- The Spaghetti Bridge is to be a minimum width of 50 mm, a minimum height of 100 mm and is to span a length of 500 mm. It will incorporate, at the middle of the bridge deck, the loading platform that is provided by the Technical Committee.
- The Spaghetti Bridge is to be as light as possible and be able to hold up the official **1 Kg loading mass** for **60 seconds**.
- The loading mass will be hung from a supplied official loading platform**.** The bridge must be placed on a pre-measured wooden testing platform prior to attaching the loading mass.
- The team whose bridge supports the official loading mass for a period of 60 seconds and the lightest bridge wins the competition.
- In the case of a tie, the bridge that can hold the most additional weight before breaking will be deemed the winner
- The teams bridge during the building time with a ½ Kg loading mass.
- The teams are only allowed to test their bridge during the building time with a ½ Kg loading mass
- Each team of students is required to work on their own, without outside assistance from either their sponsor or other people.

- To avoid damage to the bridge only the student team leader(s) will be the only people to carry the bridge to the scale and to the test area.
- To avoid damage to the bridge the student team leader(s) are the designate responsible to place the weights on the bridge.
- The bridge deck does not need to be a solid surface for the length of the bridge.
- No support(s) from the bridge to the vertical sides of the testing platform will be permitted.

Judging Criteria:
There are two sets of judging criteria, Bridge Construction and Technical Presentation:

Bridge Construction:

- The team whose bridge supports the official loading mass for a period of 60 seconds and has the smallest mass wins the competition.
- In the place of a tie, the tie will be broken by the bridge that can hold the most additional weight before breaking.

Technical Presentation:
Whereas Skills BC believes that Junior Skills Competitions should include math and science skills each team is requested to prepare drawings of the bridge being built and that the team be prepared to make an oral presentation. Each member of the team that has the best drawing(s) and gives the best oral presentation will receive a $10 gift card.

Technical Committee Chair:
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