



ENGINEERS &
GEOSCIENTISTS
BRITISH COLUMBIA

2024 BRIDGE BUILDING COMPETITION

ORGANIZED BY THE WEST KOOTENAY BRANCH

INFORMATION SHEET

Summary: Build the strongest bridge you can that spans 500mm using only 100 craft sticks and white glue. Submit it for testing, have it get loaded to destruction, maybe win a prize, and most of all, have some fun!

Event Format: Virtual format for 2024.

Bridges need to be dropped off at one of the locations below. They will then be collected and tested, with results and videos of the testing posted a few weeks later.

Where to pick up kits and drop off completed bridges:

- **Castlegar:** Ready Engineering, 1402 Columbia Ave, Castlegar, BC (open Mon-Fri, 9 AM-5 PM) – call 250-365-8455
- **Creston:** Canyon-Lister School, 4575 Canyon-Lister Rd, Creston, BC – 250-428-4161 (calls only)
- **Grand Forks:** John A. Hutton Elementary School, 2575 75th Ave, Grand Forks, BC (open Mon-Thurs, 8:30 AM-4 PM) 250-442-7010

Deadline: Bridges can be dropped off starting Monday, April 22 but must be delivered no later than **Noon on Tuesday, April 30, 2024**. Late entries may not be collected or tested. Remember you must attach the **neatly** completed registration form to your bridge and you must **clearly** print your full name, age, phone number, and registration number on the bridge.

Results: Prize winners will be contacted by phone or through schools. We will endeavour to post the results by Friday, May 17, 2024). Check www.egbc.ca/wk for a link to the results and videos of the test.

Cost: \$5 covers contest entry and Materials Kit

Materials: 100 craft sticks and one bottle of white glue

Prizes:



Robotics Kit



Camera



iPad



Telescope



Digital
Microscope

This year there are 5 main draw prizes up for grabs to all entrants under 19 years of age. **Plus**, there are prizes for the first, second, and third strongest bridges in each of the three age categories under 19 years of age. To enter to win the draw prizes, you don't have to build the strongest bridge, just simply build and enter a qualifying bridge.

Categories:

- Ages 8 and under
- Ages 9 to 12
- Ages 13 to 18
- Unlimited category (includes contest organizers and their immediate families, teachers, and anyone over 18)

RULES

Build a bridge as strong as you can using only the 100 craft sticks and glue provided in the kit. Bridges must be built from the 2024 materials kits. Bridges built from past year's kits are not allowed, nor are bridges built of materials from any other sources.

There are no step-by-step instructions for this project, but bridges **must meet the following requirements or they will be disqualified (see sketch below):**

The total length of the bridge must be at least 520 mm.

The maximum height of the bridge is 300 mm.

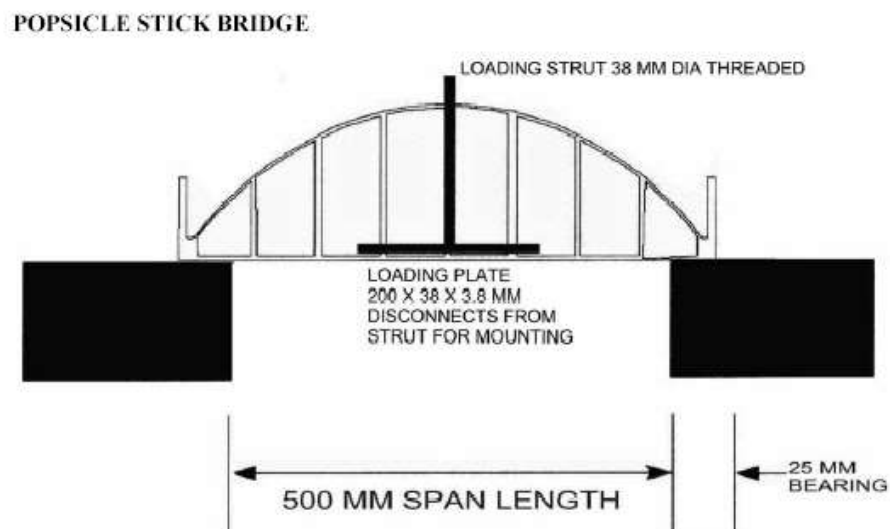
You must be able to roll a 40 mm wide toy car across the bridge. The bridge must have a continuous driving surface across its entire length. This can be a solid deck or two parallel strips at wheel width.

The loading plate and strut must fit onto the bridge for testing. The loading plate is 200 mm long and 38 mm wide and needs to be placed on the bridge deck at centre span; the loading strut is connected to the loading plate and projects out of the top of the bridge.

ONLY the craft sticks and glue from the 2024 kits may be used; NO other materials may be used (no additional glue, no substitute glues, no additional craft sticks, no substitute sticks; nor the glue bottle / plastic bag / stick wrap / instruction sheet!)

Once your bridge is finished, write your name, phone number, age, and registration number on the bridge, and then attach the **neatly** completed REGISTRATION FORM (included with the Materials Kit) to your bridge (with tape, string, or an elastic).

SKETCH



HINTS

Glued joints will be much stronger if they have lots of time to dry and are clamped during construction. You could try using a clothes peg, a C-clamp, binder clips, or a vise.

TESTING

A force will be applied to the bridge using a loading plate until the bridge fails (ouch!). The maximum load supported by the bridge before it fails will be its recorded "bridge maximum load".

Note that all bridges submitted for testing will be destroyed. They will be loaded until they break.

QUESTIONS

The rules were written to be as clear as possible. If something is required, it is listed as such (such as the bridge deck specifications). Within reason (and the confines of the rules) if something is not specifically forbidden, it is likely acceptable (such as cutting or breaking of the craft sticks). For other questions email Soumya Thapliyal (soumya.thapliyal@bba.ca).

Adults and friends are encouraged to help children with their bridges, but the bridge should essentially be designed and built by the person entering it. (Remember, adults are invited to enter their own bridges!)

Notes:

- 1) This contest is presented as an entertaining learning opportunity and should be viewed as such. The contest organizers make every effort to avoid errors and ensure the rules are applied consistently and correctly. Any decisions made by the volunteers throughout the course of the contest are final. Entering this contest implies acceptance of these conditions.
- 2) Due to availability, prizes may not be exactly as shown or described.
- 3) Prizes must be accepted as awarded or declined.
- 4) Team entries must sort out for themselves how to share a prize.
- 5) Due to the nature of some of the prizes, parent or guardian permission may be required before the prize can be released.

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