ENGINEERS &
GEOSCIENTISTS
BRITISH COLUMBIA

2021 POPSICLE STICK BRIDGE BUILDING CONTEST

ENGINEERS AND GEOSCIENTISTS BC WEST KOOTENAY BRANCH

INFORMATION SHEET

Virtual format for 2021! Completed 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 the following week. Thanks for participating in this modified format. We look forward to seeing you in person again in 2022!

WHERE

Pick up kits and drop off completed bridges at one of the following locations:

- Castlegar - Ready Engineering, 1402 Columbia Ave, Castlegar, BC (open Mon~Fri, 8~5) - 250-365-8455
- Creston – Jennifer Adams at Homelinks, 617 – 11th Ave S, Creston, BC - 250-428-6725
- Grand Forks - City of Grand Forks, 7217 4th St, Grand Forks, BC (open Mon~Fri, 9~4) - 250-442-8266

WHEN

Kits will be ready for pickup by February 24, 2021 and will be available while supplies last. Completed bridges can be dropped off between Tuesday, April 6th and 4:00PM Thursday, April 15, 2021. Late entries may not be collected or tested.

COST AND MATERIALS

Bridge Kits cost $5 each, including contest entry. ONLY materials provided in the kits (i.e.,100 Popsicle sticks and 1 bottle of White glue) can be used to build bridges. Kits can be purchased at the locations listed above. If paying cash, please bring the exact amount. Bridges built from the 2020 kits will be accepted.

CATEGORIES

- Ages 8 and under
- Ages 9 to 12
- Ages 13 to 18
- Unlimited category (includes contest organizers and their families, teachers, and anyone over 18). Sorry, no prize money

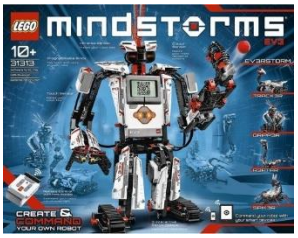
PRIZES

As well as $50, $40, and $30 prize money for the first, second, and third strongest bridges in each of the three age categories under 19 years of age, this year there are 5 draw prizes up for grabs to all entrants under 19 years of age. To enter to win, you don't have to build the strongest bridge, but simply build and enter a qualifying bridge. Prizes will include:

iPad & Robotics Kit

Digital Microscope

Celestron Telescope



Lego Mindstorm EV3 Robotics Kit

Nikon Digital Camera

Notes: 1) Due to availability, prizes may not be exactly as shown or described. 2) Prizes must be accepted as awarded, or declined. 3) Team entries must sort out for themselves how to share the prize. 4) Due to the nature of some of the prizes, parent or guardian permission may be required before the prize can be released.

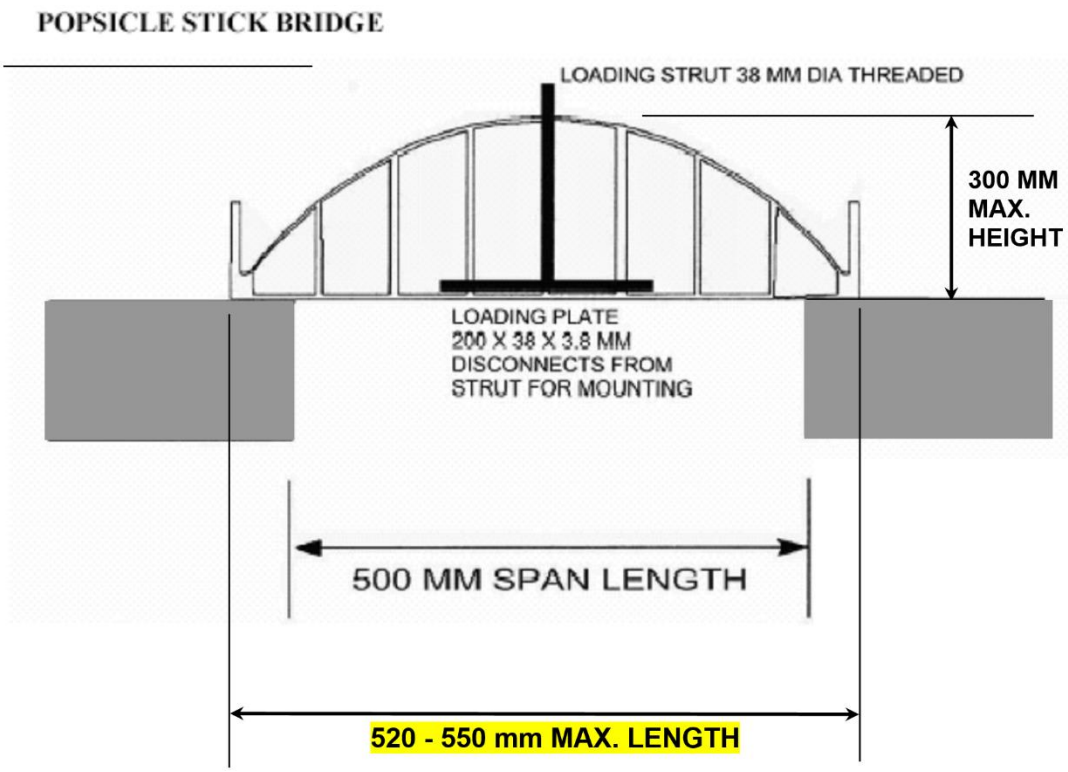
INSTRUCTIONS

Build a bridge as strong as you can using only the popsicle sticks and glue provided in the kit.

There are no step-by-step instructions for this project, but BRIDGES MUST MEET THE FOLLOWING REQUIREMENTS OR THEY WILL BE DISQUALIFIED (see sketch):

- The bridge span must be 500 mm.
- The total length of the bridge must be between 520 mm and 550 mm.
- The maximum height of the bridge is 300 mm.
- You must be able to roll a "hot wheels" car across the bridge deck; the bridge deck must be continuous and at least 40 mm wide. We will test this. (The deck be solid or simply two parallel strips at wheel width.)
- We must be able to fit the loading plate and strut on the bridge. The loading plate is 200 mm long and 38 mm wide and needs to be placed on the bridge deck; the loading strut is connected to the loading plate and projects out of the top of the bridge.
- All supplies MUST come from the purchased kit; NO other materials may be used (no additional glue, no substitute glues, no additional popsicle sticks, no substitute sticks); all materials are supplied in kit. (The glue bottle cannot be used!). Bridges built for the cancelled 2020 competition will be allowed, as will bridges built from either 2020 or 2021 materials kits.

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 clip, or a vise.

TESTING

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

Note: All bridges submitted for testing will be destroyed. They will be loaded until they break.

RESULTS

Prize winners will be contacted by phone. We will endeavour to post the results within one week (by Friday, April 23, 2021). For a link to the results and videos of the testing, check https://www.egbc.ca/About/About-Us/Branches/West-Kootenay-Branch.

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). 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 popsicle sticks). Other questions? Call or email Mark Sirges (250-365-4230 / mark.sirges@mercerint.com).

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